

For Your Use of This Catalog

Easy to select!
Easy to find!
Easy to understand!

Easy to search products.

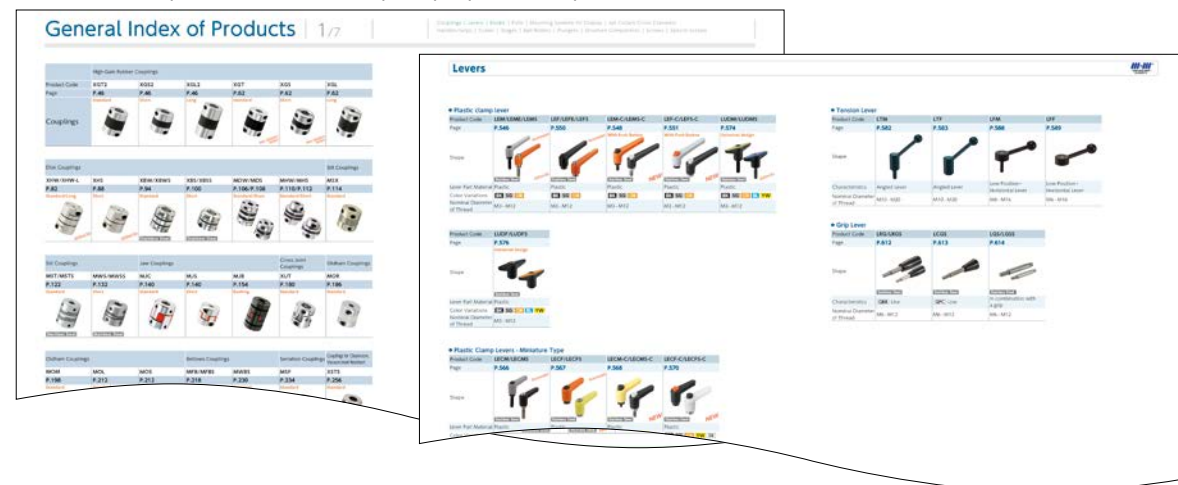
All Products

Search products using the index

General index of products is on P.3 - 16. The index is also shown at the top of each category.

In the index located at the top of each category, you will find a list of information, including characteristics, performance and specifications, in addition to the part numbers, photos and pages.

You can find a product suitable for your purpose easily.



Coupling/Transmission Support Component

Search products by motors and devices you are using.

Coupling suitable to the combination with your motor can be selected.



Selected based on motor → P.21

It is possible to select the most appropriate coupling to solve the device problems.



Selected based on application → P.22

e-nedzi.com (Special thread)

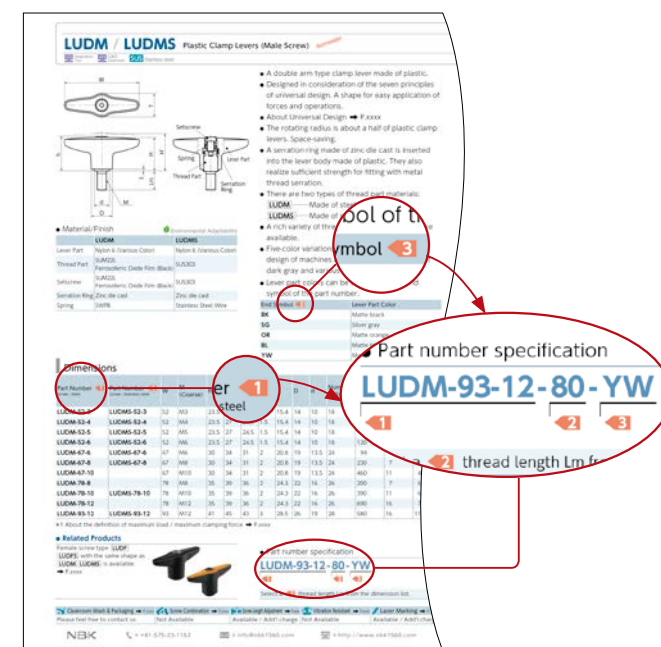
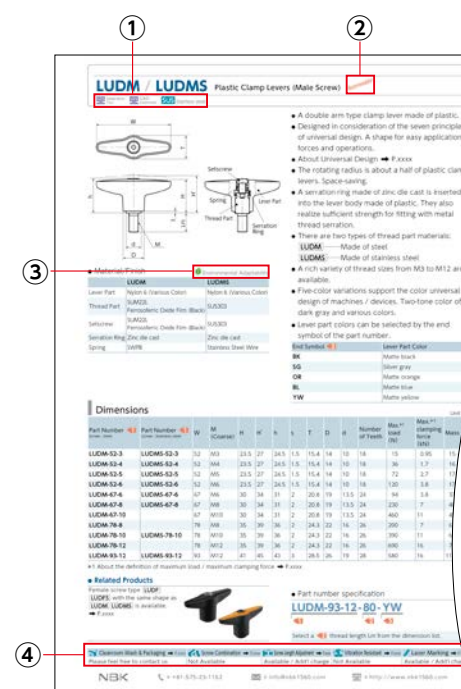
Search products by intended use.

You will find a list of intended usages of the products and the corresponding products on P.553.

You can find a product easily using search keywords.



Product page contains a lot of information.



① Selection Tool

The products can be selected from our website. (www.nbk1560.com)

② CAD Download

2D or 3D CAD data are available. These data can be downloaded from our website. (www.nbk1560.com)

③ SUS Stainless steel

The product with stainless steel specifications is available. In addition, this catalog includes the following icons indicating product characteristics.

Cleanroom wash & packaging Vacuum Vibration resistant treatment
Protrusion Heat-resistance Chemical-proof

④

NEW A new product. The product is newly introduced in this catalog.

New Variation Added More variations added such as new materials and colors.

Recommendation It is the representative product of the category. Excellent cost performance with a wide range of size variations.

⑤ RoHS Compliant

Conforms to RoHS Directive. *You can find the latest information on our website.

⑥ This represents products targeted for various services. For the types and contents of the services, please refer to the various services page. → P.801 - 822

Selection Tool Guide

On the NBK website (www.nbk1560.com), you can easily select products you are looking for by its dimension and performance, etc.

Coupling/Transmission Support Component

Load torque
0~560 N · m

Bore Diameter (D1)
1~55 mm

Bore Diameter (D2)
1~55 mm

Outside Diameter

Machine element component

Select Shape

Turning Radius Short
Turning Radius Long
Flat

T-shaped

e-nedzi.com (Special thread)

Select Size

M2 M2.5 M2.6
M3 M4 M5
M6 M8 M10
M12

High-Gain Rubber Couplings						
Product Code	XGT2	XGS2	XGL2	XGT	XGS	XGL
Page	P.29	P.29	P.29	P.45	P.45	P.45
Couplings	Standard	Short	Long	Standard	Short	Long
						

Disk Couplings						Slit Couplings
XHW/XHW-L	XHS	XBWS	XBSS	MDW/MDS	MHW/MHS	MSX
P.65	P.71	P.77	P.83	P.89 / P.91	P.93 / P.95	P.97
Standard/Long	Short	Standard	Short	Standard/Short	Standard/Short	Standard
						

Slit Couplings			Jaw Couplings			Cross Joint Couplings
MST/MSTS	MWS/MWSS	MSXP-C-W-SP	MJC	MJS	MJB	XUT
P.105	P.115	P.123	P.125	P.139	P.147	P.155
Standard	Short		Standard	Short	Bushing	Standard
						

Oldham Couplings				Bellows Coupling		
MOR	MOM	MOL	MOS	MBB	MFB/MFBS	MWBS
P.161	P.173	P.187	P.187	P.193	P.195	P.201
Standard	Standard	Standard	Short		Standard	Standard
						

Serration Couplings	Couplings for Cleanroom,Vacuum,Heat Resistant					Rigid Couplings
MSF	XSTS	XWSS	MSXP	MOHS	MOP	XRP
P.205	P.227	P.227	P.231	P.237	P.243	P.207
Standard	Standard	Short	Standard	Standard	Standard	Standard
						

Rigid Couplings		Custom - made parts	Photo Sensor Flange	Damper Roll		Plastic clamp lever
MRG/MRGS	MLR/MLRS	Flexus	MPF	MDR	Product Code	LEM/LEME/LEMS
P.211	P.219	P.249	P.251	P.252	Page	P.271
Standard	Long				Levers	
						

Plastic clamp lever					Plastic Clamp Levers - Miniature Type	
LEF/LEFE/LEFS	LEM-C/LEMS-C	LEF-C/LEFS-C	LUDM/LUDMS	LUDF/LUDFS	LECM/LECMS	LECF/LECFs
P.275	P.273	P.276	P.277	P.279	P.280	P.283
Standard	With Push Button	With Push Button	Universal design	Universal design		
						

Plastic Clamp Levers - Miniature Type			Tension Lever			Grip Lever
LECM-C/LECMS-C	LECF-C/LECFs-C	LTM	LTF	LFM	LFF	LRG/LRGS
P.281	P.284	P.285	P.286	P.287	P.288	P.289
						

Grip Lever			Dimple Knob			
LCGS	LGS/LGSS	Product Code	KDM/KDF	KDMS/KDFS	KDMS-SC	KRM/KRF/KRR
P.290	P.291	Page	P.295	P.295	P.297	P.299
		Knobs				

Dimple Knob		Miniature Knob	Wing Knob			Super Knob
KRMS/KRFS	KLM/KLMS/KLF/KLFS	KUDM/KUDF	KUDMS/KUDFS	KUWM/KUWF	KUWMS/KUWFS	SS/SK
P.299	P.301	P.303	P.303	P.305	P.305	P.307
Standard	Standard	Universal design	Universal design	Universal design	Universal design	
						

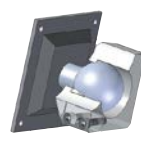
Plastic Star Knob	Eight Lobe Knob	Grip Knob		Ball Knob		Knurled Knob
KF/KGC	KP	KDC	KEC	PB/PC	KGB	KNM/KNF
P.308	P.309	P.310	P.311	P.312	P.313	P.315
						

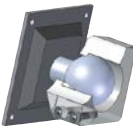
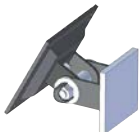
Knurled Knob						
KNMS/KNFS	KNMS-BK	KUM/KUF	KUMS/KUFS	KUMS-BK	KNM-SC	KUM-SC
P.315	P.319	P.317	P.317	P.320	P.321	P.322
						

Clamp Knob	Star Knob	Hand Knob	Knob			
KCF/KCFS	CK/CKT	KK/KKT	EAT	EAC	EAE	EAM
P.314	P.323	P.324	P.325	P.326	P.327	P.328
						

	Metal Pull					Washers
Product Code	UNFA/UNFA-W	UNF/UNF-W	UNFS/UNFS-W	UNMS-SC	TGY/TG	LY
Page	P.331 / P.333	P.331 / P.333	P.331 / P.333	P.330	P.335	P.336
Pulls						

Captive Washer	Washer with Captive Screw	Plastic Pull			Zinc Pull
LYSC-N	LYSC-N-SSC	UUDF	UGF	TA	TCY/TC
P.337	P.339	P.341	P.342	P.343	P.344
					

	Tablet PC Fixing Part					Display fixing parts
Product Code	DTT	DTK	DTS	DTSN	DTR	DFT
Page	P.347	P.349	P.351	P.351	P.353	P.355
Mounting Systems for Display						

Display fixing parts			Keyboard Fixing Part	Pulls for display angle operation	Pipe	Pipe Holder
DFK	DFS/DFSN	DFR	DKBR/DKB	DPU	DAP	DPH
P.357	P.359	P.361	P.363 / P.365	P.368	P.370	P.369
						

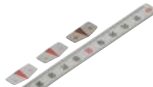
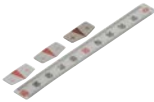
	Cross Clamper				Cross Bracket	Set collar (Standard)
Product Code	FCCA/FCCS	FCCA-C/FCCS-C	FCFA/FCFS	FCTA-C/FCTS-C	FBCA-C/FBCS-C	NSC
Page	P.372	P.373	P.374	P.375	P.376	P.377
Set Collars Cross Clampers						

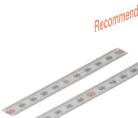
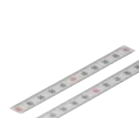
Set Collar (Standard)		Set Collar (with Mounting Hole)		Set Collar (For Securing Bearings)		
NSCS	NSCSS	NSC	NSCS	NSC	NSC	NSCS
P.379	P.381	P.383	P.384	P.385	P.387	P.389
						

Set Collar (For Securing Bearings)		Round Handwheel				
NSCS	Product Code	HAK	PH/PHS	HDA	HSM	AV
P.391	Page	P.395	P.397	P.398	P.399	P.400
	Handles Grips					

Round Handwheel					Revolving Grip	
AH	HSN	D	F	FS	GIRS	GIRA
P.401	P.402	P.403	P.404	P.405	P.406	P.407
						
						

Revolving Grip					Fixing Grip	
GNTR/GNTRS	GTR	RM	GGB	NP	GTM/GTF	GTMS/GTFS
P.408	P.409	P.410	P.411	P.412	P.413	P.413
						
						

Fixing Grip				Scaling point		
SM	HS	GSS	Product Code	FLE	FPP	FPS/FPT
P.414	P.415	P.416	Page	P.418	P.419	P.420
		 Stainless Steel	Scales		 Stainless Steel	

Scale						Measuring Indicator
FSP	FSP-HSR	FSP-V	FSP-V-HSR	FSS/FST	FSS-V/FST-V	RNCL
P.421	P.423	P.425	P.427	P.429	P.430	P.431
						
						

Rack-and-pinion Stage						Precision Stage
Product Code	TAR-X	TAR-XY	TAR-Z	TAR	TAR	TAR-D
Page	P.435	P.436	P.437	P.438	P.439	P.441
Stages						

Precision Stage	Screw Stage		Block Stage		Cross Stage	
TKSP / TAKS	TAS	TAS-XY	TAS	TAS	TAM-S	TAM-SXY
P.442	P.443	P.444	P.445	P.446	P.447	P.449
						

Tilting Stage	Jackscrew		Ball Roller			
TGOH	TLJK	Product Code	BRUSS-S	BRUSS-N	BRUSS-P	BRUSN-N
P.451	P.453	Page	P.459	P.459	P.459	P.459
		Ball Rollers				
						

Ball Roller						
BRUP-P	BRUHS-S	BRUHS-N	BRUHN-N	BRUHP-P	BRUPS-S	BRUPS-N
P.459	P.461	P.461	P.461	P.461	P.463	P.463
						
						

Ball Roller						
BRUPN-N	BRUIN-N	BRUIP-P	BRUCS-S	BRUCS-N	BRURS-S	BRURS-N
P.463	P.464	P.464	P.465	P.465	P.466	P.466
						
						

Ball Roller Unit				Ball Roller (Plunger Type)		
BRAHS-S	BRAHS-N	BRAPS-S	BRAPS-N	BRPSS-S	BRPSS-N	BRPPS-S
P.467	P.467	P.468	P.468	P.469	P.469	P.470
						
						

Ball Roller (Plunger Type)		Downward Ball Roller				
BRPIN-N	BRPMS-S	BRDRF	BRDSF	BRDH	BRDT	BRDB
P.471	P.472	P.473	P.473	P.474	P.475	P.476
	 Stainless Steel					

Tool		Ball Plunger			Pin Plunger	
BRW	Product Code	PAF/PAFS	FP/MP	MPS	PSS/PSSS	PSP
P.465 / P.472	Page	P.479 / P.481	P.483	P.484	P.485	P.487
	Plungers	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel

Pin Plunger		Spring Stops	Wrenches for Pin Plunger	Plunger Holders	Ball Buttons	Stepped Locating Pins
PSPS	PLP	PST/PSTS/PST-N	PPW	PHL	BB	PJP
P.489	P.490	P.491	P.492	P.493	P.494	P.495
 Stainless Steel		 Stainless Steel		 Stainless Steel		

Bushing for Locating Pin	Bushing for Locating Pin		Plate for fixing DIN Rail	Roller Chain Bolt	Roller Chain Bolt	Roller Chain Nut
PJA	PJB	Product Code	EDP	SRC	SRCS	SRF/SRFS
P.496	P.497	Page	P.500	P.501	P.503	P.504
		Structure Components			 Stainless Steel	 Stainless Steel

Stud Bolt	Joint Nut	Turn Buckle		Hexagon Post		Spring Posts
SHS	SJN/SJNS	STR/STRS	STB	SHA-EL/SHAS	SHB-EL/SHBS	SPOS
P.505	P.506	P.507	P.508	P.509	P.510	P.511
	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel

	Clamping Set Screws					
Product Code	SCS-R/SCSS-R	SCS-R(INCH)/SCSS-R(INCH)	SCS-F-R	SCS-N/SCS-BR/SCSS-CE	SCS-F/SCSS-F	SCS-F(INCH)/SCSS-F(INCH)
Page	P.515	P.516	P.519	P.517	P.521	P.522
Screws	 Stainless Steel	 Stainless Steel	 Fine Screw Threads	 Special Material Balls	 Stainless Steel	 Stainless Steel

Clamping Set Screws		Clamping Screw	Clamping Cap Screws			
SCS-F-F	SCS-FB/SCSS-FB	SCS-GB/SCSS-GB	SCB-R/SCBS-R	SCB-R(INCH)/SCBS-R(INCH)	SCBS-CE	SCB-F/SCBS-F
P.520	P.523	P.524	P.525	P.526	P.527	P.529
 Fine Screw Threads	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Special Material Balls	 Stainless Steel

Clamping Cap Screws			Screw Adaptor			
SCB-F(INCH)/SCBS-F(INCH)	SCB-FB/SCBS-FB	SCB-GB/SCBS-GB	SADS-LC	SADS-RF	SADS-SD	SAD-FT/SADS-FT
P.530	P.531	P.532	P.533	P.534	P.535	P.536
 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel

Stopper Bolt			Stopper Screw		Locating Blocks	Stop Pins
SSB-A	SSB-B/SSBS-B	SUB	SUS	SAN-B/SANS-B	SBN	SPM
P.537	P.538	P.539	P.540	P.541	P.542	P.543
 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Fine Screw Threads	 Stainless Steel	 Stainless Steel

Adjust Bolt	Blocks for Adjust Bolts	Socket Head Cap Screws with Ventilation Hole			
SAT	SAK-A/SAK-B	Product Code	SVSS	SVSS-PC	SVSQS
P.544	P.545	Page	P.565	P.565	P.567
		Special Screws	 Stainless Steel	 Stainless Steel	 Stainless Steel

Socket Head Cap Screws with Ventilation Hole		Socket Head Cap Screws (with Ventilation Hole)				
SVSS-MOS	SVSS-AG	SVSX-88	SVSL	SVST	SVLS	SVSHS
P.569	P.570	P.571	P.572	P.573	P.574	P.575
						

Socket Head Cap Screws (with Ventilation Hole)	Hex Head Screws (with Ventilation Hole)	Cross Recessed Flat Head Machine Screws		Cross Recessed Pan Head Machine Screws		Hex Socket Set Screws (with Ventilation Hole)
SVFCS	SVHS	SVFS	SVFT	SVPS	SVPT	SVTS
P.576	P.577	P.578	P.579	P.580	P.581	P.582
						

Washers (with Ventilation Grooves)			Hex Posts with Ventilation Hole		Clamping Set Screws (with Ventilation Hole)	
SWAS-VF	SWAS-VF-PC	SWAT-VF	SHVAS	SHVBS	SCSS-VR	SCSS-VF
P.583	P.583	P.584	P.585	P.586	P.587	P.587
						

Clamping Cap Screws (with Ventilation Hole)		Spring Plunger with Ball (with Ventilation Hole)	Socket Head Cap Screws with Special Low Profile (Head Shot Blast)	Cover Caps		Socket Head Cap Screws for Cover Caps
SCBS-VR	SCBS-VF	PVFS	SSHS-HB	SCAP-AL	SCAP-CE	SNCP5
P.588	P.588	P.589	P.590	P.591	P.591	P.591
						

Socket Head Cap Screws with Low Profile			Socket Head Cap Screws with Special Low Profile			Socket Head Cap Screws with Special Low Profile
SLH	SLHS	SLHL	SSH	SSHS / SSLHL	SSHS-FT	SSHT
P.595	P.597	P.598	P.599	P.601	P.603	P.604
						

Hexalobular Socket Head Cap Screws with Low Profile		ALuminum Super Special Low Head Bolt with Hexalobular Socket	Hex Head Screw / Special Low Head	Hexalobular Socket Head Cap Screws with Low Profile	Socket Head Cap Screws with Low Profile	Socket Button Head Cap Screws with Flange
SSTS	SET	SETA	SNHS-LH	SLT	SLP	SFB
P.606	P.607	P.609	P.610	P.605	P.613	P.611
						

Socket Head Cap Screws with Small Head	Socket Head Cap Screws with Low & Small Head	Socket Head Cap Screws with Special Low & Small Head	Cross Recessed Flat Head Machine Screws with Small Head	Duplex Stainless Steel Hexagon Head Screw	Duplex Stainless Steel Hexagon Nuts	High strength Socket Head Cap Screws
SNS-SD	SLH-SD	SSH-SD	SNF-SD	SNHDS	SHNDS	SNSX
P.615	P.617	P.619	P.614	P.623	P.624	P.625
						

Socket Head Cap Screws (Heat-resistance)		Hex Nuts • Washers (Heat-resistance)	Socket Head Cap Screws with Magnetic Captive Washers (For Magnetic Property Detection)	Hex Nuts • Washers (For Magnetic Property Detection)	Titanium Socket Head Cap Screws	
SNSL	SNSJ	SHNJ/SWAJ	SNSQS-PM	SHNS-PM/SWAS-PM	SNSTG	SNST
P.627	P.628	P.629	P.631	P.632	P.635	P.636
						

Titanium Cross Recessed Machine Screws					Titanium Hex Nuts	Titanium Hex Lock Nuts	Titanium Washers
SNPTG	SNPT	SNFTG	SNFT	SHNT	SWUT	SWAT	
P.637	P.638	P.639	P.640	P.641	P.642	P.643	
							

Hex Socket Head Cap Screws (Monel 400 equiv.)	Inconel Socket Head Cap Screws	Inconel Hex Nuts • Washers	Molybdenum Socket Head Cap Screws	Molybdenum HexSocket Countersunk Head Screw	Molybdenum Hex Nuts • Washers	Hastelloy Socket Head Cap Screws
SNSMN	SNSI	SHNI / SWAI	SNSM	SNFCM	SHNM / SWAM	SNSH-C276
P.647	P.648	P.649	P.650	P.651	P.652	P.653
						

Hastelloy Socket Head Cap Screws	Nickel Socket Head Cap Screws	Super Invar Socket Head Cap Screws	Phosphor Bronze Socket Head Cap Screws	Aluminum Socket Head Cap Screws	Ceramic Socket Head Cap Screws	Ceramic Hex Head Screws
SNSH-C22	SNSN	SNSIV	SNSP	SNSA	SCX-C	SCX-H
P.654	P.655	P.656	P.657	P.658	P.659	P.659
					 <i>Additional Size</i>	 <i>Additional Size</i>

Ceramic Hex Nuts	Cover Caps	Socket Head Cap Screws for Cover Caps	Hex Head Screws (Teflon Coating on Head)	Sealing Washers (Teflon Coating)	Socket Head Cap Screws (Fluorine Coating)	Socket Head Cap Screws (Molybdenum Disulfide Coating)
SCX-N	SCAP-PT	SNCP5	SNHS-HTF	SWS-HTF	SNSS-FC	SNSS-MO
P.661	P.667	P.667	P.669	P.670	P.673	P.674
				 <i>Revised Part number</i>		

Socket Head Cap Screws (Super Black)	Socket Head Cap Screws (Low Temperature Black Chrome Treatment)	Socket Head Cap Screws (Teflon Coating)	Socket Head Cap Screws (Gold Coating)	Socket Head Cap Screws (Surface Hardening Treatment)	Socket Head Cap Screws (Electroless Nickel Plating)	Socket Head Cap Screws (Miniature Screws)
SNSS-BK	SNSS-RY	SNSS-TF	SNSS-AUS	SNSL-PN	SNS-EL	SNS / SNSS
P.675	P.676	P.677	P.678	P.679	P.680	P.682
				 <i>NEW</i>		

Flat Head Machine Screws (Miniature Screws)	Pan Head Machine Screws (Miniature Screws)	Set Screws (Miniature Screws)	Hex Nuts (Miniature Screws)	Hex Keys (Miniature Screws)	Socket Head Cap Captive Screws
SNZF / SNZFS	SNZS	SNZ	SNTS	SHNS	SKH
P.683	P.684	P.685	P.686	P.687	P.688
 <i>Additional Size</i>	 <i>Additional Size</i>				

Socket Head Cap Captive Screws	Socket Head Cap Captive Screws	Pan Head Machine Screws	Captive Hexagon Head Bolt	Captive Button Head Cap Bolt	Cross Recessed Machine Captive Screws
SSC (INCH)	SSCLS	SSCHS	SSCZS	SSC-SNHS	SSCP5
P.692	P.697	P.698	P.699	P.693	P.695
			 <i>NEW</i>		

Cross Recessed Machine Captive Screws	Socket Head Cap Screws (Full Thread)	Clamping Cap Screws with Eccentric Head				Socket Head Cap Screws (Fine Screw Threads)
SSCMS	SNSS-FT	SLEC-A	SLEC-A-EL	SLEC-B	SLEC-B-EL	SNSS
P.696	P.700	P.703	P.703	P.705	P.705	P.707
						

Socket Head Cap Screws (Inch Screws)	Button Head Cap Screws (Inch Screws)	Hex Nuts • Washers (Inch Screws)	Hex Keys (Inch Screws)	Tamper-resistant Special Low Head Bolt	Anti-theft Nut	Hexalobular Flat Head Machine Screw with Pin
SNSS (INCH)	SNBS (INCH)	SHNS(INCH) / SWAS(INCH)	SKH (INCH)	SRSHS	SHNRS	SRFXS
P.709	P.710	P.711	P.712	P.714	P.715	P.717
				 <i>NEW</i>	 <i>NEW</i>	 <i>NEW</i>

Button Head Cap Screws (with Pins)	One Side Pan Head Machine Screws	Two Hole Pan Head Machine Screws	Triwing Pan Head Machine Screws	Special Bits for Tamper Resistance Screws	Special Socket for Security Nut
SRBS	SRHS	SROS	SRTS	SRWS	SRSHB
P.718	P.719	P.720	P.721	P.722	P.714
					 <i>NEW</i>

Special Keys for SRFXS SRBS	Special Keys for SRHS	Special Screwdriver for SROS	Special Magnetic Screwdriver for SRTS SRWS	Special Bits for SRTS	Special Bits for SRWS	Pan Head Machine Screw with Hexalobular Socket
SRX	SRH	SROT	SRD	SRTB	SRWB	SNPXS
P.717 / P.718	P.719	P.720	P.721-722	P.721	P.722	P.724
						

Machine Screw with Hexalobular Socket	Key for Hexalobular Socket Head Screws	Hex Socket Flange Head Screw Plugs	Parallel Screw Plugs	Hexagon Socket Pipe Plugs	Socket Head Cap Screws (Vespel®)
SNFXS	SKX	SFF / SFFS	SFM / SFMS	SFP	SFT/SFTS
P.725	P.726	P.728	P.729	P.731	P.732
					

Hex Head Screws (Vespe®)	Socket Head Cap Screws (Vespe®)	Hex Head Screws (Vespe®)	Socket Head Cap Screws (Conductive PEEK)	Socket Head Cap Screws (PEEK)		Socket Head Cap Screws with Low Profile (PEEK)
SPD-H	SPDC-C	SPDC-H	SPEC-C	SPE-C	SPE-FT	SPE-LC
P.740	P.741	P.742	P.743	P.744	P.745	P.746
						

Micro Screw (PEEK)		Cross Recessed Pan Head Machine Screws (PEEK)	Cross Recessed Flat Head Machine Screws (PEEK)	Hex Socket Set Screws (PEEK)	Hex Head Screws (PEEK)	Hex Nuts • Washers (PEEK)
SPE-MC	SPE-MF	SPE-P	SPE-F	SPE-T	SPE-H	SPE-N/SPE-W
P.747	P.748	P.749	P.750	P.751	P.752	P.753
						

Screw plug (PEEK)	Socket Head Cap Screws (RENY)	Socket Head Cap Screws with Low Profile (RENY)	Micro Screw (RENY)		Cross Recessed Pan Head Machine Screws (RENY)	Cross Recessed Flat Head Machine Screws (RENY)
SPE-R	SPA-C	SPA-LC	SPA-MC	SPA-MF	SPA-P	SPA-F
P.754	P.761	P.762	P.763	P.764	P.765	P.766
						

Hex Head Screws (RENY)	Hex Nuts • Washers (RENY)	Socket Head Cap Screws (PPS)	Socket Head Cap Screws with Low Profile (PPS)	Cross Recessed Pan Head Machine Screws (PPS)	Cross Recessed Flat Head Machine Screws (PPS)	Hex Head Screws (PPS)
SPA-H	SPA-N/SPA-W	SPS-C	SPS-LC	SPS-P	SPS-F	SPS-H
P.767	P.768	P.755	P.756	P.757	P.758	P.759
						

Hex Nuts • Washers (PPS)	Hex Head Screws (PTFE)	Hex Nuts • Washers (PTFE)	Hex Head Screws (PVDF)	Socket Head Cap Screws (PVDF)	Hex Head Screws (PP)	Hex Nuts • Washers (PP)
SPS-N/SPS-W	SPT-H	SPT-N/SPT-W	SPV-H	SPV-C	SPP-H	SPP-N/SPP-W
P.760	P.769	P.770	P.771	P.772	P.773	P.774
						

Hex Head Screws (H-PVC)	Hex Nuts • Washers (H-PVC)	Cross Recessed Pan Head Machine Screws (PC)	Hex Nuts • Washers (PC)	Eccentric Lock Washer™	Adjustment Washer	
SPVC-H	SPVC-N/SPVC-W	SPC-P	SPC-N/SPC-W	SWAS-EW	SWA-AW	SWA-AWEL
P.775	P.776	P.777	P.778	P.781	P.783	P.785
						

Adjustment Washer		Locking and Sealing Rings	Ribbed Lock Washers	Sealing Washers	Spherical Washers	High Intensity Flat Washers
SWAS-AW	SWAS-AWBK	SWH / SWC	SWR / SWRS	SWS	SQW / SQWS	SWF
P.787	P.789	P.790	P.791	P.793	P.794	P.795
						

Bezel Washers	Hex Lock Nuts	Cover Caps	
SWBS	SWUS	SCC	SCH
P.796	P.797	P.798	P.799
			

Couplings

Select from the table	P.19	Serration Couplings	P.205
Select based on motor	P.21	Rigid Couplings.....	P.207
Select based on device to use	P.22	Cleanroom,Vacuum,Heat Resistance ...	P.225
High-Gain Rubber Couplings	P.27	Flexus	P.249
Disk Couplings	P.63	Mechanical Parts	P.251
Slit Couplings.....	P.97	Explanation of Terminology	P.254
Jaw Couplings	P.125	Mounting and Maintenance	P.257
Cross Joint Couplings	P.155	For better drive	P.259
Oldham Couplings	P.161	Safety Precautions	P.260
Bellows Couplings	P.193		

2 Select based on motor

1 Select from the table
→ P.19

3 Select based on device to use
→ P.22

Servomotor & Stepping Motor

• These are couplings suitable to the combination with servomotor or stepping motor.

- High-gain rubber type coupling **XGT2** **XGL2** **XGS2** are superior in vibration absorption and are the most appropriate for the combination in particular with servomotor.



XGT2 **XGL2** **XGS2** → P.29

- **XHW** **XHS** have high rigidity.
- Also applicable to servomotors with instantaneous max. torque of 350%.



XHW → P.65



XHS → P.71



MSX → P.97



MJC → P.125



XUT → P.155



XRP → P.207

• Selection based on the rated output of servomotor
The size of coupling to be used can be selected from the rated output of the servomotor.

Rated output (W)	Servomotor Specifications*			Recommended Coupling size				
	Diameter of motor shaft (mm)	Rated torque (N·m)	Instantaneous max. torque (N·m)	XGT2 XGL2	XHW	MSX	MJC-RD	XUT
10	5 - 6	0.032	0.096	15C	19C	16C	14C	15C
20	5 - 6	0.064	0.19	15C	19C	16C	14C	15C
30	5 - 7	0.096	0.29	19C	19C	19C	14C	20C
50	6 - 8	0.16	0.48	19C	19C	19C	20C	20C
100	8	0.32	0.95	19C	19C	19C	20C	25C
200	9 - 14	0.64	1.9	30C	27C	29C	30C	30C
400	14	1.3	3.8	30C	34C	39C	30C	35C
750	16 - 19	2.4	7.2	39C	39C	44C	40C	—

• For the specifications of each product, please refer to the corresponding product pages.
* Motor specifications are based on general values. For details, please refer to catalogs of each motor manufacturers. Recommended sizes are for the cases where reduction gears are not used.

General-purpose motor

• These are couplings suitable to the combination with general-purpose motor.



MJC → P.125



MOR → P.161



MOM → P.173



MSF → P.205



3 Select based on device to use

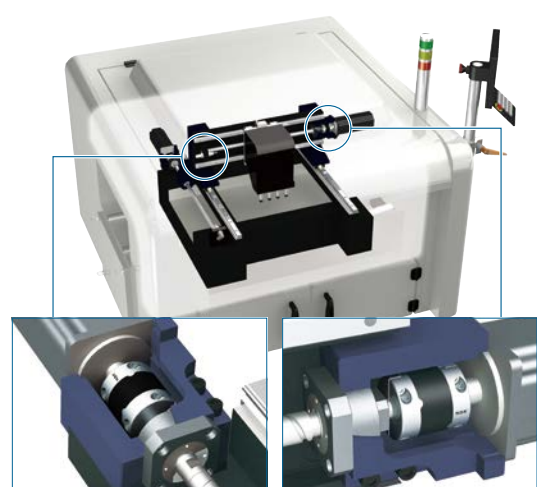
1 Select from the table
→ P.19

2 Select based on motor
→ P.21

Surface-Mount Machine

Improved Productivity (High Throughput)

- Selection point: reduced settling time due to the high-gain compatible servo motor

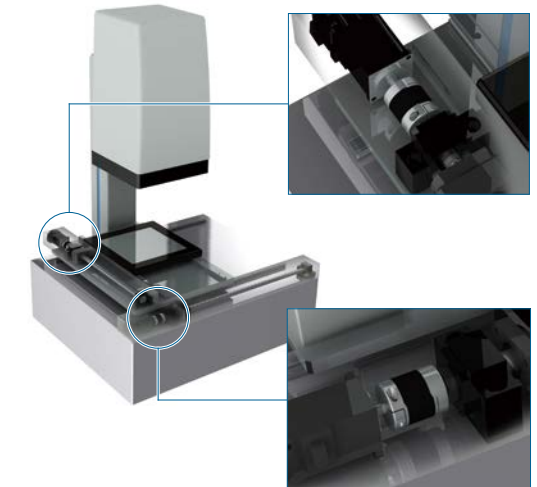


Product used: high-gain rubber type **XGT2** → P.29

CNC Image Measuring Instrument

Improved Measurement Speed

- Selection point: reduced settling time due to the high-gain compatible servo motor



Product used: high-gain rubber type **XGT2** → P.29

Genetic Testing Device

Vibration suppression and low noise of mixing shaft

- Selection point: excellent vibration absorption

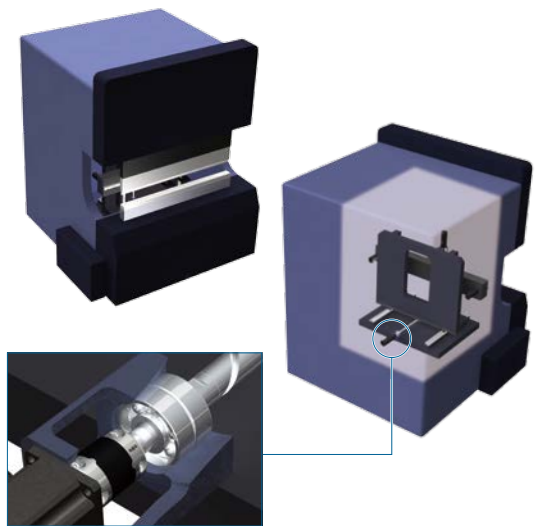


Product used: high-gain rubber type **XGS2** → P.29

Press Brake

Vibration suppression of back gauge

- Selection point: excellent vibration absorption



Product used: high-gain rubber type **XGT2** → P.29

Couplings
High-Gain Rubber Couplings
Disk Couplings
Slit Couplings
Jaw Couplings
Cross Joint Couplings
Oldham Couplings
Bellows Couplings
Serration Couplings
Rigid Couplings
Cleanroom/Vacuum/Heat Resistant
Flexus
Mechanical Parts
Technology/Mounting For better drive

Couplings
High-Gain Rubber Couplings
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Bellows Couplings
Serration Couplings
Rigid Couplings
Cleanroom/Vacuum/Heat Resistant
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Mechanical Parts
Technology/Mounting For better drive

3 Select based on device to use

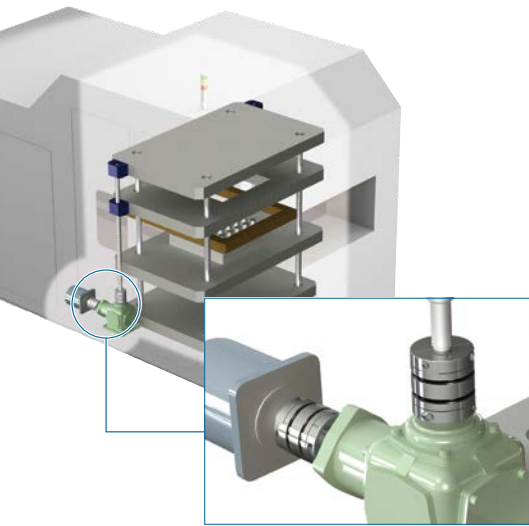
1 Select from the table
→ P.19

2 Select based on motor
→ P.21

Vacuum/Compressed Air Mold for Food Containers

High torque transmission, high-precision positioning

- Selection point: high torque/high torsional rigidity

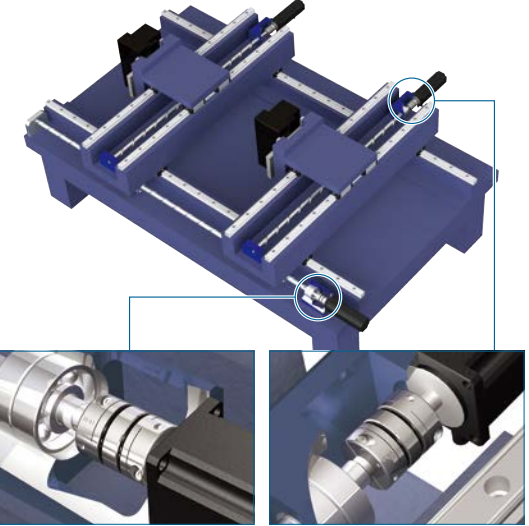


Product used: disk type **XHW** → P.65

Next-Generation Battery Module Assembling Device

High-speed/high-precision positioning

- Selection point: high torsional rigidity



Product used: disk type **XHW** → P.65

Medical Diagnostic Imaging Device

Stable Speed Control

- Selection point: high torsional rigidity



Product used: disk type **XHW** → P.65

Deposition Transport Device for Solar Cells

Long distance between motor shaft and driven shaft

- Selection point: special cleanroom specifications with a longer coupling length
→ P.807 Cleanroom Wash / Cleanroom Packing Service



Product used: disk type **XBWS** → P.77

3 Select based on device to use

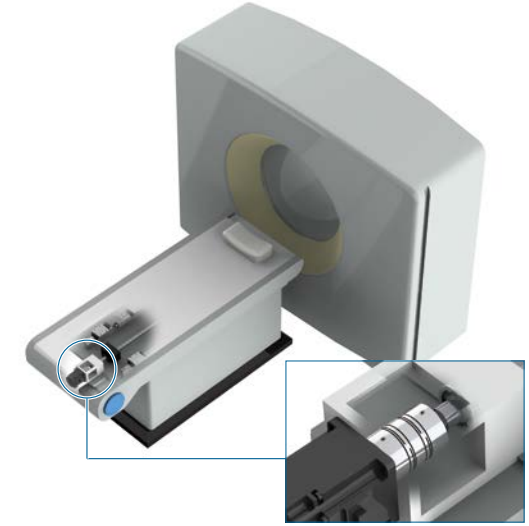
1 Select from the table
→ P.19

2 Select based on motor
→ P.21

CT Scan

Corrosion Resistance

- Selection point: all-stainless steel couplings

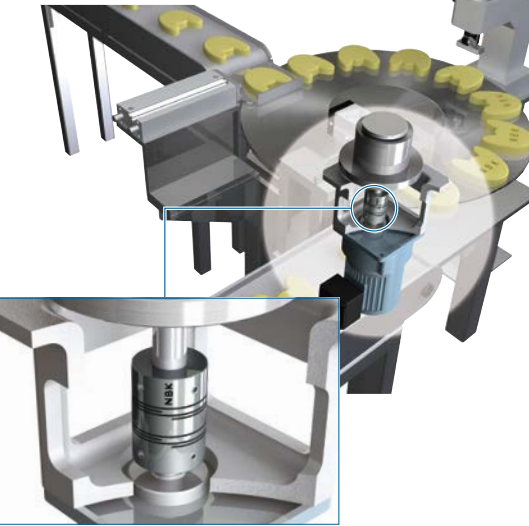


Product used: slit type **MSTS** → P.105

Confectionery Equipment

Corrosion Resistance

- Selection point: all-stainless steel couplings

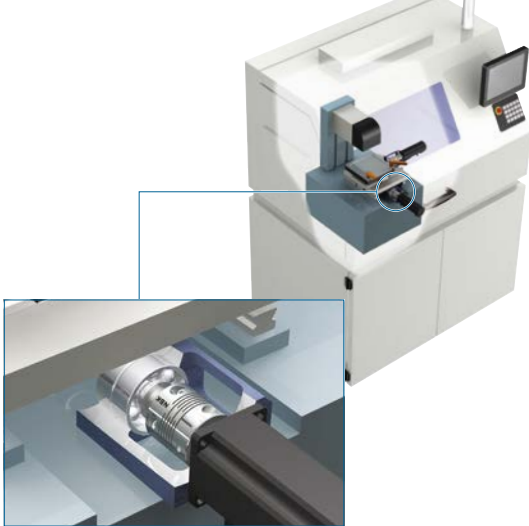


Product used: slit type **MSTS** → P.105

Laser Marking Device

High-speed/high-precision positioning

- Selection point: high torsional rigidity

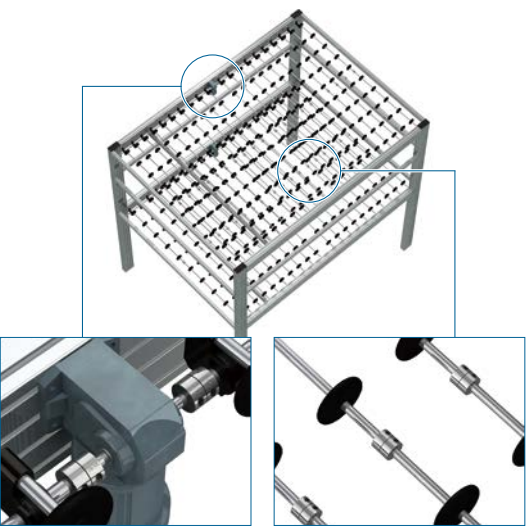


Product used: slit type **MSX** → P.97

Large Glass Cleaning/Transport Device

Chemical Resistance

- Selection point: all-stainless steel couplings



Product used: slit type **MRGS** → P.211

3 Select based on device to use

1 Select from the table
→ P.19

2 Select based on motor
→ P.21

Machine Tools

High-speed, high-torque spindle

- Selection point: high-speed rotation and high-torque transmission

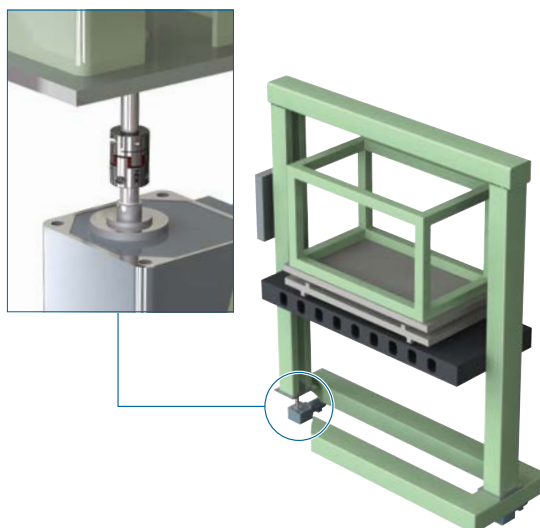


Product used: jaw type **MJB** → P.147

FPD Transport Stocker Lifting Device

Downsized drive module

- Selection point: high torque and compact size



Product used: jaw type **MJC** → P.125

Coin Feeder

Reduced equipment assembly and adjustment time

- Selection point: easy segmentation/large allowable misalignment

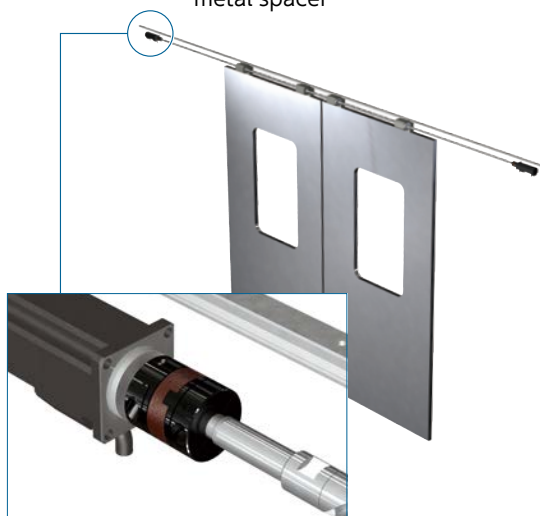


Product used: Oldham type **MOR** → P.161

Airtight Sliding Door Open/Close Device

Improved reliability of equipment operation

- Selection point: high torque transmission via metal spacer



Product used: Oldham type **MOM** → P.173

3 Select based on device to use

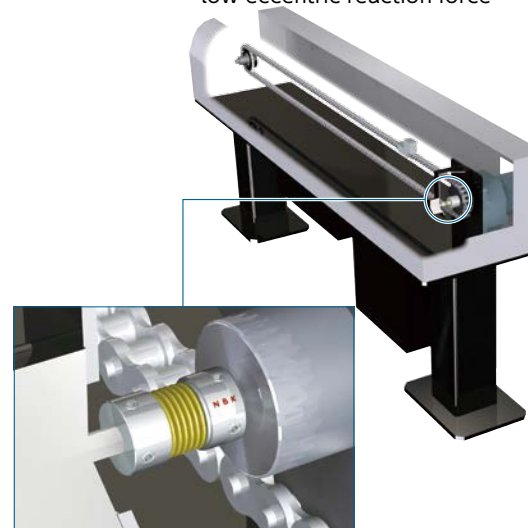
1 Select from the table
→ P.19

2 Select based on motor
→ P.21

Bar Feeder Encoder

Constant velocity and suppression of shaft radial load

- Selection point: excellent constant velocity and low eccentric reaction force

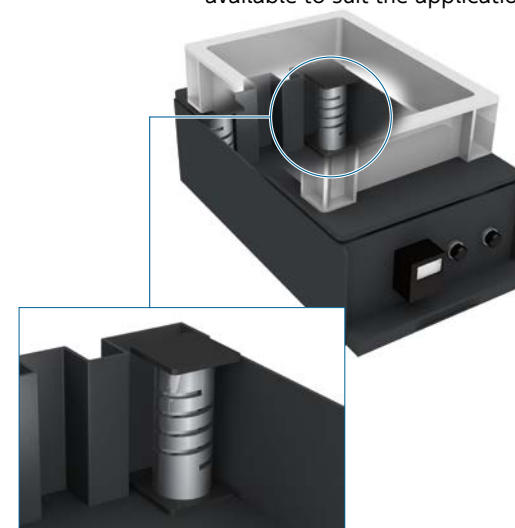


Product used: bellows type **MFB** → P.195

Parts Feeder

Durability and improved positioning reproducibility

- Selection point: arbitrary spring characteristics available to suit the application

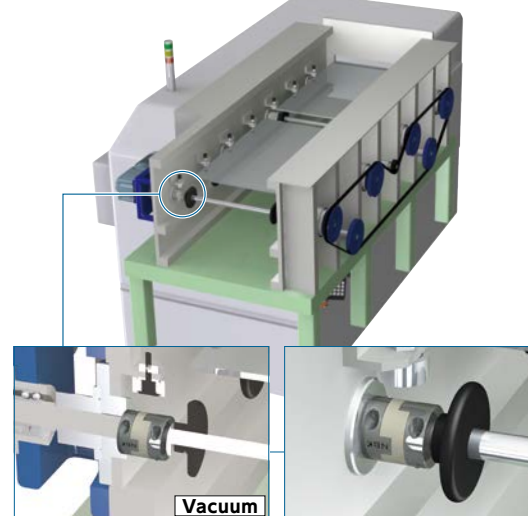


Product used: custom spring component **Flexus** → P.249

In-line Vacuum Vapor Deposition Equipment

Connection of devices in vacuum chamber and external drive unit

- Selection point: low outgassing/large allowable misalignment

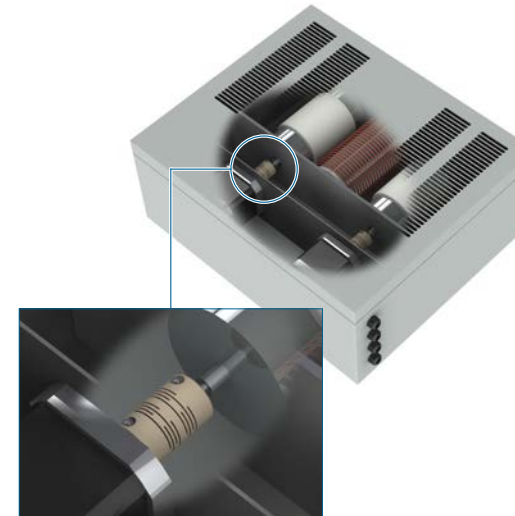


Product used: cleanroom/vacuum/heat resistant type **MOP** → P.243

Matching Box for RF Power

Electrical insulation of vacuum variable capacitor and stepping motor

- Selection point: zero backlash/electrical insulation



Product used: for vacuum variable capacitor/slit type **MSXP** → P.231

Solution to High Response

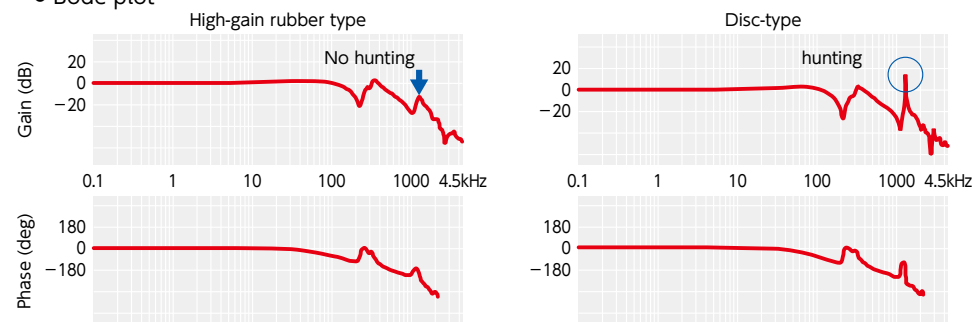
High-Gain Rubber Type Coupling XG2



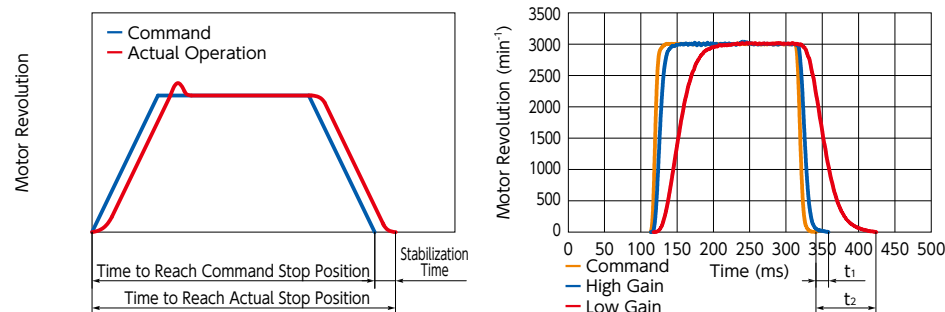
1. Reduction of Stabilization Time

Improvement in servomotor's limit gain can reduce stabilization time.

• Bode plot



• Gain and stabilization time



• Measurement of stabilization time and overshoot

Gain*		XG2 Series	XG Series	Disc-type
25	Stabilization time (ms)	12	12	12
	Overshoot (μm)	0.4	0.9	0.6
27	Stabilization time (ms)	8	8	
	Overshoot (μm)	0.6	1	Occurrence of hunting
32	Stabilization time (ms)	3		Occurrence of hunting
	Overshoot (μm)	1.7		Occurrence of hunting

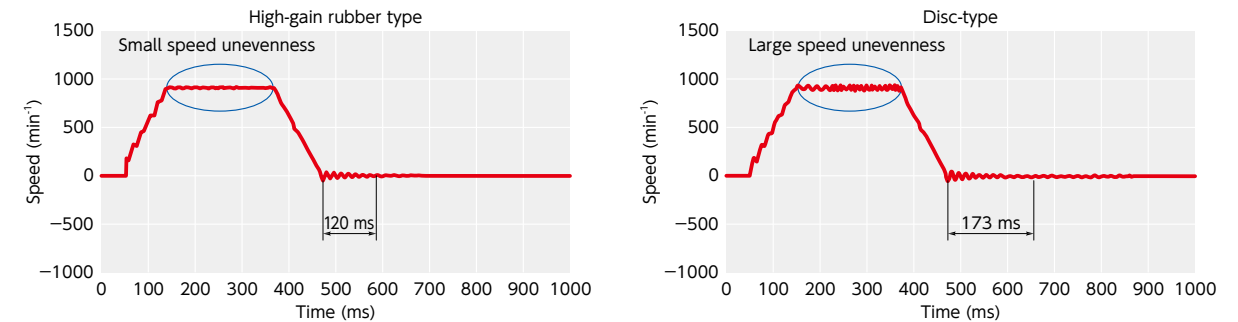
* Values after adjustment of all gains including position control gain and speed control gain (1 - 32)
 • The values in the table vary depending on the test conditions.

Reduction of Stabilization Time

Improved Productivity (Movie featuring comparison with disc-type is available on NBK website.)

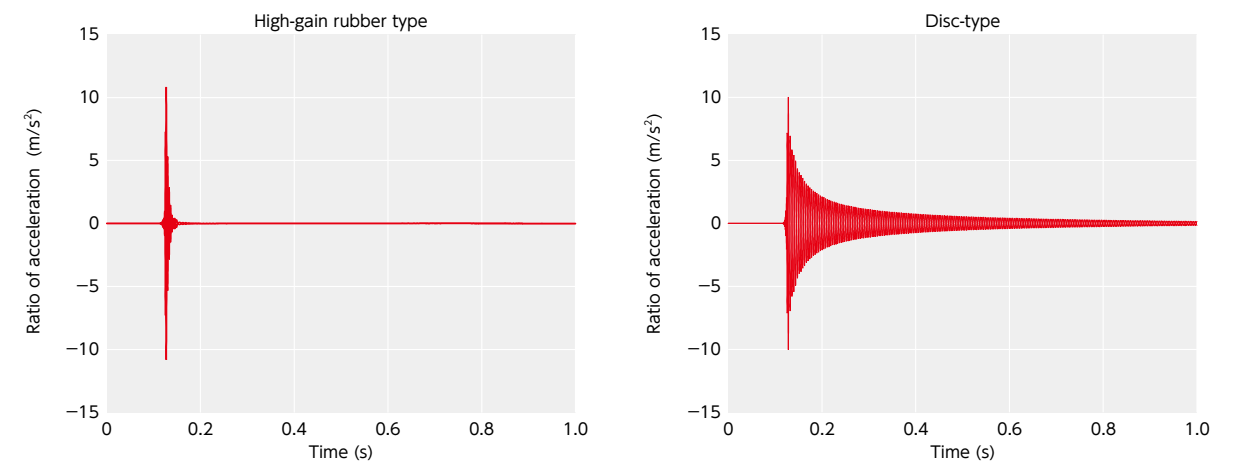
2. Speed Unevenness Suppression

Speed and torque unevenness arising from misalignment will be suppressed.



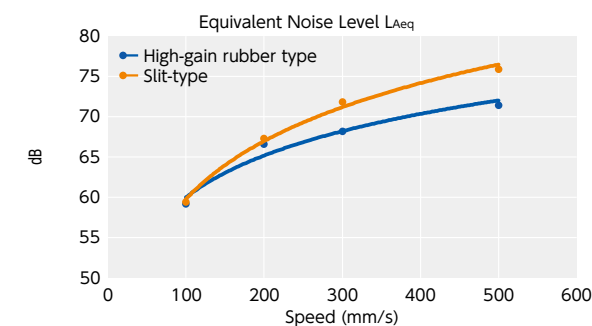
3. Vibration Suppression

High damping ratio will enable quick absorption of vibrations.



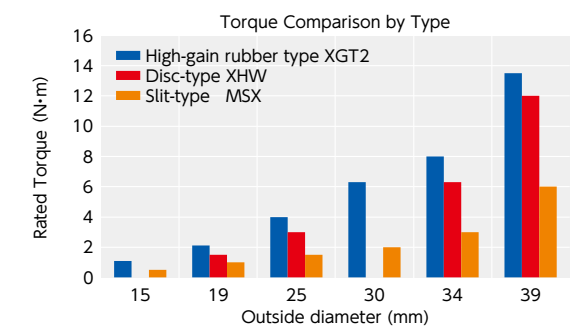
4. Quietness

Actuator drive noise can be reduced.



5. High Torque

High torque use is possible compared with disc-type and slit-type.



XGT2/XGL2/XGS2 Flexible coupling - High - gain rubber type Additional Size Patent Pending

WEB Selection Tool CAD Download Zero Backlash High gain supported High torque High Rigidity Vibration absorption

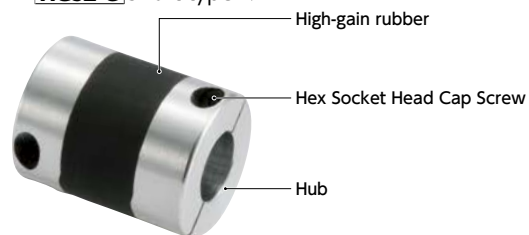
Structure

Clamping type

XGT2-C Standard type → P.39

XGL2-C Long type → P.43

XGS2-C Short type → P.41



Internal Structure



Recommended applicable motor

	XGT2 / XGL2 / XGS2
Servomotor	○
Stepping Motor	○
General-purpose motor	△

○: Excellent ○: Very good △: Available

Property

	XGT2 / XGL2 / XGS2
Zero Backlash	○
For servomotor high gain	○
High torque	○
High Torsional Stiffness	○
Allowable Misalignment	○
Vibration absorption	○
Allowable operating temperature	-10°C to 120°C

○: Excellent ○: Very good

• High-gain flexible coupling which surpasses of **XGT** **XGL** **XGS** in performance. This is a singlepiece construction with the two aluminum hubs molded with vibration-absorbing rubber.

• He optimal damping and rigidity design enables realization of even greater servomotor gain, leading to a reduction in stabilization time.

→ P.31 (Technical Information)

• Suppresses speed unevenness during stepping motor operation. → P.36

• Contributes to improved productivity and quality by suppressing residual vibration during positioning.

• Features outstanding thermal, oil and chemical resistance.

→ P.37 (Physical properties and chemical resistance of vibration-absorbing rubber)

• Standard type **XGT2**, Long type **XGL2** and Short type **XGS2** standardized.

Application

Semiconductor manufacturing equipment / Mount machines / Machine tools / Packaging machines

Material/Finish



	XGT2 / XGL2 / XGS2
Hub	A2017
Vibration-absorbing rubber	FKM
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

Part number specification

XGT2-19C-6-8

Product Code Size Bore Diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Available / Add'l charge

Available / Add'l charge

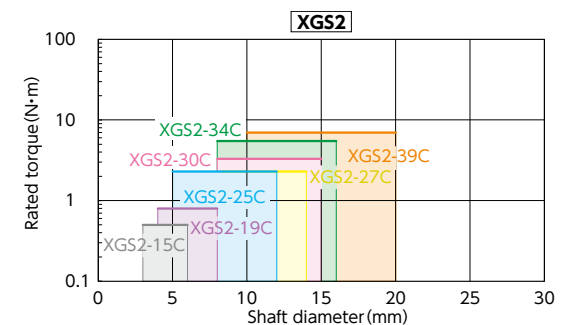
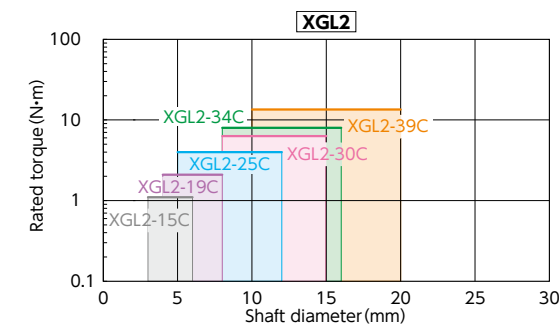
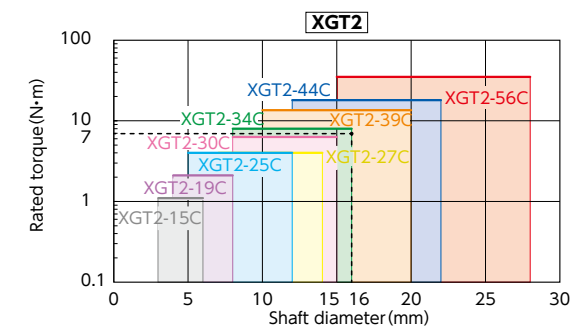
Available / Add'l charge



Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



Selection example

In case of selected parameters of shaft diameter of ϕ 16 and load torque of 7N·m, the selection size is

XGT2-34C.

Selection based on the rated output of the servomotor

Rated output (W)	Servomotor specifications*1			Selection size		
	Diameter of motor shaft (mm)	Rated torque (N·m)	Instantaneous max. torque (N·m)	XGT2	XGL2	XGS2
10	5 - 6	0.032	0.096	15C	15C	15C
20	5 - 6	0.064	0.19	15C	15C	15C
30	5 - 7	0.096	0.29	19C	19C	19C
50	6 - 8	0.16	0.48	19C	19C	19C
100	8	0.32	0.95	19C	19C	25C
200	9 - 14	0.64	1.9	27C	30C	27C
400	14	1.3	3.8	27C	30C	34C
750	16 - 19	2.4	7.2	39C	39C	—

*1: Motor specifications are based on general values. For details, see the motor manufacturer's catalogs. This is the size for cases where devices such as reduction gears are not used.

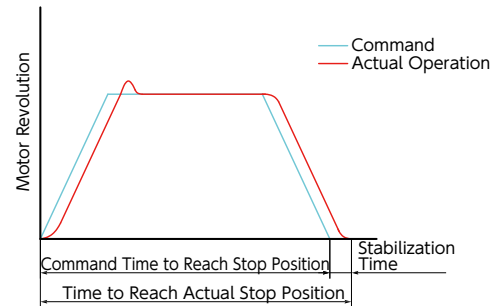
Technical Information

● Productivity and stabilization time

In a production facility, using servomotor's and actuator's, operating these components accurately, as directed by the program, can lead to the improvement of productivity.

Reality, in actual operation, execution of commands may be delayed. For example, when trying to stop the actuator at a predetermined position, the actuator stops somewhat later than the command. We call this delay "stabilization time."

Since the operation does not shift to next process until the actuator completely stops, it is important to shorten the stabilization time to improve productivity.



● Gain and stabilization time of servomotor

Servomotor's gain is an indicator representing to what degree the motor operation can follow the command.

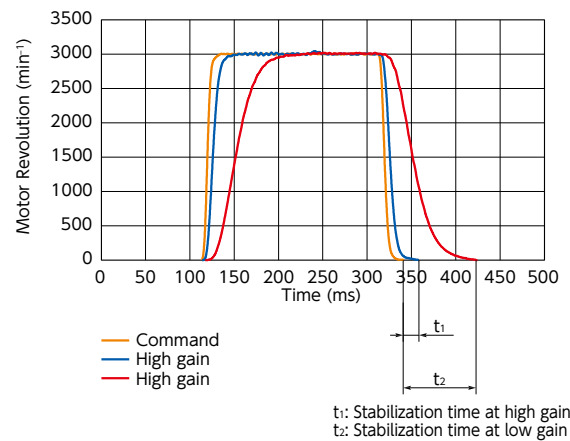
Although raising the gain can reduce the stabilization time, excessive gain increases are likely to cause hunting, thereby disable the control of the servomotor.

Raising the gain while suppressing hunting requires fine adjustment of respective parameters of the servomotor.

However, when a servomotor is combined with a coupling with a metal disk type in the elastic segment, raising the gain tends to cause hunting, making it difficult to resolve the problem by fine adjustments to parameters.

When hunting occurs, it is usually recommended to change to a more rigid coupling to increase the rigidity of the rotating system.

However, in reality, it is difficult to increase the rigidity of the entire rotating system including the ball screw simply by changing the coupling. So, changing to a highly-rigid coupling such as a disk-type may not be effective.



● High-gain rubber type

XGT2 XGL2 XGS2 XGT XGL XGS

The high-gain rubber type can be used at higher gain than the disk type, enabling reduction of stabilization time.

In addition, the outstanding damping performance reduces the amount of troublesome parameter adjustments required, making it possible to make optimal actuator adjustments in a shorter time.

● Why does the high-gain rubber type allows higher gain setting than the disk type?

The main reasons can be understood from the bode plot.

Intersection point between 0 dB gain line the phase lag in the board wiring is -180 degrees is called the "gain margin".

As a general guideline, in servo systems, the gain margin should be 10 - 20 dB, and when the servomotor gain is increased, the gain margin decreases, with the risk of hunting occurs at 10 dB or lower.

A comparison at the disk type limit gain shows not only that the high-gain rubber type features a larger gain margin, but also that the gain margin is over 10 dB. This is why the high-gain rubber type allows greater servomotor gain than the disk type.

To increase the gain margin are that both coupling damping ratio and dynamic rigidity are high.

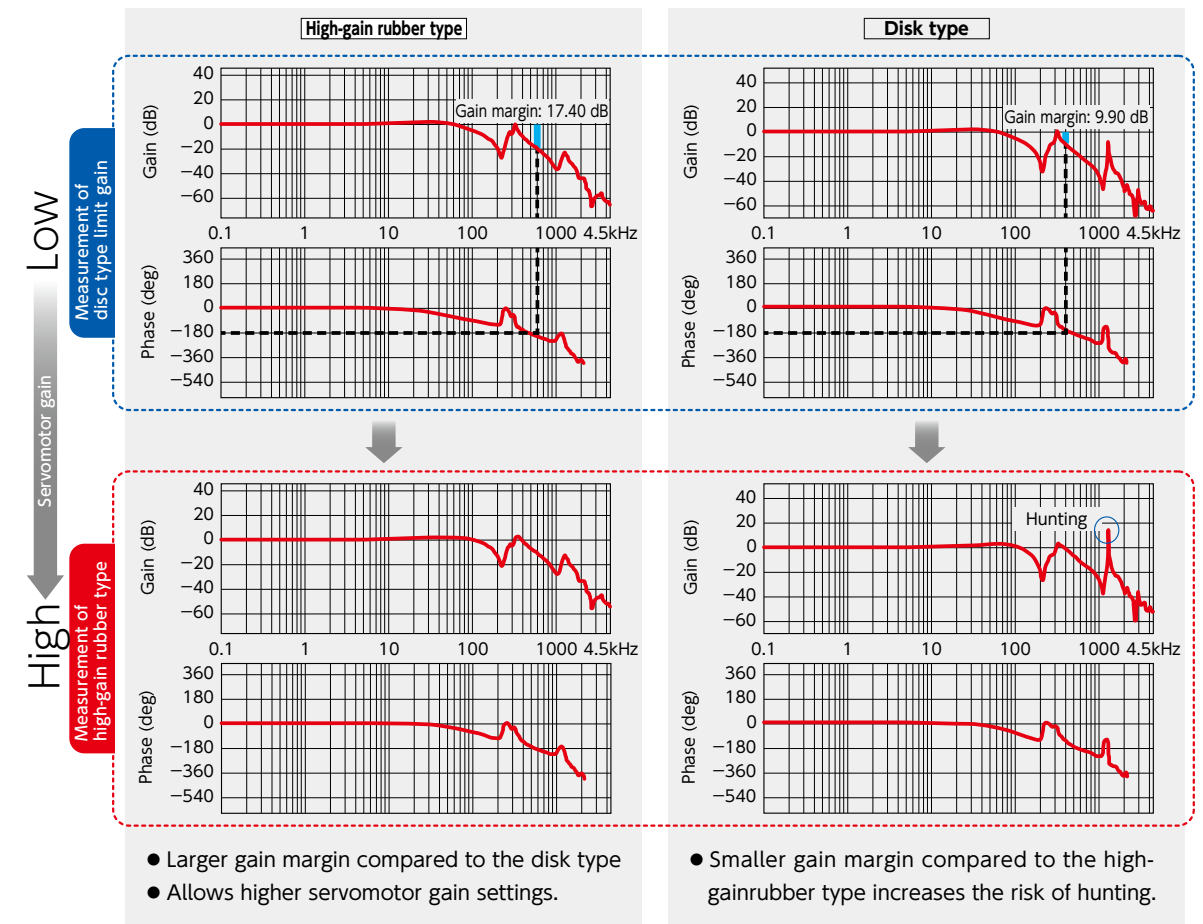
➔ P.33

Gain margin at the disk type limit gain

High-gain rubber type : 17.40 dB

Disk type : 9.90 dB

● Bode plot



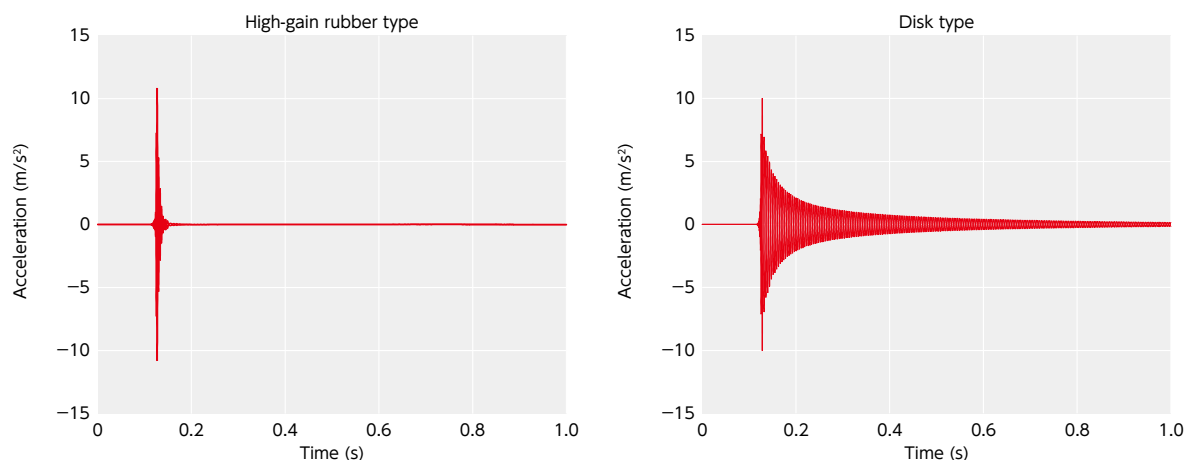
XGT2/XGL2/XGS2 Flexible Coupling - High - Gain Rubber Type Additional Size Patent Pending

WEB Selection Tool WEB CAD Download 0 Zero Backlash High gain supported High torque High Rigidity Vibration absorption

Technical Information

• Damping ratios of high-gain rubber and disk types

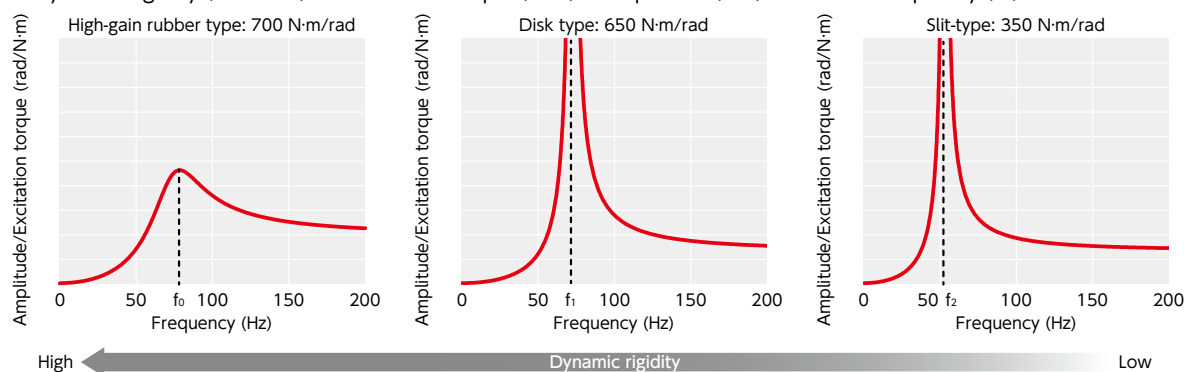
Damping ratio of high-gain rubber type is far higher than that of the disk type, enabling rapid absorption of vibration.



• Dynamic rigidity of high-gain rubber and disk types

The dynamic rigidity of the high-gain rubber type is equivalent to or higher than that of the disk type.

Dynamic rigidity (N·m/rad) = Excitation torque (N·m) / Amplitude (rad) at natural frequency (fn)



• Comparison of High-gain Rubber Type (XG2 Series/XG Series) and Disk Type Couplings

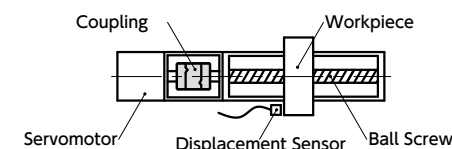
In tests using servo motors and actuators, the followings are verified.

- **Stabilization time**
No differences between couplings as long as the gain is the same.
To reduce stabilization time, higher gains enabled by the use of the high-gain rubber types, especially the XG2 series, demonstrates clear advantage against the disk type.
- **Positioning accuracy/Repeated positioning accuracy**
No differences observed attributable to factors such as gain or coupling.
- **Overshoot**
Normally higher gain increases the degree of overshoot. At the same gain, the XG2 series demonstrates the smallest overshoot.
- **The XG2 Series allows of higher servomotor gain settings than the existing XG series, enabling shorter stabilization time.**

- **Test Devices**
- **Actuator** : MCM08 Manufactured by NSK Ltd.
*Ball screw lead: 10 mm
- **Servomotor** : HF-KP13 Mitsubishi Electric
- **Test conditions**
- Motor revolution : 3000min⁻¹
- Acceleration/Deceleration time : 50ms
- Load on the work : 3.0kg
- Load inertia moment ratio : 3.5

- **Test Operation**
Normal rotation (1 rev) → Stop (500 ms) → Reverse rotation (1 rev)

- **Test Method**
Measure the work movement with a displacement sensor and also measure the work piece's travel distance and stabilization time.



• Measurement of stabilization time, positioning accuracy and overshoot

Gain*1		XG2 series	XG series	Disk type	Consideration
25	Stabilization time (ms)	12	12	12	This is the upper gain limit for the disk type. XG series and XG2 series have no problems.
	Positioning accuracy (mm)	0.002	0.002	0.002	
	Repeated positioning accuracy (mm)	±0.001	±0.002	±0.002	
	Overshoot (μm)	0.4	0.9	0.6	
27	Stabilization time (ms)	8	8	Occurrence of hunting	This is the upper gain limit for XG series. XG2 series have no problems. The disk type is not usable due to hunting.
	Positioning accuracy (mm)	0.002	0.003		
	Repeated positioning accuracy (mm)	±0.002	±0.002		
	Overshoot (μm)	0.6	1		
32	Stabilization time (ms)	3	Occurrence of hunting	Occurrence of hunting	The disk type and XG series are not usable due to hunting. XG2 series have no problems.
	Positioning accuracy (mm)	0.003			
	Repeated positioning accuracy (mm)	±0.001			
	Overshoot (μm)	1.7			

*1 : Values (1 - 32) are after adjustment of all gains including Position Control Gain and Speed Control Gain.

Positioning accuracy : Positioning operation is performed and the absolute value of the difference between the target point and the actual stop position is determined. Max. value of the values found by performing this measurement from the home position at all positions within the max. stroke range.

Repeated Positioning Accuracy : Positioning is repeated 7 times from the same direction of movement to a randomly-selected point and the stopping position are measured and the difference between the max. and minimum values of the stopping position is determined. This method of measurement is applied at positions at the middle and both ends of the max. stroke range, then the max. value becomes the measured value, halved and prefixed with ±.

• The values in the table vary depending on the test conditions.

XGT2/XGL2/XGS2 Flexible Coupling - High - Gain Rubber Type Additional Size Patent Pending

WEB Selection Tool CAD Download Zero Backlash High gain supported High torque High Rigidity Vibration absorption

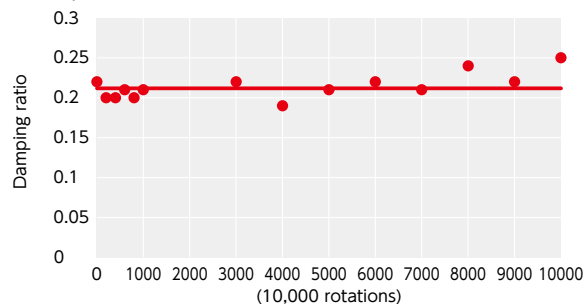
Technical Information

Changes in performance after cycles

Test Method ①

Rated torque load is applied to a coupling which rotates in a single direction, and the damping ratio and dynamic rigidity are measured.

Changes in Damping Ratio depends on the number of cycles.



*No changes are observed in the damping ratio or dynamic rigidity after 100,000,000 rotations.

Test Method ②

A motor and coupling are mounted on a single-shaft actuator, the work is set in reciprocating motion and the damping ratio and dynamic rigidity are measured.

Test Sample

XGT-25C-12 - 12

Test Operation

Normal rotation (10 rev) → Reverse rotation (10 rev). This operation is repeated.
Stroke: 100 mm, Total travel distance: 4400 km

Measurement of Damping Ratio and Dynamic Rigidity

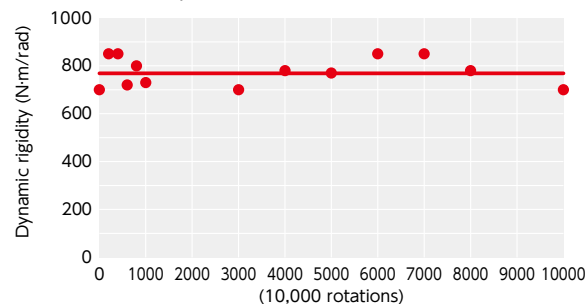
	Before testing	After testing
Damping ratio	0.07	0.07
Dynamic rigidity (N·m/rad)	330	330

*No changes are observed in the coupling performance even after a total travel distance of 4400 km.

Test Sample

XGT2 - 25C-12 - 12

Changes in Dynamic Rigidity depends on the number of cycles.



Test Devices

Actuator : BG46 Manufactured by Nippon Bearing Co., Ltd.
*Ball screw lead: 10 mm
Servomotor : HF-KP13 Mitsubishi Electric

Test conditions

Motor revolution : 3000min⁻¹
Acceleration/Deceleration time : 10ms
Load on the work : 3.0kg
Load inertia moment ratio : 3.5

Test Method

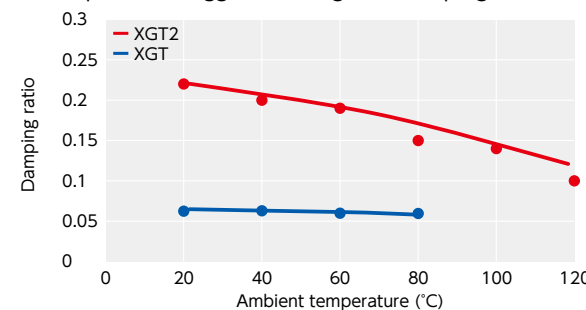
The damping ratio and dynamic rigidity of the coupling are measured before and after the testing.

Temperature-triggered changes in performance

Test Method

A coupling is left at the prescribed ambient temperature for 4 hours and damping ratio and dynamic rigidity measured.

Temperature-triggered changes in damping ratio

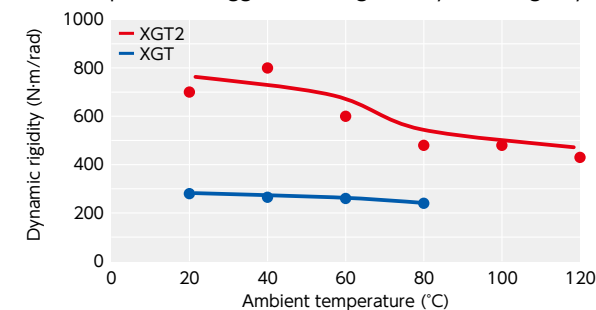


*Although the damping ratio and dynamic rigidity decrease as the temperature rises, **XGT2** exceeds the damping ratio and dynamic rigidity of **XGT** across the entire temperature range.

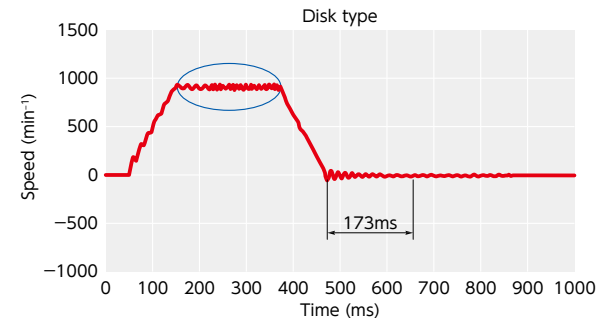
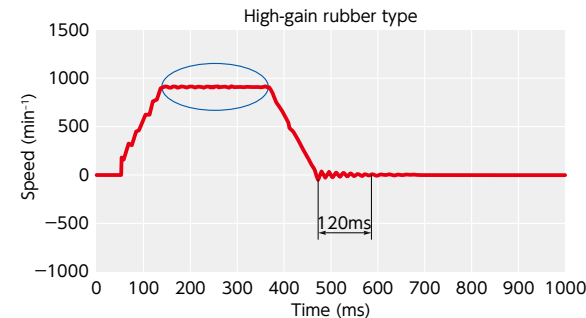
Test Sample

XGT2 - 25C-12 - 12, XGT-25C-12 - 12

Temperature-triggered changes in dynamic rigidity



Suppressing speed unevenness Control during Stepping Motor Operation



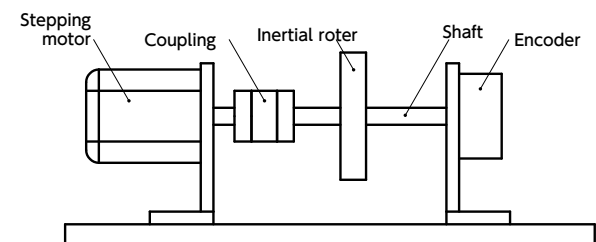
Test Devices

Motor : α step AR66AK-1 Manufactured by Oriental Motor Co., Ltd.
Set voltage: —24 VDC,
Resolution: —1000p/r
Moment of inertia: —1250×10⁻⁷kg·cm²
Encoder : RD5000 Manufactured by Nikon Corporation

Drive Parameters

Startup speed : 60min⁻¹
Drive speed : 900min⁻¹
Rotation angle : 1800°
Acceleration/Deceleration time : 0.1s

*The high-gain rubber type is effective to suppress speed unevenness during fixed-speed rotation.

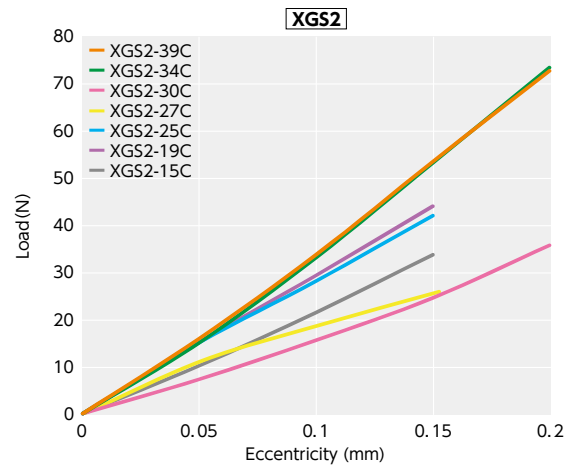
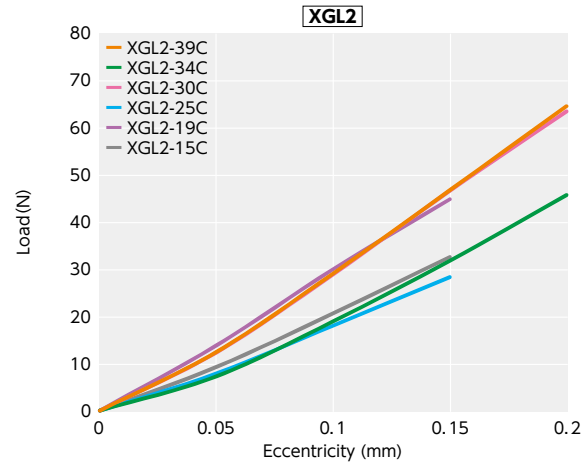
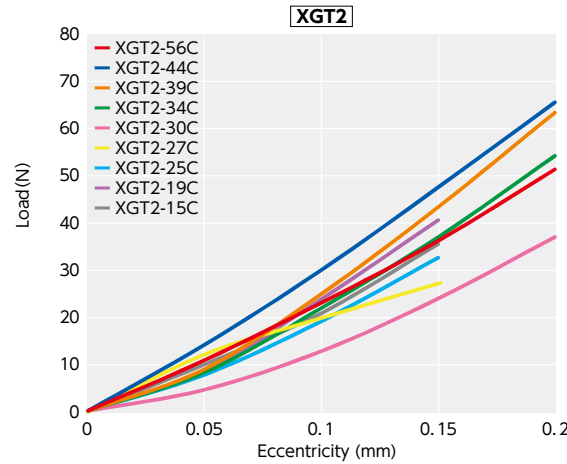


XGT2/XGL2/XGS2 Flexible Coupling - High - Gain Rubber Type Additional Size Patent Pending

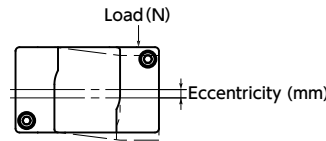
WEB Selection Tool CAD Download 0 Zero Backlash High gain supported High torque High Rigidity Vibration absorption

Technical Information

• Eccentric reaction force



This is a force generated when making **XGT2** **XGL2** **XGS2** in eccentric condition.
As the eccentric reaction force becomes smaller, the force acting on the shaft bearing also becomes smaller.

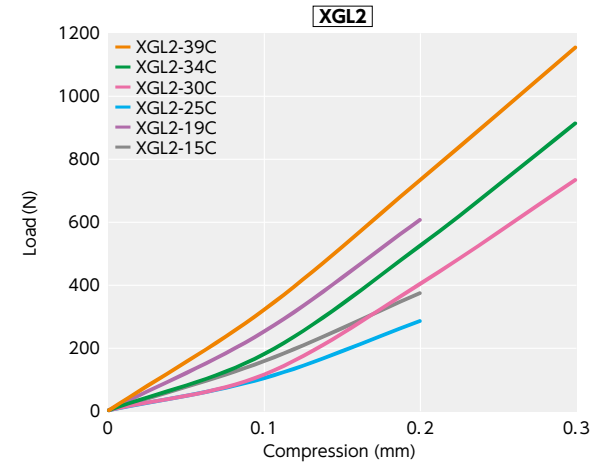
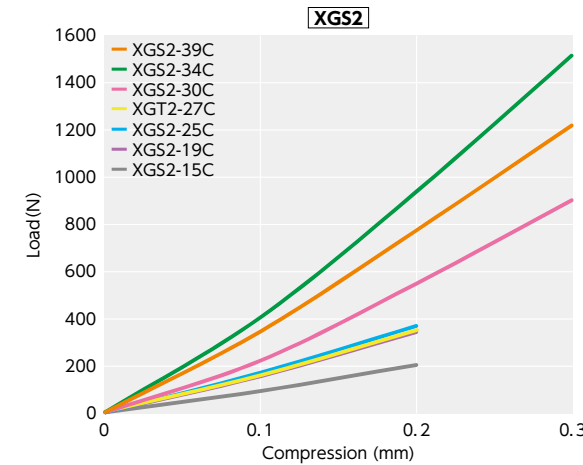
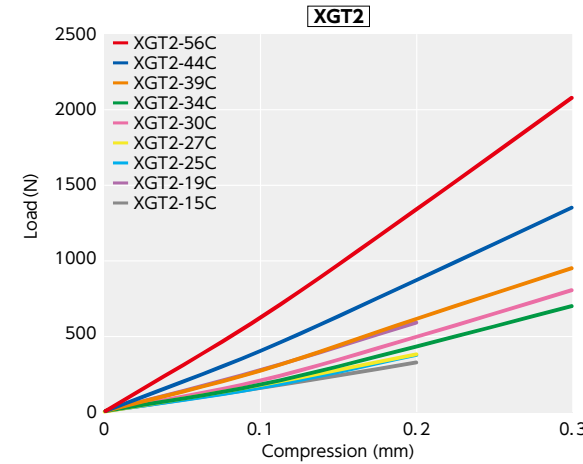


• Physical property and chemical resistance of vibration-resistance rubber (FKM)

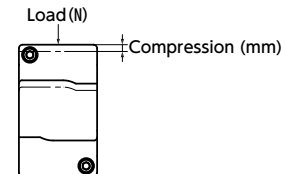
	Effect
Aging resistance	○
Weather resistance	○
Ozone resistance	○
Gasoline/Gas Oil	○
Benzene/Toluene	○
Alcohol	○
Ether	X~△
Ketone (MEK)	X
Ethyl acetate	X
Water	○
Organic acid	X
High concentration inorganic acid	○
Low concentration inorganic acid	○
Strong alkali	X
Weak alkali	△

○: Very Good ○: Available △: Fair pending on condition
X: Not available

• Thrust Reaction Force



This is a force generated when compressing **XGT2** **XGL2** **XGS2** in the shaft direction. As the thrust reaction force becomes smaller, the force acting on the motor also becomes smaller.



• Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the rated torque.

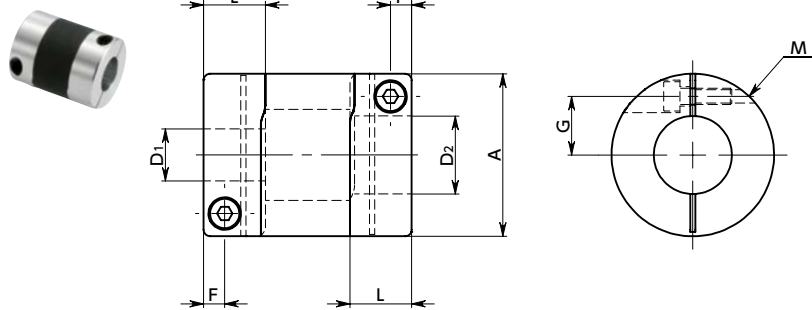
Part number	Bore Diameter (mm)		
	3	5	10
XGT2-15C, XGL2-15C	1		
XGT2-27C, XGL2-27C		3.8	
XGT2-39C, XGL2-39C			13.3

• These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in Dimension table.

XGT2 Flexible coupling - High - gain rubber type - Standard type Additional Size Patent Pending

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 High gain supported
 High torque
 High Rigidity
 Vibration absorption

XGT2-C



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
XGT2-15C	15	6.5	23	2.15	5	M1.6	0.25
XGT2-19C	19	7.7	26	2.65	6.5	M2	0.5
XGT2-25C	25	9.5	32	3.25	9	M2.5	1
XGT2-27C	27	9.5	32	3.25	10	M2.5	1
XGT2-30C	30	11	36	4	11	M3	1.5
XGT2-34C	34	12	38	4	12.25	M3	1.5
XGT2-39C	39	15.5	48	4.5	14.5	M4	2.5
XGT2-44C	44	15	48	4.75	16	M4	2.5
XGT2-56C	56	19.5	60	5.5	20	M5	7

Part Number	Standard Bore Diameter D1-D2									
XGT2-15C	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6	
XGT2-19C	4 - 5 6.35 - 8	4 - 8 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8
XGT2-25C	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10	8 - 8
XGT2-27C	5 - 6 8 - 10	5 - 8 8 - 11	5 - 14 8 - 12	6 - 6 8 - 14	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 10 - 14	6 - 12 12 - 12	6 - 14 12 - 14	8 - 8 14 - 14
XGT2-30C	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12	10 - 14
XGT2-34C	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15	10 - 14 16 - 16
XGT2-39C	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 15	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17	12 - 19 20 - 20
XGT2-44C	12 - 12 15 - 19	12 - 14 15 - 20	12 - 16 16 - 16	12 - 19 16 - 19	14 - 14 17 - 17	14 - 15 19 - 20	14 - 16 20 - 20	14 - 19	15 - 15	15 - 16
XGT2-56C	15 - 15	15 - 19	15 - 20	15 - 25	19 - 20	19 - 24	20 - 20	20 - 25	24 - 25	25 - 25

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGT2-15C	6	1.1	2.2	42000	2.6×10 ⁻⁷	110	0.15	1.5	±0.2	9
XGT2-19C	8	2.1	4.2	33000	7.6×10 ⁻⁷	240	0.15	1.5	±0.2	15
XGT2-25C	12	4	8	25000	2.7×10 ⁻⁶	390	0.15	1.5	±0.2	29
XGT2-27C	14	4	8	23000	3.7×10 ⁻⁶	400	0.15	1.5	±0.2	33
XGT2-30C	15	6.3	12.6	21000	6.3×10 ⁻⁶	590	0.2	1.5	±0.3	45
XGT2-34C	16	8	16	18000	1.2×10 ⁻⁵	890	0.2	1.5	±0.3	66
XGT2-39C	20	13.5	27	16000	2.5×10 ⁻⁵	1100	0.2	1.5	±0.3	105
XGT2-44C	22	18	36	14000	4.1×10 ⁻⁵	1300	0.2	1.5	±0.3	134
XGT2-56C	28	35	70	11000	1.4×10 ⁻⁴	2500	0.2	1.5	±0.3	270

*1 : Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of **XGT2-C** is -10°C to 120°C.

*2 : These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-10°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55

Part number specification

XGT2-39C-12-20

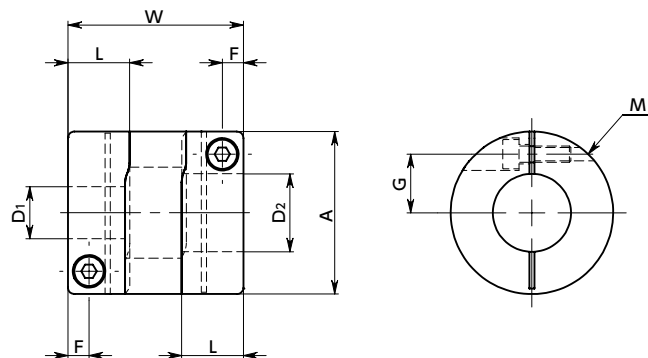
➡ ➡

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XGS2 Flexible coupling - High - gain rubber type - Short type Additional Size Patent Pending

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[CAD Download](#)
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[High gain supported](#)
[High torque](#)
[High Rigidity](#)
[Vibration absorption](#)

XGS2-C



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
XGS2-15C	15	6.5	18	2.15	5	M1.6	0.25
XGS2-19C	19	7.7	20	2.65	6.5	M2	0.5
XGS2-25C	25	9.5	27	3.25	9	M2.5	1
XGS2-27C	27	9.5	27	3.25	10	M2.5	1
XGS2-30C	30	11	30	4	11	M3	1.5
XGS2-34C	34	12	35	4	12.25	M3	1.5
XGS2-39C	39	15.5	40	4.5	14.5	M4	2.5

Part Number	Standard Bore Diameter D1-D2								
XGS2-15C	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6
XGS2-19C	4 - 5 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8 6.35 - 8
XGS2-25C	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10 8 - 8
XGS2-27C	5 - 6 8 - 10	5 - 8 8 - 11	5 - 14 8 - 12	6 - 6 8 - 14	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 10 - 14	6 - 12 12 - 12	6 - 14 12 - 14 8 - 8 14 - 14
XGS2-30C	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12 10 - 14
XGS2-34C	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15 10 - 14 16 - 16
XGS2-39C	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 15	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17 12 - 19 20 - 20

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGS2-15C	6	0.5	42000	2.1×10^{-7}	64	0.15	1.5	±0.2	7
XGS2-19C	8	0.8	33000	5.9×10^{-7}	170	0.15	1.5	±0.2	12
XGS2-25C	12	2.3	25000	2.4×10^{-6}	290	0.15	1.5	±0.2	24
XGS2-27C	14	2.3	23000	3.2×10^{-6}	290	0.15	1.5	±0.2	28
XGS2-30C	15	3.3	21000	5.2×10^{-6}	430	0.2	1.5	±0.3	38
XGS2-34C	16	5.5	18000	1.1×10^{-5}	800	0.2	1.5	±0.3	61
XGS2-39C	20	7	16000	2.1×10^{-5}	930	0.2	1.5	±0.3	90

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. The allowable operating temperature of **XGS2-C** is -10°C to 120°C.

*2 : These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-10°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55

Part number specification

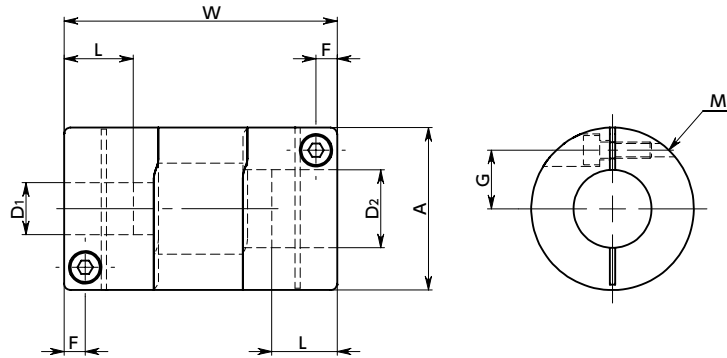
XGS2-34C-11-12

1 2

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XGL2 Flexible coupling - High - gain rubber type - Long type Patent Pending

WEB Selection Tool
 CAD Download
 Zero Backlash
 High gain supported
 High torque
 High Rigidity
 Vibration absorption

XGL2-C**Dimensions**

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
XGL2-15C	15	6.5	30	2.15	5	M1.6	0.25
XGL2-19C	19	7.7	34	2.65	6.5	M2	0.5
XGL2-25C	25	9.5	42	3.25	9	M2.5	1
XGL2-30C	30	11	42	4	11	M3	1.5
XGL2-34C	34	12	44	4	12.25	M3	1.5
XGL2-39C	39	15.5	55	4.5	14.5	M4	2.5

Part Number	Standard Bore Diameter D1-D2									
XGL2-15C	3 - 5	5 - 5	5 - 6							
XGL2-19C	4 - 5	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 8	6.35 - 8	8 - 8
XGL2-25C	5 - 8	6 - 8	6 - 10	6.35 - 8	8 - 8	8 - 10	8 - 11	8 - 12	10 - 10	10 - 12
XGL2-30C	8 - 8	8 - 10	8 - 11	8 - 12	8 - 14	8 - 15	10 - 10	10 - 11	10 - 14	11 - 12
XGL2-34C	8 - 8	8 - 10	8 - 12	8 - 14	10 - 11	10 - 14	11 - 12	12 - 14	14 - 15	
XGL2-39C	10 - 10	10 - 12	10 - 14	12 - 14	14 - 15	15 - 19				

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➔ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGL2-15C	6	1.1	42000	3.6×10^{-7}	82	0.15	1.5	±0.2	11
XGL2-19C	8	2.1	33000	1.0×10^{-6}	210	0.15	1.5	±0.2	20
XGL2-25C	12	4	25000	3.8×10^{-6}	300	0.15	1.5	±0.2	40
XGL2-30C	15	6.3	21000	7.6×10^{-6}	540	0.2	1.5	±0.3	56
XGL2-34C	16	8	18000	1.4×10^{-5}	640	0.2	1.5	±0.3	78
XGL2-39C	20	13.5	16000	2.9×10^{-5}	950	0.2	1.5	±0.3	122

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. The allowable operating temperature of **XGL2-C** is -10°C to 120°C.

*2 : These are values with max. bore diameter.

● Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-10°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55

● Part number specification

XGL2-15C - 5-5

1 2

Additional Keyway at Shaft Hole ➔ P.803	Cleanroom Wash & Packaging ➔ P.807	Change to Stainless Steel Screw ➔ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XGT/XGL/XGS Flexible coupling - High-gain rubber type

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[High torque](#)
[Vibration absorption](#)

Structure

Set Screw Type

XGT Standard type → P.49

XGS Short type → P.55



Single Clamping Type

XGT-CS Standard type → P.51

XGS-CS Short type → P.57



Double Clamping Type

XGT-C Standard type → P.53

XGL-C Long type → P.61

XGS-C Short type → P.59



XGT-C XGS-C XGL-C Split Type

Easy to mount and remove screws.



Material/Finish

	XGT / XGL / XGS
Hub	A2017
Vibration-absorbing rubber	HNBR
Hex Socket Head Cap Screw / Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)

[Additional Keyway at Shaft Hole → P.803](#)
[Cleanroom Wash & Packaging → P.807](#)
[Change to Stainless Steel Screw → P.805](#)

Recommended applicable motor

	XGT / XGL / XGS
Servomotor	○
Stepping Motor	○
General-Purpose Motor	△

○: Excellent ○: Very good △: Available

Property

	XGT / XGL / XGS
Zero Backlash	○
For servomotor high gain	○
High Torque	○
High Torsional Stiffness	○
Allowable Misalignment	○
Vibration absorption characteristics	○
Allowable Operating Temperature	-20°C to 80°C

○: Excellent ○: Very good

- This is a high gain rubber type flexible coupling optimized for actuators.
- Enables you to make high precision positioning in a short time.



- A single-piece construction with the two aluminum hubs molded with vibration absorbing rubber.
- About high-gain rubber coupling and reduction of stabilization time → P.31

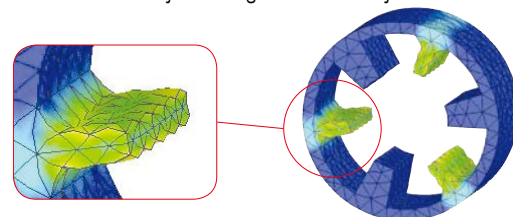
Application

Actuator / Surface-mount machine / High precision XY stage / Index table

Internal Structure



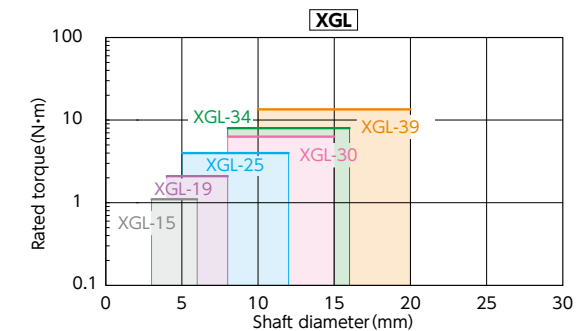
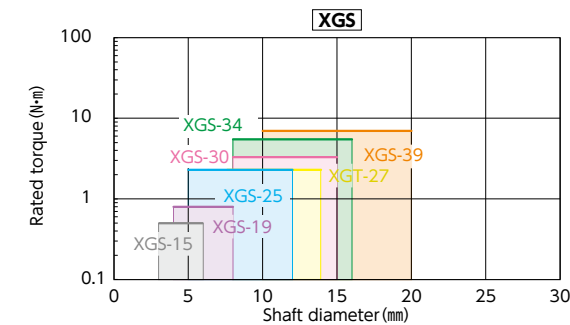
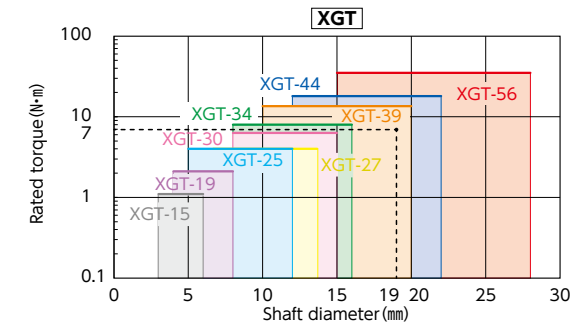
The designed shape of vibration-absorbing rubber achieves high torsional stiffness and high torque according to the newest finite element method. This product also succeeds in elongating its life by evenly dispersing the stress focusing on around the inner diameter of the jaw throughout the entire jaw.



Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



Selection Example

In case of selected parameters of shaft diameter of ϕ 19 and load torque of 7 N·m, the selected size is **XGT-39C**.

Selection based on the rated output of the servomotor

Rated Output (W)	Servomotor Specifications*1			selection size		
	Diameter of Motor Shaft (mm)	Rated Torque (N·m)	Instantaneous Max. Torque (N·m)	XGT	XGL	XGS
10	5 - 6	0.032	0.096	15C	15C	15C
20	5 - 6	0.064	0.19	15C	15C	15C
30	5 - 7	0.096	0.29	19C	19C	19C
50	6 - 8	0.16	0.48	19C	19C	19C
100	8	0.32	0.95	19C	19C	25C
200	9 - 14	0.64	1.9	27C	30C	27C
400	14	1.3	3.8	27C	30C	34C
750	16 - 19	2.4	7.2	39C	39C	-

*1 : Motor specifications are based on general values. For details, see the motor manufacturer's catalogs. This is the size for cases where devices such as reduction gears are not used.

Related Products

XGT2 enables further improvement of productivity by adding damping performance to **XGT**.
→ P.29



Part number specification

XGT-19C-6-8

Product code Size bore diameter

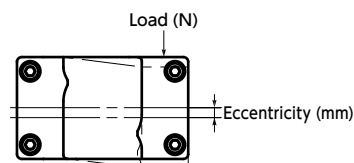
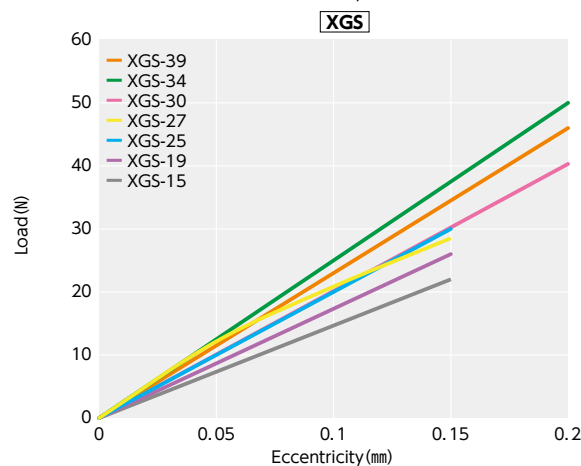
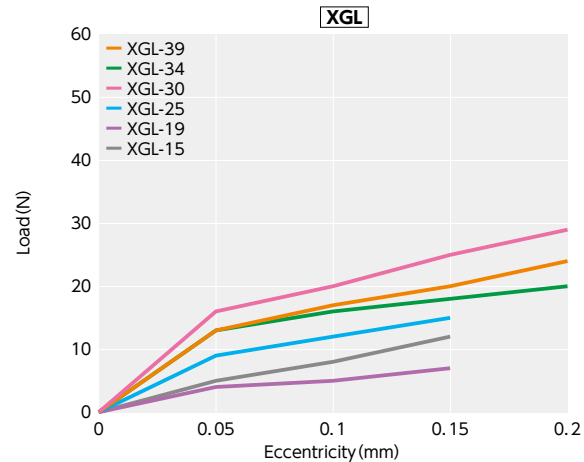
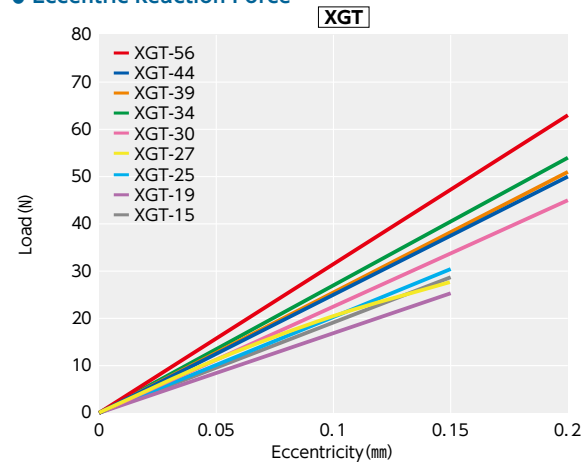
Please refer to dimensional table for part number specification.

XGT/XGL/XGS Flexible coupling - High-gain rubber type

WEB Selection Tool CAD Download Zero Backlash High gain supported High torque Vibration absorption

Technical Information

• Eccentric Reaction Force



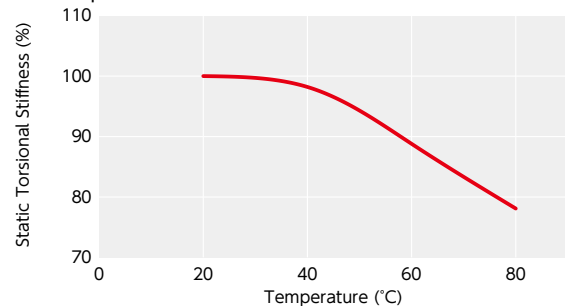
The charts show force generated when making **XGT XGL XGS** in eccentric condition. As the eccentric reaction force becomes smaller, the force acting on the shaft bearing also becomes smaller.

• Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20°C is 100%.

The change of torsional stiffness within the range of allowable operating temperature is as shown in the graph.

Before using the unit, be aware of the deterioration of responsiveness.



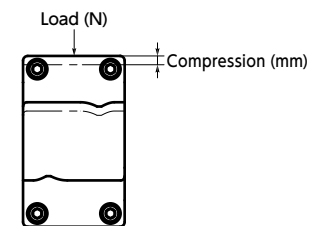
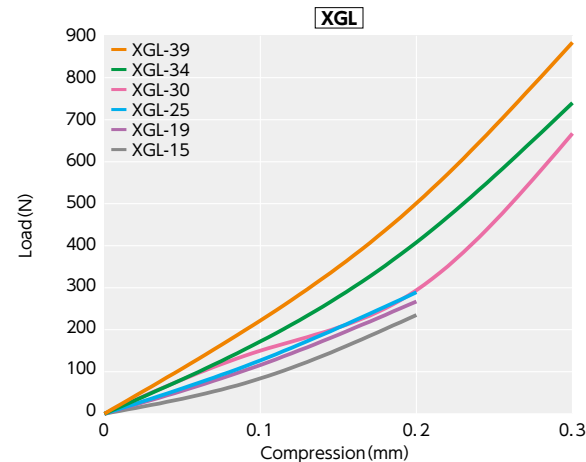
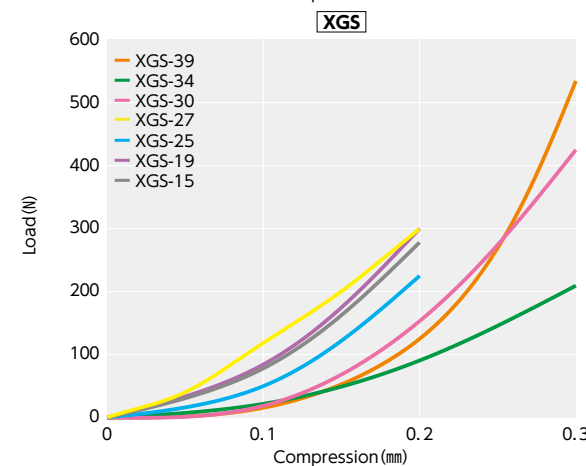
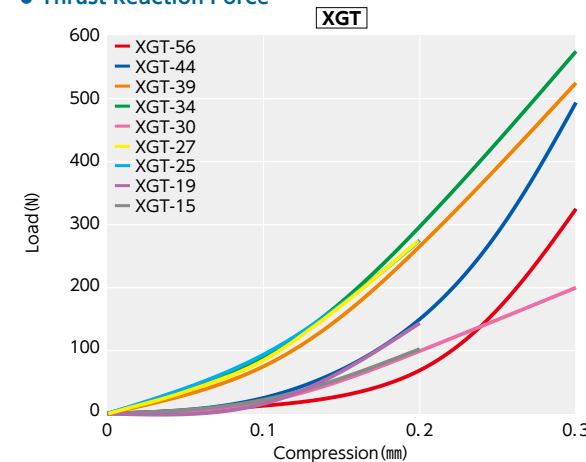
• Physical property and chemical resistance of high-gain type rubber (HNBR)

	Effect
Aging Resistance	○
Weather Resistance	○
Ozone Resistance	○
Gasoline / Gas Oil	○-○
Benzene / Toluene	△-○
Alcohol	○
Ether	×-△
Ketone (MEK)	×
Ethyl Acetate	×-△
Water	○
Organic Acid	○
High concentration inorganic acid	○
Low concentration inorganic acid	○
Strong Alkali	○
Weak Alkali	○

○: Very Good ○: Available

△: Fair pending on condition ×: Not available

• Thrust Reaction Force



The charts show force generated when compressing **XGT XGL XGS** in the shaft direction. As the thrust reaction force becomes smaller, the force acting on the motor also becomes smaller.

• Slip Torque

Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the rated torque of **XGT-C XGT-CS XGS-C XGS-CS**.

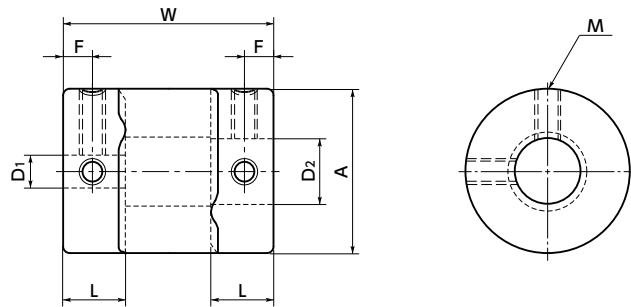
Part Number	Bore diameter (mm)				Unit: N·m
	3	5	10	12	
XGT-15C, XGL-15C	1				
XGT-15CS	1				
XGT-27CS		3.8			
XGT-39CS			13.3		
XGT-44C				16.3	

• These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **XGT-C XGT-CS XGS-C XGS-CS XGL-C** dimensional table.

XGT Flexible coupling - High-gain rubber type - Set screw type

WEB Selection Tool CAD Download 0 Zero Backlash High gain supported High torque Vibration absorption

XGT



Dimensions

Unit : mm

Part Number	A	L	W	F	M	Screw Tightening Torque (N・m)
XGT-15	15	6.5	23	3	M3	0.7
XGT-19	19	7.7	26	4	M3	0.7
XGT-25	25	9.5	32	5	M4	1.7
XGT-27	27	9.5	32	5	M4	1.7
XGT-30	30	11	36	5.5	M4	1.7
XGT-34	34	12	38	6	M5	4
XGT-39	39	15.5	48	8	M5	4
XGT-44	44	15	48	7.5	M6	7
XGT-56	56	19.5	60	10	M6	7

Part Number	Standard bore diameter (dimensional allowance H8) D1-D2									
XGT-15	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6	
XGT-19	4 - 5 6.35 - 8	4 - 8 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8
XGT-25	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10	8 - 8
XGT-27	5 - 6 8 - 10	5 - 8 8 - 11	5 - 14 8 - 12	6 - 6 8 - 14	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 10 - 14	6 - 12 12 - 12	6 - 14 12 - 14	8 - 8 14 - 14
XGT-30	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12	10 - 14
XGT-34	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15	10 - 14 16 - 16
XGT-39	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 16	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17	12 - 19 20 - 20
XGT-44	12 - 12 15 - 19	12 - 14 15 - 20	12 - 16 16 - 16	12 - 19 16 - 19	14 - 14 17 - 17	14 - 15 19 - 20	14 - 16 20 - 20	14 - 19	15 - 15	15 - 16
XGT-56	15 - 15	15 - 19	15 - 20	15 - 25	19 - 20	19 - 24	20 - 20	20 - 25	24 - 25	25 - 25

- All products are provided with hex socket set screw.
- In a case where the bore diameter is $\phi 4$ or less, the setscrew is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGT-15	6	1.1	42000	2.6×10^{-7}	43	0.15	1.5	±0.2	9
XGT-19	8	2.1	33000	7.5×10^{-7}	88	0.15	1.5	±0.2	15
XGT-25	12	4	25000	2.7×10^{-6}	140	0.15	1.5	±0.2	29
XGT-27	14	4	23000	3.6×10^{-6}	140	0.15	1.5	±0.2	32
XGT-30	15	6.3	21000	6.3×10^{-6}	220	0.2	1.5	±0.3	46
XGT-34	16	8	18000	1.1×10^{-5}	390	0.2	1.5	±0.3	66
XGT-39	20	13.5	16000	2.4×10^{-5}	520	0.2	1.5	±0.3	103
XGT-44	22	18	14000	4.0×10^{-5}	640	0.2	1.5	±0.3	133
XGT-56	28	35	11000	1.3×10^{-4}	1500	0.2	1.5	±0.3	267

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. **XGT**'s allowable operating temperature is -20°C to 80°C.

*2 : These are values with max. bore diameter.

● Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

● Part number specification

XGT-39 - 12-20

1

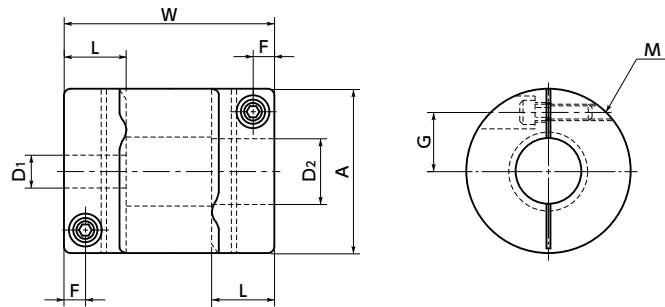
2

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XGT-CS Flexible coupling - High-gain rubber type - Single clamp type

WEB Selection Tool CAD Download 0 Zero Backlash High gain supported High torque Vibration absorption

XGT-CS



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
XGT-15CS	15	6.5	23	2.15	5	M1.6	0.25
XGT-19CS	19	7.7	26	2.65	6.5	M2	0.5
XGT-25CS	25	9.5	32	3.25	9	M2.5	1
XGT-27CS	27	9.5	32	3.25	10	M2.5	1
XGT-30CS	30	11	36	4	11	M3	1.5
XGT-34CS	34	12	38	4	12.25	M3	1.5
XGT-39CS	39	15.5	48	4.5	14.5	M4	2.5
XGT-44CS	44	15	48	4.75	16	M4	2.5
XGT-56CS	56	19.5	60	5.5	20	M5	7

Part Number	Standard bore diameter D1-D2									
XGT-15CS	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6	
XGT-19CS	4 - 5 6.35 - 8	4 - 8 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8
XGT-25CS	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10	8 - 8
XGT-27CS	5 - 6 8 - 10	5 - 8 8 - 11	5 - 14 8 - 12	6 - 6 8 - 14	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 10 - 14	6 - 12 12 - 12	6 - 14 12 - 14	8 - 8 14 - 14
XGT-30CS	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12	10 - 14
XGT-34CS	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15	10 - 14 16 - 16
XGT-39CS	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 15	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17	12 - 19 20 - 20
XGT-44CS	12 - 12 15 - 19	12 - 14 15 - 20	12 - 16 16 - 16	12 - 19 16 - 19	14 - 14 17 - 17	14 - 15 19 - 20	14 - 16 20 - 20	14 - 19	15 - 15	15 - 16
XGT-56CS	15 - 15	15 - 19	15 - 20	15 - 25	19 - 20	19 - 24	20 - 20	20 - 25	24 - 25	25 - 25

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➔ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGT-15CS	6	1.1	42000	2.3×10^{-7}	43	0.15	1.5	±0.2	8
XGT-19CS	8	2.1	33000	6.9×10^{-7}	88	0.15	1.5	±0.2	14
XGT-25CS	12	4	25000	2.5×10^{-6}	140	0.15	1.5	±0.2	27
XGT-27CS	14	4	23000	3.4×10^{-6}	140	0.15	1.5	±0.2	30
XGT-30CS	15	6.3	21000	6.0×10^{-6}	220	0.2	1.5	±0.3	44
XGT-34CS	16	8	18000	1.0×10^{-5}	390	0.2	1.5	±0.3	61
XGT-39CS	20	13.5	16000	2.3×10^{-5}	520	0.2	1.5	±0.3	98
XGT-44CS	22	18	14000	3.7×10^{-5}	640	0.2	1.5	±0.3	124
XGT-56CS	28	35	11000	1.2×10^{-4}	1500	0.2	1.5	±0.3	252

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. **XGT-CS**'s allowable operating temperature is -20°C to 80°C.

*2 : These are values with max. bore diameter.

• Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

• Part number specification

XGT-34CS-11-12



Additional Keyway at Shaft Hole ➔ P.803 Available / Add'l charge

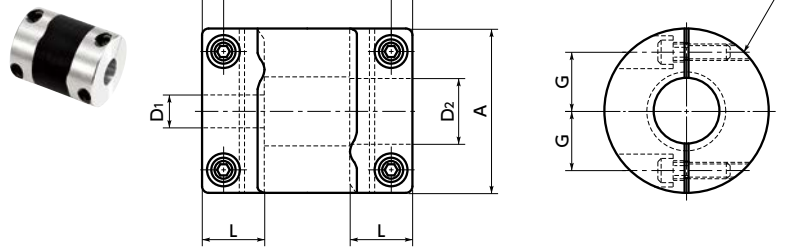
Cleanroom Wash & Packaging ➔ P.807 Available / Add'l charge

Change to Stainless Steel Screw ➔ P.805 Available / Add'l charge

XGT-C Flexible coupling - High - gain rubber type - Standard type

WEB Selection Tool CAD Download 0 Zero Backlash High gain supported High torque Vibration absorption

XGT-C



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
XGT-15C	15	6.5	23	2.15	5	M1.6	0.25
XGT-19C	19	7.7	26	2.65	6.5	M2	0.5
XGT-25C	25	9.5	32	3.25	9	M2.5	1
XGT-30C	30	11	36	4	11	M3	1.5
XGT-34C	34	12	38	4	12.25	M3	1.5
XGT-39C	39	15.5	48	4.5	14.5	M4	2.5
XGT-44C	44	15	48	4.75	16	M4	2.5
XGT-56C	56	19.5	60	5.5	20	M5	7

Part Number	Standard Bore Diameter									
	D1-D2									
XGT-15C	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6	
XGT-19C	4 - 5 6.35 - 8	4 - 8 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8
XGT-25C	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10	8 - 8
XGT-30C	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12	10 - 14
XGT-34C	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15	10 - 14 16 - 16
XGT-39C	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 15	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17	12 - 19 20 - 20
XGT-44C	12 - 12 15 - 19	12 - 14 15 - 20	12 - 16 16 - 16	12 - 19 16 - 19	14 - 14 17 - 17	14 - 15 19 - 20	14 - 16 20 - 20	14 - 19	15 - 15	15 - 16
XGT-56C	15 - 15	15 - 19	15 - 20	15 - 25	19 - 20	19 - 24	20 - 20	20 - 25	24 - 25	25 - 25

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGT-15C	6	1.1	42000	2.7×10^{-7}	43	0.15	1.5	±0.2	8
XGT-19C	8	2.1	33000	8.4×10^{-7}	88	0.15	1.5	±0.2	14
XGT-25C	12	4	25000	3.0×10^{-6}	140	0.15	1.5	±0.2	28
XGT-30C	15	6.3	21000	6.9×10^{-6}	220	0.2	1.5	±0.3	45
XGT-34C	16	8	18000	1.3×10^{-5}	390	0.2	1.5	±0.3	65
XGT-39C	20	13.5	16000	2.7×10^{-5}	520	0.2	1.5	±0.3	98
XGT-44C	22	18	14000	4.2×10^{-5}	640	0.2	1.5	±0.3	136
XGT-56C	28	35	11000	1.4×10^{-4}	1500	0.2	1.5	±0.3	276

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. The allowable operating temperature of **XGT-C** is -20°C to 80°C.

*2 : These are values with max. bore diameter.

● Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

● Part number specification

XGT-39C - 12-20

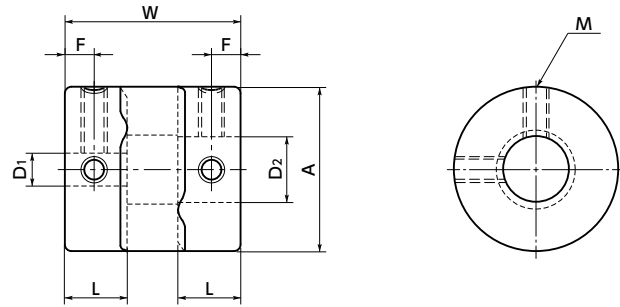
1 2

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XGS Flexible coupling - High-gain rubber type (short) - Set screw type

WEB Selection Tool WEB CAD Download 0 Zero Backlash High gain supported High torque Vibration absorption

XGS



Dimensions

Unit : mm

Part Number	A	L	W	F	M	Screw Tightening Torque (N·m)
XGS-15	15	6.5	18	3	M3	0.7
XGS-19	19	7.7	20	4	M3	0.7
XGS-25	25	9.5	27	5	M4	1.7
XGS-27	27	9.5	27	5	M4	1.7
XGS-30	30	11	30	5.5	M4	1.7
XGS-34	34	12	35	6	M5	4
XGS-39	39	15.5	40	8	M5	4

Part Number	Standard bore diameter (dimensional allowance H8)									
	D1-D2									
XGS-15	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6	
XGS-19	4 - 5 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8	6.35 - 8
XGS-25	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10	8 - 8
XGS-27	5 - 6 8 - 10	5 - 8 8 - 11	5 - 14 8 - 12	6 - 6 8 - 14	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 10 - 14	6 - 12 12 - 12	6 - 14 12 - 14	8 - 8 14 - 14
XGS-30	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12	10 - 14
XGS-34	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15	10 - 14 16 - 16
XGS-39	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 15	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17	12 - 19 20 - 20

- All products are provided with hex socket set screw.
- In a case where the bore diameter is $\phi 4$ or less, the setscrew is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGS-15	6	0.5	42000	2.2×10^{-7}	25	0.15	1.5	±0.2	7
XGS-19	8	0.8	33000	6.3×10^{-7}	63	0.15	1.5	±0.2	12
XGS-25	12	2.3	25000	2.4×10^{-6}	100	0.15	1.5	±0.2	26
XGS-27	14	2.3	23000	3.2×10^{-6}	120	0.15	1.5	±0.2	29
XGS-30	15	3.3	21000	5.6×10^{-6}	160	0.2	1.5	±0.3	41
XGS-34	16	5.5	18000	1.1×10^{-5}	350	0.2	1.5	±0.3	62
XGS-39	20	7	16000	2.2×10^{-5}	440	0.2	1.5	±0.3	91

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. **XGS**'s allowable operating temperature is -20°C to 80°C.

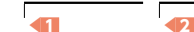
*2 : These are values with max. bore diameter.

• Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

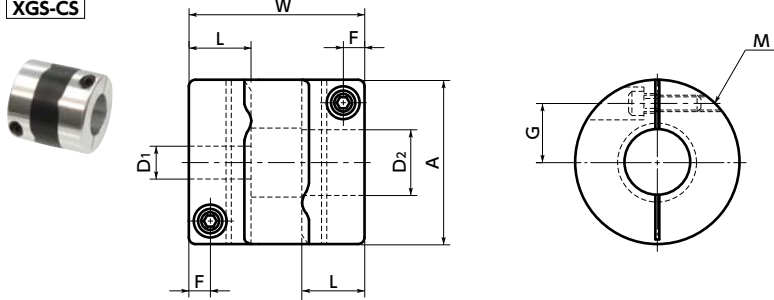
• Part number specification

XGS-34- 11-12



Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XGS-CS



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N・m)
XGS-15CS	15	6.5	18	2.15	5	M1.6	0.25
XGS-19CS	19	7.7	20	2.65	6.5	M2	0.5
XGS-25CS	25	9.5	27	3.25	9	M2.5	1
XGS-27CS	27	9.5	27	3.25	10	M2.5	1
XGS-30CS	30	11	30	4	11	M3	1.5
XGS-34CS	34	12	35	4	12.25	M3	1.5
XGS-39CS	39	15.5	40	4.5	14.5	M4	2.5

Part Number	Standard bore diameter D1-D2									
XGS-15CS	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6	
XGS-19CS	4 - 5 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8	6.35 - 8
XGS-25CS	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10	8 - 8
XGS-27CS	5 - 6 8 - 10	5 - 8 8 - 11	5 - 14 8 - 12	6 - 6 8 - 14	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 10 - 14	6 - 12 12 - 12	6 - 14 12 - 14	8 - 8 14 - 14
XGS-30CS	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12	10 - 14
XGS-34CS	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15	10 - 14 16 - 16
XGS-39CS	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 15	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17	12 - 19 20 - 20

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➔ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGS-15CS	6	0.5	42000	2.0×10^{-7}	25	0.15	1.5	±0.2	7
XGS-19CS	8	0.8	33000	5.7×10^{-7}	63	0.15	1.5	±0.2	11
XGS-25CS	12	2.3	25000	2.2×10^{-6}	100	0.15	1.5	±0.2	24
XGS-27CS	14	2.3	23000	3.0×10^{-6}	120	0.15	1.5	±0.2	27
XGS-30CS	15	3.3	21000	5.3×10^{-6}	160	0.2	1.5	±0.3	38
XGS-34CS	16	5.5	18000	9.9×10^{-6}	350	0.2	1.5	±0.3	58
XGS-39CS	20	7	16000	2.0×10^{-5}	440	0.2	1.5	±0.3	86

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. **XGS-CS**'s allowable operating temperature is -20°C to 80°C.

*2 : These are values with max. bore diameter.

• Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

• Part number specification

XGS-34CS - 11-12

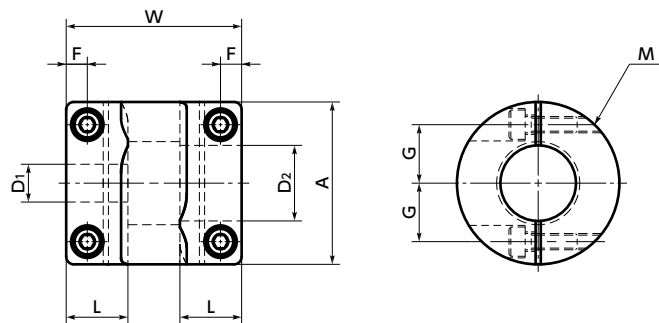


Additional Keyway at Shaft Hole ➔ P.803	Cleanroom Wash & Packaging ➔ P.807	Change to Stainless Steel Screw ➔ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XGS-C Flexible coupling - High - gain rubber type - Short type

WEB Selection Tool
 WEB CAD Download
 Zero Backlash
 High gain supported
 High torque
 Vibration absorption

XGS-C



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
XGS-15C	15	6.5	18	2.15	5	M1.6	0.25
XGS-19C	19	7.7	20	2.65	6.5	M2	0.5
XGS-25C	25	9.5	27	3.25	9	M2.5	1
XGS-30C	30	11	30	4	11	M3	1.5
XGS-34C	34	12	35	4	12.25	M3	1.5
XGS-39C	39	15.5	40	4.5	14.5	M4	2.5

Part Number	Standard Bore Diameter D1-D2									
XGS-15C	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6	
XGS-19C	4 - 5 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8	6.35 - 8
XGS-25C	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10	8 - 8
XGS-30C	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12	10 - 14
XGS-34C	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15	10 - 14 16 - 16
XGS-39C	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 15	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17	12 - 19 20 - 20

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGS-15C	6	0.5	42000	2.0×10^{-7}	25	0.15	1.5	±0.2	7
XGS-19C	8	0.8	33000	6.2×10^{-7}	63	0.15	1.5	±0.2	12
XGS-25C	12	2.3	25000	2.3×10^{-6}	100	0.15	1.5	±0.2	25
XGS-30C	15	3.3	21000	5.5×10^{-6}	160	0.2	1.5	±0.3	39
XGS-34C	16	5.5	18000	1.0×10^{-5}	350	0.2	1.5	±0.3	62
XGS-39C	20	7	16000	2.1×10^{-5}	440	0.2	1.5	±0.3	85

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. The allowable operating temperature of **XGS-C** is -20°C to 80°C.

*2 : These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

Part number specification

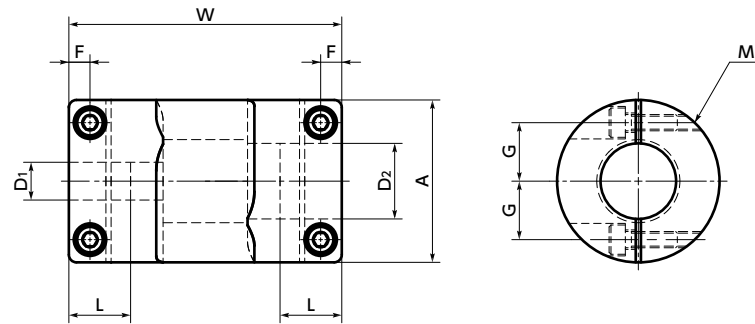
XGS-34C-11-12

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XGL-C Flexible coupling - High - gain rubber type - Long type

[WEB Selection Tool](#)
[WEB CAD Download](#)
[Zero Backlash](#)
[High gain supported](#)
[High torque](#)
[Vibration absorption](#)

XGL-C



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N・m)
XGL-15C	15	6.5	30	2.15	5	M1.6	0.25
XGL-19C	19	7.7	34	2.65	6.5	M2	0.5
XGL-25C	25	9.5	42	3.25	9	M2.5	1
XGL-30C	30	11	42	4	11	M3	1.5
XGL-34C	34	12	44	4	12.25	M3	1.5
XGL-39C	39	15.5	55	4.5	14.5	M4	2.5

Part Number	Standard Bore Diameter D1-D2							
XGL-15C	3 - 5	5 - 5	5 - 6					
XGL-19C	4 - 5 6.35 - 8	5 - 5 8 - 8	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 8
XGL-25C	5 - 8 10 - 10	6 - 8 10 - 12	6 - 10	6.35 - 8	8 - 8	8 - 10	8 - 11	8 - 12
XGL-30C	8 - 8 10 - 14	8 - 10 11 - 12	8 - 11 12 - 14	8 - 12	8 - 14	8 - 15	10 - 10	10 - 11
XGL-34C	8 - 8 14 - 15	8 - 10	8 - 12	8 - 14	10 - 11	10 - 14	11 - 12	12 - 14
XGL-39C	10 - 10	10 - 12	10 - 14	12 - 14	14 - 15	15 - 19		

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGL-15C	6	1.1	42000	3.3×10^{-7}	32	0.15	1.5	±0.2	11
XGL-19C	8	2.1	33000	9.7×10^{-7}	77	0.15	1.5	±0.2	19
XGL-25C	12	4	25000	3.5×10^{-6}	130	0.15	1.5	±0.2	38
XGL-30C	15	6.3	21000	7.3×10^{-6}	200	0.2	1.5	±0.3	53
XGL-34C	16	8	18000	1.3×10^{-5}	280	0.2	1.5	±0.3	73
XGL-39C	20	13.5	16000	2.8×10^{-5}	450	0.2	1.5	±0.3	117

*1 : Correction of rated torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table. The allowable operating temperature of **XGL-C** is -20°C to 80°C.

*2 : These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

Part number specification

XGL-15C-5-5

1 2

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

Stronger, Easier to Use

Disc-Type Coupling

XHW/XHS/XHW-L

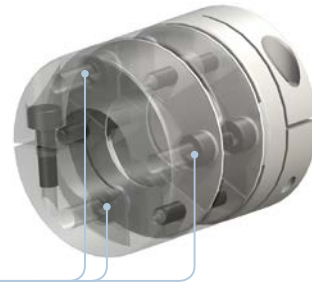


1. Transmission torque has improved by 1.5 times.

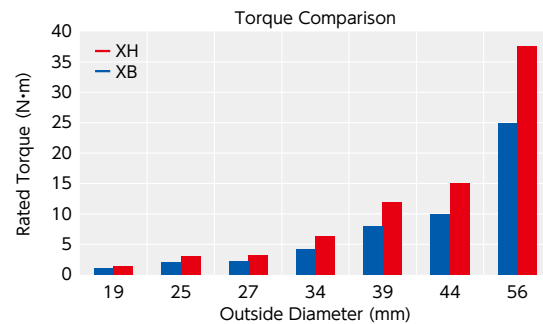
- The number of disc fixing bolts on one side, which was two for conventional XB series products, has been changed to three for XH series products.
The increased disc fixing power has enhanced transmission torque by 1.5 times.

XB Series

XH Series



Fixing Bolts for Disc



- XH series is the successor to XB series.
- Total length / outside diameter, and max. bore diameter are the same as **XBW**.
- Affordable price compared with identical sizes of XB series products.

XBW Part Number	Total Length (mm)	Rated Torque (N·m)	XHW Part Number	Total Length (mm)	Rated Torque (N·m)	XHW-L Part Number	Total Length (mm)	Rated Torque (N·m)
XBW-19C	25.5	1	XHW-19C	25.7	1.5	XHW-19C-L	34	1.5
XBW-25C	32.2	2	XHW-25C	32.2	3	XHW-25C-L	42	3
XBW-27C	32.2	2.2	XHW-27C	32.2	3.3	XHW-27C-L	42	3.3
XBW-34C	37.4	4.2	XHW-34C	36.8	6.3	XHW-34C-L	44	6.3
XBW-39C	46.6	8	XHW-39C	46.6	12	XHW-39C-L	55	12
XBW-44C	46.6	10	XHW-44C	46.6	15	-	-	-
XBW-56C	60.4	25	XHW-56C	61.2	37.5	-	-	-

2. Compact and Lower Cost

- Downsizing and cost reduction of couplings can be achieved by selecting XH series when servomotors' instantaneous maximum torque improve by 350%.

Servomotor Specifications				XBW Part Number	Total Length (mm)	Rated Torque (N·m)	XHW Part Number	Total Length (mm)	Rated Torque (N·m)	XHW-L Part Number	Total Length (mm)	Rated Torque (N·m)
Rated Output (W)	Shaft Diameter (φ)	Rated Torque (N·m)	instantaneous maximum torque (N·m)									
100	8	0.32	1.1	XBW-25C	32.2	2	XHW-19C	25.7	1.5	XHW-19C-L	34	1.5
200	14	0.64	2.2	XBW-34C	37.4	4.2	XHW-27C	32.2	3.3	XHW-27C-L	42	3.3
400	14	1.3	4.5	XBW-39C	46.6	8	XHW-34C	36.8	6.3	XHW-34C-L	44	6.3
750	16 - 19	2.4	8.4	XBW-44C	46.6	10	XHW-39C	46.6	12	XHW-39C-L	55	12

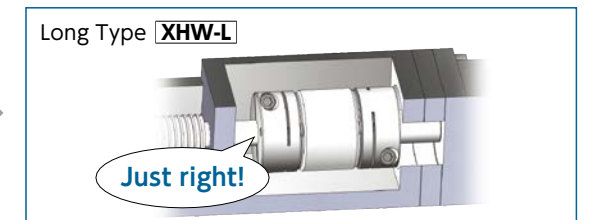
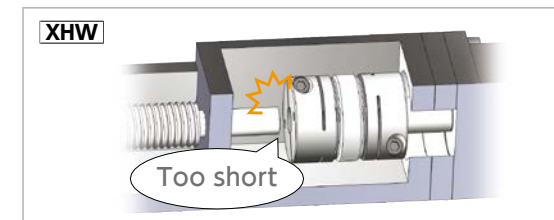
3. Expansion of Standard Bore Diameter

- Standard bore diameters, which are not in XB series, have been added.
(● indicates standardized bore diameters newly added in XH series.)
- ① Minimum bore diameter has been added
- ② Inch sizes (φ6.35・φ9.525) have been added
- ③ Inside bearing diameter of φ17 has been added

Part Number	3	4	5	6	6.35	8	9.525	10	11	12	14	15	16	17	18	19	20	22	24	25	28
XH-19C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XH-25C		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XH-27C		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XH-34C			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XH-39C				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XH-44C					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XH-56C						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

4. Standardization of Long Type XHW-L

- If the coupling cannot reach the shaft when connecting an electric actuator and a motor, usually a special product with its total length elongated is used. However, in XH series, long type **XHW-L** has been standardized.
- With its improved torque transmission capability, XH series will enable downsizing from conventional products. If **XHW** does not provide sufficient total length, use long type **XHW-L** instead.

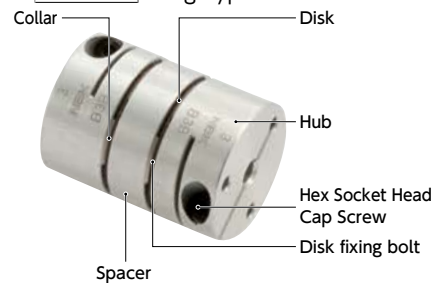


XHW / XHW-L Flexible Coupling - Disk - type Additional Size

WEB Selection Tool CAD Download 0 Zero Backlash High torque High Rigidity

Structure

- Clamping type → P.69
- XHW-C** Standard Type
- XHW-C-L** Long Type



- Material/Finish RoHS2 Compliant

	XHW-C / XHW-C-L
Hub	A2017 Alumite Treatment
Spacer	A2017 Alumite Treatment
Disk fixing bolt	SCM435 Ferrosoferric Oxide Film (Black)
Disk	SUS304
Collar	SUS304
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

- Recommended applicable motor

	XHW / XHW-L
Servomotor	○
Stepping Motor	○
General-Purpose Motor	△

○: Excellent ○: Very good △: Available

- Property

	XHW / XHW-L
Zero Backlash	○
High gain supported	○
High Torque	○
High Torsional Stiffness	○
Allowable Misalignment	○

○: Excellent ○: Very good

- This is a disk-type flexible coupling.
- High-torque specification with rated torque 1.5 times higher than conventional products.
- This is the most appropriate for a servomotor with the instantaneous max. torque of 350%.
- The stainless steel Disk allows the eccentricity, angular misalignment, and end-play.

- Application

Actuator / Surface-mount machine / High precision XY stage / Index table

- Part number specification

XHW-34C-10-11

Product code Size bore diameter

Please refer to dimensional table for part number specification.

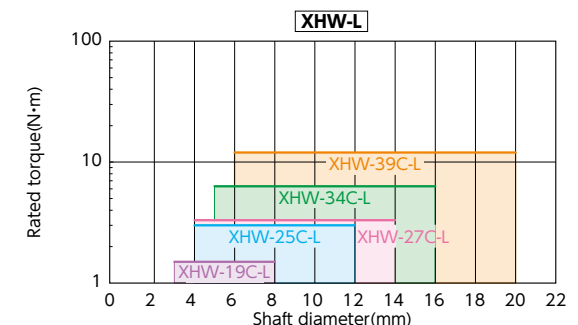
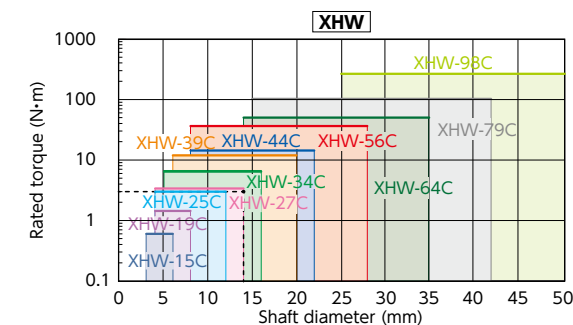
Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Please feel free to contact us



Selection

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



- Selection Example

In case of selected parameters of shaft diameter of ϕ 14 and load torque of 3 N·m, the selected size is

XHW-27C.

- Selection based on the rated output of the servomotor

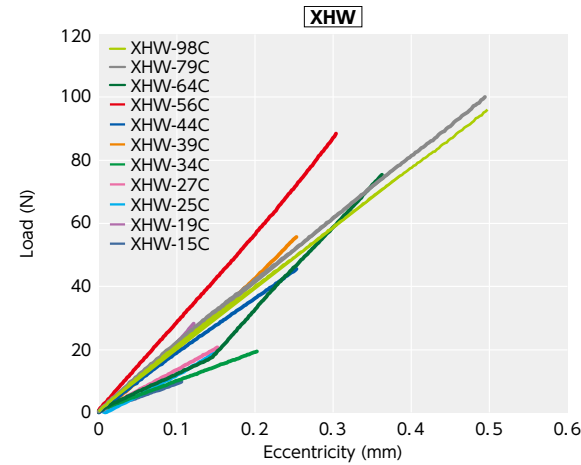
XHW supports the servomotor with instantaneous max. torque increased to 350% of the rated torque and the size can be more reduced than the size of conventional product **XBW**.

Rated Output (W)	Servomotor type				Servomotor Specifications*1			selection size	
	Mitsubishi Electric Corporation	YASKAWA Electric Corporation	SANYO DENKI Co., Ltd.	KEYENCE CORPORATION	Diameter of Motor Shaft (mm)	Rated Torque (N·m)	Instantaneous Max. Torque (N·m)	XHW-C	XBW-C
100					8	0.32	1.1	XHW-19C	XBW-25C
200					14	0.64	2.2	XHW-27C	XBW-34C
400	HG-KR	SGMJV	R2	SV	14	1.3	4.5	XHW-34C	XBW-39C
750					16 - 19	2.4	8.4	XHW-39C	XBW-44C

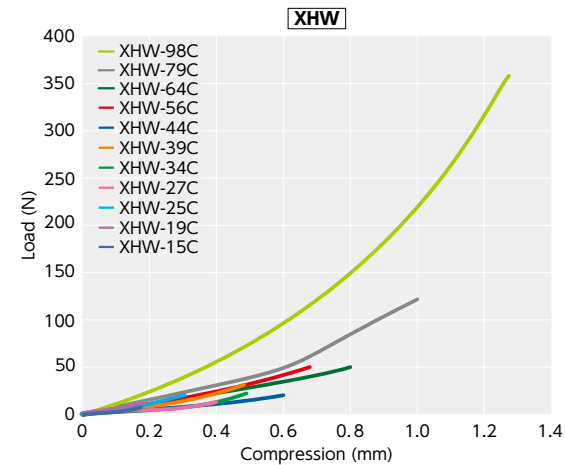
*1: Motor specifications are based on general values. For details, see the motor manufacturer's catalogs. This is the size for cases where devices such as reduction gears are not used.

Technical Information

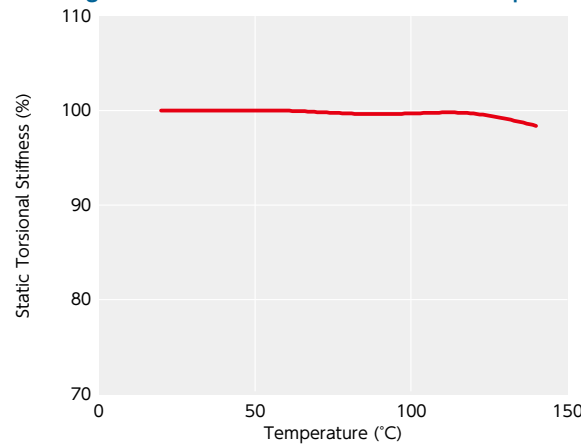
• Eccentric Reaction Force



• Thrust Reaction Force



• Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%. The change of **XHW** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

• Slip Torque

Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the rated torque of **XHW-C** **XHW-C-L**.

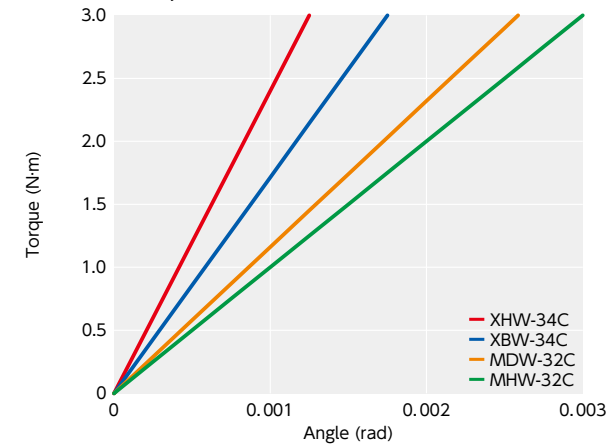
Part Number	Bore diameter (mm)								
	3	4	5	6	6.35	8	9.525	10	11
XHW-19C	0.7								
XHW-25C		2.5							
XHW-27C		2	2.9						
XHW-34C			3.5	4.9	5.5				
XHW-39C				6	8				
XHW-44C						8	13		
XHW-56C						22	34	37	
XHW-64C								23	42
XHW-19C-L	0.7								
XHW-25C-L		2.5							
XHW-27C-L		2	2.9						
XHW-34C-L			3.5	4.9	5.5				
XHW-39C-L				6	8				

• These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **XHW-C** **XHW-C-L** dimensional table.

• Comparison of static torsional stiffness (double disk-type)

XHW have high torsional stiffness and responsiveness.

Optimal for high-speed and precision positioning for servomotors, etc.



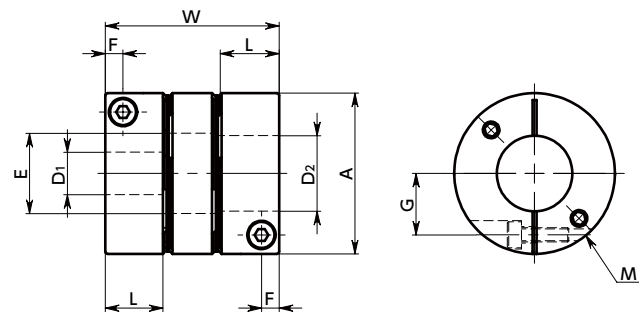
XHW-C / XHW-C-L Flexible Coupling - Disk - type Additional Size

WEB Selection Tool CAD Download Zero Backlash High torque High Rigidity

XHW-C



XHW-C-L

Outside diameter $\phi 15$

Dimensions

Unit : mm

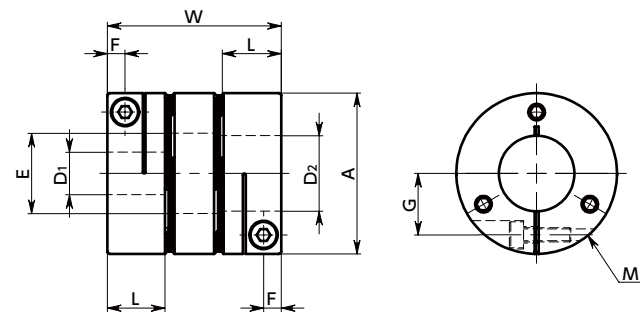
Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
XHW-15C	15	7.5	21.6	6.3	2.1	5	M2	0.45
XHW-19C	19	9.2	25.7	8.5	2.6	7	M2	0.5
XHW-25C	25	11	32.2	12.5	3.3	9.25	M2.5	1
XHW-27C	27	11	32.2	14.5	3.3	10.25	M2.5	1
XHW-34C	34	12.5	36.8	16.5	3.75	13	M3	1.5
XHW-39C	39	15.5	46.6	20.5	4.5	14.5	M4	3.5
XHW-44C	44	15.5	46.6	22.5	4.5	17	M4	3.5
XHW-56C	56	20.5	61.2	28.5	6	21	M5	8
XHW-64C	64	24	74.4	36	7	24	M6	13
XHW-79C	79	30	97.2	43	8.75	29	M8	28
XHW-98C	98	32	104	51	8.7	38	M8	28
XHW-19C-L	19	9.2	34	8.5	2.6	7	M2	0.5
XHW-25C-L	25	11	42	12.5	3.3	9.25	M2.5	1
XHW-27C-L	27	11	42	14.5	3.3	10.25	M2.5	1
XHW-34C-L	34	12.5	44	16.5	3.75	13	M3	1.5
XHW-39C-L	39	15.5	55	20.5	4.5	14.5	M4	3.5

Part Number	Standard Bore Diameter																												
	D1 • D2 																												
	3	4	5	6	6.35	8	9.525	10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	50
XHW-15C	●	●	●	●																									
XHW-19C	●	●	●	●	●	●																							
XHW-25C		●	●	●	●	●	●	●	●	●																			
XHW-27C		●	●	●	●	●	●	●	●	●	●																		
XHW-34C			●	●	●	●	●	●	●	●	●	●	●																
XHW-39C				●	●	●	●	●	●	●	●	●	●	●	●	●	●												
XHW-44C						●	●	●	●	●	●	●	●	●	●	●	●	●	●										
XHW-56C							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
XHW-64C								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
XHW-79C									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
XHW-98C																					●	●	●	●	●	●	●	●	
XHW-19C-L	●	●	●	●	●	●																							
XHW-25C-L		●	●	●	●	●	●	●	●	●	●																		
XHW-27C-L		●	●	●	●	●	●	●	●	●	●	●																	
XHW-34C-L			●	●	●	●	●	●	●	●	●	●	●	●															
XHW-39C-L				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●											

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Available / Add'l charge Available / Add'l charge Please feel free to contact us

Outside diameter $\phi 19 - \phi 98$

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XHW-15C	6	0.6	42000	3.0×10^{-7}	100	0.1	1.4	±0.2	9.4
XHW-19C	8	1.5	33000	8.8×10^{-7}	300	0.12	2	±0.2	17
XHW-25C	12	3	25000	3.4×10^{-6}	1000	0.15	2	±0.3	35
XHW-27C	14	3.3	23000	4.4×10^{-6}	1400	0.15	2	±0.4	39
XHW-34C	16	6.3	18000	1.3×10^{-5}	2500	0.2	2	±0.5	75
XHW-39C	20	12	16000	2.9×10^{-5}	4700	0.25	2	±0.5	123
XHW-44C	22	15	14000	4.7×10^{-5}	6400	0.25	2	±0.6	156
XHW-56C	28	37.5	11000	1.7×10^{-4}	12000	0.3	2	±0.7	340
XHW-64C	35	50	9800	3.3×10^{-4}	15000	0.35	2	±0.9	490
XHW-79C	42	100	7900	1.0×10^{-3}	22000	0.5	2	±1.1	1100
XHW-98C	50	280	6400	2.6×10^{-3}	47000	0.5	2	±1.3	1740
XHW-19C-L	8	1.5	33000	1.2×10^{-6}	300	0.25	2	±0.2	22
XHW-25C-L	12	3	25000	4.3×10^{-6}	1000	0.3	2	±0.3	45
XHW-27C-L	14	3.3	23000	5.8×10^{-6}	1400	0.3	2	±0.4	50
XHW-34C-L	16	6.3	18000	1.6×10^{-5}	2500	0.3	2	±0.5	89
XHW-39C-L	20	12	16000	3.4×10^{-5}	4700	0.4	2	±0.5	144

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

XHW-25C-L-8-10

XHS Flexible Coupling - Single Disk Type Additional Size

WEB Selection Tool CAD Download Zero Backlash High torque High Rigidity

Structure

- Clamping type → P.75

XHS-C Short Type



- Recommended applicable motor

	XHS
Servomotor	○
Stepping Motor	○
General-Purpose Motor	△

○: Excellent ○: Very good △: Available

- Property

	XHS
Zero Backlash	○
High gain supported	○
High Torque	○
High Torsional Stiffness	○
Allowable Misalignment	○

○: Excellent ○: Very good

- This is a single disk type flexible coupling.
- High-torque specification with rated torque 1.5 times higher than conventional products.
- This is the most appropriate for a servomotor with the instantaneous max. torque of 350%.
- The stainless steel disk allows the eccentricity, angular misalignment, and end-play.

- Application

Actuator / Surface-mount machine / High precision XY stage / Index table

- Material/Finish



	XHS
Hub	A2017 Alumite Treatment
Disk fixing bolt	SCM435 Ferrosioferric Oxide Film (Black)
Disk	SUS304
Collar	SUS304
Hex Socket Head Cap Screw	SCM435 Ferrosioferric Oxide Film (Black)

- Part number specification

XHS-27C-10-11

Product code Size bore diameter

Please refer to dimensional table for part number specification.

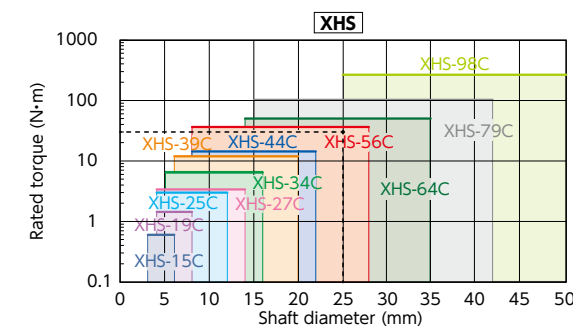
Additional Keyway at Shaft Hole → P.803 Available / Add'l charge
Cleanroom Wash & Packaging → P.807 Available / Add'l charge
Change to Stainless Steel Screw → P.805 Please feel free to contact us



Selection

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



- Selection Example

In case of selected parameters of shaft diameter of ϕ 25 and load torque of 30 N·m, the selected size is

XHS-56C.

- Selection based on the rated output of the servomotor

XHS supports the servomotor with instantaneous max. torque increased to 350% of the rated torque and the size can be more reduced than the size of conventional product **XBS**.

Rated Output (W)	Servomotor type				Servomotor Specifications*1			selection size	
	Mitsubishi Electric Corporation	YASKAWA Electric Corporation	SANYO DENKI Co., Ltd.	KEYENCE CORPORATION	Diameter of Motor Shaft (mm)	Rated Torque (N·m)	Instantaneous Max. Torque (N·m)	XHS-C	XBS-C
100					8	0.32	1.1	XHS-19C	XBS-25C
200					14	0.64	2.2	XHS-27C	XBS-34C
400	HG-KR	SGMJV	R2	SV	14	1.3	4.5	XHS-34C	XBS-39C
750					16 - 19	2.4	8.4	XHS-39C	XBS-44C

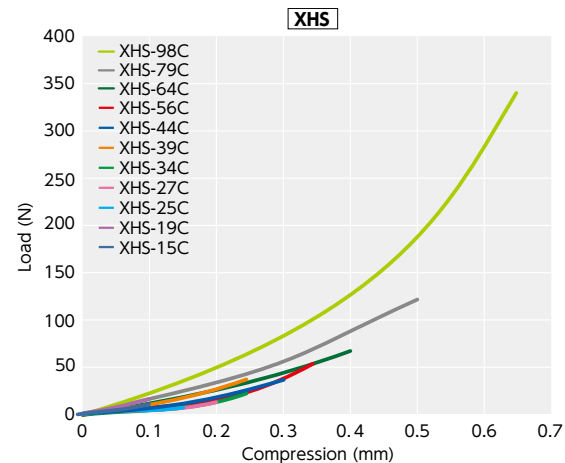
*1: Motor specifications are based on general values. For details, see the motor manufacturer's catalogs. This is the size for cases where devices such as reduction gears are not used.

XHS Flexible Coupling - Single Disk Type Additional Size

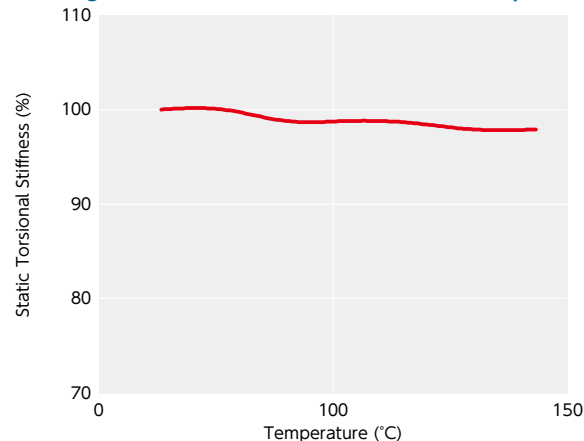
WEB Selection Tool WEB CAD Download 0 Zero Backlash High torque High Rigidity

Technical Information

Thrust Reaction Force



Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%. The change of **XHS** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

Slip Torque

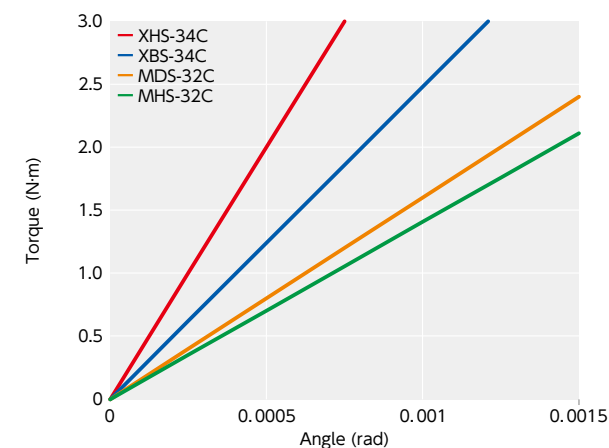
Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the rated torque of **XHS-C**.

Part Number	Bore Diameter (mm)									Unit : N · m
	3	4	5	6	6.35	8	9.525	10	11	
XHS-19C	0.7									
XHS-25C		2.5								
XHS-27C		2	2.9							
XHS-34C			3.5	4.9	5.5					
XHS-39C				6	8					
XHS-44C						8	13			
XHS-56C						22	34	37		
XHS-64C								23	42	

These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **XHS-C** dimensional table.

Comparison of static torsional stiffness (single disk-type)

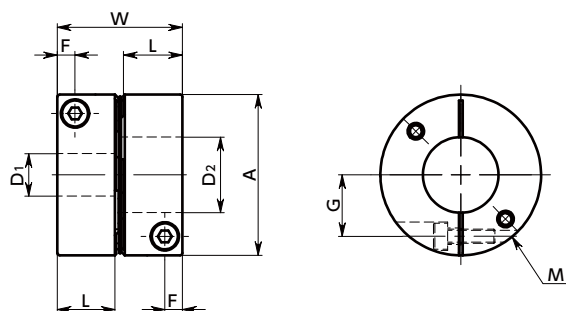
XHS have high torsional stiffness and responsiveness. Optimal for high-speed and precision positioning for servomotors, etc.



XHS-C Flexible Coupling - Single Disk Type Additional Size

WEB Selection Tool CAD Download Zero Backlash High torque High Rigidity

XHS-C

Outside diameter $\phi 15$

Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
XHS-15C	15	7.5	15.8	2.1	5	M2	0.45
XHS-19C	19	9.2	19.4	2.6	7	M2	0.5
XHS-25C	25	11	23.1	3.3	9.25	M2.5	1
XHS-27C	27	11	23.1	3.3	10.25	M2.5	1
XHS-34C	34	12.5	26.5	3.75	13	M3	1.5
XHS-39C	39	15.5	32.8	4.5	14.5	M4	3.5
XHS-44C	44	15.5	32.8	4.5	17	M4	3.5
XHS-56C	56	20.5	43.2	6	21	M5	8
XHS-64C	64	24	51.2	7	24	M6	13
XHS-79C	79	30	63.6	8.75	29	M8	28
XHS-98C	98	32	69	8.7	38	M8	28

Part Number	Standard Bore Diameter																												
	D1	D2																											
	3	4	5	6	6.35	8	9.525	10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	50
XHS-15C	●	●	●	●																									
XHS-19C	●	●	●	●	●	●																							
XHS-25C		●	●	●	●	●	●	●	●	●																			
XHS-27C		●	●	●	●	●	●	●	●	●	●																		
XHS-34C			●	●	●	●	●	●	●	●	●	●	●																
XHS-39C				●	●	●	●	●	●	●	●	●	●	●	●	●	●												
XHS-44C						●	●	●	●	●	●	●	●	●	●	●	●	●	●										
XHS-56C						●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●							
XHS-64C								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
XHS-79C											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XHS-98C																					●	●	●	●	●	●	●	●	●

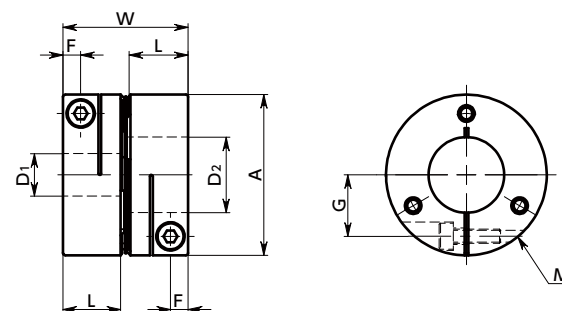
- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Available / Add'l charge

Available / Add'l charge

Please feel free to contact us

Outside diameter $\phi 19 - \phi 98$

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XHS-15C	6	0.6	42000	2.2×10^{-7}	110	0.01	0.7		6.6
XHS-19C	8	1.5	33000	6.3×10^{-7}	330	0.02	1	±0.1	13
XHS-25C	12	3	25000	2.3×10^{-6}	1200	0.02	1	±0.15	25
XHS-27C	14	3.3	23000	3.1×10^{-6}	1800	0.02	1	±0.2	27
XHS-34C	16	6.3	18000	9.2×10^{-6}	3900	0.02	1	±0.25	52
XHS-39C	20	12	16000	2.0×10^{-5}	6000	0.02	1	±0.25	84
XHS-44C	22	15	14000	3.3×10^{-5}	7900	0.02	1	±0.3	107
XHS-56C	28	37.5	11000	1.1×10^{-4}	14000	0.02	1	±0.35	233
XHS-64C	35	50	9800	2.2×10^{-4}	16000	0.02	1		328
XHS-79C	42	100	7900	6.7×10^{-4}	23000	0.02	1		748
XHS-98C	50	280	6400	1.7×10^{-3}	52000	0.02	1	±0.65	1120

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

XHS-27C-8-10

1

2

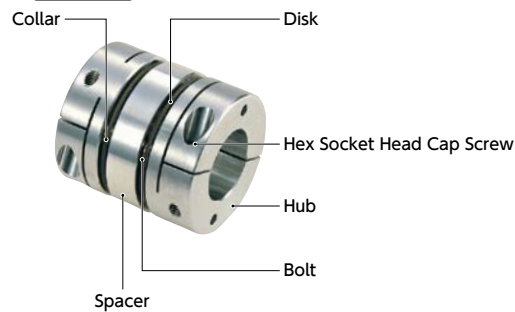
XBWS Flexible Coupling - Disk Type

WEB Selection Tool CAD Download 0 Zero Backlash High Rigidity SUS Stainless steel

Structure

- Clamping type → P.81

XBWS-C Made of all stainless steel



- Recommended applicable motor

	XBWS
Servomotor	○
Stepping motor	○
General-purpose motor	△

○: Excellent ○: Very good △: Available

- Property

	XBWS
Zero Backlash	○
High Torque	○
High Torsional Stiffness	○
Allowable Misalignment	○
Corrosion Resistance (All S.S.)	○

○: Excellent ○: Very good

- This is a disk type flexible coupling.
- The stainless steel disk allows the eccentricity, angular misalignment and end-play.
- Wide variation of outside diameter ϕ 15 - ϕ 104 and bore diameter ϕ 3 - ϕ 50.
- XBWS** is the all stainless steel type with stainless steel hubs.

- Application

Actuator/ Surface-mount machine/ High precision XY stage/ Index table

- Material/Finish



	XBWS-C
Hub	SUS303
Spacer	SUS303
Bolt	SUSXM7
Disk	SUS304
Collar	SUS304
Hex Socket Head Cap Screw	SUSXM7

Related Products

The Double-Disk type Flexible Coupling **XHW** is compatible with the servomotor with 350% instantaneous max. torque is available.

→ P.65



- Part number specification

XBWS-25C2A-8-8

Product Code Size Bore Diameter

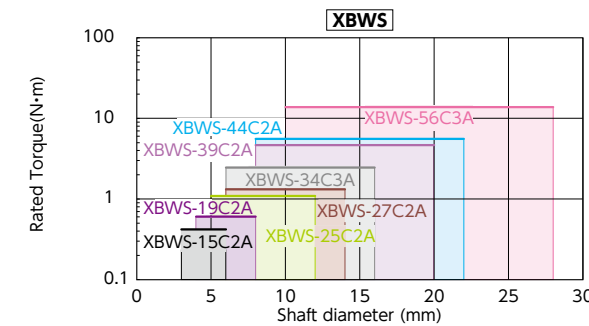
Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	SUS Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

Selection

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



- Selection example

In case of selected parameters of shaft diameter of ϕ 15 and load torque of 2 N·m, the selection size is

XBWS-34C3A.

- Selection based on the rated output of the servomotor

Rated output (W)	Servomotor specifications*1			Selection size
	Diameter of motor shaft (mm)	Rated torque (N·m)	Instantaneous max. torque (N·m)	XBWS-C Made of all stainless steel
10	5 - 6	0.032	0.096	XBWS-15C
20	5 - 6	0.064	0.19	XBWS-15C
30	5 - 7	0.096	0.29	XBWS-19C
50	6 - 8	0.16	0.48	XBWS-19C
100	8	0.32	0.95	XBWS-25C
200	9 - 14	0.64	1.9	XBWS-34C
400	14	1.3	3.8	XBWS-39C
750	16 - 19	2.4	7.2	XBWS-56C

*1: Motor specifications are based on general values. For details, please refer to catalogs of each motor manufacturers. Recommended sizes are for the cases where reduction gears are not used.

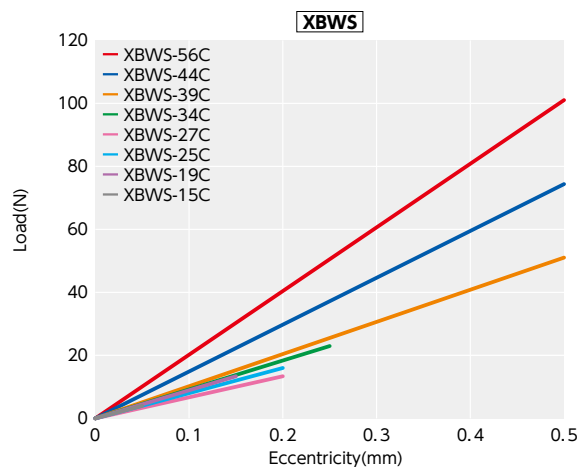


XBWS Flexible Coupling - Disk Type

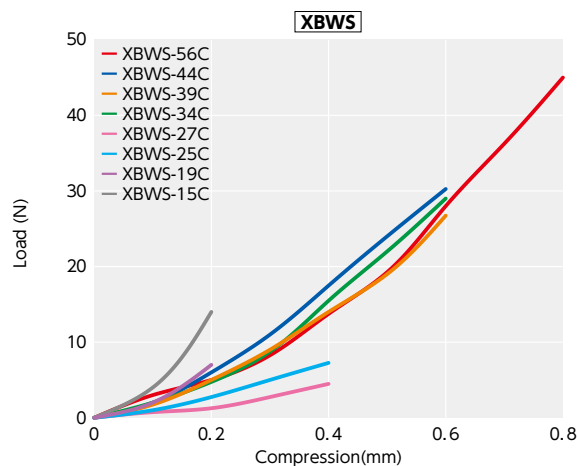
WEB Selection Tool CAD Download SUS Stainless steel 0 Zero Backlash High Rigidity

Technical Information

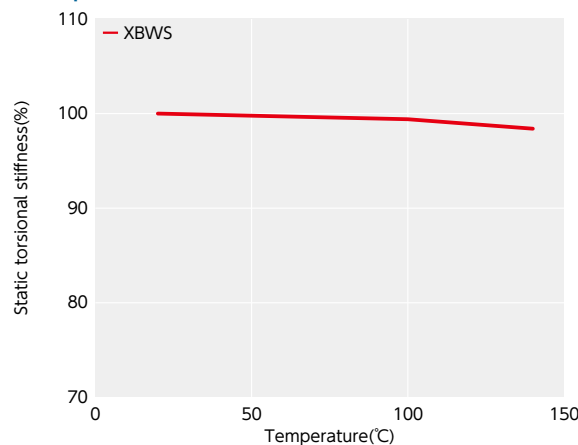
• Eccentric Reaction Force



• Thrust Reaction Force



• Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%. The change of **XBWS** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

• Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the rated torque of **XBWS-C**.

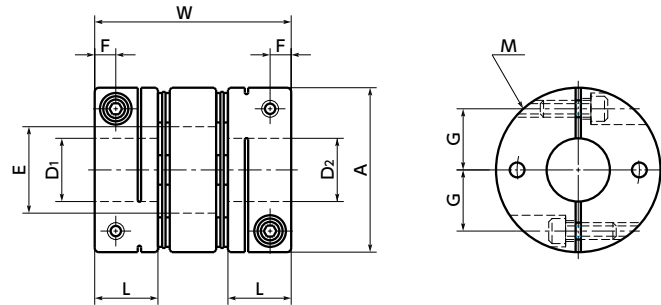
Part Number	Bore Diameter (mm)		
	8	10	11
XBWS-44C2A	4.5		
XBWS-56C3A		9	13

- These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **XBWS-C** Dimension table.

XBWS-C Flexible Coupling - Disk Type

WEB Selection Tool WEB CAD Download 0 Zero Backlash High Rigidity

XBWS-C Made of all stainless steel



Dimensions

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N・m)
XBWS-15C2A	15	7.5	22	6.1	2.3	5.25	M2	0.5
XBWS-19C2A	19	9	25.5	8.5	2.5	7.1	M2	0.5
XBWS-25C2A	25	11	32.2	12.5	3.5	9.25	M2.5	1
XBWS-27C2A	27	11	32.2	14.5	3.5	10.25	M2.5	1
XBWS-34C3A	34	12	37.4	16.5	4	13	M3	1.5
XBWS-39C2A	39	15	46.6	20.5	5	14.5	M4	3.5
XBWS-44C2A	44	15	46.6	23	5	17	M4	3.5
XBWS-56C3A	56	20	60.4	29	6	21.25	M5	8

Part Number	Standard Bore Diameter																	
	D1・D2 																	
	3	4	5	6	8	10	11	12	14	15	16	18	19	20	22	24	25	28
XBWS-15C2A	●	●	●	●														
XBWS-19C2A		●	●	●	●													
XBWS-25C2A			●	●	●	●	●	●										
XBWS-27C2A				●	●	●	●	●	●									
XBWS-34C3A				●	●	●	●	●	●	●	●							
XBWS-39C2A					●	●	●	●	●	●	●	●	●	●				
XBWS-44C2A					●	●	●	●	●	●	●	●	●	●	●			
XBWS-56C3A						●	●	●	●	●	●	●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XBWS-15C2A	6	0.42	42000	5.0×10 ⁻⁷	300	0.05	1	±0.2	20
XBWS-19C2A	8	0.6	33000	1.6×10 ⁻⁶	550	0.15	2	±0.2	38
XBWS-25C2A	12	1.1	25000	6.1×10 ⁻⁶	1100	0.2	2	±0.4	71
XBWS-27C2A	14	1.3	23000	8.2×10 ⁻⁶	1300	0.2	2	±0.4	88
XBWS-34C3A	16	2.5	18000	2.5×10 ⁻⁵	1800	0.25	2	±0.6	160
XBWS-39C2A	20	4.8	16000	5.1×10 ⁻⁵	3500	0.3	2	±0.6	260
XBWS-44C2A	22	5.6	14000	8.9×10 ⁻⁵	5500	0.3	2	±0.6	400
XBWS-56C3A	28	14	11000	2.9×10 ⁻⁴	10000	0.3	2	±0.8	800

*1: Correction of rated torque and max. torque due to load fluctuation is not required.

*2: These are values with max. bore diameter.

- Part number specification

XBWS-27C2A- 11-12



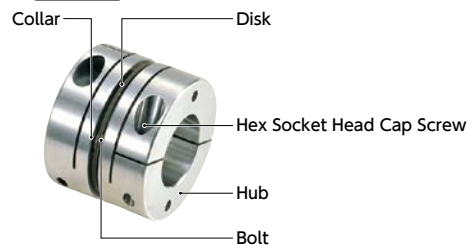
Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

XBSS Flexible Coupling - Single - Disk Type

WEB Selection Tool CAD Download 0 Zero Backlash High Rigidity SUS Stainless steel

Structure

- Clamping type → P.87
- XBSS-C** Made of all stainless steel



- Recommended applicable motor

	XBSS
Servomotor	○
Stepping motor	○
General-purpose motor	△

○: Excellent ○: Very good △: Available

- Property

	XBSS
Zero Backlash	○
High Torque	○
High Torsional Stiffness	○
Allowable Misalignment	○
Corrosion Resistance (All S.S.)	○

○: Excellent ○: Very good

- This is a disk type flexible coupling.
- It has compact design with short entire length.
- The stainless steel disk allows the eccentricity, angular misalignment and end-play.
- Wide variation of outside diameter ϕ 15 - ϕ 104 and bore diameter ϕ 3 - ϕ 50.
- XBSS** is the all stainless steel type with stainless steel hubs.

- Application

Actuator / Surface-mount machine / High precision XY stage / Index table

- Material/Finish



	XBSS-C
Hub	SUS303
Bolt	SUSXM7
Disk	SUS304
Collar	SUS304
Hex Socket Head Cap Screw	SUSXM7

Related Products

The Single-Disk type Flexible Coupling **XHS** is compatible with the servomotor with 350% instantaneous max. torque is available.

→ P.71



- Part number specification

XBSS-25C2A-8-8

Product Code Size Bore Diameter

Please refer to dimensional table for part number specification.

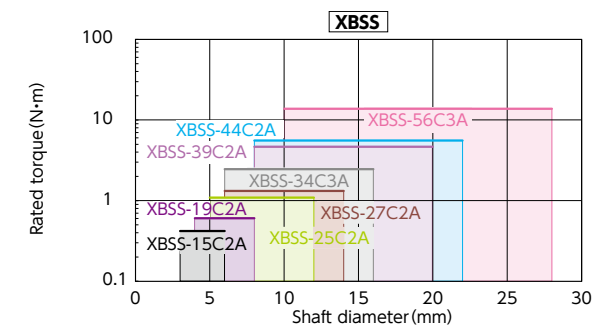
Additional Keyway at Shaft Hole → P.803 Available / Add'l charge

Cleanroom Wash & Packaging → P.807 Available / Add'l charge

SUS Change to Stainless Steel Screw → P.805 Available / Add'l charge

Selection

- Selection based on shaft diameter and rated torque



- Selection example

In case of selected parameters of shaft diameter of ϕ 15 and load torque of 2 N·m, the selected size is

XBSS-34C3A.

- Selection based on the rated output of the servomotor

Rated output (W)	Servomotor specifications*1			Selection size
	Diameter of motor shaft (mm)	Rated torque (N·m)	Instantaneous max. torque (N·m)	XBSS-C Made of all stainless steel
10	5 - 6	0.032	0.096	XBSS-15C
20	5 - 6	0.064	0.19	XBSS-15C
30	5 - 7	0.096	0.29	XBSS-19C
50	6 - 8	0.16	0.48	XBSS-19C
100	8	0.32	0.95	XBSS-25C
200	9 - 14	0.64	1.9	XBSS-34C
400	14	1.3	3.8	XBSS-39C
750	16 - 19	2.4	7.2	XBSS-56C

*1: Motor specifications are based on general values. For details, please refer to catalogs of each motor manufacturers. Recommended sizes are for the cases where reduction gears are not used.

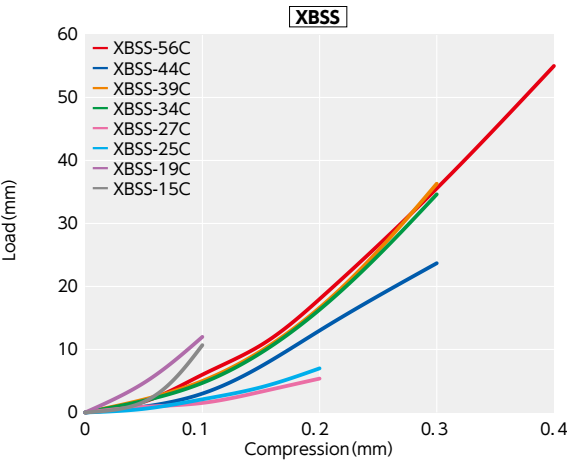


XBSS Flexible Coupling - Single - Disk Type

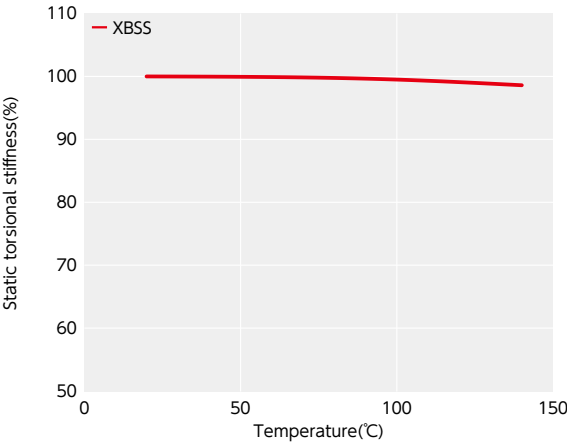
WEB Selection Tool WEB CAD Download SUS Stainless steel 0 Zero Backlash High Rigidity

Technical Information

Thrust Reaction Force



Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%. The change of **XBSS** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the rated torque of **XBSS-C**

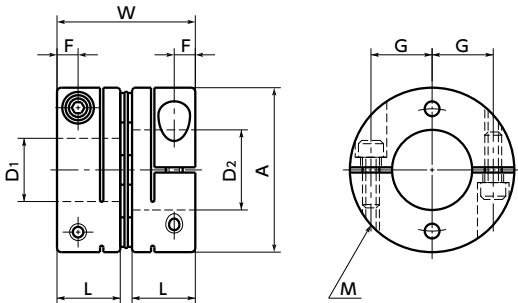
Part Number	Bore Diameter (mm)		
	8	10	11
XBSS-44C2A	4.5		
XBSS-56C3A		9	13

These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **XBSS-C** Dimension table.

XBSS-C Flexible Coupling - Single - Disk Type

WEB Selection Tool WEB CAD Download 0 Zero Backlash High Rigidity

XBSS-C Made of all stainless steel



Dimensions

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N・m)
XBSS-15C2A	15	7.5	16	2.3	5.25	M2	0.5
XBSS-19C2A	19	9	19	2.5	7.1	M2	0.5
XBSS-25C2A	25	11	23.6	3.5	9.25	M2.5	1
XBSS-27C2A	27	11	23.6	3.5	10.25	M2.5	1
XBSS-34C3A	34	12	26.2	4	13	M3	1.5
XBSS-39C2A	39	15	32.8	5	14.5	M4	3.5
XBSS-44C2A	44	15	32.8	5	17	M4	3.5
XBSS-56C3A	56	20	43.2	6	21.25	M5	8

Part Number	Stock Bores																		
	D1-D2 																		
	3	4	5	6	8	10	11	12	14	15	16	18	19	20	22	24	25	28	
XBSS-15C2A	●	●	●	●															
XBSS-19C2A		●	●	●	●														
XBSS-25C2A			●		●	●	●	●											
XBSS-27C2A				●	●	●	●	●	●										
XBSS-34C3A				●	●	●	●	●	●	●	●								
XBSS-39C2A					●	●	●	●	●	●	●	●	●	●					
XBSS-44C2A					●	●	●	●	●	●	●	●	●	●	●				
XBSS-56C3A						●	●	●	●	●	●	●	●	●	●	●	●	●	

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XBSS-15C2A	6	0.42	42000	2.3×10 ⁻⁷	500	0.02	0.5	±0.1	15
XBSS-19C2A	8	0.6	33000	7.4×10 ⁻⁷	1000	0.02	1	±0.1	29
XBSS-25C2A	12	1.1	25000	2.8×10 ⁻⁶	1500	0.02	1	±0.2	53
XBSS-27C2A	14	1.3	23000	3.8×10 ⁻⁶	2100	0.02	1	±0.2	67
XBSS-34C3A	16	2.5	18000	1.1×10 ⁻⁵	3800	0.02	1	±0.3	115
XBSS-39C2A	20	4.8	16000	2.3×10 ⁻⁵	5500	0.02	1	±0.3	185
XBSS-44C2A	22	5.6	14000	3.9×10 ⁻⁵	7000	0.02	1	±0.3	305
XBSS-56C3A	28	14	11000	1.4×10 ⁻⁴	15000	0.02	1	±0.4	610

*1: Correction of rated torque and max. torque due to load fluctuation is not required.
*2: These are values with max. bore diameter.

- Part number specification

XBSS-39C2A-12-14

1

2

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

MDW Flexible Coupling - Disk Type

WEB Selection Tool CAD Download 0 Zero Backlash SUS Stainless steel

Structure

● Clamping type

MDW-C



● Applicable motors..

	MDW
Servomotor	○
Stepping motor	○
General-purpose motor	○

○: Excellent ○: Very good

● Property

	MDW
Zero Backlash	○
Allowable Misalignment	○

○: Excellent ○: Very good

- This is a disk type flexible coupling.
- The stainless steel disk allows the eccentricity, and angular misalignment, and end-play.

● Application

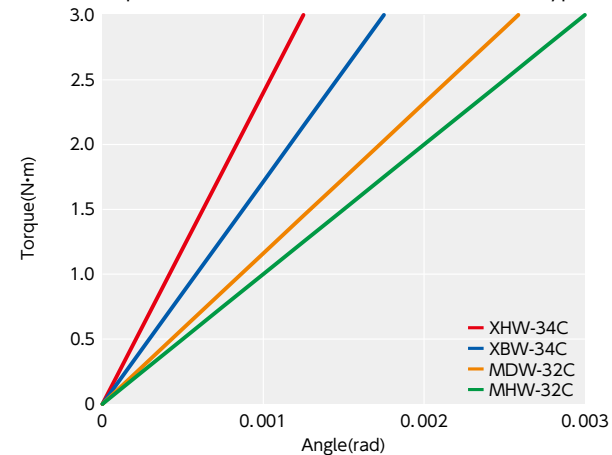
Actuator/XY stage

● Material/Finish

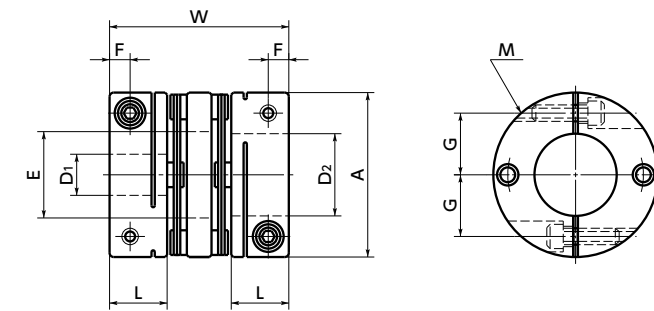
RoHS2 Compliant

	MDW-C
Hub	A2017 Alumite Treatment
Spacer	A2017 Alumite Treatment
Disk	SUS304
Pin	SUS303
Collar	SUS303
Hex Socket Head Cap Screw	SCM435 Ferrosoferric oxide film

● Comparison of static torsional stiffness (disk-type)



MDW-C



Dimensions

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
MDW-19C	19	8	27	8.5	2.5	6.5	M2	0.5
MDW-25C	25	10	31	12.5	3.5	9	M2.5	1
MDW-32C	32	12	40	16	4	11	M3	1.5
MDW-40C	40	14	44	21	5	15	M4	2.5
MDW-50C	50	18	57	26	6	18	M5	7
MDW-63C	63	20	61	35	7	24	M6	12

Unit : mm

Part Number	Standard Bore Diameter D1 • D2 2																								
	4	5	6	6.35	7	8	9	10	11	12	14	15	16	17	18	19	20	22	24	25	28	30			
MDW-19C	●	●	●		●	●																			
MDW-25C			●	●		●	●	●	●	●															
MDW-32C						●		●	●	●	●	●													
MDW-40C						●		●	●	●	●	●	●	●	●	●	●								
MDW-50C											●	●	●	●	●	●	●	●	●	●					
MDW-63C												●	●	●	●	●	●	●	●	●	●	●	●		

● All products are provided with hex socket head cap screw.

● Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

● In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MDW-19C	8	0.7	33000	8.7×10^{-7}	200	0.12	1.5	±0.5	18
MDW-25C	12	1	25000	2.7×10^{-6}	450	0.12	1.5	±0.5	25
MDW-32C	15	2.5	19000	9.6×10^{-6}	1100	0.15	1.5	±0.5	60
MDW-40C	20	3.5	15000	1.9×10^{-5}	1400	0.15	1.5	±0.5	100
MDW-50C	25	9	12000	8.1×10^{-5}	2200	0.15	1.5	±0.5	210
MDW-63C	30	12.5	10000	2.1×10^{-4}	3000	0.15	1.5	±0.5	340

*1: Correction of rated torque due to load fluctuation is not required.

*2: These are values with max. bore diameter.

● Related Products

The Double-Disk type Flexible Coupling **XHW** is compatible with the servomotor with 350% instantaneous max. torque is available.
→ P.65



● Part number specification

MDW-25C - 6-8

1 2

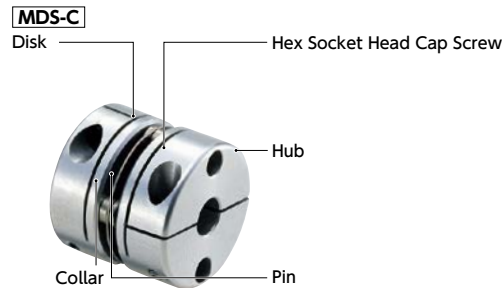
Additional Keyway at Shaft Hole → P.803 Available / Add'l charge
Cleanroom Wash & Packaging → P.807 Available / Add'l charge
Change to Stainless Steel Screw → P.805 Available / Add'l charge

MDS Flexible Coupling - Single - Disk Type

WEB Selection Tool WEB CAD Download 0 Zero Backlash

Structure

● Clamping type

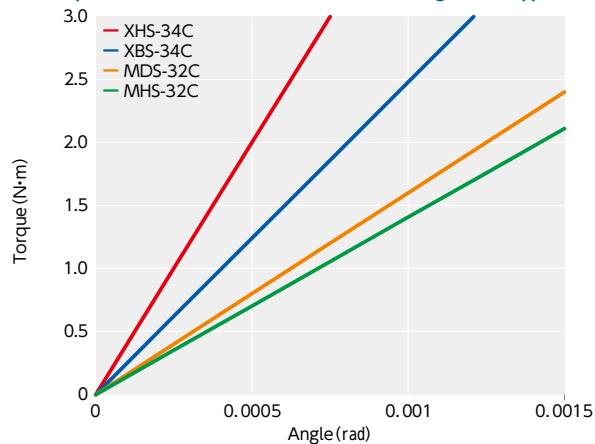


● Material/Finish

RoHS2 Compliant

	MDS-C
Hub	A2017 Alumite Treatment
Disk	SUS304
Pin	SUS303
Collar	SUS303
Hex Socket Head Cap Screw	SCM435 Ferrosferric oxide film

● Comparison of static torsional stiffness (single disk-type)



● Applicable motors

	MDS
Servomotor	○
Stepping motor	○
General-purpose motor	○

○: Excellent ○: Very good

● Property

	MDS
Zero Backlash	○
Allowable Misalignment	○

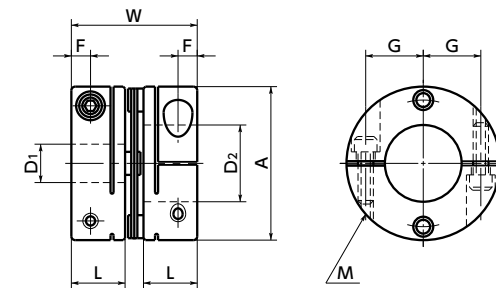
○: Excellent ○: Very good

- This is a disk type flexible coupling.
- It has compact design with short entire length.
- The stainless steel disk allows the eccentricity, and angular misalignment, and end-play.

● Application

Actuator/XY stage

MDS-C



Dimensions

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
MDS-19C	19	8	20	2.5	6.5	M2	0.5
MDS-25C	25	10	24	3.5	9	M2.5	1
MDS-32C	32	12	29	4	11	M3	1.5
MDS-40C	40	14	33	5	15	M4	2.5
MDS-50C	50	18	42	6	18	M5	7
MDS-63C	63	20	46	7	24	M6	12

Unit : mm

Part Number	Standard Bore Diameter D1・D2																
	4	5	6	6.35	7	8	9	10	11	12	14	15	16	17	18	19	20
MDS-19C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MDS-25C			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MDS-32C						●	●	●	●	●	●	●	●	●	●	●	●
MDS-40C						●	●	●	●	●	●	●	●	●	●	●	●
MDS-50C								●	●	●	●	●	●	●	●	●	●
MDS-63C											●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MDS-19C	8	0.7	33000	6.3×10 ⁻⁷	280	0.02	0.7	±0.2	9
MDS-25C	12	1	25000	2.1×10 ⁻⁶	630	0.02	0.7	±0.2	19
MDS-32C	15	2.5	19000	7.2×10 ⁻⁶	1600	0.02	0.7	±0.2	41
MDS-40C	20	3.5	15000	1.3×10 ⁻⁵	2600	0.02	0.7	±0.2	68
MDS-50C	25	9	12000	6.1×10 ⁻⁵	3100	0.02	0.7	±0.2	140
MDS-63C	30	12.5	10000	1.7×10 ⁻⁴	4200	0.02	0.7	±0.2	250

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

● Related Products

The Single-Disk type Flexible Coupling [XHS] is compatible with the servomotor with 350% instantaneous max. torque is available.
→ P.71



● Part number specification

MDS-32C-10-12

1 2

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

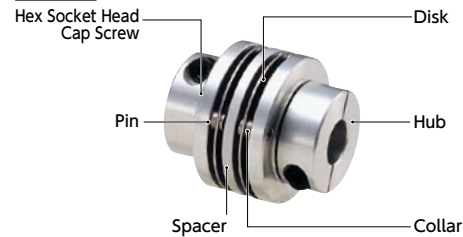
MHW Flexible Coupling - Disk Type

WEB Selection Tool WEB CAD Download 0 Zero Backlash

Structure

● Clamping type

MHW-C



● Applicable motors

	MHW
Servomotor	-
Stepping motor	○
General-purpose motor	○

○: Excellent ○: Very good

● Property

	MHW
Zero Backlash	○
Allowable Misalignment	○

○: Excellent ○: Very good

● This is a disk type flexible coupling.

- The stainless steel disk allows the eccentricity, and angular misalignment, and end-play.

● Application

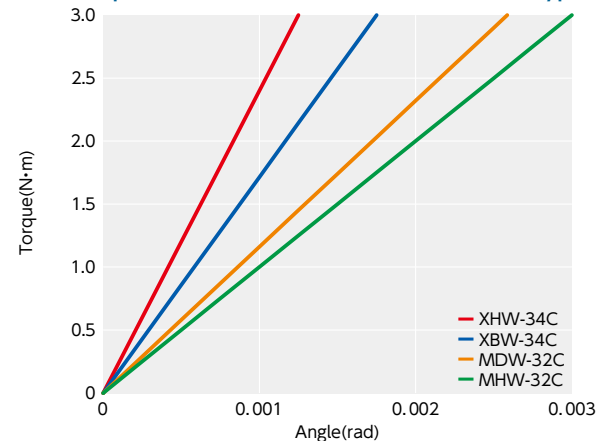
XY stage/Transport device

● Material/Finish

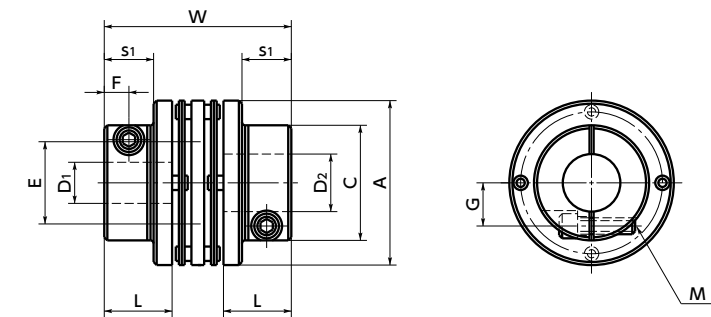
RoHS2 Compliant

	MHW-C
Hub	A2017 Alumite Treatment
Spacer	A2017 Alumite Treatment
Disk	SUS301
Pin	SUS303
Collar	SUS303
Hex Socket Head Cap Screw	SCM435 Ferrosoferric oxide film

● Comparison of static torsional stiffness (disk-type)



MHW-C



Dimensions

Part Number	A	L	W	C	s1	E	F	G	M	Screw Tightening Torque (N·m)
MHW-32C	32	13.7	40	22	9	15	4	8	M3	1.5
MHW-40C	40	16.5	46	28	12	20	6	10.5	M4	2.5
MHW-50C	50	19.4	52	39	15	25	7	14.75	M5	7
MHW-63C	63	22.3	58	45	18	32	8	17	M6	12

Unit: mm

Part Number	Standard Bore Diameter D1・D2											
	6	8	10	11	12	14	15	16	18	19	20	25
MHW-32C	●	●	●									
MHW-40C		●	●	●	●	●						
MHW-50C					●	●	●	●	●	●	●	
MHW-63C							●	●	●	●	●	●

- All products are provided with hex socket head cap screw.

- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MHW-32C	10	2	19000	6.2×10 ⁻⁶	1000	0.15	2	±0.4	48
MHW-40C	14	4	15000	1.6×10 ⁻⁵	1500	0.2	2	±0.5	81
MHW-50C	20	7.5	12000	4.6×10 ⁻⁵	2000	0.2	2	±0.6	150
MHW-63C	25	10	10000	1.1×10 ⁻⁴	2500	0.3	2	±0.8	230

*1: Correction of rated torque due to load fluctuation is not required.

*2: These are values with max. bore diameter.

● Related Products

The Double-Disk type Flexible Coupling [XHW] is compatible with the servomotor with 350% instantaneous max. torque is available.
→ P.65



● Part number specification

MHW-32C-8-10

1 2

Additional Keyway at Shaft Hole → P.803 Available / Add'l charge
Cleanroom Wash & Packaging → P.807 Available / Add'l charge
Change to Stainless Steel Screw → P.805 Available / Add'l charge

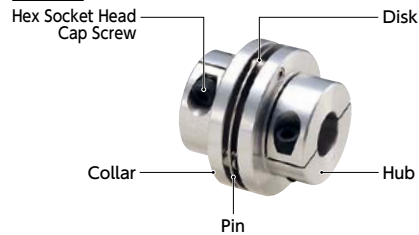
MHS Flexible Coupling - Single - Disk Type

WEB Selection Tool WEB CAD Download 0 Zero Backlash

Structure

● Clamping type

MHS-C



● Applicable motors

	MHS
Servomotor	-
Stepping motor	○
General-purpose motor	○

○: Excellent ○: Very good

● Property

	MHS
Zero Backlash	○
Allowable Misalignment	○

○: Excellent ○: Very good

● This is a disk type flexible coupling.

- The stainless steel disk allows the eccentricity, and angular misalignment and end-play.

● Application

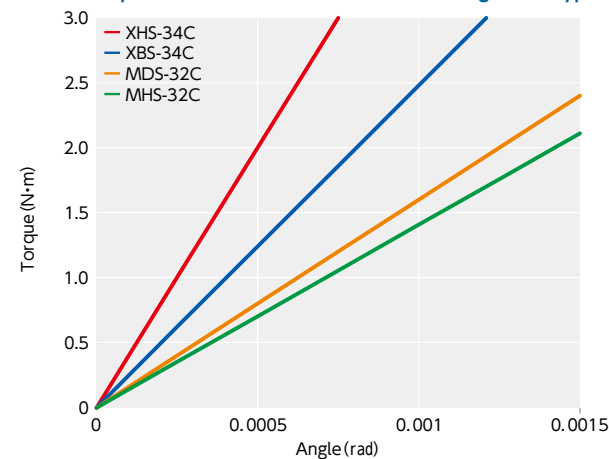
XY stage/Transport device

● Material/Finish

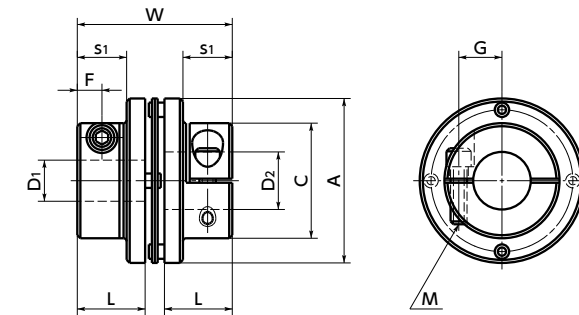
RoHS2 Compliant

	MHS-C
Hub	A2017 Alumite Treatment
Disk	SUS301
Pin	SUS303
Collar	SUS303
Hex Socket Head Cap Screw	SCM435 Ferrosioferic oxide film

● Comparison of static torsional stiffness (single disk-type)



MHS-C



Dimensions

Part Number	A	L	W	C	s1	F	G	M	Screw Tightening Torque (N·m)
MHS-32C	32	13.7	32	22	9	4	8	M3	1.5
MHS-40C	40	16.5	38	28	12	6	10.5	M4	2.5
MHS-50C	50	19.4	44	39	15	7	14.75	M5	7
MHS-63C	63	22.3	50	45	18	8	17	M6	12

Unit : mm

Part Number	Standard Bore Diameter												
	D1 • D2 	6	8	10	11	12	14	15	16	18	19	20	25
MHS-32C		●	●	●									
MHS-40C			●	●	●	●	●						
MHS-50C						●	●	●	●	●	●	●	
MHS-63C								●	●	●	●	●	●

- All products are provided with hex socket head cap screw.

- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MHS-32C	10	2	19000	4.5×10 ⁻⁶	1300	0.02	1	±0.2	38
MHS-40C	14	4	15000	1.2×10 ⁻⁵	2800	0.02	1	±0.2	66
MHS-50C	20	7.5	12000	3.7×10 ⁻⁵	3700	0.02	1	±0.2	120
MHS-63C	25	10	10000	8.4×10 ⁻⁵	5000	0.02	1	±0.2	190

*1: Correction of rated torque due to load fluctuation is not required.

*2: These are values with max. bore diameter.

● Related Products

The Single-Disk type Flexible Coupling [XHS] is compatible with the servomotor with 350% instantaneous max. torque is available.

→ P.71



● Part number specification

MHS-32C-8-10

1 2

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Available / Add'l charge

Available / Add'l charge

Available / Add'l charge

MSX Flexible coupling - Slit - type

WEB Selection Tool CAD Download 0 Zero Backlash High Rigidity

Structure

- Set Screw type

MSX → P.101



- Clamping type

MSX-C → P.103



- Applicable motors

	MSX
Servomotor	○
Stepping motor	○
General-purpose motor	○

○: Excellent ○: Very good

- Property

	MSX
Zero Backlash	○
High Torque	○
High Torsional Stiffness	○

○: Excellent ○: Very good

- This is a metal spring coupling with single-piece construction. A slit is inserted into a cylindrical material.
- It has an extremely high torsional stiffness and low moment of inertia.
- Extra super duralumin (A7075) featuring the highest strength among aluminum alloy is adopted.
- A plate spring formed by a slit allows eccentricity, angular misalignment, and end-play to be accepted.

- Application

Actuator/High precision XY stage/Index table

- Material/Finish



	MSX / MSX-C
Main Body	A7075 Alumite Treatment
Hex Socket Set Screw	SCM435 Ferrosioferric oxide film
Hex Socket Head Cap Screw	SCM435 Ferrosioferric oxide film

Related Products

The slit-type coupling **MSXP** in PEEK material can be used in an environment or cleanroom where heat and chemical resistance are required, such as FPD and semiconductor equipments.
→ P.231



- Part number specification

MSX-19C-5-6

Product Code size Bore diameter

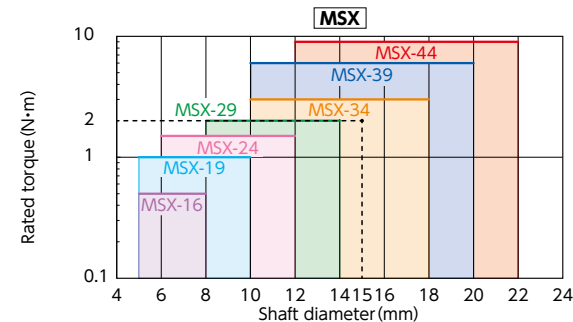
Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

Selection

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



- Selection example

In case of selected parameters of shaft diameter of ϕ 15 and load torque of 2 N·m, the selected size is

MSX-34 or **MSX-34C**.

- Selection based on the rated output of the servomotor

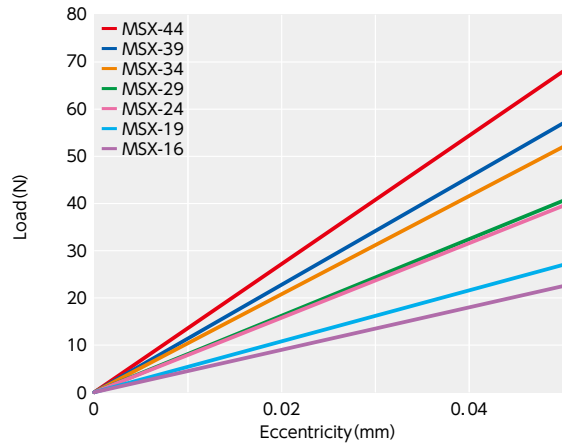
Rated output (W)	Servomotor Specifications*1			Selection size	
	Diameter of motor shaft (mm)	Rated torque (N·m)	Instantaneous max. torque (N·m)	MSX Set Screw Type	MSX-C Clamping type
10	5 - 6	0.032	0.096	MSX-16	MSX-16C
20	5 - 6	0.064	0.19	MSX-16	MSX-16C
30	5 - 7	0.096	0.29	MSX-19	MSX-19C
50	6 - 8	0.16	0.48	MSX-19	MSX-19C
100	8	0.32	0.95	MSX-19	MSX-19C
200	9 - 14	0.64	1.9	MSX-29	MSX-34C
400	14	1.3	3.8	MSX-39	MSX-39C
750	16 - 19	2.4	7.2	MSX-44	MSX-44C

*1: Motor specifications are based on general values. For details, see the motor manufacturer's catalogs. This is the size for cases where devices such as reduction gears are not used.

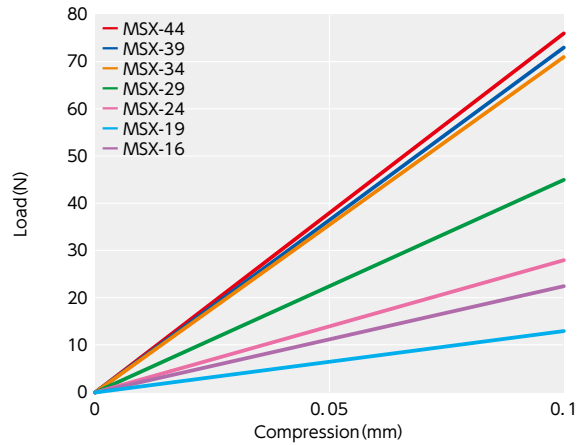


Technical Information

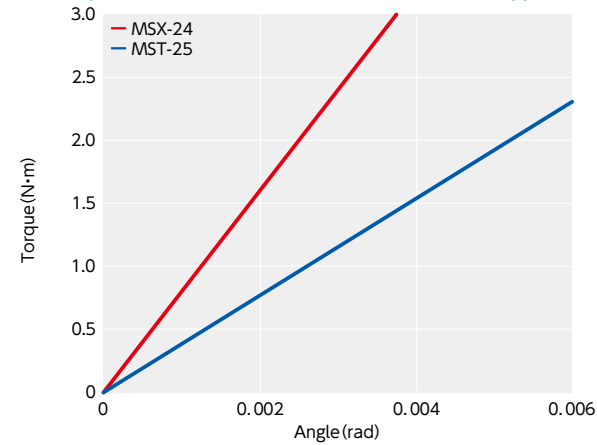
● Eccentric Reaction Force



● Thrust Reaction Force

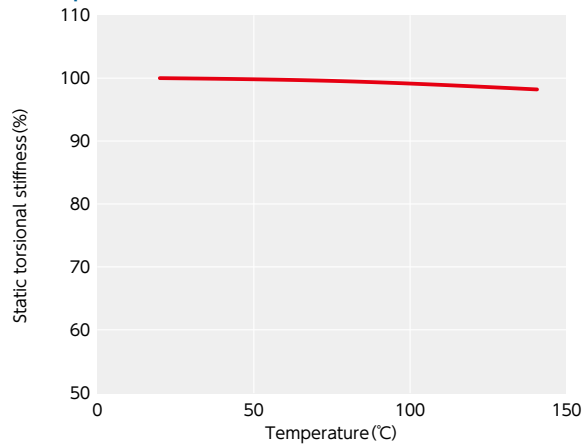


● Comparison of static torsional stiffness (slit-type)



MSX have high torsional stiffness and responsiveness. Optimal for high-speed and precision positioning for servomotors, etc.

● Change in static torsional stiffness due to temperature



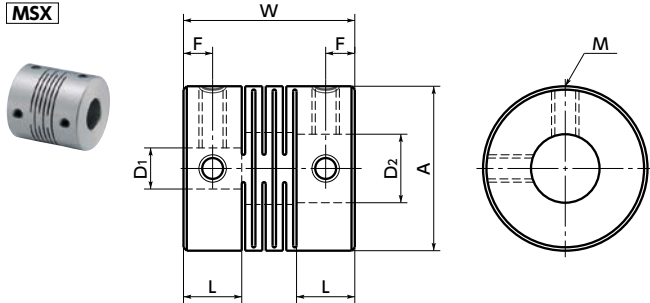
This is a value under the condition where the static torsional stiffness at 20°C is 100%.

MSX's change in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used under higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

MSX Flexible coupling - Slit - type - Set screw type

WEB Selection Tool CAD Download 0 Zero Backlash High Rigidity

MSX



Dimensions

Unit : mm

Part Number	A	L	W	F	M	Screw Tightening Torque (N・m)
MSX-16	16	6	17.4	3	M3	0.7
MSX-19	19	6.8	20	3.4	M3	0.7
MSX-24	24	8.5	25	4.25	M4	1.7
MSX-29	29	10.2	30	5.1	M4	1.7
MSX-34	34	12	35	6	M5	4
MSX-39	39	13.5	40	6.75	M5	4
MSX-44	44	15.5	45	7.75	M6	7

Part Number	Standard Bore Diameter (dimensional allowance H8) D1-D2 2							
MSX-16	5 - 5	5 - 6	6 - 6					
MSX-19	5 - 5 6.35 - 6.35	5 - 6 6.35 - 8	5 - 7 8 - 8	5 - 8 8 - 10	6 - 6 10 - 10	6 - 6.35	6 - 7	6 - 8
MSX-24	6 - 6 8 - 9.525	6 - 8 8 - 10	6 - 10 9.525 - 10	6.35 - 6.35 10 - 10	6.35 - 8 10 - 11	6.35 - 10 10 - 12	7 - 8 11 - 12	8 - 8 12 - 12
MSX-29	8 - 8 11 - 12	8 - 10 11 - 14	8 - 11 12 - 12	8 - 12 12 - 14	10 - 10	10 - 11	10 - 12	10 - 14
MSX-34	10 - 14 15 - 15	11 - 14 15 - 16	12 - 12 16 - 16	12 - 14	12 - 16	14 - 14	14 - 15	14 - 16
MSX-39	10 - 14 15 - 15	12 - 12 15 - 16	12 - 14 16 - 16	12 - 15	12 - 16	12 - 19	14 - 14	14 - 15
MSX-44	12 - 12 15 - 19	12 - 14 15 - 20	12 - 19 20 - 20	14 - 14	14 - 15	14 - 16	15 - 15	15 - 16

- All products are provided with hex socket set screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MSX-16	8	0.5	39000	2.8×10^{-7}	200	0.05	0.5	±0.1	7
MSX-19	10	1	33000	6.2×10^{-7}	270	0.05	0.5	±0.1	10
MSX-24	12	1.5	26000	2.0×10^{-6}	790	0.05	0.5	±0.1	22
MSX-29	14	2	21000	5.2×10^{-6}	1400	0.05	0.5	±0.1	40
MSX-34	18	3	18000	1.1×10^{-5}	2200	0.05	0.5	±0.1	64
MSX-39	20	6	16000	2.9×10^{-5}	4100	0.05	0.5	±0.1	90
MSX-44	22	9	14000	5.5×10^{-5}	5100	0.05	0.5	±0.1	133

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

MSX-19-5-6

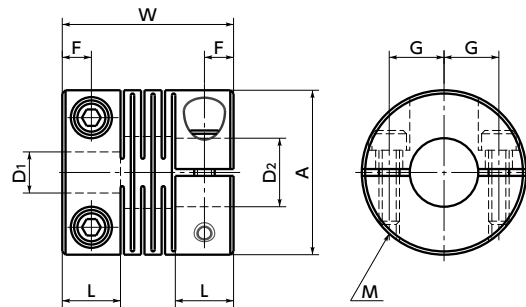
1 2

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

MSX-C Flexible coupling - Slit - type - Clamping type

WEB Selection Tool CAD Download 0 Zero Backlash High Rigidity

MSX-C Made of aluminum alloy



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
MSX-16C	16	6	17.4	3	4.74	M2	0.5
MSX-19C	19	6.8	20	3.4	5.6	M2.5	1
MSX-24C	24	8.5	25	4.25	8	M3	1.5
MSX-29C	29	10.2	30	5.1	9	M3	1.5
MSX-34C	34	12	35	6	11	M3	1.5
MSX-39C	39	13.5	40	6.75	14	M4	2.5
MSX-44C	44	15.5	45	7.75	16	M4	2.5

Part Number	Standard Bore Diameter D1-D2 2							
MSX-16C	5 - 5	5 - 6	6 - 6					
MSX-19C	5 - 5 6.35 - 6.35	5 - 6 6.35 - 8	5 - 7 8 - 8	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8
MSX-24C	6 - 6 8 - 9.525	6 - 8 8 - 10	6 - 10 9.525 - 10	6.35 - 6.35 10 - 10	6.35 - 8	6.35 - 10	7 - 8	8 - 8
MSX-29C	8 - 8 12 - 12	8 - 10	8 - 11	8 - 12	10 - 10	10 - 11	10 - 12	11 - 12
MSX-34C	10 - 14 15 - 15	11 - 14 15 - 16	12 - 12 16 - 16	12 - 14	12 - 16	14 - 14	14 - 15	14 - 16
MSX-39C	10 - 14 15 - 15	12 - 12 15 - 16	12 - 14 16 - 16	12 - 15	12 - 16	12 - 19	14 - 14	14 - 15
MSX-44C	12 - 12 15 - 19	12 - 14 15 - 20	12 - 19 20 - 20	14 - 14	14 - 15	14 - 16	15 - 15	15 - 16

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MSX-16C	6	0.5	39000	2.5×10^{-7}	200	0.05	0.5	±0.1	7
MSX-19C	8	1	33000	5.8×10^{-7}	270	0.05	0.5	±0.1	12
MSX-24C	10	1.5	26000	1.8×10^{-6}	790	0.05	0.5	±0.1	23
MSX-29C	12	2	21000	4.7×10^{-6}	1400	0.05	0.5	±0.1	41
MSX-34C	16	3	18000	1.1×10^{-5}	2200	0.05	0.5	±0.1	62
MSX-39C	20	6	16000	2.3×10^{-5}	4100	0.05	0.5	±0.1	88
MSX-44C	22	9	14000	4.3×10^{-5}	5100	0.05	0.5	±0.1	128

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

MSX-39C - 14-15

1 2

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

MST/MSTS Flexible coupling - Slit - type

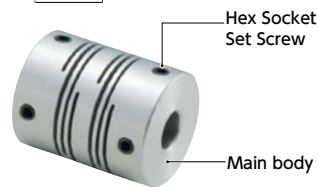
WEB Selection Tool CAD Download 0 Zero Backlash SUS Stainless steel

Structure

- Set Screw type → P.109

MST Made of aluminum alloy

MSTS Made of all stainless steel



- Clamping type → P.111

MST-C Made of aluminum alloy

MSTS-C Made of all stainless steel

Outside diameter $\phi 40 - \phi 63$



MSTS-C
Outside diameter $\phi 12 - \phi 32$



- Set Screw + Key type → P.113

MST-K Made of aluminum alloy



MSTS-K Made of all stainless steel



- Recommended applicable motor

	MST	MSTS
Servomotor	—	—
Stepping motor	○	○
General-purpose motor	△	△

○: Excellent ○: Very good △: Available

- Property

	MST	MSTS
Zero Backlash	○	○
High Torque	○	○
High Torsional Stiffness	○	○
Allowable Misalignment	○	○
Corrosion Resistance (All S.S.)	—	○

○: Excellent ○: Very good

- This is a metal spring coupling with single-piece construction. Slits are made into a cylindrical material.
- A plate spring formed by slits allows eccentricity, angular misalignment, and end-play to be accepted.
- There are two types of units made of aluminum alloy or all stainless steel.
- Wide variation of outside diameter $\phi 8 - \phi 63$.
- Application

Transport device/XY stage/Parts feeder

- Material/Finish



	MST / MST-C / MST-K	MSTS / MSTS-C / MSTS-K
Main Body	A2017 Alumite Treatment	SUS303
Hex Socket Set Screw	SCM435 Ferrosioferric oxide film	SUSXM7
Hex Socket Head Cap Screw	SCM435 Ferrosioferric oxide film	SUSXM7

- Related Products

Slit-type flexible coupling **MSX** with excellent torsional stiffness is available.
→ P.97



XSTS SUS316L material finished with clean washing and clean packaging, which is best suited for FPD and semiconductor manufacturing equipment, is available.
→ P.227



- Part number specification

MST-32K-12-12

Product Code Size Bore Diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803

Cleanroom Wash & Packaging → P.807

SUS Change to Stainless Steel Screw → P.805

Available / Add'l charge

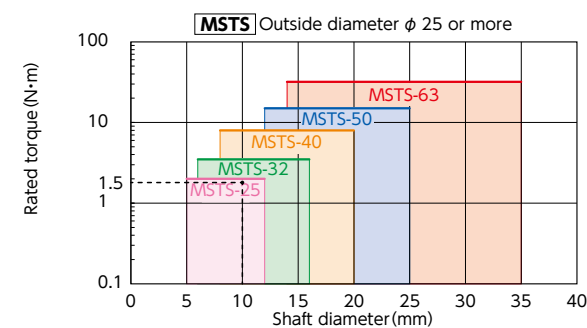
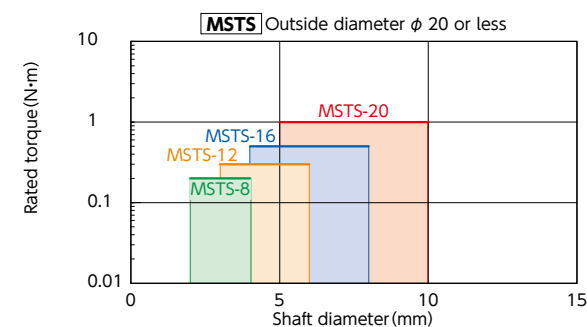
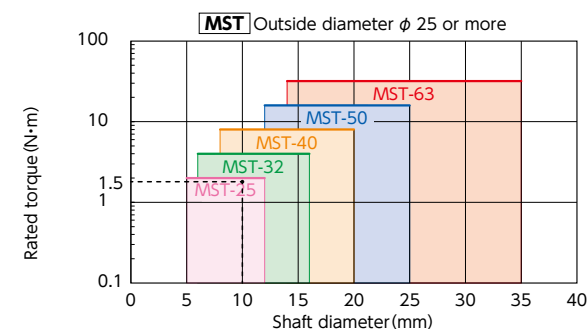
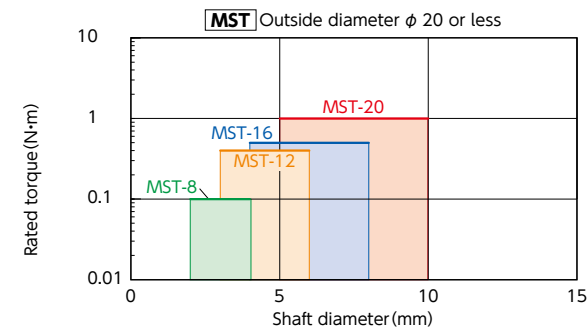
Available / Add'l charge

Available / Add'l charge

Selection

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



- Selection example

In case of selected parameters of shaft diameter of $\phi 10$ and load torque of 1.5 N·m, the selected size for

MST **MSTS** is **MST-25** **MSTS-25**

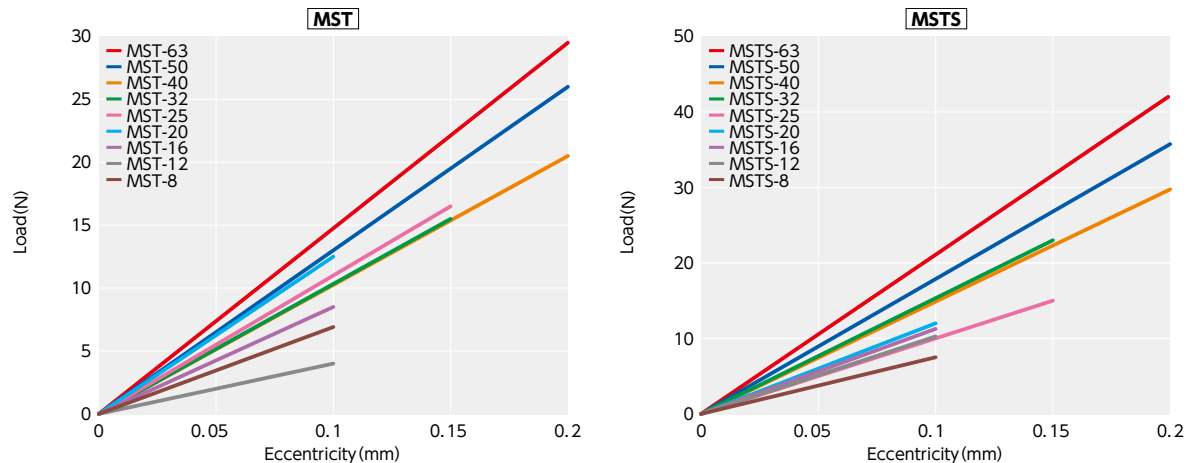


MST/MSTS Flexible coupling - Slit - type

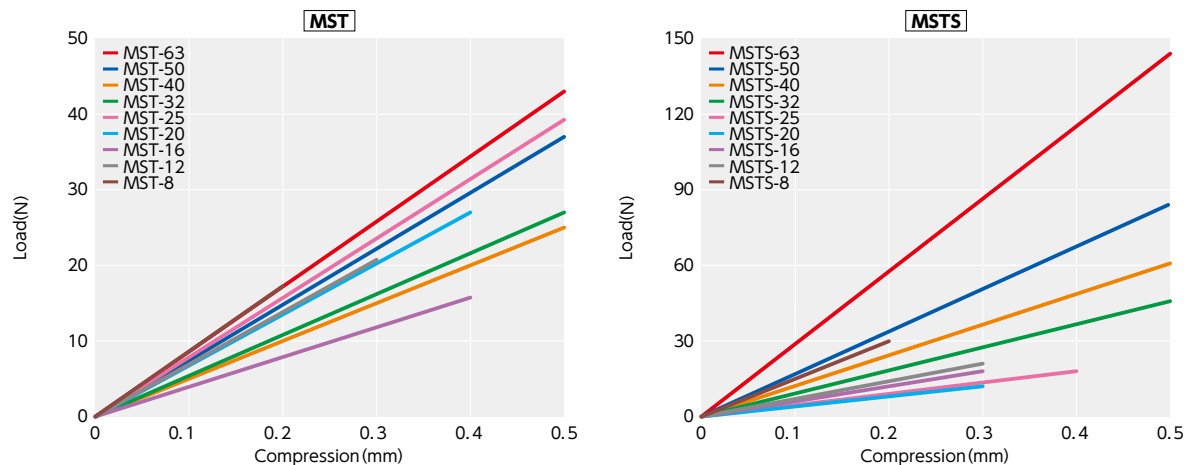
WEB Selection Tool CAD Download SUS Stainless steel 0 Zero Backlash

Technical Information

• Eccentric Reaction Force



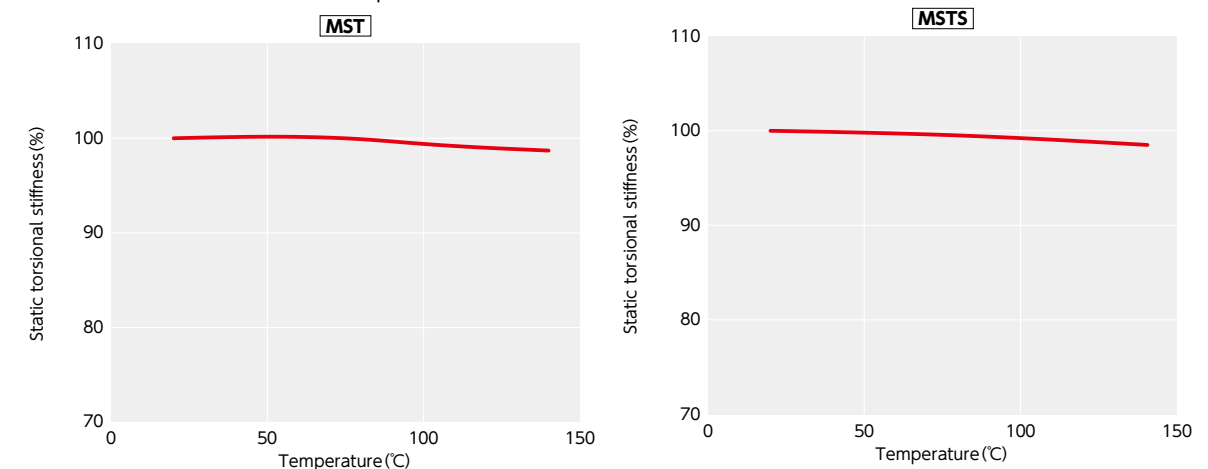
• Thrust Reaction Force



• Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20°C is 100%.

The change of **MST** **MSTS** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.



• Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the rated torque of **MST-C** **MSTS-C**.

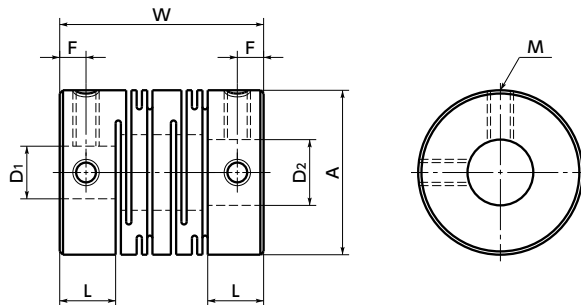
Part Number	Bore Diameter (mm)							Unit : N · m
	5	6	6.35	8	9.525	10	11	
MST-40C				7.1				
MSTS-25C	0.7	0.7	0.9	1.7				
MSTS-32C				1.2	2.1	2.7	2.9	
MSTS-63C								28.8

• These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **MST-C** **MSTS-C** Dimension table.

MST/MSTS Flexible coupling - Slit - type - Set screw type

WEB Selection Tool WEB CAD Download 0 Zero Backlash SUS Stainless steel

MST Made of aluminum alloy
MSTS Made of all stainless steel



Dimensions

Unit : mm

Part Number	A	L	W	F	M	Screw Tightening Torque (N·m)
MST-8	8	3.5	14	1.7	M2	0.3
MST-12	12	5	18.5	2.5	M2.5	0.5
MST-16	16	6.5	23	3	M3	0.7
MST-20	20	7.5	26	3	M3	0.7
MST-25	25	8.5	31	4	M4	1.7
MST-32	32	12	41	6	M4	1.7
MST-40	40	17	56	8.5	M5	4
MST-50	50	21	71	10.5	M6	7
MST-63	63	26	90	13	M8	15
MSTS-8	8	3.5	14	1.7	M2	0.3
MSTS-12	12	5	18.5	2.5	M2.5	0.5
MSTS-16	16	6.5	23	3	M3	0.7
MSTS-20	20	7.5	26	3	M3	0.7
MSTS-25	25	8.5	31	4	M4	1.7
MSTS-32	32	12	41	6	M4	1.7
MSTS-40	40	17	56	8.5	M5	4
MSTS-50	50	21	71	10.5	M6	7
MSTS-63	63	26	90	13	M8	15

Part Number	Standard Bore Diameter (dimensional allowance H8)							
	D1-D2							
MST-8	MSTS-8	2 - 2	2 - 3	3 - 3				
MST-12	MSTS-12	3 - 3	3 - 4	4 - 4	4 - 5	4.5 - 5	5 - 5	5 - 6
MST-16	MSTS-16	4 - 4 6 - 6.35	4 - 5 6 - 7	4 - 6 6 - 8	4.5 - 5 6.35 - 8	5 - 5	5 - 6	5 - 8 6 - 6
MST-20	MSTS-20	5 - 5 6.35 - 8	5 - 6 8 - 8	5 - 8 8 - 9.525*1	6 - 6 8 - 10	6 - 6.35 10 - 10	6 - 7	6 - 8 6 - 10
MST-25	MSTS-25	5 - 6 8 - 9.525*1	6 - 6 8 - 10	6 - 6.35 8 - 12	6 - 8 9.525 - 10	6 - 10 10 - 10	6.35 - 8 10 - 11*1	6.35 - 10 10 - 12 8 - 8 12 - 12
MST-32	MSTS-32	6 - 8 10 - 12	6.35 - 8 10 - 14	8 - 8 12 - 12	8 - 10 12 - 14	8 - 12 14 - 14	9.525 - 12 14 - 16	10 - 10 10 - 11
MST-40	MSTS-40	8 - 9.525	10 - 10	12 - 12	14 - 14	15 - 15	16 - 16	16 - 18*1 18 - 18
MST-50	MSTS-50	12 - 12	14 - 14	15 - 15	16 - 18			
MST-63	MSTS-63	14 - 14						

- All products are provided with hex socket set screw.
 - In a case where the bore diameter is $\phi 4$ or less, the set screw is used in only one place.
 - Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- *1 : Only **MSTS-*** is standard product. For **MST-***, use the additional modification service **BT**. → P.803

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Available / Add'l charge Available / Add'l charge Available / Add'l charge

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MST-8	4	0.1	78000	1.2×10^{-8}	25	0.1	2	±0.2	1.4
MST-12	6	0.4	52000	8.3×10^{-8}	45	0.1	2	±0.3	3.7
MST-16	8	0.5	39000	3.3×10^{-7}	80	0.1	2	±0.4	8.1
MST-20	10	1	31000	9.0×10^{-7}	170	0.1	2	±0.4	14
MST-25	12	2	25000	2.6×10^{-6}	380	0.15	2	±0.5	27
MST-32	16	4	19000	9.6×10^{-6}	500	0.15	2	±0.5	60
MST-40	20	8	15000	3.2×10^{-5}	700	0.2	2	±0.5	130
MST-50	25	16	12000	1.0×10^{-4}	1800	0.2	2	±0.5	260
MST-63	35	32	10000	3.2×10^{-4}	3100	0.2	2	±0.5	490
MSTS-8	4	0.2	78000	3.1×10^{-8}	50	0.1	2	±0.2	3
MSTS-12	6	0.3	52000	2.1×10^{-7}	64	0.1	2	±0.3	9.3
MSTS-16	8	0.5	39000	8.4×10^{-7}	85	0.1	2	±0.3	21
MSTS-20	10	1	31000	2.4×10^{-6}	250	0.1	2	±0.3	38
MSTS-25	12	2	25000	6.8×10^{-6}	330	0.15	2	±0.4	71
MSTS-32	16	3.5	19000	2.6×10^{-5}	850	0.15	2	±0.5	160
MSTS-40	20	8	15000	8.7×10^{-5}	1000	0.2	2	±0.5	350
MSTS-50	25	15	12000	2.7×10^{-4}	1400	0.2	2	±0.5	700
MSTS-63	35	35	10000	8.4×10^{-4}	1800	0.2	2	±0.5	1300

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

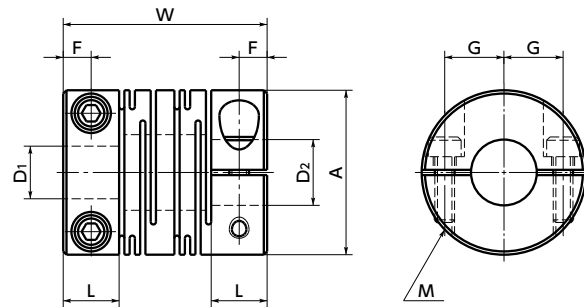
MSTS-25-9.525-10

1 2

MST-C/MSTS-C Flexible coupling - Slit - type - Clamping type

WEB Selection Tool CAD Download 0 Zero Backlash SUS Stainless steel

MST-C Made of aluminum alloy
MSTS-C Made of all stainless steel
 Outside diameter $\phi 40 - \phi 63$



Dimensions

Unit : mm

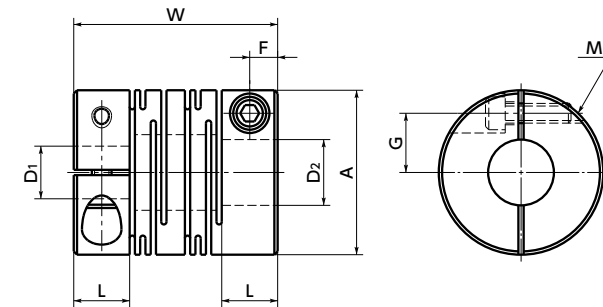
Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)
MST-12C	12	5	18.5	2.5	4	M2	0.5
MST-16C	16	6.5	23	3.25	5	M2.5	1
MST-20C	20	7.5	26	3.75	6.5	M2.5	1
MST-25C	25	8.5	31	4.25	9	M3	1.5
MST-32C	32	12	41	6	11	M4	2.5
MST-40C	40	17	56	8.5	14	M5	4
MST-50C	50	21	71	10.5	18	M6	8
MST-63C	63	26	90	13	24	M8	16
MSTS-12C	12	5	18.5	2.5	4	M2	0.5
MSTS-16C	16	6.5	23	3.25	5	M2.5	1
MSTS-20C	20	7.5	26	3.75	6.5	M2.5	1
MSTS-25C	25	8.5	31	4.25	9	M3	1.5
MSTS-32C	32	12	41	6	11	M4	2.5
MSTS-40C	40	17	56	8.5	14	M5	4
MSTS-50C	50	21	71	10.5	18	M6	8
MSTS-63C	63	26	90	13	24	M8	16

Part Number		Standard Bore Diameter D1-D2							
MST-12C	MSTS-12C	4 - 4	4 - 5	4.5 - 5	5 - 5				
MST-16C	MSTS-16C	4.5 - 5	4.5 - 6	5 - 5	5 - 6	6 - 6			
MST-20C	MSTS-20C	5 - 6 6.35 - 8	5 - 6.35 8 - 8	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8
MST-25C	MSTS-25C	5 - 6 8 - 9.525	6 - 6 8 - 10	6 - 6.35 9.525 - 10	6 - 8 10 - 10	6 - 10	6.35 - 8	6.35 - 10	8 - 8
MST-32C	MSTS-32C	8 - 8 10 - 12	8 - 9.525 10 - 14	8 - 10 12 - 12	8 - 12 12 - 14	9.525 - 10	9.525 - 12	10 - 10	10 - 11
MST-40C	MSTS-40C	8 - 8 15 - 16	8 - 10 16 - 16	10 - 10	12 - 12	12 - 14	14 - 14	14 - 16	15 - 15
MST-50C	MSTS-50C	12 - 14	14 - 14	15 - 15	16 - 16	18 - 18			
MST-63C	MSTS-63C	14 - 14	16 - 16	18 - 18					

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258
- **MST-C** has variable slit shapes depending on the size. See the Slit Details.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
 Available / Add'l charge Available / Add'l charge Available / Add'l charge

MSTS-C Made of all stainless steel
 Outside diameter $\phi 12 - \phi 32$



Performance

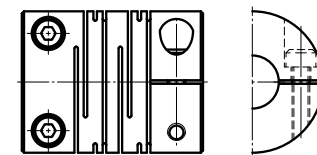
Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MST-12C	5	0.4	52000	7.8×10^{-8}	45	0.1	2	±0.3	3.6
MST-16C	6	0.5	39000	3.4×10^{-7}	80	0.1	2	±0.4	9.2
MST-20C	8	1	31000	9.1×10^{-7}	170	0.1	2	±0.4	16
MST-25C	10	2	25000	2.6×10^{-6}	380	0.15	2	±0.5	28
MST-32C	14	4	19000	9.7×10^{-6}	500	0.15	2	±0.5	64
MST-40C	18	8	15000	3.3×10^{-5}	700	0.2	2	±0.5	140
MST-50C	22	16	12000	1.0×10^{-4}	1800	0.2	2	±0.5	270
MST-63C	30	32	10000	3.2×10^{-4}	3100	0.2	2	±0.5	530
MSTS-12C	5	0.3	52000	2.2×10^{-7}	64	0.1	2	±0.2	10
MSTS-16C	6	0.5	39000	9.0×10^{-7}	85	0.1	2	±0.3	25
MSTS-20C	8	1	31000	2.5×10^{-6}	250	0.1	2	±0.3	43
MSTS-25C	10	2	25000	7.1×10^{-6}	330	0.15	2	±0.4	78
MSTS-32C	14	3.5	19000	2.7×10^{-5}	850	0.15	2	±0.5	170
MSTS-40C	18	8	15000	9.0×10^{-5}	1000	0.2	2	±0.5	370
MSTS-50C	22	15	12000	2.8×10^{-4}	1400	0.2	2	±0.5	750
MSTS-63C	30	35	10000	8.8×10^{-4}	1800	0.2	2	±0.5	1400

*1 : Correction of rated torque due to load fluctuation is not required.

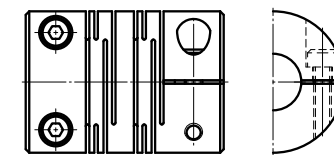
*2 : These are values with max. bore diameter.

Slit Details

MST-C



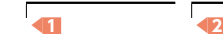
Outside diameter $\phi 12 - \phi 32$



Outside diameter $\phi 40 - \phi 63$

- Part number specification

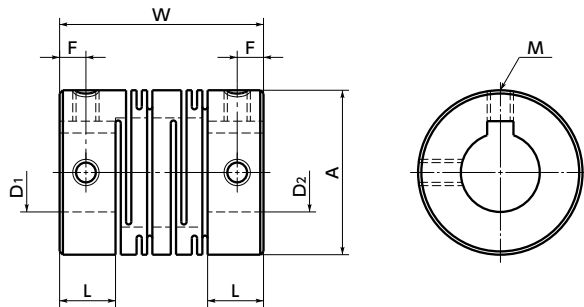
MST-40C - 12-14



MST-K/MSTS-K Flexible coupling - Slit - type - Set screw + Key type

WEB Selection Tool CAD Download 0 Zero Backlash SUS Stainless steel

MST-K Made of aluminum alloy
MSTS-K Made of all stainless steel



Dimensions

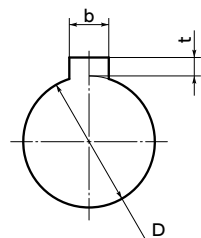
Unit : mm

Part Number	A	L	W	F	M	Screw Tightening Torque (N·m)
MST-32K	32	12	41	6	M4	1.7
MST-40K	40	17	56	8.5	M5	4
MST-50K	50	21	71	10.5	M6	7
MST-63K	63	26	90	13	M8	15
MSTS-32K	32	12	41	6	M4	1.7
MSTS-40K	40	17	56	8.5	M5	4
MSTS-50K	50	21	71	10.5	M6	7
MSTS-63K	63	26	90	13	M8	15

Part Number	Standard Bore Diameter (dimensional allowance H8) D1-D2		
MST-32K	12 - 12		
MST-40K	14 - 14		
MST-50K	16 - 16		
MST-63K	20 - 20		
MSTS-32K	12 - 12		
MSTS-40K	14 - 14		
MSTS-50K	16 - 16		
MSTS-63K	20 - 20		

- All products are provided with hex socket set screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Details of Shaft Hole



Standard bore diameter D	Keyway				Key Nominal Dimension b×h
	b Standard Dimension	Allowance (JS9)	t Standard Dimension	Allowance (JS9)	
12	4	±0.0150	1.8	+0.1 0	4×4
14・16	5	±0.0150	2.3	+0.1 0	5×5
18・20	6	±0.0150	2.8	+0.1 0	6×6
25・30	8	±0.0180	3.3	+0.2 0	8×7

• Excerpt from JIS B 1301

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Please feel free to contact us

Available / Add'l charge

Available / Add'l charge

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MST-32K	14	4	19000	9.6×10 ⁻⁶	500	0.15	2	±0.5	59
MST-40K	18	8	15000	3.2×10 ⁻⁵	700	0.2	2	±0.5	130
MST-50K	20	16	12000	1.0×10 ⁻⁴	1800	0.2	2	±0.5	270
MST-63K	30	32	10000	3.2×10 ⁻⁴	3100	0.2	2	±0.5	490
MSTS-32K	14	3.5	19000	2.6×10 ⁻⁵	850	0.15	2	±0.5	160
MSTS-40K	18	8	15000	8.6×10 ⁻⁵	1000	0.2	2	±0.5	340
MSTS-50K	20	15	12000	2.8×10 ⁻⁴	1400	0.2	2	±0.5	730
MSTS-63K	30	35	10000	8.5×10 ⁻⁴	1800	0.2	2	±0.5	1300

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

• Part number specification

MST-32K-12-12

1

2

MWS/MWSS Flexible coupling - Slit - type

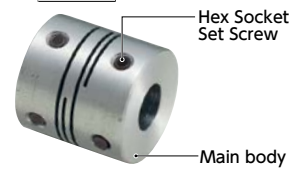
WEB Selection Tool CAD Download 0 Zero Backlash SUS Stainless steel

Structure

- Set Screw type → P.119

MWS Made of aluminum alloy

MWSS Made of all stainless steel

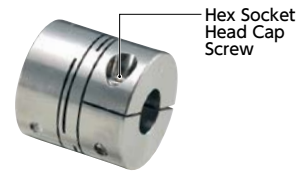


- Clamping type → P.121

MWS-C Made of aluminum alloy



MWSS-C Made of all stainless steel



- Recommended applicable motor

	MWS	MWSS
Servomotor	—	—
Stepping motor	●	●
General-purpose motor	△	△

●: Excellent ○: Very good △: Available

- Property

	MWS	MWSS
Zero Backlash	●	●
High Torque	○	○
High Torsional Stiffness	○	○
Corrosion Resistance (All S.S.)	—	●

●: Excellent ○: Very good

- This is a metal spring coupling with single-piece construction. Slits are made into a cylindrical material.

- A plate spring formed by slits allows angular misalignment, and end-play to be accepted.

- There are two types of units made of aluminum alloy or all stainless steel.

- Application

Transport device/XY stage/Parts feeder

- Material/Finish

RoHS2 Compliant

	MWS / MWS-C	MWSS / MWSS-C
Main body	A2017 Alumite Treatment	SUS303
Hex Socket Set Screw	SCM435 Ferrosoferric oxide film	SUSXM7
Hex Socket Head Cap Screw	SCM435 Ferrosoferric oxide film	SUSXM7

Related Products

The slit-type coupling **XWSS** SUS316L material, finished with clean washing and clean packaging, which is best suited to FPD and semiconductor manufacturing equipments is available.

→ P.227



- Part number specification

MWS-20C-5-6

Product Code Size Bore Diameter

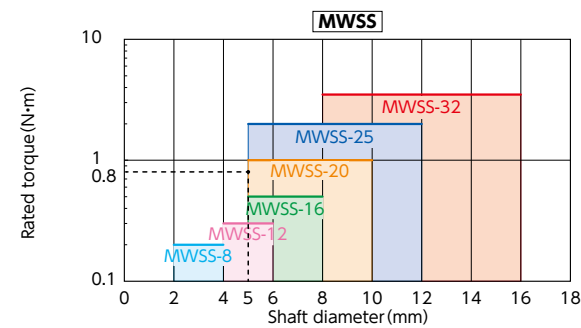
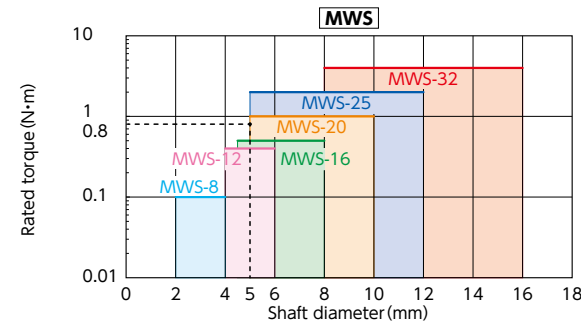
Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

Selection

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



- Selection example

In case of selected parameters of shaft diameter of ϕ 5 and load torque of 0.8 N·m, the selected size for

MWS **MWSS** is **MWS-20** **MWSS-20**.

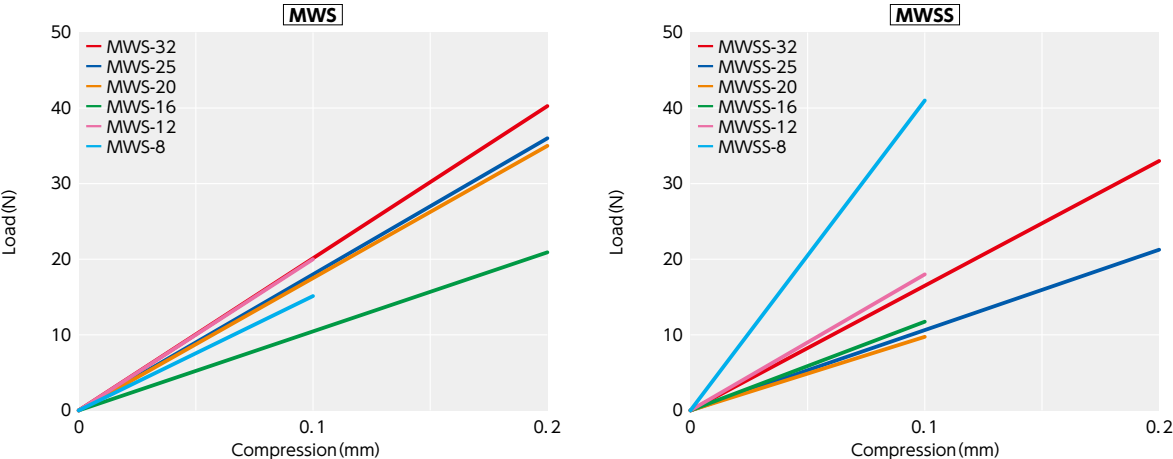


MWS/MWSS Flexible coupling - Slit - type

WEB Selection Tool CAD Download SUS Stainless steel 0 Zero Backlash

Technical Information

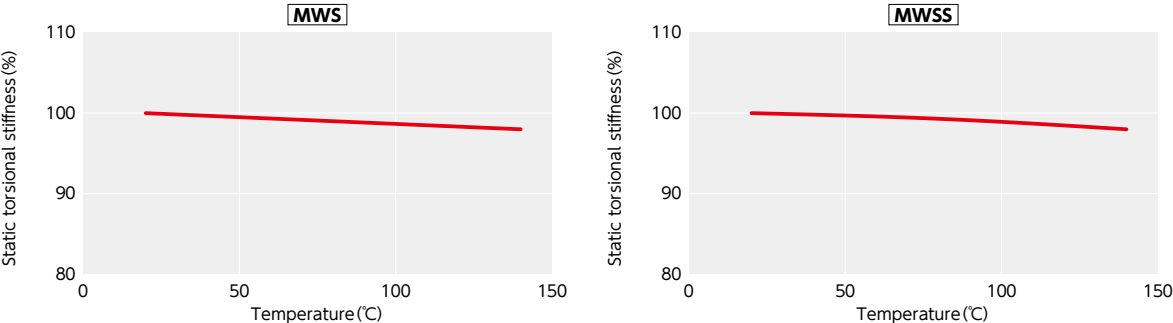
Thrust Reaction Force



Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20°C is 100%.

MWS MWSS's change in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used under higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.



Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the rated torque of MWSS-C.

Unit : N・m

Part Number	Bore Diameter (mm)				
	5	6	8	10	12
MWSS-20C	0.9				
MWSS-25C	1.2	1.4	1.9		
MWSS-32C			1.9	2.4	3.4

These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in MWSS-C Dimension table.

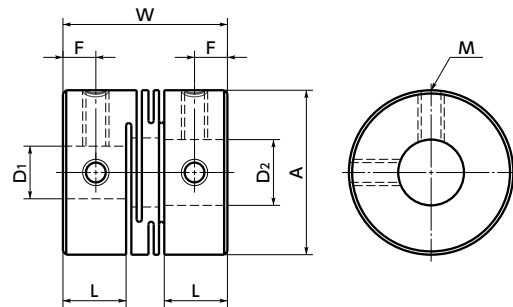


https://www.nbk1560.com/

MWS/MWSS Flexible coupling - Slit - type - Set screw type

WEB Selection Tool CAD Download 0 Zero Backlash SUS Stainless steel

MWS Made of aluminum alloy
MWSS Made of all stainless steel



Dimensions

Unit : mm

Part Number 1	A	L	W	F	M	Screw Tightening Torque (N·m)	Standard Bore Diameter (dimensional allowance H8) D1-D2 2					
MWS-8	8	3.4	10	1.7	M2	0.3	2 - 2	3 - 3				
MWS-12	12	5.2	14	2.5	M2.5	0.5	4 - 4	4 - 5	4.5 - 5	5 - 5		
MWS-16	16	6.8	18	3	M3	0.7	4.5 - 5	5 - 5	5 - 6	6 - 6		
MWS-20	20	7.65	20	3	M3	0.7	5 - 6	5 - 8	6 - 6	6 - 8	8 - 8	
MWS-25	25	9.6	25	4	M4	1.7	5 - 6	6 - 6	6 - 8	8 - 8	8 - 10	10 - 10
MWS-32	32	12.6	32	6	M4	1.7	8 - 8	8 - 10	10 - 10	10 - 12	12 - 12	12 - 14
MWSS-8	8	3.4	10	1.7	M2	0.3	2 - 2	3 - 3				
MWSS-12	12	5.2	14	2.5	M2.5	0.5	4 - 4	4 - 5	4.5 - 5	5 - 5		
MWSS-16	16	6.8	18	3	M3	0.7	5 - 5	5 - 6	6 - 6			
MWSS-20	20	7.65	20	3	M3	0.7	5 - 6	5 - 8	6 - 6	6 - 8	8 - 8	
MWSS-25	25	9.6	25	4	M4	1.7	5 - 6	6 - 6	6 - 8	8 - 8	8 - 10	10 - 10
MWSS-32	32	12.6	32	6	M4	1.7	8 - 8	8 - 10	10 - 10	10 - 12	12 - 12	12 - 14

- All products are provided with hex socket set screw.
- In a case where the bore diameter is $\phi 4$ or less, the set screw is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Performance

Part Number	Max. Bore Diameter (mm)	Rated* ¹ torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment* ² of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass* ² (g)
MWS-8	4	0.1	78000	1.0×10^{-8}	24	1	±0.1	1
MWS-12	6	0.4	52000	7.0×10^{-8}	80	1	±0.1	3.1
MWS-16	8	0.5	39000	2.8×10^{-7}	180	1	±0.2	7.4
MWS-20	10	1	31000	7.5×10^{-7}	200	1	±0.2	12
MWS-25	12	2	25000	2.3×10^{-6}	780	1	±0.2	24
MWS-32	16	4	19000	8.0×10^{-6}	1100	1	±0.2	50
MWSS-8	4	0.2	78000	2.4×10^{-8}	49	1	±0.1	2.7
MWSS-12	6	0.3	52000	1.8×10^{-7}	140	1	±0.1	7.8
MWSS-16	8	0.5	39000	7.2×10^{-7}	240	1	±0.1	18
MWSS-20	10	1	31000	2.0×10^{-6}	330	1	±0.1	32
MWSS-25	12	2	25000	6.1×10^{-6}	720	1	±0.2	63
MWSS-32	16	3.5	19000	2.1×10^{-5}	1300	1	±0.2	130

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

MWSS-32-10-12

1

2

Additional Keyway at Shaft Hole → P.803 Available / Add'l charge

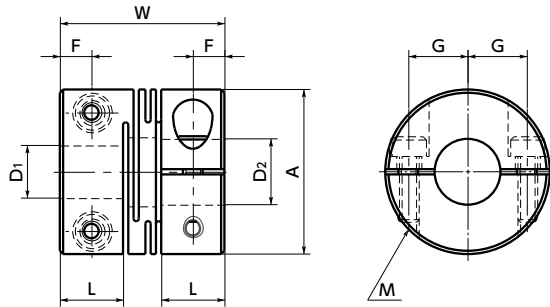
Cleanroom Wash & Packaging → P.807 Available / Add'l charge

SUS Change to Stainless Steel Screw → P.805 Available / Add'l charge

MWS-C / MWSS-C Flexible coupling - Slit - type - Clamping type

WEB Selection Tool WEB CAD Download 02 Zero Backlash SUS Stainless steel

MWS-C Made of aluminum alloy



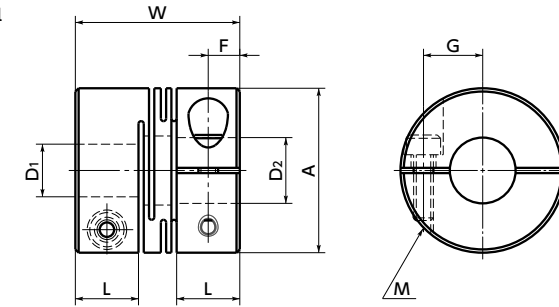
Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)	Standard Bore Diameter D1-D2					
MWS-12C	12	5.2	14	2.6	4	M2	0.5	4 - 4	4 - 5	4.5 - 5	5 - 5		
MWS-16C	16	6.8	18	3.4	5	M2.5	1	4.5 - 5	5 - 5	5 - 6	6 - 6		
MWS-20C	20	7.65	20	3.8	6.5	M2.5	1	5 - 6	5 - 8	6 - 6	6 - 8	8 - 8	
MWS-25C	25	9.6	25	4.8	9	M3	1.5	5 - 6	6 - 6	6 - 8	6 - 10	8 - 8	8 - 10
MWS-32C	32	12.6	32	6.3	11	M4	2.5	8 - 8	8 - 10	10 - 10	10 - 12	12 - 12	12 - 14
MWSS-12C	12	5.2	14	2.6	4	M2	0.5	4 - 4	4 - 5	4.5 - 5	5 - 5		
MWSS-16C	16	6.8	18	3.4	5	M2.5	1	4.5 - 5	5 - 5	5 - 6	6 - 6		
MWSS-20C	20	7.65	20	3.8	6.5	M2.5	1	5 - 6	5 - 8	6 - 6	6 - 7	6 - 8	8 - 8
MWSS-25C	25	9.6	25	4.8	9	M3	1.5	5 - 6	6 - 6	6 - 8	6 - 10	8 - 8	8 - 10
MWSS-32C	32	12.6	32	6.3	11	M4	2.5	8 - 8	8 - 10	10 - 10	10 - 12	12 - 12	12 - 14

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➔ P.258

MWSS-C Made of all stainless steel



Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MWS-12C	5	0.4	52000	6.4×10 ⁻⁸	80	1	±0.1	3
MWS-16C	6	0.5	39000	2.9×10 ⁻⁷	180	1	±0.2	8
MWS-20C	8	1	31000	7.5×10 ⁻⁷	200	1	±0.2	13
MWS-25C	10	2	25000	2.3×10 ⁻⁶	780	1	±0.2	25
MWS-32C	14	4	19000	8.1×10 ⁻⁶	1100	1	±0.2	53
MWSS-12C	5	0.3	52000	1.8×10 ⁻⁷	140	1	±0.1	8.5
MWSS-16C	6	0.5	39000	7.8×10 ⁻⁷	240	1	±0.1	21
MWSS-20C	8	1	31000	2.1×10 ⁻⁶	330	1	±0.1	36
MWSS-25C	10	2	25000	6.3×10 ⁻⁶	720	1	±0.2	69
MWSS-32C	14	3.5	19000	2.2×10 ⁻⁵	1300	1	±0.2	150

- *1 : Correction of rated torque due to load fluctuation is not required.
- *2 : These are values with max. bore diameter.

- Part number specification

MWS-16C - 5-6

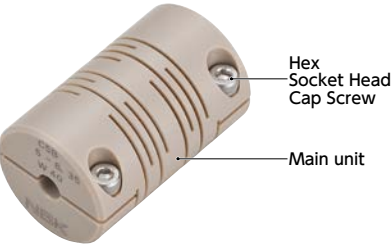
1 2

Additional Keyway at Shaft Hole ➔ P.803 Available / Add'l charge Cleanroom Wash & Packaging ➔ P.807 Available / Add'l charge SUS Change to Stainless Steel Screw ➔ P.805 Available / Add'l charge

MSXP-C-W-SP Coupling for Vacuum Variable Capacitor NEW

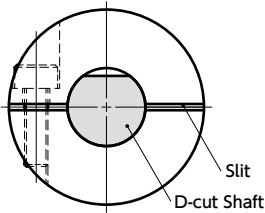
[WEB Selection Tool](#)
[WEB CAD Download](#)
[Zero Backlash](#)
[Electrical Insulation](#)

Structure



⚠ Precautions for Use

- Mounting on D-cut shaft
In principle, use a round shaft.
If a D-cut shaft is used, an excessive load due to tightening by the hex socket head cap screw may damage the coupling, depending on the mounting position of the D-cut surface of the shaft.
When using a D-cut shaft, mount so that the D-cut surface of the shaft avoids contact with the coupling slit as much as possible.



- This is a resin spring coupling with single-piece construction. A slit is inserted into a cylindrical material.
- PEEK superior in physical properties and electrical insulation is adopted.
- A plate spring formed by a slit allows eccentricity, argument, and end-play to be accepted.

● Property

	MSXP-C-W-SP
Zero Backlash	⊙
Allowable Misalignment	○
Electrical Insulation	⊙
Allowable Operating Temperature	-20℃ to 120℃

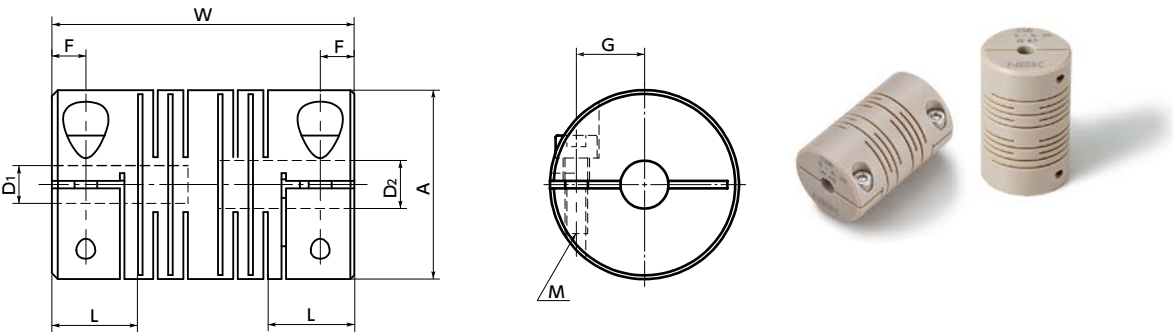
● Application

High frequency power / Matching box

● Material/Finish

RoHS2 Compliant

	MSXP-C-W-SP
Main unit	PEEK (Polyether ether ketone)
Hex Socket Head Cap Screw	SUSXM7



Dimensions

Part Number	A	L	W	F	G	M	D ₁	D ₂	Screw Tightening Torque (N・m)
MSXP-25C-W40-5-6.35-SP3	25	11.4	40	4.5	9	M3	5	6.35	0.6

● All products are provided with hex socket head cap screw. ➡ P.258

Performance

Part Number	Rated torque*1 (N・m)	Max. torque*1 (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment of Inertia(kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment(°)	Max. Axial Misalignment (mm)	Mass(g)
MSXP-25C-W40-5-6.35-SP3	1.3	2.6	6000	1.9×10 ⁻⁶	50	0.3	1.2	±0.33	23

*1: Correction of rated torque and max. torque due to load fluctuation is not required.

- Part number specification

MSXP-25C-W40-5-6.35-SP3

1

Additional Keyway at Shaft Hole ➡ P.803 Not Available	Cleanroom Wash & Packaging ➡ P.807 Available / Add'l charge	Change to Stainless Steel Screw ➡ P.805 Changed to the S.S. screw
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MJC Flexible Coupling - Jaw - type

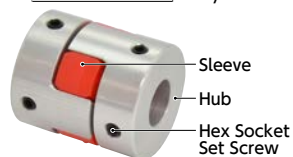
WEB Selection Tool CAD Download High torque Vibration absorption Electrical Insulation

Structure

● Set Screw Type → P.131

MJC-*-***** Tight Fit

MJC-*-E***** Easy Fit



● Clamping Type → P.133

MJC-*CS***** Tight Fit

MJC-*CS-E***** Easy Fit



● Set Screw + Key Type → P.135

MJC-*K***** Tight Fit

MJC-*K-E***** Easy Fit



● Clamping + Key Type → P.137

MJC-*CSK***** Tight Fit

MJC-*CSK-E***** Easy Fit



● Material/Finish

RoHS2 Compliant

	MJC / MJC-CS / MJC-K / MJC-CSK
Hub	A2017 Alumite Treatment
Sleeve	Polyurethane
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

● Sleeve

Outside Diameter: $\phi 14 - \phi 30$



Tight Fit



Easy Fit

Outside Diameter: $\phi 40$



Tight Fit



Easy Fit

Outside Diameter: $\phi 55 - \phi 95$



Tight Fit



Easy Fit

● Part number specification

MJC-30CSK-ERD-10-11

Product Code Size Sleeve Type bore diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

● Applicable motors

	Tight Fit	Easy Fit
Servomotor	○	○
Stepping Motor	○	○
General-Purpose Motor	○	○

○: Excellent ○: Very good

● Property

	Tight Fit	Easy Fit
Zero Backlash	○	—
High Torque	○	○
Allowable Misalignment	○	○
Vibration Absorption	○	○
Electrical Insulation	○	○
Assembling	○	○
Allowable Operating Temperature	-20°C to 60°C	-20°C to 60°C

○: Excellent ○: Very good

● Sleeve Type

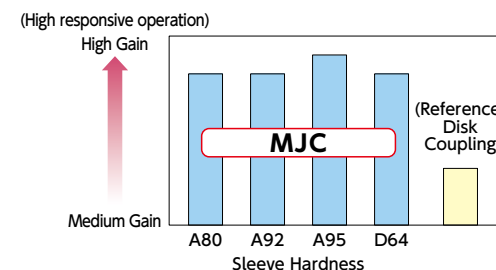
Sleeve Type	Sleeve Hardness (JIS)			
	A80	A92	A98	D64
Tight Fit				
Easy Fit				

Small ← Rated Torque / Max. Torque → Large
Large ← Allowable Misalignment → Small

● Tight Fit

The hub and sleeve are press-fit and can be used under zero backlash*1. Since the sleeve's vibration absorption can raise the gain of a servomotor, this unit can achieve high responsive operation exceeding the Disk coupling.

*1: For the torque used under zero backlash, please refer to dimensional table.



● Tight Fit Applications

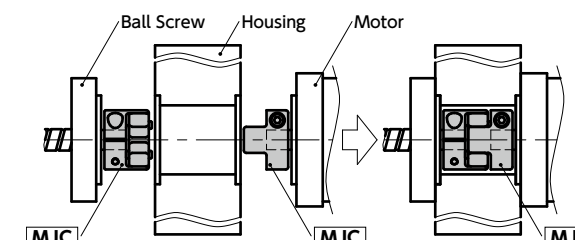
XY stage / Index table / Machine tool / Injection molding machine

● This is a jaw type flexible coupling.

- Tight Fit enables transmission with zero backlash at low torque.
- Easy fit allows you to assemble and partition the hub and sleeve smoothly.
- Excellent flexibility allows eccentricity, angular misalignment and twisting vibration to be accepted.
- It has electrical insulation. Resistance value: Not less than 2 MΩ
- There are four types of sleeve hardness. Please select desirable units according to usage conditions including torque and misalignment.

● Easy Fit

This unit allows you to easily assemble and partition the hub and sleeve. This allows you to reduce the time of assembling the unit and maintenance. It is possible to mount a hub on the shaft in advance and easily assemble the unit even in a location where the coupling is less-visible.



● Easy Fit Applications

Transport device / Mixer / Ventilator / Pump / Dispenser

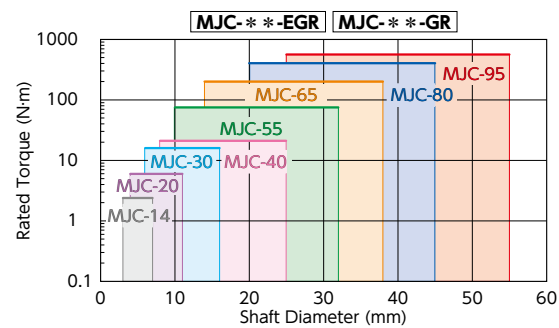
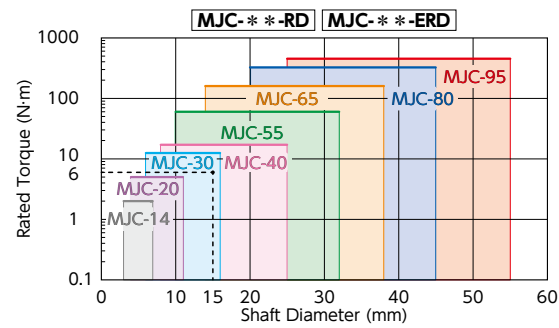
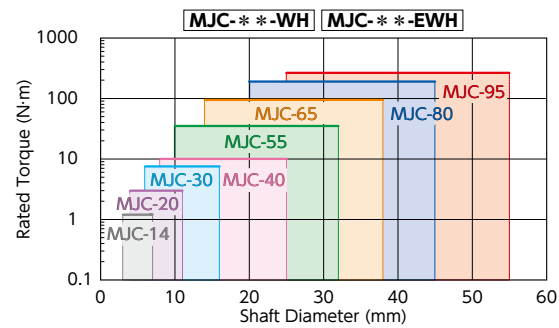
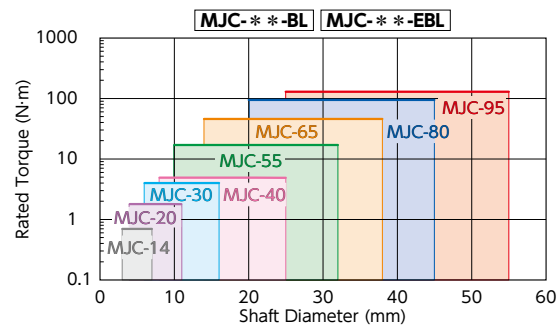
MJC Flexible Coupling - Jaw - type

WEB Selection Tool CAD Download High torque Vibration absorption Electrical Insulation

Selection

● Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



● Selection Example

In case of selected parameters of shaft diameter of $\phi 15$ and load torque of 6 N·m, the selected size for **MJC-**-RD**, **MJC-**-ERD** is **MJC-30-RD**, **MJC-30-ERD**.

● Selection based on the rated output of the servomotor

Rated Output (W)	Servomotor Specifications			Selection Outside Diameter Size			
	Diameter of Motor Shaft (mm)	Rated Torque (N·m)	Instantaneous Max. Torque (N·m)	MJC-**-BL MJC-**-EBL	MJC-**-WH MJC-**-EWH	MJC-**-RD MJC-**-ERD	MJC-**-GR MJC-**-EGR
10	5 - 6	0.032	0.096	14	14	14	14
20	5 - 6	0.064	0.19	14	14	14	14
30	5 - 7	0.096	0.29	14	14	14	14
50	6 - 8	0.16	0.48	20	20	20	20
100	8	0.32	0.95	20	20	20	20
200	9 - 14	0.64	1.9	30	30	30	30
400	14	1.3	3.8	30	30	30	30
750	16 - 19	2.4	7.2	—	40	40	40

● Motor specifications are based on general values. For details, see the motor manufacturer's catalogs. This is the size for cases where devices such as reduction gears are not used.

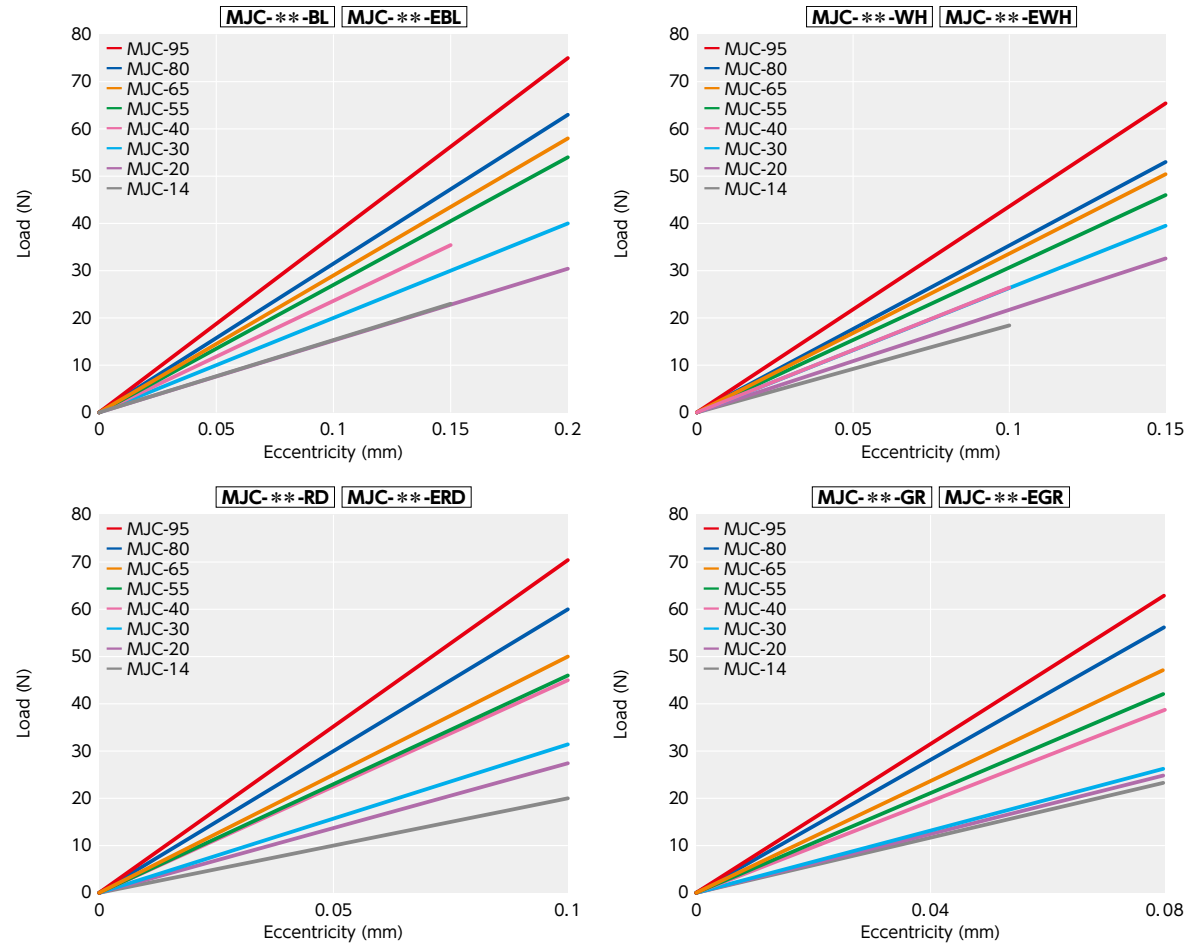
● Selection Example

In case of motor specification of shaft diameter of $\phi 9$ and rated torque of 0.64 N·m, the selected size of **MJC-**-BL** is as follows.

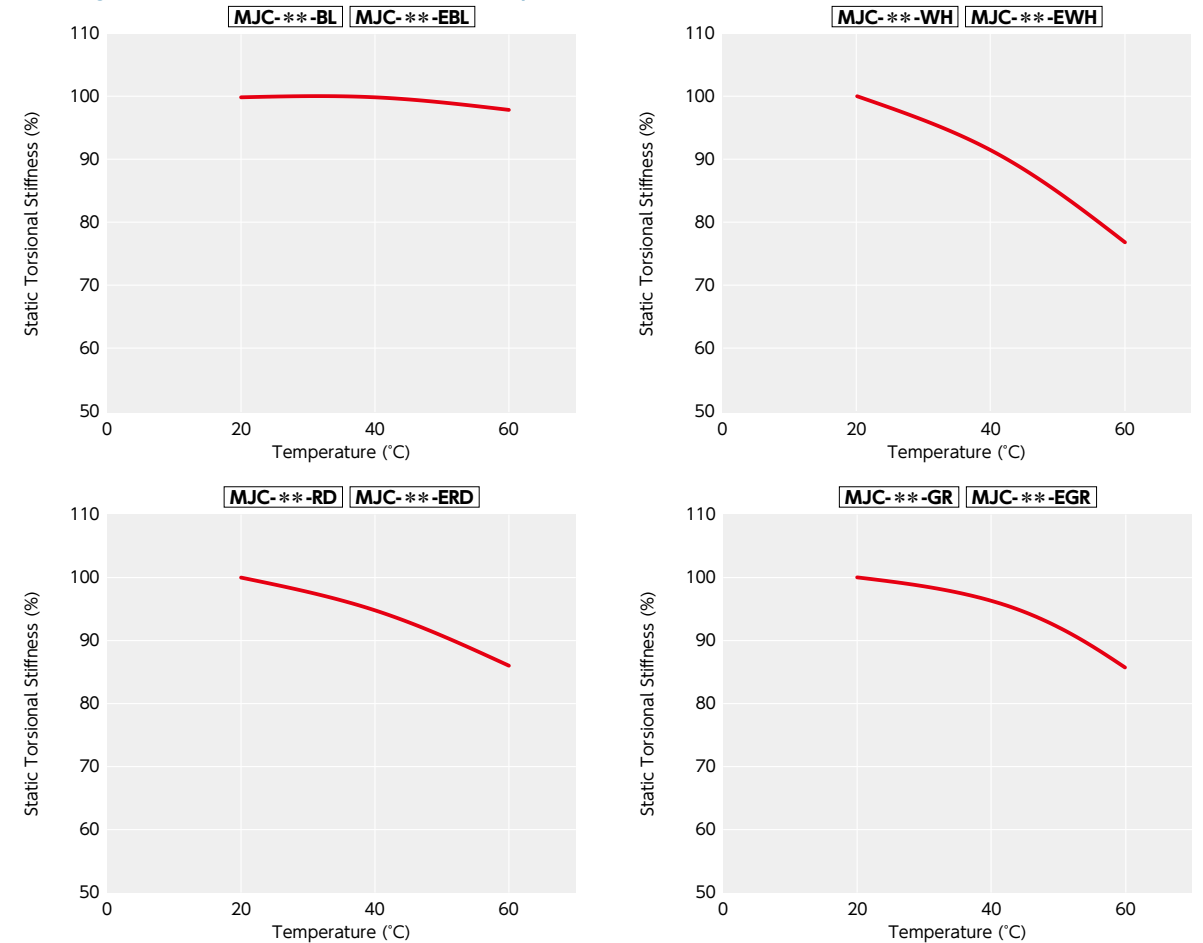
- Set Screw Type — **MJC-30-BL**
- Clamping Type — **MJC-30CS-BL**
- Set Screw + Key Type — **MJC-30K-BL**
- Clamping + Key Type — **MJC-30CSK-BL**

Technical Information

● Eccentric Reaction Force



● Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20℃ is 100%.
The change of torsional stiffness within the range of allowable operating temperature is as shown in the graph.
Before using the unit, be aware of the deterioration of responsiveness.

● Slip Torque

Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the max. torque of **MJC-CS**.

Part Number	Bore Diameter (mm)																																	
	3	4	4.5	5	6	6.35	7	8	9.525	10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	
MJC-14CS	0.8	1.4	1.7	2.1	1.3	1.4	1.5																											
MJC-20CS		3.4	4.1	4.9	6.4	6.9	7.9	9.4	5.1	6	8																							
MJC-30CS					4	4.9	6.6	9.3	13.4	14.6	17.3	20	15.3	21.2	27.2																			
MJC-40CS								18	23.2	24.8	28.2	31.7	38.5																					
MJC-55CS									29.9	33	39.5	46	59	65.5	72	78.5	85	91.5	98	111	124	130		117	124									
MJC-65CS													104	118	133	148	162	177	192	221	251	265	310	339	368	185	200							
MJC-80CS																				151	170	189	198	227	246	265	293	322	341	360	500			
MJC-95CS																							347	415	460	500	500	500	500	500	500	500	500	500

● These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **MJC-CS** dimensional table.

● Slip Torque

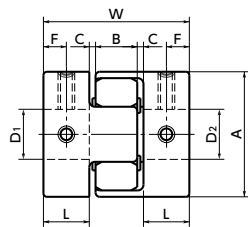
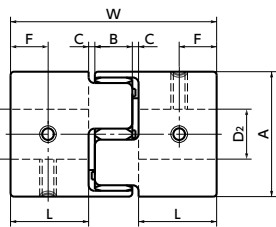
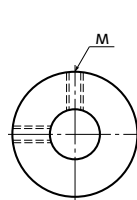
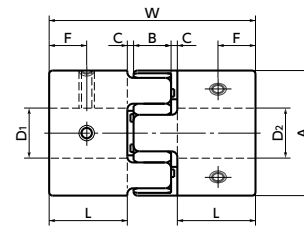
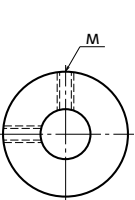
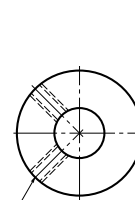
Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the max. torque of **MJC-CS**.

Part Number	Bore Diameter (inch)																					
	1 / 8	3 / 16	1 / 4	5 / 16	3 / 8	7 / 16	1 / 2	9 / 16	5 / 8	11 / 16	3 / 4	13 / 16	7 / 8	15 / 16	1	1 1⁄8	1 1⁄4	1 3⁄8	1 1⁄2	1 5⁄8	1 3⁄4	
MJC-14CS	0.9	1.9	1.4																			
MJC-20CS		4.5	6.9	9.3	5.1																	
MJC-30CS			4.9	9.1	13.4	17.6	7.5	17	26.4													
MJC-40CS				17.7	23.2	28.6	34.1	39.5														
MJC-55CS					29.9	40.2	50.5	60.8	71.1	81.5	91.8	102	112	122	133	112	123					
MJC-65CS							85	108	131	155	178	201	225	248	271	318	365	184	200			
MJC-80CS								96	111	126	141	157	172	187	202	232	262	292	322	353	500	
MJC-95CS												249	285	320	356	428	500	500	500	500	500	

● These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **MJC-CS** dimensional table.

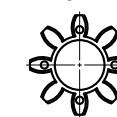
MJC Flexible coupling - Jaw - type - Set screw type

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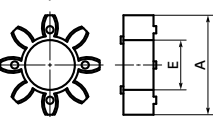
Outside Diameter: $\phi 14 - \phi 30$ Outside Diameter: $\phi 40$ Outside Diameter: $\phi 55 - \phi 95$ 

Sleeve Details

Tight Fit



Easy Fit



Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70

Dimensions

Unit : mm

Part Number	A	L	W	B	C*1	Sleeve E	F	M	Screw Tightening Torque (N·m)
MJC-14	14	7	22	6	1	4.5	3.5	M3	0.7
MJC-20	20	10	30	8	1	7	5	M3	0.7
MJC-30	30	11	35	10	1.5	11	5.5	M4	1.7
MJC-40	40	25	66	12	2	18	12.5	M5	4
MJC-55	55	30	78	14	2	27.5	15	M6	7
MJC-65	65	35	90	15	2.5	31	17.5	M8	15
MJC-80	80	45	114	18	3	37	22.5	M8	15
MJC-95	95	50	126	20	3	45.5	25	M8	15

*1 : Use with C Dimension

Part Number	Standard metric bore diameter (dimensional allowance H8)																								
	3	4	4.5	5	6	6.35	7	8	9.525	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32	35
MJC-14	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-55	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-65	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-80	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-95	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Part Number	Standard inch bore diameter (dimensional allowance H7)																					
	D1	D2	3																			
	1 / 8	3 / 16	1 / 4	5 / 16	3 / 8	7 / 16	1 / 2	9 / 16	5 / 8	11 / 16	3 / 4	13 / 16	7 / 8	15 / 16	1	1 1 / 8	1 1 / 4	1 3 / 8	1 1 / 2	1 5 / 8	1 3 / 4	
MJC-14	●	●	●																			
MJC-20		●	●	●	●																	
MJC-30			●	●	●	●	●	●	●													
MJC-40				●	●	●	●	●	●	●	●											
MJC-55					●	●		●	●	●	●	●	●	●	●							
MJC-65							●	●	●	●		●	●	●	●	●	●	●	●			
MJC-80											●	●	●	●	●	●	●	●	●	●	●	
MJC-95															●	●	●	●	●	●	●	

- All products are provided with hex socket set screw.
- In a case where the bore diameter are $\phi 3, \phi 4$ and $\phi 1/8$, the setscrew is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with set screw type for one side and clamping type or other type for the other side is available upon request.

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

Performance

Part Number	Sleeve 		Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Zero Backlash*3 Allowable Transmission Torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m / rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)	Sleeve Hardness (JIS)
	Tight Fit	Easy Fit												
MJC-14	BL	EBL	7	0.7	1.4	0.1	45000	2.0 x 10 ⁻⁷	8	0.15	1	+0.6 0	6.6	A80
MJC-20	BL	EBL	11	1.8	3.6	0.2	31000	1.1 x 10 ⁻⁶	16	0.2	1	+0.8 0	17	
MJC-30	BL	EBL	16	4	8	0.5	21000	6.2 x 10 ⁻⁶	46	0.2	1	+1.0 0	44	
MJC-40	BL	EBL	25	4.9	9.8	1.2	15000	3.7 x 10 ⁻⁵	380	0.15	1	+1.2 0	130	
MJC-55	BL	EBL	32	17	34		11000	1.6 x 10 ⁻⁴	1400	0.2	1	+1.4 0	320	
MJC-65	BL	EBL	38.1	46	92		9000	3.6 x 10 ⁻⁴	2800	0.2	1	+1.5 0	520	
MJC-80	BL	EBL	45	95	190		7000	1.1 x 10 ⁻³	3200	0.2	1	+1.8 0	1000	
MJC-95	BL	EBL	55	130	260		6000	2.3 x 10 ⁻³	3600	0.2	1	+2.0 0	1500	
MJC-14	WH	EWH	7	1.2	2.4	0.1	45000	2.0 x 10 ⁻⁷	14	0.1	1	+0.6 0	6.6	A92
MJC-20	WH	EWH	11	3	6	0.2	31000	1.1 x 10 ⁻⁶	29	0.15	1	+0.8 0	17	
MJC-30	WH	EWH	16	7.5	15	0.5	21000	6.2 x 10 ⁻⁶	73	0.15	1	+1.0 0	44	
MJC-40	WH	EWH	25	10	20	1.2	15000	3.7 x 10 ⁻⁵	570	0.1	1	+1.2 0	130	
MJC-55	WH	EWH	32	35	70		11000	1.6 x 10 ⁻⁴	1600	0.15	1	+1.4 0	320	
MJC-65	WH	EWH	38.1	95	190		9000	3.6 x 10 ⁻⁴	3000	0.15	1	+1.5 0	520	
MJC-80	WH	EWH	45	190	380		7000	1.1 x 10 ⁻³	5300	0.15	1	+1.8 0	1000	
MJC-95	WH	EWH	55	265	530		6000	2.3 x 10 ⁻³	6200	0.15	1	+2.0 0	1500	
MJC-14	RD	ERD	7	2	4	0.1	45000	2.0 x 10 ⁻⁷	22	0.1	1	+0.6 0	6.6	A98
MJC-20	RD	ERD	11	5	10	0.2	31000	1.1 x 10 ⁻⁶	55	0.1	1	+0.8 0	17	
MJC-30	RD	ERD	16	12.5	25	0.5	21000	6.2 x 10 ⁻⁶	130	0.1	1	+1.0 0	44	
MJC-40	RD	ERD	25	17	34	1.2	15000	3.7 x 10 ⁻⁵	1200	0.1	1	+1.2 0	130	
MJC-55	RD	ERD	32	60	120		11000	1.6 x 10 ⁻⁴	2600	0.1	1	+1.4 0	320	
MJC-65	RD	ERD	38.1	160	320		9000	3.6 x 10 ⁻⁴	4900	0.1	1	+1.5 0	520	
MJC-80	RD	ERD	45	325	650		7000	1.1 x 10 ⁻³	6500	0.1	1	+1.8 0	1000	
MJC-95	RD	ERD	55	450	900		6000	2.3 x 10 ⁻³	8900	0.1	1	+2.0 0	1500	
MJC-14	GR	EGR	7	2.4	4.8	0.1	45000	2.0 x 10 ⁻⁷	66	0.08	1	+0.6 0	6.6	D64
MJC-20	GR	EGR	11	6	12	0.2	31000	1.1 x 10 ⁻⁶	87	0.08	1	+0.8 0	17	
MJC-30	GR	EGR	16	16	32	0.5	21000	6.2 x 10 ⁻⁶	200	0.08	1	+1.0 0	44	
MJC-40	GR	EGR	25	21	42	1.2	15000	3.7 x 10 ⁻⁵	3000	0.08	1	+1.2 0	130	
MJC-55	GR	EGR	32	75	150		11000	1.6 x 10 ⁻⁴	9000	0.08	1	+1.4 0	320	
MJC-65	GR	EGR	38.1	200	400		9000	3.6 x 10 ⁻⁴	13000	0.08	1	+1.5 0	520	
MJC-80	GR	EGR	45	405	810		7000	1.1 x 10 ⁻³	14000	0.08	1	+1.8 0	1000	
MJC-95	GR	EGR	55	560	1120		6000	2.3 x 10 ⁻³	15000	0.08	1	+2.0 0	1500	

*1 : Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the table. **MJC**'s allowable operating temperature is -20°C to 60°C.

*2 : These are values with max. bore diameter.

*3 : For transmission with Zero Backlash, please use a tight fit sleeve.

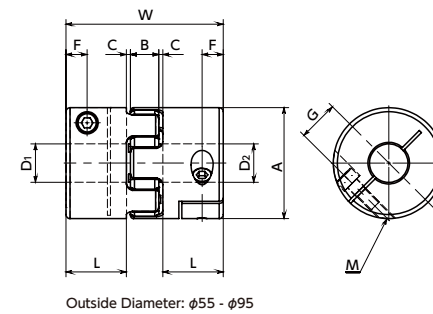
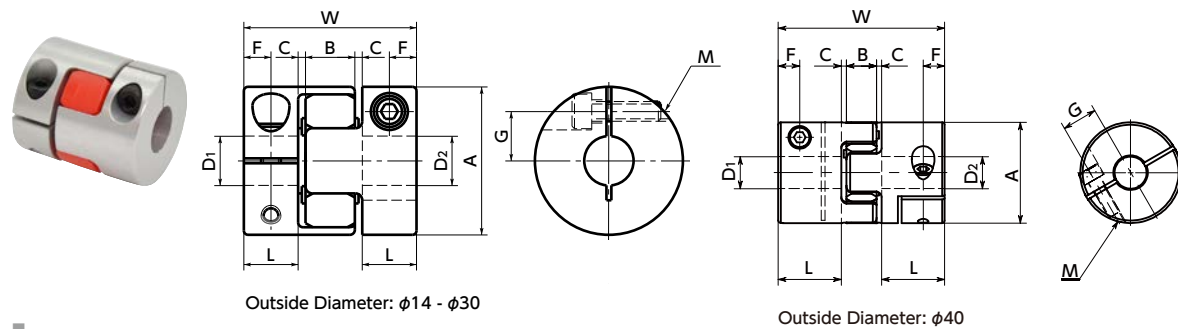
Part number specification

MJC-95-EBL-40-45

1 2 3

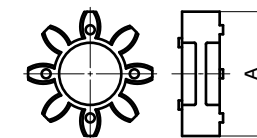
MJC-CS Flexible coupling - Jaw - type - Clamping type

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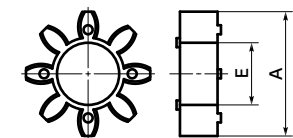


Sleeve Details

Tight Fit



Easy Fit



Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70

Dimensions

Unit : mm

Part Number	Bore Diameter	A	L	W	B	C*1	Sleeve E	F	G	M	Screw Tightening Torque (N·m)
MJC-14CS	3 - 5	14	7	22	6	1	4.5	3.5	4	M2	0.5
	6 - 7								5	M1.6	0.25
MJC-20CS	4 - 8	20	10	30	8	1	7	5	6.5	M2.5	1
	9.525 - 11								7.5	M2	0.5
MJC-30CS	6 - 12	30	11	35	10	1.5	11	5.5	10	M4	3.5
	12.7 - 16								11	M3	1.5
MJC-40CS	7.9375 - 20	40	25	66	12	2	18	8.5	14	M5	8
	22 - 25								15.75	M4	3.5
MJC-55CS	9.525 - 28	55	30	78	14	2	27.5	10.5	20	M6	13
	30 - 32								21	M5	8
MJC-65CS	12.7 - 32	65	35	90	15	2.5	31	13	24	M8	28
	34.925 - 38.1								25	M6	13
MJC-80CS	19.05 - 42	80	45	114	18	3	37	15	30	M8	28
	45								31		
MJC-95CS	0.05	95	50	126	20	3	45.5	18	34	M10	55
	50 - 55								36		

*1 : Use with C Dimension

Part Number	Standard metric bore diameter																																
	D1 • D2 																																
	3	4	4.5	5	6	6.35	7	8	9.525	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	
MJC-14CS																																	
MJC-20CS																																	
MJC-30CS																																	
MJC-40CS																																	
MJC-55CS																																	
MJC-65CS																																	
MJC-80CS																																	
MJC-95CS																																	

Part Number	Standard inch bore diameter D1 • D2 3																				
	1 / 8	3 / 16	1 / 4	5 / 16	3 / 8	7 / 16	1 / 2	9 / 16	5 / 8	11 / 16	3 / 4	13 / 16	7 / 8	15 / 16	1	1 1 / 8	1 1 / 4	1 3 / 8	1 1 / 2	1 5 / 8	1 3 / 4
MJC-14CS	●	●	●		●																
MJC-20CS		●	●	●	●																
MJC-30CS			●	●	●	●	●	●	●												
MJC-40CS				●	●	●	●	●	●	●	●										
MJC-55CS					●	●	●	●	●	●	●	●	●	●	●	●					
MJC-65CS							●	●	●	●	●	●	●	●	●	●	●	●	●		
MJC-80CS									●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-95CS																●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with clamping type for one side and set screw type or other type for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Available / Add'l charge

Available / Add'l charge

Available / Add'l charge

Performance

Part Number	Sleeve	Tight Fit	Easy Fit	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Zero Backlash*3 Allowable Transmission Torque(N·m)	Max.Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m / rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)	Sleeve Hardness (JIS)
MJC-14CS	BL	EBL		7	0.7	1.4	0.1	45000	1.9 x 10 ⁻⁷	8	0.15	1	+0.6 0	6.2	A80
MJC-20CS	BL	EBL		11	1.8	3.6	0.2	31000	1.0 x 10 ⁻⁶	16	0.2	1	+0.8 0	16	
MJC-30CS	BL	EBL		16	4	8	0.5	21000	6.0 x 10 ⁻⁶	46	0.2	1	+1.0 0	42	
MJC-40CS	BL	EBL		25	4.9	9.8	1.2	15000	3.6 x 10 ⁻⁵	380	0.15	1	+1.2 0	130	
MJC-55CS	BL	EBL		32	17	34		11000	1.6 x 10 ⁻⁴	1400	0.2	1	+1.4 0	310	
MJC-65CS	BL	EBL		38.1	46	92		9000	3.5 x 10 ⁻⁴	2800	0.2	1	+1.5 0	500	
MJC-80CS	BL	EBL		45	95	190		7000	1.0 x 10 ⁻³	3200	0.2	1	+1.8 0	1000	
MJC-95CS	BL	EBL		55	130	260		6000	2.3 x 10 ⁻³	3600	0.2	1	+2.0 0	1600	
MJC-14CS	WH	EWL		7	1.2	2.4	0.1	45000	1.9 x 10 ⁻⁷	14	0.1	1	+0.6 0	6.2	A92
MJC-20CS	WH	EWL		11	3	6	0.2	31000	1.0 x 10 ⁻⁶	29	0.15	1	+0.8 0	16	
MJC-30CS	WH	EWL		16	7.5	15	0.5	21000	6.0 x 10 ⁻⁶	73	0.15	1	+1.0 0	42	
MJC-40CS	WH	EWL		25	10	20	1.2	15000	3.6 x 10 ⁻⁵	570	0.1	1	+1.2 0	130	
MJC-55CS	WH	EWL		32	35	70		11000	1.6 x 10 ⁻⁴	1600	0.15	1	+1.4 0	310	
MJC-65CS	WH	EWL		38.1	95	190		9000	3.5 x 10 ⁻⁴	3000	0.15	1	+1.5 0	500	
MJC-80CS	WH	EWL		45	190	380		7000	1.0 x 10 ⁻³	5300	0.15	1	+1.8 0	1000	
MJC-95CS	WH	EWL		55	265	530		6000	2.3 x 10 ⁻³	6200	0.15	1	+2.0 0	1600	
MJC-14CS	RD	ERD		7	2	4	0.1	45000	1.9 x 10 ⁻⁷	22	0.1	1	+0.6 0	6.2	A98
MJC-20CS	RD	ERD		11	5	10	0.2	31000	1.0 x 10 ⁻⁶	55	0.1	1	+0.8 0	16	
MJC-30CS	RD	ERD		16	12.5	25	0.5	21000	6.0 x 10 ⁻⁶	130	0.1	1	+1.0 0	42	
MJC-40CS	RD	ERD		25	17	34	1.2	15000	3.6 x 10 ⁻⁵	1200	0.1	1	+1.2 0	130	
MJC-55CS	RD	ERD		32	60	120		11000	1.6 x 10 ⁻⁴	2600	0.1	1	+1.4 0	310	
MJC-65CS	RD	ERD		38.1	160	320		9000	3.5 x 10 ⁻⁴	4900	0.1	1	+1.5 0	500	
MJC-80CS	RD	ERD		45	325	650		7000	1.0 x 10 ⁻³	6500	0.1	1	+1.8 0	1000	
MJC-95CS	RD	ERD		55	450	900		6000	2.3 x 10 ⁻³	8900	0.1	1	+2.0 0	1600	
MJC-14CS	GR	EGR		7	2.4	4.8	0.1	45000	1.9 x 10 ⁻⁷	66	0.08	1	+0.6 0	6.2	D64
MJC-20CS	GR	EGR		11	6	12	0.2	31000	1.0 x 10 ⁻⁶	87	0.08	1	+0.8 0	16	
MJC-30CS	GR	EGR		16	16	32	0.5	21000	6.0 x 10 ⁻⁶	200	0.08	1	+1.0 0	42	
MJC-40CS	GR	EGR		25	21	42	1.2	15000	3.6 x 10 ⁻⁵	3000	0.08	1	+1.2 0	130	
MJC-55CS	GR	EGR		32	75	150		11000	1.6 x 10 ⁻⁴	9000	0.08	1	+1.4 0	310	
MJC-65CS	GR	EGR		38.1	200	400		9000	3.5 x 10 ⁻⁴	13000	0.08	1	+1.5 0	500	
MJC-80CS	GR	EGR		45	405	810		7000	1.0 x 10 ⁻³	14000	0.08	1	+1.8 0	1000	
MJC-95CS	GR	EGR		55	560	1120		6000	2.3 x 10 ⁻³	15000	0.08	1	+2.0 0	1600	

*1 : Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the table. **MJC-CS**'s allowable operating temperature is -20°C to 60°C.

*2 : These are values with max. bore diameter.

*3 : For transmission with Zero Backlash, please use a tight fit sleeve.

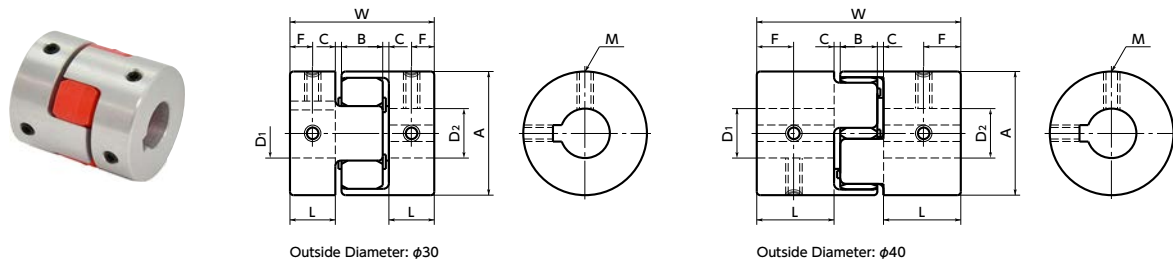
Part number specification

MJC-30CS-GR-7-8

1 2 3

MJC-K Flexible Coupling - Jaw - type - Set Screw + Key Type

WEB Selection Tool WEB CAD Download High torque Vibration absorption Electrical Insulation



Dimensions

Unit : mm

Part Number	A	L	W	B	C*1	Sleeve E	F	M	Screw Tightening Torque (N·m)
MJC-30K	30	11	35	10	1.5	11	5.5	M4	1.7
MJC-40K	40	25	66	12	2	18	12.5	M5	4
MJC-55K	55	30	78	14	2	27.5	15	M6	7
MJC-65K	65	35	90	15	2.5	31	17.5	M8	15
MJC-80K	80	45	114	18	3	37	22.5	M8	15
MJC-95K	95	50	126	20	3	45.5	25	M8	15

Part Number	Standard Bore Diameter (dimensional allowance H8) D1 • D2																		
	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40	42
MJC-30K	●	●	●	●	●	●													
MJC-40K	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-55K	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-65K				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-80K							●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-95K												●	●	●	●	●	●	●	●

Part Number	Standard Bore Diameter (dimensional allowance H7) D1 • D2														
	1 / 2	9 / 16	5 / 8	11 / 16	3 / 4	13 / 16	7 / 8	15 / 16	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4
MJC-30K	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-40K	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-55K	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-65K	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJC-80K				●	●	●	●	●	●	●	●	●	●	●	●
MJC-95K								●	●	●	●	●	●	●	●

- All products are provided with hex socket set screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with key type for one side and clamping type or other type for the other side is available upon request.

Part number specification

MJC-40K-EGR-11-12

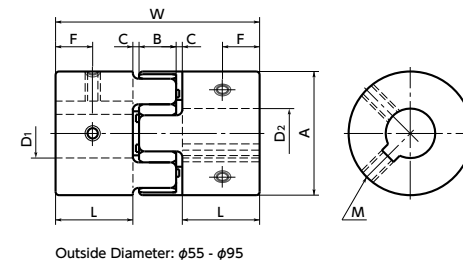
1 2 3

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Please feel free to contact us

Available / Add'l charge

Available / Add'l charge



Outside Diameter: φ55 - φ95

Performance

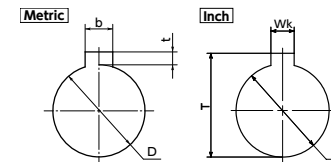
Part Number	Sleeve Tight Fit	Easy Fit	Max. Bore Diameter (mm)	Rated ^{*1} torque (N·m)	Max. ^{*1} torque (N·m)	Zero Backlash ^{*3} Allowable Transmission Torque(N·m)	Max. Rotational Frequency (min ⁻¹)	Moment ^{*2} of Inertia (kg·m ²)	Static Torsional Stiffness (N·m / rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass ^{*2} (g)	Sleeve Hardness (JIS)
MJC-30K	BL	EBL	16	4	8	0.5	21000	6.1 x 10 ⁻⁶	46	0.2	1	+1.0 0	43	A80
MJC-40K	BL	EBL	25	4.9	9.8	1.2	15000	3.6 x 10 ⁻⁵	380	0.15	1	+1.2 0	130	A92
MJC-55K	BL	EBL	32	17	34		11000	1.6 x 10 ⁻⁴	1400	0.2	1	+1.4 0	310	
MJC-65K	BL	EBL	38.1	46	92		9000	3.6 x 10 ⁻⁴	2800	0.2	1	+1.5 0	510	
MJC-80K	BL	EBL	45	95	190		7000	1.1 x 10 ⁻³	3200	0.2	1	+1.8 0	1000	
MJC-95K	BL	EBL	55	130	260		6000	2.3 x 10 ⁻³	3600	0.2	1	+2.0 0	1500	
MJC-30K	WH	EWL	16	7.5	15	0.5	21000	6.1 x 10 ⁻⁶	73	0.15	1	+1.0 0	43	A92
MJC-40K	WH	EWL	25	10	20	1.2	15000	3.6 x 10 ⁻⁵	570	0.1	1	+1.2 0	130	
MJC-55K	WH	EWL	32	35	70		11000	1.6 x 10 ⁻⁴	1600	0.15	1	+1.4 0	310	
MJC-65K	WH	EWL	38.1	95	190		9000	3.6 x 10 ⁻⁴	3000	0.15	1	+1.5 0	510	
MJC-80K	WH	EWL	45	190	380		7000	1.1 x 10 ⁻³	5300	0.15	1	+1.8 0	1000	
MJC-95K	WH	EWL	55	265	530		6000	2.3 x 10 ⁻³	6200	0.15	1	+2.0 0	1500	
MJC-30K	RD	ERD	16	12.5	25	0.5	21000	6.1 x 10 ⁻⁶	130	0.1	1	+1.0 0	43	A98
MJC-40K	RD	ERD	25	17	34	1.2	15000	3.6 x 10 ⁻⁵	1200	0.1	1	+1.2 0	130	
MJC-55K	RD	ERD	32	60	120		11000	1.6 x 10 ⁻⁴	2600	0.1	1	+1.4 0	310	
MJC-65K	RD	ERD	38.1	160	320		9000	3.6 x 10 ⁻⁴	4900	0.1	1	+1.5 0	510	
MJC-80K	RD	ERD	45	325	650		7000	1.1 x 10 ⁻³	6500	0.1	1	+1.8 0	1000	
MJC-95K	RD	ERD	55	450	900		6000	2.3 x 10 ⁻³	8900	0.1	1	+2.0 0	1500	
MJC-30K	GR	EGR	16	16	32	0.5	21000	6.1 x 10 ⁻⁶	200	0.08	1	+1.0 0	43	D64
MJC-40K	GR	EGR	25	21	42	1.2	15000	3.6 x 10 ⁻⁵	3000	0.08	1	+1.2 0	130	
MJC-55K	GR	EGR	32	75	150		11000	1.6 x 10 ⁻⁴	9000	0.08	1	+1.4 0	310	
MJC-65K	GR	EGR	38.1	200	400		9000	3.6 x 10 ⁻⁴	13000	0.08	1	+1.5 0	510	
MJC-80K	GR	EGR	45	405	810		7000	1.1 x 10 ⁻³	14000	0.08	1	+1.8 0	1000	
MJC-95K	GR	EGR	55	560	1120		6000	2.3 x 10 ⁻³	15000	0.08	1	+2.0 0	1500	

*1: Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the table. **MJC-K**'s allowable operating temperature is -20°C to 60°C.

*2: These are values with max. bore diameter.

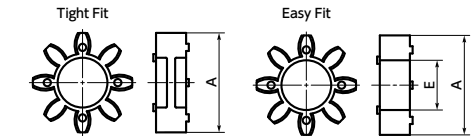
*3: For transmission with Zero Backlash, please use a tight fit sleeve.

Details of Shaft Hole



Standard Bore Diameter D	keyway				Key Nominal Dimension b x h
	Standard Dimension	allowance (JS9)	Standard Dimension	allowance	
10 · 11 · 12	4	±0.0150	1.8	+0.1 0	4×4
14 · 15 · 16	5	±0.0150	2.3	+0.1 0	5×5
18 · 19 · 20 · 22	6	±0.0150	2.8	+0.1 0	6×6
24 · 25 · 28 · 30	8	±0.0180	3.3	+0.2 0	8×7
32 · 35 · 38	10	±0.0180	3.3	+0.2 0	10×8
40 · 42	12	±0.0215	3.3	+0.2 0	12×8
45 · 48 · 50	14	±0.0215	3.8	+0.2 0	14×9
55	16	±0.0215	4.3	+0.2 0	16×10

Sleeve Details



Ambient Temperature / Temperature Correction Factor

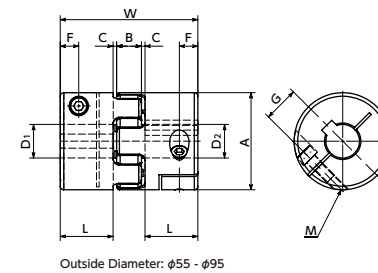
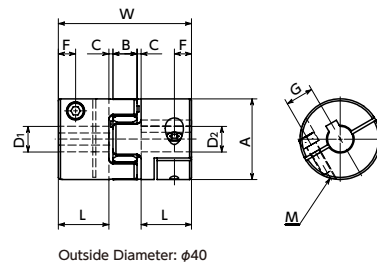
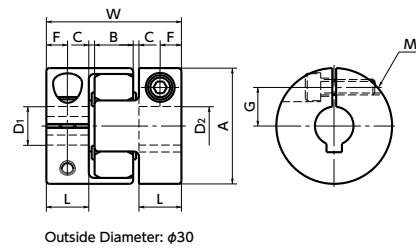
Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70

Unit : inch

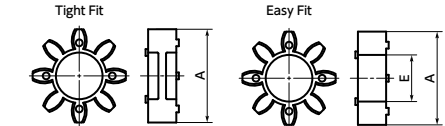
Standard Inch Bore Diameter D	Keyway			
	Standard Dimension	Allowance	Standard Dimension	Allowance
1/2	1 / 8	+0.002 0	0.560	+0.01 0
9/16	1 / 8	+0.002 0	0.623	+0.01 0
5/8	3 / 16	+0.002 0	0.709	+0.01 0
11/16	3 / 16	+0.002 0	0.773	+0.01 0
3/4	3 / 16	+0.002 0	0.837	+0.01 0
13/16	3 / 16	+0.002 0	0.900	+0.01 0
7/8	3 / 16	+0.002 0	0.964	+0.01 0
15/16	1 / 4	+0.002 0	1.051	+0.01 0
1	1 / 4	+0.002 0	1.114	+0.01 0
1 1/8	1 / 4	+0.002 0	1.241	+0.01 0
1 1/4	1 / 4	+0.002 0	1.367	+0.01 0
1 3/8	5 / 16	+0.002 0	1.518	+0.01 0
1 1/2	3 / 8	+0.002 0	1.669	+0.01 0
1 5/8	3 / 8	+0.002 0	1.796	+0.01 0
1 3/4	3 / 8	+0.002 0	1.922	+0.01 0

MJC-CSK Flexible Coupling - Jaw - type - Clamping + Key Type

WEB Selection Tool CAD Download High torque Vibration absorption Electrical Insulation



Sleeve Details



Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70

Dimensions

Unit : mm

Part Number	Bore Diameter	A	L	W	B	C*1	Sleeve E	F	G	M	Screw Tightening Torque (N·m)
MJC-30CSK	10 - 12	30	11	35	10	1.5	11	5.5	10	M4	3.5
	14 - 16								11	M3	1.5
MJC-40CSK	10 - 20	40	25	66	12	2	18	8.5	14	M5	8
	22 - 25								15.75	M4	3.5
MJC-55CSK	10 - 28	55	30	78	14	2	27.5	10.5	20	M6	13
	30 - 32								21	M5	8
MJC-65CSK	12.7 - 32	65	35	90	15	2.5	31	13	24	M8	28
	34.925 - 38.1								25	M6	13
MJC-80CSK	19.05 - 42	80	45	114	18	3	37	15	30	M8	28
	44.45 - 45								31		
MJC-95CSK	25 - 48	95	50	126	20	3	45.5	18	34	M10	55
	50 - 55								36		

*1 : Use with C Dimension

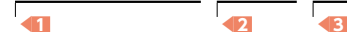
Part Number	Standard metric bore diameter																								
	D1 • D2 																								
	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55		
MJC-30CSK	●	●	●	●	●	●																			
MJC-40CSK	●	●	●	●	●	●	●	●	●	●	●	●													
MJC-55CSK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
MJC-65CSK				●	●	●	●	●	●	●	●	●	●	●	●	●	●								
MJC-80CSK										●	●	●	●	●	●	●	●	●	●	●					
MJC-95CSK												●	●	●	●	●	●	●	●	●	●	●	●		

Part Number	Standard inch bore diameter															
	D1 • D2 3															
	1 / 2	9 / 16	5 / 8	11 / 16	3 / 4	13 / 16	7 / 8	15 / 16	1	1 1 / 8	1 1 / 4	1 3 / 8	1 1 / 2	1 5 / 8	1 3 / 4	
MJC-30CSK	●	●	●													
MJC-40CSK	●	●	●	●	●											
MJC-55CSK	●	●	●	●	●	●	●	●	●							
MJC-65CSK	●	●	●	●	●	●	●	●	●	●	●	●	●			
MJC-80CSK					●	●	●	●	●	●	●	●	●	●	●	
MJC-95CSK									●	●	●	●	●	●	●	

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with clamping + key type for one side and clamping type or other type for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Part number specification

MJC-80CSK-EWH-22-24



Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Please feel free to contact us

Available / Add'l charge

Available / Add'l charge

Performance

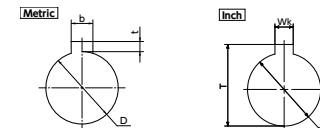
Part Number	Sleeve		Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Zero Backlash*3 Allowable Transmission Torque(N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m / rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)	Sleeve Hardness (JIS)
	Tight Fit	Easy Fit												
MJC-30CSK	BL	EBL	16	4	8	0.5	21000	5.9 × 10 ⁻⁶	46	0.2	1	+1.0 0	41	A80
MJC-40CSK	BL	EBL	25	4.9	9.8	1.2	15000	3.5 × 10 ⁻⁵	380	0.15	1	+1.2 0	130	
MJC-55CSK	BL	EBL	32	17	34		11000	1.5 × 10 ⁻⁴	1400	0.2	1	+1.4 0	300	
MJC-65CSK	BL	EBL	38.1	46	92		9000	3.5 × 10 ⁻⁴	2800	0.2	1	+1.5 0	490	
MJC-80CSK	BL	EBL	45	95	190		7000	1.0 × 10 ⁻³	3200	0.2	1	+1.8 0	990	
MJC-95CSK	BL	EBL	55	130	260		6000	2.3 × 10 ⁻³	3600	0.2	1	+2.0 0	1500	
MJC-30CSK	WH	EW	16	7.5	15	0.5	21000	5.9 × 10 ⁻⁶	73	0.15	1	+1.0 0	41	A92
MJC-40CSK	WH	EW	25	10	20	1.2	15000	3.5 × 10 ⁻⁵	570	0.1	1	+1.2 0	130	
MJC-55CSK	WH	EW	32	35	70		11000	1.5 × 10 ⁻⁴	1600	0.15	1	+1.4 0	300	
MJC-65CSK	WH	EW	38.1	95	190		9000	3.5 × 10 ⁻⁴	3000	0.15	1	+1.5 0	490	
MJC-80CSK	WH	EW	45	190	380		7000	1.0 × 10 ⁻³	5300	0.15	1	+1.8 0	990	
MJC-95CSK	WH	EW	55	265	530		6000	2.3 × 10 ⁻³	6200	0.15	1	+2.0 0	1500	
MJC-30CSK	RD	ERD	16	12.5	25	0.5	21000	5.9 × 10 ⁻⁶	130	0.1	1	+1.0 0	41	A98
MJC-40CSK	RD	ERD	25	17	34	1.2	15000	3.5 × 10 ⁻⁵	1200	0.1	1	+1.2 0	130	
MJC-55CSK	RD	ERD	32	60	120		11000	1.5 × 10 ⁻⁴	2600	0.1	1	+1.4 0	300	
MJC-65CSK	RD	ERD	38.1	160	320		9000	3.5 × 10 ⁻⁴	4900	0.1	1	+1.5 0	490	
MJC-80CSK	RD	ERD	45	325	650		7000	1.0 × 10 ⁻³	6500	0.1	1	+1.8 0	990	
MJC-95CSK	RD	ERD	55	450	900		6000	2.3 × 10 ⁻³	8900	0.1	1	+2.0 0	1500	
MJC-30CSK	GR	EGR	16	16	32	0.5	21000	5.9 × 10 ⁻⁶	200	0.08	1	+1.0 0	41	D64
MJC-40CSK	GR	EGR	25	21	42	1.2	15000	3.5 × 10 ⁻⁵	3000	0.08	1	+1.2 0	130	
MJC-55CSK	GR	EGR	32	75	150		11000	1.5 × 10 ⁻⁴	9000	0.08	1	+1.4 0	300	
MJC-65CSK	GR	EGR	38.1	200	400		9000	3.5 × 10 ⁻⁴	13000	0.08	1	+1.5 0	490	
MJC-80CSK	GR	EGR	45	405	810		7000	1.0 × 10 ⁻³	14000	0.08	1	+1.8 0	990	
MJC-95CSK	GR	EGR	55	560	1120		6000	2.3 × 10 ⁻³	15000	0.08	1	+2.0 0	1500	

*1 : Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the table. MJC-CSK's allowable operating temperature is -20°C to 60°C.

*2 : These are values with max. bore diameter.

*3 : For transmission with Zero Backlash, please use a tight fit sleeve.

Details of Shaft Hole



Unit : mm

Standard Metric Bore Diameter D	Keyway				Key Nominal Dimension b x h
	Standard Dimension	Allowance (JS9)	Standard Dimension	Allowance	
10 · 11 · 12	4	±0.0150	1.8	+0.1 0	4×4
14 · 15 · 16	5	±0.0150	2.3	+0.1 0	5×5
18 · 19 · 20 · 22	6	±0.0150	2.8	+0.1 0	6×6
24 · 25 · 28 · 30	8	±0.0180	3.3	+0.2 0	8×7
32 · 35 · 38	10	±0.0180	3.3	+0.2 0	10×8
40 · 42	12	±0.0215	3.3	+0.2 0	12×8
45 · 48 · 50	14	±0.0215	3.8	+0.2 0	14×9
55	16	±0.0215	4.3	+0.2 0	16×10

Standard Inch Bore Diameter D	Keyway Wk		T	
	Standard Dimension	Allowance	Standard Dimension	Allowance
1/2	1 / 8	+0.002 0	0.560	+0.01 0
9/16	1 / 8	+0.002 0	0.623	+0.01 0
5/8	3 / 16	+0.002 0	0.709	+0.01 0
11/16	3 / 16	+0.002 0	0.773	+0.01 0
3/4	3 / 16	+0.002 0	0.837	+0.01 0
13/16	3 / 16	+0.002 0	0.900	+0.01 0
7/8	3 / 16	+0.002 0	0.964	+0.01 0
15/16	1 / 4	+0.002 0	1.051	+0.01 0
1	1 / 4	+0.002 0	1.114	+0.01 0
1 1/8	1 / 4	+0.002 0	1.241	+0.01 0
1 1/4	1 / 4	+0.002 0	1.367	+0.01 0
1 3/8	5 / 16	+0.002 0	1.518	+0.01 0
1 1/2	3 / 8	+0.002 0	1.669	+0.01 0
1 5/8	3 / 8	+0.002 0	1.796	+0.01 0
1 3/4	3 / 8	+0.002 0	1.922	+0.01 0

MJS Flexible Coupling - Jaw - type (Short)

WEB Selection Tool CAD Download High torque Vibration absorption Electrical Insulation

Structure

- Clamping Type → P.143

MJS--CS-**-Tight Fit**

MJS--CS-E**-Easy Fit**



- Clamping + Key Type → P.145

MJS--CSK-**-Tight Fit**

MJS--CSK-E**-Easy Fit**



- Sleeve

Outside Diameter: $\phi 40$

Outside Diameter: $\phi 55 - \phi 95$



Tight Fit

Easy Fit

Tight Fit

Easy Fit

- Applicable motors

	Tight Fit	Easy Fit
Servomotor	○	○
Stepping Motor	○	○
General-Purpose Motor	○	○

○: Excellent ○: Very good

- Property

	Tight Fit	Easy Fit
Zero Backlash	○	—
High Torque	○	○
Allowable Misalignment	○	○
Vibration Absorption	○	○
Electrical Insulation	○	○
Assembling	○	○
Allowable Operating Temperature	−20°C to 60°C	−20°C to 60°C

○: Excellent ○: Very good

- This is a jaw type flexible coupling.
- It is a short type and more compact than **MJC**.
- Tight Fit enables transmission with zero backlash at low torque.
- Easy fit allows assembling and separation of hubs.
- Excellent flexibility allows eccentricity, angular misalignment and twisting vibration to be accepted.
- It has electrical insulation. Resistance value: Not less than 2 M Ω

- Sleeve Type

Sleeve Type	Sleeve Hardness (JIS)			
	A80	A92	A98	D64
Tight Fit	BL	WH	RD	GR
Easy Fit	EBL	EWH	ERD	EGR

Small → Rated Torque / Maximum Torque → Large
Large ← Allowable Misalignment ← Small

- Material/Finish

RoHS2 Compliant

	MJS-CS / MJS-CSK
Hub	A2017 Alumite Treatment
Sleeve	Polyurethane
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

- Part number specification

MJS-40CSK-ERD-10-11

Product Code Size Sleeve Type bore diameter

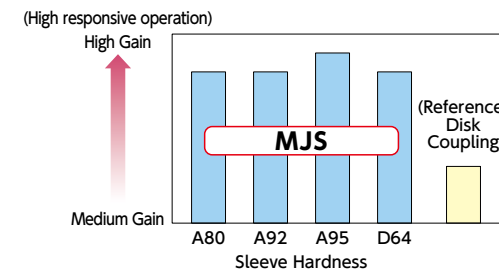
Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Available / Add'l charge Available / Add'l charge Available / Add'l charge

- Tight Fit

The hub and sleeve are press-fit and can be used under zero backlash*1. Since the sleeve's vibration absorption can raise the gain of a servomotor, this unit can achieve high responsive operation exceeding the Disk coupling.

*1: For the torque used under zero backlash, please refer to Performance table.



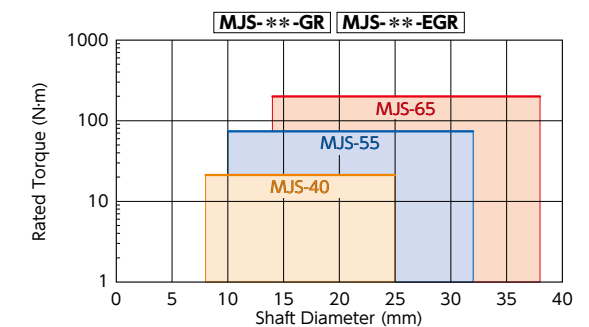
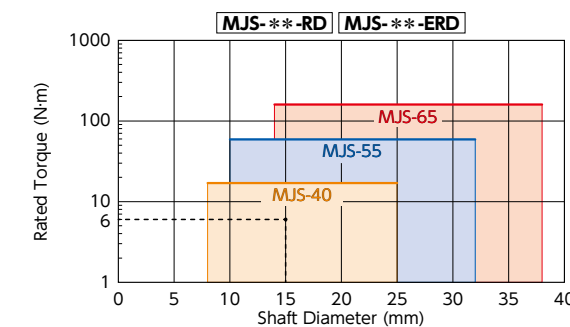
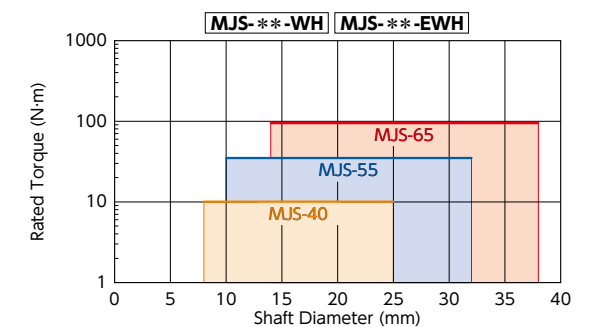
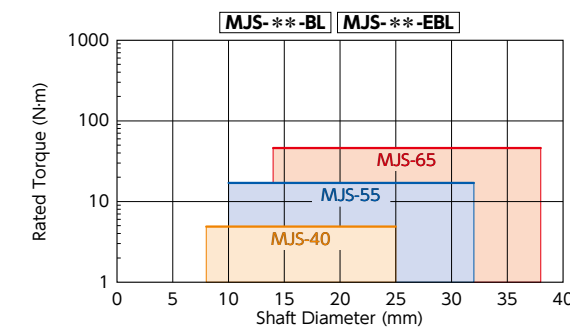
- Tight Fit Applications

XY stage / Index table / Machine tool / Injection molding machine

Selection

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



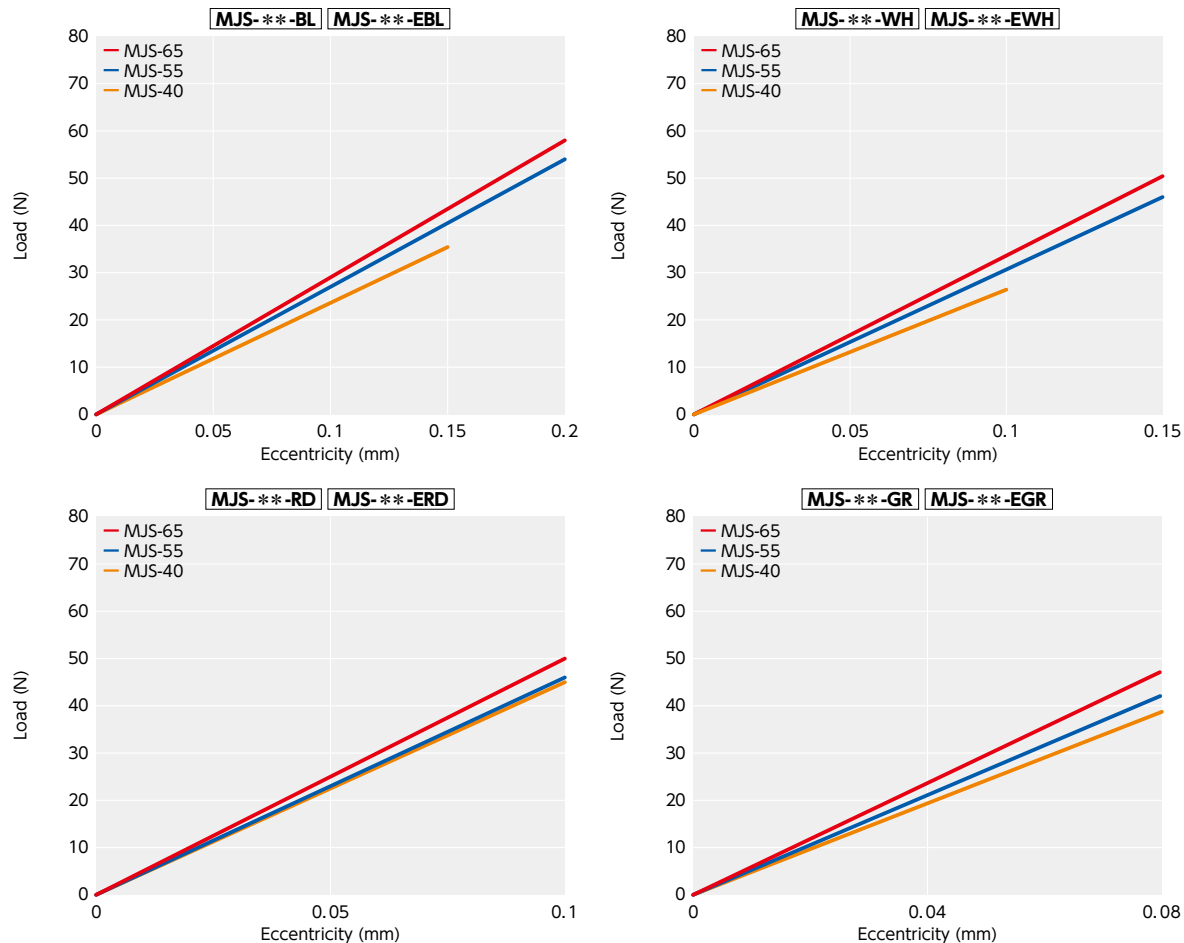
- Selection Example

In case of selected parameters of shaft diameter of $\phi 15$ and load torque of 6 N·m, the selected size for

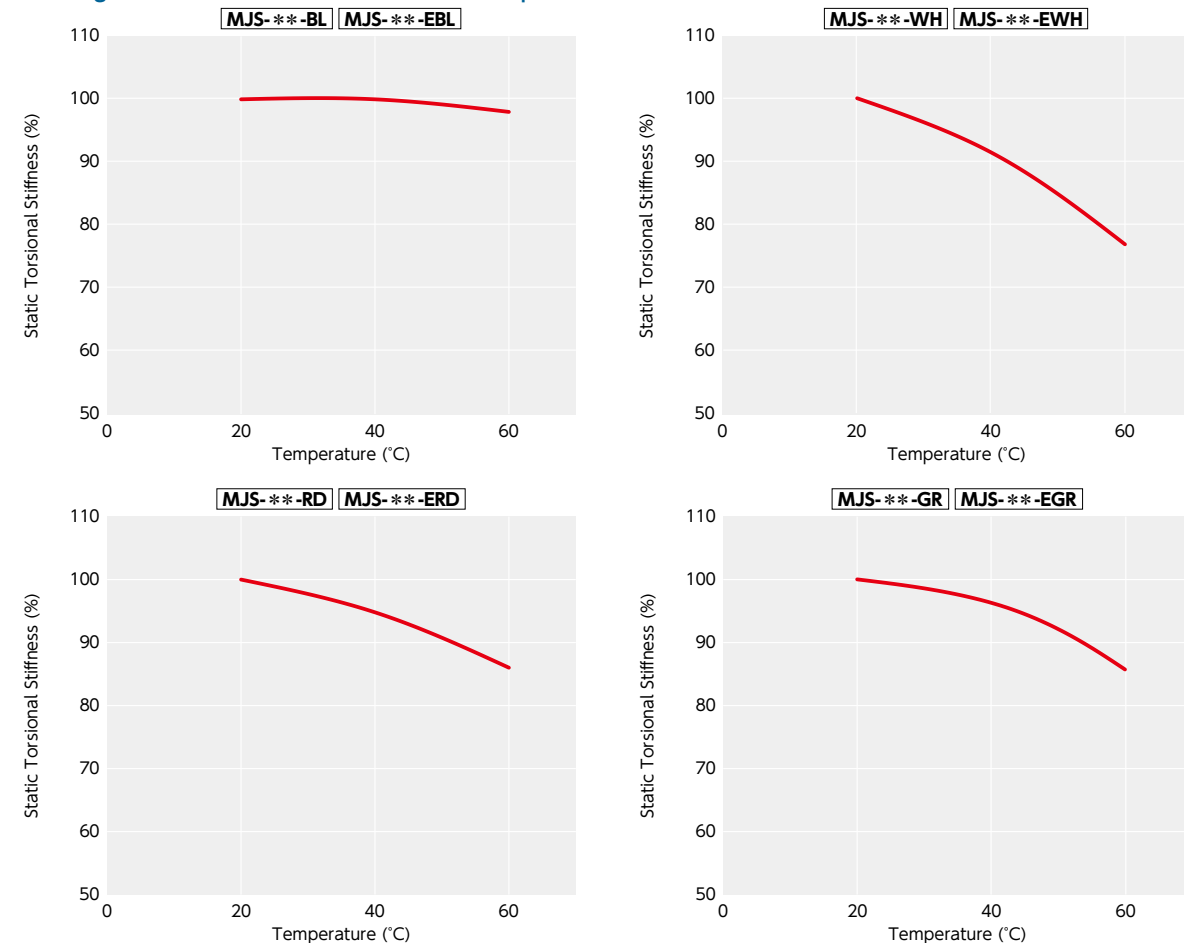
MJS--CS-RD**, **MJS-**-CS-ERD** is **MJS-40CS-RD**, **MJS-40CS-ERD**.

Technical Information

● Eccentric Reaction Force



● Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20℃ is 100%.
The change of torsional stiffness within the range of allowable operating temperature is as shown in the graph.
Before using the unit, be aware of the deterioration of responsiveness.

● Slip Torque

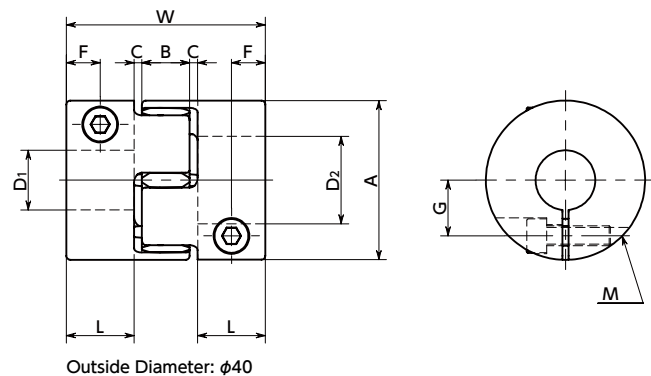
Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the max. torque of **MJS-CS**.

Part Number	Bore Diameter (mm)																
	8	9.525	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32
MJS-40CS	28.9	35.6	37.7														
MJS-55CS			40.2	46.7	53.2	66.1	72.6	79	92	98.4	104	117	130	137		145	
MJS-65CS						113	123	134	155	165	176	197	218	228	260	281	302

● These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **MJS-CS** dimensional table.

MJS-CS Flexible Coupling - Jaw - type (Short) - Clamping Type

WEB Selection Tool CAD Download High torque Vibration absorption Electrical Insulation



Dimensions

Unit: mm

Part Number	Bore Diameter	A	L	W	B	C*1	Sleeve E	F	G	M	Screw Tightening Torque (N·m)
MJS-40CS	8 - 20	40	17	50	12	2	18	8.5	14	M5	8
	22 - 25								15.75	M4	3.5
MJS-55CS	10 - 28	55	18	54	14	2	27.5	9	20	M6	13
	30 - 32								21	M5	8
MJS-65CS	14 - 32	65	21	62	15	2.5	31	10.5	24	M8	28
	35 - 38								25	M6	13

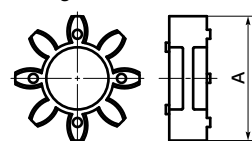
*1: Use with C Dimension

Part Number	Standard Bore Diameter D1・D2																
	8	9.525	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32
MJS-40CS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJS-55CS			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJS-65CS						●	●	●	●	●	●	●	●	●	●	●	●

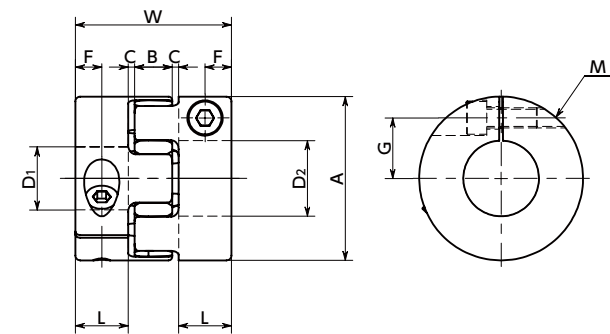
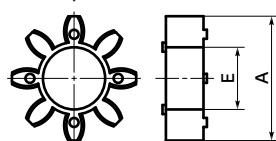
- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with clamping type for one side and clamping + key type for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➔ P.258

● Sleeve Details

Tight Fit



Easy Fit



Outside Diameter: φ55 / φ65

Performance

Part Number	Sleeve	Tight Fit	Easy Fit	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Zero Backlash*3 Allowable Transmission Torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m / rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)	Sleeve Hardness (JIS)
MJS-40CS	BL	EBL		25	4.9	9.8	1.2	15000	2.7 x 10 ⁻⁵	380	0.15	1	+1.2 0	100	
MJS-55CS	BL	EBL		32	17	34		11000	1.1 x 10 ⁻⁴	1400	0.2	1	+1.4 0	210	A80
MJS-65CS	BL	EBL		38	46	92		9000	2.4 x 10 ⁻⁴	2800	0.2	1	+1.5 0	340	
MJS-40CS	WH	EWL		25	10	20	1.2	15000	2.7 x 10 ⁻⁵	570	0.1	1	+1.2 0	100	
MJS-55CS	WH	EWL		32	35	70		11000	1.1 x 10 ⁻⁴	1600	0.15	1	+1.4 0	210	A92
MJS-65CS	WH	EWL		38	95	190		9000	2.4 x 10 ⁻⁴	3000	0.15	1	+1.5 0	340	
MJS-40CS	RD	ERD		25	17	34	1.2	15000	2.7 x 10 ⁻⁵	1200	0.1	1	+1.2 0	100	
MJS-55CS	RD	ERD		32	60	120		11000	1.1 x 10 ⁻⁴	2600	0.1	1	+1.4 0	210	A98
MJS-65CS	RD	ERD		38	160	320		9000	2.4 x 10 ⁻⁴	4900	0.1	1	+1.5 0	340	
MJS-40CS	GR	EGR		25	21	42	1.2	15000	2.7 x 10 ⁻⁵	3000	0.08	1	+1.2 0	100	
MJS-55CS	GR	EGR		32	75	150		11000	1.1 x 10 ⁻⁴	9000	0.08	1	+1.4 0	210	D64
MJS-65CS	GR	EGR		38	200	400		9000	2.4 x 10 ⁻⁴	13000	0.08	1	+1.5 0	340	

*1: Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the table. **MJS-CS**'s allowable operating temperature is -20°C to 60°C.

*2: These are values with max. bore diameter.

*3: For transmission with Zero Backlash, please use a tight fit sleeve.

● Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70

● Part number specification

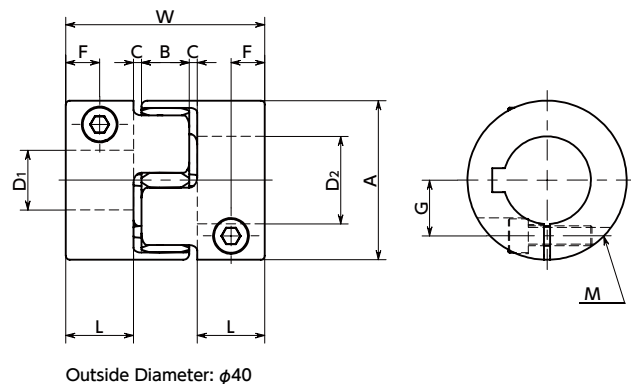
MJS-55CS-EGR-14-16

1 2 3

Additional Keyway at Shaft Hole ➔ P.803 Cleanroom Wash & Packaging ➔ P.807 Change to Stainless Steel Screw ➔ P.805
Available / Add'l charge Available / Add'l charge Available / Add'l charge

MJS-CSK Flexible Coupling - Jaw - type (Short) - Clamping + Key Type

WEB Selection Tool WEB CAD Download High torque Vibration absorption Electrical Insulation



Dimensions

Unit : mm

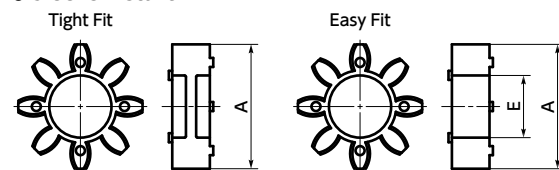
Part Number	Bore Diameter	A	L	W	B	C*1	Sleeve E	F	G	M	Screw Tightening Torque (N·m)
MJS-40CSK	10 - 20	40	17	50	12	2	18	8.5	14	M5	8
	22 - 25								15.75	M4	3.5
MJS-55CSK	10 - 28	55	18	54	14	2	27.5	9	20	M6	13
	30 - 32								21	M5	8
MJS-65CSK	14 - 32	65	21	62	15	2.5	31	10.5	24	M8	28
	35 - 38								25	M6	13

*1 : Use with C Dimension

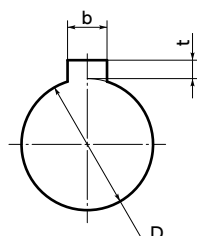
Part Number	Standard Bore Diameter D1・D2 																
	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38
MJS-40CSK	●	●	●	●	●	●	●	●	●	●	●	●					
MJS-55CSK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
MJS-65CSK				●	●	●	●	●	●	●	●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with clamping + key type for one side and clamping type for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Sleeve Details



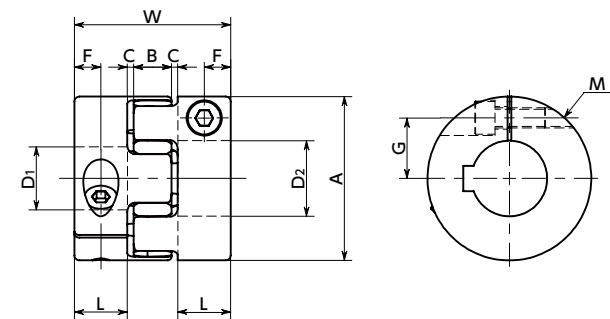
Details of Shaft Hole



Standard Bore Diameter D	Keyway				Unit: mm
	b		t		Nominal Dimension b x h
	Standard Dimension	Allowance (JS9)	Standard Dimension	Allowance	
10・11・12	4	±0.0150	1.8	+0.1 0	4×4
14・15・16	5	±0.0150	2.3	+0.1 0	5×5
18・19・20・22	6	±0.0150	2.8	+0.1 0	6×6
24・25・28・30	8	±0.0180	3.3	+0.2 0	8×7
32・35・38	10	±0.0180	3.3	+0.2 0	10×8

Unit : mm

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Please feel free to contact us Available / Add'l charge Available / Add'l charge



Outside Diameter: φ55 / φ65

Performance

Part Number	Sleeve Fit	Easy Fit	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Zero Backlash*3 Allowable Transmission Torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m / rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)	Sleeve Hardness (JIS)
MJS-40CSK	BL	EBL	25	4.9	9.8	1.2	15000	2.7 x 10 ⁻⁵	380	0.15	1	+1.2 0	96	
MJS-55CSK	BL	EBL	32	17	34		11000	1.0 x 10 ⁻⁴	1400	0.2	1	+1.4 0	210	A80
MJS-65CSK	BL	EBL	38	46	92		9000	2.3 x 10 ⁻⁴	2800	0.2	1	+1.5 0	330	
MJS-40CSK	WH	EWH	25	10	20	1.2	15000	2.7 x 10 ⁻⁵	570	0.1	1	+1.2 0	96	
MJS-55CSK	WH	EWH	32	35	70		11000	1.0 x 10 ⁻⁴	1600	0.15	1	+1.4 0	210	A92
MJS-65CSK	WH	EWH	38	95	190		9000	2.3 x 10 ⁻⁴	3000	0.15	1	+1.5 0	330	
MJS-40CSK	RD	ERD	25	17	34	1.2	15000	2.7 x 10 ⁻⁵	1200	0.1	1	+1.2 0	96	
MJS-55CSK	RD	ERD	32	60	120		11000	1.0 x 10 ⁻⁴	2600	0.1	1	+1.4 0	210	A98
MJS-65CSK	RD	ERD	38	160	320		9000	2.3 x 10 ⁻⁴	4900	0.1	1	+1.5 0	330	
MJS-40CSK	GR	EGR	25	21	42	1.2	15000	2.7 x 10 ⁻⁵	3000	0.08	1	+1.2 0	96	
MJS-55CSK	GR	EGR	32	75	150		11000	1.0 x 10 ⁻⁴	9000	0.08	1	+1.4 0	210	D64
MJS-65CSK	GR	EGR	38	200	400		9000	2.3 x 10 ⁻⁴	13000	0.08	1	+1.5 0	330	

*1 : Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the table. **MJS-CSK**'s allowable operating temperature is -20°C to 60°C.

*2 : These are values with max. bore diameter.

*3 : For transmission with Zero Backlash, please use a tight fit sleeve.

Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70

Part number specification

MJS-40CSK-EBL-14-16

1 2 3

MJB Flexible Coupling - Jaw - type (Bushing)

WEB Selection Tool CAD Download High torque Vibration absorption Electrical Insulation

Structure

- Bushing type
- MJB** → P.153



- Sleeve
- Outside diameter $\phi 40$



Tight Fit



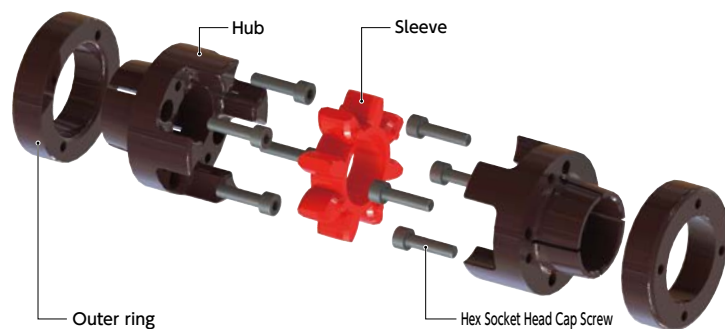
Easy Fit

Outside diameter $\phi 55 - \phi 95$ 

Tight Fit



Easy Fit



Material/Finish

RoHS2 Compliant

	MJB
Hub	S45C Ferrosoferric Oxide Film (Black)
Outer ring	S45C Ferrosoferric Oxide Film (Black)
Sleeve	Polyurethane
Hex Socket Head Cap Screw	SCM435 Ferrosoferric oxide film

Part number specification

MJB-55-RD-10-10

Product Code Size Sleeve Bore Type Diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Please feel free to contact us	Not Available	Not Available

Applicable motors

	Tight fit	Easy Fit
Servomotor	○	○
Stepping Motor	○	○
General-purpose motor	○	○

○: Excellent ○: Very good

Property

	Tight fit	Easy Fit
High torque	○	○
Allowable Misalignment	○	○
Vibration absorption	○	○
Electrical insulation	○	○
Assembling	○	○
Allowable operating temperature	-20°C to 60°C	-20°C to 60°C

○: Excellent ○: Very good

- This is a jaw type flexible coupling.
- This superior high torque transmission is the most appropriate for the spindle of a machine tool.
- Excellent flexibility allows eccentricity, and angular misalignment and vibration to be accepted.
- It has electrical insulation. Resistance value: not less than 2 MΩ.
- There are four types of sleeve hardness. Please select desirable units according to usage conditions including torque and misalignment.
- Since the sleeve's vibration absorption can raise the gain of a servomotor, tight fit can achieve high responsive operation exceeding the Disk coupling.
- Easy fit allows you to assemble and partition the hub and sleeve smoothly. This allows you to reduce the time of assembling the unit and maintenance.

Application

Machine tool / Spindle

Sleeve type

Sleeve Type	Sleeve Hardness (JIS)			
	A80	A92	A98	D64
Tight Fit				
Easy Fit				

Small → Large Rated torque and max. torque
Large ← Small Allowable Misalignment



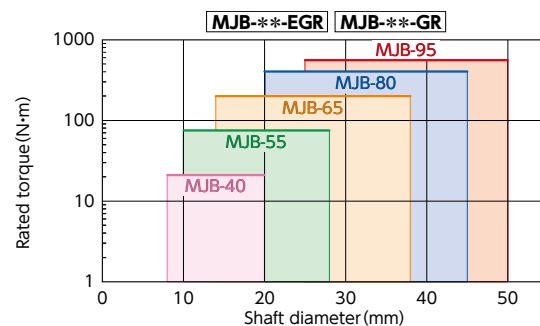
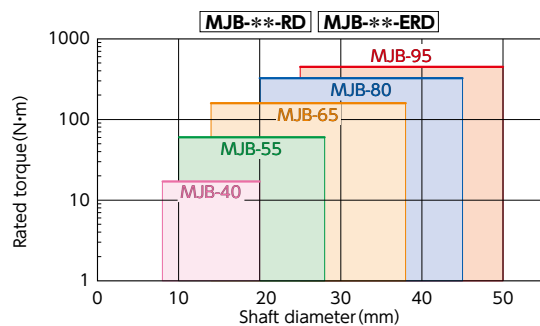
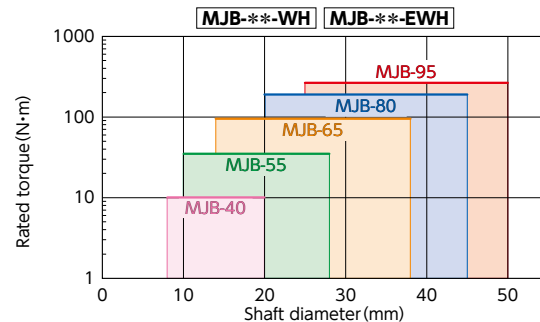
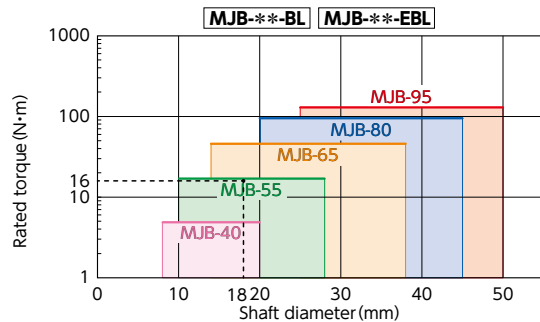
MJB Flexible Coupling - Jaw - type (Bushing)

WEB Selection Tool CAD Download High torque Vibration absorption Electrical Insulation

Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



Selection example

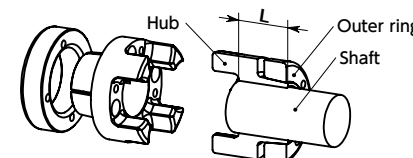
In case of selected parameters of shaft diameter of ϕ 18 and load torque of 16 N·m, the selected size for

MJB--BL** **MJB-**-EBL** is **MJB-55-BL**
MJB-55-EBL

Mounting / Removing

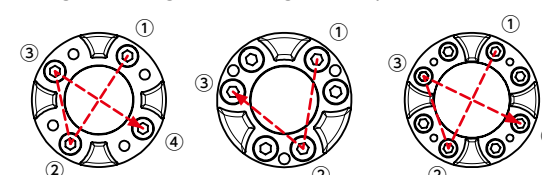
Mounting

- ① Clean up the fitting surfaces of hub, outer ring and shaft.
- ② Apply light oil thinly on the surfaces. Avoid molybdenum base oil as it reduces the fastening power seriously.
- ③ Insert the shaft to the dimension L. → **Table 1**



- ④ Tighten the hexagon socket head bolts with 50% of the tightening torque in **Table 1**, each for once, following the sequence in **Fig.1**
- ⑤ In the same sequence as in ④, tighten the hexagon socket head bolts with 100% of the tightening torque in **Table 1**, each for once.

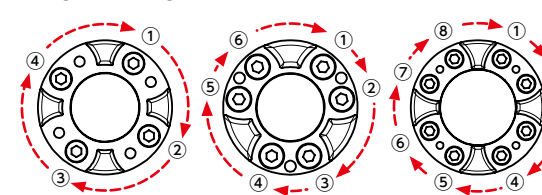
Diagram 1 Tighten in diagonal sequence



Number of bolts=4 Number of bolts=6 Number of bolts=8

- ⑥ Tighten all hexagon socket head bolts with the tightening torque in **Table 1**, following the sequence in **Fig.2**

Diagram 2 Tighten all bolts



Number of bolts=4 Number of bolts=6 Number of bolts=8

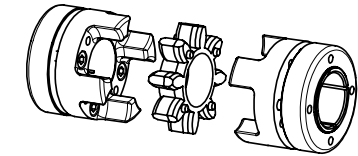
- ⑦ Repeat ⑥ until all hex socket head cap screws securely fixed.

As a guide, the rotation of a hex socket head screw, when tightened, should be less than 20 degrees.

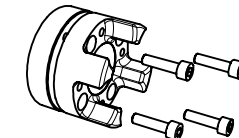
▲ Use a torque wrench to tighten bolts.

Removal

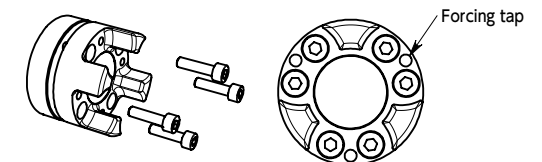
- ① Disassemble the hub and the sleeve.



- ② Confirm that there is no torque or thrust load, then loosen all hexagon socket head bolts completely and remove them.



- ③ Insert one of the removed bolts in ② to a forcing tap, and tighten little by little, avoiding uneven clamping.



- ④ Repeating ③ will lead to sharply reduced tightening torque. Remove the coupling from the shaft, as the fastening force from the tapered surface is reduced.

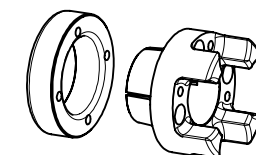


Table 1

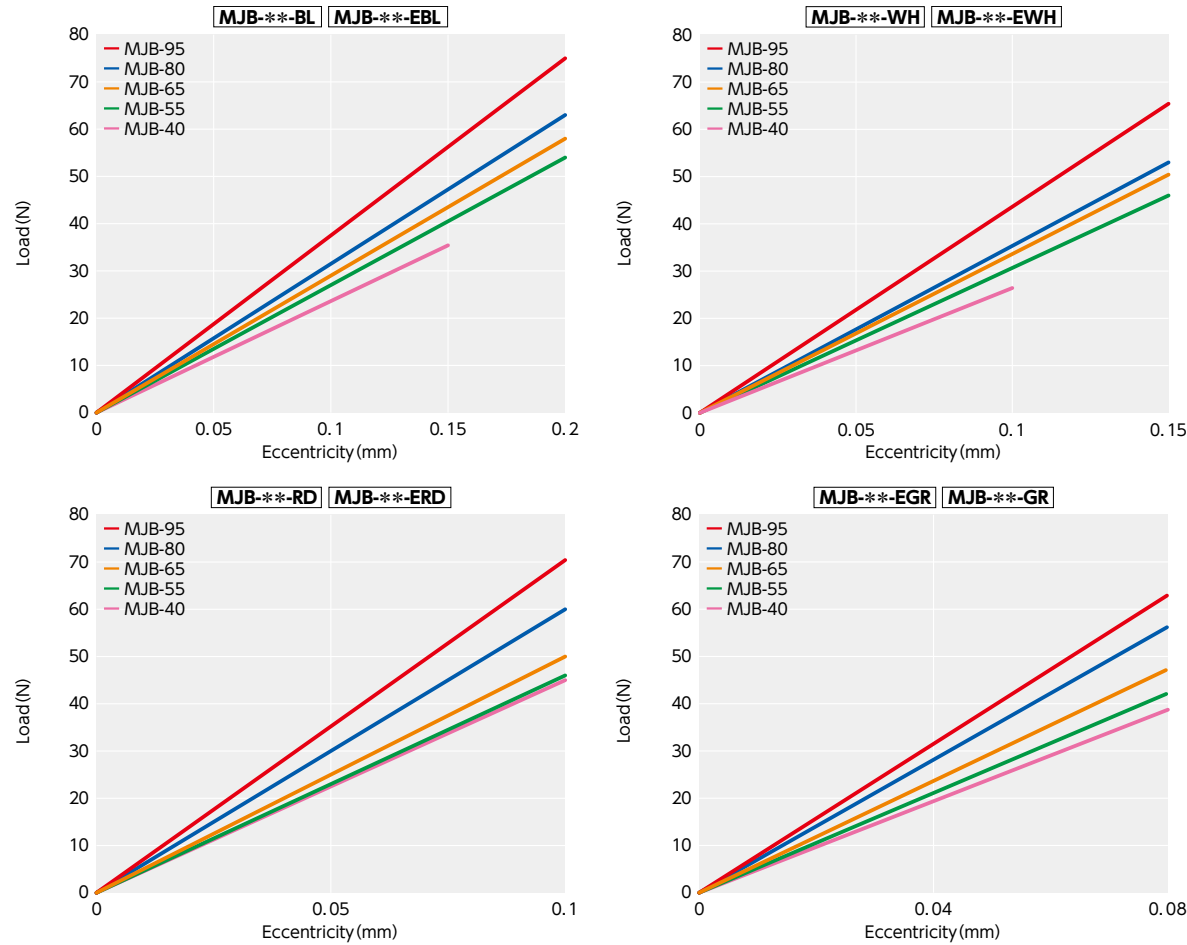
Part Number	L	Hex Socket Head Cap Screw		Screw Tightening Torque (N·m)
		Diameter of Thread	Number of bolts	
MJB-40	25	M4	6	4
MJB-55	30	M5	4	8.5
MJB-65	35	M5	8	8.5
MJB-80	45	M6	8	14
MJB-95	50	M8	8	35

MJB Flexible Coupling - Jaw - type (Bushing)

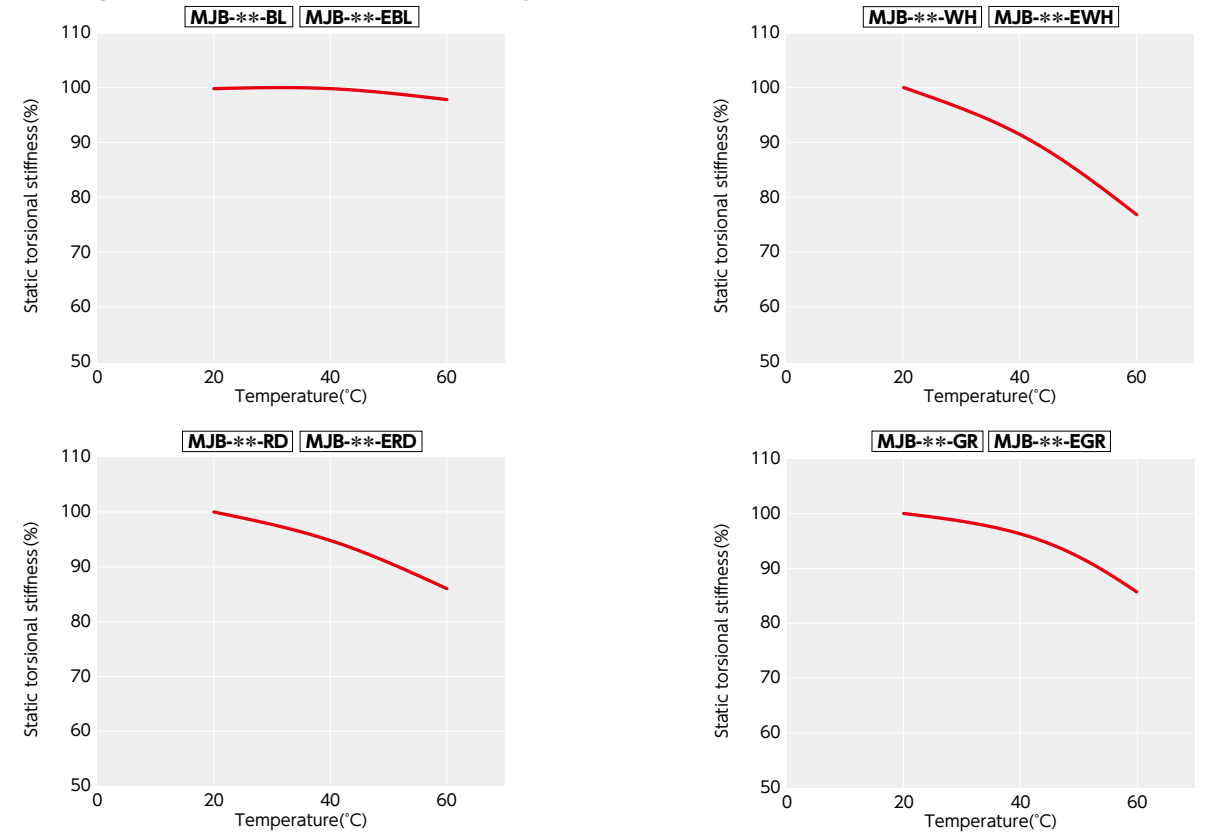
WEB Selection Tool WEB CAD Download High torque Vibration absorption Electrical Insulation

Technical Information

• Eccentric Reaction Force



• Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%.

The change of torsional stiffness within the range of allowable operating temperature is as shown in the graph.

Before using the unit, be aware of the deterioration of responsiveness.

• Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the max. torque of **MJB**.

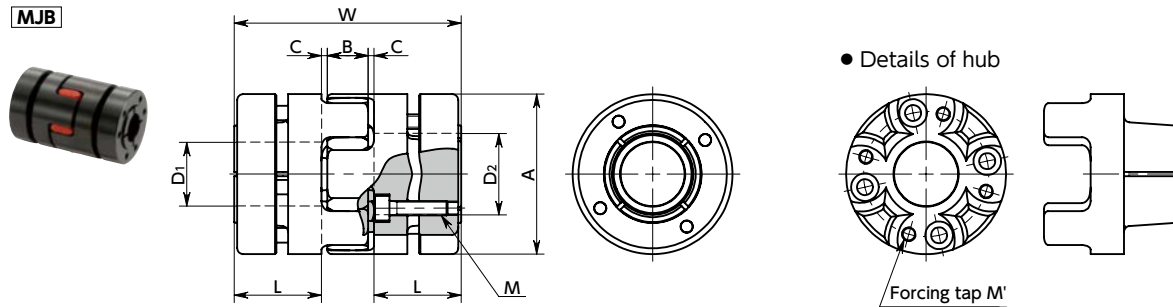
Part Number	Bore (mm)																				Unit : N · m	
	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50
MJB-55	32.8	54	75.2	117	138																	
MJB-65				161	171	181	202	212	222	243	264	274	305	325	346	377						
MJB-80									285	335	385	411	486	500	500	500	500	500	500	500		
MJB-95												500	500	500	500	500	500	500	500	500	500	500

• These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **MJB** Dimension table.

MJB Flexible Coupling - Jaw - type (Bushing)

WEB Selection Tool CAD Download High torque Vibration absorption Electrical Insulation

MJB



Dimensions

Unit : mm

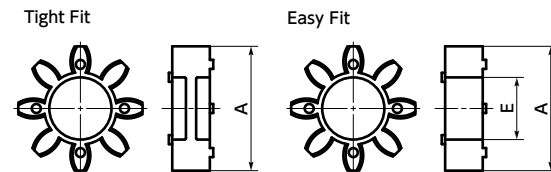
Part Number	A	L	W	B	C*1	Sleeve E	M	Number of bolts	Forcing tap M'	Screw Tightening Torque (N·m)
MJB-40	40	25	66	12	2	17	M4	6	M4	4
MJB-55	55	30	78	14	2	26	M5	4	M5	8.5
MJB-65	65	35	90	15	2.5	29.5	M5	8	M5	8.5
MJB-80	80	45	114	18	3	35.5	M6	8	M6	14
MJB-95	95	50	126	20	3	44	M8	8	M8	35

*1 : Use with C Dimension

Part Number	Standard Bore Diameter D1・D2																			
	8	9.525	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40
MJB-40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJB-55			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJB-65				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJB-80						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MJB-95											●	●	●	●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Sleeve Details



Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Please feel free to contact us

Not Available

Not Available

Performance

Part Number	Sleeve Tight Fit	Sleeve Easy Fit	Max. Bore Diameter (mm)	Rated*1 Torque (N·m)	Max.*1 Torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m / rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)	Sleeve Hardness (JIS)
MJB-40	BL	EBL	20	4.9	9.8	23000	3.9×10 ⁻⁵	380	0.15	1	+1.2 0	400	A80
MJB-55	BL	EBL	28	17	34	17000	1.6×10 ⁻⁴	1400	0.2	1	+1.4 0	800	
MJB-65	BL	EBL	38	46	92	14000	3.8×10 ⁻⁴	2800	0.2	1	+1.5 0	1100	
MJB-80	BL	EBL	45	95	190	11000	1.0×10 ⁻³	3200	0.2	1	+1.8 0	2300	
MJB-95	BL	EBL	50	130	260	10000	2.3×10 ⁻³	3600	0.2	1	+2.0 0	4000	A92
MJB-40	WH	EWL	20	10	20	23000	3.9×10 ⁻⁵	570	0.1	1	+1.2 0	400	
MJB-55	WH	EWL	28	35	70	17000	1.6×10 ⁻⁴	1600	0.15	1	+1.4 0	800	
MJB-65	WH	EWL	38	95	190	14000	3.8×10 ⁻⁴	3000	0.15	1	+1.5 0	1100	
MJB-80	WH	EWL	45	190	380	11000	1.0×10 ⁻³	5300	0.15	1	+1.8 0	2300	A98
MJB-95	WH	EWL	50	265	530	10000	2.3×10 ⁻³	6200	0.15	1	+2.0 0	4000	
MJB-40	RD	ERD	20	17	34	23000	3.9×10 ⁻⁵	1200	0.1	1	+1.2 0	400	
MJB-55	RD	ERD	28	60	120	17000	1.6×10 ⁻⁴	2600	0.1	1	+1.4 0	800	
MJB-65	RD	ERD	38	160	320	14000	3.8×10 ⁻⁴	4900	0.1	1	+1.5 0	1100	D64
MJB-80	RD	ERD	45	325	650	11000	1.0×10 ⁻³	6500	0.1	1	+1.8 0	2300	
MJB-95	RD	ERD	50	450	900	10000	2.3×10 ⁻³	8900	0.1	1	+2.0 0	4000	
MJB-40	GR	EGR	20	21	42	23000	3.9×10 ⁻⁵	3000	0.08	1	+1.2 0	400	D64
MJB-55	GR	EGR	28	75	150	17000	1.6×10 ⁻⁴	9000	0.08	1	+1.4 0	800	
MJB-65	GR	EGR	38	200	400	14000	3.8×10 ⁻⁴	13000	0.08	1	+1.5 0	1100	
MJB-80	GR	EGR	45	405	810	11000	1.0×10 ⁻³	14000	0.08	1	+1.8 0	2300	
MJB-95	GR	EGR	50	560	1120	10000	2.3×10 ⁻³	15000	0.08	1	+2.0 0	4000	

*1 : Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of **MJB** is -20°C to 60°C.

*2 : These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70

Part number specification

MJB-65-EWH-16-20 (1 set)

1 2 3

MJ - 40 - RD - SLV (Single Sleeve)

Sleeve Symbol Outside Diameter (A Dimension) 2 Sleeve Symbol

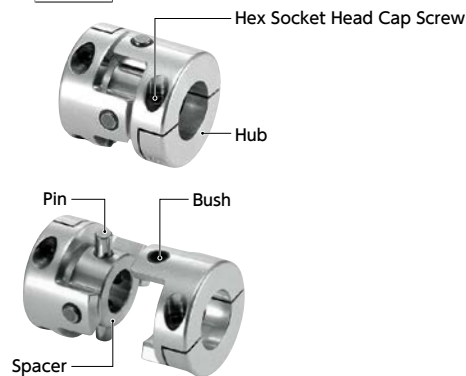
XUT Flexible Coupling - Cross joint - type

WEB Selection Tool CAD Download High Rigidity Vibration absorption

Structure

Clamping type

XUT-C → P.159



The high accuracy fitting of pin and bush allows the extremely small backlash.

For the bush of **XUT** the polyimide resin with excellent abrasion-resistance is adopted.

The backlash at the initial stage is maintained for a long period.

Recommended applicable motor

	XUT
Servomotor	○
Stepping Motor	○
General-purpose motor	△

○: Excellent ○: Very good △: Available

Property

	XUT
Zero Backlash	○
High torque	○
High Torsional Stiffness	○
Allowable Misalignment	○
Vibration absorption	○

○: Excellent ○: Very good

- This is a Cross joint-type flexible coupling.
- Slippage of the bush built in the hubs and the pins of the spacer allows eccentricity and angular misalignment to be accepted.
- The high accuracy fitting of pin and bush allows the extremely small backlash.
- The load on the shaft generated by misalignment is small and the burden on the shaft is reduced.

Application

Actuator/XY stage/Index table

Material/Finish

RoHS2 Compliant

	XUT-C
Hub	A2017*1
Spacer	SUS304
Pin	SUJ2
Bush	Polyimide
Hex Socket Head Cap Screw	SCM435 Ferrosoferric oxide film

*1: Manufacturing alumite treatment products is also possible.
Please feel free to contact our customer service.

Part number specification

XUT-25C-6-8

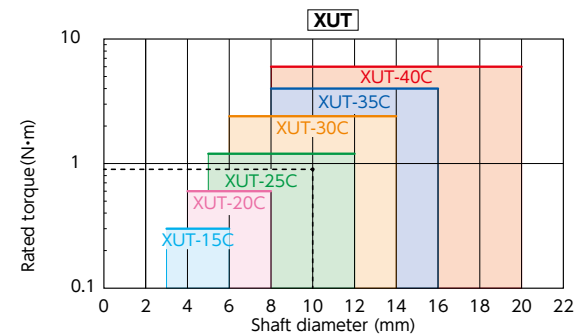
Product Code Size Bore Diameter

Please refer to dimensional table for part number specification.

Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates the selection size.



Selection example

In case of selected parameters of shaft diameter of ϕ 10 and load torque of 0.9 N·m, the selected size is

XUT-25C

Selection based on the rated output of the servomotor

Rated output (W)	Servomotor Specifications*1			Selection size
	Diameter of motor shaft (mm)	Rated torque (N·m)	Instantaneous maximum torque (N·m)	
10	5 - 6	0.032	0.096	XUT-15C
20	5 - 6	0.064	0.19	XUT-15C
30	5 - 7	0.096	0.29	XUT-20C
50	6 - 8	0.16	0.48	XUT-20C
100	8	0.32	0.95	XUT-25C
200	9 - 14	0.64	1.9	XUT-30C
400	14	1.3	3.8	XUT-35C
750	16 - 19	2.4	7.2	—

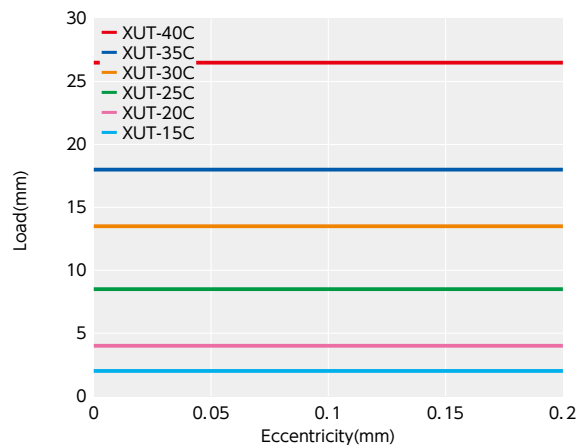
*1: Motor specifications are based on general values. For details, see the motor manufacturer's catalogs. This is the size for cases where devices such as reduction gears are not used.



Additional Keyway at Shaft Hole → P.803 Available / Add'l charge
Cleanroom Wash & Packaging → P.807 Please feel free to contact us
Change to Stainless Steel Screw → P.805 Available / Add'l charge

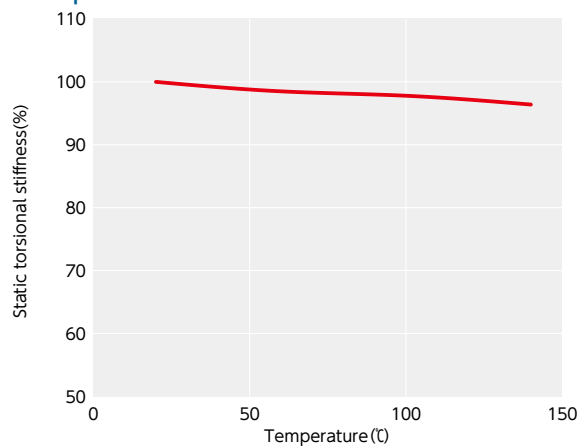
Technical Information

● Eccentric Reaction Force



XUT has small eccentric reaction force and an extremely small shaft load generated by misalignment. This reduces the load to such components as shaft bearings.

● Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%.

XUT 's change in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used under higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

Selection Navigator



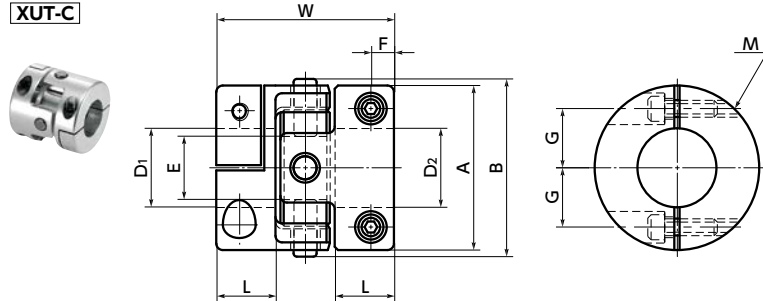
CAD Data Download

<https://www.nbk1560.com/>

XUT-C Flexible coupling - Cross joint - type - Clamping type

WEB Selection Tool WEB CAD Download High Rigidity Vibration absorption

XUT-C



Dimensions

Unit : mm

Part Number	A	B	L	W	E	F	G	M	Screw Tightening Torque (N・m)
XUT-15C	15	16	6	18	4	2.5	5.2	M2	0.5
XUT-20C	20	22	7	20	7	2.7	6.5	M2	0.5
XUT-25C	25	27	9	27	10	3.5	9	M2.5	1
XUT-30C	30	32	9.5	30	10	4	10.5	M3	1.5
XUT-35C	35	37	11.5	35	13	5	12.5	M4	2.5
XUT-40C	40	42	12.5	40	15	5.5	15	M4	2.5

Part Number	Standard Bore Diameter D1・D2													
	3	4	5	6	8	10	11	12	14	15	16	18	19	20
XUT-15C	●	●	●	●										
XUT-20C		●	●	●	●									
XUT-25C			●	●	●	●	●	●						
XUT-30C				●	●	●	●	●	●					
XUT-35C					●	●	●	●	●	●				
XUT-40C					●	●	●	●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
XUT-15C	6	0.3	42000	2.3×10^{-7}	200	0.2	1	8
XUT-20C	8	0.6	31000	8.1×10^{-7}	400	0.2	1	16
XUT-25C	12	1.2	25000	2.7×10^{-6}	900	0.2	1	33
XUT-30C	14	2.4	21000	6.2×10^{-6}	1300	0.2	1	53
XUT-35C	16	4	18000	1.3×10^{-5}	2200	0.2	1	81
XUT-40C	20	6	15000	2.6×10^{-5}	2300	0.2	1	120

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

XUT-30C-10-12

1

2

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Available / Add'l charge Please feel free to contact us Available / Add'l charge

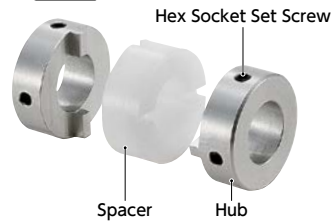
MOR Flexible coupling - Oldham - type

WEB Selection Tool CAD Download High torque Electrical Insulation High Allowable Misalignment Small Eccentric Reaction Force

Structure

• Set Screw type

MOR → P.165



• Clamping type

MOR-C → P.167



• Set Screw + Key type

MOR-K → P.169



• Clamping + Key type

MOR-CK → P.171



• Applicable motors

	MOR
Servomotor	-
Stepping Motor	○
General-purpose motor	◎

◎: Excellent ○: Very good

• Property

	MOR
High torque	◎
Allowable Misalignment	◎
Small eccentric reaction force	◎
Electrical insulation	◎
Allowable operating temperature	-20°C to 80°C

◎: Excellent ○: Very good

- This is an oldham-type flexible coupling.
- Slippage of hubs and a spacer allows large eccentricity and angular misalignment to be accepted.
- The eccentric reaction force generated by misalignment is small and the burden on the shaft is reduced.
- The simple structure allows the unit to be easily assembled.

• Application

Sputtering device / Parts feeder / Industrial sewing machine / Amusement device

• Material/Finish

RoHS2 Compliant

	MOR / MOR-C / MOR-K / MOR-CK
Hub	A2017 Alumite Treatment
Spacer	Polyacetal
Hex Socket Set Screw	SCM435 Ferrosferric oxide film
Hex Socket Head Cap Screw	SCM435 Ferrosferric oxide film

• Related Products

Oldham-type couplings with metal spacers are available.
→ P.173



• Part number specification

MOR - 20CK - 6-10

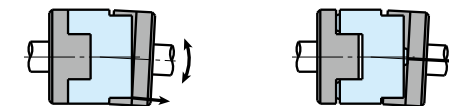
Product Code Size Bore Diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803 Available / Add'l charge
Cleanroom Wash & Packaging → P.807 Available / Add'l charge
Change to Stainless Steel Screw → P.805 Available / Add'l charge

• Spacer's projection structure

Spacer's projection structure allows large angular to be effortlessly accepted. It reduces burden on the shaft.



(Without projection)

(With projection)

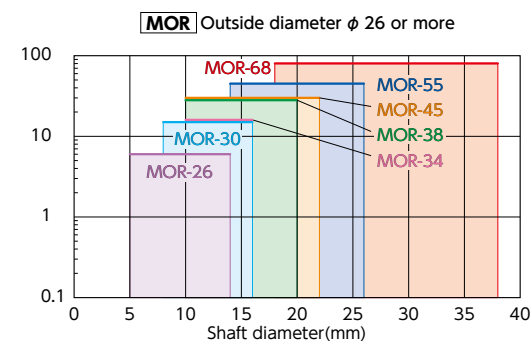
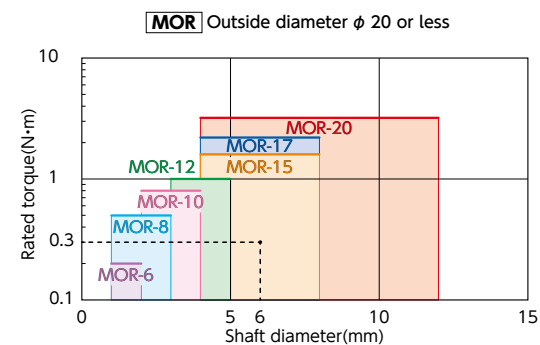
In the oldham-type coupling whose spacer has no projection, the spacer and hubs interfere with each other near outside diameter, so that the max. angular misalignment is small (1° - 1.5°) and that the bending moment arises on the shaft.

NBK's oldham type coupling allows the angular misalignment to be easily accepted since the projection serves as support. Bending moment does not arise. Therefore, the max. angular misalignment is large (3°) and the burden on the shaft is reduced.

Selection

• Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



• Selection example

In case of selected parameters of shaft diameter of ϕ 6 and load torque of 0.3 N·m, the selected size is

MOR-15.

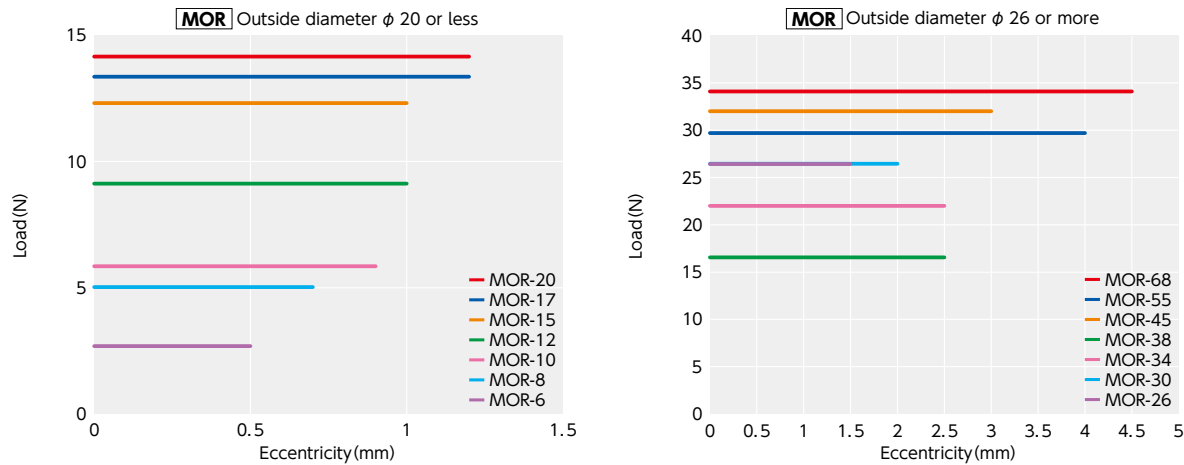


MOR Flexible coupling - Oldham - type

WEB Selection Tool CAD Download High torque Electrical Insulation High Allowable Misalignment Small Eccentric Reaction Force

Technical Information

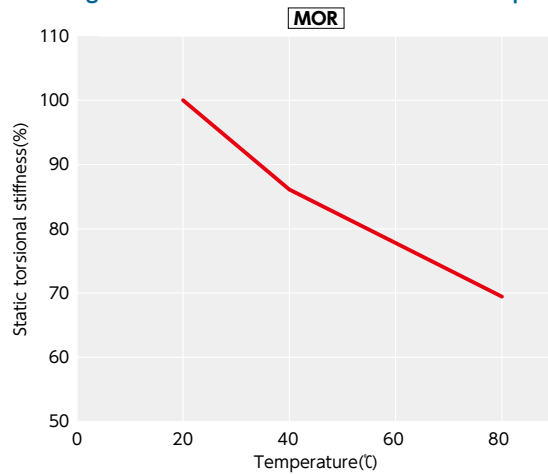
• Eccentric reaction force



These are initial slippage load values of hubs and a spacer.

After running-in operation, the slippage load becomes small, the load on the shaft due to misalignment becomes lowered, and the burden on the shaft bearing is reduced.

• Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%.

The change of torsional stiffness within the range of allowable operating temperature is as shown in the graph.

Before using the unit, be aware of the deterioration of responsiveness.

• Spacer's physical property (Polyacetal)

	Test method	unit	Polyacetal
Density	ISO 1183	g/cm ³	1.36
Water Absorption (23°C, dipped for 24 hr)	ISO 62	%	0.7
Tensile strength	ISO 527 - 1, 2	N/mm ²	52
Bending Strength	ISO 178	N/mm ²	72
Charpy impact strength (with notch)	ISO 179/1eA	kJ/m ²	5.9
Deflection temperature under load(1.8 MPa)	ISO 75 - 1, 2	°C	85
Insulation breakdown strength (3 mm)	IEC 60243 - 1	kV/mm	20
Volume Resistivity	IEC 60093	Ω·cm	1×10 ¹⁴
Combustibility	UL94	—	HB

• Spacer's chemical resistance (Polyacetal)

	Effect
Weather Resistance	Slight change in color
Weak Acid Resistance	Minor effect
Strong Acid Resistance	Effect
Weak Alkali Resistance	Minor effect
Strong Alkali Resistance	Minor effect
Organic Solvent Resistance	Includes resistance

• Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the max. torque of **MOR-C**.

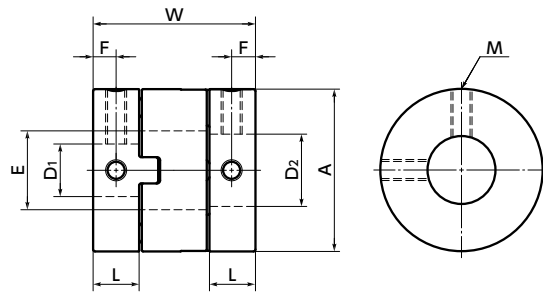
Part Number	Bore diameter																		
	3	4	5	6	6.35	8	9.525	10	12	14	15	16	18	20	22	25	28	30	35
MOR-12C	0.8	1.9	2.4																
MOR-15C		2.3	3.5	4.8															
MOR-17C			2.7	3.6	4														
MOR-20C			3.7	4.2	4.3	5.7	6.1												
MOR-26C				4	6.4	9.3	11.8												
MOR-30C						7.5	13.6	13.9	17.2	20.4									
MOR-34C								16.5	18.6	23.3	30.9								
MOR-38C								19.4	20.2	24	30	34.1	37.8	38.8					
MOR-45C									34.5	41.8	42.6	44.5	48.4						
MOR-55C												73.2	75.9	88.1					
MOR-68C															101.5	104.3	104.9	105.4	110.5

• These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **MOR-C** Dimension table.

MOR Flexible coupling - Oldham - type - Set screw type

WEB Selection Tool CAD Download High torque Electrical Insulation High Allowable Misalignment Small Eccentric Reaction Force

MOR



Dimensions

Unit : mm

Part Number	A	L	W	E	F	M	Screw Tightening Torque (N·m)
MOR-6	6	2.5	8.4	2.1	1.3	M2	0.3
MOR-8	8	2.5	9.6	3.1	1.3	M2	0.3
MOR-10	10	2.9	10.2	4.1	1.4	M2	0.3
MOR-12	12	3.9	14.2	5.2	2	M3	0.7
MOR-15	15	4.4	16	8.2	2.2	M3	0.7
MOR-17	17	4.9	19.8	8.2	2.5	M3	0.7
MOR-20	20	5.8	21.4	12.2	2.9	M4	1.7
MOR-26	26	7.3	25.6	14.2	3.7	M4	1.7
MOR-30	30	10	32.5	16.2	5	M4	1.7
MOR-34	34	11.1	34	16.2	5.6	M5	4
MOR-38	38	12.1	40	20.3	6.1	M5	4
MOR-45	45	13.8	46	22.3	6.9	M6	7
MOR-55	55	18.7	57	26.5	9.4	M8	15
MOR-68	68	24	77	38.5	12	M10	30

Part Number	Standard Bore Diameter D1 • D2 (dimensional allowance H8) 2																							
	1	1.5	2	3	4	5	6	6.35	8	9.525	10	12	14	15	16	18	20	22	25	28	30	35	38	
MOR-6	●	●	●																					
MOR-8	●		●	●																				
MOR-10			●	●	●																			
MOR-12				●	●	●																		
MOR-15					●	●	●	●	●															
MOR-17					●	●	●	●	●															
MOR-20					●	●	●	●	●	●	●	●												
MOR-26						●	●	●	●	●	●	●	●											
MOR-30									●	●	●	●	●	●	●									
MOR-34											●	●	●	●	●	●								
MOR-38											●	●	●	●	●	●	●	●						
MOR-45											●	●	●	●	●	●	●	●	●					
MOR-55													●	●	●	●	●	●	●	●				
MOR-68																	●	●	●	●	●	●	●	●

- All products are provided with hex socket set screw.
- In a case where the bore diameter is $\phi 4$ or less, the set screw is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with set screw type for one side and clamping type or other type for the other side is available upon request.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Available / Add'l charge

Available / Add'l charge

Available / Add'l charge

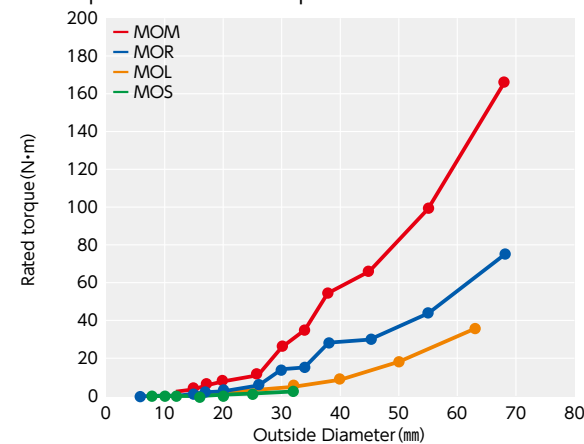
Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOR-6	2	0.2	0.4	100000	2.2×10^{-9}	5	0.5	3	0.4
MOR-8	3	0.5	1	78000	7.4×10^{-9}	12	0.7	3	0.8
MOR-10	4	0.8	1.6	63000	1.9×10^{-8}	23	0.9	3	1
MOR-12	5	1	2	52000	5.3×10^{-8}	60	1	3	3
MOR-15	8	1.6	3.2	42000	1.4×10^{-7}	80	1	3	4
MOR-17	8	2.2	4.4	37000	2.8×10^{-7}	120	1.2	3	7
MOR-20	12	3.2	6.4	31000	5.7×10^{-7}	120	1.2	3	9
MOR-26	14	6	12	24000	2.1×10^{-6}	300	1.5	3	20
MOR-30	16	15	30	21000	5.4×10^{-6}	530	2	3	38
MOR-34	16	16	32	18000	9.1×10^{-6}	1000	2.5	3	52
MOR-38	20	28	56	16000	1.6×10^{-5}	1500	2.5	3	69
MOR-45	22	30	60	14000	3.3×10^{-5}	2400	3	3	110
MOR-55	26	45	90	11000	1.0×10^{-4}	4100	4	3	230
MOR-68	38	80	160	9000	3.7×10^{-4}	6400	4.5	3	430

*1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin. If ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of MOR is -20°C to 80°C.

*2 : These are values with max. bore diameter.

Comparison of rated torque



Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

Part number specification

MOR-20-6-12 1 set

1 2

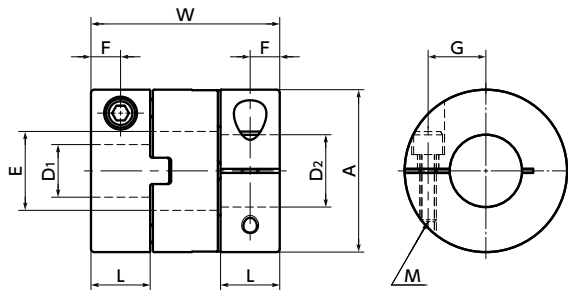
MOR - 20 - SPCR Single Spacer

Product Code Outside Diameter (A Dimension) Single Spacer

MOR-C Flexible coupling - Oldham - type - Clamping type

WEB Selection Tool
 CAD Download
 High torque
 Electrical Insulation
 High Allowable Misalignment
 Small Eccentric Reaction Force

MOR-C



Dimensions

Unit : mm

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
MOR-12C	12	5	16.5	5.2	2.5	4	M2	0.5
MOR-15C	15	5.8	18.8	8.2	2.9	5	M2.5	1
MOR-17C	17	7.3	24.5	8.2	3.7	6	M2.5	1
MOR-20C	20	8.8	27.4	12.2	4.4	7.5	M3	1.5
MOR-26C	26	9.7	30.4	14.2	4.9	9.5	M3	1.5
MOR-30C	30	10	32.5	16.2	5	11.1	M4	2.5
MOR-34C	34	11.1	34	16.2	5.6	12.6	M4	2.5
MOR-38C	38	12.1	40	20.3	6	14.2	M5	4
MOR-45C	45	13.8	46	22.3	6.9	16	M5	4
MOR-55C	55	18.7	57	26.5	9.4	20	M6	8
MOR-68C	68	24	77	38.5	12	26	M8	16

Part Number	Standard Bore Diameter D1 • D2																		
	3	4	5	6	6.35	8	9.525	10	12	14	15	16	18	20	22	25	28	30	35
MOR-12C	●	●	●																
MOR-15C		●	●	●															
MOR-17C			●	●	●														
MOR-20C			●	●	●	●	●	●											
MOR-26C				●	●	●	●	●	●	●									
MOR-30C						●	●	●	●	●	●								
MOR-34C								●	●	●	●	●							
MOR-38C								●	●	●	●	●	●						
MOR-45C									●	●	●	●	●	●					
MOR-55C											●	●	●	●	●	●			
MOR-68C														●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with clamping type for one side and set screw type or other type for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Additional Keyway at Shaft Hole → P.803
 Cleanroom Wash & Packaging → P.807
 Change to Stainless Steel Screw → P.805

Available / Add'l charge

Available / Add'l charge

Available / Add'l charge

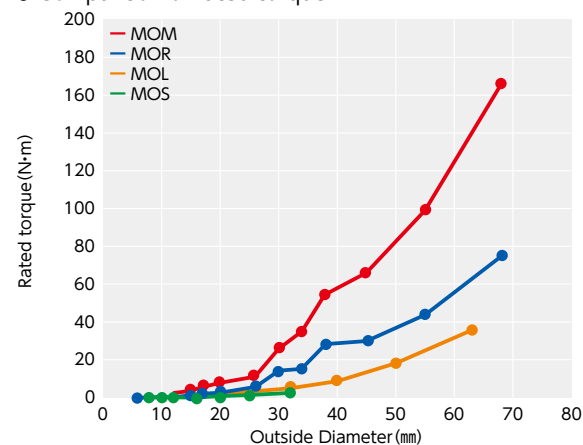
Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOR-12C	5	1	2	52000	6.6×10 ⁻⁸	60	1	3	3
MOR-15C	6	1.6	3.2	42000	1.7×10 ⁻⁷	80	1	3	5
MOR-17C	6.35	2.2	4.4	37000	3.8×10 ⁻⁷	120	1.2	3	9
MOR-20C	10	3.2	6.4	31000	8.0×10 ⁻⁷	120	1.2	3	13
MOR-26C	14	6	12	24000	2.5×10 ⁻⁶	300	1.5	3	24
MOR-30C	14	15	30	21000	5.3×10 ⁻⁶	530	2	3	39
MOR-34C	16	16	32	18000	8.6×10 ⁻⁶	1000	2.5	3	50
MOR-38C	20	28	56	16000	1.5×10 ⁻⁵	1500	2.5	3	67
MOR-45C	20	30	60	14000	3.2×10 ⁻⁵	2400	3	3	110
MOR-55C	25	45	90	11000	1.0×10 ⁻⁴	4100	4	3	230
MOR-68C	35	80	160	9000	3.3×10 ⁻⁴	6400	4.5	3	440

*1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin. If ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of **MOR-C** is -20°C to 80°C.

*2 : These are values with max. bore diameter.

Comparison of rated torque



Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

Part number specification

MOR-55C - 18-20

1 set

1

2

MOR - 20 - SPCR

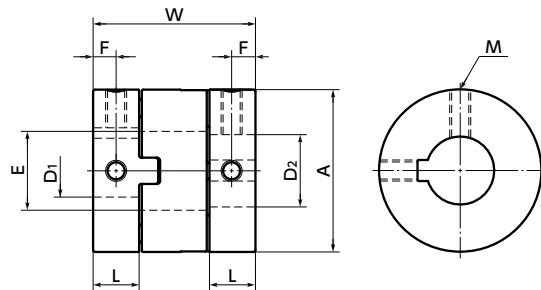
Single Spacer

Product Code Outside Diameter (A Dimension) Single Spacer

MOR-K Flexible coupling - Oldham - type - Set screw + Key type

WEB Selection Tool CAD Download High torque Electrical Insulation High Allowable Misalignment Small Eccentric Reaction Force

MOR-K



Dimensions

Unit : mm

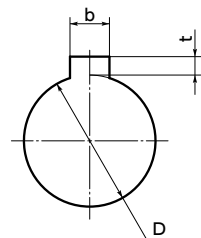
Part Number	A	L	W	E	F	M	Screw Tightening Torque (N·m)
MOR-15K	15	4.4	16	8.2	2.2	M3	0.7
MOR-17K	17	4.9	19.8	8.2	2.5	M3	0.7
MOR-20K	20	5.8	21.4	12.2	2.9	M4	1.7
MOR-26K	26	7.3	25.6	14.2	3.7	M4	1.7
MOR-30K	30	10	32.5	16.2	5	M4	1.7
MOR-34K	34	11.1	34	16.2	5.6	M5	4
MOR-38K	38	12.1	40	20.3	6.1	M5	4
MOR-45K	45	13.8	46	22.3	6.9	M6	7
MOR-55K	55	18.7	57	26.5	9.4	M8	15
MOR-68K	68	24	77	38.5	12	M10	30

Part Number	Standard Bore Diameter (dimensional allowance H8) D1・D2 														
	6	8	10	12	14	15	16	18	20	22	25	28	30	35	38
MOR-15K	●	●													
MOR-17K	●	●													
MOR-20K	●	●	●	●											
MOR-26K	●	●	●	●	●										
MOR-30K		●	●	●	●	●	●								
MOR-34K			●	●	●	●	●								
MOR-38K			●	●	●	●	●	●	●						
MOR-45K			●	●	●	●	●	●	●	●					
MOR-55K					●	●	●	●	●	●	●				
MOR-68K								●	●	●	●	●	●	●	●

- All products are provided with hex socket set screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with key type for one side and clamping type or other type for the other side is available upon request.

Unit : mm

Details of Shaft Hole



Standard bore diameter D	Keyway				Key Nominal dimension b×h
	Standard Dimension	Allowance (JS9)	Standard Dimension	Allowance	
6	2	±0.0125	1.0	+0.1 0	2×2
8	3	±0.0125	1.4	+0.1 0	3×3
10 · 12	4	±0.0150	1.8	+0.1 0	4×4
14 · 15 · 16	5	±0.0150	2.3	+0.1 0	5×5
18 · 20 · 22	6	±0.0150	2.8	+0.1 0	6×6
25 · 28	8	±0.0180	3.3	+0.2 0	8×7
30 · 35 · 38	10	±0.0180	3.3	+0.2 0	10×8

● Excerpt from JIS B 1301

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Please feel free to contact us

Available / Add'l charge

Available / Add'l charge

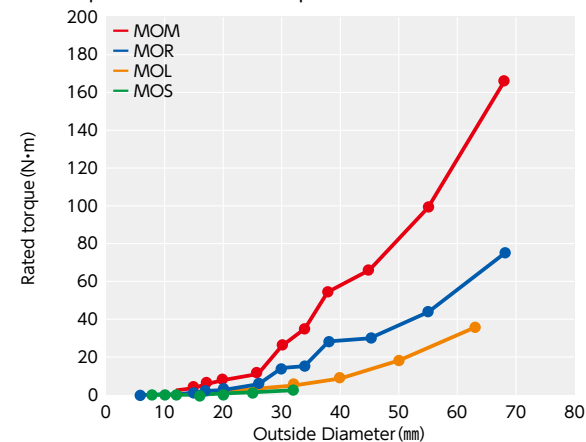
Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOR-15K	8	1.6	3.2	42000	1.4×10 ⁻⁷	80	1	3	4
MOR-17K	8	2.2	4.4	37000	2.8×10 ⁻⁷	120	1.2	3	7
MOR-20K	12	3.2	6.4	31000	5.6×10 ⁻⁷	120	1.2	3	8
MOR-26K	14	6	12	24000	2.0×10 ⁻⁶	300	1.5	3	19
MOR-30K	16	15	30	21000	5.4×10 ⁻⁶	530	2	3	37
MOR-34K	16	16	32	18000	9.0×10 ⁻⁶	1000	2.5	3	51
MOR-38K	20	28	56	16000	1.5×10 ⁻⁵	1500	2.5	3	68
MOR-45K	22	30	60	14000	3.2×10 ⁻⁵	2400	3	3	110
MOR-55K	26	45	90	11000	1.0×10 ⁻⁴	4100	4	3	230
MOR-68K	38	80	160	9000	3.3×10 ⁻⁴	6400	4.5	3	430

*1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin. If ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of **MOR-K** is -20°C to 80°C.

*2 : These are values with max. bore diameter.

Comparison of rated torque



Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

Part number specification

MOR-26K-8-10 1 set

1 2

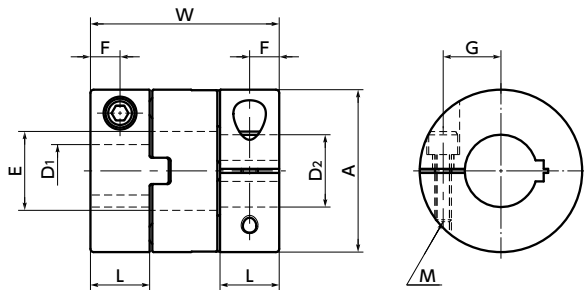
MOR - 20 - SPCR Single Spacer

Product Code Outside Diameter (A Dimension) Single Spacer

MOR-CK Flexible coupling - Oldham - type - Clamping + Key type

WEB Selection Tool CAD Download High torque Electrical Insulation High Allowable Misalignment Small Eccentric Reaction Force

MOR-CK



Dimensions

Unit : mm

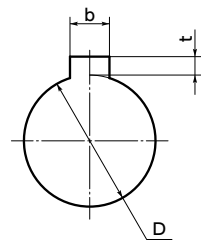
Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
MOR-15CK	15	5.8	18.8	8.2	2.9	5	M2.5	1
MOR-17CK	17	7.3	24.5	8.2	3.7	6	M2.5	1
MOR-20CK	20	8.8	27.4	12.2	4.4	7.5	M3	1.5
MOR-26CK	26	9.7	30.4	14.2	4.9	9.5	M3	1.5
MOR-30CK	30	10	32.5	16.2	5	11.1	M4	2.5
MOR-34CK	34	11.1	34	16.2	5.6	12.6	M4	2.5
MOR-38CK	38	12.1	40	20.3	6	14.2	M5	4
MOR-45CK	45	13.8	46	22.3	6.9	16	M5	4
MOR-55CK	55	18.7	57	26.5	9.4	20	M6	8
MOR-68CK	68	24	77	38.5	12	26	M8	16

Part Number	Standard Bore Diameter D1 • D2												
	6	8	10	12	14	15	16	18	20	22	25	28	30
MOR-15CK	●												
MOR-17CK	●												
MOR-20CK	●	●	●										
MOR-26CK	●	●	●	●	●								
MOR-30CK		●	●	●	●	●	●						
MOR-34CK			●	●	●	●	●	●	●				
MOR-38CK				●	●	●	●	●	●	●	●		
MOR-45CK				●	●	●	●	●	●	●	●	●	
MOR-55CK							●	●	●	●	●	●	●
MOR-68CK								●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with clamping + key type for one side and clamping type or other types for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➔ P.258

Unit : mm

Details of Shaft Hole



Standard bore diameter D	Keyway				Key Nominal dimension b×h
	b Standard Dimension	Allowance (JS9)	t Standard Dimension	Allowance	
6	2	±0.0125	1.0	+0.1 0	2×2
8	3	±0.0125	1.4	+0.1 0	3×3
10・12	4	±0.0150	1.8	+0.1 0	4×4
14・15・16	5	±0.0150	2.3	+0.1 0	5×5
18・20・22	6	±0.0150	2.8	+0.1 0	6×6
25・28	8	±0.0180	3.3	+0.2 0	8×7
30・35	10	±0.0180	3.3	+0.2 0	10×8

● Excerpt from JIS B 1301

Additional Keyway at Shaft Hole ➔ P.803 Cleanroom Wash & Packaging ➔ P.807 Change to Stainless Steel Screw ➔ P.805

Please feel free to contact us

Available / Add'l charge

Available / Add'l charge

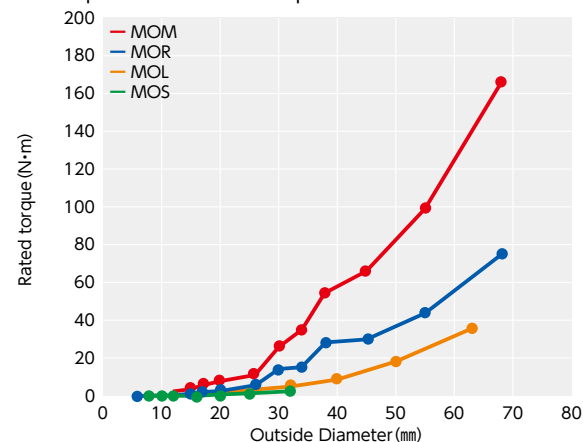
Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOR-15CK	6	1.6	3.2	42000	1.8×10 ⁻⁷	80	1	3	5
MOR-17CK	6.35	2.2	4.4	37000	3.8×10 ⁻⁷	120	1.2	3	9
MOR-20CK	10	3.2	6.4	31000	8.0×10 ⁻⁷	120	1.2	3	13
MOR-26CK	14	6	12	24000	2.5×10 ⁻⁶	300	1.5	3	23
MOR-30CK	14	15	30	21000	5.2×10 ⁻⁶	530	2	3	38
MOR-34CK	16	16	32	18000	8.6×10 ⁻⁶	1000	2.5	3	49
MOR-38CK	20	28	56	16000	1.5×10 ⁻⁵	1500	2.5	3	64
MOR-45CK	20	30	60	14000	3.2×10 ⁻⁵	2400	3	3	110
MOR-55CK	25	45	90	11000	1.0×10 ⁻⁴	4100	4	3	230
MOR-68CK	35	80	160	9000	3.3×10 ⁻⁴	6400	4.5	3	440

*1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin. If ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of **MOR** is -20°C to 80°C.

*2 : These are values with max. bore diameter.

Comparison of rated torque



Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

Part number specification

MOR-38CK - 14-15 1 set

MOR - 20 - SPCR Single Spacer

Product Code Outside Diameter (A Dimension)

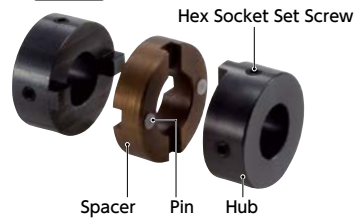
MOM Flexible coupling - Oldham - type

WEB Selection Tool WEB CAD Download High torque High Rigidity

Structure

Set Screw type

MOM → P.179



Clamping type

MOM-C → P.181



Set Screw + Key type

MOM-K → P.183



Clamping + Key type

MOM-CK → P.185



Material/Finish

RoHS2 Compliant

	MOM / MOM-C / MOM-K / MOM-CK
Hub	S45C Ferrosoferric Oxide Film (Black)
Spacer	FCD400 Ferrosoferric oxide film
Pin	Polyacetal
Hex Socket Set Screw	SCM435 Ferrosoferric oxide film
Hex Socket Head Cap Screw	SCM435 Ferrosoferric oxide film

Applicable motors

	MOM
Servomotor	—
Stepping Motor	—
General-purpose motor	○

○: Excellent ○: Very good

Property

	MOM
High torque	○
High Torsional Stiffness	○
Allowable Misalignment	○

○: Excellent ○: Very good

- This is an oldham-type flexible coupling.
- FCD400 is adopted in the spacer. Suitable for low-speed and high-torque specification.
- High performance grease is applied in the gap between hubs and the spacer in order to prevent sticking.
- Slippage of hubs and a spacer allows large eccentricity and angular misalignment to be accepted.
- A projection placed in the spacer (resin pin) allows angular misalignment to be effortlessly accepted.
- Long-term maintenance free. The grease accumulated in a grease hole will gradually seep out during operation, thereby maintaining the lubrication property over a long period.



Application

Mixer / Pump / Small power press / Grinder



Precautions for Use

Please apply grease periodically in order to prevent sticking of hubs and a spacer.

Part number specification

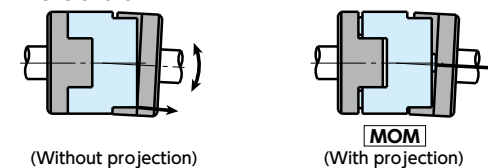
MOM-30K-12-14

Product Code Size Bore Diameter

Please refer to dimensional table for part number specification.

Spacer's projection structure

Spacer's projection structure allows large angular to be effortlessly accepted. It reduces burden on the shaft.

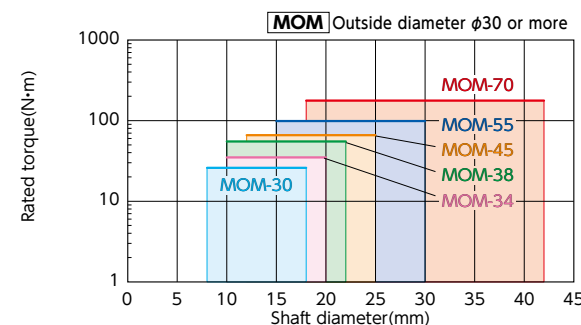
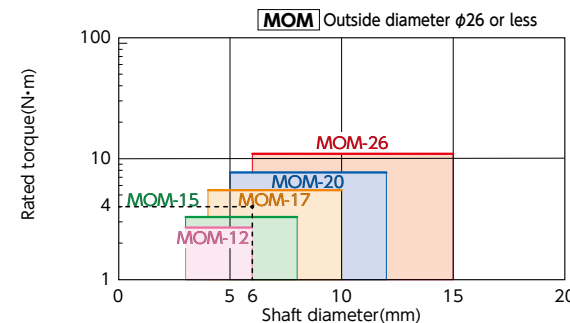


In the oldham-type coupling whose spacer has no projection, the spacer and hubs interfere with each other near outside diameter, so that the max. angular misalignment is small (1° - 1.5°) and that the bending moment arises on the shaft. NBK's oldham type coupling allows the angular misalignment to be easily accepted since the projection serves as support. Bending moment does not arise. Therefore, the max. angular misalignment is large (2°) and the burden on the shaft is reduced. **MOM** is provided with a projection by inserting a resin pin into the spacer.

Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



Selection example

In case of selected parameters of shaft diameter of φ 6 and load torque of 4N·m, the selected size is

MOM-17.

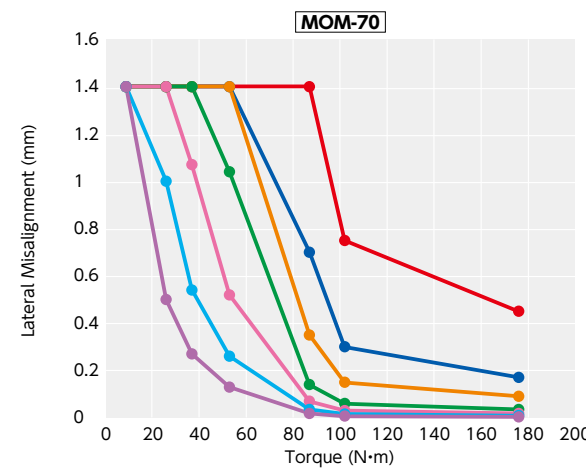
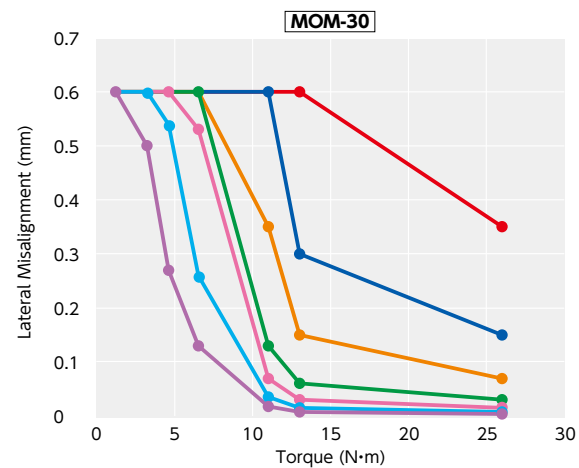
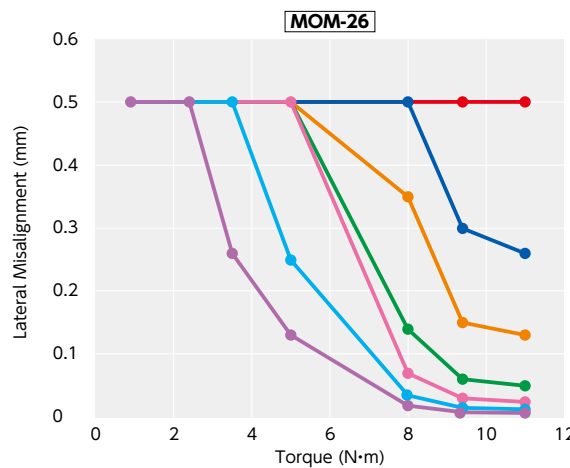
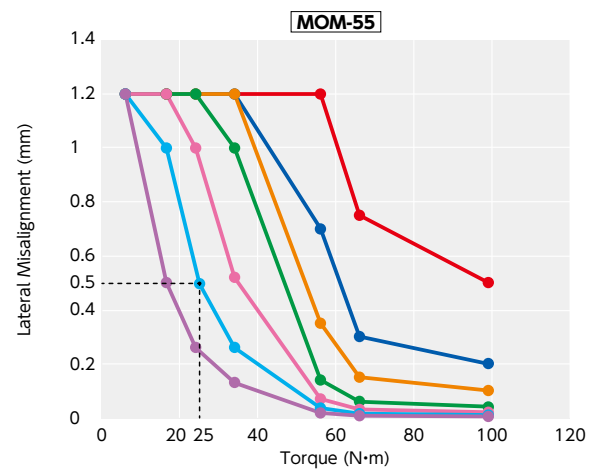
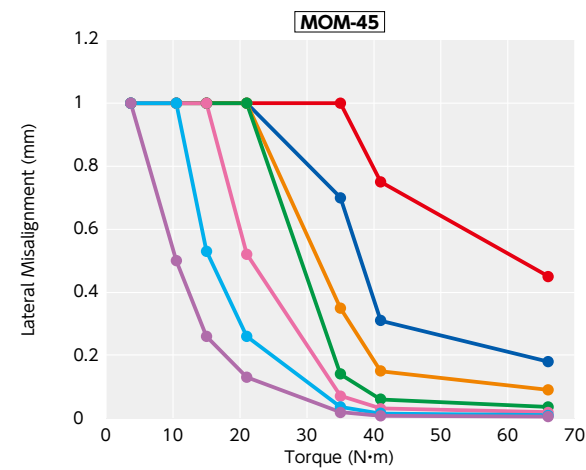
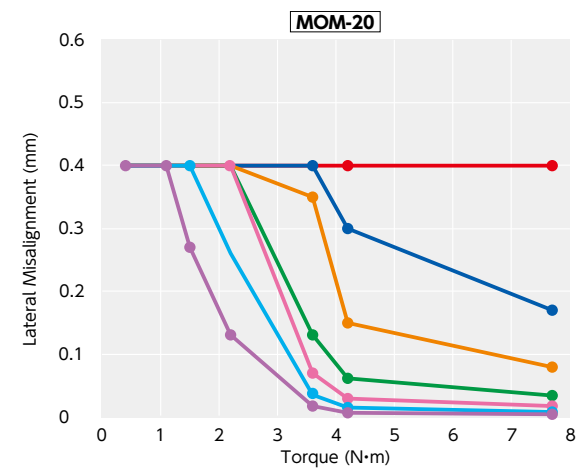
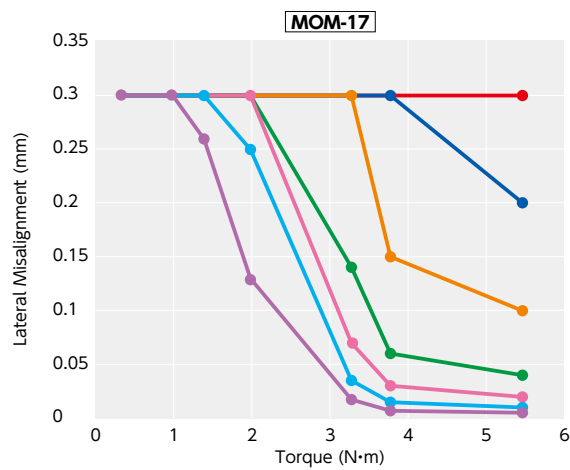
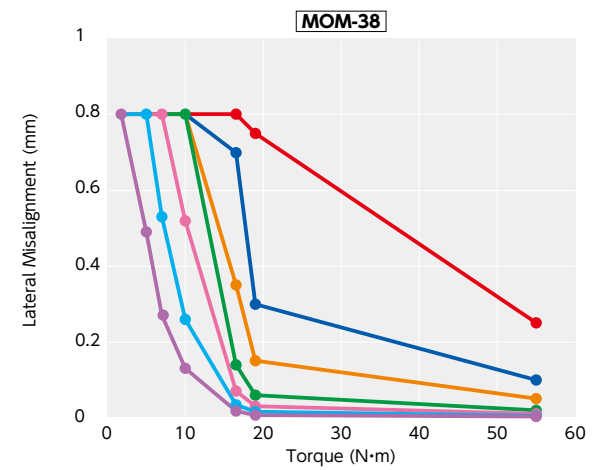
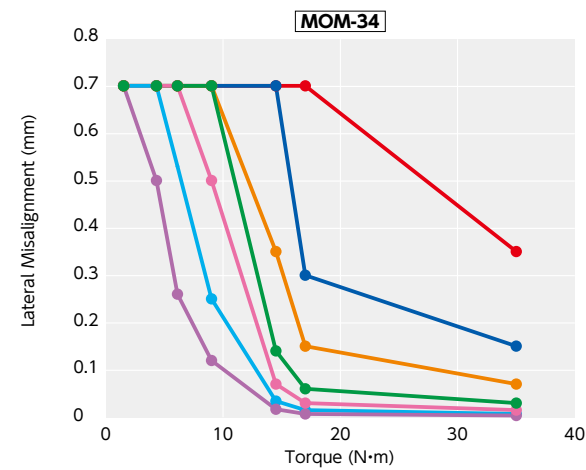
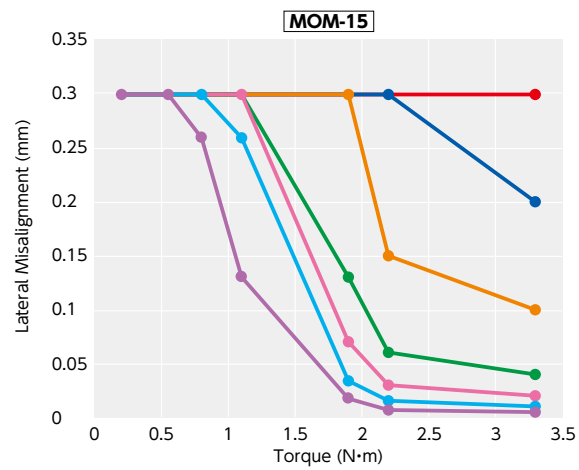
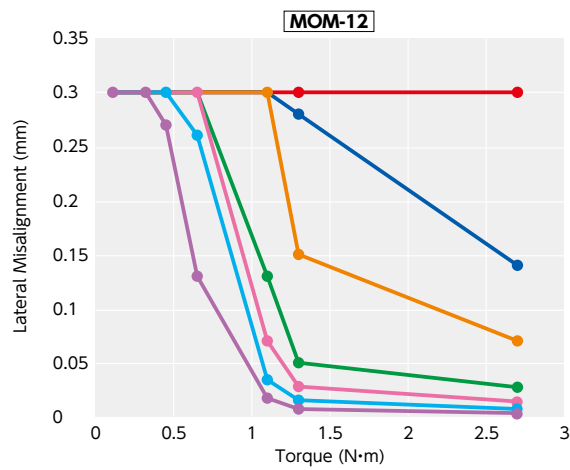


Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Available / Add'l charge Available / Add'l charge Available / Add'l charge

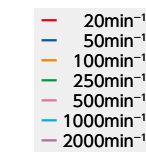
Technical Information

Max. Lateral Misalignment

MOM's max. lateral misalignment varies depending on the load torque and revolution.



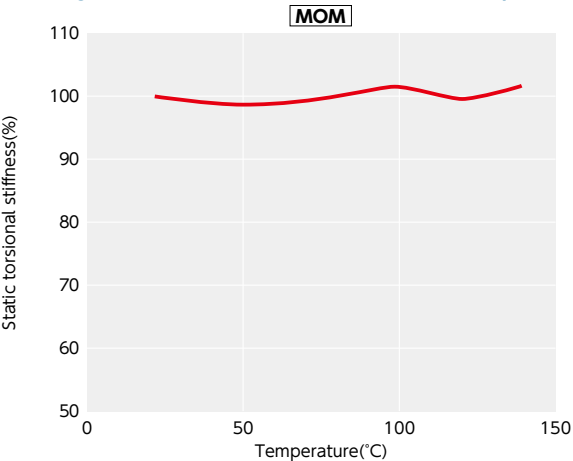
● Example
When load torque is 25 N·m and revolution is 1000 min⁻¹, the max. lateral misalignment of **MOM-55** is 0.5 mm.



MOM Flexible coupling - Oldham - type

WEB Selection Tool WEB CAD Download High torque High Rigidity

Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%.
MOM's change in torsional stiffness due to temperature is small and the change in responsiveness is extremely small.
However, if the unit is used under higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the max. torque of MOM-C.

Part Number	Bore Diameter																		
	3	4	5	6	6.35	8	10	12	14	15	16	18	20	22	24	25	28	30	35
MOM-15C	0.3	0.5	0.8	1															
MOM-17C		2.1	3.5	3.7															
MOM-20C			3.8	6	6	6.8	7.5												
MOM-26C				5.4	5.4	5.8	6.6	8.7											
MOM-30C						7.4	12.6	14.4	15.1										
MOM-34C							13	13.2	15.8	16.1	16.8								
MOM-38C							16.4	18.4	20.9	23.1	25.1	28.3	31.6						
MOM-45C								47.9	48.9	56.1	56.8	57.5	62.8						
MOM-55C										42.9	54.1	55.3	56.2	89.3	93.4	97.5			
MOM-70C												62.6	92.9	95.5	97.6	103.9	119	122.1	130

These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in MOM-C Dimension table.

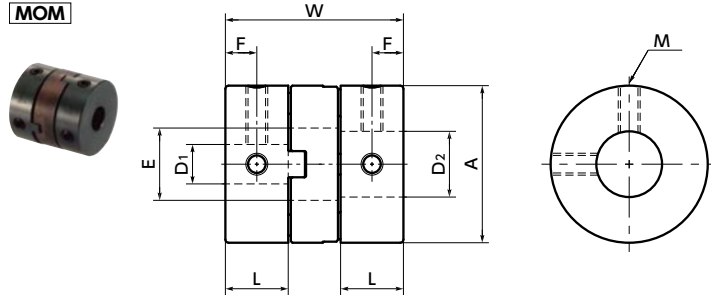


https://www.nbk1560.com/

MOM Flexible coupling - Oldham - type - Set screw type

WEB Selection Tool CAD Download High torque High Rigidity

MOM



Dimensions

Unit : mm

Part Number	A	L	W	E	F	M	Screw Tightening Torque (N·m)
MOM-12	12	5.2	15	5.9	2.6	M2.5	0.5
MOM-15	15	5.4	16.6	6.9	2.7	M3	0.7
MOM-17	17	6.7	20.4	7.3	3.35	M3	0.7
MOM-20	20	7	22	11.1	3.5	M3	0.7
MOM-26	26	9	26.6	13.3	4.5	M4	1.7
MOM-30	30	12	34	15.5	6	M4	1.7
MOM-34	34	13	35	17.5	6.5	M5	4
MOM-38	38	15	40.5	21.5	7.5	M5	4
MOM-45	45	15	45.2	24.3	7.5	M5	4
MOM-55	55	17	51	27.7	8.5	M6	7
MOM-70	70	20	58.6	38.5	10	M8	15

Part Number	Standard Bore Diameter (dimensional allowance H8)																		
	D1 • D2	3	4	5	6	6.35	8	10	12	14	15	16	18	20	22	24	25	28	30
MOM-12		●	●	●	●														
MOM-15		●	●	●	●														
MOM-17			●	●	●														
MOM-20				●	●														
MOM-26					●	●													
MOM-30						●	●												
MOM-34							●	●											
MOM-38								●	●										
MOM-45									●	●									
MOM-55										●	●								
MOM-70											●	●							

- All products are provided with hex socket set screw.
- In a case where the bore diameter is $\phi 4$ or less, the set screw is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with set screw type for one side and clamping type for the other side is available upon request.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Available / Add'l charge

Available / Add'l charge

Available / Add'l charge

Performance

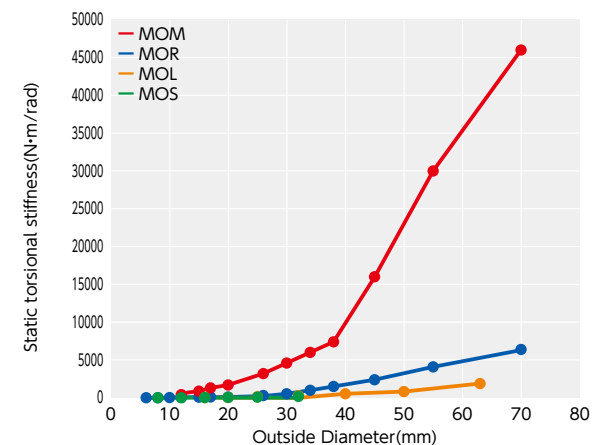
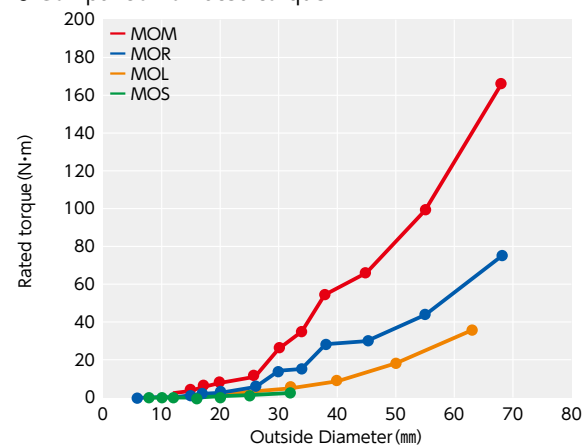
Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. lateral*3 misalignment (mm) → P.175	Max. Angular Misalignment (°)	Mass*2 (g)
MOM-12	6	2.7	5.4	2000	2.0×10^{-7}	420	0.3	2	9
MOM-15	8	3.3	6.6	2000	5.5×10^{-7}	870	0.3	2	15
MOM-17	10	5.5	11	2000	1.1×10^{-6}	1300	0.3	2	24
MOM-20	12	7.7	15.4	2000	2.3×10^{-6}	1700	0.4	2	34
MOM-26	15	11	22	2000	8.1×10^{-6}	3200	0.5	2	72
MOM-30	18	26	52	2000	1.8×10^{-5}	4600	0.6	2	119
MOM-34	20	35	70	2000	3.1×10^{-5}	6000	0.7	2	159
MOM-38	22	55	110	2000	5.5×10^{-5}	7400	0.8	2	230
MOM-45	25	66	132	2000	1.2×10^{-4}	16000	1	2	364
MOM-55	30	99	198	2000	3.0×10^{-4}	30000	1.2	2	636
MOM-70	42	176	352	2000	8.9×10^{-4}	46000	1.4	2	1090

*1: Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin.

*2: These are values with max. bore diameter.

*3: The max. lateral misalignment varies depending on the load torque and revolution. → P.175

Comparison of rated torque



Part number specification

MOM-26-6.35-10

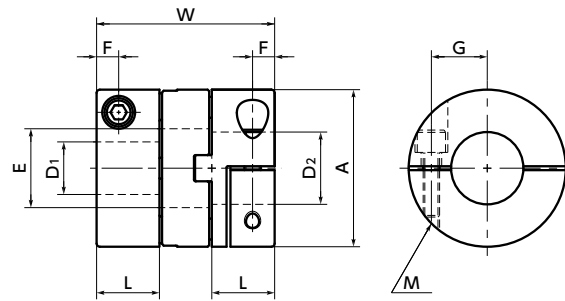
1

2

MOM-C Flexible coupling - Oldham - type - Clamping type

WEB Selection Tool CAD Download High torque High Rigidity

MOM-C



Outside Diameter: $\phi 15 - \phi 38$

Dimensions

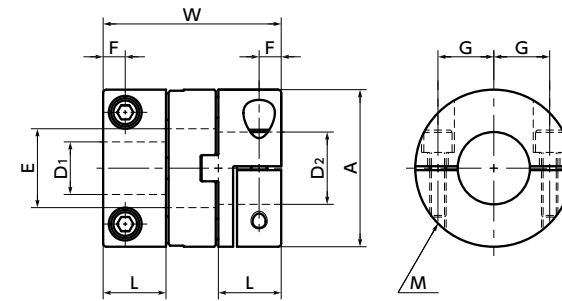
Unit : mm

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
MOM-15C	15	6.6	19	6.9	2.15	5.2	M1.6	0.25
MOM-17C	17	9	25	7.3	2.65	5.5	M2	0.5
MOM-20C	20	10	28	11.1	3.25	7.25	M2.5	1
MOM-26C	26	11.5	31.6	13.3	4	9	M3	1.5
MOM-30C	30	12	34	15.5	4	11	M3	1.5
MOM-34C	34	13	35	17.5	4.5	12	M4	3.5
MOM-38C	38	15	40.5	21.5	4.75	14	M4	3.5
MOM-45C	45	16.2	47.6	24.3	6.2	16	M5	8
MOM-55C	55	20.8	58.6	27.7	7.9	20	M6	13
MOM-70C	70	25	68.6	38.5	8.9	26	M6	13

Part Number	Standard Bore Diameter																
	D1 • D2	3	4	5	6	6.35	8	10	12	14	15	16	18	20	22	24	25
MOM-15C	●	●	●	●	●												
MOM-17C		●	●	●	●												
MOM-20C			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MOM-26C				●	●	●	●	●	●	●	●	●	●	●	●	●	●
MOM-30C					●	●	●	●	●	●	●	●	●	●	●	●	●
MOM-34C						●	●	●	●	●	●	●	●	●	●	●	●
MOM-38C							●	●	●	●	●	●	●	●	●	●	●
MOM-45C								●	●	●	●	●	●	●	●	●	●
MOM-55C									●	●	●	●	●	●	●	●	●
MOM-70C										●	●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with clamping type for one side and set screw type or other type for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Available / Add'l charge Available / Add'l charge Available / Add'l charge



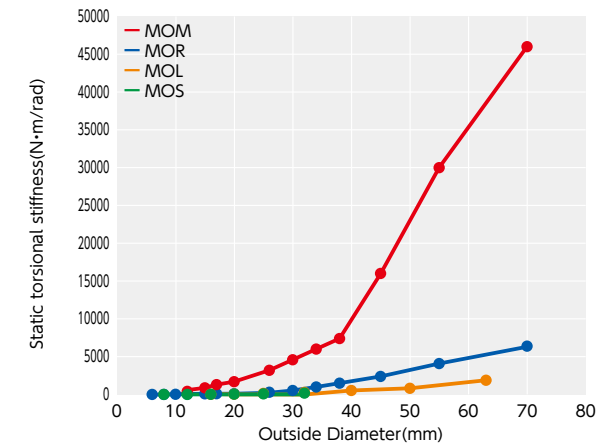
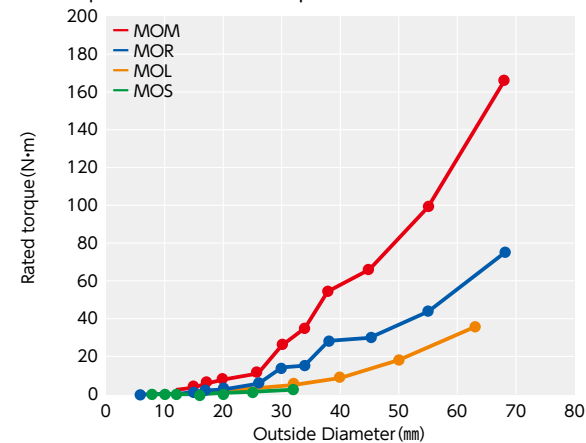
Outside Diameter: $\phi 45 - \phi 70$

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral*3 Misalignment (mm) → P.175	Max. Angular Misalignment (°)	Mass*2 (g)
MOM-15C	6	3.3	6.6	2000	6.2×10^{-7}	870	0.3	2	19
MOM-17C	6.35	5.5	11	2000	1.4×10^{-6}	1300	0.3	2	34
MOM-20C	10	7.7	15.4	2000	3.0×10^{-6}	1700	0.4	2	47
MOM-26C	12	11	22	2000	9.6×10^{-6}	3200	0.5	2	92
MOM-30C	14	26	52	2000	1.8×10^{-5}	4600	0.6	2	131
MOM-34C	16	35	70	2000	3.1×10^{-5}	6000	0.7	2	173
MOM-38C	20	55	110	2000	5.5×10^{-5}	7400	0.8	2	235
MOM-45C	22	66	132	2000	1.2×10^{-4}	16000	1	2	387
MOM-55C	25	99	198	2000	3.4×10^{-4}	30000	1.2	2	752
MOM-70C	35	176	352	2000	1.0×10^{-3}	46000	1.4	2	1370

- *1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin.
- *2 : These are values with max. bore diameter.
- *3 : The max. lateral misalignment varies depending on the load torque and revolution. → P.175

Comparison of rated torque



Part number specification

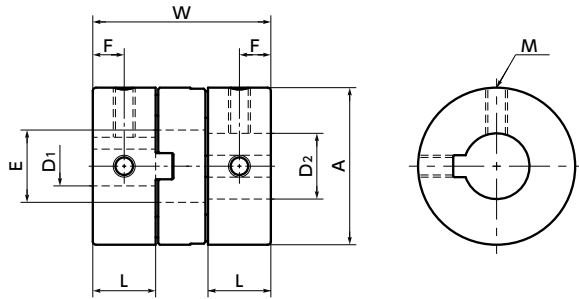
MOM-55C-15-16

1 2

MOM-K Flexible coupling - Oldham - type - Set screw + Key type

WEB Selection Tool WEB CAD Download High torque High Rigidity

MOM-K



Dimensions

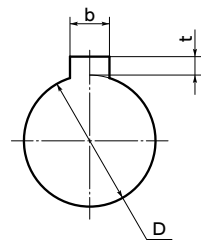
Unit : mm

Part Number	A	L	W	E	F	M	Screw Tightening Torque (N·m)
MOM-15K	15	5.4	16.6	6.9	2.7	M3	0.7
MOM-17K	17	6.7	20.4	7.3	3.35	M3	0.7
MOM-20K	20	7	22	11.1	3.5	M3	0.7
MOM-26K	26	9	26.6	13.3	4.5	M4	1.7
MOM-30K	30	12	34	15.5	6	M4	1.7
MOM-34K	34	13	35	17.5	6.5	M5	4
MOM-38K	38	15	40.5	21.5	7.5	M5	4
MOM-45K	45	15	45.2	24.3	7.5	M5	4
MOM-55K	55	17	51	27.7	8.5	M6	7
MOM-70K	70	20	58.6	38.5	10	M8	15

Part Number	Standard Bore Diameter (dimensional allowance H8)																
	D1 • D2	6	6.35	8	10	12	14	15	16	18	20	22	24	25	28	30	35
MOM-15K		●															
MOM-17K		●		●													
MOM-20K		●	●	●	●												
MOM-26K		●	●	●	●	●											
MOM-30K				●	●	●	●	●									
MOM-34K					●	●	●	●	●								
MOM-38K					●	●	●	●	●	●	●						
MOM-45K						●	●	●	●	●	●	●					
MOM-55K								●	●	●	●	●	●	●	●		
MOM-70K										●	●	●	●	●	●	●	●

- All products are provided with hex socket set screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with key type for one side and clamping type or other type for the other side is available upon request.

Details of Shaft Hole



Standard bore diameter D	Keyway				Key Nominal dimension b×h
	b Standard Dimension	Allowance (JS9)	t Standard Dimension	Allowance	
6 · 6.35	2	±0.0125	1.0	+0.1 0	2×2
8	3	±0.0125	1.4	+0.1 0	3×3
10 · 12	4	±0.0150	1.8	+0.1 0	4×4
14 · 15 · 16	5	±0.0150	2.3	+0.1 0	5×5
18 · 20 · 22	6	±0.0150	2.8	+0.1 0	6×6
24 · 25 · 28 · 30	8	±0.0180	3.3	+0.2 0	8×7
35	10	±0.0180	3.3	+0.2 0	10×8

● Excerpt from JIS B 1301

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Please feel free to contact us

Available / Add'l charge

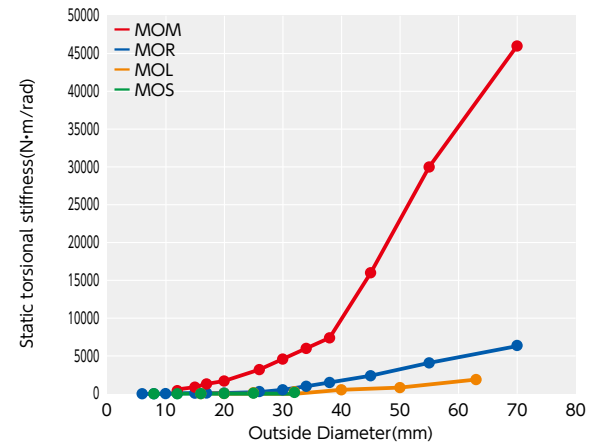
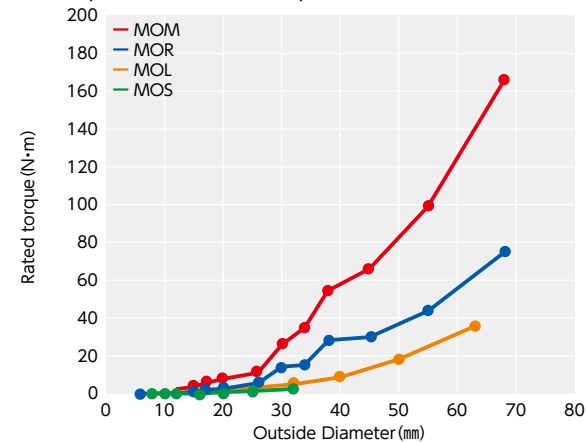
Available / Add'l charge

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. lateral*3 misalignment (mm) → P.175	Max. Angular Misalignment (°)	Mass*2 (g)
MOM-15K	7	3.3	6.6	2000	5.7×10 ⁻⁷	870	0.3	2	17
MOM-17K	8	5.5	11	2000	1.1×10 ⁻⁶	1300	0.3	2	26
MOM-20K	10	7.7	15.4	2000	2.4×10 ⁻⁶	1700	0.4	2	37
MOM-26K	12	11	22	2000	8.4×10 ⁻⁶	3200	0.5	2	78
MOM-30K	15	26	52	2000	1.8×10 ⁻⁵	4600	0.6	2	130
MOM-34K	16	35	70	2000	3.2×10 ⁻⁵	6000	0.7	2	178
MOM-38K	20	55	110	2000	5.7×10 ⁻⁵	7400	0.8	2	241
MOM-45K	22	66	132	2000	1.2×10 ⁻⁴	16000	1	2	384
MOM-55K	28	99	198	2000	3.1×10 ⁻⁴	30000	1.2	2	650
MOM-70K	35	176	352	2000	9.3×10 ⁻⁴	46000	1.4	2	1200

- *1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin.
- *2 : These are values with max. bore diameter.
- *3 : The max. lateral misalignment varies depending on the load torque and revolution. → P.175

Comparison of rated torque



Part number specification

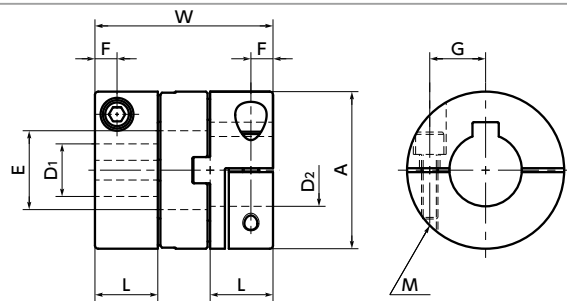
MOM-15K-6-6

1 2

MOM-CK Flexible coupling - Oldham - type - Clamping + Key type

WEB Selection Tool WEB CAD Download High torque High Rigidity

MOM-CK



Outside Diameter: $\phi 15 - \phi 38$

Unit : mm

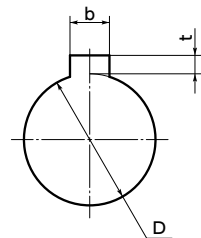
Dimensions

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
MOM-15CK	15	6.6	19	6.9	2.15	5.2	M1.6	0.25
MOM-17CK	17	9	25	7.3	2.65	5.5	M2	0.5
MOM-20CK	20	10	28	11.1	3.25	7.25	M2.5	1
MOM-26CK	26	11.5	31.6	13.3	4	9	M3	1.5
MOM-30CK	30	12	34	15.5	4	11	M3	1.5
MOM-34CK	34	13	35	17.5	4.5	12	M4	3.5
MOM-38CK	38	15	40.5	21.5	4.75	14	M4	3.5
MOM-45CK	45	16.2	47.6	24.3	6.2	16	M5	8
MOM-55CK	55	20.8	58.6	27.7	7.9	20	M6	13
MOM-70CK	70	25	68.6	38.5	8.9	26	M6	13

Part Number	Standard Bore Diameter D1 • D2 															
	6	6.35	8	10	12	14	15	16	18	20	22	24	25	28	30	35
MOM-15CK	●															
MOM-17CK	●															
MOM-20CK	●	●	●	●												
MOM-26CK	●	●	●	●	●											
MOM-30CK			●	●	●	●										
MOM-34CK				●	●	●	●	●								
MOM-38CK				●	●	●	●	●	●	●						
MOM-45CK					●	●	●	●	●	●	●					
MOM-55CK							●	●	●	●	●	●	●			
MOM-70CK									●	●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with clamping + key type for one side and clamping type or other type for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Details of Shaft Hole



Standard bore diameter D	Keyway				Key
	b	t	Standard Dimension	Allowance	
6 · 6.35	2	±0.0125	1.0	+0.1 0	2×2
8	3	±0.0125	1.4	+0.1 0	3×3
10 · 12	4	±0.0150	1.8	+0.1 0	4×4
14 · 15 · 16	5	±0.0150	2.3	+0.1 0	5×5
18 · 20 · 22	6	±0.0150	2.8	+0.1 0	6×6
24 · 25 · 28 · 30	8	±0.0180	3.3	+0.2 0	8×7
35	10	±0.0180	3.3	+0.2 0	10×8

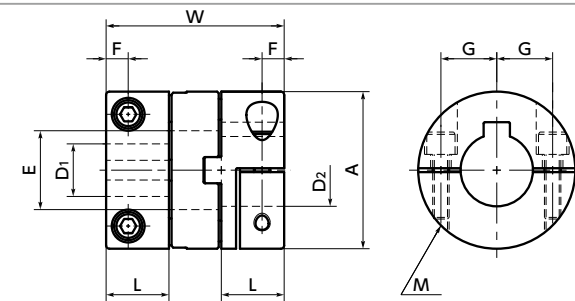
● Excerpt from JIS B 1301

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Please feel free to contact us

Available / Add'l charge

Available / Add'l charge



Outside Diameter: $\phi 45 - \phi 70$

Performance

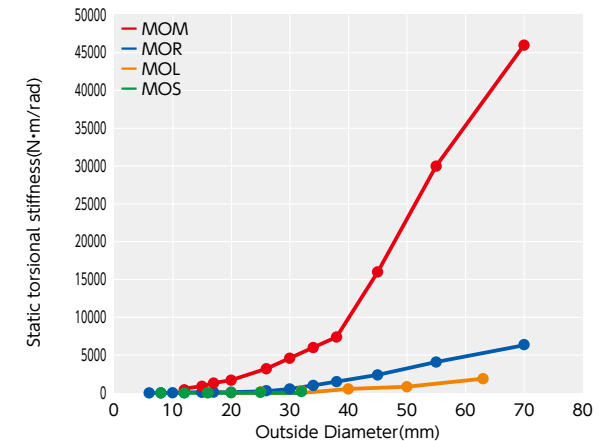
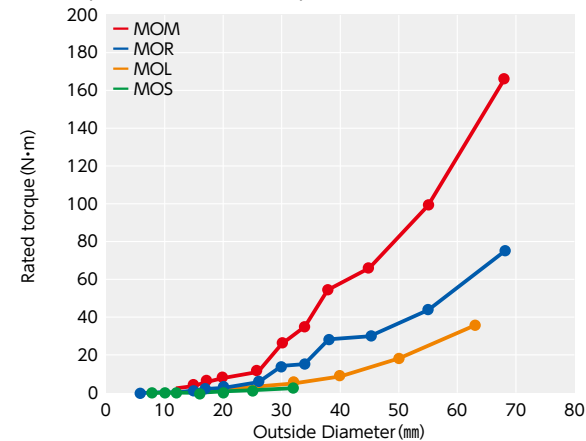
Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. lateral*3 misalignment (mm) → P.175	Max. Angular Misalignment (°)	Mass*2 (g)
MOM-15CK	6	3.3	6.6	2000	6.1×10^{-7}	870	0.3	2	18
MOM-17CK	6.35	5.5	11	2000	1.4×10^{-6}	1300	0.3	2	33
MOM-20CK	10	7.7	15.4	2000	2.9×10^{-6}	1700	0.4	2	45
MOM-26CK	12	11	22	2000	9.5×10^{-6}	3200	0.5	2	90
MOM-30CK	14	26	52	2000	1.8×10^{-5}	4600	0.6	2	128
MOM-34CK	16	35	70	2000	3.0×10^{-5}	6000	0.7	2	170
MOM-38CK	20	55	110	2000	5.4×10^{-5}	7400	0.8	2	231
MOM-45CK	22	66	132	2000	1.2×10^{-4}	16000	1	2	383
MOM-55CK	25	99	198	2000	3.4×10^{-4}	30000	1.2	2	743
MOM-70CK	35	176	352	2000	1.0×10^{-3}	46000	1.4	2	1350

*1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin.

*2 : These are values with max. bore diameter.

*3 : The max. lateral misalignment varies depending on the load torque and revolution. → P.175

Comparison of rated torque



Part number specification

MOM-38CK - 16-18

1

2

MOL/MOS Flexible coupling - Oldham - type

WEB Selection Tool CAD Download High Allowable Misalignment Small Eccentric Reaction Force

Structure

Set Screw type

MOL Outside diameter $\phi 16 - \phi 32 \rightarrow$ P.189

Hex Socket Set Screw



MOL Outside diameter $\phi 40 - \phi 63$

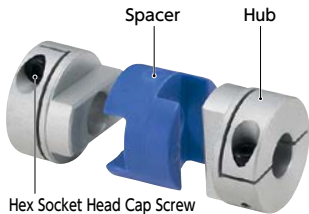


MOS $\rightarrow$ P.191



Clamping type

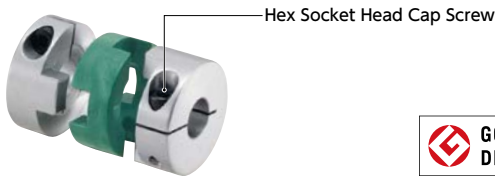
MOL-C Outside diameter $\phi 16 - \phi 32 \rightarrow$ P.189



MOL-C Outside diameter $\phi 40 - \phi 63$



MOS-C $\rightarrow$ P.191



Applicable motors

	MOL	MOS
Servomotor	—	—
Stepping Motor	○	○
General-purpose motor	◎	◎

◎: Excellent ○: Very good

Property

	MOL	MOS
Allowable Misalignment	◎	◎
Electrical insulation	◎	◎
Allowable operating temperature	-20°C to 80°C	-20°C to 80°C

◎: Excellent ○: Very good

- This is an oldham-type flexible coupling.
- Slippage of hubs and a spacer allows large eccentricity and angular misalignment to be accepted.
- The load on the shaft generated by misalignment is small and the burden on the shaft is reduced.
- It has electrical insulation.
- Standard type **MOL** and short type **MOS** are available.

Application

Parts feeder/Transport device

Material/Finish

RoHS2 Compliant

	MOL / MOL-C / MOS / MOS-C
Hub	A2017 Alumite Treatment
Spacer	Polyacetal
Hex Socket Set Screw	SCM435 Ferrosferric oxide film
Hex Socket Head Cap Screw	SCM435 Ferrosferric oxide film

Related Products

Oldham-type coupling with high torque specification **MOR** is available.
 $\rightarrow$ P.161



Oldham-type couplings **MOM** with metal spacers are available.
 $\rightarrow$ P.173



Part number specification

MOL-20C-6-8

Product Code Size Bore Diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole $\rightarrow$ P.803 Available / Add'l charge
Cleanroom Wash & Packaging $\rightarrow$ P.807 Available / Add'l charge
Change to Stainless Steel Screw $\rightarrow$ P.805 Available / Add'l charge

Selection Navigator

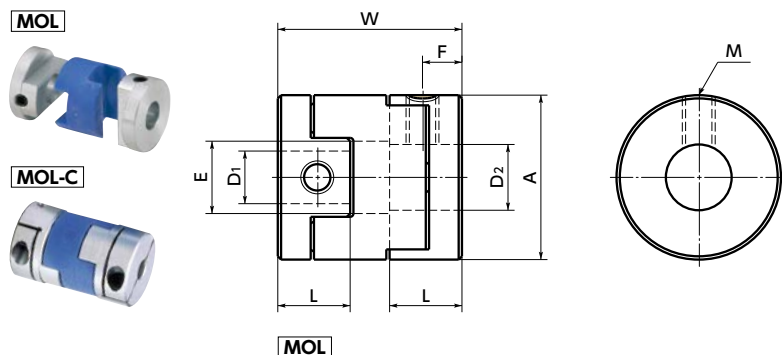


CAD Data Download

<https://www.nbk1560.com/>

MOL/MOL-C Flexible coupling - Oldham - type - Set screw type/Clamping type

WEB Selection Tool CAD Download High Allowable Misalignment Small Eccentric Reaction Force



Dimensions

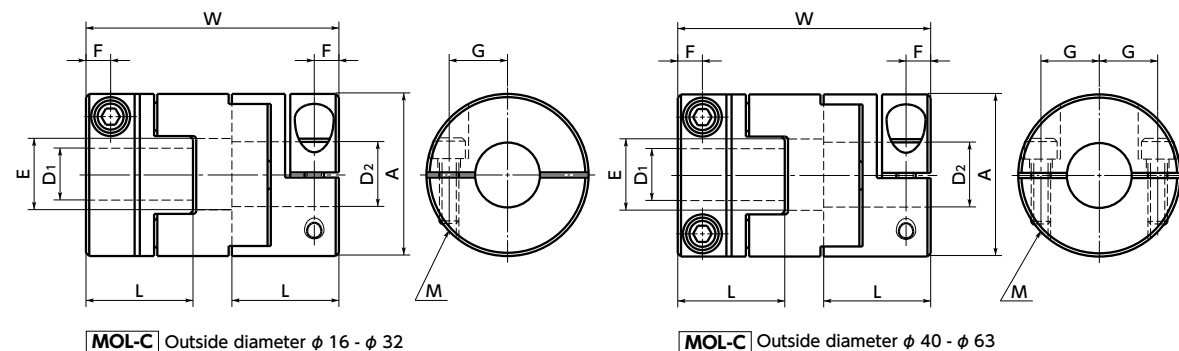
Unit : mm

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
MOL-16	16	7	18	7	3.5		M3	0.7
MOL-20	20	9	23	9	4.5		M4	1.7
MOL-25	25	11	28.2	11	5.5		M5	4
MOL-32	32	12.7	32.7	14.5	6.5		M6	7
MOL-40	40	14	32	17	7		M6	7
MOL-50	50	17	38.2	23	8.5		M8	15
MOL-63	63	21	46.6	28	10.5		M10	30
MOL-16C	16	12.5	29	7	3	5	M2.5	1
MOL-20C	20	14.4	33.8	9	3	6.5	M2.5	1
MOL-25C	25	16.5	39.2	11	3.8	9	M3	1.5
MOL-32C	32	18.7	44.7	14.5	4.5	11	M4	2.5
MOL-40C	40	23	50	17	7	13	M5	4
MOL-50C	50	27	58.2	23	8	16	M6	8
MOL-63C	63	33	70.6	28	10	21	M8	16

Part Number	Standard Bore Diameter D1 • D2 															
	3	4	5	6	6.35	8	9.525	10	11	12	14	15	16	18	20	25
MOL-16	●	●	●	●	●											
MOL-20		●	●	●	●	●										
MOL-25			●	●	●	●	●	●								
MOL-32						●		●		●	●					
MOL-40								●		●	●	●	●			
MOL-50											●	●	●	●	●	
MOL-63													●	●	●	●
MOL-16C			●	●												
MOL-20C				●	●	●										
MOL-25C					●	●		●								
MOL-32C						●		●	●	●	●					
MOL-40C										●	●	●	●			
MOL-50C													●	●	●	
MOL-63C														●	●	●

- All products are provided with hex socket set screw **MOL** or hex socket head cap screw **MOL-C**.
- The dimensional allowance for bore diameter of a set screw type **MOL** is H8.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with set screw type for one side and clamping type for the other side is available upon request.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Available / Add'l charge Available / Add'l charge Available / Add'l charge



MOL-C Outside diameter ϕ 16 - ϕ 32

MOL-C Outside diameter ϕ 40 - ϕ 63

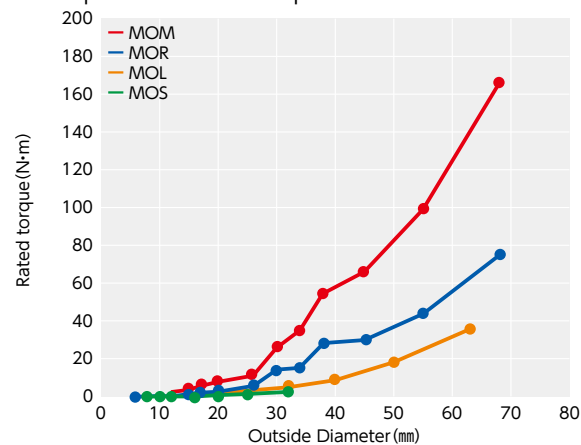
Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOL-16	6.35	0.7	1.4	39000	3.2×10^{-7}	31	1	3	7
MOL-20	8	1.2	2.4	31000	1.0×10^{-6}	60	1.5	3	14
MOL-25	10	2	4	25000	3.0×10^{-6}	140	2	3	27
MOL-32	14	4.5	9	19000	9.5×10^{-6}	280	2.5	3	50
MOL-40	16	9	18	15000	2.3×10^{-5}	540	3	3	80
MOL-50	20	18	36	12000	6.7×10^{-5}	820	3.5	3	150
MOL-63	25	36	72	10000	2.2×10^{-4}	1900	4	3	300
MOL-16C	6	0.7	1.4	39000	5.8×10^{-7}	31	1	3	12
MOL-20C	8	1.2	2.4	31000	1.5×10^{-6}	60	1.5	3	19
MOL-25C	10	2	4	25000	4.4×10^{-6}	140	2	3	36
MOL-32C	14	4.5	9	19000	1.4×10^{-5}	280	2.5	3	69
MOL-40C	16	9	18	15000	4.1×10^{-5}	540	3	3	130
MOL-50C	20	18	36	12000	1.2×10^{-4}	820	3.5	3	230
MOL-63C	25	36	72	10000	3.7×10^{-4}	1900	4	3	450

*1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin. If ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of **MOL** **MOL-C** is -20°C to 80°C.

*2 : These are values with max. bore diameter.

Comparison of rated torque



Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

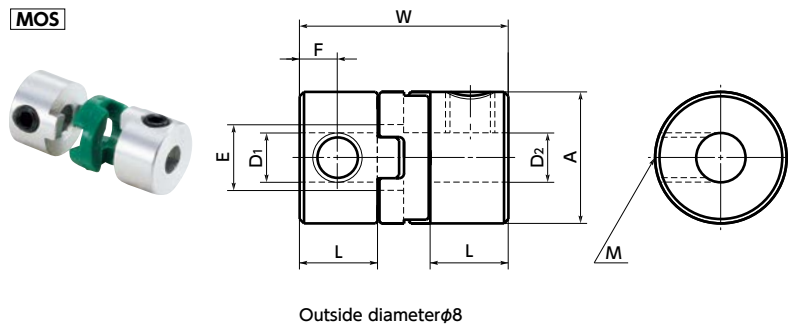
Part number specification

MOL-40C-14-15 1 set
MOL - 40 - SPCR Single Spacer
 Product Code Outside Diameter (A Dimension) Single Spacer

MOS/MOS-C Flexible coupling - Oldham - type - Set screw type/Clamping type

WEB Selection Tool CAD Download High Allowable Misalignment Small Eccentric Reaction Force

MOS



Dimensions

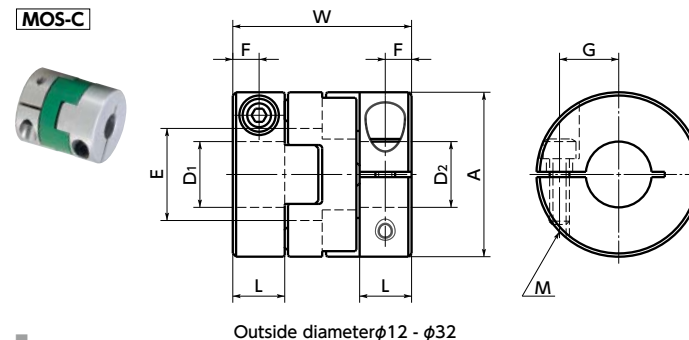
Unit : mm

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
MOS-8	8	4.8	12.7	4	2.3		M3	0.7
MOS-12C	12	5	14.9	6	2.5	4	M2	0.5
MOS-16C	16	7	21	8	3.5	5	M2.5	1
MOS-20C	20	7	22.1	10	3.5	6.5	M2.5	1
MOS-25C	25	8	27.2	14	4	9	M3	1.5
MOS-32C	32	10	33.3	18	5	11	M4	2.5

Part Number	Standard Bore Diameter D1・D2													
	1	2	2.5	3	4	5	6	6.35	7	8	10	11	12	14
MOS-8	●	●	●	●										
MOS-12C				●	●	●								
MOS-16C				●	●	●	●							
MOS-20C						●	●	●	●	●				
MOS-25C							●	●	●	●	●			
MOS-32C								●		●	●	●	●	●

- All products are provided with hex socket set screw (**MOS-8**) or hex socket head cap screw (**MOS-C**)
- The dimensional allowance for bore diameter of **MOS-8** is H8.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

MOS-C



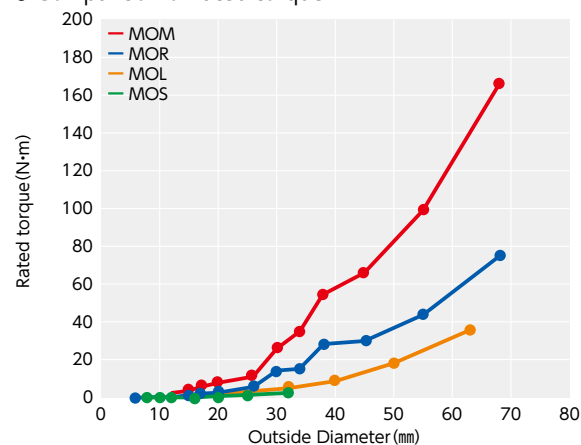
Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOS-8	3	0.08	0.16	78000	1.2×10 ⁻⁸	2	0.5	2	2
MOS-12C	5	0.2	0.4	52000	7.1×10 ⁻⁸	9	0.6	2	3
MOS-16C	6	0.4	0.8	39000	3.0×10 ⁻⁷	30	1	2	8
MOS-20C	8	0.7	1.4	31000	7.4×10 ⁻⁷	47	1.3	2	13
MOS-25C	10	1.2	2.4	25000	2.2×10 ⁻⁶	85	1.5	2	24
MOS-32C	14	2.8	5.6	19000	7.3×10 ⁻⁶	190	2	2	48

*1 : Values with no load fluctuation and rotation in a single direction. If there is large load fluctuation, or both normal and reverse rotation, select a size with some margin. If ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of **MOS** **MOS-C** is -20°C to 80°C.

*2 : These are values with max. bore diameter.

● Comparison of rated torque



● Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

● Part number specification

MOS-20C-6.35-8 1 set

MOS - 40 - SPCR Single Spacer
 Product Code Outside Diameter (A Dimension)

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
 Available / Add'l charge Available / Add'l charge Available / Add'l charge

MBB Flexible Couplings - Bellows Type

WEB Selection Tool CAD Download 0 Zero Backlash High torque High Rigidity

Structure

Clamping Type

MBB-C Aluminum alloy hub

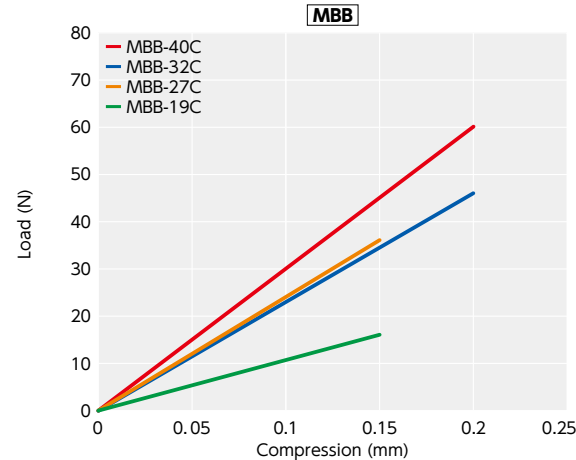


Material/Finish

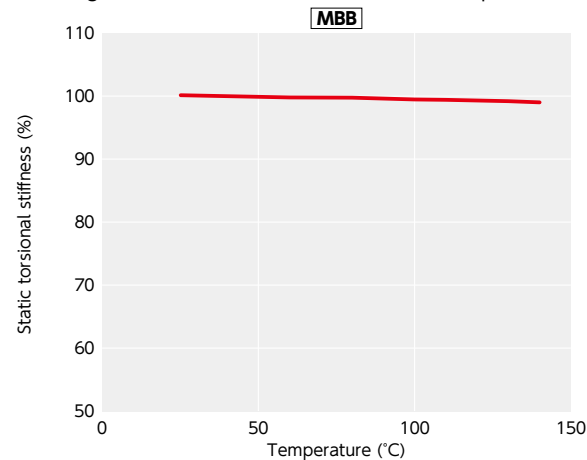
RoHS2 Compliant

	MBB
Hub	A2017 Alumite Treatment
Bellows	SUS304
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

Eccentric Reaction Force



Change in static torsional stiffness due to temperature



Applicable motors

	MBB
Servomotor	○
Stepping Motor	○
General-purpose Motor	-

○: Excellent ○: Very good

Property

	MBB
Zero Backlash	○
Allowable Misalignment	○

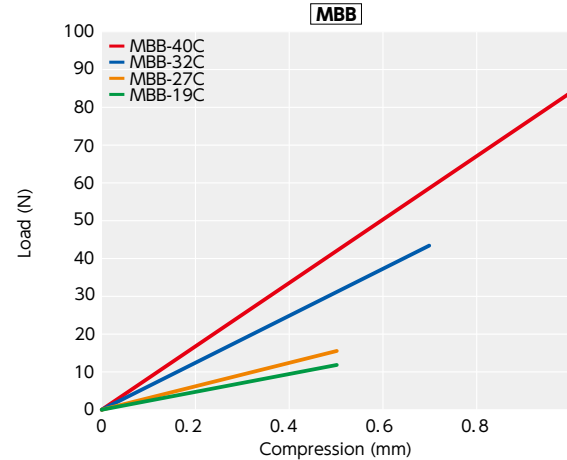
○: Excellent ○: Very good

- This is a bellows type flexible coupling.
- The bellows allows eccentricity, angular misalignment, and end-play.
- The bellows is stainless steel.

Application

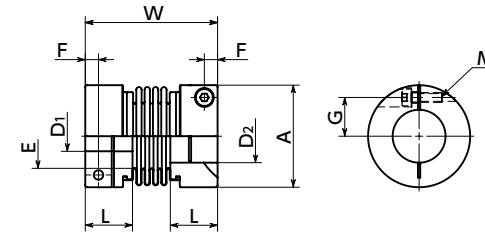
Actuator / High precision XY stage / Semiconductor devices / Encoder

Thrust Reaction Force



This is a value under the condition where the static torsional stiffness at 20°C is 100%.

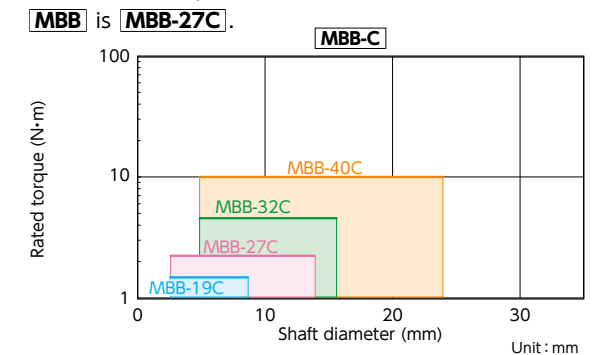
The change of **MBB** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. If the unit is used under higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.



Selection

Selection Example

In case of selected parameters of shaft diameter of $\phi 10$ and load torque of 2 N·m, the selected size for **MBB** is **MBB-27C**.



Dimensions

Part Number	Bore Diameter	A	L	W	E	F	G	M	WrenchTorque(N·m)
MBB-19C	3 - 8	19	10.5	30	12	3	6.75	M2	0.5
MBB-27C	3 - 14	27	12.5	35	17	3.5	10.25	M2.5	0.9
MBB-32C	5 - 16	32	15.5	46	22	4.25	12	M3	1.5
MBB-40C	5 - 20	40	16	51	28	5	15	M4	3.5
	22 - 24							M3	1.5

Part Number	Standard Bore Diameter D1·D2											
	3	4	5	6	8	10	12	14	15	16	17	19
MBB-19C	●	●	●	●	●	●	●	●	●	●	●	●
MBB-27C	●	●	●	●	●	●	●	●	●	●	●	●
MBB-32C			●	●	●	●	●	●	●	●	●	●
MBB-40C			●	●	●	●	●	●	●	●	●	●

Part Number	Standard Bore Diameter D1·D2							
	1 / 8	3 / 16	1 / 4	3 / 8	1 / 2	5 / 8	3 / 4	7 / 8
MBB-19C	●	●	●	●	●	●	●	●
MBB-27C	●	●	●	●	●	●	●	●
MBB-32C			●	●	●	●	●	●
MBB-40C			●	●	●	●	●	●

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 Torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MBB-19C	8	1.5	33000	8.6×10^{-7}	170	0.15	1.5	±0.5	16
MBB-27C	14	2.3	23000	3.6×10^{-6}	800	0.15	1.5	±0.5	32
MBB-32C	16	4.5	19000	1.1×10^{-5}	1600	0.2	1.5	±0.7	68
MBB-40C	24	10	15000	2.8×10^{-5}	2700	0.2	1.5	±1	110

*1: Correction of rated torque due to load fluctuation is not required.

*2: These are values with max. bore diameter.

Slip Torque

Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the rated torque of **MBB-C**.

Part Number	Bore Diameter (mm)	
	3	5
MBB-19C	0.8	
MBB-32C		2
MBB-40C		9.8

These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **MBB-C** dimensional table.

Part number specification

MBB-19C-6-1/4

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805

Please feel free to contact us

Not Available

Please feel free to contact us

MFB Flexible Coupling - Bellows - type

WEB Selection Tool CAD Download 0 Zero Backlash SUS Stainless steel

Structure

- Set Screw type

MFB Aluminum alloy hub → P.199



MFBS Made of all stainless steel → P.199



- Clamping type

MFB-C Aluminum alloy hub → P.199



MFBS-C Made of all stainless steel → P.199



- Recommended applicable motor

	MFB	MFBS
Servomotor	—	—
Stepping motor	○	○
General-purpose motor	—	—

○: Excellent ○: Very good △: Available

- Property

	MFB	MFBS
Zero Backlash	○	○
Allowable Misalignment	○	○
Corrosion Resistance (All S.S.)	—	○

○: Excellent ○: Very good

- This is a bellows type flexible coupling.
- The bellows allow the eccentricity, and angular misalignment, and end-play.
- Even if there is misalignment, the constant revolution is performed.
- There are two types of bellows: phosphor bronze type and stainless steel type.

- Application

Encoder

- Material/Finish

RoHS2 Compliant

	MFB / MFB-C	MFBS / MFBS-C
Hub	A2017 Alumite Treatment	SUS303
Bellows	C5191	SUS316L
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film	SUSXM7
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film	SUSXM7

- Part number specification

MFB-20C-6-8

Product Code Size Bore Diameter

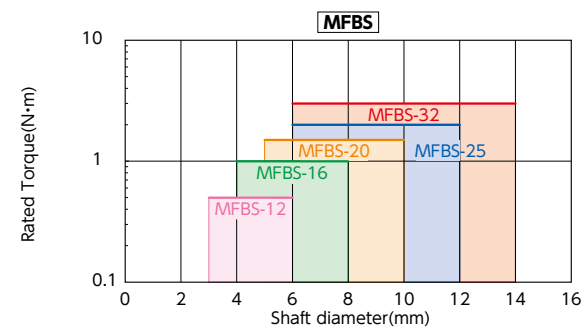
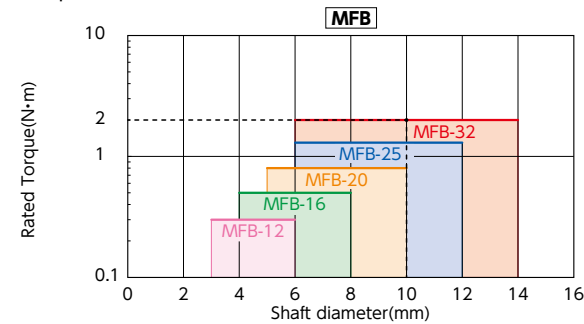
Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803 Available / Add'l charge
Cleanroom Wash & Packaging → P.807 Available / Add'l charge
Change to Stainless Steel Screw → P.805 Available / Add'l charge

Selection

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates the selection size.



- Selection example

In case of selected parameters of shaft diameter of ϕ 10 and load torque of 2 N·m, the selected size for

MFB **MFB-32**.

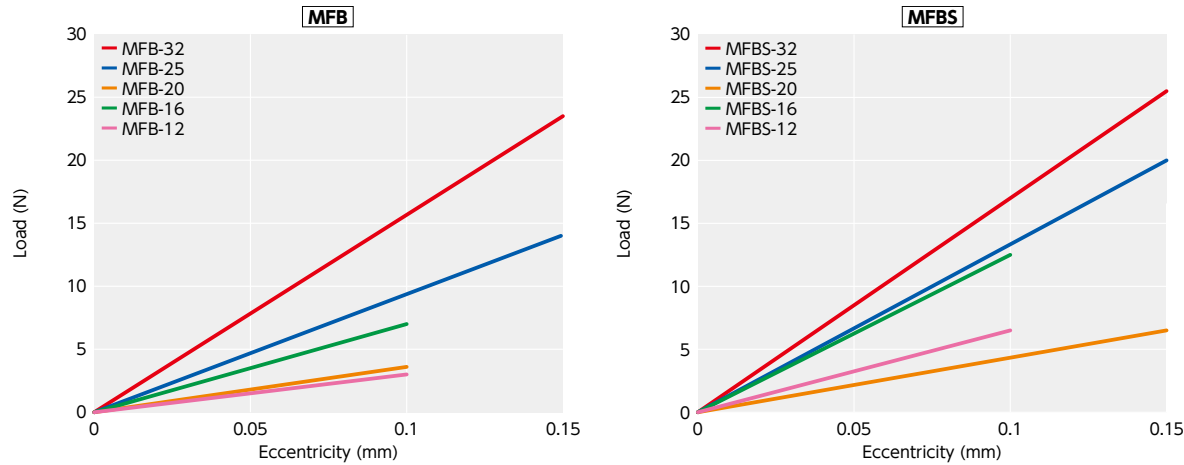


MFB Flexible Coupling - Bellows - type

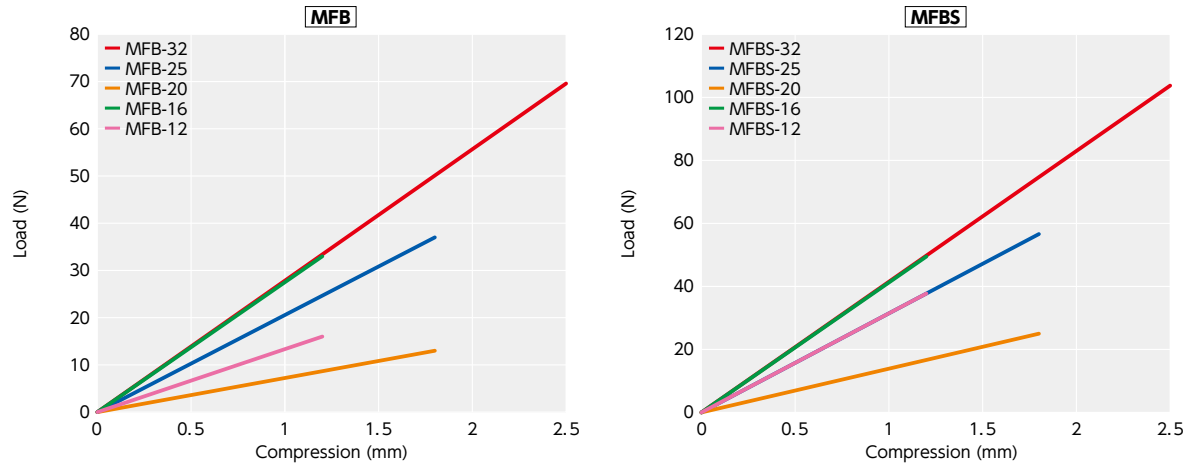
WEB Selection Tool CAD Download SUS Stainless steel 0 Zero Backlash

Technical Information

● Eccentric reaction force



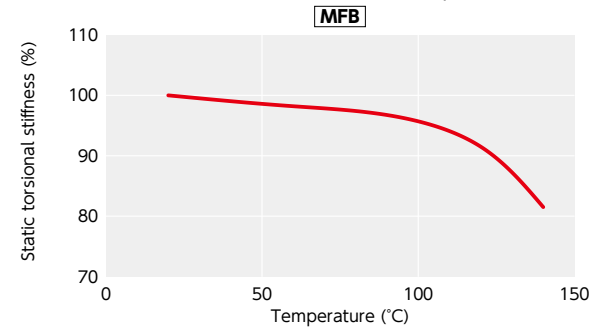
● Thrust Reaction Force (N)



● Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20°C is 100%.

The change of **MFB** **MFBS** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be cautious about misalignment due to elongation or deflection of the shaft associated with thermal expansion.



● Slip Torque

Concerning the sizes shown in the following table, please note that the shaft's slip torque is smaller than the rated torque of **MFBS-C**.

Unit : N · m

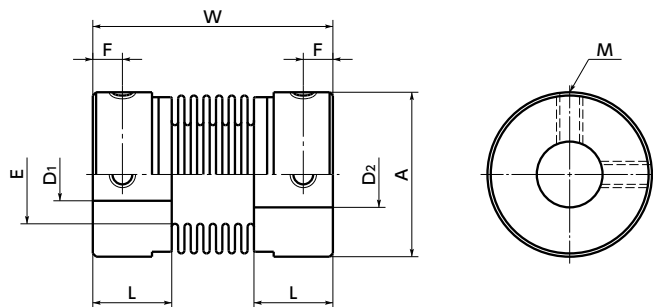
Part Number	Bore Diameter (mm)	
	4	5
MFBS-12C	0.4	
MFBS-16C		0.9

● These are test values based on the condition of shaft's dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **MFBS-C** Dimension table.

MFB/MFBS/MFB-C/MFBS-C Flexible Coupling - Bellows - type

WEB Selection Tool CAD Download 0 Zero Backlash SUS Stainless steel

MFB Aluminum alloy hub
MFBS Made of all stainless steel



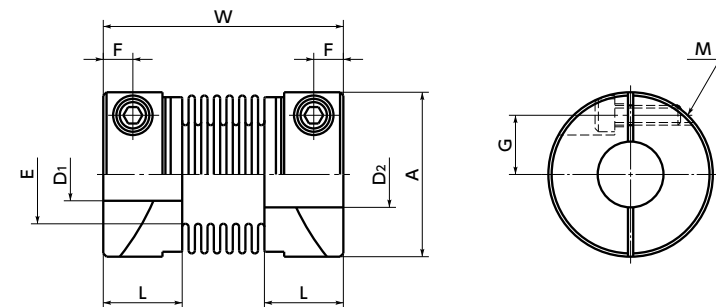
Dimensions

Unit : mm

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)	Standard Bore Diameter							
									D1 • D2							
									3	4	5	6	8	10	12	14
MFB-12	12	7.5	23.5	7	2.5		M2.5	0.5	●	●	●	●	●			
MFB-16	16	9	26.5	9.5	3		M3	0.7		●	●	●	●			
MFB-20	20	10	33	12.5	3.5		M3	0.7			●	●	●	●		
MFB-25	25	12	36.5	15	4.5		M4	1.7				●	●	●	●	
MFB-32	32	13.5	42	21	5.5		M4	1.7				●	●	●	●	●
MFBS-12	12	7.5	23.5	7	2.5		M2.5	0.5	●	●	●	●	●			
MFBS-16	16	9	26.5	9.5	3		M3	0.7		●	●	●	●			
MFBS-20	20	10	32	12.5	3.5		M3	0.7			●	●	●	●		
MFBS-25	25	12	36.5	15	4.5		M4	1.7				●	●	●	●	
MFBS-32	32	13.5	42	21	5.5		M4	1.7				●	●	●	●	●
MFB-12C	12	7.5	23.5	7	2.25	4	M2	0.5		●	●					
MFB-16C	16	9	26.5	9.5	3	5	M2.5	1			●	●				
MFB-20C	20	10	33	12.5	3.5	6.5	M2.5	1				●	●			
MFB-25C	25	12	36.5	15	4.5	9	M3	1.5					●	●		
MFB-32C	32	13.5	42	21	5	11	M4	2.5					●	●	●	●
MFBS-12C	12	7.5	23.5	7	2.25	4	M2	0.5		●	●					
MFBS-16C	16	9	26.5	9.5	3	5	M2.5	1			●	●				
MFBS-20C	20	10	32	12.5	3.5	6.5	M2.5	1				●	●			
MFBS-25C	25	12	36.5	15	4.5	9	M3	1.5					●	●		
MFBS-32C	32	13.5	42	21	5	11	M4	2.5					●	●	●	●

- All products are provided with hex socket set screws (**MFB**, **MFBS**) and hex socket head cap screws (**MFB-C**, **MFBS-C**).
- In a case where the bore diameter is $\phi 4$ or less, the set screw is used in only one place.
- The dimensional allowance for bore diameter of a set screw type is H8.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting a clamping type **MFB-C**, **MFBS-C** on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

MFB-C Aluminum alloy hub
MFBS-C Made of all stainless steel



Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MFB-12	6.35	0.3	52000	9.0×10^{-8}	82	0.1	1.5	$+0.4$ -1.2	4.1
MFB-16	8	0.5	39000	3.5×10^{-7}	110	0.1	1.5	$+0.4$ -1.2	9
MFB-20	10	0.8	31000	9.9×10^{-7}	180	0.15	2	$+0.6$ -1.8	16
MFB-25	12	1.3	25000	3.1×10^{-6}	240	0.15	2	$+0.6$ -1.8	32
MFB-32	16	2	19000	9.2×10^{-6}	330	0.2	2	$+0.8$ -2.5	57
MFBS-12	6.35	0.5	52000	2.1×10^{-7}	100	0.1	1.5	$+0.4$ -1.2	9.1
MFBS-16	8	1	39000	8.0×10^{-7}	150	0.1	1.5	$+0.4$ -1.2	20
MFBS-20	10	1.5	31000	2.3×10^{-6}	220	0.15	2	$+0.6$ -1.8	37
MFBS-25	12	2	25000	7.0×10^{-6}	330	0.15	2	$+0.6$ -1.8	73
MFBS-32	16	3	19000	2.1×10^{-5}	490	0.2	2	$+0.8$ -2.5	130
MFB-12C	5	0.3	52000	9.7×10^{-8}	82	0.1	1.5	$+0.4$ -1.2	3.8
MFB-16C	6.35	0.5	39000	3.7×10^{-7}	110	0.1	1.5	$+0.4$ -1.2	9.8
MFB-20C	8	0.8	31000	1.0×10^{-6}	180	0.15	2	$+0.6$ -1.8	16
MFB-25C	10	1.3	25000	3.1×10^{-6}	240	0.15	2	$+0.6$ -1.8	32
MFB-32C	14	2	19000	9.6×10^{-6}	330	0.2	2	$+0.8$ -2.5	58
MFBS-12C	5	0.5	52000	2.1×10^{-7}	100	0.1	1.5	$+0.4$ -1.2	9.2
MFBS-16C	6.35	1	39000	8.1×10^{-7}	150	0.1	1.5	$+0.4$ -1.2	22
MFBS-20C	8	1.5	31000	2.3×10^{-6}	220	0.15	2	$+0.6$ -1.8	38
MFBS-25C	10	2	25000	6.9×10^{-6}	330	0.15	2	$+0.6$ -1.8	74
MFBS-32C	14	3	19000	2.1×10^{-5}	490	0.2	2	$+0.8$ -2.5	130

*1: Correction of rated torque due to load fluctuation is not required.

*2: These are values with max. bore diameter.

● Part number specification

MFB-12C-4-5

1

2

Additional Keyway at Shaft Hole → P.803 Available / Add'l charge
 Cleanroom Wash & Packaging → P.807 Available / Add'l charge
 SUS Change to Stainless Steel Screw → P.805 Available / Add'l charge

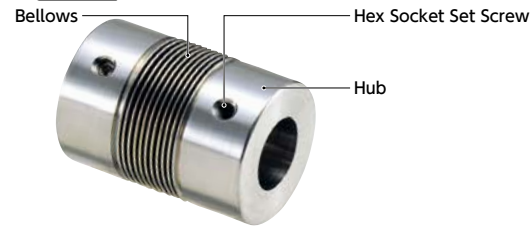
MWBS Flexible coupling - Bellows - type (high precision welding)

WEB Selection Tool CAD Download 0 Zero Backlash High Allowable Misalignment SUS Stainless steel

Structure

Set Screw type

MWBS → P.203



Property

	MWBS
Zero Backlash	○
Allowable Misalignment	○
Corrosion Resistance (All S.S.)	○

○: Excellent ○: Very good

- This is a bellows type flexible coupling.
- The crest and root of the bellows are bonded by special high precision welding.
- Thin metal plate molded with high precision allows higher misalignment to be accepted.
- Even if there is misalignment, the constant revolution is performed.

Application

Measurement equipment/Control device/Encoder

Material/Finish

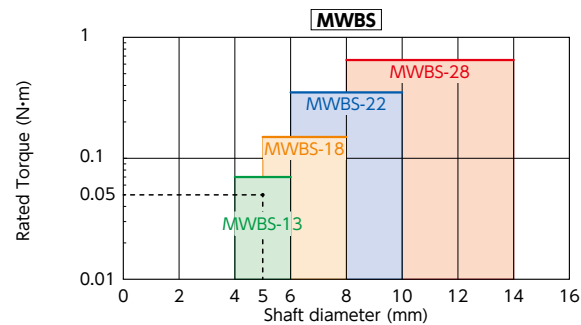
RoHS2 Compliant

	MWBS
Hub	SUS304
Bellows	SUS316L
Hex Socket Set Screw	SUSXM7

Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



Selection example

In case of selected parameters of shaft diameter of $\phi 5$ and load torque of $0.05 \text{ N} \cdot \text{m}$, the selected size for MWBS is MWBS-13.

Related Products

Completely custom-made super bellows coupling with high precision welded bellows can be manufactured.

→ P.204



Part number specification

MWBS-22-6-8

Product Code	Size	Bore Diameter
--------------	------	---------------

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 SUS Change to Stainless Steel Screw → P.805

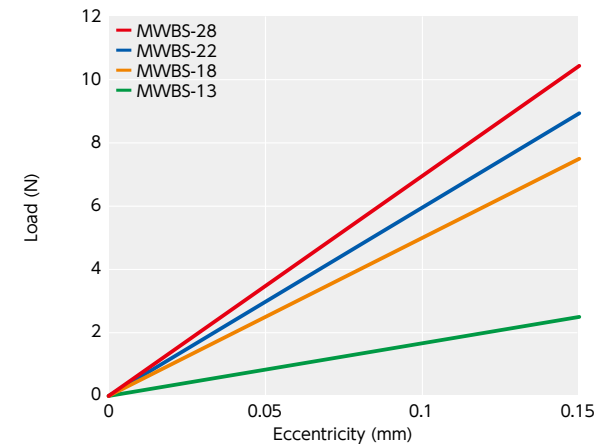
Please feel free to contact us

Available / Add'l charge

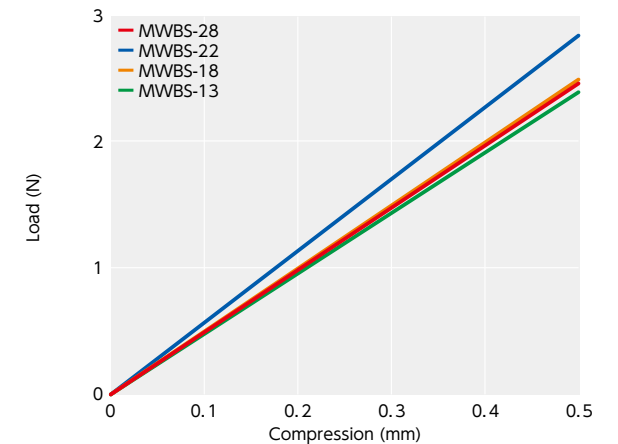
Changed to the S.S. screw

Technical Information

Eccentric reaction force



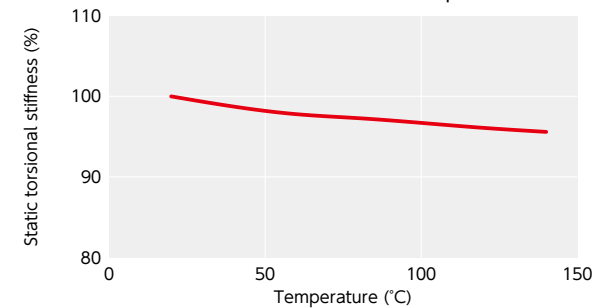
Thrust Reaction Force



Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20°C is 100%.

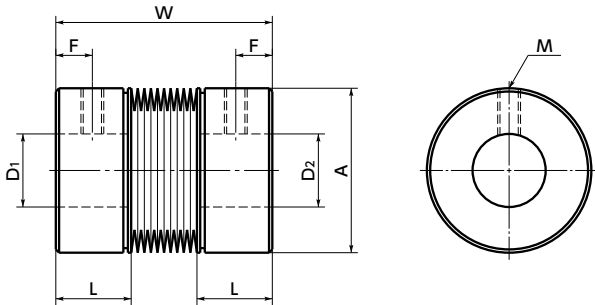
MWBS's change in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used under higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.



MWBS Flexible coupling - Bellows - type (high precision welding)

WEB Selection Tool CAD Download 02 Zero Backlash High Allowable Misalignment SUS Stainless steel

MWBS Made of all stainless steel



Dimensions

Unit : mm

Part Number	A 	L	W	F	M	Screw Tightening Torque (N・m)	Standard Bore Diameter (dimensional allowance H8) D1・D2 							
							4	5	6	8	10	11	12	14
MWBS-13	13	6	16.5	3	M2	0.5								
MWBS-18	18	8	22	4	M2.5	1								
MWBS-22	22	10	27	5	M3	1.5								
MWBS-28	28	14	37	7	M4	2.5								

- All products are provided with hex socket set screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MWBS-13	6	0.07	10000	2.5×10 ⁻⁷	30	0.15	3.5	0.5	9.8
MWBS-18	8	0.15	10000	1.2×10 ⁻⁶	40	0.15	5	0.5	25
MWBS-22	10	0.35	10000	3.4×10 ⁻⁶	200	0.15	4	0.5	48
MWBS-28	14	0.65	10000	1.4×10 ⁻⁵	900	0.15	4.5	0.5	110

- *1 : Correction of rated torque due to load fluctuation is not required.
- *2 : These are values with max. bore diameter.



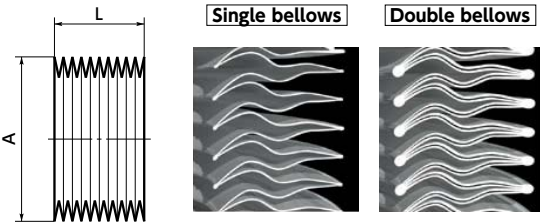
- Part number specification

MWBS-22-6-8

Product Code 1 2

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 SUS Change to Stainless Steel Screw → P.805 Please feel free to contact us Available / Add'l charge Changed to the S.S. screw

Super bellows Custom - made coupling



- Completely Custom-made super bellows coupling with high precision welded bellows can be designed and manufactured.
- The following table shows part of the performance that the super bellows coupling achieves. The performance depends on the type, outside diameter, threads per inch, and plate thickness of the bellows to use.

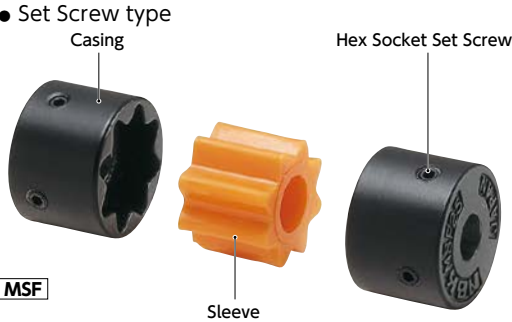
Dimensions・Performance

Type	A (mm)	Threads per inch	L (mm)	Plate thickness (mm)	Rated torque (N・m)	Max. torque (N・m)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)
Single bellows	13	10	4.5	0.05 - 0.1	0.07	0.15	0.15	3.5	±0.5
		20	9				0.3	6.5	±1
		30	13.5				0.45	10	±1.5
	18	10	6	0.05 - 0.1	0.15	0.3	0.15	5	±0.5
		20	12				0.3	9.5	±1
		30	18				0.45	14.5	±1.5
	22	10	7	0.06 - 0.1	0.35	0.7	0.2	4	±0.5
		20	14				0.4	8	±1
		30	21				0.6	12	±1.5
	28	10	9	0.1 - 0.15	0.65	1.3	0.25	6.5	±0.5
		20	18				0.5	9	±1
		30	27				0.75	14	±1.5
Double bellows	13	10	6	0.05 - 0.1	0.15	0.3	0.15	3.6	±0.5
		20	12				0.3	7.2	±1
		30	18				0.45	10	±1.5
	18	10	8	0.05 - 0.1	0.7	1.4	0.15	5.7	±0.5
		20	16				0.3	11.5	±1
		30	24				0.45	17.2	±1.5
	22	10	8	0.06 - 0.1	1.25	2.5	0.2	4.7	±0.5
		20	16				0.4	9.4	±1
		30	24				0.6	14	±1.5
	28	10	11	0.1 - 0.15	1.3	2.6	0.25	3.7	±0.5
		20	22				0.5	7.4	±1
		30	33				0.75	11	±1.5

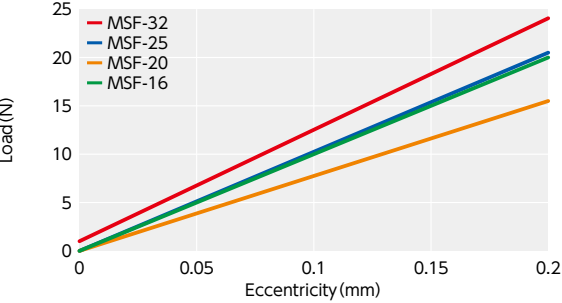
MSF Flexible coupling - Serration - type

WEB Selection Tool CAD Download Electrical Insulation SUS Stainless steel

Structure

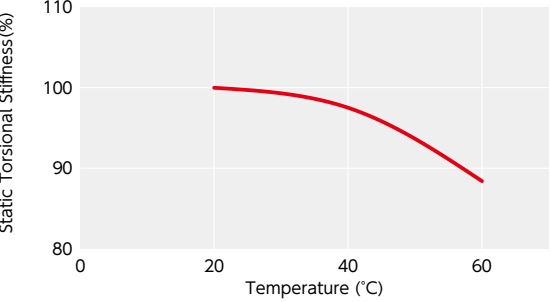


- Technical Information
- Eccentric reaction force



Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20°C is 100%. If the unit is used under higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.



Applicable motors

	MSF
Servomotor	—
Stepping Motor	—
General-purpose motor	○

○: Excellent ○: Very good

Property

	MSF
Allowable Misalignment	○
Vibration absorption	○
Electrical insulation	○
Allowable operating temperature	−20°C to 60°C

○: Excellent ○: Very good

- The engagement of serration transmits torque. This is a simple structure flexible coupling.
- It has excellent flexibility. Its max. lateral misalignment and max. angular misalignment are large, absorbing torsional vibration.

Application

Mixer/Gaming device

Material/Finish

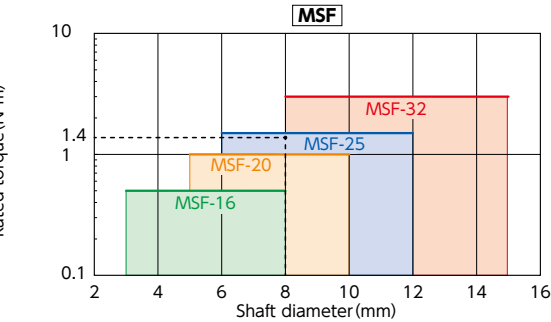
RoHS2 Compliant

	MSF-16-MSF-25	MSF-32
Casing	ZDC2 Cathodic electrodeposition coating	SMF4040 Steam treatment
Sleeve	Polyurethane	Polyurethane
Hex Socket Set Screw	SCM435 Ferrosioferric oxide film	SCM435 Ferrosioferric oxide film

Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.

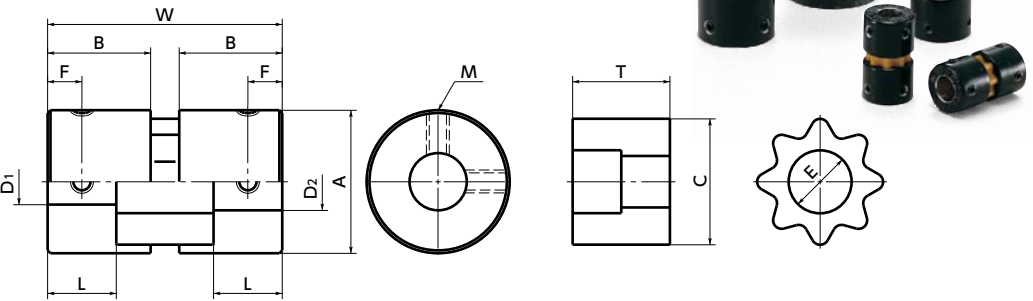


Selection example

In case of selected parameters of shaft diameter of φ 8 and load torque of 1.4 N·m, the selected size is **MSF-25**.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805 Available / Add'l charge Please feel free to contact us Available / Add'l charge

MSF



Dimensions

Part Number	A	B	L	W	F	M	Screw Tightening Torque (N·m)	Sleeve T	C	E	Standard Bore Diameter (dimensional allowance H8) D1・D2	3	4	5	6	6.35	8	10	12	14
MSF-16	16	12	8	27	4	M3	0.7	11	14	6 / 6	●	●								
MSF-20	20	15	10	34	5	M3	0.7	14	18	8 / 8			●	●	●	●	●	●		
MSF-25	25	18	12	41	6	M4	1.7	17	22	10 / 10				●	●	●	●	●	●	
MSF-32	32	21	14	48	7	M4	1.7	20	29	12 / 14							●	●	●	●

- All products are provided with hex socket set screw.
- In a case where the bore diameter is φ 4 or less, the set screw is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max.*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MSF-16	8	0.5	1	39000	9.0×10 ⁻⁷	4.4	0.20	2	22
MSF-20	10	1	2	31000	2.7×10 ⁻⁶	9.5	0.20	2	42
MSF-25	12	1.5	3	25000	8.1×10 ⁻⁶	20	0.20	2	81
MSF-32	15	3	6	19000	2.5×10 ⁻⁵	52	0.20	2	150

- *1: Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of **MSF** is −20°C to 60°C.
- *2: These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

Ambient temperature	Temperature correction factor
−20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70

Part number specification

MSF-16-6-6.35 1 set

MSF-16-SLV Single Sleeve

XRP Rigid Coupling

WEB Selection Tool CAD Download 0 Zero Backlash High Rigidity

Structure

- Clamping type

XRP-C → P.209



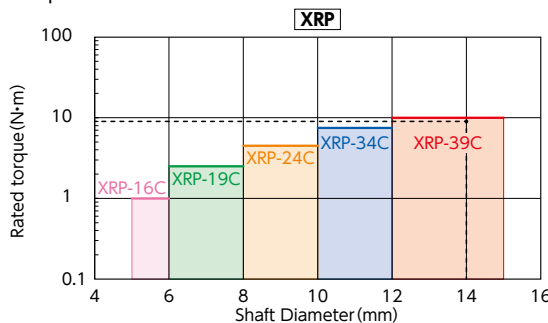
- Material/Finish

RoHS2 Compliant

	XRP-C
Main Body	A7075
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film

Selection

- Selection based on shaft diameter and rated torque
The area bounded by the shaft diameter and rated torque indicates is the selection size.



- Selection example

In case of selected parameters of shaft diameter of ϕ 14 and load torque of 9 N·m, the selected size is

XRP-39C.

- Recommended applicable motor

	XRP-C
Servomotor	○
Stepping motor	○
General-purpose motor	—

○: Excellent ○: Very good △: Available

- Property

	XRP-C
Zero Backlash	○
High Torque	○
High Torsional Stiffness	○

○: Excellent ○: Very good

- This is a high precision rigid coupling.
- Coaxiality, bore diameter, and run out have been pursued to the ultimate level.
- An inspection report is attached to all products before shipment.
- Light weight and ultra small moment of inertia. High response.
- This is a shaft fastening structure with consideration of rotational balance and unbalance is ultra small.
- Extra super duralumin (A7075) featuring the highest strength among aluminum alloy is adopted.

- Application

High precision measurement device/High precision XY stage/Encoder

- Part number specification

XRP-19C-6-8

Product Code size Bore Diameter

Please refer to dimensional table for part number specification.

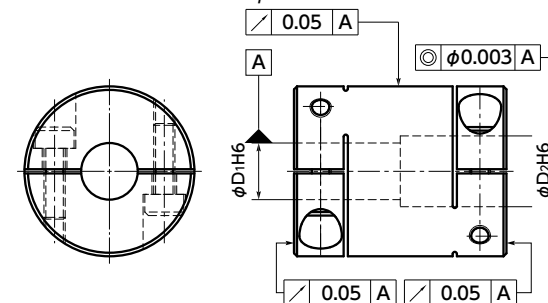
Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Please feel free to contact us Available / Add'l charge Available / Add'l charge



GOOD DESIGN

- Commitment to high precision

- The coaxiality of both bores is not more than 3 μ m.
- Bore diameter tolerance is H6.
- Radial run out and run out of end face against bore are not more than 50 μ m.



- Precision assurance by total inspection

- The inspection is conducted in an environment of constant temperature and humidity.
- Inspection item:
Bore diameters D1 and D2
Coaxiality of bores D1 and D2
Radial run out and run out of end face against bore

- 3D measurement device:

UPMC850CARAT SuperAcc made by Carl Zeiss
Measurement precision Max. allowable instruction error 0.7+L/600 μ m
Max. allowable probing error 0.6 μ m
Measurement environment Temperature 20 $\pm$ 1°C
Humidity 50 $\pm$ 10%



- Concentricity tolerance and coaxiality tolerance

Property symbol	Definition of tolerance zone
○	If the symbol ϕ is attached to the tolerance value, the tolerance zone is regulated by a circle of diameter t. The center of circular tolerance zone coincides with datum A.
○	If the symbol ϕ is attached to the tolerance value, the tolerance zone is regulated by a cylinder of diameter t. The axis line of cylindrical tolerance zone coincides with datum A.
Example and explanation of instruction method	
	The actual (reproduced) center of the outside circle must be within the circle concentric with datum circle A and of 0.1 in diameter.
	The actual (reproduced) shaft line of inside cylinder must be within a cylindrical tolerance area coaxial with common datum axis line A-B and of 0.08 in diameter.

Excerpt from JIS B 0021

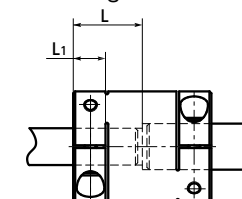
- Shaft insertion length

The shaft insertion length should be not less than L₁ (clamp portion) and not more than L.

The insertion length of a shaft to maintain the high precision should be L dimension if possible.

However, be careful so that both shaft ends do not interfere with each other.

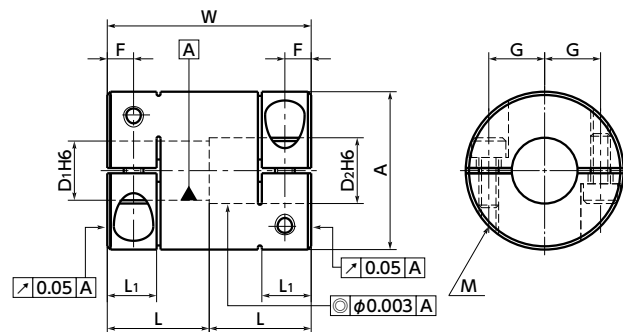
If the shaft insertion length is less than L₁, it may derange the coaxiality or generate vibration when fastening the shaft.



XRP Rigid Coupling - Clamping Type

WEB Selection Tool WEB CAD Download Zero Backlash High Rigidity

XRP-C



Dimensions

Unit : mm

Part Number	A	L	L1	W	F	G	M	Screw Tightening Torque (N·m)
XRP-16C	16	10	5	20	2.6	5	M2	0.5
XRP-19C	19	13	6.5	26	3.5	6.25	M2.5	1
XRP-24C	24	15	7	30	3.75	7.75	M3	1.5
XRP-34C	34	20	8	40	4	12	M3	1.5
XRP-39C	39	24	10	48	5	14.5	M4	2.5

Part Number	Standard Bore Diameter D1・D2		
XRP-16C	5 - 5	5 - 6	6 - 6
XRP-19C	6 - 6	6 - 8	8 - 8
XRP-24C	8 - 8	8 - 10	10 - 10
XRP-34C	10 - 10	10 - 12	12 - 12
XRP-39C	12 - 12	12 - 14	15 - 15

- All products are provided with hex socket head cap screws.
- Recommended tolerance of applicable shaft diameter is h6.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated torque*1 (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment of Inertia*2 (kg·m ²)	Mass*2 (g)
XRP-16C	6	1	39000	3.1×10^{-7}	9
XRP-19C	8	2.5	33000	8.0×10^{-7}	15
XRP-24C	10	4.5	26000	2.7×10^{-6}	32
XRP-34C	15	7.5	18000	1.4×10^{-5}	87
XRP-39C	18	10	16000	3.9×10^{-5}	140

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

XRP-24C-8-10

1 2

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Please feel free to contact us	Available / Add'l charge	Available / Add'l charge

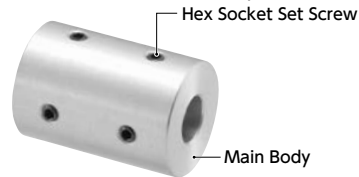
MRG / MRGS Rigid Coupling

WEB Selection Tool CAD Download 0 Zero Backlash High torque High Rigidity SUS Stainless steel

Structure

Set screw type

MRG Aluminum alloy hub → P.213



MRGS Made of all stainless steel → P.213



Clamping type

MRG-C Aluminum alloy hub → P.215



MRGS-C Made of all stainless steel → P.215



Split type

MRG-W Aluminum alloy hub → P.217



MRGS-W Made of all stainless steel → P.217



Related Products

Rigid coupling with high precision **XRP** is available.
→ P.207



Recommended applicable motor

	MRG	MRGS
Servomotor	○	○
Stepping motor	○	○
General-purpose motor	—	—

○: Excellent ○: Very good △: Available

Property

	MRG	MRGS
Zero Backlash	○	○
High Torque	○	○
High Torsional Stiffness	○	○
Corrosion Resistance (All S.S.)	—	○

○: Excellent ○: Very good

- These are rigid-type couplings.
- Light weight and ultra small moment of inertia. High response.
- There are two types of units made of aluminum alloy or all stainless steel.
- There are three attachment methods: set screw type, clamping type, and split type.
- Sizes of $\phi 40$ - $\phi 65$ in outside diameter have been added.

Application

High precision XY stage/Machine tool/Cleaning equipment

Material/Finish

RoHS2 Compliant

	MRG / MRG-C / MRG-W	MRGS / MRGS-C / MRGS-W
Main Body	A2017 Alumite Treatment	SUS303
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film	SUSXM7
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film	SUSXM7

Part number specification

MRG - 16W - 5-6

Product Code size Bore Diameter

Please refer to dimensional table for part number specification.

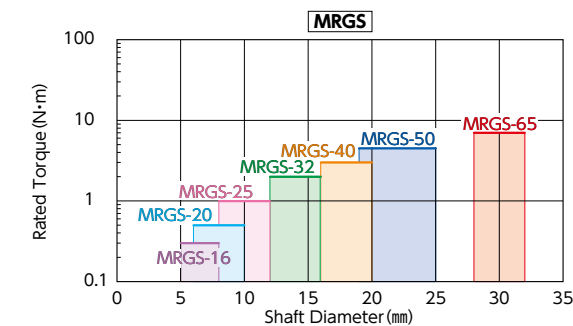
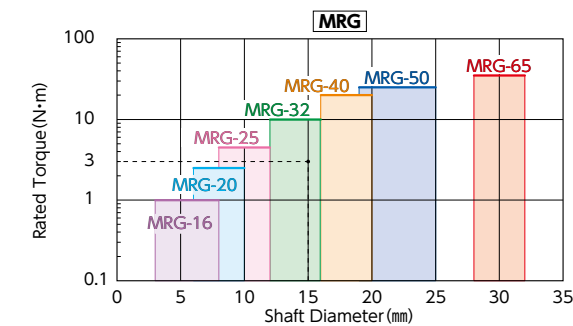
Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 SUS Change to Stainless Steel Screw → P.805
Please feel free to contact us Available / Add'l charge Available / Add'l charge



Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



Selection example

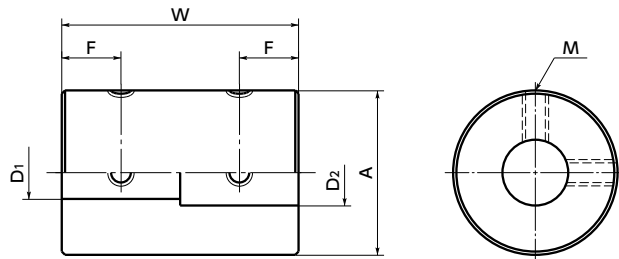
In case of selected parameters of shaft diameter of $\phi 15$ and load torque of $3 \text{ N} \cdot \text{m}$, the selected size is

MRG-32.

MRG / MRGS Rigid coupling - Set screw type

WEB Selection Tool WEB CAD Download 0 Zero Backlash High torque High Rigidity SUS Stainless steel

MRG Made of aluminum alloy
MRGS Made of all stainless steel



Dimensions • Performance

Unit : mm

Part Number 	A	W	F	M	Screw Tightening Torque (N·m)	Standard Bore Diameter (dimensional allowance H8) D1・D2 															
						3	4	5	6	8	10	12	15	16	18	19	20	25	28	30	32
MRG-16	16	24	6	M3	0.7	●	●	●	●												
MRG-20	20	30	7	M3	0.7				●	●	●										
MRG-25	25	36	9	M4	1.7					●	●	●									
MRG-32	32	41	10	M4	1.7							●	●	●							
MRG-40	40	44	10.5	M5	4									●	●	●	●				
MRG-50	50	53	12	M6	7											●	●	●			
MRG-65	65	65	16	M8	15														●	●	●
MRGS-16	16	24	6	M3	0.7			●	●												
MRGS-20	20	30	7	M3	0.7				●	●	●										
MRGS-25	25	36	9	M4	1.7					●	●	●									
MRGS-32	32	41	10	M4	1.7							●	●	●							
MRGS-40	40	44	10.5	M5	4									●	●	●	●				
MRGS-50	50	53	12	M6	7											●	●	●			
MRGS-65	65	65	16	M8	15														●	●	●

- All products are provided with hex socket set screws.
- In a case where the bore diameter is $\phi 4$ or less, the set screw is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Performance

Part Number	Max. Bore Diameter (mm)	Rated torque*1 (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment of Inertia*2 (kg·m ²)	Mass*2 (g)
MRG-16	8	1	39000	4.4×10^{-7}	11
MRG-20	10	2.5	31000	1.3×10^{-6}	20
MRG-25	12	4.5	25000	3.9×10^{-6}	39
MRG-32	16	10	19000	1.2×10^{-5}	71
MRG-40	20	20	15000	2.8×10^{-5}	114
MRG-50	25	25	12000	8.4×10^{-5}	215
MRG-65	32	35	9000	2.9×10^{-4}	450
MRGS-16	8	0.3	39000	1.2×10^{-6}	28
MRGS-20	10	0.5	31000	3.5×10^{-6}	54
MRGS-25	12	1	25000	1.0×10^{-5}	100
MRGS-32	16	2	19000	3.1×10^{-5}	190
MRGS-40	20	3	15000	8.1×10^{-5}	326
MRGS-50	25	4.5	12000	2.4×10^{-4}	658
MRGS-65	32	7	9000	8.4×10^{-4}	1290

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

MRGS-40 - 18-20

¹

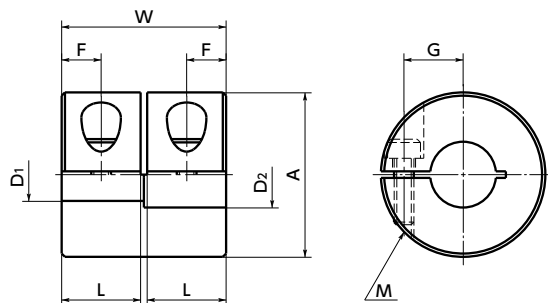
²

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 SUS Change to Stainless Steel Screw → P.805
 Please feel free to contact us Available / Add'l charge Available / Add'l charge

MRG-C / MRGS-C Rigid coupling - Clamping type

WEB Selection Tool WEB CAD Download 0 Zero Backlash High torque High Rigidity SUS Stainless steel

MRG-C Made of aluminum alloy
MRGS-C Made of all stainless steel



Dimensions • Performance

Unit : mm

Part Number	A	W	L	F	G	M	Screw Tightening Torque (N·m)	Standard Bore Diameter D1 • D2																
								5	6	8	10	12	14	15	16	18	19	20	25	28	30			
MRG-16C	16	16	7.5	3.75	5	M2.5	1	●	●															
MRG-20C	20	20	9.5	4.75	6.5	M2.5	1		●	●														
MRG-25C	25	25	12	6	9	M3	1.5			●	●													
MRG-32C	32	32	15.5	7.75	11	M4	2.5				●	●	●											
MRG-40C	40	40	19.5	9.5	14	M5	4							●	●	●								
MRG-50C	50	50	24.4	12	18	M6	8										●	●						
MRG-65C	65	65	31.9	16	23	M8	16												●	●	●			
MRGS-16C	16	16	7.5	3.75	5	M2.5	1	●	●															
MRGS-20C	20	20	9.5	4.75	6.5	M2.5	1		●	●														
MRGS-25C	25	25	12	6	9	M3	1.5			●	●													
MRGS-32C	32	32	15.5	7.75	11	M4	2.5				●	●	●											
MRGS-40C	40	40	19.5	9.5	14	M5	4							●	●	●								
MRGS-50C	50	50	24.4	12	18	M6	8										●	●						
MRGS-65C	65	65	31.9	16	23	M8	16												●	●	●			

- All products are provided with hex socket head cap screws.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated torque*1 (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment of Inertia*2 (kg·m ²)	Mass*2 (g)
MRG-16C	6	1	39000	3.0×10 ⁻⁷	8.3
MRG-20C	8	2.5	31000	8.7×10 ⁻⁷	15
MRG-25C	10	4.5	25000	2.7×10 ⁻⁶	29
MRG-32C	14	10	19000	7.1×10 ⁻⁶	51
MRG-40C	18	20	15000	2.4×10 ⁻⁵	104
MRG-50C	24	25	12000	7.5×10 ⁻⁵	197
MRG-65C	30	35	9000	2.8×10 ⁻⁴	446
MRGS-16C	6	0.3	39000	8.0×10 ⁻⁷	22
MRGS-20C	8	0.5	31000	2.4×10 ⁻⁶	41
MRGS-25C	10	1	25000	7.3×10 ⁻⁶	80
MRGS-32C	14	2	19000	2.5×10 ⁻⁵	160
MRGS-40C	18	3	15000	7.0×10 ⁻⁵	297
MRGS-50C	24	4.5	12000	2.1×10 ⁻⁴	563
MRGS-65C	30	7	9000	8.1×10 ⁻⁴	1270

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

MRG-32C- 12-14

1

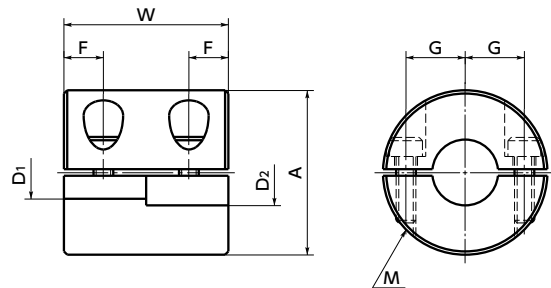
2

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 SUS Change to Stainless Steel Screw → P.805
 Please feel free to contact us Available / Add'l charge Available / Add'l charge

MRG-W / MRGS-W Rigid coupling - Split type

WEB Selection Tool CAD Download 0 Zero Backlash High torque High Rigidity SUS Stainless steel

MRG-W Made of aluminum alloy
MRGS-W Made of all stainless steel



Dimensions • Performance

Unit : mm

Part Number	A	W	F	G	M	Screw Tightening Torque (N・m)	Standard Bore Diameter D1・D2															
							5	6	8	10	12	14	15	16	18	19	20	25	28	30		
MRG-16W	16	16	4	5	M2.5	1	●	●														
MRG-20W	20	20	5	6.5	M2.5	1		●	●													
MRG-25W	25	25	6	9	M3	1.5			●	●												
MRG-32W	32	32	8	11	M4	2.5				●	●	●										
MRG-40W	40	40	9.5	14	M5	4						●	●	●								
MRG-50W	50	50	12	18	M6	8										●	●					
MRG-65W	65	65	16	23	M8	16												●	●	●		
MRGS-16W	16	16	4	5	M2.5	1	●	●														
MRGS-20W	20	20	5	6.5	M2.5	1		●	●													
MRGS-25W	25	25	6	9	M3	1.5			●	●												
MRGS-32W	32	32	8	11	M4	2.5				●	●	●										
MRGS-40W	40	40	9.5	14	M5	4						●	●	●								
MRGS-50W	50	50	12	18	M6	8										●	●					
MRGS-65W	65	65	16	23	M8	16												●	●	●		

- All products are provided with hex socket head cap screws.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Performance

Part Number	Max. Bore Diameter (mm)	Rated torque*1 (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment of Inertia*2 (kg·m ²)	Mass*2 (g)
MRG-16W	6	1	39000	3.2×10 ⁻⁷	8.8
MRG-20W	8	2.5	31000	8.7×10 ⁻⁷	15
MRG-25W	10	4.5	25000	2.7×10 ⁻⁶	29
MRG-32W	14	10	19000	9.3×10 ⁻⁶	61
MRG-40W	18	20	15000	2.3×10 ⁻⁵	99
MRG-50W	24	25	12000	7.1×10 ⁻⁵	189
MRG-65W	30	35	9000	2.7×10 ⁻⁴	428
MRGS-16W	6	0.3	39000	8.2×10 ⁻⁷	22
MRGS-20W	8	0.5	31000	2.4×10 ⁻⁶	41
MRGS-25W	10	1	25000	7.3×10 ⁻⁶	80
MRGS-32W	14	2	19000	2.5×10 ⁻⁵	160
MRGS-40W	18	3	15000	6.7×10 ⁻⁵	285
MRGS-50W	24	4.5	12000	2.0×10 ⁻⁴	541
MRGS-65W	30	7	9000	7.7×10 ⁻⁴	1220

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

MRGS-25W-8-8

1

2

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 SUS Change to Stainless Steel Screw → P.805
 Please feel free to contact us Available / Add'l charge Available / Add'l charge

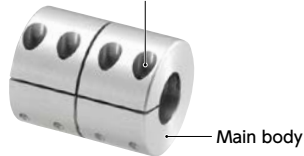
MLR / MLRS Rigid Coupling

WEB Selection Tool CAD Download 0 Zero Backlash High Rigidity SUS Stainless steel

Structure

Clamping type

MLR-C Made of aluminum alloy → P.221
Hex Socket Head Cap Screw



MLRS-C Made of all stainless steel → P.221



Semi-split type

MLR-V Made of aluminum alloy → P.223



MLRS-V Made of all stainless steel → P.223



Recommended applicable motor

	MLR	MLRS
Servomotor	○	○
Stepping motor	○	○
General-purpose motor	—	—

○: Excellent ○: Very good △: Available

Property

	MLR	MLRS
Zero Backlash	○	○
High Torque	○	○
High Torsional Stiffness	○	○
Corrosion Resistance (All S.S.)	—	○

○: Excellent ○: Very good

- This is a long type rigid coupling.
- This can also be used as a joint for extending a shaft.
- There are two types of units made of aluminum alloy or stainless steel.
- There are clamping type and semi-split type.

Application

Cleaning equipment/Transport device

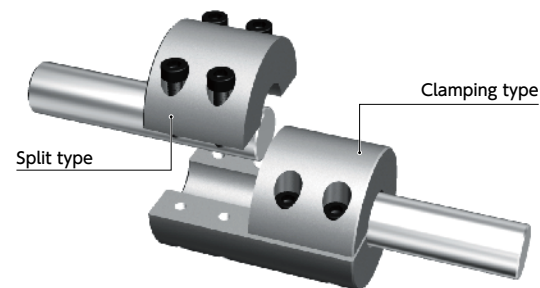
Material/Finish

RoHS2 Compliant

	MLR-C / MLR-V	MLRS-C / MLRS-V
Main Body	A2017 Alumite Treatment	SUS303
Hex Socket Head Cap Screw	SCM435 Ferrosoferic Oxide Film	SUSXM7

Semi-split type

Semi-split type is an attachment method in which one side of the hubs is clamping type and the other side is split type. While keeping one shaft attached on clamping side, the other shaft can be mounted or removed on split side, thus easier assembling set up.



Related Products

Rigid coupling with high precision **XRP** is available.
→ P.207



Part number specification

MLR-16V-6-6

Product Code size Bore Diameter

Please refer to dimensional table for part number specification.

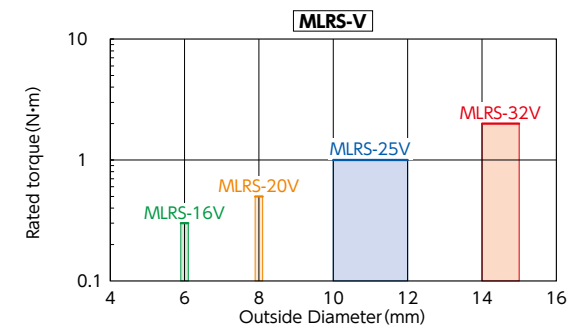
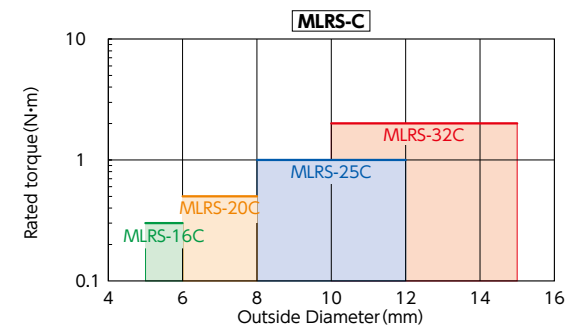
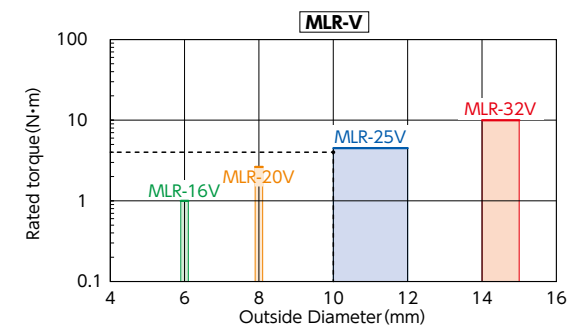
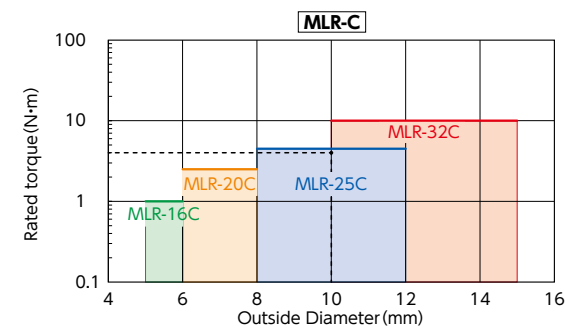
Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 SUS Change to Stainless Steel Screw → P.805
Please feel free to contact us Available / Add'l charge Available / Add'l charge



Selection

Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



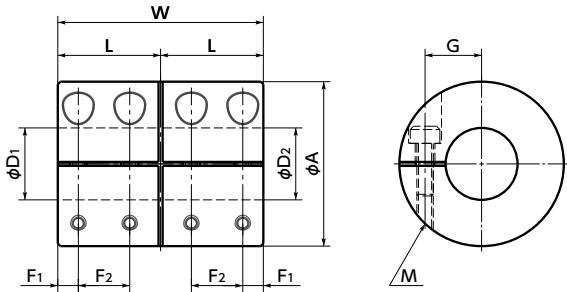
Selection example

In case of selected parameters of shaft diameter of $\phi 10$ and load torque of 4 N·m, the selected size is **MLR-25C** or **MLR-25V**.

MLR-C / MLRS-C Rigid coupling - Clamping type

WEB Selection Tool WEB CAD Download 0 Zero Backlash High Rigidity SUS Stainless steel

MLR-C Made of aluminum alloy
MLRS-C Made of all stainless steel



Dimensions

Unit : mm

Part Number	A	L	W	F1	F2	G	M	Screw Tightening Torque (N・m)	Standard Bore Diameter D1-D2						
									5 - 5	5 - 6	6 - 6				
MLR-16C	16	11	22	2.5	5.5	5	M2	0.5	5 - 5	5 - 6	6 - 6				
MLR-20C	20	12	24	2.5	6	7	M2	0.5	6 - 6	6 - 8	8 - 8				
MLR-25C	25	18	36	4.5	9	9	M2.5	1	8 - 8	8 - 10	10 - 10	12 - 12			
MLR-32C	32	20	40	4	10	11	M3	1.5	10 - 10	10 - 12	10 - 14	12 - 12	12 - 14	14 - 14	15 - 15
MLRS-16C	16	11	22	2.5	5.5	5	M2	0.5	5 - 5	5 - 6	6 - 6				
MLRS-20C	20	12	24	2.5	6	7	M2	0.5	6 - 6	6 - 8	8 - 8				
MLRS-25C	25	18	36	4.5	9	9	M2.5	1	8 - 8	8 - 10	10 - 10	12 - 12			
MLRS-32C	32	20	40	4	10	11	M3	1.5	10 - 10	10 - 12	10 - 14	12 - 12	12 - 14	14 - 14	15 - 15

- All products are provided with hex socket head cap screws.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated torque*1 (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment of Inertia*2 (kg・m ²)	Mass*2 (g)
MLR-16C	6	1	39000	3.4×10 ⁻⁷	10
MLR-20C	8	2.5	31000	9.2×10 ⁻⁷	18
MLR-25C	12	4.5	25000	3.4×10 ⁻⁶	38
MLR-32C	15	10	19000	1.0×10 ⁻⁵	70
MLRS-16C	6	0.3	39000	8.9×10 ⁻⁷	25
MLRS-20C	8	0.5	31000	2.5×10 ⁻⁶	45
MLRS-25C	12	1	25000	9.2×10 ⁻⁶	100
MLRS-32C	15	2	19000	2.7×10 ⁻⁵	180

- *1 : Correction of rated torque due to load fluctuation is not required.
- *2 : These are values with max. bore diameter.

- Part number specification

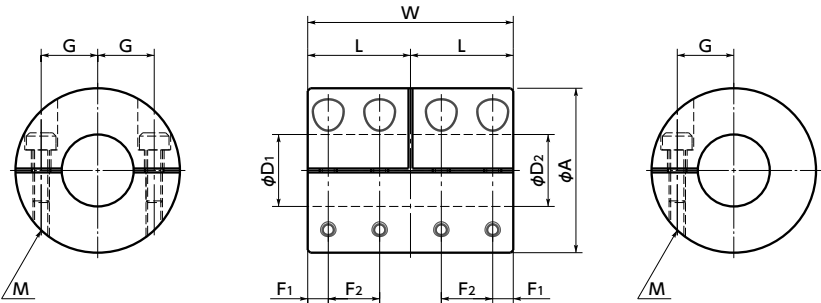
MLR-16C-5-5
1 2

Additional Keyway at Shaft Hole ➡ P.803 Cleanroom Wash & Packaging ➡ P.807 SUS Change to Stainless Steel Screw ➡ P.805
Please feel free to contact us Available / Add'l charge Available / Add'l charge

MLR-V / MLRS-V Rigid coupling - Semi - split type

WEB Selection Tool CAD Download 0 Zero Backlash High Rigidity SUS Stainless steel

MLR-V Made of aluminum alloy
MLRS-V Made of all stainless steel



Dimensions

Unit : mm

Part Number 1	A	L	W	F1	F2	G	M	Screw Tightening Torque (N・m)	Standard Bore Diameter D1-D2 2	
MLR-16V	16	11	22	2.5	5.5	5	M2	0.5	6 - 6	
MLR-20V	20	12	24	2.5	6	7	M2	0.5	8 - 8	
MLR-25V	25	18	36	4.5	9	9	M2.5	1	10 - 10	12 - 12
MLR-32V	32	20	40	4	10	11	M3	1.5	14 - 14	15 - 15
MLRS-16V	16	11	22	2.5	5.5	5	M2	0.5	6 - 6	
MLRS-20V	20	12	24	2.5	6	7	M2	0.5	8 - 8	
MLRS-25V	25	18	36	4.5	9	9	M2.5	1	10 - 10	12 - 12
MLRS-32V	32	20	40	4	10	11	M3	1.5	14 - 14	15 - 15

- All products are provided with hex socket head cap screws.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated torque*1 (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment of Inertia*2 (kg・m ²)	Mass*2 (g)
MLR-16V	6	1	39000	3.5×10 ⁻⁷	10
MLR-20V	8	2.5	31000	9.5×10 ⁻⁷	18
MLR-25V	12	4.5	25000	3.4×10 ⁻⁶	38
MLR-32V	15	10	19000	1.0×10 ⁻⁵	70
MLRS-16V	6	0.3	39000	9.1×10 ⁻⁷	25
MLRS-20V	8	0.5	31000	2.6×10 ⁻⁶	45
MLRS-25V	12	1	25000	9.3×10 ⁻⁶	100
MLRS-32V	15	2	19000	2.8×10 ⁻⁵	180

- *1 : Correction of rated torque due to load fluctuation is not required.
- *2 : These are values with max. bore diameter.

- Part number specification

MLRS-20V - 8-8
1 2

Additional Keyway at Shaft Hole ➡ P.803 Cleanroom Wash & Packaging ➡ P.807 SUS Change to Stainless Steel Screw ➡ P.805
Please feel free to contact us Available / Add'l charge Available / Add'l charge

Type	Slit Coupling			Oldham Coupling		Disk Coupling	
Part Number	XSTS	XWSS	MSXP	MOHS	MOP	XBWS	XBSS
Page	P.227	P.227	P.231	P.237	P.243	P.77	P.83
Shape							
Material	SUS316L	SUS316L	PEEK	SUS303 Vespe [®] *2 SUSXM7	A2017 PEEK SUSXM7	SUS303 SUSXM7	SUS303 SUSXM7
Cleaning method	Ultrasonic cleaning	Ultrasonic cleaning	Ultrasonic cleaning	Ultrasonic cleaning	Ultrasonic cleaning	Ultrasonic cleaning*1	Ultrasonic cleaning*1
Low particle	●	●	●	△	△	○	○
Vacuum-supported	○	○	○	●	●	○	○
Less outgas	○	○	○	○	○	○	○
Heat resistant	○	○	○	●	●	○	○
Chemical resistant	●	●	●	○	○	○	○
Zero Backlash	●	●	●			●	●
High torque	○	○				○	○
High torsional rigidity						●	●
Allowable Misalignment	○		○	●	●	○	○

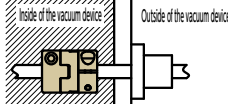
●: Excellent ○: Very good △: Abrasion powder may be produced
*1 **XBWS** **XBSS** are uncleaned products. Clean washing and clean packaging are available upon request. For details, please refer to the Service page. ➡ P.807
*2 VESPEL is a registered trademark of U.S. company DuPont.

Low particle

The amount of attached particle is ultra low.
This is directly available in a cleanroom. This does not bring contaminated matters into a cleanroom.

Vacuum-supported

A material with which outgas production in a vacuum environment is small is used.
If misalignment becomes larger due to vacuum pressure difference, **MOHS** **MOP**, for which larger misalignment is permitted, are recommended.



Less outgas

Materials with which production of outgas that causes chemical contamination under atmospheric environment is small are used.

Heat resistant

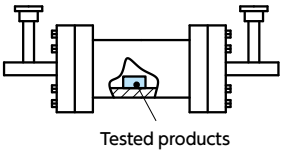
This is available even in an environment of high temperature (80°C or higher)
Elongation or deflection of a shaft associated with thermal expansion may increase misalignment. If misalignment becomes larger, **MOHS** **MOP**, for which larger misalignment is permitted, is recommended.

Chemical resistant

Materials superior in chemical resistance are used.

Analysis of outgas Vacuum-supported Less outgas

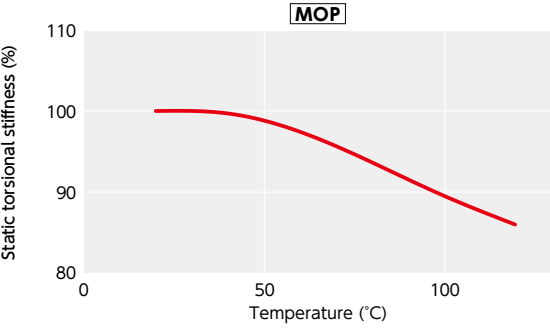
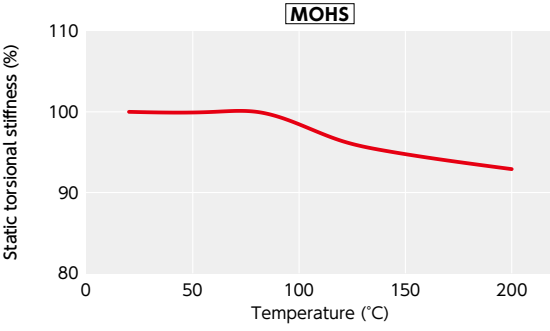
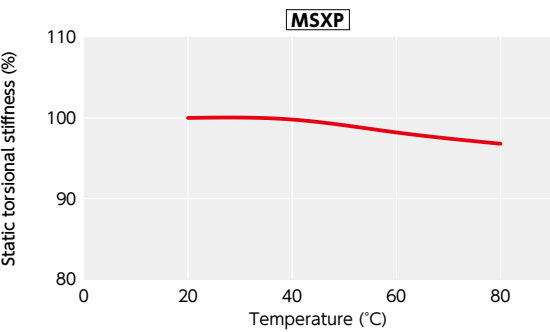
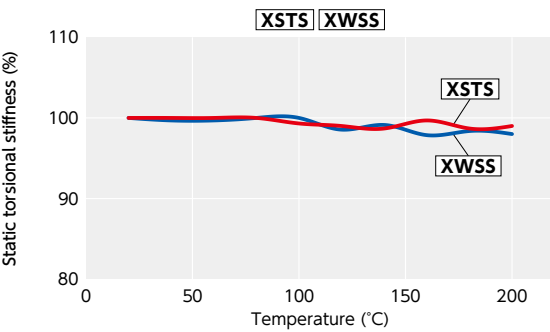
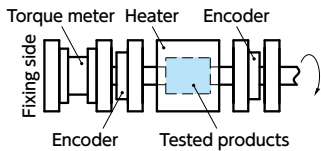
Target product: **MOHS** **MOP** **MSXP**
Measurement method: Inorganic gas — Gas chromatography (TCD)
Organic gas — Gas chromatography (FID)
Measurement condition: Heating temperature — 100°C



Component		Content
Inorganic gas	Hydrogen	500 or less
	Carbon monoxide	500 or less
	Carbon dioxide	500 or less
Organic gas	Methane	5 or less
	Ethane	5 or less
	Ethylene	5 or less
	Propane	5 or less
	Acetylene	5 or less
	i-butane	5 or less
	n-butane	5 or less
	Propylene	5 or less

*Both inorganic gas and organic gas are not more than the lower limit of determined amount and are not detected.

Change in static torsional stiffness due to temperature Heat resistant



This is a value for each product under the condition where the static torsional stiffness at 20°C is 100%.

The data described in this catalog are just for your reference and are not guaranteed values.

XSTS/XWSS Cleanroom / Vacuum / Heat Resistant Coupling - Slit - type (SUS316L)

WEB Selection Tool CAD Download 0 Zero Backlash Cleanroom Chemical-proof SUS Stainless steel

Structure

Clamping type

XSTS-C → P.229

Outside Diameter $\phi 25/\phi 32$



XSTS-C

Outside Diameter $\phi 40 - \phi 63$

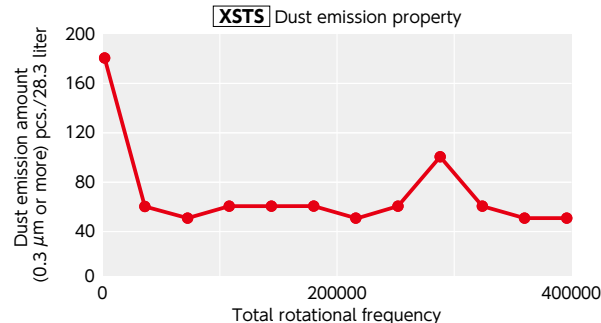
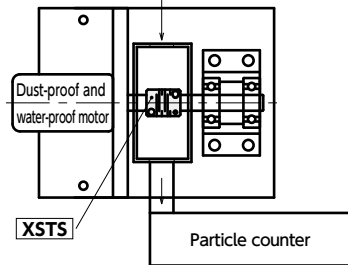


XWSS-C → P.229



Dust emission property

Cleanroom (class 500 or lower) Clean bench (class 10 or lower)



Property

	XSTS	XWSS
Low Particle	○	○
Vacuum-supported	○	○
Low Outgas	○	○
Heat-resistance	○	○
Chemical Resistance	○	○
Zero Backlash	○	○
High Torque	○	○
Allowable Misalignment	○	-
Corrosion resistance (all stainless steel)	○	○

○: Excellent ○: Very good

- This is an all stainless steel spring coupling with single-piece construction. A slit is inserted into a cylindrical material.
- Clean washing and clean packaging are completed. It can be used in an environment where chemical resistance is required, such as FPD manufacturing device and semiconductor manufacturing device.
- High flexibility type XSTS and short type XWSS are standardized.
- In XSTS, a plate spring formed by a slit allows eccentricity, angular misalignment, and end-play to be accepted.

Application

FPD manufacturing device/Semiconductor manufacturing device/Offshore instrument

Material/Finish

RoHS2 Compliant

	XSTS-C / XWSS-C
Main body	SUS316L Shot Blast
Hex Socket Head Cap Screw	SUS316L HiMo

Related Products

There is a slit-type flexible coupling MSX made of extra super duralumin (A7075). → P.97



Part number specification

XSTS-32C-12-12

Product code Size bore diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805 Please feel free to contact us Cleanroom washed and packed Changed to the S.S. screw

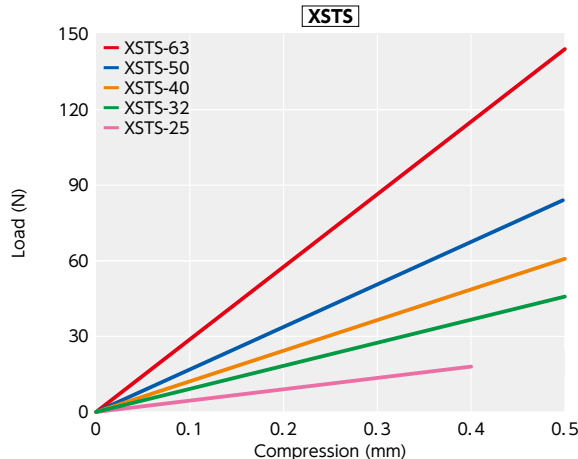
Technical Information

Made of SUS316L superior in corrosion resistance

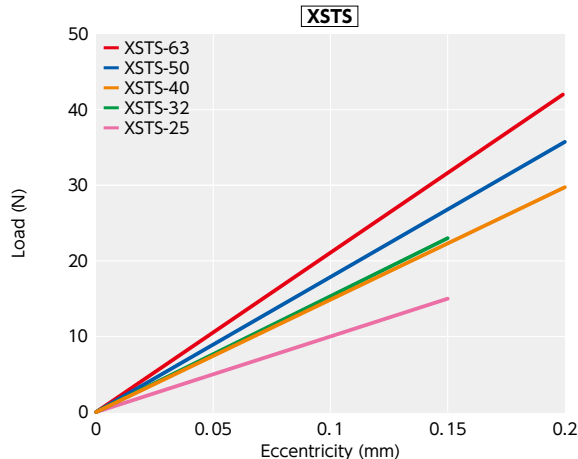
Characteristics

Material code	Characteristics
SUS304	This features smaller amount of carbon and is superior in corrosion resistance and weldability. This is the most standard product among austenitic stainless steel.
SUS316	This has good corrosion resistance and acid resistance as well as high-temperature strength due to addition of Mo and is used as heat resistant steel.
SUS316L	Carbon content is lower than that of SUS316 and the grain boundary corrosivity and weldability are improved.

Thrust Reaction Force



Eccentric Reaction Force

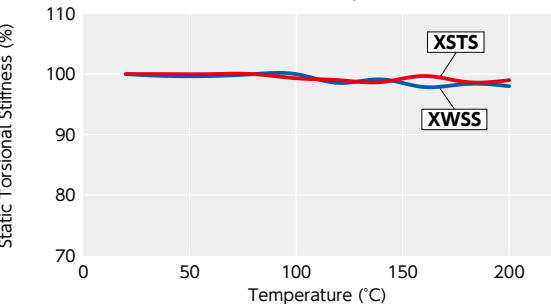


Chemical component

Material code	Chemical components (%)					
	C	Si / Mn / P / S	Ni	Cr	Mo	
SUS304	0.08 or less	Equivalent	8.00-10.50	18.00-20.00	—	
SUS316	0.08 or less		10.00-14.00	16.00-18.00	2.00-3.00	
SUS316L	0.03 or less		12.00-15.00	16.00-18.00	2.00-3.00	

Change in static torsional stiffness due to temperature

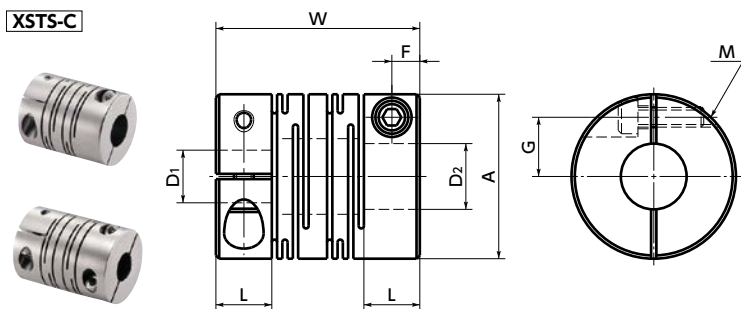
This is a value under the condition where the static torsional stiffness at 20°C is 100%. The change of XSTS XWSS in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.



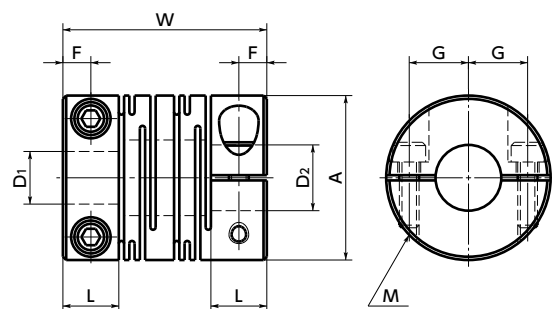
XSTS-C / XWSS-C Cleanroom / Vacuum / Heat Resistant Coupling - Slit-type (SUS316L) - Clamping Type

WEB Selection Tool CAD Download 02 Zero Backlash Cleanroom Chemical-proof SUS Stainless steel

XSTS-C



Outside diameter $\phi 25, \phi 32$



Outside diameter $\phi 40 - \phi 63$

Dimensions

Unit : mm

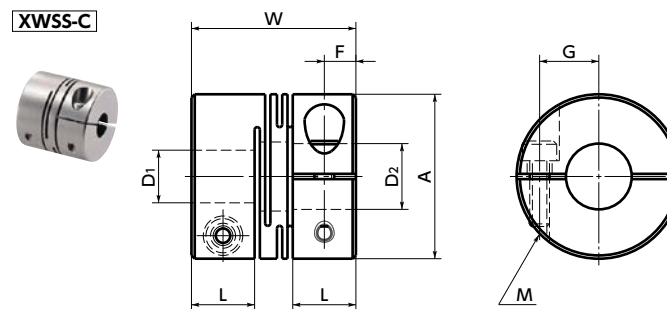
Part Number	A	L	W	F	G	M	Screw Tightening Torque*1 (N·m)
XSTS-25C	25	8.5	31	4.25	9	M3	1.5
XSTS-32C	32	12	41	6	11	M4	2.5
XSTS-40C	40	17	56	8.5	14	M5	4
XSTS-50C	50	21	71	10.5	18	M6	8
XSTS-63C	63	26	90	13	24	M8	16
XWSS-25C	25	9.6	25	4.8	9	M3	1.5
XWSS-32C	32	12.6	32	6.3	11	M4	2.5

Part Number	Standard Bore Diameter D1・D2															
	5	6	8	10	11	12	14	15	16	18	19	20	22	24	25	30
XSTS-25C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XSTS-32C			●	●	●	●	●	●	●	●	●	●	●	●	●	●
XSTS-40C			●	●	●	●	●	●	●	●	●	●	●	●	●	●
XSTS-50C						●	●	●	●	●	●	●	●	●	●	●
XSTS-63C							●	●	●	●	●	●	●	●	●	●
XWSS-25C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
XWSS-32C			●	●	●	●	●	●	●	●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
 - Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
 - In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258
- *1 : This is a screw tightening torque when inserting a degreased shaft.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Please feel free to contact us Cleanroom washed and packed Changed to the S.S. screw

XWSS-C



Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XSTS-25C	10	2	25000	7.1×10^{-6}	330	0.15	2	±0.4	78
XSTS-32C	14	3.5	19000	2.7×10^{-5}	850	0.15	2	±0.5	170
XSTS-40C	18	8	15000	9.0×10^{-5}	1000	0.2	2	±0.5	370
XSTS-50C	22	15	12000	2.8×10^{-4}	1400	0.2	2	±0.5	750
XSTS-63C	30	35	10000	8.8×10^{-4}	1800	0.2	2	±0.5	1400
XWSS-25C	10	2	25000	6.3×10^{-6}	720		1	±0.2	69
XWSS-32C	14	3.5	19000	2.2×10^{-5}	1300		1	±0.2	150

*1 : Correction of rated torque due to load fluctuation is not required.

*2 : These are values with max. bore diameter.

- Part number specification

XWSS-25C-8-10

1 2

MSXP Cleanroom / Vacuum / Heat Resistant Coupling - Slit - type (PEEK)

WEB Selection Tool WEB CAD Download 0 Zero Backlash Cleanroom Electrical Insulation Chemical-proof SUS Stainless steel

Structure

- Clamping type MSXP-C → P.235



Property

	MSXP
Low Particle	⦿
Vacuum-supported	○
Low Outgas	○
Heat-resistance	○
Chemical Resistance	⦿
Zero Backlash	⦿
Allowable Misalignment	○
Electrical Insulation	⦿
Cleanroom Specification	⦿
Allowable Operating Temperature	-20℃ to 80℃

⦿: Excellent ○: Very good

- This is a resin spring coupling with single-piece construction. A slit is inserted into a cylindrical material.
- It can be used in an environment or cleanroom where heat resistance and chemical resistance are required, such as FPD manufacturing device.
- PEEK superior in physical and chemical properties is adopted. The amount of outgas is ultralow.
- A plate spring formed by a slit allows eccentricity, angular misalignment, and end-play to be accepted.

Application

FPD manufacturing device/Semiconductor manufacturing device

Material/Finish

RoHS2 Compliant

	MSXP-C
Main body	PEEK (Polyether ether ketone)
Hex Socket Head Cap Screw	PEEK (Polyether ether ketone)

PEEK's color may vary depending on the lot or other matters.

Related Products

There is a slit-type flexible coupling MSX made of extra super duralumin (A7075). → P.97



Part number specification

MSXP-25C-6-8

Product Code Size bore diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Please feel free to contact us	Cleanroom washed and packed	Not Available

Selection Navigator



CAD Data Download

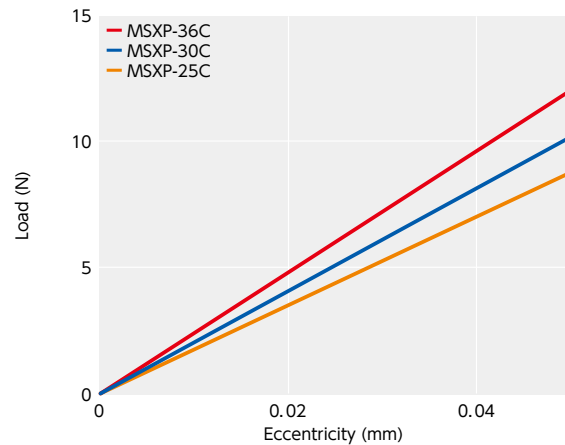
https://www.nbk1560.com/

MSXP Cleanroom / Vacuum / Heat Resistant Coupling - Slit - type (PEEK)

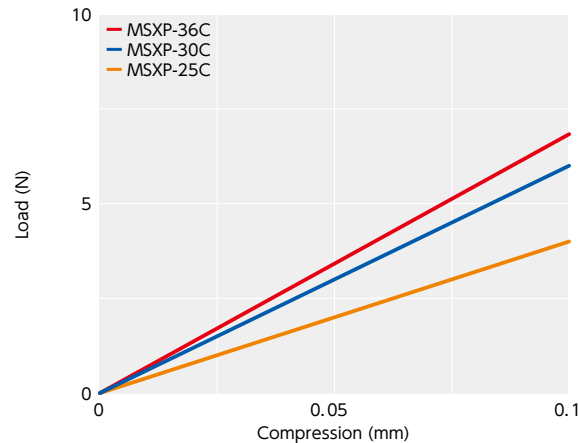
WEB Selection Tool CAD Download 02 Zero Backlash Cleanroom Electrical Insulation Chemical-proof

Technical Information

● Eccentric Reaction Force



● Thrust Reaction Force



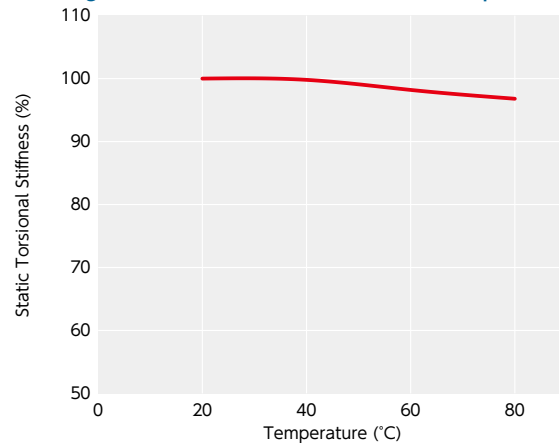
● Analysis of outgas

Unit: (v/v ppm)

Component	Content
Inorganic gas	Hydrogen
	Carbon monoxide
	Carbon dioxide
Organic gas	Methane
	Ethane
	Ethylene
	Propane
	Acetylene
	i-butane
	n-butane
	Propylene

- Both inorganic gas and organic gas are not more than the lower limit of determined amount and are not detected.

● Change in static torsional stiffness due to temperature



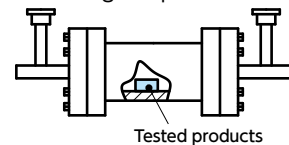
● Measurement Methods

Inorganic gas — Gas chromatography (TCD)

Organic gas — Gas chromatography (FID)

● Measurement Conditions

Heating temperature — 100°C



Technical Information

● PEEK's physical property

Property	Test Method	unit	PEEK
Tensile Strength	D638	N/mm ²	97
Tensile elongation	D638	%	65
Bending Strength	D790	N/mm ²	156
Bending elastic modulus	D790	GPa	4.1
Izod impact value (with notch)	D256	J/m	94
Rockwell hardness	D785	R / M Scale	M99
Deflection Temperature Under Load (1.82MPa)	D648	°C	152
Combustibility	UL94	—	V-0
Dielectric Constant (10 ⁶ Hz)	D150	—	3.3
Dielectric loss tangent (10 ⁶ Hz)	D150	—	0.003
Volume resistivity (x10 ¹⁴)	D257	Ω·m	4.9
Insulation Breakdown Strength	D149	MV/m	17
Arc resistance	D495	sec	23
Specific gravity	D792	—	1.30
Water absorption (in 23°C water x 24 h)	D570	%	0.500
Content by percentage of glass fiber	—	%	0

● PEEK's chemical resistance

Chemical name	PEEK
10% hydrochloric acid	○
10% sulfuric acid	○
50% sulfuric acid	×
10% nitric acid	○
50% nitric acid	×
50% hydrofluoric acid	×
10% phosphoric acid	○
Formic acid	△
10% acetic acid	○
Citric acid	○
Chromic acid	○
Boric acid	○
Methyl alcohol	○
Glycol	○
Ammonia	○
10% sodium hydroxide	○
10% potassium hydroxide	○
Calcium hydroxide	○
Hydrogen sulfide (gas)	○
Sulfur dioxide	○
Ammonium nitrate	○
Sodium nitrate	○
Calcium carbonate	○
Calcium chloride	○
Magnesium chloride	○
Magnesium sulfate	○
Zinc sulfate	○
Hydrogen peroxide	○

○: Available △: Fair pending on condition

×: Not available

● This is test data with a specimen used at room temperature (23°C). The chemical resistance varies depending on the usage conditions. Be sure to perform a test under the same usage conditions as in actual usage in advance.

● Slip Torque

Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the rated torque of **MSXP-C**.

Unit: N·m

Part Number	Bore Diameter (mm)			
	6	8	10	12
MSXP-25C	0.5	0.6		
MSXP-30C		0.8		
MSXP-36C			0.7	1.2

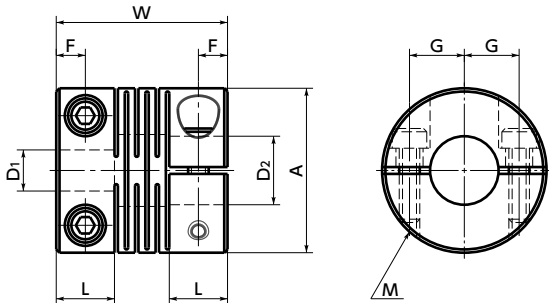
- These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **MSXP-C** dimensional table.

MSXP-C

Cleanroom / Vacuum / Heat Resistant Coupling - Slit - type (PEEK) - Clamping Type

WEB Selection Tool WEB CAD Download 0 Zero Backlash Cleanroom Electrical Insulation Chemical-proof

MSXP-C



Dimensions

Unit : mm

Part Number	A	L	W	F	G	M	Screw Tightening Torque (N・m)
MSXP-25C	25	8.5	25	4.25	8	M3	0.15
MSXP-30C	30	10.2	30	5.1	9	M3	0.15
MSXP-36C	36	12	35	6	11	M3	0.15

Part Number	Standard Bore Diameter D1-D2				
MSXP-25C	6 - 8		6 - 10		10 - 10
MSXP-30C	8 - 8		8 - 10		
MSXP-36C	10 - 14		12 - 14		

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➔ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
MSXP-25C	10	0.7	25000	3.0×10 ⁻⁷	110	0.05	0.5	±0.1	3.8
MSXP-30C	12	1	21000	7.8×10 ⁻⁷	180	0.05	0.5	±0.1	6.8
MSXP-36C	16	1.5	17000	1.8×10 ⁻⁶	280	0.05	0.5	±0.1	10

- *1 : Correction of rated torque due to load fluctuation is not required.
- *2 : These are values with max. bore diameter.

- Part number specification

MSXP-36C- 14-15

1

2

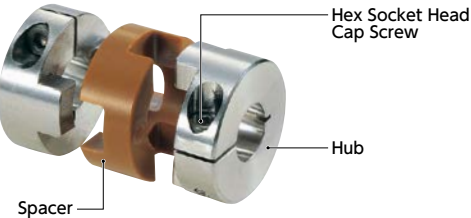
Additional Keyway at Shaft Hole ➔ P.803	Cleanroom Wash & Packaging ➔ P.807	Change to Stainless Steel Screw ➔ P.805
Please feel free to contact us	Cleanroom washed and packed	Not Available

MOHS Cleanroom / Vacuum / Heat Resistant Coupling - Oldham - Type (VESPEL)

WEB Selection Tool WEB CAD Download Cleanroom Electrical Insulation Heat-resistance Chemical-proof High Allowable Misalignment

Structure

- clamping type
MOHS-C → P.241



● Application

FPD manufacturing device/Semiconductor manufacturing device

● Material/Finish

RoHS2 Compliant

	MOHS-C
Hub	SUS303
Spacer	VESPEL*1
Hex Socket Head Cap Screw	SUSXM7 Molybdenum Disulfide Coating

- *1 : VESPEL is a registered trademark of U.S. company DuPont.
- The color may vary depending on the lot or other matters.

● Spacer's projection structure

Spacer's projection structure allows large angular to be effortlessly accepted. It reduces burden on the shaft.



(Without projection) (With projection)

In the Oldham-type coupling whose spacer has no projection, the spacer and hubs interfere with each other near outside diameter, so that the max. angular misalignment is small (1° - 1.5°) and that the bending moment arises on the shaft.

NBK's oldham type coupling allows the angular misalignment to be easily accepted since the projection serves as support. Bending moment does not arise. Therefore, the max. angular misalignment is large (2°) and the burden on the shaft is reduced.



● Property

	MOHS
Low Particle	△
Vacuum-supported	◎
Low Outgas	○
Heat-resistance	◎
Chemical Resistance	○
Allowable Misalignment	◎
Electrical Insulation	◎
Cleanroom Specification	◎
Allowable Operating Temperature	-20℃ to 200℃

- ◎: Excellent ○: Very good △: Abrasion powder may be produced
- This is an oldham-type flexible coupling.
- Clean washing and clean packaging are completed. It can be used in an environment or cleanroom where heat resistance and chemical resistance are required, such as FPD manufacturing device.
- VESPEL SPC5000 is adopted in the spacer. This is superior in heat resistance and chemical resistance, and the amount of outgas at high temperature is ultralow.
- Slippage of hubs and a spacer allows eccentricity and angular misalignment to be accepted.
- The load on the shaft generated by misalignment is small and the burden on the shaft is reduced.

● Part number specification

MOHS-19C-6-6

Product Code Size bore diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803	Cleanroom Wash & Packaging → P.807	Change to Stainless Steel Screw → P.805
Available / Add'l charge	Cleanroom washed and packed	Changed to the S.S. screw

Selection Navigator



CAD Data Download

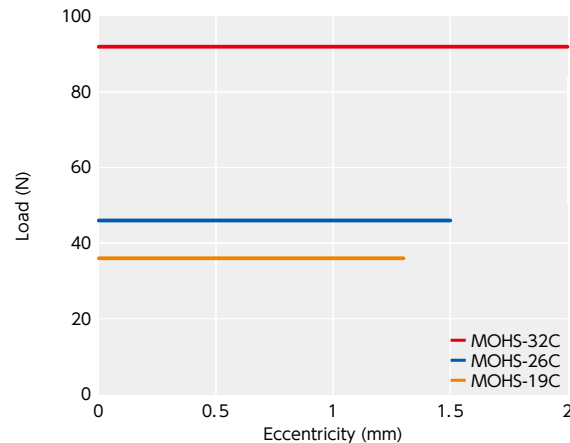
<https://www.nbk1560.com/>

MOHS Cleanroom / Vacuum / Heat Resistant Coupling - Oldham - Type (VESPEL)

WEB Selection Tool
 CAD Download
 Cleanroom
 Electrical Insulation
 Heat-resistance
 Chemical-proof
 High Allowable Misalignment

Technical Information

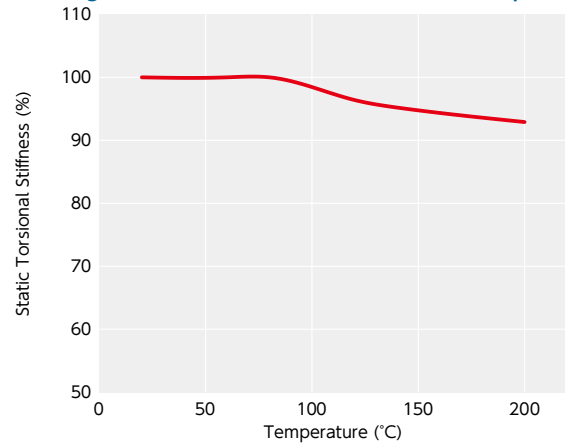
● Eccentric Reaction Force



These are initial slippage load values of hubs and a spacer.

After running-in operation, the slippage load becomes small, the load on the shaft due to misalignment becomes lowered, and the burden on the shaft bearing is reduced.

● Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%.

The change of **MOHS** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

● Analysis of outgas

Unit: (v/v ppm)

Component	Content
Inorganic gas	Hydrogen
	Carbon monoxide
	Carbon dioxide
Organic gas	Methane
	Ethane
	Ethylene
	Propane
	Acetylene
	i-butane
	n-butane
	Propylene

● Both inorganic gas and organic gas are not more than the lower limit of determined amount and are not detected.

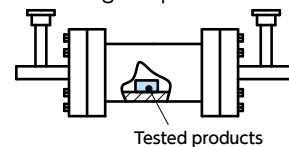
● Measurement Methods

Inorganic gas — Gas chromatography (TCD)

Organic gas — Gas chromatography (FID)

● Measurement Conditions

Heating temperature — 100°C



Technical Information

● VESPEL's physical property

Property	Test Method	Unit	VESPEL
Tensile Strength	D1708	N/mm ²	160
Tensile elongation	D1708	%	7
Bending Strength	D790	N/mm ²	247
Bending elastic modulus	D790	GPa	5.7
Izod impact value (with notch)	D256	J/m	—
Rockwell hardness	D785	R / M Scale	M100
Deflection Temperature Under Load (1.82MPa)	D648	°C	350
Combustibility	UL94	—	V-0
Dielectric Constant (10 ⁶ Hz)	D150	—	3.3
Dielectric loss tangent (10 ⁶ Hz)	D150	—	0.001
Volume resistivity (x10 ¹⁴)	D257	Ω · m	1
Insulation Breakdown Strength	D149	MV/m	—
Specific gravity	D792	—	1.43
Water absorption (in 23°C water x 24 h)	D570	%	0.08
Content by percentage of glass fiber	—	%	—

● VESPEL's chemical resistance

Property	VESPEL
10% hydrochloric acid	○
10% sulfuric acid	○
50% sulfuric acid	△
10% nitric acid	△
50% nitric acid	×
10% hydrofluoric acid	△
50% hydrofluoric acid	×
Formic acid	△
10% acetic acid	○
Citric acid	○
Boric acid	○
Methyl alcohol	△
Glycol	○
Ammonia	△

○: Available △: Fair pending on condition

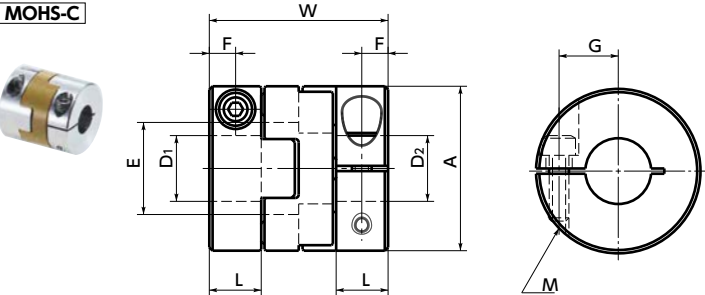
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● This is test data with a specimen used at room temperature (23°C). The chemical resistance varies depending on the usage conditions. Be sure to perform a test under the same usage conditions as in actual usage in advance.

MOHS-C Cleanroom / Vacuum / Heat Resistant Coupling - Oldham Type (VESPEL) - Clamping Type

[WEB Selection Tool](#)
[WEB CAD Download](#)
[Cleanroom](#)
[Electrical Insulation](#)
[Heat-resistance](#)
[Chemical-proof](#)
[High Allowable Misalignment](#)

MOHS-C



Dimensions

Unit : mm

Part Number 1	A	L	W	E	F	G	M	Screw Tightening Torque (N・m)
MOHS-19C	19	7	22.1	10	3.5	6.5	M2.5	0.5
MOHS-26C	25.4	8	27.2	14	4	9	M3	0.7
MOHS-32C	31.7	10	33.3	18	5	11	M4	1.2

Part Number	Standard Bore Diameter D1・D2 2						
	5	6	8	10	11	12	14
MOHS-19C	●	●	●				
MOHS-26C			●	●			
MOHS-32C			●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Available / Add'l charge	Cleanroom washed and packed	Changed to the S.S. screw

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max.*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOHS-19C	8	0.4	0.8	900	1.4×10 ⁻⁶	160	1.3	2	28
MOHS-26C	10	1.2	2.4	900	5.5×10 ⁻⁶	220	1.5	2	61
MOHS-32C	14	2.2	4.4	900	1.6×10 ⁻⁵	600	2	2	110

- *1 : Correction of rated torque and max. torque due to load fluctuation is not required.
 *2 : These are values with max. bore diameter.

- Part number specification

MOHS-32C-10-12 (1 set)

1 2

MOHS-SPCR (Single Spacer)

1 Single Spacer

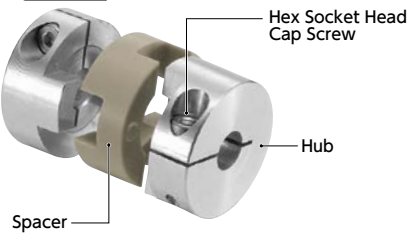
MOP Cleanroom / Vacuum / Heat Resistant Coupling - Oldham - Type (PEEK)

WEB Selection Tool WEB CAD Download Cleanroom Electrical Insulation Heat-resistance Chemical-proof High Allowable Misalignment

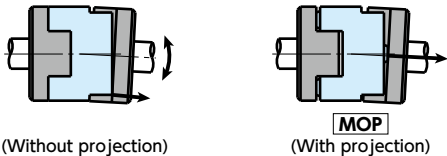
Structure

- clamping type

MOP-C → P.247



- Spacer's projection structure
Spacer's projection structure allows large angular to be effortlessly accepted. It reduces burden on the shaft.



In the Oldham-type coupling whose spacer has no projection, the spacer and hubs interfere with each other near outside diameter, so that the max. angular misalignment is small (1° - 1.5°) and that the bending moment arises on the shaft.
NBK's oldham type coupling allows the angular misalignment to be easily accepted since the projection serves as support. Bending moment does not arise. Therefore, the max. angular misalignment is large (2°) and the burden on the shaft is reduced.

● Property

	MOP
Low Particle	△
Vacuum-supported	○
Low Outgas	○
Heat-resistance	○
Chemical Resistance	○
Allowable Misalignment	○
Electrical Insulation	○
Cleanroom Specification	○
Allowable Operating Temperature	-20℃ to 120℃

○: Excellent ○: Very good

△: Abrasion powder may be produced

- This is an oldham-type flexible coupling.
- Clean washing and clean packaging are completed.
It can be used in an environment or cleanroom where heat resistance and chemical resistance are required, such as FPD manufacturing device and semiconductor manufacturing device.
- PEEK is adopted in the spacer. This is superior in heat resistance and chemical resistance, and the amount of outgas is ultralow.
- Slippage of hubs and a spacer allows eccentricity and angular misalignment to be accepted.
- The load on the shaft generated by misalignment is small and the burden on the shaft is reduced.

● Application

FPD manufacturing device/Semiconductor manufacturing device

● Material/Finish



	MOP-C
Hub	A2017
Spacer	PEEK (Polyether ether ketone)
Hex Socket Head Cap Screw	SUSXM7

- PEEK's color may vary depending on the lot or other matters.

● Part number specification

MOP-25C-8-8

Product Code Size bore diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole → P.803

Cleanroom Wash & Packaging → P.807

Change to Stainless Steel Screw → P.805

Available / Add'l charge

Cleanroom washed and packed

Changed to the S.S. screw

Selection Navigator



CAD Data Download

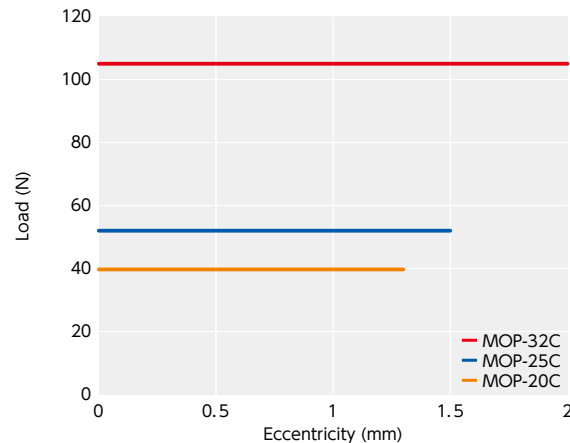
<https://www.nbk1560.com/>

MOP Cleanroom / Vacuum / Heat Resistant Coupling - Oldham - Type (PEEK)

WEB Selection Tool CAD Download Cleanroom Electrical Insulation Heat-resistance Chemical-proof High Allowable Misalignment

Technical Information

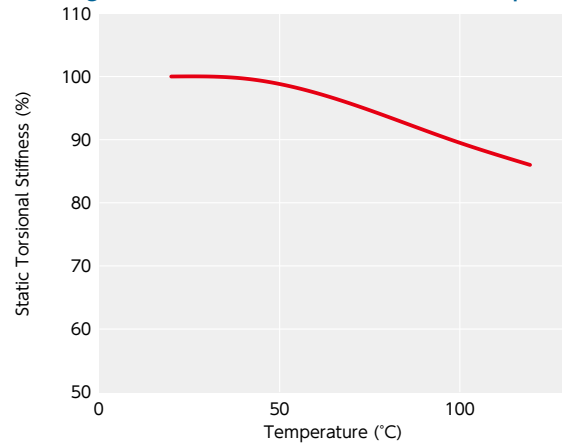
● Eccentric Reaction Force



These are initial slippage load values of hubs and a spacer.

After running-in operation, the slippage load becomes small, the load on the shaft due to misalignment becomes lowered, and the burden on the shaft bearing is reduced.

● Change in static torsional stiffness due to temperature



This is a value under the condition where the static torsional stiffness at 20°C is 100%.

The change of **MOP** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

● Analysis of outgas

Unit: (v/v ppm)		
Component	Content	
Inorganic gas	Hydrogen	500 or less
	Carbon monoxide	500 or less
	Carbon dioxide	500 or less
Organic gas	Methane	5 or less
	Ethane	5 or less
	Ethylene	5 or less
	Propane	5 or less
	Acetylene	5 or less
	i-butane	5 or less
	n-butane	5 or less
	Propylene	5 or less

● Both inorganic gas and organic gas are not more than the lower limit of determined amount and are not detected.

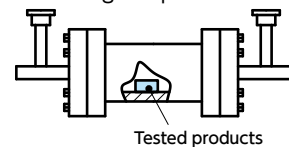
● Measurement Methods

Inorganic gas — Gas chromatography (TCD)

Organic gas — Gas chromatography (FID)

● Measurement Conditions

Heating temperature — 100°C



Technical Information

● PEEK's physical property

Property	Test Method	unit	PEEK
Tensile Strength	D638	N/mm ²	97
Tensile elongation	D638	%	65
Bending Strength	D790	N/mm ²	156
Bending elastic modulus	D790	GPa	4.1
Izod impact value (with notch)	D256	J/m	94
Rockwell hardness	D785	R / M Scale	M99
Deflection Temperature Under Load (1.82MPa)	D648	°C	152
Combustibility	UL94	—	V-0
Dielectric Constant (10 ⁶ Hz)	D150	—	3.3
Dielectric loss tangent (10 ⁶ Hz)	D150	—	0.003
Volume resistivity (x10 ¹⁴)	D257	Ω·m	4.9
Insulation Breakdown Strength	D149	MV/m	17
Arc resistance	D495	sec	23
Specific gravity	D792	—	1.30
Water absorption (in 23°C water x 24 h)	D570	%	0.500
Content by percentage of glass fiber	—	%	0

● PEEK's chemical resistance

Chemical name	PEEK
10% hydrochloric acid	○
10% sulfuric acid	○
50% sulfuric acid	×
10% nitric acid	○
50% nitric acid	×
50% hydrofluoric acid	×
10% phosphoric acid	○
Formic acid	△
10% acetic acid	○
Citric acid	○
Chromic acid	○
Boric acid	○
Methyl alcohol	○
Glycol	○
Ammonia	○
10% sodium hydroxide	○
10% potassium hydroxide	○
Calcium hydroxide	○
Hydrogen sulfide (gas)	○
Sulfur dioxide	○
Ammonium nitrate	○
Sodium nitrate	○
Calcium carbonate	○
Calcium chloride	○
Magnesium chloride	○
Magnesium sulfate	○
Zinc sulfate	○
Hydrogen peroxide	○

○: Available △: Fair pending on condition

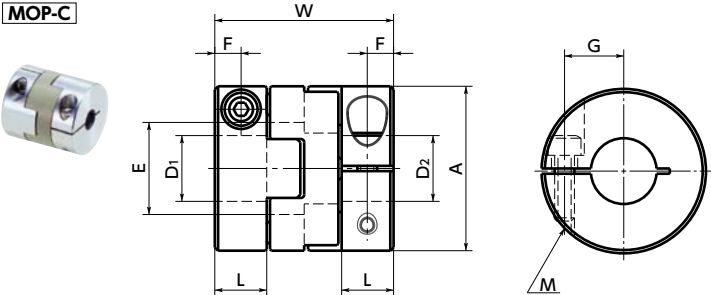
×: Not available

● This is test data with a specimen used at room temperature (23°C). The chemical resistance varies depending on the usage conditions. Be sure to perform a test under the same usage conditions as in actual usage in advance.

MOP-C Cleanroom / Vacuum / Heat Resistant Coupling - Oldham - Type (PEEK) - Clamping Type

WEB Selection Tool WEB CAD Download Cleanroom Electrical Insulation Heat-resistance Chemical-proof High Allowable Misalignment

MOP-C



Dimensions

Unit : mm

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N・m)
MOP-20C	20	7	22.1	10	3.5	6.5	M2.5	1
MOP-25C	25	8	27.2	14	4	9	M3	1.5
MOP-32C	32	10	33.3	18	5	11	M4	2.5

Part Number	Standard Bore Diameter D1・D2						
	5	6	8	10	11	12	14
MOP-20C	●	●	●				
MOP-25C			●	●			
MOP-32C				●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N・m)	Max.*1 torque (N・m)	Max. Rotational Frequency (min ⁻¹)	Moment*2 of Inertia (kg・m ²)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOP-20C	8	0.7	1.4	31000	7.4×10 ⁻⁷	93	1.3	2	13
MOP-25C	10	1.2	2.4	25000	2.2×10 ⁻⁶	140	1.5	2	24
MOP-32C	14	2.8	5.6	19000	7.3×10 ⁻⁶	350	2	2	48

- *1 : Correction of rated torque and max. torque due to load fluctuation is not required.
*2 : These are values with max. bore diameter.

- Part number specification

MOP-25C - 8-8 (1 set)

1 2

MOP-25 - SPCR (Single Spacer)

Product Code Outside Diameter (A Dimension) Single Spacer

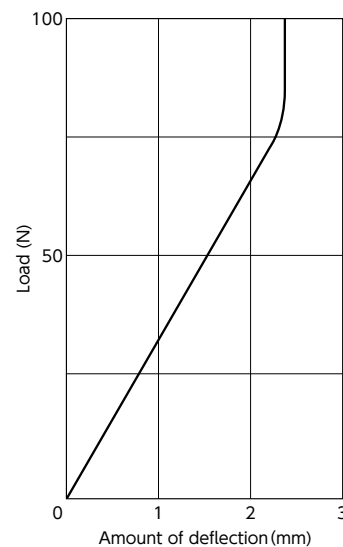
Additional Keyway at Shaft Hole ➡ P.803 Cleanroom Wash & Packaging ➡ P.807 Change to Stainless Steel Screw ➡ P.805 Available / Add'l charge Cleanroom washed and packed Changed to the S.S. screw

Technical Information

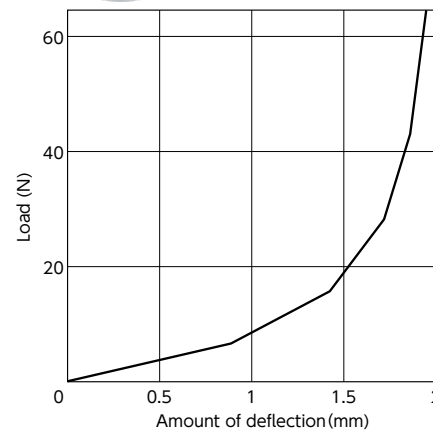
Characteristics

- This is a multi-functional part made of various materials with slits and the portion between the slits works as a spring.
- Simple structure made of various materials with slits. Its excellent functionality is demonstrated in a flexible coupling (**MST** and **MSX**).
- This enables arbitrary spring properties against compression, tension, shearing, and bending.
- It has extremely high rigidity against torsion.
- Due to cutting process, exact spring constant can be obtained for use in instruments where precision and reliability are required.
- This enables you to get a spring property extremely close to the linearity.
- Its heat radiation effect allows thermal expansion and shrink.
- The shape and dimensions are flexible. Polygonal shape as well as cylinder can be manufactured.
- The shape of hub (end portion for mounting) can also be manufactured according to individual needs.
- Materials such as beryllium copper, spring steel, and engineering plastic in addition to aluminum alloy and stainless steel are freely selectable.

Parts for instrumentation of linear properties

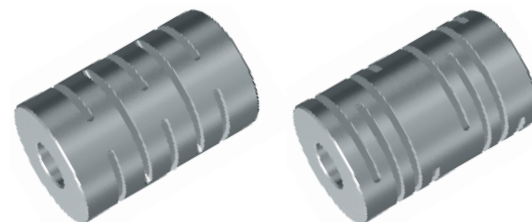


• Flexus with a spring property made to approximate quadratic curve by inserting irregular pitch slits.



Slit Pattern

- Changing the slit (number, pitch, width, depth, etc.) enables you to obtain arbitrary spring property.



Usage Example

- Functions other than spring such as screw, washer, and pin can be added and integrated into one unit to reduce the part cost and the number of manhours for assembling. For example, end portions for holding or fixing can be integrated into screw or flange form.



Flexus with a female screw integrated.

Flexus with a male screw integrated.



Flexus with a flange integrated.



Flexus is a completely custom-made multi-functional part.

When considering, please specify the following condition.

- Material and surface treatment
- Spring properties: Spring constant (N/mm), amount of deflection (mm)
- Application
- Outline

- A heat radiating effect can be created by increasing the surface area and minimize shrinkage and expansion due to heat. Heat insulating products can also be made based on selected materials.



Flexus with a surface area expanded by processing into thin shape. Thermal expansion-permitted machine tool retaining parts.



Flexus integrated into the spindle of a machine tool for absorbing the machining error caused by thermal expansion.

MPF Photo Sensor Flange

WEB Selection Tool WEB CAD Download

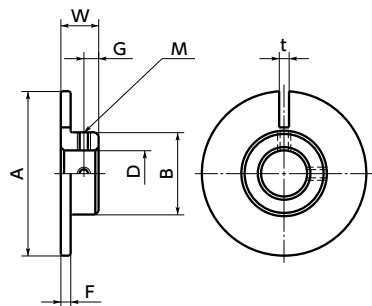
Structure



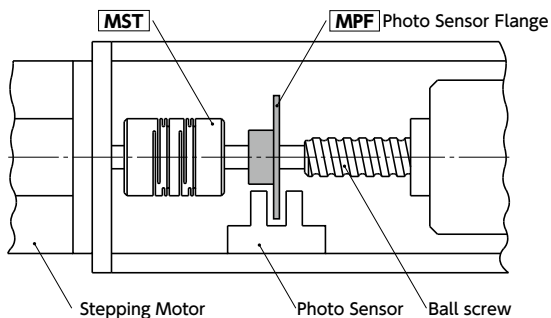
Material/Finish

RoHS2 Compliant

	MPF
Main Body	A2017 Alumite Treatment
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film



- Photo sensor flange for origin detection.
- Light weight and ultra small moment of inertia.
- Bore-completed products. Bore diameter of $\phi 4$ to $\phi 15$.



- Products of special specifications including outside diameter of flange, slit width, bore diameter, material, and surface treatment can also be manufactured. Please contact our customer service.

Dimensions

Unit : mm

Part Number 	A	B	W	F	t	G	M	Moment ^{*1} of Inertia (kg · m ²)	Mass ^{*1} (g)	Standard Bore Diameter (dimensional allowance H8)									
										D 	4	5	6	6.35	8	9.525	10	12	14
MPF-32	32	14	8	1.5	1.5	3.5	M3	5.1×10 ⁻⁷	5.2	●	●	●	●	●					
MPF-40	40	20	10	1.5	2	4.5	M3	1.4×10 ⁻⁶	9.8	●	●	●	●	●	●	●	●		
MPF-50	50	25	10	1.5	2.5	4.5	M4	3.5×10 ⁻⁶	15				●	●	●	●	●	●	●

*1 : These are values with max. bore diameter.

- The standard bore diameter (dimensional tolerance is H8) 9.525 of **MPF-40** **MPF-50** is order-made. For delivery period, please contact our customer service.
- All products are provided with hex socket set screw.
- In a case where the bore diameter is $\phi 4$ or less, the set screw is used in only one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

- Part number specification

MPF-32-8

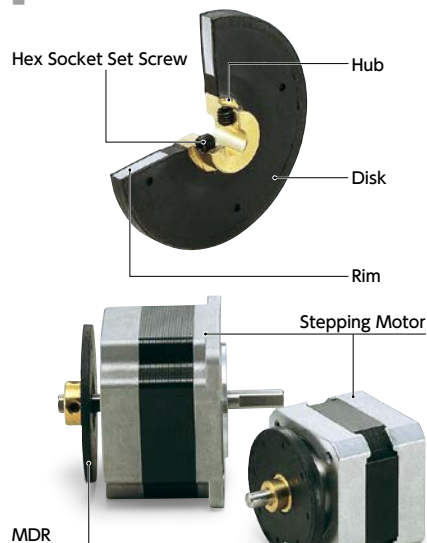


Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Please feel free to contact us Please feel free to contact us Available / Add'l charge

MDR Damper Roll

WEB Selection Tool WEB CAD Download

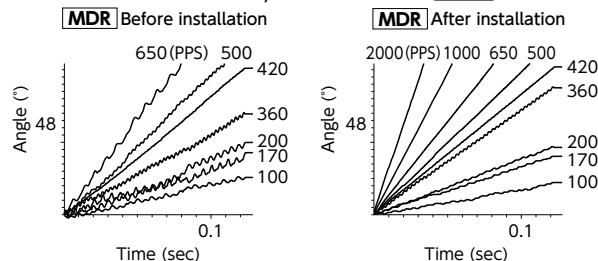
Structure



Vibration control effect

Below is a figure that shows the measurement of vibration control effect of **MDR** by stepping motor speed (pulse).

Vibration is reduced by attachment of **MDR**.



Selection

From the moment of inertia of the rotor of the stepping motor to use, select the applicable part number of **MDR** according to the following table.

Part Number	Moment of inertia of the stepping motor's rotor
MDR-41	Not more than 50 g·cm ²
MDR-52	Not more than 150 g·cm ²
MDR-57	Not more than 250 g·cm ²

Dimensions

Unit : mm

Part Number	A	L	B	M	G	Moment*1 of Inertia (g·cm ²)	Mass*1 (g)	Standard Bore Diameter (dimensional allowance H8)			
								5	6	6.35	8
MDR-41	41	8	10	1 - M3	3	48	23	●			
MDR-52	52	9.5	15	2 - M4	3.5	139	46	●	●	●	
MDR-57	57	12	15	2 - M4	3.5	270	70		●	●	●

*1 : These are values with max. bore diameter.

- All products are provided with hex socket set screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.

Additional Keyway at Shaft Hole → P.803 Cleanroom Wash & Packaging → P.807 Change to Stainless Steel Screw → P.805
Please feel free to contact us Please feel free to contact us Available / Add'l charge

Explanation of Terminology

Couplicon®

Rated torque

This is a torque value that can be continuously transmitted by Coupling.
This is a value with load variation during operation considered and does not require correction of the rated torque at the time of selection (Except for Oldham Couplings).
Select the Coupling so that the load torque generated by continuous operation may not be more than the rated torque.

Max. torque

This is a torque value that can be instantaneously transmitted by Coupling.

Misalignment

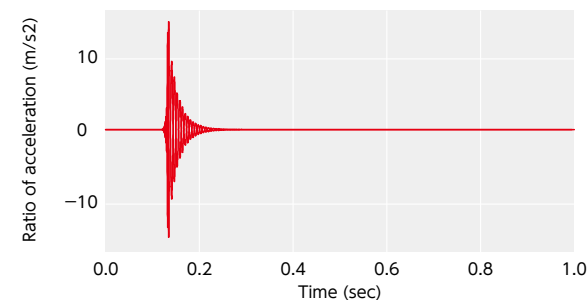
This is a shaft center error.
There are three types of misalignment: eccentricity, argument, and end-play.
For details, please refer to Mounting and Maintenance. → P.257

Max. rotational frequency

This is a maximum rotational frequency available for Coupling.
A value calculated based on peripheral speed 33 m/s is described and we have confirmed that this frequency does not damage the unit by a test. (Except for **MOM** **MOHS** **MWBS**)

Damping ratio

This is a parameter that represents the damping property of vibration amplitude.
XGT2 **XGL2** **XGS2** have a large damping ratio, thus enabling the servomotor gain to be raised. → P.33

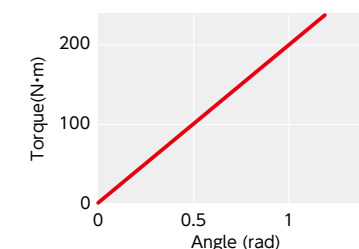


Moment of Inertia

This is a value that indicates the rotational difficulty of Coupling.
Smaller moment of inertia reduces the load torque at the time of start and stop.

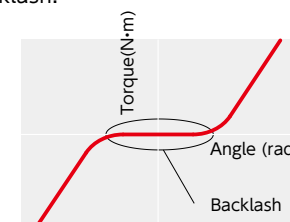
Static Torsional Stiffness

This is rigidity against torsion of Coupling and the inclination shown in the graph indicates the static torsional stiffness.
Static torsional stiffness for the entire Coupling including not only deflection part but also hub is described here.



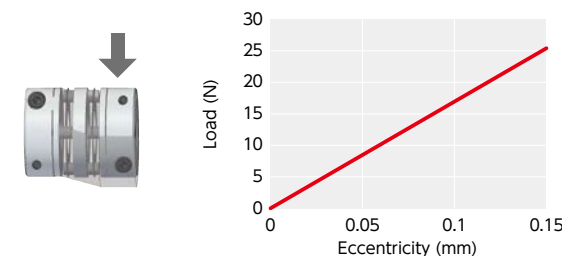
Backlash

This is a backlash against the rotational direction of Coupling.
When high precision positioning is required, select a Coupling with zero backlash.



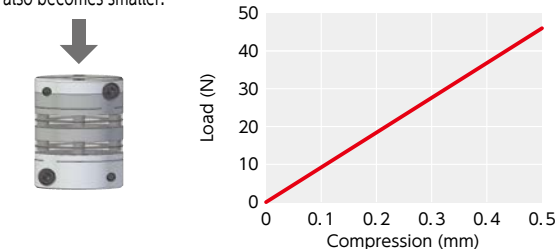
Eccentric reaction force

This is a force generated when making Coupling in eccentric condition.
As the eccentric reaction force becomes smaller, the force acting on the shaft bearing also becomes smaller.



Thrust Reaction Force

This is a force generated when compressing Coupling in the shaft direction.
As the thrust reaction force becomes smaller, the force acting on the motor also becomes smaller.



<https://www.nbk1560.com/>

Electrical insulation

This is insulation against electricity from both hubs of Coupling. The electrical insulation value of Coupling with rubber/resin used between both hubs is as shown in the following table.

Product Code	Electric resistance value
XGT2 / XGL2 / XGS2	Not less than 2 MΩ
XGT / XGL / XGS	Not less than 100 kΩ and not more than 1 MΩ
MJC / MJS / MJB	Not less than 2 MΩ
MOR / MOL / MOS	Not less than 2 MΩ
MOHS	Not less than 2 MΩ
MOP	Not less than 2 MΩ
MSXP	Not less than 2 MΩ
MSF	Not less than 2 MΩ

Constant velocity

This is speed unevenness for one rotation of Coupling. In general, the higher the misalignment is, the lower the constant velocity becomes. **MFB** **MWBS** are superior in constant velocity even when misalignment exists and is appropriate for detection devices such as encoder.

Allowable operating temperature

This is a temperature available for Coupling. The allowable operating temperature for rubber/ resin-used Coupling is as shown in the following table.

Product Code	Allowable operating temperature
XGT2 / XGL2 / XGS2	-10℃ - 120℃
XGT / XGL / XGS	-20℃ - 80℃
MJC / MJS / MJB	-20℃ - 60℃
MOR / MOL / MOS	-20℃ - 80℃
MOHS	-20℃ - 200℃
MOP	-20℃ - 120℃
MSXP	-20℃ - 80℃
MSF	-20℃ - 60℃

Temperature correction factor

This is a factor multiplied to the rated torque and max. torque depending on the operating temperature of Coupling. In **XGT2** **XGL2** **XGS2** **XGT** **XGL** **XGS** **MJC** **MJS** **MJB** **MOR** **MOL** **MOS** **MSF**, the rated torque and max. torque vary. If ambient temperature exceeds 30℃, be sure to correct the rated torque and max. torque with correction factor shown in the following table. **MOHS** **MOP** **MSXP** are superior in heat resistance and the rated torque and max. torque do not vary depending on the operating temperature. Correction by temperature correction factor is not required.

Ambient temperature	Temperature correction factor
-20 - 30℃	1.00
30 - 40℃	0.80
40 - 60℃	0.70
60 - 120℃	0.55

Attachment

There are seven types of shaft attachment methods as follows. Select a method according to your needs.

① Set screw type

This is low cost and most common attachment method. However, since the screw point directly contacts the shaft, note that it may damage the shaft or make it difficult to remove the unit.



② Clamping type

The bore is contracted by tightening force of the screw to clamp the shaft. Mounting and removal can be easily conducted, which does not damage the shaft.



③ Split type

The bore portion can be completely divided. Therefore, it can be easily mounted or removed without moving the device. In addition, the shaft is not damaged.



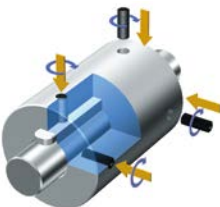
④ Semi-split type

This is an attachment method in which one side of the hubs is clamping type and the other side is split type. The device can be connected only on the split type side while keeping the clamping type side attached on the shaft.



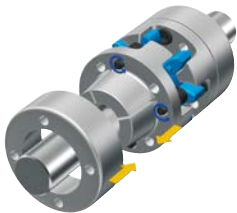
⑤ Key type

As with set screw type, this is a general attachment method and can be applied to the transmission of relatively high torque. To prevent the movement in the shaft direction, this is used together with set screw type and clamping type.



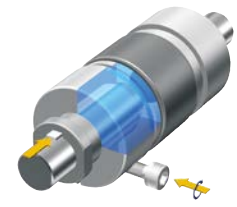
⑥ Bushing type

Attachment method using taper wedge effect enables secure and stable attachment. This is suitable to high torque transmission and is the most appropriate for the spindle of a machine tool.



⑦ Adapter + Clamping type

This is a type made by inserting an adapter into the clamping type so as to be applied to 1/10 taper shaft of the servomotor.

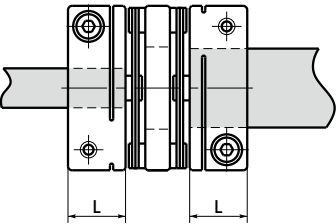


Alignment adjustment

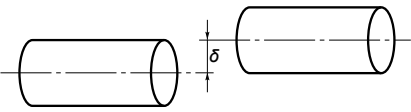
- 1 Although flexible coupling permits misalignment and transmits rotation angle and torque, if the misalignment exceeds the allowable value, vibration may occur or the life may be rapidly shortened. Be sure to perform alignment adjustment.
- 2 Shaft center misalignment includes eccentricity (parallel error of both shaft centers), argument (angle error of both shaft centers), and end-play (shaft direction movement of the shaft). Adjust the shaft alignment so that it is not more than an allowable value described in the Dimension/Performance table in this catalog.
- 3 The allowable values of misalignment described in the Dimension/Performance table are for the case where any one of eccentricity, argument, and end-play occurs independently. Mixing of two or more misalignment causes each of the allowable values to be reduced to half.
- 4 Misalignment may occur not only in mounting into the device but also due to vibration, thermal expansion, and shaft bearing abrasion during operation. Therefore, misalignment is recommended to be not more than one third of the allowable value.

Shaft insertion length

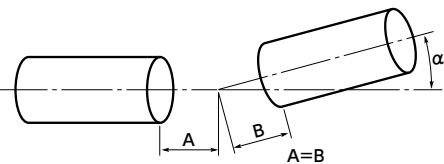
The shaft insertion length into Coupling should be the length of hub (L dimension) described in the catalog. Shorter insertion length may cause slippage of the shaft or damage of the clamp portion. Longer insertion length may cause damage due to the shaft interference in Coupling.



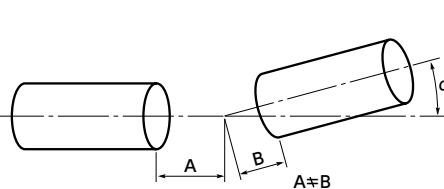
Eccentricity



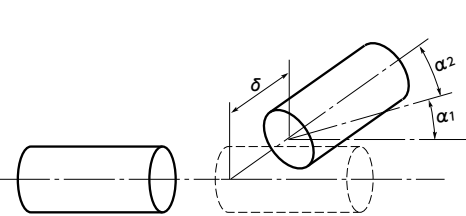
Angular alignment (center matched)



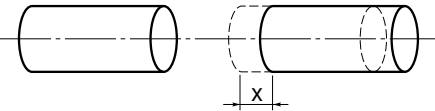
Angular alignment (center unmatched)



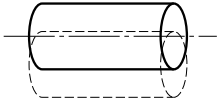
Mixture of eccentricity and angular alignment



End-play

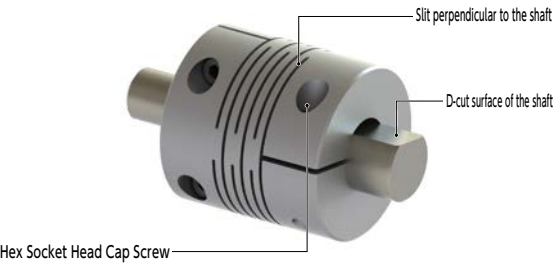


Run out



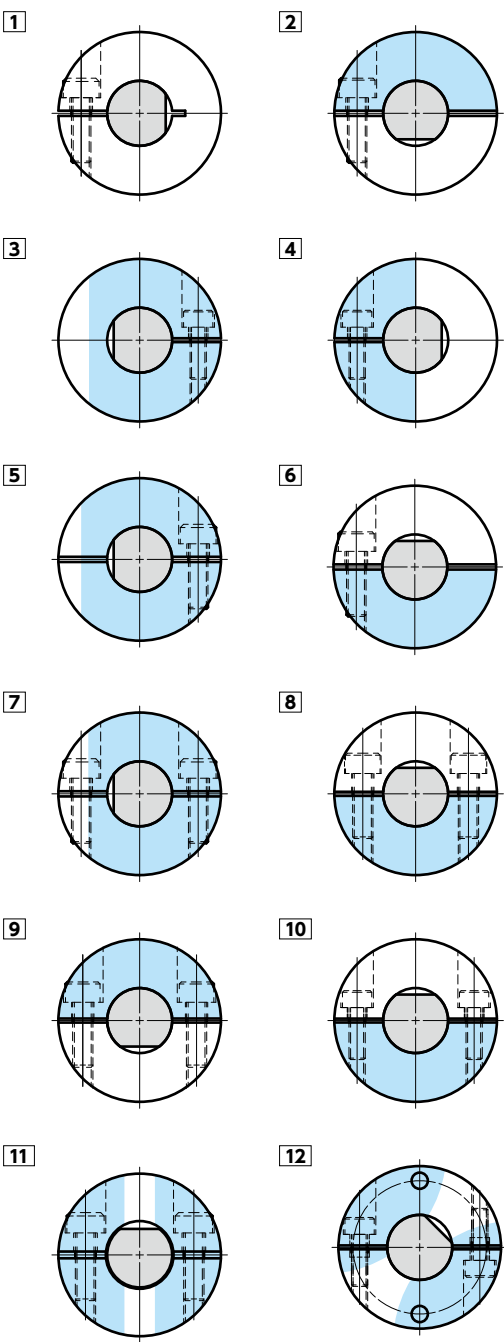
Mounting on D-cut shaft

When using a Coupling of clamping type, use a round-shaped shaft in principle. If D-cut shaft is used, an excessive load due to tightening by the hex socket head cap screw may damage the Coupling depending on the mounting position of D-cut surface of the shaft. When using a D-cut shaft, please perform mounting so that the D-cut surface of the shaft does not contact to a slit perpendicular to the shaft as much as possible. (Refer to mounting example)



Product Code	Mounting example
MJC (Outside diameter $\phi 30$ or less) / MJS / MOR / MOS / MKM / MOHS / MOP	1
MHW / MHS / MOL (Outside diameter $\phi 32$ or less) / MFB / MFBS / MRG	2
MLR / MLRS	3
XHW / XHS	4
MSTS (Outside diameter $\phi 32$ or less) / MWSS / XSTS / XWSS	5
MOM (Outside diameter $\phi 38$ or less) / XGT2 / XGL2 / XGS2	6
MST (Outside diameter $\phi 32$ or less) / MWS	7
MJC (Outside diameter $\phi 40$ or more) / MOM (Outside diameter $\phi 45$ or more)	8
MST (Outside diameter $\phi 40$ or more) / MSTS (Outside diameter $\phi 40$ or more) / MOL (Outside diameter $\phi 40$ or more) / XSTS (Outside diameter $\phi 40$ or more)	9
XGT / XGL / XGS / XUT	10
MSX / MSXP	11
XBW / XBWS / XBS / XBSS / MDW / MDS / XRP	12

Mounting example



Selection

Select an appropriate Couplicon according to the following procedures.

Selection procedures

- 1. Type selection
- 2. Size selection
- 3. Torque correction by operating temperature
- 4. Checking of max. bore diameter and max. rotational frequency
- 5. Summary

1.Type selection

By referring to Couplicon selected from the table, Couplicon selected based on motor, and Couplicon selected based on application , select the most appropriate Couplicon type.

2.Size selection

Be sure to select a size with performance of rated torque higher than the load torque of the system. The rated torque is a value with load variation during operation considered and dose not require correction at the time of selection. Select the size so that the load torque generated by continuous operation may not be more than the rated torque.

3.Torque correction by operating temperature

For rubber/resin-material Couplicon, the rated torque and max. torque vary depending on the operating temperature. ➡ P.255
If ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table.

Ambient temperature	Temperature correction factor
-20°C - 30°C	1.00
30°C - 40°C	0.80
40°C - 60°C	0.70
60°C - 120°C	0.55

In other Couplicons, the rated torque and max. torque do not vary depending on the operating temperature. Correction by temperature correction factor is not required.

4.Checking of max. bore diameter and max. rotational frequency

Ensure that both of the max. bore diameter and max. rotational frequency exceed the bore diameter and rotational frequency specified in the design conditions. If either or both of the max. bore diameter and max. rotational frequency are not satisfied, change the size.

5.Summary

Finally, ensure that other items also satisfy the design condition by referring to the Dimention/Performance table.



Warning

In the case it is thought that improper handling may cause a person to die or be heavily injured.

- The devices must be covered with our product protection covers. Otherwise your hands or fingers may contact the device in operation and get injured. However, do not fully cover the device but ventilate the surrounding air.
- A safety mechanism must be installed on the equipment for hazard prevention.
- When mounting or removing a product, never turn on the device. Otherwise your hands or fingers may contact the device suddenly driven and get injured.
- The screw (hex socket set screw or hex socket head cap screw) must be properly tightened using a torque driver or torque wrench.
- Do not use this unit with rotational frequency exceeding the max. rotational frequency.
- Never disassemble or modify the products.

Precautions

In the case it is thought that improper handling may cause a person to be injured or physical damage to occur.

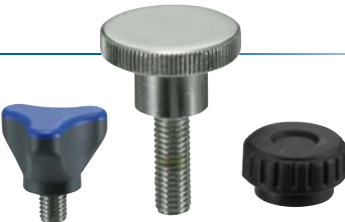
- Do not store or use the products in an environment that may affect them.
- Be careful about handling the products. Dropping a product may damage them. Also, be careful not to damage your waist or drop a product and damage your feet when transporting products.
- Coupling should be used with misalignment of not more than the allowable value. Use of the unit exceeding the allowable value may damage the product or affect peripheral devices.
- The load torque generated by continuous operation must be not more than a rated torque of the coupling. Use of the unit exceeding the allowable value may damage the product or affect peripheral devices.
- In case of a device with large load fluctuation, please apply adhesive agent or upgrade the part number of a coupling to use by one level to prevent screw loosening.
- If any abnormal sound or vibration occurs during operation, immediately stop the operation and check the alignment, interference with peripheral devices, and loosening of screws.
- Screws other than our specified ones (hex socket set screw or hex socket head cap screw) should not be used.
- When discarding the used products, please ask a special dealer to discard them so as to prevent bad influence on environment.
- Never touch the product immediately after stopping the operation. Heat transmission from peripheral devices may cause the product to be highly heated, which may cause the worker to be burned.

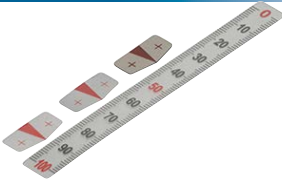
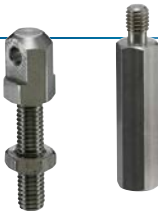
Machine Elements

Category Index	P.263	Scales	P.417
Levers	P.267	Stages	P.434
Knobs	P.293	Ball Rollers	P.455
Pulls	P.329	Plungers	P.477
Mounting Systems for Display	P.345	Structure Components	P.499
Set collars/Cross Clampers	P.371	Screws	P.513
Handles/Grips	P.393		



List of Machine Elements Categories

Levers	→ P.267	Knobs	→ P.293
			
Pulls	→ P.329	Mounting Systems for Display	→ P.345
			
Set Collars/Cross Clampers	→ P.371	Handles/Grips	→ P.393
			

Scales	→ P.417	Stages	→ P.434
			
Ball Rollers	→ P.455	Plungers	→ P.477
			
Structure Components	→ P.499	Screws	→ P.513
			

• Plastic Clamp Lever

Product Code	LEM/LEME/LEMS	LEF/LEFE/LEFS	LEM-C/LEMS-C	LEF-C/LEFS-C	LUDM/LUDMS
Page	P.271	P.275	P.273 With Push Button	P.276 With Push Button	P.277 Universal design
Shape					
Lever Part Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Color Variations	BK SG OR	BK SG OR	BK SG OR	BK SG OR	BK SG OR BL YW
Nominal Diameter of Thread	M3 - M12	M3 - M12	M3 - M12	M3 - M12	M3 - M12

Product Code	LUDF/LUDFS
Page	P.279 Universal design
Shape	
Lever Part Material	Stainless Steel
Color Variations	BK SG OR BL YW
Nominal Diameter of Thread	M3 - M12

• Plastic Clamp Levers - Miniature Type

Product Code	LECM/LECMS	LECF/LECFs	LECM-C/LECMS-C	LECF-C/LECFs-C
Page	P.280	P.283	P.281	P.284
Shape				
Lever Part Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Color Variations	BK SG OR YW SK	BK SG OR YW SK	BK SG OR YW SK	BK SG OR YW SK
Nominal Diameter of Thread	M3 - M6	M3 - M6	M3 - M6	M3 - M6

• Tension Lever

Product Code	LTM	LTF	LFM	LFF
Page	P.285	P.286	P.287	P.288
Shape				
Characteristics	Angled Lever	Angled Lever	Low Position • Horizontal Lever	Low Position • Horizontal Lever
Nominal Diameter of Thread	M10 - M20	M10 - M20	M8 - M16	M6 - M16

• Grip Lever

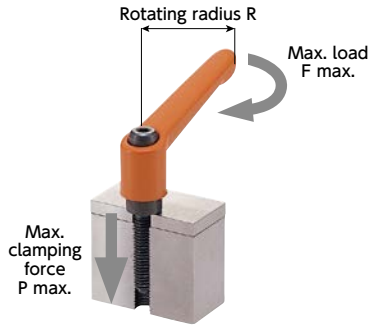
Product Code	LRG/LRGS	LCGS	LGS/LGSS
Page	P.289	P.290	P.291
Shape			
Lever Part Material	Stainless Steel	Stainless Steel	Stainless Steel
Characteristics	GRR Use	GPC Use	In combination with a grip
Nominal Diameter of Thread	M6 - M12	M6 - M12	M6 - M12

How to Use Clamp Lever / Tension Lever

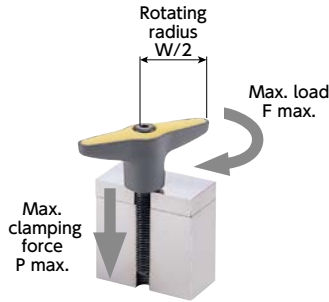
	Clamp Lever Clamp Lever - Miniature Type	Clamp Lever (Double Arm Type)	Tension Lever
1 Pull up the lever. The built-in spring will be compressed, and the engaged serration will be released.			
2 Next, rotate the loosened lever to your desired position.			
3 Release the lever, and the spring will pull the lever back in, the serration will be engaged again, and the lever will be locked.			

Definition of Max. Load and Max. Clamping Force

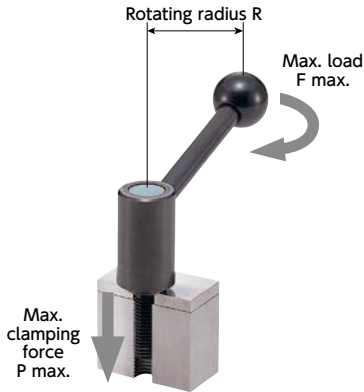
• Clamp Lever / Clamp Lever - Miniature Type



• Clamp Lever (Double Arm Type)



• Tension Lever



Selection
Navigator

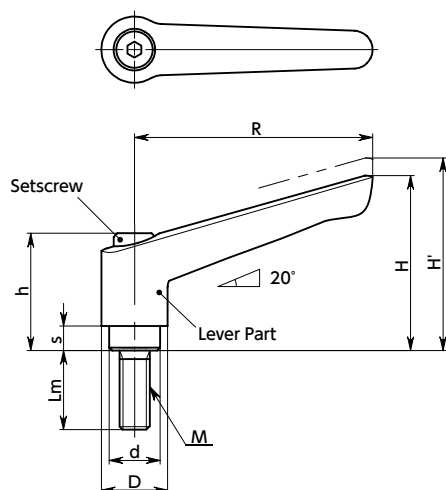


CAD Data
Download

<https://www.nbk1560.com/>

LEM / LEME / LEMS Plastic Clamp Lever, Male Screw *Recommendation*

WEB Selection Tool CAD Download SUS Stainless steel



- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- A rich variety of thread sizes from M3 to M12 are available.
- There are three types of combinations of thread part materials / surface treatments:
 - LEM** — Made of steel / ferrosferric oxide film (black)
 - LEME** — Made of steel / electroless nickel plating
 - LEMS** — Made of stainless steel
- **LEME** has electroless nickel plating applied to its thread part made of steel to enhance its corrosion resistance.
- There are three color variations for the lever part. They can be selected by the end symbol of the part number.

End Symbol	Lever Part Color
BK	Matte black
SG	Matte silver
OR	Matte orange

Dimensions

LEM Thread part: made of steel / ferrosferric oxide film **LEME** Thread part: made of steel / electroless nickel plating

LEMS Thread part: stainless steel

Part Number	Part Number	Part Number	M (coarse)	R	H	H'	h	s	D	d	Number of Teeth	Max.*1 load (N)	Max.*1 clamping force (kN)	Mass (g)
LEM-3		LEMS-3	M3	45	35.5	39	24.5	4.2	13	10	18	9	0.95	15
LEM-4	LEME-4	LEMS-4	M4	45	35.5	39	24.5	4.2	13	10	18	21	1.7	15 - 16
LEM-5	LEME-5	LEMS-5	M5	45	35.5	39	24.5	4.2	13	10	18	42	2.7	16 - 20
LEM-6	LEME-6	LEMS-6	M6	45	35.5	39	24.5	4.2	13	10	18	70	3.8	16 - 22
LEM-6B		LEMS-6B	M6	63	46.3	50.3	31	6.5	17.5	13.5	24	50	3.8	35 - 44
LEM-8	LEME-8	LEMS-8	M8	63	46.3	50.3	31	6.5	17.5	13.5	24	120	7	38 - 53
LEM-8B		LEMS-8B	M8	78	55.4	59.4	36	8	21	16	26	100	7	61 - 82
LEM-10A			M10	63	46.3	50.3	31	6.5	17.5	13.5	24	240	11	43 - 84
LEM-10	LEME-10	LEMS-10	M10	78	55.4	59.4	36	8	21	16	26	200	11	65 - 96
LEM-12A			M12	78	55.4	59.4	36	8	21	16	26	350	16	75 - 113
LEM-12	LEME-12	LEMS-12	M12	92	66	70	43	11	25	19	28	290	16	112 - 149

*1 : About the definition of max. load / max. clamping force → P.269

Related Products

Female screw type **LEF** **LEFE**

LEFS with the same shape as

LEM **LEME** **LEMS** is available.

→ P.275



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Please feel free to contact us	Not Available	Available / Add'l charge	Not Available	Available / Add'l charge



RoHS2 Compliant

Material/Finish

	LEM	LEME	LEMS
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosferric Oxide Film (Black)	SUM22L Electroless Nickel Plating	SUS303
Setscrew	SUM22L Ferrosferric Oxide Film (Black)	SUM22L Electroless Nickel Plating	SUS303
Serration Ring (Insert)	Zinc die cast	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire	Stainless Steel Wire

LEM Thread part: made of steel / ferrosferric oxide film **LEME** Thread part: made of steel / electroless nickel plating

LEMS Thread part: stainless steel

Part Number	Lm (mm)	6	8	10	12	16	20	25	32	40	50	63	80
LEM-3		●	●	●	●	●	●	●	●	●	●	●	●
LEM-4				●	●	●	●	●	●	●	●	●	●
LEM-5				●	●	●	●	●	●	●	●	●	●
LEM-6				●	●	●	●	●	●	●	●	●	●
LEM-6B				●	●	●	●	●	●	●	●	●	●
LEM-8				●	●	●	●	●	●	●	●	●	●
LEM-8B					●	●	●	●	●	●	●	●	●
LEM-10A					●	●	●	●	●	●	●	●	●
LEM-10					●	●	●	●	●	●	●	●	●
LEM-12A						●	●	●	●	●	●	●	●
LEM-12						●	●	●	●	●	●	●	●
LEME-4			●	●	●	●	●	●	●	●	●	●	●
LEME-5				●	●	●	●	●	●	●	●	●	●
LEME-6				●	●	●	●	●	●	●	●	●	●
LEME-8				●	●	●	●	●	●	●	●	●	●
LEME-10					●	●	●	●	●	●	●	●	●
LEME-12						●	●	●	●	●	●	●	●
LEMS-3		●	●	●	●	●	●	●	●	●	●	●	●
LEMS-4			●	●	●	●	●	●	●	●	●	●	●
LEMS-5				●	●	●	●	●	●	●	●	●	●
LEMS-6				●	●	●	●	●	●	●	●	●	●
LEMS-6B					●	●	●	●	●	●	●	●	●
LEMS-8					●	●	●	●	●	●	●	●	●
LEMS-8B						●	●	●	●	●	●	●	●
LEMS-10						●	●	●	●	●	●	●	●
LEMS-12							●	●	●	●	●	●	●

Part number specification

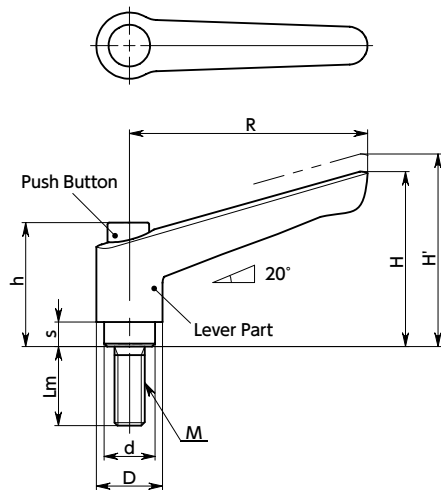
LEM-6B-16-BK

1 2 3

Select a 2 thread length Lm from the dimension table.

LEM-C / LEMS-C Plastic Clamp Lever, Male Screw - with Push Button

WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish



	LEM-C	LEMS-C
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosoferric Oxide Film (Black)	SUS303
Push Button	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Setscrew	SUS303	SUS303
Serration Ring (Insert)	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire

- A plastic clamp lever with push button. Male screw type.
- When the lever part is pulled up for position adjustment, the force is easily transmitted to help the operation if a push button is available.
- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- A rich variety of thread sizes from M3 to M12 are available.
- There are two types of thread part materials:
 - LEM-C — Made of steel
 - LEMS-C — Made of stainless steel

- Three color variations for the lever part and three for the push button are available. Each color can be selected by the symbol of the part number.
- Color variations of the lever part

Symbol	Lever Part Color
BK	Matte black
SG	Matte silver
OR	Matte orange

- Operation Button Color Variations

Symbol	Operation Button Color
CBK	Matte black
CSG	Matte silver
COR	Matte orange

Dimensions

Unit : mm

Part Number Screw : Steel	Part Number Screw : Stainless steel	M (Coarse)	R	H	H'	h	s	D	d	Number of Teeth	Max.*1 load (N)	Max.*1 clamping force (kN)	Mass (g)
LEM-3	LEMS-3	M3	45	35.5	39	24	4.2	13	10	18	9	0.95	15
LEM-4	LEMS-4	M4	45	35.5	39	24	4.2	13	10	18	21	1.7	15 - 16
LEM-5	LEMS-5	M5	45	35.5	39	24	4.2	13	10	18	42	2.7	16 - 20
LEM-6	LEMS-6	M6	45	35.5	39	24	4.2	13	10	18	70	3.8	16 - 22
LEM-6B	LEMS-6B	M6	63	46.3	50.3	31	6.5	17.5	13.5	24	50	3.8	35 - 44
LEM-8	LEMS-8	M8	63	46.3	50.3	31	6.5	17.5	13.5	24	120	7	38 - 53
LEM-8B	LEMS-8B	M8	78	55.4	59.4	36	8	21	16	26	100	7	61 - 82
LEM-10A		M10	63	46.3	50.3	31	6.5	17.5	13.5	24	240	11	43 - 84
LEM-10	LEMS-10	M10	78	55.4	59.4	36	8	21	16	26	200	11	65 - 96
LEM-12A		M12	78	55.4	59.4	36	8	21	16	26	350	16	75 - 113

*1 : About the definition of max. load / max. clamping force → P.269

- Part number specification

LEM-8-16-SG-COR

1 2 3 4

Select a 2 thread length Lm from the dimension table.

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Available / Add'l charge	Not Available	Available / Add'l charge

Related Products

Female screw type LEF-C
LEFS-C of the same shape as
LEM-C LEMS-C is available.
→ P.276



A plastic clamp lever LEM
LEME LEMS of the same shape
as LEM-C LEMS-C with no
push button is available.
→ P.271

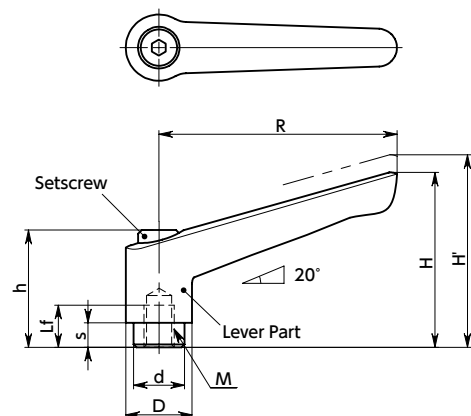


LEM-C Thread part : made of steel LEMS-C Thread part : made of stainless steel

Part Number	Lm (mm) 2											
	6	8	10	12	16	20	25	32	40	50	63	80
LEM-3	●	●	●	●	●							
LEM-4			●	●	●	●	●	●				
LEM-5				●	●	●	●	●	●	●		
LEM-6				●	●	●	●	●	●	●		
LEM-6B				●	●	●	●	●	●	●	●	
LEM-8				●	●	●	●	●	●	●	●	
LEM-8B					●	●	●	●	●	●	●	●
LEM-10A					●	●	●	●	●	●	●	●
LEM-10					●	●	●	●	●	●	●	●
LEM-12A						●	●	●	●	●	●	●
LEMS-3	●	●	●	●	●							
LEMS-4			●	●	●	●	●	●				
LEMS-5				●	●	●	●	●	●	●		
LEMS-6				●	●	●	●	●	●	●		
LEMS-6B				●	●	●	●	●	●	●	●	
LEMS-8					●	●	●	●	●	●	●	
LEMS-8B						●	●	●	●	●	●	●
LEMS-10						●	●	●	●	●	●	●

LEF / LEFE / LEFS Plastic Clamp Lever, Female Screw

WEB Selection Tool CAD Download SUS Stainless steel



- There are three color variations for the lever part. They can be selected by the end symbol of the part number.

End Symbol	Lever Part Color
BK	Matte black
SG	Matte Silver
OR	Matte orange

Material/Finish

	LEF	LEFE	LEFS
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosoferric Oxide Film (Black)	SUM22L Electroless Nickel Plating	SUS303
Setscrew	SUM22L Ferrosoferric Oxide Film (Black)	SUM22L Electroless Nickel Plating	SUS303
Serration Ring (Insert)	Zinc die cast	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire	Stainless Steel Wire

LEF Steel / ferrosoferric oxide film		LEFE Steel / electroless nickel plating		LEFS Stainless steel		Common dimensions											
Part Number	Lf min.	Part Number	Lf min.	Part Number	Lf min.	M (coarse)	R	H	H'	h	s	D	d	Number of Teeth	Max. load #1 (N)	Max. clamping#1 force (kN)	Mass (g)
1		1		1													
LEF-3	7			LEFS-3	7	M3	45	35.5	39	24.5	4.2	13	10	18	9	0.95	14
LEF-4	9	LEFE-4	9	LEFS-4	8	M4	45	35.5	39	24.5	4.2	13	10	18	21	1.7	14
LEF-5	9	LEFE-5	9	LEFS-5	8	M5	45	35.5	39	24.5	4.2	13	10	18	42	2.7	13
LEF-6	9	LEFE-6	9	LEFS-6	8	M6	45	35.5	39	24.5	4.2	13	10	18	70	3.8	12
LEF-6B	11			LEFS-6B	11	M6	63	46.3	50.3	31	6.5	17.5	13.5	24	50	3.8	32
LEF-8	11	LEFE-8	11	LEFS-8	11	M8	63	46.3	50.3	31	6.5	17.5	13.5	24	120	7	30
LEF-8B	14			LEFS-8B	14	M8	78	55.4	59.4	36	8	21	16	26	100	7	52
LEF-10	14	LEFE-10	14	LEFS-10	14	M10	78	55.4	59.4	36	8	21	16	26	200	11	48
LEF-12	17	LEFE-12	17	LEFS-12	17	M12	92	66	70	43	11	25	19	28	290	16	78

*1: About the definition of max. load / max. clamping force → P.269

Part number specification

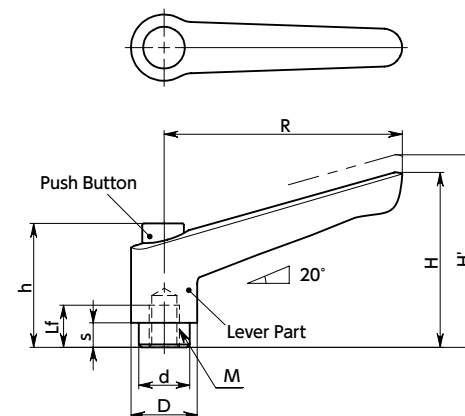
LEFE-12-OR**LEF-SG****LEFS-OR****LEFE-BK**

- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- A rich variety of thread sizes from M3 to M12 are available.
- There are three types of thread part materials:
 - LEF** — Made of steel / ferrosoferric oxide film (black)
 - LEFE** — Made of steel / electroless nickel plating
 - LEFS** — Made of stainless steel
- LEFE** has electroless nickel plating applied to its thread part made of steel to enhance its corrosion resistance.

RoHS2 Compliant

LEF-C / LEFS-C Plastic Clamp Lever, Female Screw - with Push Button

WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish

RoHS2 Compliant

	LEF-C	LEFS-C
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosoferric Oxide Film (Black)	SUS303
Push Button	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Setscrew	SUS303	SUS303
Serration Ring (Insert)	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire

Related Products

Male type **LEM-C** **LEMS-C** of the same shape as **LEF-C** **LEFS-C** is available.
→ P.273



Part number specification

LEF-8-SG-COR

LEF Steel		LEFS Stainless steel		Common dimensions												Unit: mm	
Part Number 	Lf min.	Part Number 	Lf min.	M (Coarse)	R	H	H'	h	s	D	d	Number of Teeth	Max.*1 load (N)	Max.*1 clamping force (kN)	Mass (g)		
LEF-3	7	LEFS-3	7	M3	45	35.5	39	24	4.2	13	10	18	9	0.95	14		
LEF-4	9	LEFS-4	8	M4	45	35.5	39	24	4.2	13	10	18	21	1.7	14		
LEF-5	9	LEFS-5	8	M5	45	35.5	39	24	4.2	13	10	18	42	2.7	13		
LEF-6	9	LEFS-6	8	M6	45	35.5	39	24	4.2	13	10	18	70	3.8	12		
LEF-6B	11	LEFS-6B	11	M6	63	46.3	50.3	31	6.5	17.5	13.5	24	50	3.8	32		
LEF-8	11	LEFS-8	11	M8	63	46.3	50.3	31	6.5	17.5	13.5	24	120	7	30		
LEF-8B	14	LEFS-8B	14	M8	78	55.4	59.4	36	8	21	16	26	100	7	52		
LEF-10	14	LEFS-10	14	M10	78	55.4	59.4	36	8	21	16	26	200	11	48		

*1: About the definition of max. load / max. clamping force → P.269

LEFS-OR-CBK**LEF-SG-COR****LEFS-BK-CSG**

- A plastic clamp lever with push button. Female screw type.
- When the lever part is pulled up for position adjustment, the force is easily transmitted to help the operation if a push button is available.
- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- A rich variety of thread sizes from M3 to M10 are available.
- There are two types of thread part materials:
 - LEF-C** — Made of steel
 - LEFS-C** — Made of stainless steel
- Three color variations for the lever part and three for the push button are available. Each color can be selected by the symbol of the part number.

Symbol	Lever Part Color
BK	Matte black
SG	Matte silver
OR	Matte orange

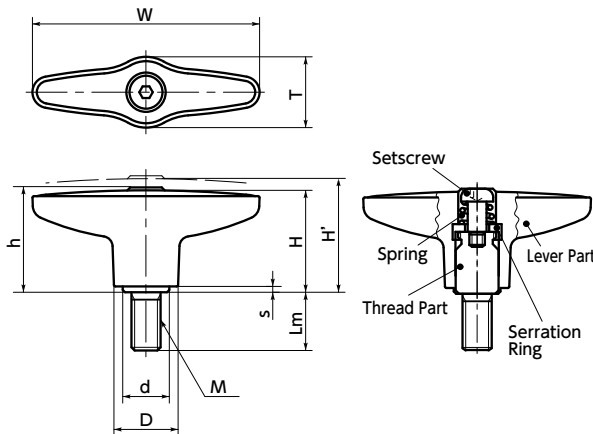
Operation Button Color Variations

Symbol	Operation Button Color
CBK	Matte black
CSG	Matte silver
COR	Matte orange

Unit : mm

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
Please feel free to contact us Available / Add'l charge Not Available Not Available Available / Add'l charge

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
Not Available Available / Add'l charge Not Available Not Available Available / Add'l charge



● Material/Finish



	LUDM	LUDMS
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosoferric Oxide Film (Black)	SUS303
Setscrew	SUM22L Ferrosoferric Oxide Film (Black)	SUS303
Serration Ring	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire

- A double arm type clamp lever made of plastic.
- Designed in consideration of the seven principles of universal design. A shape for easy application of forces and operations.
- About Universal Design → P.265
- The rotating radius is about a half of plastic clamp levers. Space-saving.
- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- There are two types of thread part materials:
 - LUDM** — Made of steel
 - LUDMS** — Made of stainless steel
- A rich variety of thread sizes from M3 to M12 are available.
- Five-color variations support the color universal design of machines / devices. Two-tone color of dark gray and various colors.
- Lever part colors can be selected by the end symbol of the part number.

End Symbol	Lever Part Color
BK	Matte black
SG	Matte Silver
OR	Matte orange
BL	Matte blue
YW	Matte yellow

Dimensions

Unit : mm

Part Number Screw : Steel	Part Number Screw : Stainless steel	W	M (Coarse)	H	H'	h	s	T	D	d	Number of Teeth	Max.*1 load (N)	Max.*1 clamping force (kN)	Mass (g)
LUDM-52-3	LUDMS-52-3	52	M3	23.5	27	24.5	1.5	15.4	14	10	18	15	0.95	15 - 16
LUDM-52-4	LUDMS-52-4	52	M4	23.5	27	24.5	1.5	15.4	14	10	18	36	1.7	16 - 17
LUDM-52-5	LUDMS-52-5	52	M5	23.5	27	24.5	1.5	15.4	14	10	18	72	2.7	17 - 21
LUDM-52-6	LUDMS-52-6	52	M6	23.5	27	24.5	1.5	15.4	14	10	18	120	3.8	17 - 23
LUDM-67-6	LUDMS-67-6	67	M6	30	34	31	2	20.8	19	13.5	24	94	3.8	37 - 46
LUDM-67-8	LUDMS-67-8	67	M8	30	34	31	2	20.8	19	13.5	24	230	7	40 - 55
LUDM-67-10		67	M10	30	34	31	2	20.8	19	13.5	24	460	11	45 - 86
LUDM-78-8	LUDMS-78-8	78	M8	35	39	36	2	24.3	22	16	26	200	7	62 - 83
LUDM-78-10	LUDMS-78-10	78	M10	35	39	36	2	24.3	22	16	26	390	11	66 - 97
LUDM-78-12		78	M12	35	39	36	2	24.3	22	16	26	690	16	76 - 114
LUDM-93-12	LUDMS-93-12	93	M12	41	45	43	3	28.5	26	19	28	580	16	117 - 154

*1 : About the definition of max. load / max. clamping force → P.269

● Related Products

Female screw type **LUDF**
LUDFS with the same shape as
LUDM **LUDMS** is available.
 → P.279



● Part number specification

LUDM-93-12-80-YW

1 2 3

Select a 2 thread length Lm from the dimension table.

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Please feel free to contact us	Not Available	Available / Add'l charge	Not Available	Available / Add'l charge



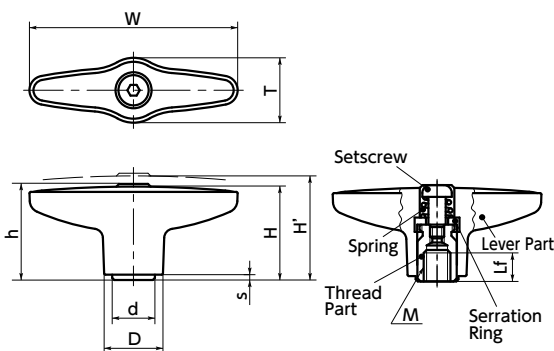
LUDM Thread part: made of steel LUDMS Thread part: made of stainless steel

Part Number	Lm (mm)	6	8	10	12	16	20	25	32	40	50	63	80
LUDM-52-3		●	●	●	●	●	●	●	●	●	●	●	●
LUDM-52-4				●	●	●	●	●	●	●	●	●	●
LUDM-52-5					●	●	●	●	●	●	●	●	●
LUDM-52-6					●	●	●	●	●	●	●	●	●
LUDM-67-6					●	●	●	●	●	●	●	●	●
LUDM-67-8					●	●	●	●	●	●	●	●	●
LUDM-67-10						●	●	●	●	●	●	●	●
LUDM-78-8						●	●	●	●	●	●	●	●
LUDM-78-10						●	●	●	●	●	●	●	●
LUDM-78-12							●	●	●	●	●	●	●
LUDM-93-12								●	●	●	●	●	●
LUDMS-52-3		●	●	●	●	●	●	●	●	●	●	●	●
LUDMS-52-4				●	●	●	●	●	●	●	●	●	●
LUDMS-52-5					●	●	●	●	●	●	●	●	●
LUDMS-52-6					●	●	●	●	●	●	●	●	●
LUDMS-67-6					●	●	●	●	●	●	●	●	●
LUDMS-67-8					●	●	●	●	●	●	●	●	●
LUDMS-78-8						●	●	●	●	●	●	●	●
LUDMS-78-10						●	●	●	●	●	●	●	●
LUDMS-93-12							●	●	●	●	●	●	●

LUDF / LUDFS Plastic Clamp Lever, Female Screw



WEB Selection Tool CAD Download SUS Stainless steel



- Lever part colors can be selected by the end symbol of the part number.

End Symbol	Lever Part Color
BK	Matte black
SG	Matte Silver
OR	Matte orange
BL	Matte blue
YW	Matte yellow

- Material/Finish

	LUDF	LUDFS
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosferric Oxide Film (Black)	SUS303
Setscrew	SUM22L Ferrosferric Oxide Film (Black)	SUS303
Serration Ring	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire

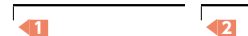
- A double arm type clamp lever made of plastic.
- Designed in consideration of the seven principles of universal design. A shape for easy application of forces and operations.
- About Universal Design → P.265
- The rotating radius is about a half of plastic clamp levers. Space-saving.
- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- There are two types of thread part materials:
LUDF — Made of steel
LUDFS — Made of stainless steel
- A rich variety of thread sizes from M3 to M12 are available.
- Five-color variations support the color universal design of machines / devices. Two-tone color of dark gray and various colors.

Unit : mm													
LUDF Steel		LUDFS Stainless steel		Common dimensions									
Part Number	Lf min.	Part Number	Lf min.	W	M (Coarse)	H	H'	h	s	T	D	d	Mass (g)
LUDF-52-3	7	LUDFS-52-3	7	52	M3	23.5	27	24.5	1.5	15.4	14	10	15
LUDF-52-4	9	LUDFS-52-4	8	52	M4	23.5	27	24.5	1.5	15.4	14	10	36
LUDF-52-5	9	LUDFS-52-5	8	52	M5	23.5	27	24.5	1.5	15.4	14	10	72
LUDF-52-6	9	LUDFS-52-6	8	52	M6	23.5	27	24.5	1.5	15.4	14	10	120
LUDF-67-6	11	LUDFS-67-6	11	67	M6	30	34	31	2	20.8	19	13.5	94
LUDF-67-8	11	LUDFS-67-8	11	67	M8	30	34	31	2	20.8	19	13.5	230
LUDF-78-8	14	LUDFS-78-8	14	78	M8	35	39	36	2	24.3	22	16	200
LUDF-78-10	14	LUDFS-78-10	14	78	M10	35	39	36	2	24.3	22	16	390
LUDF-93-12	17	LUDFS-93-12	17	93	M12	41	45	43	3	28.5	26	19	580

*1 : About the definition of max. load / max. clamping force → P.269

- Part number specification

LUDF-52-3-SG

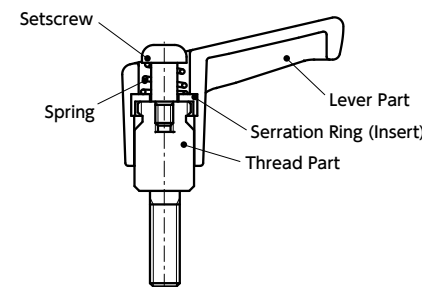
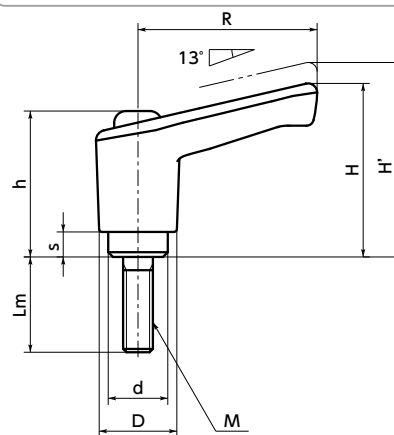


Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Please feel free to contact us	Available / Add'l charge	Not Available	Not Available	Available / Add'l charge

LECM / LECMS Plastic Clamp Lever - Miniature Type, Male Screw

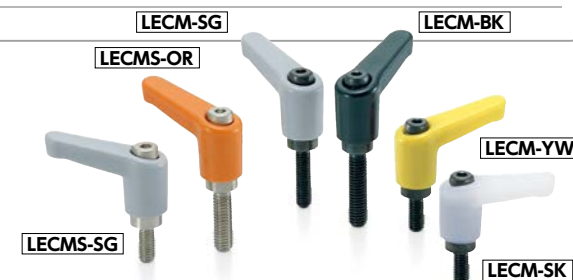


WEB Selection Tool CAD Download SUS Stainless steel



- Material/Finish

	LECM Made of Steel	LECMS Made of Stainless Steel
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosferric Oxide Film (Black)	SUS303
Setscrew	SUM22L Ferrosferric Oxide Film (Black)	SUS303
Serration Ring	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire



- The product development was conducted with LCA, Life Cycle Assessment, in consideration for environmental load, especially for global warming.
- Greenhouse effect gas emission is reduced by 6.5 % compared to conventional products.
- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- Female screw type **LECF** **LECFs** with the same shape is available. → P.283
- There are five color variations. They can be selected by the end symbol of the part number.

End Symbol	Lever Part Color
BK	Matte black
SG	Matte Silver
OR	Matte orange
YW	Matte yellow
SK	Matte Transparent

- Part number specification

LECMS-3-16-SK



Select a **2** thread length Lm from the dimension table.

Dimensions

Unit : mm													
Part Number	Part Number	M (Coarse)	R	H	H'	h	s	D	d	Number of Teeth	Max. load*1 (N)	Max. clamping*1 force (kN)	Mass (g)
LECM-3	LECMS-3	M3	30	29	32.5	24.5	4.2	13	10	18	13	0.95	14 - 15
LECM-4	LECMS-4	M4	30	29	32.5	24.5	4.2	13	10	18	31	1.7	15 - 16
LECM-5	LECMS-5	M5	30	29	32.5	24.5	4.2	13	10	18	62	2.7	16 - 20
LECM-6	LECMS-6	M6	30	29	32.5	24.5	4.2	13	10	18	110	3.8	16 - 22

*1 : About the definition of max. load / max. clamping force → P.269

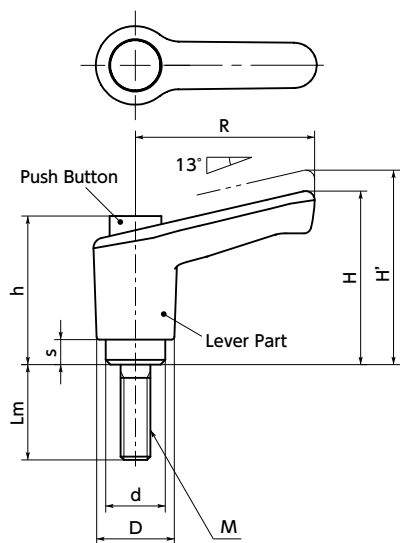
LECM Thread part : made of steel **LECMS** Thread part : made of stainless steel

Part Number	Lm (mm)									
	6	8	10	12	16	20	25	32	40	50
LECM-3	●	●	●	●	●	●	●	●	●	●
LECM-4			●	●	●	●	●	●	●	●
LECM-5				●	●	●	●	●	●	●
LECM-6				●	●	●	●	●	●	●
LECMS-3	●	●	●	●	●	●	●	●	●	●
LECMS-4			●	●	●	●	●	●	●	●
LECMS-5				●	●	●	●	●	●	●
LECMS-6				●	●	●	●	●	●	●

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Please feel free to contact us	Not Available	Available / Add'l charge	Not Available	Available / Add'l charge

LECM-C / LECMS-C Clamp Lever - Miniature Type, Male Screw - with Push Button

WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish



	LECM-C	LECMS-C
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosoferric Oxide Film (Black)	SUS303
Push Button	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Setscrew	SUS303	SUS303
Serration Ring (Insert)	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire

- A clamp lever - miniature type with push button. Male screw type.
- When the lever part is pulled up for position adjustment, the force is easily transmitted to help the operation if a push button is available.
- The product development was conducted with LCA, Life Cycle Assessment, in consideration for environmental load, especially for global warming.
- Greenhouse effect gas emission is reduced by 6.5 % compared to conventional products.
- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- There are two types of thread part materials:
 - LECM-C — Made of steel
 - LECMS-C — Made of stainless steel
- Five color variations for the lever part and three for the push button are available. They can be selected by the symbol of the part number.

Color variations of the lever part

Symbol	Lever Part Color
BK	Matte black
SG	Matte silver
OR	Matte orange
YW	Matte yellow
SK	Matte Transparent

Operation Button Color Variations

Symbol	Operation Button Color
CBK	Matte black
CSG	Matte silver
COR	Matte orange

Dimensions

Unit : mm

Part Number Screw : Steel	Part Number Screw : Stainless steel	M (Coarse)	R	H	H'	h	s	D	d	Number of Teeth	Max.*1 load (N)	Max.*1 clamping force (kN)	Mass (g)
LECM-3	LECMS-3	M3	30	29	32.5	24	4.2	13	10	18	13	0.95	14 - 15
LECM-4	LECMS-4	M4	30	29	32.5	24	4.2	13	10	18	31	1.7	15 - 16
LECM-5	LECMS-5	M5	30	29	32.5	24	4.2	13	10	18	62	2.7	16 - 20
LECM-6	LECMS-6	M6	30	29	32.5	24	4.2	13	10	18	110	3.8	16 - 22

*1 : About the definition of max. load / max. clamping force → P.269

Part number specification

LECM-3-16-SK-CBK

1 2 3 4

Select a 2 thread length Lm from the dimension table.

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Available / Add'l charge	Not Available	Available / Add'l charge

Related Products

Female screw type LECF-C
LECF-C of the same shape as
LECM-C LECMS-C is available.
→ P.284

A clamp lever - miniature type
LECM LECMS of the same
shape as LECM-C LECMS-C
with no push button is available.
→ P.280

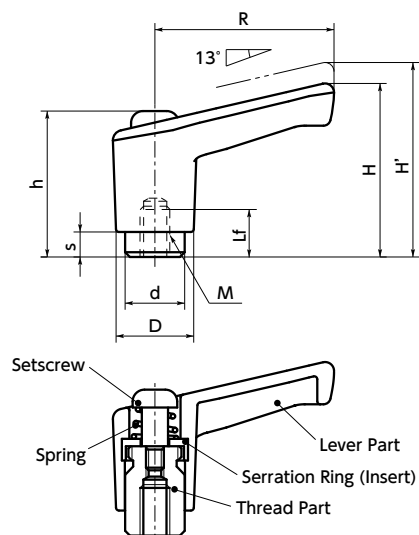


LECM-C Thread part : made of steel LECMS-C Thread part : made of stainless steel

Part Number	Lm (mm)									
	6	8	10	12	16	20	25	32	40	50
LECM-3	●	●	●	●	●	●	●	●	●	●
LECM-4			●	●	●	●	●	●	●	●
LECM-5				●	●	●	●	●	●	●
LECM-6				●	●	●	●	●	●	●
LECMS-3	●	●	●	●	●	●	●	●	●	●
LECMS-4			●	●	●	●	●	●	●	●
LECMS-5				●	●	●	●	●	●	●
LECMS-6				●	●	●	●	●	●	●

LECF / LECFS Plastic Clamp Lever - Miniature Type, Female Screw

WEB Selection Tool WEB CAD Download SUS Stainless steel



- A compact type clamp lever made of plastic.
- The product development was conducted with LCA, Life Cycle Assessment, in consideration for environmental load, especially for global warming.
- Greenhouse effect gas emission is reduced by 6.5 % compared to conventional products.
- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- There are two types of thread part materials:
 - LECF** — Made of steel
 - LECFS** — Made of stainless steel
- There are five color variations. They can be selected by the end symbol of the part number.

End Symbol	Lever Part Color
BK	Matte black
SG	Matte Silver
OR	Matte orange
YW	Matte yellow
SK	Matte Transparent

Material/Finish

RoHS2 Compliant

	LECF	LECFS
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosioferric Oxide Film (Black)	SUS303
Setscrew	SUM22L Ferrosioferric Oxide Film (Black)	SUS303
Serration Ring	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire

Unit : mm

LECF Steel		LECFS Stainless steel		Common dimensions											
Part Number	Lf min.	Part Number	Lf min.	M (Coarse)	R	H	H'	h	s	D	d	Number of Teeth	Max. load*1 (N)	Max. clamping*1 force (kN)	Mass (g)
LECF-3	7	LECFS-3	7	M3	30	29	32.5	24.5	4.2	13	10	18	13	0.95	14
LECF-4	9	LECFS-4	8	M4	30	29	32.5	24.5	4.2	13	10	18	31	1.7	13
LECF-5	9	LECFS-5	8	M5	30	29	32.5	24.5	4.2	13	10	18	62	2.7	13
LECF-6	9	LECFS-6	8	M6	30	29	32.5	24.5	4.2	13	10	18	110	3.8	12

*1 : About the definition of max. load / max. clamping force ➡ P.269

Related Products

Male screw type **LECM** **LECMS** with the same shape is available.
➡ P.280



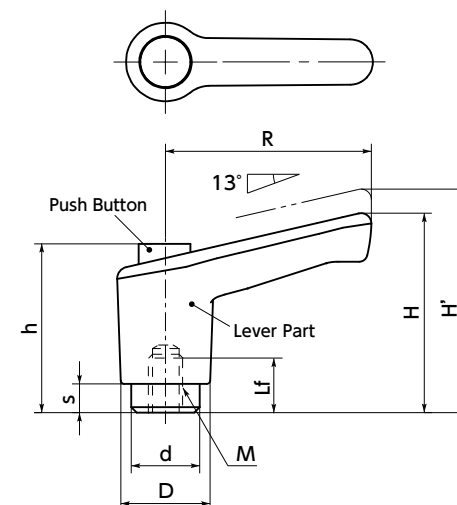
Part number specification

LECF-3-BK
1 2

Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Please feel free to contact us	Available / Add'l charge	Not Available	Not Available	Available / Add'l charge

LECF-C / LECFS-C Clamp Lever - Miniature Type, Female Screw - with Push Button

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Five color variations for the lever part and three for the push button are available. They can be selected by the symbol of the part number.

Color variations of the lever part

Symbol	Lever Part Color
BK	Matte black
SG	Matte silver
OR	Matte orange
YW	Matte yellow
SK	Matte Transparent

Operation Button Color Variations

Symbol	Operation Button Color
CBK	Matte black
CSG	Matte silver
COR	Matte orange

- A clamp lever - miniature type with push button. Female screw type.
- When the lever part is pulled up for position adjustment, the force is easily transmitted to help the operation if a push button is available.
- The product development was conducted with LCA, Life Cycle Assessment, in consideration for environmental load, especially for global warming.
- Greenhouse effect gas emission is reduced by 6.5 % compared to conventional products.
- A serration ring made of zinc die cast is inserted into the lever body made of plastic. They also realize sufficient strength for fitting with metal thread serration.
- There are two types of thread part materials:
 - LECF-C** — Made of steel
 - LECFS-C** — Made of stainless steel

Material/Finish

RoHS2 Compliant

	LECF-C	LECFS-C
Lever Part	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SUM22L Ferrosioferric Oxide Film (Black)	SUS303
Push Button	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Setscrew	SUS303	SUS303
Serration Ring (Insert)	Zinc die cast	Zinc die cast
Spring	SWPB	Stainless Steel Wire

Unit : mm

LECF Steel		LECFS Stainless steel		Common dimensions											
Part Number 	Lf min.	Part Number 	Lf min.	M (Coarse)	R	H	H'	h	s	D	d	Number of Teeth	Max.*1 load (N)	Max.*1 clamping force (kN)	Mass (g)
LECF-3	7	LECFS-3	7	M3	30	29	32.5	24	4.2	13	10	18	13	0.95	14
LECF-4	9	LECFS-4	8	M4	30	29	32.5	24	4.2	13	10	18	31	1.7	14
LECF-5	9	LECFS-5	8	M5	30	29	32.5	24	4.2	13	10	18	62	2.7	13
LECF-6	9	LECFS-6	8	M6	30	29	32.5	24	4.2	13	10	18	110	3.8	12

*1 : About the definition of max. load / max. clamping force ➡ P.269

Related Products

Male type **LECM-C** **LECMS-C** of the same shape as **LECF-C** is available.
➡ P.281



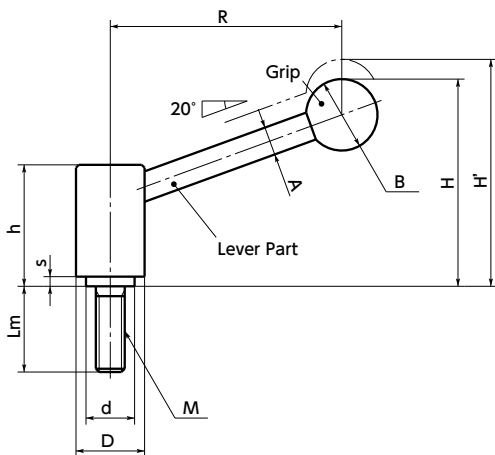
Part number specification

LECF-3-YW-CBK
1 2 3

Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Not Available	Available / Add'l charge	Not Available	Not Available	Available / Add'l charge

LTM Tension Lever, Male Screw

WEB Selection Tool WEB CAD Download



- A strong type clamping lever.
- Products of special specifications such as rotating radius of the lever can also be manufactured. Please feel free to contact our customer service.

Material/Finish		LTM
Lever Part	S45C Ferrosferric Oxide Film (Black)	
Thread Part	S45C Ferrosferric Oxide Film (Black)	
Grip	Phenol Resin (Black)	

Dimensions

Part Number	M (Coarse)	R	H	H'	h	s	A	B	D	d	Number of Teeth	Max. load*1 (N)	Max. clamping*1 force (kN)	Mass (g)
LTM-10	M10	81	72.5	78	42.5	2.5	10	25	24	17	24	280	16	195 - 210
LTM-12	M12	99	85.5	92	49.5	3.5	11	25	28	20	26	400	23	300 - 320
LTM-16	M16	118	98.5	106	55.5	3.5	12	30	33	24	36	830	43	490 - 535
LTM-20	M20	136	114.5	123	65.5	4.5	14	35	41	30	36	1400	67	880 - 975

*1 : About the definition of max. load / max. clamping force → P.269

Part Number	Lm (mm)				
	30	40	50	60	80
LTM-10	●	●	●		
LTM-12	●	●	●	●	
LTM-16	●	●	●	●	
LTM-20		●		●	●

Related Products

Female screw type tension lever
LTF is available.
→ P.286



- Part number specification

LTM-10-40

1

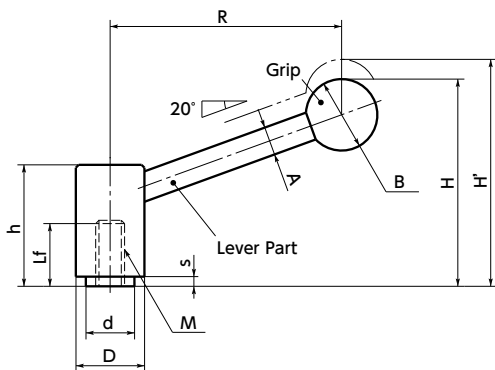
2

Select a 2 thread length Lm from the dimension table.

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Not Available	Not Available	Available / Add'l charge

LTF Tension Lever, Female Screw

WEB Selection Tool WEB CAD Download



- A strong type clamping lever.
- Products of special specifications such as rotating radius of the lever can also be manufactured. Please feel free to contact our customer service.

Material/Finish		LTF
Lever Part	S45C Ferrosferric Oxide Film (Black)	
Thread Part	S45C Ferrosferric Oxide Film (Black)	
Grip	Phenol Resin (Black)	

Part Number	M (Coarse)	Lf	R	H	H'	h	s	A	B	D	d	Number of Teeth	Max. load*1 (N)	Max. clamping*1 force (kN)	Mass (g)
LTF-10	M10	23	81	72.5	78	42.5	2.5	10	25	24	17	24	280	16	170
LTF-12	M12	26	99	85.5	92	49.5	3.5	11	25	28	20	26	400	23	270
LTF-16	M16	30	118	98.5	106	55.5	3.5	12	30	33	24	36	830	43	405
LTF-20	M20	35	136	114.5	123	65.5	4.5	14	35	41	30	36	1400	67	705

*1 : About the definition of max. load / max. clamping force → P.269

Related Products

Male screw type tension lever
LTM is available.
→ P.285



- Part number specification

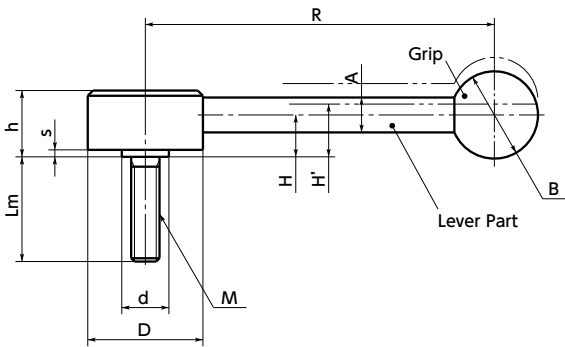
LTF-20

1

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Not Available	Not Available	Available / Add'l charge

LFM Flat Tension Lever, Male Screw

WEB Selection Tool WEB CAD Download



- A flat-shaped tension lever. For applications with narrow top or bottom space.
- Since the rotating radius is large, a large clamping force can be achieved by small force.

• Material/Finish

	LFM
Lever Part	S45C Ferrosioferric Oxide Film (Black)
Thread Part	S45C Ferrosioferric Oxide Film (Black)
Grip	Phenol Resin (Black)

Dimensions

Unit : mm

Part Number	M (Coarse)	R	H	H'	h	s	A	B	D	d	Number of Teeth	Max. load*1 (N)	Max. clamping*1 force (kN)	Mass (g)
LFM-8	M8	100	12	16	19	2	10	25	33	13	22	120	10	180 - 185
LFM-10	M10	130	13.5	17.5	22	2	12	30	41	19	26	180	16	320 - 340
LFM-12	M12	130	13.5	17.5	22	2	12	30	41	19	26	300	23	330 - 350
LFM-16	M16	150	17	22	28	2	14	35	45	23	36	660	43	550 - 580

*1 : About the definition of max. load / max. clamping force ➡ P.269

Part Number	Lm (mm)	30	40	50	60
LFM-8	●	●	●	●	●
LFM-10	●	●	●	●	●
LFM-12	●	●	●	●	●
LFM-16	●	●	●	●	●

• Related Products

Female screw type flat tension lever **LFF** is available.
➡ P.288



• Part number specification

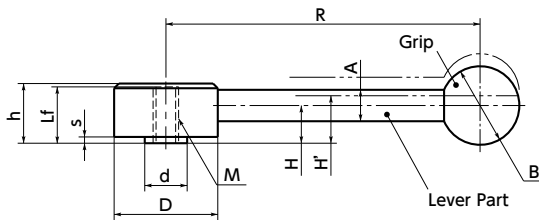
LFM-10-40



Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Not Available	Not Available	Not Available	Not Available	Available / Add'l charge

LFF Flat Tension Lever, Female Screw

WEB Selection Tool WEB CAD Download



- A flat-shaped tension lever. For applications with narrow top or bottom space.
- Since the rotating radius is large, a large clamping force can be achieved by small force.

• Material/Finish

	LFF
Lever Part	S45C Ferrosioferric Oxide Film (Black)
Thread Part	S45C Ferrosioferric Oxide Film (Black)
Grip	Phenol Resin (Black)

Unit : mm

Part Number	M (Coarse)	Lf	R	H	H'	h	s	A	B	D	d	Number of Teeth	Max. load*1 (N)	Max. clamping*1 force (kN)	Mass (g)
LFF-8	M8	18	100	12	16	19	2	10	25	33	13	22	120	10	160
LFF-10	M10	21	130	13.5	17.5	22	2	12	30	41	19	26	180	16	300
LFF-12	M12	21	130	13.5	17.5	22	2	12	30	41	19	26	300	23	300
LFF-16	M16	27	150	17	22	28	2	14	35	45	23	36	660	43	450

*1 : About the definition of max. load / max. clamping force ➡ P.269

• Related Products

Male screw type flat tension lever **LFM** is available.
➡ P.287



• Part number specification

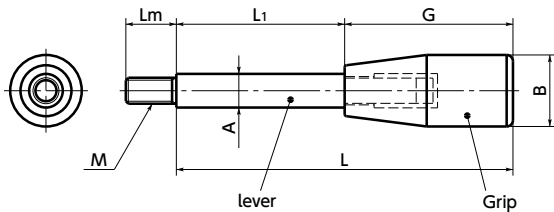
LFF-16



Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Not Available	Not Available	Not Available	Not Available	Available / Add'l charge

LRG / LRGS Plastic Grip Lever

WEB Selection Tool WEB CAD Download SUS Stainless steel



- The grip is made of phenol resin. It is highly durable.
- There are two types of the lever part material.
- LRG** — Made of steel
- LRGS** — Made of stainless steel

	LRG Made of Steel	LRGS Made of Stainless Steel
Lever Part	SS400 Matte Chrome Plating	SUS303
Grip	Phenol Resin (Black)	Phenol Resin (Black)

Part Number Lever : Steel	Part Number Lever : Stainless steel	M (coarse)	Lm	L	A	B	L1	G	Mass (g)
LRG-6-63	LRGS-6-63	M6	12	63	8	17	23	40	25
LRG-6-80	LRGS-6-80	M6	12	80	8	17	40	40	32
LRG-6-100	LRGS-6-100	M6	12	100	8	17	60	40	40
LRG-8-80	LRGS-8-80	M8	20	80	10	21	30	50	53
LRG-8-100	LRGS-8-100	M8	20	100	10	21	50	50	65
LRG-8-125	LRGS-8-125	M8	20	125	10	21	75	50	81
LRG-10-100	LRGS-10-100	M10	25	100	12	25	35	65	97
LRG-10-125	LRGS-10-125	M10	25	125	12	25	60	65	119
LRG-10-160	LRGS-10-160	M10	25	160	12	25	95	65	149
LRG-12-125	LRGS-12-125	M12	30	125	14	28	40	85	163
LRG-12-160	LRGS-12-160	M12	30	160	14	28	75	85	205
LRG-12-200	LRGS-12-200	M12	30	200	14	28	115	85	253

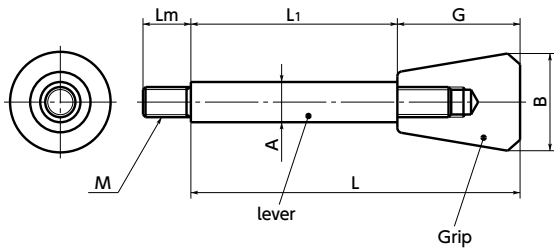
- Part number specification

LRG-6-63

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
S.S. only/ Add'l charge	Not Available	Not Available	Available / Add'l charge	Available / Add'l charge

LCGS Conical grip lever

WEB Selection Tool WEB CAD Download SUS Stainless steel



- The lever is made of stainless steel. The grip is made of phenol resin.
- It is highly durable and corrosion-resistant.

	LCGS
lever	SUS303
Grip	Phenol Resin (Black)

Part Number	M (coarse)	Lm	L	A	B	L1	G	Mass (g)
LCGS-6-63	M6	12	63	8	20	33	30	23
LCGS-6-80	M6	12	80	8	20	50	30	30
LCGS-6-100	M6	12	100	8	20	70	30	38
LCGS-8-80	M8	20	80	10	25	42	38	49
LCGS-8-100	M8	20	100	10	25	62	38	61
LCGS-8-125	M8	20	125	10	25	87	38	76
LCGS-10-100	M10	25	100	12	30	54	46	88
LCGS-10-125	M10	25	125	12	30	79	46	110
LCGS-10-160	M10	25	160	12	30	114	46	140
LCGS-12-125	M12	30	125	14	35	72	53	155
LCGS-12-160	M12	30	160	14	35	107	53	197
LCGS-12-200	M12	30	200	14	35	147	53	244

- Part number specification

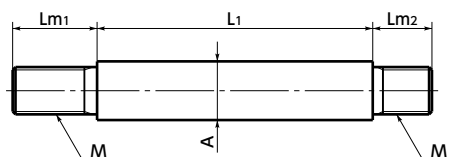
LCGS-6-63
Product Code

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Not Available	Not Available	Available / Add'l charge	Available / Add'l charge

LGS / LGSS Shaft for Grip Lever



WEB Selection Tool CAD Download SUS Stainless steel



- Use it in combination with a grip.
- There are two types of materials. ◀1
 - LGS** — Made of steel
 - LGSS** — Made of stainless steel

	LGS	LGSS
Main body	SS400 Matte Chrome Plating	SUS303

RoHS2 Compliant

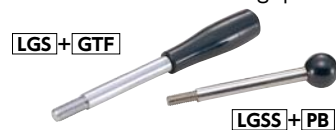
● Recommended Knobs & Grips

Part Number Made of Steel	Part Number Made of Stainless Steel	Recommended Knobs & Grips					
		PB→P.312	PC→P.312	KDC→P.310	KEC→P.311	GTF→P.413	GTFS→P.413
LGS-M6	LGSS-M6	PB-20-M6	PC-20-M6	KDC-6	KEC-6	GTF-19-M6	GTFS-19-M6
LGS-M8	LGSS-M8	PB-25-M8	PC-25-M8	KDC-8	KEC-8	GTF-24-M8	GTFS-24-M8
LGS-M10	LGSS-M10	PB-30-M10	PC-30-M10	KDC-10		GTF-24-M10	GTFS-24-M10
LGS-M12	LGSS-M12	PB-40-M12	PC-40-M12			GTF-28-M12	

Part Number Steel	Part Number Stainless steel	M (coarse) ◀2	L1 ◀3	A	Lm1	Lm2	Mass (g)
LGS-M6-40	LGSS-M6-40	M6	40	8	12	9	20
LGS-M6-60	LGSS-M6-60	M6	60	8	12	9	28
LGS-M6-80	LGSS-M6-80	M6	80	8	12	9	36
LGS-M8-50	LGSS-M8-50	M8	50	10	20	11	42
LGS-M8-75	LGSS-M8-75	M8	75	10	20	11	58
LGS-M8-100	LGSS-M8-100	M8	100	10	20	11	73
LGS-M10-60	LGSS-M10-60	M10	60	12	25	14	76
LGS-M10-90	LGSS-M10-90	M10	90	12	25	14	103
LGS-M10-120	LGSS-M10-120	M10	120	12	25	14	130
LGS-M12-80	LGSS-M12-80	M12	80	14	30	14	134
LGS-M12-120	LGSS-M12-120	M12	120	14	30	14	182
LGS-M12-160	LGSS-M12-160	M12	160	14	30	14	230

Unit : mm

- Usage example
In combination with a grip.



● Part number specification

LGSS-M6-40

◀1 ◀2 ◀3

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
S.S. only/ Add'l charge	Not Available	Not Available	Available / Add'l charge	Not Available

Selection
Navigator



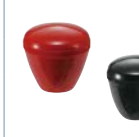
CAD Data
Download

<https://www.nbk1560.com/>

• Plastic Knob

Product Code	KDM/KDF	KDMS/KDFS	KDMS-SC	KRM/KRF/KRR	KRMS/KRFS	KLM/KLMS/KLF/KLFS
Page	P.295	P.295	P.297	P.299	P.299	P.301
Shape						
Knob Material	Nylon 6	Nylon 6	Nylon 6	Nylon 6	Nylon 6	Nylon 6
Nominal Diameter of Thread	M3 - M8	M3 - M8	M4 - M8	M4 - M10	M5 - M10	M5 - M10

Product Code	KUDM/KUDF	KUDMS/KUDFS	KUWM/KUWF	KUWMS/KUWFS	SS/SK	KF/KGC
Page	P.303	P.303	P.305	P.305	P.307	P.308
Shape						
Knob Material	Nylon 6	Nylon 6	Nylon 6	Nylon 6	Nylon 66	Nylon 6
Nominal Diameter of Thread	M3 - M10	M3 - M10	M4 - M10	M4 - M10	M6 - M12	M5 - M12

Product Code	KP	KDC	KEC	PB/PC	KGB	KCF/KCFS
Page	P.309	P.310	P.311	P.312	P.313	P.314
Shape						
Knob Material	Nylon 6	Nylon 6	Nylon 6	Plastic	Rubber	Steel/Stainless Steel
Nominal Diameter of Thread/Bore Diameter	M6 - M12	M6 - M10	M6 - M8	M6 - M12	M6 - M12	5 - M12

• Metal Knob

Product Code	KNM/KNF	KNMS/KNFS	KNMS-BK	KUM/KUF	KUMS/KUFS	KUMS-BK
Page	P.315	P.315	P.319	P.317	P.317	P.320
Shape						
Knob Material	Steel	Stainless Steel	Stainless Steel	Steel	Stainless Steel	Stainless Steel
Nominal Diameter of Thread	M3 - M10	M3 - M10	M4 - M6	M3 - M10	M3 - M10	M4 - M6

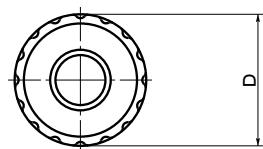
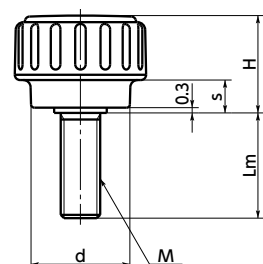
Product Code	KNM-SC	KUM-SC	CK/CKT	KK/KKT	EAT	EAC
Page	P.321	P.322	P.323	P.324	P.325	P.326
Shape						
Knob Material	Steel	Steel	Cast iron	Cast iron	Aluminum Alloy	Phenol Resin
Nominal Diameter of Thread	M3 - M10	M3 - M10	M8 - M12/φ5 (Pilot Hole)	M6 - M16/φ5 (Pilot Hole)	φ6.1	φ6.1

• Knob

Product Code	EAE	EAM
Page	P.327	P.328
Shape		
Knob Material	Phenol Resin	Phenol Resin
Bore diameter	φ3.3 - φ6.1	φ6.1

KDM / KDMS / KDF / KDFS Dimple Knob *Recommendation*

WEB Selection Tool CAD Download SUS Stainless steel

KDM
KDMS

● Material/Finish



	KDM	KDMS	KDF	KDFS
Knob	Nylon 6 (Matte Black)	Nylon 6 (Various Color)	Nylon 6 (Matte Black)	Nylon 6 (Various Color)
Thread Part	SWCH10R Trivalent Chromate Treatment	SUSXM7	S45C Trivalent Chromate Treatment	SUS303

Dimensions

KDM KDMS Male Screw

Part Number Steel	Part Number Stainless steel	D	M (coarse)	H	s	d	Mass (g)
KDM-16-M3	KDMS-16-M3	16	M3	11	2	11	3 - 4
KDM-16-M4	KDMS-16-M4	16	M4	11	2	11	3 - 4
KDM-16-M5	KDMS-16-M5	16	M5	11	2	11	5 - 6
KDM-20-M5	KDMS-20-M5	20	M5	14	4	15	5 - 8
KDM-20-M6	KDMS-20-M6	20	M6	14	4	15	8 - 11
KDM-25-M5	KDMS-25-M5	25	M5	18	6	19	8 - 10
KDM-25-M6	KDMS-25-M6	25	M6	18	6	19	9 - 13
KDM-25-M8	KDMS-25-M8	25	M8	18	6	19	16 - 20
KDM-32-M6	KDMS-32-M6	32	M6	18	6	24	17 - 19
KDM-32-M8	KDMS-32-M8	32	M8	18	6	24	23 - 32

Unit : mm

KDF KDFS Female Screw

Part Number Steel	Part Number Stainless steel	D	M (coarse)	Lf	H	s	d	Mass (g)
KDF-16-M3	KDFS-16-M3	16	M3	5	11	2	11	4
KDF-16-M4	KDFS-16-M4	16	M4	5	11	2	11	4
KDF-16-M5	KDFS-16-M5	16	M5	5	11	2	11	4
KDF-20-M5	KDFS-20-M5	20	M5	6	14	4	15	7
KDF-20-M6	KDFS-20-M6	20	M6	6	14	4	15	6
	KDFS-25-M5	25	M5	9	18	6	19	11
KDF-25-M6	KDFS-25-M6	25	M6	9	18	6	19	10
KDF-32-M6	KDFS-32-M6	32	M6	8	18	6	24	18
KDF-32-M8	KDFS-32-M8	32	M8	8	18	6	24	17

Unit : mm

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
S.S. only/ Add'l charge Female screw only/ Add'l charge Male screw only/ Add'l charge Male screw only/ Add'l charge Available / Add'l charge



- High quality. Human design.
- Dimple on the outer circumference enhances the operability.
- A rich variety of thread sizes from M3 to M8 are available.
- Types and thread part materials can be selected by a product code.

Product Code	Type	Thread Part Material
KDM	Male Screw	Made of Steel
KDMS	Male Screw	Made of Stainless Steel
KDF	Female Screw	Made of Steel
KDFS	Female Screw	Made of Stainless Steel

- **KDMS** **KDFS** (made of stainless steel) have two color variations. They can be selected by the end symbol of the part number.
End Symbol **BK** — Matte black
End Symbol **WH** — Matte white
- White is optimal for use with medical equipment.

KDM Made of Steel

Part Number Male screw	Lm (mm)	6	10	16	20	25	40
KDM-16-M3		●	●	●			
KDM-16-M4		●	●	●			
KDM-16-M5			●	●	●		
KDM-20-M5			●	●	●		
KDM-20-M6			●	●	●	●	
KDM-25-M5				●	●	●	
KDM-25-M6			●	●	●	●	
KDM-25-M8				●	●	●	
KDM-32-M6				●	●	●	
KDM-32-M8				●	●		●

KDMS Made of Stainless Steel

Part Number Male screw	Knob Color	Lm (mm)	6	10	16	20	25	40
KDMS-16-M3	BK		●	●	●			
KDMS-16-M4	BK		●	●	●			
KDMS-16-M5	BK			●	●	●		
KDMS-20-M5	BK			●	●	●		
KDMS-20-M6	BK			●	●	●	●	
KDMS-25-M5	BK				●	●	●	
KDMS-25-M6	BK				●	●	●	
KDMS-25-M8	BK				●	●	●	
KDMS-32-M6	BK				●	●	●	
KDMS-32-M8	BK				●	●	●	●
KDMS-16-M3	WH		●	●	●			
KDMS-16-M4	WH		●	●	●			
KDMS-16-M5	WH			●	●	●		
KDMS-20-M5	WH			●	●	●		
KDMS-20-M6	WH			●	●	●	●	
KDMS-25-M5	WH				●	●	●	
KDMS-25-M6	WH				●	●	●	
KDMS-25-M8	WH				●	●	●	
KDMS-32-M6	WH				●	●	●	
KDMS-32-M8	WH				●	●	●	●

● Part number specification

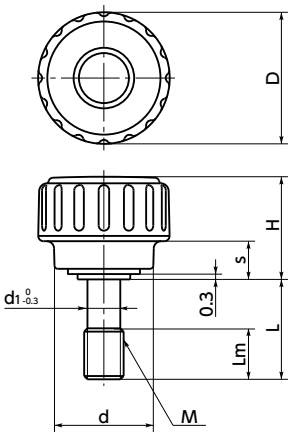
KDMS-16-M3-10-WH

For male screw type, select a thread length Lm from the dimension table.

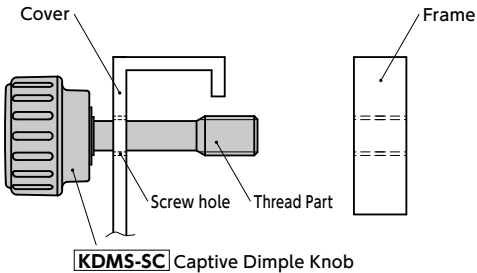
For an item made of stainless steel, select a knob color.

KDMS-SC Captive Dimple Knob

WEB Selection Tool CAD Download SUS Stainless steel



- Installation example
Machine a screw hole on the cover and let through the threaded part of **KDMS-SC**. Threaded part of **KDMS-SC** is still engaged with the screw hole on the cover even after the screw is removed from the frame, so **KDMS-SC** never fall out of the cover.



- Part number specification

KDMS-16-M4-10-SC-BK

Product code
Select a **1** thread length L from the dimension table.

Dimensions

Unit : mm

Part Number	D 1	M 2 (coarse)	Lm	H	s	d	d1	Mass (g)
KDMS-16-M4-SC-BK	16	M4	5	11	2	11	3	3 - 4
KDMS-20-M5-SC-BK	20	M5	6	14	4	15	3.9	6 - 7
KDMS-25-M6-SC-BK	25	M6	8	18	6	19	4.6	11 - 12
KDMS-32-M8-SC-BK	32	M8	10	18	6	24	6.3	22 - 23

Part Number	L (mm) 3			
	10	16	20	25
KDMS-16-M4-SC-BK	●	●		
KDMS-20-M5-SC-BK	●	●	●	
KDMS-25-M6-SC-BK		●	●	●
KDMS-32-M8-SC-BK			●	●

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Not Available	Not Available	Not Available	Available / Add'l charge



- Captive type dimple knob. It prevents fall-off and missing of the knob.
- For CE marking. → P.690
- High quality. Human design.
- Dimple on the outer circumference enhances the operability.

- Material/Finish RoHS2 Compliant

	KDMS-SC-BK
knob	Nylon 6 (Matte Black)
Thread Part	SUSXM7

- ⚠ Precautions for Use
- Screw hole inner diameter on the cover side shall be at least the d1 dimension.
- The cover thickness should be 0.8 mm or above.

- Related Products

Captive type knurled knobs are available.

KNM-SC → P.321
KUM-SC → P.322



Selection
Navigator

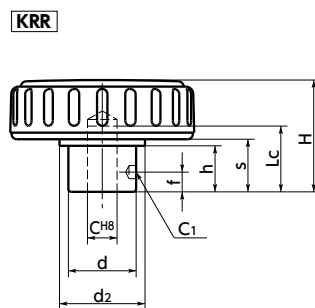
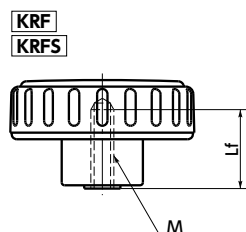
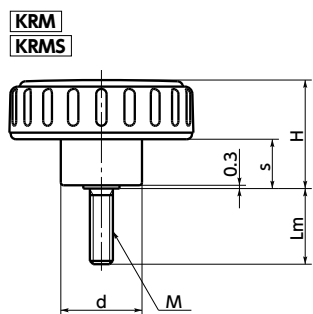
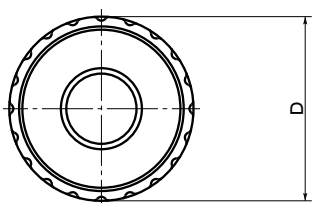


CAD Data
Download

<https://www.nbk1560.com/>

KRM / KRMS / KRF / KRFS / KRR Dimple Knob *Recommendation*

WEB Selection Tool CAD Download SUS Stainless steel



KRM | KRMS Male Screw

Part Number Steel	Part Number Stainless steel	D	M (Coarse)	Lm	H	s	d	Mass (g)
KRM-25-M4-6		25	M4	6	19	8	13	6
KRM-25-M4-10		25	M4	10	19	8	13	7
KRM-25-M4-16		25	M4	16	19	8	13	7
KRM-32-M5-10	KRMS-32-M5-10	32	M5	10	22	10	15	11
KRM-32-M5-16	KRMS-32-M5-16	32	M5	16	22	10	15	12
KRM-32-M5-20	KRMS-32-M5-20	32	M5	20	22	10	15	12
KRM-32-M6-10		32	M6	10	22	10	15	12
KRM-32-M6-20		32	M6	20	22	10	15	14
KRM-32-M6-40		32	M6	40	22	10	15	19
KRM-40-M6-10	KRMS-40-M6-10	40	M6	10	25	11	17	16
KRM-40-M6-16	KRMS-40-M6-16	40	M6	16	25	11	17	18
KRM-40-M6-20	KRMS-40-M6-20	40	M6	20	25	11	17	18
KRM-40-M6-25	KRMS-40-M6-25	40	M6	25	25	11	17	19
KRM-40-M8-16		40	M8	16	25	11	17	23
KRM-40-M8-20		40	M8	20	25	11	17	25
KRM-50-M8-16	KRMS-50-M8-16	50	M8	16	30	13.5	20	29
KRM-50-M8-20	KRMS-50-M8-20	50	M8	20	30	13.5	20	31
KRM-50-M8-25	KRMS-50-M8-25	50	M8	25	30	13.5	20	33
KRM-50-M8-30	KRMS-50-M8-30	50	M8	30	30	13.5	20	35
KRM-50-M8-50		50	M8	50	30	13.5	20	43
KRM-50-M10-20		50	M10	20	30	13.5	20	40
KRM-50-M10-30		50	M10	30	30	13.5	20	46
KRM-63-M10-20		63	M10	20	35	15	23	55
KRM-63-M10-30	KRMS-63-M10-30	63	M10	30	35	15	23	61
KRM-63-M10-50	KRMS-63-M10-50	63	M10	50	35	15	23	73

Unit : mm



- Three types: Male Screw **KRM** **KRMS** / Female Screw **KRF** **KRFS** / Reamer Bore **KRR**.
- The reamer hole **KRR** hub has a guide hole for the fixing pin.
- A rich variety of thread sizes from M4 to M10 are available.
- Types and thread part materials can be selected by a product code.

Product Code	Type	Thread Part Material
KRM	Male Screw	Made of Steel
KRMS	Male Screw	Made of Stainless Steel
KRF	Female Screw	Made of Steel
KRFS	Female Screw	Made of Stainless Steel
KRR	Reamer Bore	Made of Steel

- Material/Finish

RoHS2 Compliant

	KRM	KRMS	KRF	KRFS	KRR
knob	Nylon 6 (Matte Black)	Nylon 6 (Matte Black)	Nylon 6 (Matte Black)	Nylon 6 (Matte Black)	Nylon 6 (Matte Black)
Thread Part	SWCH10R Trivalent Chromate Treatment	SUSXM7	SUM24L Trivalent chromate treatment	SUS303	
Hub					SS400 Ferrosferic Oxide Film (Black)

KRF | KRFS Female Screw

Part Number Steel	Part Number Stainless steel	D	M (Coarse)	Lf	H	s	d	Mass (g)
KRF-25-M4		25	M4	8	19	8	13	13
KRF-32-M5	KRFS-32-M5	32	M5	10	22	10	15	15
KRF-32-M6		32	M6	10	22	10	15	15
KRF-40-M6	KRFS-40-M6	40	M6	15	25	11	17	17
KRF-40-M8		40	M8	15	25	11	17	15
KRF-50-M8	KRFS-50-M8	50	M8	18	30	13.5	20	27
KRF-50-M10		50	M10	20	30	13.5	20	24
KRF-63-M10	KRFS-63-M10	63	M10	20	35	15	23	55

Unit : mm

KRR Reamer Bore

Part Number Steel	D	C	Lc	H	C1	d2	d	f	h	s	Mass (g)
KRR-40-R8	40	8	15	25	2.8	19	14	7	9	11	27
KRR-50-R10	50	10	19	32	2.8	22	17	8	13	15.5	47
KRR-63-R12	63	12	23	40	3.8	26	21	10	17	20	91

Unit : mm

- Part number specification

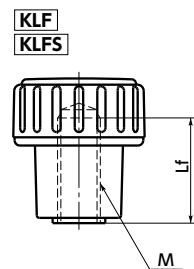
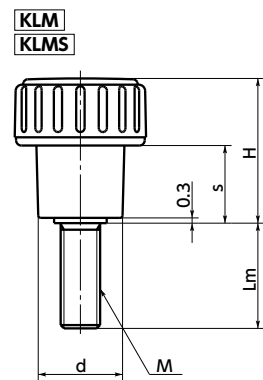
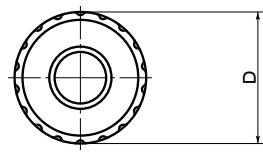
KRMS-32-M5-20

1

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
S.S. only/ Add'l charge Female screw only/ Add'l charge Male screw only/ Add'l charge Male screw only/ Add'l charge Available / Add'l charge

KLM / KLMS / KLF / KLFS Long Dimple Knobs *Recommendation*

WEB Selection Tool CAD Download SUS Stainless steel



- High quality / high-precision. Soft impression of matte black.
- Convenient long size.
- Types and thread part materials can be selected by a product code.

Product Code	Type	Thread Part Material
KLM	Male Screw	Made of Steel
KLMS	Male Screw	Made of Stainless Steel
KLF	Female Screw	Made of Steel
KLFS	Female Screw	Made of Stainless Steel

• Material/Finish



	KLM	KLMS	KLF	KLFS
knob	Nylon 6 (Matte Black)	Nylon 6 (Matte Black)	Nylon 6 (Matte Black)	Nylon 6 (Matte Black)
Thread Part	SWCH10R Trivalent Chromate Treatment	SUSXM7	SUM24L Trivalent Chromate Treatment	SUS303

Dimensions

KLM KLMS Male Screw		Unit : mm						
Part Number Steel	Part Number Stainless steel	D	M (coarse)	H	s	d	Mass (g)	
KLM-20-M5	KLMS-20-M5	20	M5	25	12	13	8 - 9	
KLM-20-M6	KLMS-20-M6	20	M6	25	12	13	9 - 13	
KLM-25-M5	KLMS-25-M5	25	M5	28	15	16	12 - 13	
KLM-25-M6	KLMS-25-M6	25	M6	28	15	16	13 - 16	
KLM-25-M8		25	M8	28	15	16	20 - 22	
KLM-32-M6	KLMS-32-M6	32	M6	32	17	20	19 - 20	
KLM-32-M8	KLMS-32-M8	32	M8	32	17	20	23 - 33	
KLM-32-M10		32	M10	32	17	20	40 - 46	

KLF KLFS Female Screw		Unit : mm						
Part Number Steel	Part Number Stainless steel	D	M (coarse)	Lf	H	s	d	Mass (g)
KLF-20-M5		20	M5	10	25	12	13	10
KLF-20-M6	KLFS-20-M6	20	M6	15	25	12	13	9
KLF-25-M5		25	M5	15	28	15	16	20
KLF-25-M6		25	M6	15	28	15	16	19
KLF-25-M8	KLFS-25-M8	25	M8	18	28	15	16	15
KLF-32-M6		32	M6	18	32	17	20	41
KLF-32-M8		32	M8	18	32	17	20	38
KLF-32-M10	KLFS-32-M10	32	M10	20	32	17	20	33

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
S.S. only/ Add'l charge Female screw only/ Add'l charge Male screw only/ Add'l charge Male screw only/ Add'l charge Available / Add'l charge

**KLM** Made of Steel **KLMS** Made of Stainless Steel

Part Number Male screw	Lm (mm)					
	10	16	20	25	30	40
KLM-20-M5	●	●	●			
KLM-20-M6	●	●	●		●	
KLM-25-M5			●	●		
KLM-25-M6		●	●	●	●	
KLM-25-M8			●	●		
KLM-32-M6			●	●		
KLM-32-M8		●	●	●	●	●
KLM-32-M10					●	●
KLMS-20-M5		●	●			
KLMS-20-M6	●	●	●			
KLMS-25-M5			●	●		
KLMS-25-M6		●	●	●		
KLMS-32-M6			●	●		
KLMS-32-M8		●	●	●		

• Related Products

Low-height dimple knob **KDM**
KDMS **KDF** **KDFS** is available.
→ P.295



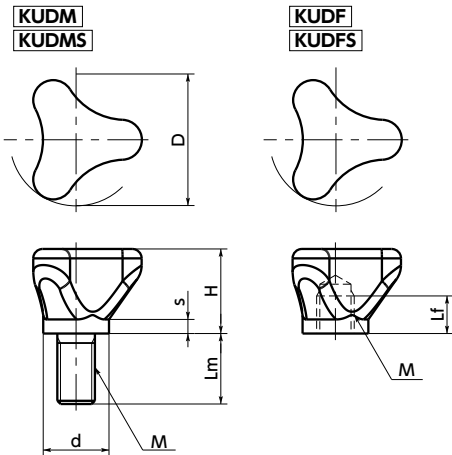
• Part number specification

KLM- 32 - M6 - 25

For male screw type, select a thread length Lm from the dimension table.

KUDM / KUDMS / KUDF / KUDFS Plastic Miniature Knob

WEB Selection Tool CAD Download SUS Stainless steel



- Designed in consideration of the seven principles of universal design. A shape for easy application of forces and operations.
- About Universal Design → P.265
- A rich variety of thread sizes from M3 to M10 are available.
- Five-color variations support the color universal design of machines / devices. Two-tone color of dark gray and various colors.
- Types and thread part materials can be selected by a product code.

Product Code	Type	Thread Part Material
KUDM	Male Screw	Made of Steel
KUDMS	Male Screw	Made of Stainless Steel
KUDF	Female Screw	Made of Steel
KUDFS	Female Screw	Made of Stainless Steel

- Knob colors can be selected by the end symbol of the part number.

End Symbol	Knob Color
BK	Matte black
SG	Matte silver
OR	Matte orange
BL	Matte blue
YW	Matte yellow

Dimensions

KUDM KUDMS Male Screw		Unit : mm					
Part Number Steel	Part Number Stainless steel	D	M (coarse)	H	s	d	Mass (g)
KUDM-16-M3	KUDMS-16-M3	16	M3	12.5	2	9	9 - 10
KUDM-16-M4	KUDMS-16-M4	16	M4	12.5	2	9	10 - 11
KUDM-16-M5	KUDMS-16-M5	16	M5	12.5	2	9	11 - 13
KUDM-20-M5	KUDMS-20-M5	20	M5	14	2.5	10	13 - 14
KUDM-20-M6	KUDMS-20-M6	20	M6	14	2.5	10	13 - 16
KUDM-25-M5	KUDMS-25-M5	25	M5	15.5	3	12	15 - 16
KUDM-25-M6	KUDMS-25-M6	25	M6	15.5	3	12	16 - 17
KUDM-32-M6	KUDMS-32-M6	32	M6	21	4	16	21 - 22
KUDM-32-M8	KUDMS-32-M8	32	M8	21	4	16	34 - 37
KUDM-40-M8	KUDMS-40-M8	40	M8	25	4	19.5	48 - 59
KUDM-40-M10	KUDMS-40-M10	40	M10	25	4	19.5	67 - 82

KUDF KUDFS Female Screw		Unit : mm						
Part Number Steel	Part Number Stainless steel	D 	M(coarse) 	Lf	H	s	d	Mass (g)
KUDF-16-M3	KUDFS-16-M3	16	M3	5	12.5	2	9	10
KUDF-16-M4	KUDFS-16-M4	16	M4	5	12.5	2	9	10
KUDF-16-M5	KUDFS-16-M5	16	M5	5	12.5	2	9	9
KUDF-20-M5	KUDFS-20-M5	20	M5	6	14	2.5	10	11
KUDF-20-M6	KUDFS-20-M6	20	M6	6	14	2.5	10	10
KUDF-25-M5	KUDFS-25-M5	25	M5	8	15.5	3	12	12
KUDF-25-M6	KUDFS-25-M6	25	M6	8	15.5	3	12	11
KUDF-32-M6	KUDFS-32-M6	32	M6	8	21	4	16	17
KUDF-32-M8	KUDFS-32-M8	32	M8	8	21	4	16	25
KUDF-40-M8	KUDFS-40-M8	40	M8	10	25	4	19.5	39
KUDF-40-M10	KUDFS-40-M10	40	M10	10	25	4	19.5	49

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
Not Available Female screw only/ Add'l charge Male screw only/ Add'l charge Male screw only/ Add'l charge Available / Add'l charge



RoHS2 Compliant

Material/Finish

	KUDM	KUDMS	KUDF	KUDFS
knob	Nylon 6 (Various Color)	Nylon 6 (Various Color)	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SS400 Trivalent Chromate Treatment	SUS303	S45C Trivalent Chromate Treatment	SUS303

KUDM Made of Steel KUDMS Made of Stainless Steel

Part Number Male screw	Lm (mm)						
	10	16	20	25	30	40	50
KUDM-16-M3	●	●					
KUDM-16-M4	●	●					
KUDM-16-M5	●	●	●				
KUDM-20-M5	●	●	●				
KUDM-20-M6	●	●	●	●			
KUDM-25-M5			●	●			
KUDM-25-M6		●	●	●			
KUDM-32-M6			●	●			
KUDM-32-M8		●	●	●			
KUDM-40-M8		●	●	●	●	●	●
KUDM-40-M10			●	●	●	●	●
KUDMS-16-M3	●	●					
KUDMS-16-M4	●	●					
KUDMS-16-M5	●	●	●				
KUDMS-20-M5	●	●	●				
KUDMS-20-M6	●	●	●	●			
KUDMS-25-M5			●	●			
KUDMS-25-M6		●	●	●			
KUDMS-32-M6			●	●			
KUDMS-32-M8		●	●	●			
KUDMS-40-M8		●	●	●	●	●	●
KUDMS-40-M10			●	●	●	●	●

Related Products

Plastic wing knob of the universal design **KUWM** is available.
→ P.305



Part number specification

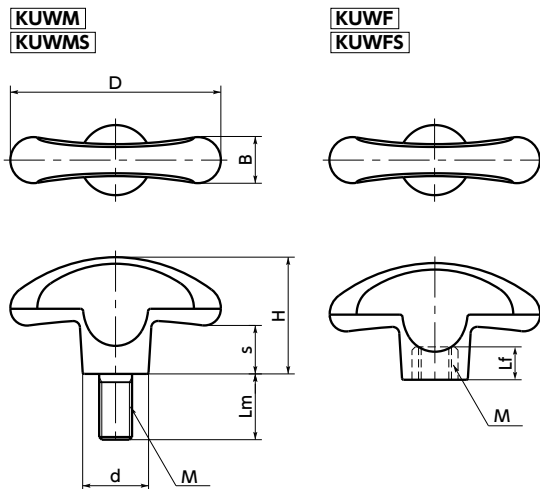
KUDMS-16-M3-10-BK

1 2 3 4 5

For male screw type, select a 4 thread length Lm from the dimension table.

KUWM / KUWMS / KUWF / KUWFS Plastic Wing Knob

WEB Selection Tool CAD Download SUS Stainless steel



- Designed in consideration of the seven principles of universal design. A shape for easy application of forces and operations.
- About Universal Design → P.265
- A rich variety of thread sizes from M4 to M10 are available.
- Five-color variations support the color universal design of machines / devices. Two-tone color of dark gray and various colors.
- Types and thread part materials can be selected by a product code.

Product Code	Type	Thread Part Material
KUWM	Male Screw	Made of Steel
KUWMS	Male Screw	Made of Stainless Steel
KUWF	Female Screw	Made of Steel
KUWFS	Female Screw	Made of Stainless Steel

- Knob colors can be selected by the end symbol of the part number.

End Symbol	Knob Color
BK	Matte black
SG	Matte silver
OR	Matte orange
BL	Matte blue
YW	Matte yellow

● Material/Finish

	KUWM	KUWMS	KUWF	KUWFS
knob	Nylon 6 (Various Color)	Nylon 6 (Various Color)	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SS400 Trivalent Chromate Treatment	SUS303	S45C Trivalent Chromate Treatment	SUS303



Dimensions

KUWM KUWMS Male Screw									Unit : mm
Part Number Steel	Part Number Stainless steel	D	M(coarse)	H	s	B	d	Mass (g)	
KUWM-32-M4	KUWMS-32-M4	32	M4	19	8.4	7	10	10 - 11	
KUWM-32-M5	KUWMS-32-M5	32	M5	19	8.4	7	10	12 - 14	
KUWM-40-M6	KUWMS-40-M6	40	M6	23	10	8.75	13	15 - 18	
KUWM-50-M8	KUWMS-50-M8	50	M8	27.8	11.4	11	16	32 - 38	
KUWM-64-M8	KUWMS-64-M8	64	M8	35.5	14.8	14	21	43 - 49	
KUWM-64-M10	KUWMS-64-M10	64	M10	35.5	14.8	14	21	60 - 70	

KUWF KUWFS Female Screw									Unit : mm
Part Number Steel	Part Number Stainless steel	D	M(coarse)	Lf	H	s	B	d	Mass (g)
KUWF-32-M4	KUWFS-32-M4	32	M4	5	19	8.4	7	10	9
KUWF-32-M5	KUWFS-32-M5	32	M5	5	19	8.4	7	10	9
KUWF-40-M6	KUWFS-40-M6	40	M6	6	23	10	8.75	13	10
KUWF-50-M8	KUWFS-50-M8	50	M8	7	27.8	11.4	11	16	22
KUWF-64-M8	KUWFS-64-M8	64	M8	9	35.5	14.8	14	21	33
KUWF-64-M10	KUWFS-64-M10	64	M10	9	35.5	14.8	14	21	42

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Female screw only/ Add'l charge	Male screw only/ Add'l charge	Male screw only/ Add'l charge	Available / Add'l charge



KUWM Made of Steel KUWMS Stainless Steel

Part Number Male screw	Lm (mm)				
	10	16	20	30	40
KUWM-32-M4	●	●	●		
KUWM-32-M5		●	●	●	
KUWM-40-M6			●	●	●
KUWM-50-M8			●	●	●
KUWM-64-M8			●	●	●
KUWM-64-M10			●	●	●
KUWMS-32-M4	●	●	●		
KUWMS-32-M5		●	●	●	
KUWMS-40-M6			●	●	●
KUWMS-50-M8			●	●	●
KUWMS-64-M8			●	●	●
KUWMS-64-M10			●	●	●

● Related Products

Plastic miniature knob of the universal design [KUDM] is available.

→ P.303



● Part number specification

KUWMS-32-M4-10-BK

1 2 3 4 5

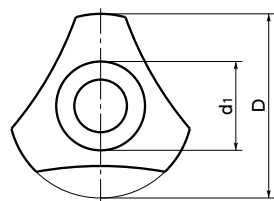
For male screw type, select a 4 thread length Lm from the dimension table.

SS / SK Super Knob

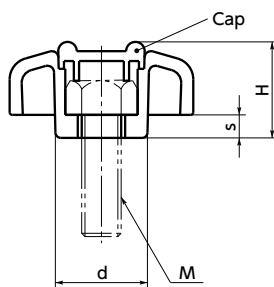
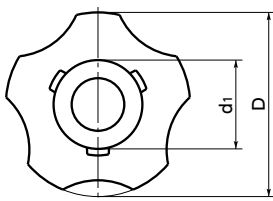
WEB Selection Tool WEB CAD Download



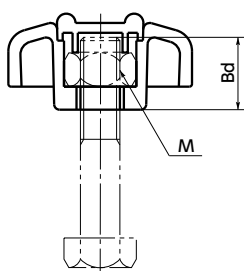
SS



SK



Hexagon Head Bolt → Male Screw Knob



Hexagon Nut → Female Screw Knob



- Any commercially available hexagon head bolt and type-three hexagon nut can be used regardless of manufacturers and materials. You can make a knob easily by just inserting them.
- Especially for hexagon head bolts, any thread length can be selected.
- There are two types: triangular knob **SS** and pentagon knob **SK**.
- Two cap colors are white and yellow. They can be selected by the end symbol of the part number.

End Symbol	Cap color
YW	Yellow
WH	White

	SS	SK
knob	Nylon 66 (Black)	Nylon 66 (Black)
Cap	Nylon 66 (Various Color)	Nylon 66 (Various Color)

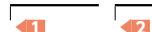
- Assembling method
 - Securely fit a hexagon head bolt and hexagon nut into the hexagon socket of the knob main body.
 - Next, fit the cap. Fit two of the three hooks in.
 - Press in the remaining one by using a screwdriver or a paddle.
- For female screw knob, pay attention to the male screw and tightening dimensions (Bd dimension of the drawing). The cap may come off.

SS Triangular Knob SK Pentagon Knob

Part Number	D	M (Coarse)	H	s	d ₁	d	Bd	Mass (g)
SS-37	38	M6	16.5	3.4	15.2	16	14	5
SS-42	42	M8	19	4.5	18.2	20	15	10
SS-47	47	M10	23.2	5.9	21.8	24	18	15
SK-34	35.2	M6	16.5	3.2	15.2	16	14	5
SK-38	39.6	M8	19	4.5	18.2	20	15	10
SK-43	45	M10	23.2	6	21.8	24	18	15
SK-53	53	M12	22.3	4	24.8	27	14	20

- Part number specification

SS-37-YW



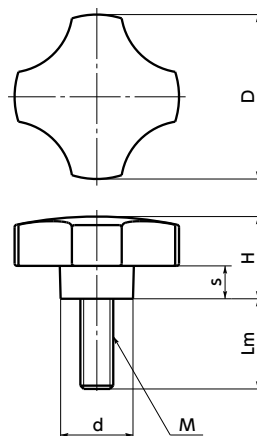
Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Not Available	Not Available	Available / Add'l charge

KF / KGC Plastic Star Knob

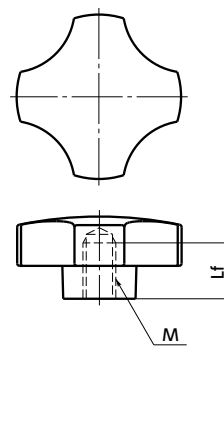
WEB Selection Tool WEB CAD Download



KF



KGC



- Material/Finish

	KF	KGC
knob	Nylon 6 (Various Color)	Nylon 6 (Various Color)
Thread Part	SS400 Trivalent Chromate Treatment	Brass

KF Male Screw

Part Number	D	M (Coarse)	Lm	H	s	d	Mass (g)
KF-25-BK	25	M5	25	15	6	11	11
KF-25-RD	25	M5	25	15	6	11	11
KF-33-BK	33	M6	30	16.5	7	12	17
KF-33-RD	33	M6	30	16.5	7	12	17
KF-40-BK	40	M8	40	19	7.5	18	37
KF-40-RD	40	M8	40	19	7.5	18	37
KF-45-BK	45	M10	40	22	9	22	60
KF-50-BK	50	M12	40	22	9	23	80

KGC Female Screw

Part Number	D	M (Coarse)	Lf	H	s	d	Mass (g)
KGC-25-BK	25	M5	9	15	6	11	10
KGC-25-RD	25	M5	9	15	6	11	10
KGC-33-BK	33	M6	9	16.5	7	12	12
KGC-33-RD	33	M6	9	16.5	7	12	12
KGC-40-BK	40	M8	12	19	7.5	18	18
KGC-40-RD	40	M8	12	19	7.5	18	18
KGC-45-BK	45	M10	12	22	9	22	25
KGC-45-RD	45	M10	12	22	9	22	25
KGC-50-BK	50	M12	14	22	9	23	40

- Part number specification

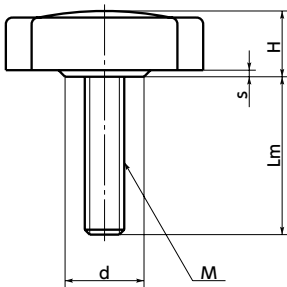
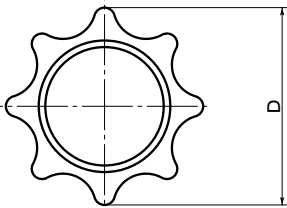
KF-25-BK



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Female screw only/ Add'l charge	Female screw only/ Add'l charge	Male screw only/ Add'l charge	Male screw only/ Add'l charge	Available / Add'l charge

KP Eight Lobe Knob

WEB Selection Tool WEB CAD Download



● Material/Finish RoHS2 Compliant

	KP
knob	Nylon 6 (Black)
Thread Part	SS400 Trivalent Chromate Treatment

Part Number	D	M (Coarse)	Lm	H	s	d	Mass (g)
KP-30A	30	M6	30	10	3	15	12
KP-30	30	M8	30	10	3	15	17
KP-50	50	M10	40	16	2	20	49
KP-65	65	M10	50	18	2	23	66
KP-65B	65	M12	50	18	2	23	83

● Part number specification

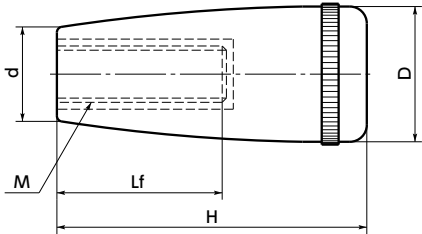
KP-50



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

KDC Pillar Grip

WEB Selection Tool WEB CAD Download



KDC-RD

KDC-BK

- There are two color variations. They can be selected by the end symbol of the part number.
End Symbol **BK** — Black
End Symbol **RD** — Red

● Material/Finish RoHS2 Compliant

	KDC
Grip	Nylon 6 (Various Color)
Thread Part	Brass

Part Number		D	M (Coarse)	Lf	d	H	Mass (g)
BK	RD						
KDC-6-BK	KDC-6-RD	19	M6	9	14	35	11
KDC-8-BK	KDC-8-RD	19	M8	10	14	35	13
KDC-8B-BK	KDC-8B-RD	20	M8	18	14	45	16
KDC-10-BK	KDC-10-RD	24	M10	18	16.5	55	26
KDC-10B-BK		26	M10	18	18	65	30

● Part number specification

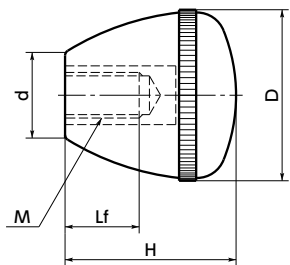
KDC-6-BK



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Please feel free to contact us	Not Available	Not Available	Available / Add'l charge

KEC Conical Grip

WEB Selection Tool WEB CAD Download



- There are two color variations. They can be selected by the end symbol of the part number.
End Symbol **BK** — Black
End Symbol **RD** — Red
 - Material/Finish ● RoHS2 Compliant
- | | |
|-------------|-------------------------|
| | KEC |
| Grip | Nylon 6 (Various Color) |
| Thread Part | Brass |

Part Number	D	M (Coarse)	Lf	d	H	Mass (g)
KEC-6-BK	25	M6	9	13	25	10
KEC-8-BK	30	M8	13	15	30	18
KEC-8-RD	30	M8	13	15	30	18

- Part number specification

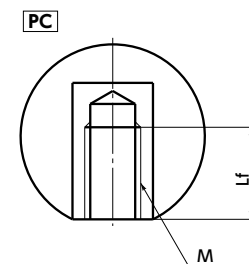
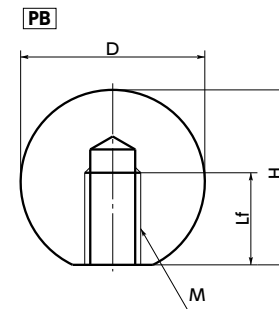
KEC-6-BK



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Please feel free to contact us	Not Available	Not Available	Available / Add'l charge

PB / PC Plastic Ball Knob

WEB Selection Tool WEB CAD Download



- Thermosetting resin. It has a high durability.
- Types can be selected by a product code. ❶
PB — Without insert
PC — With insert
- There are two color variations. They can be selected by the end symbol of the part number. ❷
End Symbol **BK** — Black
End Symbol **RD** — Red

	PB	PC
Ball Part	BK : Phenol Resin (Black) RD : Melamine Resin (Red)	BK : Phenol Resin (Black) RD : Melamine Resin (Red)
Thread Part		Brass

Part Number	D	M (coarse)	Lf	H	Mass (g)
PB-20-M6	20	M6	10	18	5.6
PB-20-M8	20	M8	10	18	5.2
PB-25-M6	25	M6	10	23	11
PB-25-M8	25	M8	12	23	10
PB-30-M8	30	M8	16	28	19
PB-30-M10	30	M10	18	28	18
PB-35-M8	35	M8	16	32	31
PB-35-M10	35	M10	18	32	30
PB-40-M10	40	M10	18	37	47
PB-40-M12	40	M12	18	37	44
PC-20-M6	20	M6	10	18	7
PC-25-M6	25	M6	10	23	15
PC-25-M8	25	M8	12	23	15
PC-30-M8	30	M8	12	28	30
PC-30-M10	30	M10	15	28	30
PC-35-M8	35	M8	12	32	40
PC-35-M10	35	M10	15	32	40
PC-40-M10	40	M10	15	37	55
PC-40-M12	40	M12	15	37	50

- Part number specification

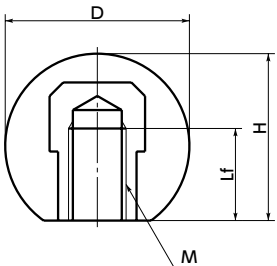
PB - 25 - M6 - BK



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Not Available	Not Available	Not Available	BK only/ Add'l charge

KGB Gum Ball Knob

WEB Selection Tool WEB CAD Download



- Made of gum with soft touch.
- Material/Finish ✓ RoHS2 Compliant

	KGB
Ball Part	EPDM (Matte Black)
Thread Part	S45C Trivalent Chromate Treatment

Part Number	D 1	M (coarse) 2	Lf	H	Mass (g)
KGB-20-M6	20	M6	10	18	10
KGB-25-M8	25	M8	12.5	22.5	15
KGB-32-M10	32	M10	16	29	25
KGB-40-M12	40	M12	20	36	40

Unit : mm

- Part number specification

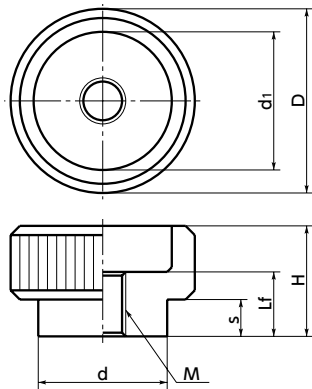
KGB-20-M6

Product Code 1 2

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Not Available	Not Available	Not Available

KCF / KCFS Clamp Knob

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Items made of steel / items made of stainless steel are standardized.
- Material/Finish ✓ RoHS2 Compliant

	KCF-BK Made of Steel	KCFS Made of Stainless Steel
Main body	S45C Ferrosoferric Oxide Film (Black)	SUS303

Part Number Steel	Part Number Stainless steel	D 1	M (coarse) 2	Lf	H	s	d	d1	Mass (g)
KCF-20-M5-BK	KCFS-20-M5	20	M5	7	12	4	14	15	17
KCF-24-M6-BK	KCFS-24-M6	24	M6	8	14	4	16	18	30
KCF-30-M8-BK	KCFS-30-M8	30	M8	10	17	5	20	24	50
KCF-36-M10-BK	KCFS-36-M10	36	M10	12	20	6	28	30	90
KCF-40-M12-BK	KCFS-40-M12	40	M12	16	24	8	32	34	125

Unit : mm

- Part number specification

KCF-30-M8-BK

Product Code 1 2 Product Code

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
S.S. only/ Add'l charge	Available / Add'l charge	Not Available	Not Available	S.S. only/ Add'l charge

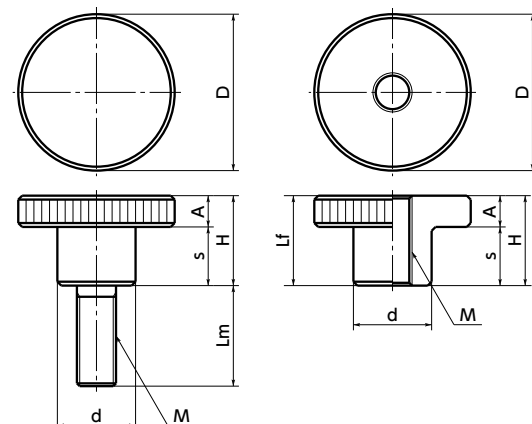
KNM/KNMS/KNF/KNFS Knurled Knobs

WEB Selection Tool CAD Download SUS Stainless steel



KNM
KNMS

KNF
KNFS



- A rich variety of thread sizes from M3 to M10 are available.
- There are two types of materials.
 - KNM KNF — Made of steel
 - KNMS KNFS — Made of Stainless Steel
- Materials and types can be selected by a product code.

Product Code	Material	Type
KNM	Made of Steel	Male Screw
KNF	Made of Steel	Female Screw
KNMS	Made of Stainless Steel	Male Screw
KNFS	Made of Stainless Steel	Female Screw

- KNM has a round-shaped thread tip to be distinguished from KNMS, KNMS-KF.

Material/Finish

RoHS2 Compliant

	KNM	KNF	KNMS / KNFS
Main Body	SWCH10R Buffing / Chrome Plating	SUM22L Buffing / Chrome Plating	SUS303*1

*1: For KNMS-36-M10, it is SUS304.

Dimensions

KNM KNMS Male Screw									Unit : mm
Part Number Steel	Part Number Stainless Steel	D	M (Coarse)	H	s	A	d	Mass (g)	
KNM-12-M3	KNMS-12-M3	12	M3	7.5	5	2.5	6	3 - 4	
KNM-16-M4	KNMS-16-M4	16	M4	9.5	6	3.5	8	9 - 10	
KNM-20-M5	KNMS-20-M5	20	M5	11.5	7.5	4	10	15 - 16	
KNM-24-M6	KNMS-24-M6	24	M6	15	10	5	12	28 - 32	
KNM-30-M8	KNMS-30-M8	30	M8	18	12	6	16	58 - 61	
KNM-36-M10	KNMS-36-M10	36	M10	23	15	8	20	108 - 120	

KNF KNFS Female Screw									Unit : mm
Part Number Steel	Part Number Stainless Steel	D	M (Coarse)	Lf	H	s	A	d	Mass (g)
KNF-12-M3	KNFS-12-M3	12	M3	7.5	7.5	5	2.5	6	3
KNF-16-M4	KNFS-16-M4	16	M4	9.5	9.5	6	3.5	8	7
KNF-20-M5	KNFS-20-M5	20	M5	11.5	11.5	7.5	4	10	13
KNF-24-M6	KNFS-24-M6	24	M6	15	15	10	5	12	23
KNF-30-M8	KNFS-30-M8	30	M8	18	18	12	6	16	45
KNF-36-M10	KNFS-36-M10	36	M10	23	23	15	8	20	86

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
S.S. only/ Add'l charge Female screw only/ Add'l charge Male screw only/ Add'l charge Male screw only/ Add'l charge S.S. only/ Add'l charge



KNM KNF Made of Steel KNMS KNFS Made of Stainless Steel

Part Number Male Screw	Lm (mm)						
	6	10	16	20	25	30	40
KNM-12-M3	●	●	●				
KNM-16-M4	●	●	●				
KNM-20-M5		●	●	●			
KNM-24-M6		●	●	●	●	●	
KNM-30-M8			●	●	●	●	
KNM-36-M10				●	●	●	●
KNMS-12-M3	●	●	●				
KNMS-16-M4	●	●	●				
KNMS-20-M5		●	●	●			
KNMS-24-M6		●	●	●	●	●	
KNMS-30-M8			●	●	●	●	
KNMS-36-M10				●	●	●	●

Related Products

Flat type knurled knobs KUM
KUF KUMS KUFS are available.
→ P.317



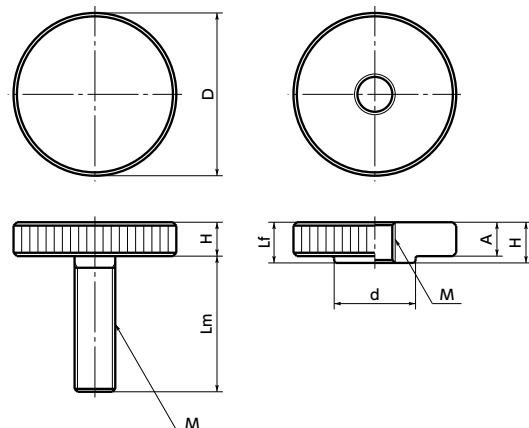
Captive knurled knob KNM-SC
is available.
→ P.321



Part number specification

KNM - 24 - M6 - 20
1 2 3 4

For male screw type, select a thread length Lm from the dimension table.

KUM
KUMSKUF
KUFS

- **KUM** has a round-shaped thread tip to be distinguished from **KUMS** **KUMS-KF**.

• Material/Finish



	KUM	KUF	KUMS / KUFS
Main Body	SWCH10R Buffing / Chrome Plating	SUM22L Buffing / Chrome Plating	SUS303*1

*1: For **KUMS-36-M10**, it is SUS304.

Dimensions

KUM KUMS Male Screw

Unit : mm

Part Number Steel	Part Number Stainless Steel	D ²	M (Coarse) ³	H	Mass (g)
KUM-12-M3	KUMS-12-M3	12	M3	2.5	2 - 4
KUM-16-M4	KUMS-16-M4	16	M4	3.5	5 - 7
KUM-20-M5	KUMS-20-M5	20	M5	4	12 - 13
KUM-24-M6	KUMS-24-M6	24	M6	5	20 - 25
KUM-30-M8	KUMS-30-M8	30	M8	6	40 - 46
KUM-36-M10	KUMS-36-M10	36	M10	8	78 - 90

KUF KUFS Female Screw

Unit : mm

Part Number Steel	Part Number Stainless Steel	D ²	M (Coarse) ³	Lf	A	d	H	Mass (g)
KUF-12-M3	KUFS-12-M3	12	M3	3	2.5	6	3	2
KUF-16-M4	KUFS-16-M4	16	M4	4	3.5	8	4	5
KUF-20-M5	KUFS-20-M5	20	M5	5	4	10	5	10
KUF-24-M6	KUFS-24-M6	24	M6	6	5	12	6	18
KUF-30-M8	KUFS-30-M8	30	M8	8	6	16	8	34
KUF-36-M10	KUFS-36-M10	36	M10	10	8	20	10	64

- Flat type knurled knobs.
- A rich variety of thread sizes from M3 to M10 are available.
- There are two types of materials.
KUM **KUF** — Made of steel
KUMS **KUFS** — Made of Stainless Steel
- Materials and types can be selected by a product code.

Product Code ¹	Material	Type
KUM	Made of Steel	Male Screw
KUF	Made of Steel	Female Screw
KUMS	Made of Stainless Steel	Male Screw
KUFS	Made of Stainless Steel	Female Screw



KUM KUF Made of Steel KUMS KUFS Made of Stainless Steel

Part Number Male Screw	Lm (mm) ⁴	6	10	16	20	25	30	40
KUM-12-M3		●	●	●				
KUM-16-M4		●	●	●				
KUM-20-M5			●	●	●			
KUM-24-M6			●	●	●	●	●	
KUM-30-M8				●	●	●	●	
KUM-36-M10					●	●	●	●
KUMS-12-M3		●	●	●				
KUMS-16-M4		●	●	●				
KUMS-20-M5			●	●	●			
KUMS-24-M6			●	●	●	●	●	
KUMS-30-M8				●	●	●	●	
KUMS-36-M10					●	●	●	●

• Related Products

Standard type knurled knobs
KNM **KNF** **KNMS** **KNFS** are
available.
➔ P.315



Flat type captive knurled knob
KUM-SC is available.
➔ P.322



• Part number specification

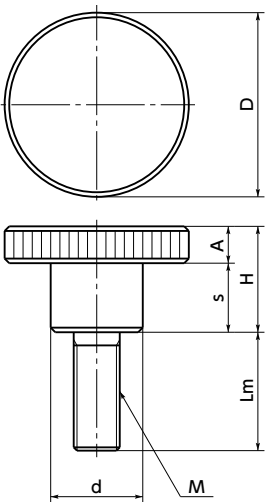
KUM - 24 - M6 - 20
¹ ² ³ ⁴

For male screw type, select a ⁴ thread length Lm from the dimension table.

KNMS-BK Knurled Knob (Stainless Steel Black)



WEB Selection Tool WEB CAD Download SUS Stainless steel



- Stainless steel black is surface treatment with passive film on the stainless steel surface grown 200 times more than normally to produce deep black. After the treatment, corrosion resistance and weather resistance is significantly improved.
- No impurities are contained in the film itself and only a trace amount of outgas exists in a vacuum environment.
- Spectral reflectivity of 1.5% or below. For applications such as optical equipment that requires antireflection. ➔ P.646
- Deep black. For decorated surfaces of equipment / device.

Material/Finish		RoHS2 Compliant
KNMS-BK		
Main body	SUS303 Stainless steel black	

Dimensions

Unit : mm

Part Number	D ❶	M(coarse) ❷	H	s	A	d	Mass (g)
KNMS-16-M4-BK	16	M4	9.5	6	3.5	8	9 - 10
KNMS-20-M5-BK	20	M5	11.5	7.5	4	10	15 - 16
KNMS-24-M6-BK	24	M6	15	10	5	12	28 - 32

Part Number	Lm (mm) ❸					
	6	10	16	20	25	30
KNMS-16-M4-BK	●	●	●			
KNMS-20-M5-BK		●	●	●		
KNMS-24-M6-BK		●	●	●	●	●

Related Products

A hex socket head cap screws with stainless steel black treatment **[SNSS-BK]** is available.
➔ P.675



Part number specification

KNMS - 24 - M6 - 20 - BK

Product code ❶ ❷ ❸ Stainless Steel Black

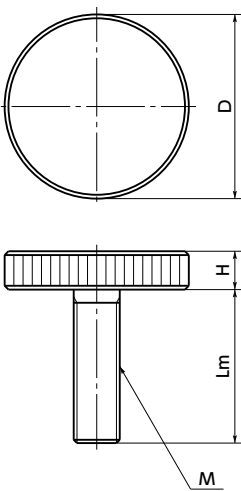
Select a ❸ thread length Lm from the dimension table.

Cleanroom Wash & Packaging ➔ P.807	Screw Combination ➔ P.813	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821
Available / Add'l charge	Not Available	Not Available	Not Available	Available / Add'l charge

KUMS-BK Knurled Knob (Stainless Steel Black)



WEB Selection Tool WEB CAD Download SUS Stainless steel



- Stainless steel black is surface treatment with passive film on the stainless steel surface grown 200 times more than normally to produce deep black. After the treatment, corrosion resistance and weather resistance is significantly improved.
- No impurities are contained in the film itself and only a trace amount of outgas exists in a vacuum environment.
- Spectral reflectivity of 1.5% or below. For applications such as optical equipment that requires antireflection. ➔ P.646
- Deep black. For decorated surfaces of equipment / device.

Material/Finish		RoHS2 Compliant
KUMS-BK		
Main body	SUS303 Stainless steel black	

Dimensions

Unit : mm

Part Number	D ❶	M(coarse) ❷	H	Mass (g)
KUMS-16-M4-BK	16	M4	3.5	5 - 7
KUMS-20-M5-BK	20	M5	4	12 - 13
KUMS-24-M6-BK	24	M6	5	20 - 25

Part Number	Lm (mm) ❸					
	6	10	16	20	25	30
KUMS-16-M4-BK	●	●	●			
KUMS-20-M5-BK		●	●	●		
KUMS-24-M6-BK		●	●	●	●	●

Related Products

A hex socket head cap screws with stainless steel black treatment **[SNSS-BK]** is available.
➔ P.675



Part number specification

KUMS - 24 - M6 - 20 - BK

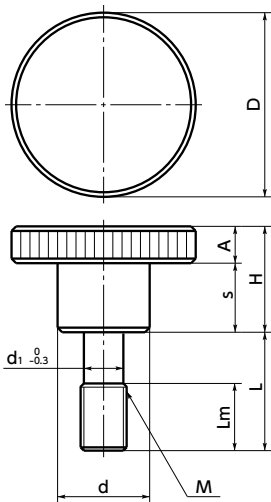
Product code ❶ ❷ ❸ Stainless Steel Black

Select a ❸ thread length Lm from the dimension table.

Cleanroom Wash & Packaging ➔ P.807	Screw Combination ➔ P.813	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821
Available / Add'l charge	Not Available	Not Available	Not Available	Available / Add'l charge

KNM-SC Captive Knurled Knob

WEB Selection Tool WEB CAD Download



- Captive type knurled knob. It prevents fall-off and missing of the knob.

• Material/Finish RoHS2 Compliant

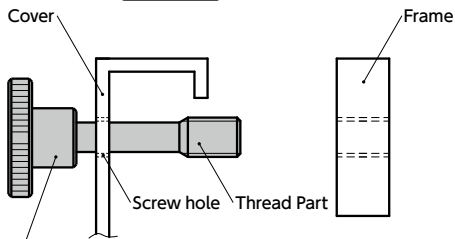
	KNM-SC
Main body	SWCH10R Buffing / Chrome Plating

- ⚠ **Precautions for Use**
Screw hole inner diameter on the cover side shall be at least the d1 dimension.
The cover thickness should be 0.8 mm or above.

• Part number specification

KNM-24-M6-20-SC

Product Code 1 2 3 Captive
Select a 3 thread length L from the dimension table.



KNM-SC Captive Knurled Knob

Dimensions

Unit : mm

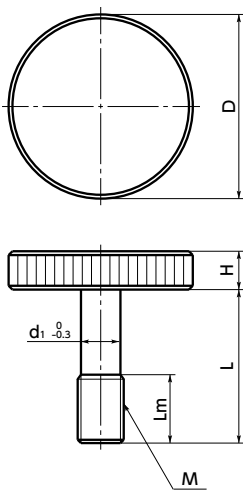
Part Number	D 1	M (coarse) 2	Lm	H	s	A	d	d1	Mass (g)
KNM-12-M3-SC	12	M3	4	7.5	5	2.5	6	2.2	3 - 4
KNM-16-M4-SC	16	M4	5	9.5	6	3.5	8	3	8 - 9
KNM-20-M5-SC	20	M5	6	11.5	7.5	4	10	3.9	15 - 16
KNM-24-M6-SC	24	M6	8	15	10	5	12	4.6	28 - 30
KNM-30-M8-SC	30	M8	10	18	12	6	16	6.3	55 - 59
KNM-36-M10-SC	36	M10	12	23	15	8	20	8	107 - 115

Part Number	L (mm) 3					
	10	16	20	25	30	40
KNM-12-M3-SC	●	●				
KNM-16-M4-SC	●	●				
KNM-20-M5-SC	●	●	●			
KNM-24-M6-SC		●	●	●	●	
KNM-30-M8-SC		●	●	●	●	●
KNM-36-M10-SC			●	●	●	●

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
Not Available Not Available Not Available Available / Add'l charge Not Available

KUM-SC Captive Knurled Knob

WEB Selection Tool WEB CAD Download



- Captive type knurled knob. It prevents fall-off and missing of the knob.
- Flat type.

• Material/Finish RoHS2 Compliant

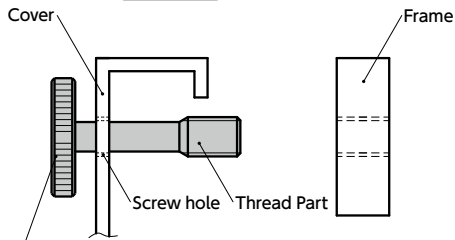
	KUM-SC
Main body	SWCH10R Buffing / Chrome Plating

- ⚠ **Precautions for Use**
Screw hole inner diameter on the cover side shall be at least the d1 dimension.
The cover thickness should be 0.8 mm or above.

• Part number specification

KUM-24-M6-20-SC

Product Code 1 2 3 Captive
Select a 3 thread length L from the dimension table.



KUM-SC Captive Knurled Knob

Dimensions

Unit : mm

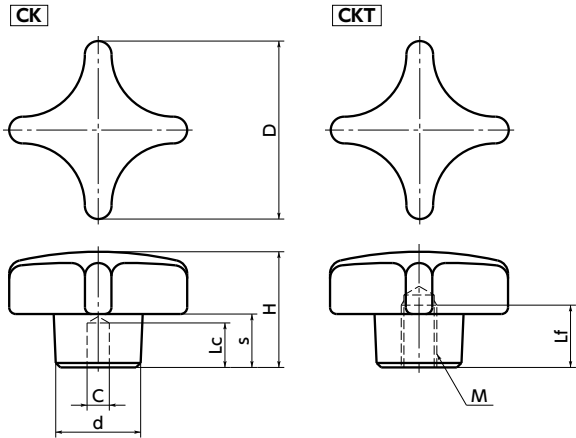
Part Number	D 1	M (coarse) 2	Lm	H	d1	Mass (g)
KUM-12-M3-SC	12	M3	4	2.5	2.2	2 - 3
KUM-16-M4-SC	16	M4	5	3.5	3	6
KUM-20-M5-SC	20	M5	6	4	3.9	11 - 12
KUM-24-M6-SC	24	M6	8	5	4.6	20 - 21
KUM-30-M8-SC	30	M8	10	6	6.3	36 - 40
KUM-36-M10-SC	36	M10	12	8	8	69 - 77

Part Number	L (mm) 3					
	10	16	20	25	30	40
KUM-12-M3-SC	●	●				
KUM-16-M4-SC	●	●				
KUM-20-M5-SC	●	●	●			
KUM-24-M6-SC		●	●	●	●	
KUM-30-M8-SC		●	●	●	●	●
KUM-36-M10-SC			●	●	●	●

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
Not Available Not Available Not Available Available / Add'l charge Not Available

CK / CKT Star Knob

WEB Selection Tool WEB CAD Download



- Pilot hole / female screw can be selected by a product code. 1 2

CK Pilot Hole
CKT Female Screw

- Material/Finish

	CK / CKT
Main body	FC200 Wrinkle Baking Paint (black)

CK Pilot Hole

Part Number	D 2	C	Lc	H	s	d	Mass (g)
CK-40	40	5	10	25	13	18	75
CK-50	50	5	10	32	18	22	135
CK-63	63	5	10	40	23	26	270

CKT Female Screw

Part Number	D 2	M (Coarse)	Lf	H	s	d	Mass (g)
CKT-40	40	M8	14	25	13	18	75
CKT-50	50	M10	18	32	18	22	135
CKT-63	63	M12	22	40	23	26	270

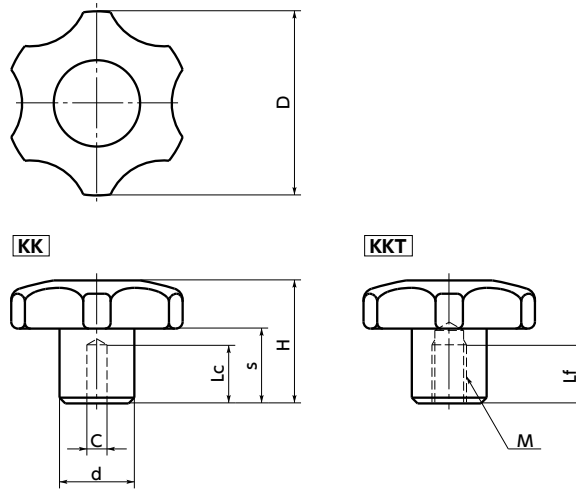
- Part number specification

CK - 40
1 2

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Female screw only/ Add'l charge	Not Available	Not Available	Not Available

KK / KKT Hexagon Knob

WEB Selection Tool WEB CAD Download



- Types can be selected by a product code. 1 2

KK Pilot Hole
KKT Female Screw

- Material/Finish

	KK / KKT
Main unit	FC200 Chrome Plating

KK Pilot Hole

Part Number	D 2	Lc	H	s	C	d	Mass (g)
KK-32	32	10	22	13	5	13	60
KK-40	40	10	25	16	5	16	100
KK-50	50	10	32	20	5	20	200
KK-63	63	10	40	25	5	25	350
KK-80	80	10	50	32	5	32	700

KKT Female Screw

Part Number	D 2	M (Coarse)	Lf	H	s	d	Mass (g)
KKT-32	32	M6	10	22	13	13	60
KKT-40	40	M8	14	25	16	16	100
KKT-50	50	M10	18	32	20	20	200
KKT-63	63	M12	22	40	25	25	350
KKT-80	80	M16	30	50	32	32	700

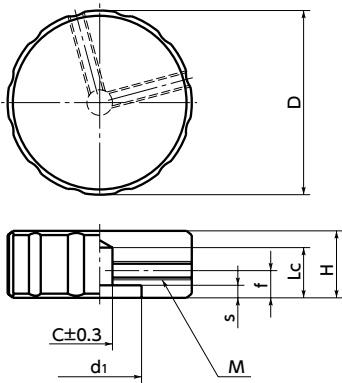
- Part number specification

KKT - 32
1 2

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Female screw only/ Add'l charge	Not Available	Not Available	Not Available

EAT Metal Knob

WEB Selection Tool WEB CAD Download



- **EAT-22** **EAT-27** **EAT-33** has symbol marks.

- Material/Finish RoHS2 Compliant

	EAT
Main body	Aluminum Alloy Alumite Treatment

Part Number	D	H	d1	s	f	M (Coarse)	Lc	C	Mass (g)
EAT-22	22	15	16	3	5	1 - M4	13	6.1	12
EAT-27	26.5	17	20	3	6	1 - M4	15	6.1	22
EAT-33	33	17	20	3	7	1 - M4	15	6.1	33
EAT-44	44	16	20	3	6	2 - M4	12	6.1	58

- Hex socket set screw is provided.

- Part number specification

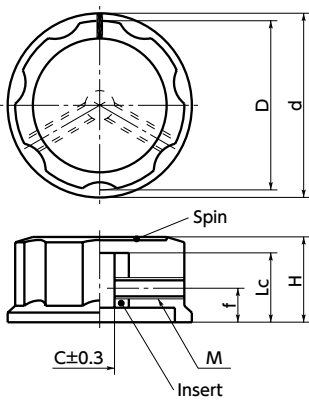
EAT-22



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Not Available	Not Available	Not Available	Available / Add'l charge

EAC Rimmed Spin Knob

WEB Selection Tool WEB CAD Download



EAC-BK

EAC-SL

- Spin colors can be selected by the end symbol of the part number. End Symbol **BK** — Black End Symbol **SL** — Silver

- Material/Finish RoHS2 Compliant

	EAC
Knob	Phenol Resin (Black)
Spin	Aluminum Alloy (Various Color)
Insert	Brass

Part Number	D	d	H	f	M (Coarse)	C	Lc	Mass (g)
EAC-19	18.9	21.8	13.5	7	1 - M4	6.1	10.7	7
EAC-23	22.6	25.7	14.4	6.5	1 - M4	6.1	11.9	12
EAC-30	29.9	32.8	16.1	7.5	2 - M4	6.1	15	15

- Hex socket set screw is provided.

- Part number specification

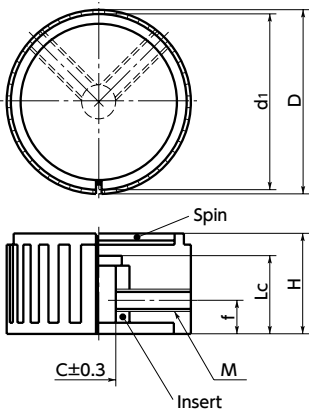
EAC-19-BK



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Not Available	Not Available	Available / Add'l charge

EAE Spin Knob

WEB Selection Tool WEB CAD Download



● Material/Finish

RoHS2 Compliant

	EAE
Knob	Phenol Resin (Black)
Spin	Aluminum Alloy (Silver)
Insert	Brass

Part Number	D	d1	H	f	M (Coarse)	C	Lc	Mass (g)
EAE-11	11.1	10.7	12	5	1 - M3	3.3	11	4
EAE-22	21.8	21.5	14.1	5.5	2 - M4	6.1	11.8	10
EAE-33	32.8	31.8	18	6	2 - M4	6.1	14	20

● Hex socket set screw is provided.

● Part number specification

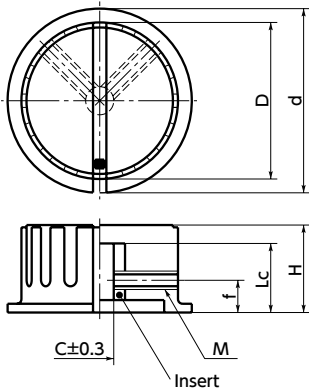
EAE-11



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Not Available	Not Available	Available / Add'l charge

EAM Rimmed Knob

WEB Selection Tool WEB CAD Download



● Material/Finish

RoHS2 Compliant

	EAM
Knob	Phenol Resin (Black)
Insert	Brass

Part Number	D	d	H	f	M (Coarse)	C	Lc	Mass (g)
EAM-12	12	15	14	5	1 - M3	6.1	11	3
EAM-16	16	20	15	6	1 - M4	6.1	13	5
EAM-21	21	24.2	16	6	1 - M4	6.1	13	12
EAM-25	25	30	17	7	2 - M4	6.1	14	13
EAM-29	29	35	18	7	2 - M4	6.1	14	17
EAM-34	34	40	19	7	2 - M4	6.1	15	20

● Hex socket set screw is provided.

● Part number specification

EAM-12

Product Code



Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Not Available	Not Available	Not Available	Available / Add'l charge

Pulls

● Metal Pull

Product Code	UNFA/UNFA-W	UNF/UNF-W	UNFS/UNFS-W	UNMS-SC	TGY/TG
Page	P.331 • P.333	P.331 • P.333	P.331 • P.333	P.330	P.335
Shape					
Pull Part Material	Aluminum Alloy	Steel	Stainless Steel	Stainless Steel	Stainless Steel

● Washer for Pull

Product Code	LY	LYSC-N	LYSC-N-SSC
Page	P.336	P.337	P.339
Shape			
Characteristics	Washer	Captive Washer	Washer with Captive Screw

● Plastic Pull

Product Code	UUDF	UGF
Page	P.341	P.342
Shape		
Pull Part Material	Plastic	Rubber

● Other Pulls

Product Code	TA	TCY/TC
Page	P.343	P.344
Shape		
Pull Part Material	Plastic	Zinc die cast

Quick Reference of Material, Mounting Dimension, and Shape

● Metal

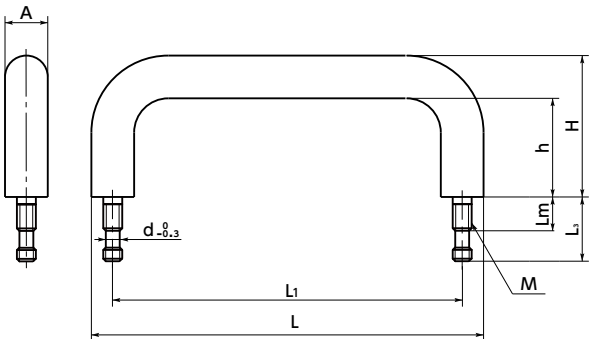
Part Number	Mounting dimension	Shape	Page
UNFA	80 mm–160 mm	Female Screw	P.331
UNFA-W	80 mm–160 mm	Female Screw	P.333
UNF	80 mm–250 mm	Female Screw	P.331
UNF-W	80 mm–250 mm	Female Screw	P.333
UNFS	80 mm–250 mm	Female Screw	P.331
UNFS-W	80 mm–250 mm	Female Screw	P.333
TC	87 mm–102 mm	Female Screw	P.344
TCY	102 mm	Male Screw	P.344
TG	20 mm–120 mm	Female Screw	P.335
TGY	80 mm–120 mm	Male Screw	P.335

● Plastic

Part Number	Mounting dimension	Pull Part Material	Shape	Page
UGF	40 mm–70 mm	Rubber	Female Screw	P.342
UUDF	100 mm–180 mm	Plastic	Female Screw	P.341

UNMS-SC Captive Pull

Selection Tool CAD Download SUS Stainless steel



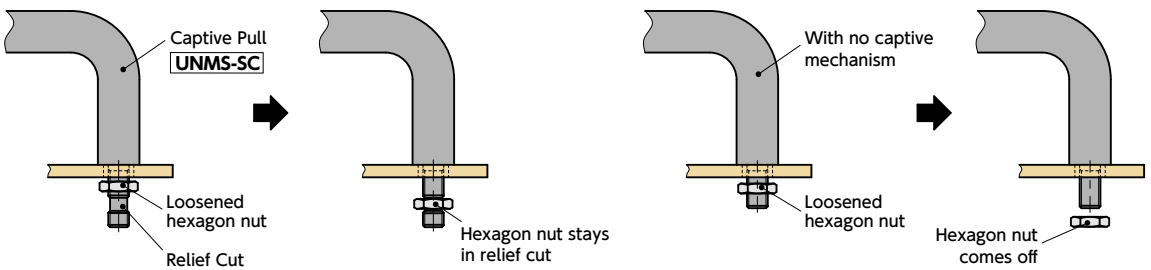
Material/Finish	UNMS-SC
Main body	SUS304 Buffing

- Pulls with captive mechanism. Male screw type.
- Accidental falling of a nut from the pull is prevented even when the mounting nut is loosened.
- SUS304 superior in corrosion resistance is used.
- For applications such as food machinery, packing machinery and chemical manufacturing devices that require countermeasures against foreign material mixture.
- For mounting, use Type 3 of commercially-available hexagon nuts (M5). Hexagon nuts are not supplied.

Part Number	L1	A	H	h	L	Lm	L3	M (Coarse)	d	Allowable load*1 (N)	Mass (g)
UNMS-100-SC	100	10	37	27	110	8	15	M5	3.8	1000	95
UNMS-125-SC	125	10	37	27	135	8	15	M5	3.8	1000	110

*1 : Allowed load for a person.

- Usage example
Even the nut is loosened, it temporarily remains in the relief cut part and will not fall off directly.
For Captive Pull UNMS-SC



● Related Products

Male type pulls with no captive mechanism TGY are available.
→ P.335



● Part number specification

UNMS-100-SC



Cleanroom Wash & Packaging → P.807

Available / Add'l charge

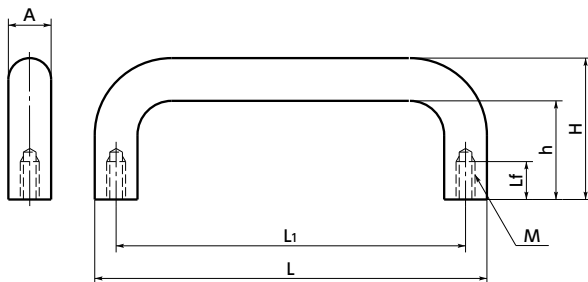
Laser Marking → P.821

Available / Add'l charge

UNF/UNFS/UNFA U - shaped Pull

Recommendation

WEB Selection Tool CAD Download SUS Stainless steel



- Hex socket head cap screws for mounting (SUSXM7) are available as an option. Use the screw supply service (charged separately).

- Types, materials and surface treatment can be selected according to the product code.

Product Code	Type	Material and Surface Treatment
UNF-CR	Standard Type H=37	Made of Steel Chrome Plating
UNFS	Standard Type H=37	Made of Stainless Steel Barrel Polishing
UNFA-BF	Standard Type H=37	Made of Aluminum Buffing
UNFA-BK	Standard Type H=37	Made of Aluminum Electrostatic Coating
UNF-H-CR	High Position Type H=45	Made of Steel Chrome Plating
UNFS-H	High Position Type H=45	Made of Stainless Steel Barrel Polishing
UNF-SH-CR	SEMI Standards Compliance Type H=60	Made of Steel Chrome Plating
UNFS-SH	SEMI Standards Compliance Type H=60	Made of Stainless Steel Barrel Polishing

UNF-CR Standard Type / Made of Steel **UNFS** Standard Type / Made of Stainless Steel

Unit : mm

Part Number Steel	Part Number Stainless steel	L1	A	H	h	L	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UNF-80-CR	UNFS-80	80	10	37	27	90	10	M5	1000	76	M5×12
UNF-100-CR	UNFS-100	100	10	37	27	110	10	M5	1000	88	M5×12
UNF-110-CR	UNFS-110	110	10	37	27	120	10	M5	1000	95	M5×12
UNF-120-CR	UNFS-120	120	10	37	27	130	10	M5	1000	101	M5×12
UNF-125-CR	UNFS-125	125	10	37	27	135	10	M5	1000	103	M5×12
UNF-160-CR	UNFS-160	160	10	37	27	170	10	M5	1000	125	M5×12
UNF-200-CR	UNFS-200	200	10	37	27	210	10	M5	1000	150	M5×12
UNF-250-CR	UNFS-250	250	10	37	27	260	10	M5	1000	180	M5×12

*1 : Allowed load for a person.

UNFA-BF Standard Type / Made of Aluminum : Buffing **UNFA-BK** Standard Type / Made of Aluminum : Electrostatic Coating

Unit : mm

Part Number	L1	A	H	h	L	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UNFA-80-BF	80	10	37	27	90	10	M5	1000	27	M5×12
UNFA-100-BF	100	10	37	27	110	10	M5	1000	31	M5×12
UNFA-110-BF	110	10	37	27	120	10	M5	1000	33	M5×12
UNFA-120-BF	120	10	37	27	130	10	M5	1000	35	M5×12
UNFA-125-BF	125	10	37	27	135	10	M5	1000	36	M5×12
UNFA-160-BF	160	10	37	27	170	10	M5	1000	44	M5×12
UNFA-80-BK	80	10	37	27	90	10	M5	1000	27	M5×12
UNFA-100-BK	100	10	37	27	110	10	M5	1000	31	M5×12
UNFA-110-BK	110	10	37	27	120	10	M5	1000	33	M5×12
UNFA-120-BK	120	10	37	27	130	10	M5	1000	35	M5×12
UNFA-125-BK	125	10	37	27	135	10	M5	1000	36	M5×12
UNFA-160-BK	160	10	37	27	170	10	M5	1000	44	M5×12

*1 : Allowed load for a person.

Cleanroom Wash & Packaging → P.807

S.S. & Al only/ Add'l charge

Laser Marking → P.821

S.S. & Al only/ Add'l charge



- Material/Finish

RoHS2 Compliant

	UNF-CR	UNFS	UNFA-BF	UNFA-BK
Main body	SS330 Chrome Plating	SUS304 Barrel Polishing	Aluminum Alloy Buffing	Aluminum Alloy Electrostatic Coating (Matte Black)
Hex Socket Head Cap Screws (Screw supply service)	SUSXM7	SUSXM7	SUSXM7	SUSXM7

UNF-H-CR | **UNFS-H** High Position Type

Unit : mm

Part Number Steel	Part Number Stainless steel	L1	A	H	h	L	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UNF-80H-CR	UNFS-80H	80	10	45	35	90	10	M5	1000	86	M5×12
UNF-100H-CR	UNFS-100H	100	10	45	35	110	10	M5	1000	98	M5×12
UNF-110H-CR	UNFS-110H	110	10	45	35	120	10	M5	1000	105	M5×12
UNF-120H-CR	UNFS-120H	120	10	45	35	130	10	M5	1000	111	M5×12
UNF-125H-CR	UNFS-125H	125	10	45	35	135	10	M5	1000	113	M5×12
UNF-160H-CR	UNFS-160H	160	10	45	35	170	10	M5	1000	135	M5×12
UNF-200H-CR	UNFS-200H	200	10	45	35	210	10	M5	1000	160	M5×12
UNF-250H-CR	UNFS-250H	250	10	45	35	260	10	M5	1000	190	M5×12

*1 : Allowed load for a person.

UNF-SH-CR | **UNFS-SH** SEMI Standards Compliance Type

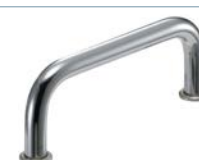
Unit : mm

Part Number Steel	Part Number Stainless steel	L1	A	H	h	L	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UNF-80SH-CR	UNFS-80SH	80	10	60	50	90	10	M5	1000	105	M5×12
UNF-100SH-CR	UNFS-100SH	100	10	60	50	110	10	M5	1000	117	M5×12
UNF-110SH-CR	UNFS-110SH	110	10	60	50	120	10	M5	1000	123	M5×12
UNF-120SH-CR	UNFS-120SH	120	10	60	50	130	10	M5	1000	129	M5×12
UNF-125SH-CR	UNFS-125SH	125	10	60	50	135	10	M5	1000	132	M5×12
UNF-160SH-CR	UNFS-160SH	160	10	60	50	170	10	M5	1000	153	M5×12
UNF-200SH-CR	UNFS-200SH	200	10	60	50	210	10	M5	1000	178	M5×12
UNF-250SH-CR	UNFS-250SH	250	10	60	50	260	10	M5	1000	208	M5×12

*1 : Allowed load for a person.

- Related Products

U - shaped Pulls with the washer
UNF-W | **UNFS-W** | **UNFA-W** is
available.
→ P.333



- Part number specification

UNF-200-SH-CR

1

UNF-200-SH-CR-P

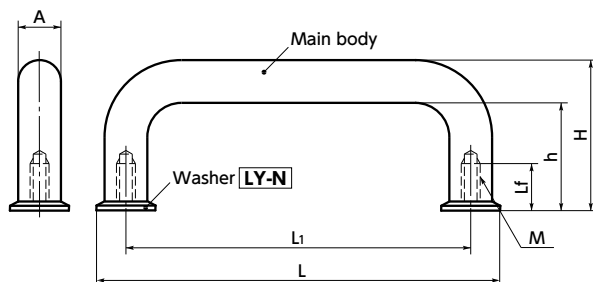
1

Screw supply service

When using the screw supply service (charged separately), add **P**
to the end of the product code.

UNF-W / UNFS-W / UNFA-W U - shaped Pull - with Washer *Recommendation*

WEB Selection Tool CAD Download SUS Stainless steel



- The type with washer **LY-N** (→ P.336). It is highly stable and decorates the mounting part beautifully.
- Hex socket head cap screws for mounting (SUSXM7) are available as an option. Use the screw supply service (charged separately).

- Materials and surface treatment of main body and types can be selected according to the product code.

Product Code	Type	Material and Surface Treatment
UNF-CR-W	Standard Type H=38.5	Made of Steel Chrome Plating
UNFS-W	Standard Type H=38.5	Made of Stainless Steel Barrel Polishing
UNFA-BF-W	Standard Type H=38.5	Made of Aluminum Buffing
UNFA-BK-W	Standard Type H=38.5	Made of Aluminum Electrostatic Coating
UNF-H-CR-W	High Position Type H=46.5	Made of Steel Chrome Plating
UNFS-H-W	High Position Type H=46.5	Made of Stainless Steel Barrel Polishing
UNF-SH-CR-W	SEMI Standards Compliance Type H=61.5	Made of Steel Chrome Plating
UNFS-SH-W	SEMI Standards Compliance Type H=61.5	Made of Stainless Steel Barrel Polishing

UNF-CR-W Standard Type / Made of Steel UNFS-W Standard Type / Made of Stainless Steel

Part Number Steel	Part Number Stainless steel	L1	A	H	h	L	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UNF-80-CR-W	UNFS-80-W	80	10	38.5	28.5	96	11.5	M5	1000	82	M5×12
UNF-100-CR-W	UNFS-100-W	100	10	38.5	28.5	116	11.5	M5	1000	94	M5×12
UNF-110-CR-W	UNFS-110-W	110	10	38.5	28.5	126	11.5	M5	1000	101	M5×12
UNF-120-CR-W	UNFS-120-W	120	10	38.5	28.5	136	11.5	M5	1000	107	M5×12
UNF-125-CR-W	UNFS-125-W	125	10	38.5	28.5	141	11.5	M5	1000	109	M5×12
UNF-160-CR-W	UNFS-160-W	160	10	38.5	28.5	176	11.5	M5	1000	131	M5×12
UNF-200-CR-W	UNFS-200-W	200	10	38.5	28.5	216	11.5	M5	1000	156	M5×12
UNF-250-CR-W	UNFS-250-W	250	10	38.5	28.5	266	11.5	M5	1000	186	M5×12

*1 : Allowed load for a person.

UNFA-BF-W Standard Type / Made of Aluminum : Buffing UNFA-BK-W Standard Type / Made of Aluminum : Electrostatic Coating

Part Number	L1	A	H	h	L	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UNFA-80-BF-W	80	10	38.5	28.5	96	11.5	M5	1000	33	M5×12
UNFA-100-BF-W	100	10	38.5	28.5	116	11.5	M5	1000	37	M5×12
UNFA-110-BF-W	110	10	38.5	28.5	126	11.5	M5	1000	39	M5×12
UNFA-120-BF-W	120	10	38.5	28.5	136	11.5	M5	1000	41	M5×12
UNFA-125-BF-W	125	10	38.5	28.5	141	11.5	M5	1000	42	M5×12
UNFA-160-BF-W	160	10	38.5	28.5	176	11.5	M5	1000	50	M5×12
UNFA-80-BK-W	80	10	38.5	28.5	96	11.5	M5	1000	33	M5×12
UNFA-100-BK-W	100	10	38.5	28.5	116	11.5	M5	1000	37	M5×12
UNFA-110-BK-W	110	10	38.5	28.5	126	11.5	M5	1000	39	M5×12
UNFA-120-BK-W	120	10	38.5	28.5	136	11.5	M5	1000	41	M5×12
UNFA-125-BK-W	125	10	38.5	28.5	141	11.5	M5	1000	42	M5×12
UNFA-160-BK-W	160	10	38.5	28.5	176	11.5	M5	1000	50	M5×12

*1 : Allowed load for a person.

Cleanroom Wash & Packaging → P.807

S.S. & Al only/ Add'l charge

Laser Marking → P.821

S.S. & Al only/ Add'l charge



- Material/Finish

	UNF-CR-W	UNFS-W	UNFA-BF-W	UNFA-BK-W
Main body	SS330 Chrome Plating	SUS304 Barrel Polishing	Aluminum Alloy Buffing	Aluminum Alloy Electrostatic Coating (Matte Black)
Washer	SUS303 Barrel Polishing	SUS303 Barrel Polishing	SUS303 Barrel Polishing	SUS303 Barrel Polishing
Hex Socket Head Cap Screws (Screw supply service)	SUSXM7	SUSXM7	SUSXM7	SUSXM7

RoHS2 Compliant

UNF-H-CR-W UNFS-H-W High Position Type

Part Number Steel	Part Number Stainless steel	L1	A	H	h	L	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UNF-80H-CR-W	UNFS-80H-W	80	10	46.5	36.5	96	11.5	M5	1000	92	M5×12
UNF-100H-CR-W	UNFS-100H-W	100	10	46.5	36.5	116	11.5	M5	1000	104	M5×12
UNF-110H-CR-W	UNFS-110H-W	110	10	46.5	36.5	126	11.5	M5	1000	111	M5×12
UNF-120H-CR-W	UNFS-120H-W	120	10	46.5	36.5	136	11.5	M5	1000	117	M5×12
UNF-125H-CR-W	UNFS-125H-W	125	10	46.5	36.5	141	11.5	M5	1000	119	M5×12
UNF-160H-CR-W	UNFS-160H-W	160	10	46.5	36.5	176	11.5	M5	1000	141	M5×12
UNF-200H-CR-W	UNFS-200H-W	200	10	46.5	36.5	216	11.5	M5	1000	166	M5×12
UNF-250H-CR-W	UNFS-250H-W	250	10	46.5	36.5	266	11.5	M5	1000	196	M5×12

*1 : Allowed load for a person.

UNF-SH-CR-W UNFS-SH-W SEMI Standards Compliance Type

Part Number Steel	Part Number Stainless steel	L1	A	H	h	L	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UNF-80SH-CR-W	UNFS-80SH-W	80	10	61.5	51.5	96	11.5	M5	1000	111	M5×12
UNF-100SH-CR-W	UNFS-100SH-W	100	10	61.5	51.5	116	11.5	M5	1000	123	M5×12
UNF-110SH-CR-W	UNFS-110SH-W	110	10	61.5	51.5	126	11.5	M5	1000	129	M5×12
UNF-120SH-CR-W	UNFS-120SH-W	120	10	61.5	51.5	136	11.5	M5	1000	135	M5×12
UNF-125SH-CR-W	UNFS-125SH-W	125	10	61.5	51.5	141	11.5	M5	1000	138	M5×12
UNF-160SH-CR-W	UNFS-160SH-W	160	10	61.5	51.5	176	11.5	M5	1000	159	M5×12
UNF-200SH-CR-W	UNFS-200SH-W	200	10	61.5	51.5	216	11.5	M5	1000	184	M5×12
UNF-250SH-CR-W	UNFS-250SH-W	250	10	61.5	51.5	266	11.5	M5	1000	214	M5×12

*1 : Allowed load for a person.

- Related Products

U-shaped pull with no washer
UNF **UNFS** **UNFA** is available.

→ P.331



- Part number specification

UNF-200-SH-CR-W

1

UNF-200-SH-CR-W-P

1

Screw supply service

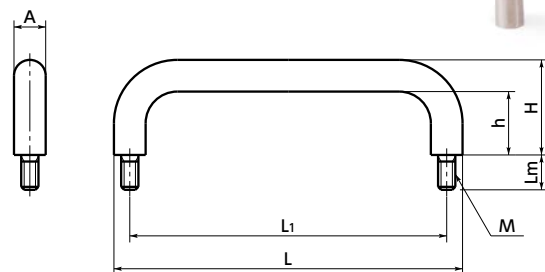
When using the screw supply service (charged separately), add **P** to the end of the product code.

TGY / TG Stainless Steel Pull



WEB Selection Tool WEB CAD Download SUS Stainless steel

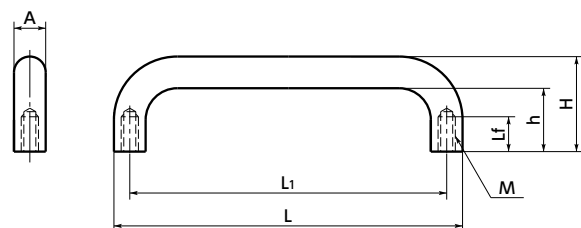
TGY Male Screw



TG

- Pull made of stainless steel.
- Use it in combination with the washer **LY-N** (→ P.336).
*Washers are not supplied.
- Male screw/female screw can be selected according to the product code.
TGY — Male screw
TG — Female screw
- For **TG**, hex socket head cap screws for mounting (SUSXM7) are available as an option. Use the screw supply service (charged separately).

TG Female Screw



TGY Male Screw

Unit : mm

Part Number	L	A	L1	H	h	Lm	M	Allowable load*1 (N)	Mass (g)	Applicable Washer
TGY-86	86	6	80	30	24	10	M4	1000	30	LY-10
TGY-108	108	8	100	35	27	10	M5	1000	62	LY-12
TGY-110	110	10	100	30	20	11	M5	1000	89	LY-16A
TGY-128	128	8	120	40	32	10	M5	1000	74	LY-12
TGY-130	130	10	120	40	30	11	M6	1000	114	LY-16

*1 : Allowed load for a person.

TG Female Screw

Unit : mm

Part Number	L	A	L1	H	h	Lf	M	Allowable load*1 (N)	Mass (g)	Applicable Washer	Screw supply service Screw size
TG-24	24	4	20	22	18	7	M2.6	1000	4.5		M2.6×8
TG-46	46	6	40	22	16	7	M4	1000	14	LY-10-N	M4×8
TG-66	66	6	60	22	16	7	M4	1000	18.5	LY-10-N	M4×8
TG-86	86	6	80	30	24	10	M4	1000	26	LY-10-N	M4×12
TG-108	108	8	100	35	27	10	M5	1000	55.5	LY-12-N	M5×12
TG-110	110	10	100	30	20	11	M5	1000	82	LY-16-N	M5×12
TG-128	128	8	120	40	32	10	M5	1000	68	LY-12-N	M5×12
TG-130	130	10	120	40	30	11	M6	1000	104	LY-16-N	M6×12

*1 : Allowed load for a person.

Material/Finish



	TGY / TG
Main body	SUS303 Buffing
Hex Socket Head Cap Screws (Screw supply service))	SUSXM7

Part number specification

TG-24



TG-24-P



Screw supply service

When using the screw supply service (charged separately), add **-P** to the end of the product code.

Cleanroom Wash & Packaging → P.807

Available / Add'l charge

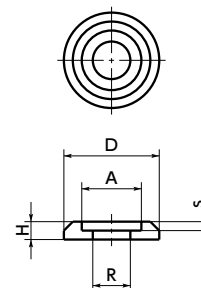
Laser Marking → P.821

Available / Add'l charge

LY Washer



WEB Selection Tool WEB CAD Download SUS Stainless steel



- Washer to be used with the pull. It decorates the mounting part of the pull beautifully.
- Pull compatible with washer
UNF **UNFS** **UNFA** (→ P.331)
TGY **TG** (→ P.335)
UGF (→ P.342)
- **LY** is provided with nut, plain washer and spring washer. To purchase the washer main body only, put **-N** at the end of part number.
LY — With nut, plain washer and spring washer
LY-N — Washer main body only

Material/Finish



	LY	LY-N
Washer Main Body	SUS303	SUS303
Nut	SUSXM7	
Plain Washer	SUS304	
Spring Washer	SUS304	

LY With Nut, Washer and Plain Washer

Unit : mm

Part Number	Attached nut size	D	A	R	H	s	Mass (g)
LY-10	M4	10	6.3	4.3	2.5	1	2
LY-12	M5	12	8.3	5.3	2.5	1	3
LY-16A	M5	16	10.3	6.3	3	1.5	5
LY-16	M6	16	10.3	6.3	3	1.5	6.5

LY-N Washer main body only

Unit : mm

Part Number	D	A	R	H	s	Mass (g)
LY-10-N	10	6.3	4.3	2.5	1	1
LY-12-N	12	8.3	5.3	2.5	1	1.5
LY-16-N	16	10.3	6.3	3	1.5	3

Part number specification

LY-12-N



Cleanroom Wash & Packaging → P.807

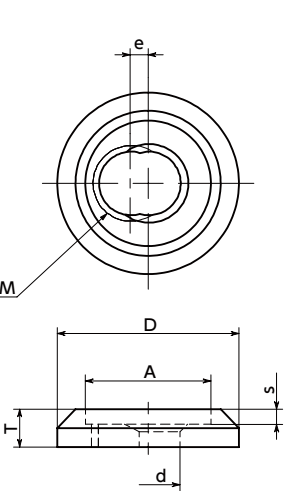
Available / Add'l charge

Laser Marking → P.821

Not Available

LYSC-N Captive Washer for Pull Patent Pending

WEB Selection Tool WEB CAD Download SUS Stainless steel



- With a pull mounted on it, the pull mounting surface is beautifully decorated while falling of screws within the enclosure is prevented.
- No additional modification of cover or door is required to mount the pull.
- Use it in combination with a captive screw (→ P.691-P.699).
- For applications such as food machinery, packing machinery and chemical manufacturing devices that require countermeasures against parts falling.

Material/Finish		LYSC-N
Main body		SUS304 Barrel Polishing

RoHS2 Compliant

Part Number	D	M	d	e	A	T	s	Mass (g)
LYSC-12-N	12	M5	4.2	1.2	8.3	2.5	1	1.4
LYSC-16A-N	16	M5	4.2	1.5	10.3	3	1.5	3.1

Unit : mm

Related Products

There is a washer for pull with no captive mechanism LY.
→ P.336



The captive washer for pulls with a captive screw supplied LYSC-N-SSC is available.
→ P.339



Part number specification

LYSC-12-N



Cleanroom Wash & Packaging → P.807

Laser Marking → P.821

Available / Add'l charge

Not Available

Applicable Captive Screws

Use the captive washer for pull LYSC-N in combination with a compatible captive screw.

Part Number	Applicable Captive Screws				
	SSC → P.691	SSCLS → P.697	SSCHS → P.698	SSCPS → P.695	SSCMS → P.696
LYSC-12-N	SSC-M5	SSCLS-M5	SSCHS-M5	SSCPS-M5	SSCMS-M5
LYSC-16A-N	SSC-M5	SSCLS-M5	SSCHS-M5	SSCPS-M5	SSCMS-M5

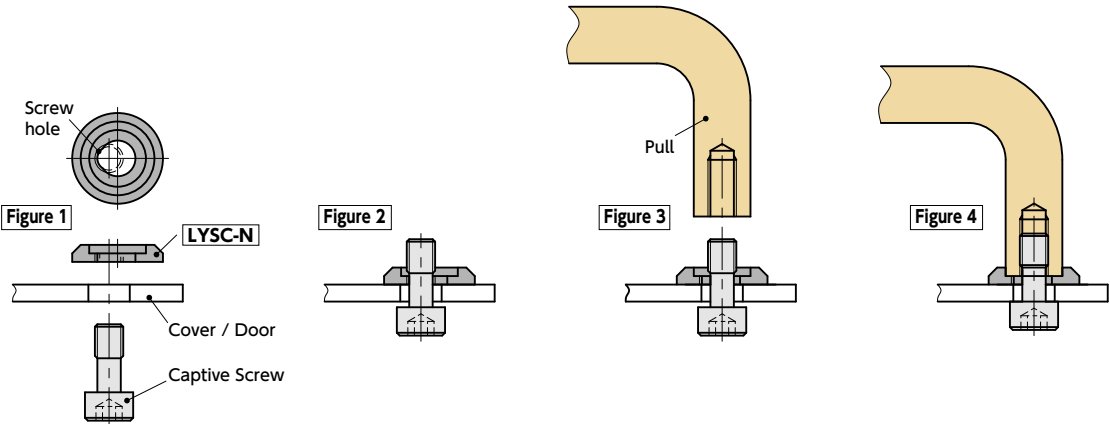
⚠ The captive washer for pull LYSC-N cannot be used in combination with any screw or bolt other than a captive screw.

Applicable Pulls

Part Number	Applicable Pulls		
	UNF → P.331	UNFS → P.331	UNFA → P.331
LYSC-12-N			
LYSC-16A-N	All Sizes	All Sizes	All Sizes

Mounting method

- ① Let the captive screw through the cover and door and tighten it into the screw hole located in the position eccentric from the center of the captive washer for the pull LYSC-N from the pull mounting surface until the cylindrical part of the captive screw is penetrated Figure 2.
- ② Move the captive screw to the drilled hole at the center of LYSC-N Figure 3.
- ③ In the state indicated in Figure 3, tighten the captive screw to mount the pull Figure 4.
- ④ After mounting, the pull screw hole and captive screw are retained at the center of LYSC-N. At this point, the drilled hole at the center of LYSC-N is smaller than the screw part of the captive screw, so the captive screw never comes out of the drilled hole and falling is prevented.

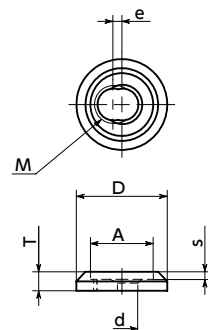


LYSC-N-SSC Captive Washer for Pull (with Captive Screw) Patent Pending

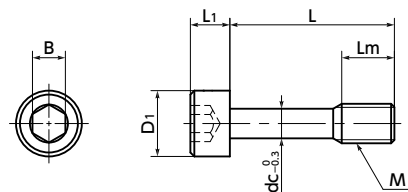
WEB Selection Tool CAD Download SUS Stainless steel



LYSC-N



SSC



LYSC-N-SSC



LYSC-N

- With a pull mounted on it, the pull mounting surface is beautifully decorated while falling of screws within the enclosure is prevented.
- No additional modification of cover or door is required to mount the pull.
- For applications such as food machinery, packing machinery and chemical manufacturing devices that require countermeasures against parts falling.
- A captive screw for mounting **SSC** is supplied.

• Material/Finish



	LYSC-N-SSC
Captive Washer for Pulls LYSC-N	SUS304 Barrel Polishing
Captive Screw SSC	SUSXM7 (Equivalent to SUS304)

Part Number	Captive Washer for Pull LYSC-N → P.337							Captive Screw SSC → P.691							Mass (g)
	D	M	d	e	A	T	s	M	L	Lm	D1	L1	B	dc	
LYSC-12-N-SSC-M5-12	12	M5	4.2	1.2	8.3	2.5	1	M5	12	6	8.5	5	4	3.9	4.4
LYSC-12-N-SSC-M5-16	12	M5	4.2	1.2	8.3	2.5	1	M5	16	6	8.5	5	4	3.9	4.9
LYSC-16A-N-SSC-M5-12	16	M5	4.2	1.5	10.3	3	1.5	M5	12	6	8.5	5	4	3.9	6.1
LYSC-16A-N-SSC-M5-16	16	M5	4.2	1.5	10.3	3	1.5	M5	16	6	8.5	5	4	3.9	6.6

Unit : mm

• Related Products

The captive washer for a pull can be purchased alone.

LYSC-N → P.337



• Part number specification

LYSC-12-N-SSC-M5-12



Cleanroom Wash & Packaging → P.807

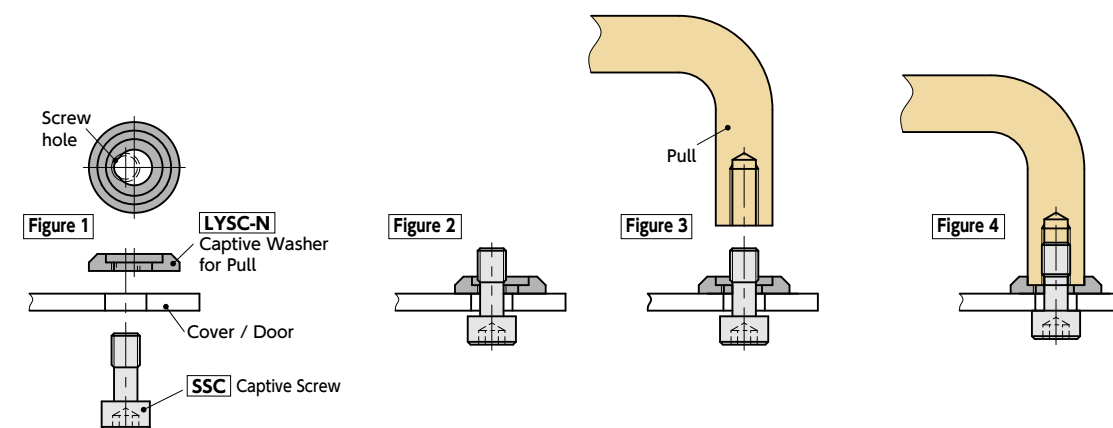
Available / Add'l charge

Laser Marking → P.821

Not Available

• Mounting method

- ① Let the supplied captive screw **SSC** through the cover and door and tighten it into the screw hole located in the position eccentric from the center of the captive washer for the pull **LYSC-N** from the pull mounting surface until the cylindrical part of **SSC** is penetrated **Figure 2**.
- ② Move **SSC** to the drilled hole at the center of **LYSC-N** **Figure 3**.
- ③ In the state indicated in **Figure 3**, tighten **SSC** to mount the pull **Figure 4**.
- ④ After mounting, the pull screw hole and **SSC** are retained at the center of **LYSC-N**. At this point, the drilled hole at the center of **LYSC-N** is smaller than the screw part of **SSC**, so **SSC** never comes out of the drilled hole and falling is prevented.

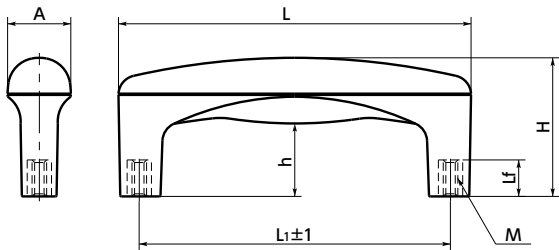


• Applicable Pulls

Part Number	Applicable Pulls			
	UNF → P.331	UNFS UNFA	UGF → P.342	TG → P.335
LYSC-12-N-SSC				TG-108 TG-128
LYSC-16A-N-SSC	All Sizes		All Sizes	TG-110 TG-130

UUDF Plastic Pull

WEB Selection Tool WEB CAD Download



Material/Finish



	UUDF
Upper Part of Pull	Nylon 6 (Various Color)
Lower Part of Pull	Nylon 6 (Dark Gray)
Thread Part	S45C Trivalent Chromate Treatment
Hex Socket Head Cap Screws (Screw supply service)	SUSXM7



- Designed in consideration of the seven principles of universal design. The shape is easy to grasp and apply forces. ➡ P.265
- Five-color variations support the color universal design of machines / devices. Two-tone color of dark gray and various colors. They can be selected by the end symbol of the part number.
- Hex socket head cap screws for mounting (SUSXM7) are available as an option. Use the screw supply service (charged separately).

End Symbol	Color
BK	Black
SG	Silver gray
BL	Blue
OR	Orange
YW	Yellow

Part Number	A	L ₁	H	h	L	L _f	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
UUDF-26-100	26	100	57	30	117	15	M6	500	51	M6×16
UUDF-26-112	26	112	57	30	129	15	M6	500	53	M6×16
UUDF-26-128	26	128	57	30	145	15	M6	500	56	M6×16
UUDF-26-160	26	160	57	30	177	15	M6	500	62	M6×16
UUDF-26-180	26	180	57	30	197	15	M6	500	66	M6×16

*1 : Allowed load for a person.

Part number specification

UUDF-26-100-BK

1 2

UUDF-26-100-BK - P

1 2

Screw supply service

When using the screw supply service (charged separately), add **-P** to the end of the product code.

Cleanroom Wash & Packaging ➡ P.807

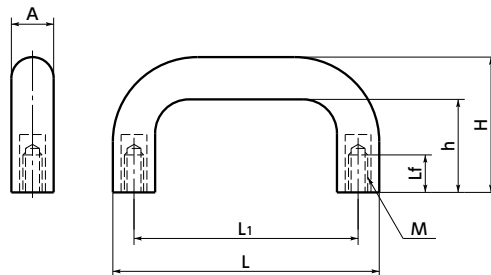
Not Available

Laser Marking ➡ P.821

Available / Add'l charge

UGF Gum Pull

WEB Selection Tool WEB CAD Download



- Use it in combination with a washer **LY-N** (➡ P.336).
*Washers are not supplied.
- Hex socket head cap screws for mounting (SUSXM7) are available as an option. Use the screw supply service (charged separately).

Material/Finish



	UGF
Pull Part	EPDM (Matte Black)
Thread Part	S45C Trivalent Chromate Treatment
Hex Socket Head Cap Screws (Screw supply service)	SUSXM7

Part Number	L	A	L ₁	H	h	L _f	M	Allowable load*1 (N)	Mass (g)	Applicable Washer	Screw supply service Screw size
UGF-50	50	10	40	32	22	10	M4	200	10	LY-16-N	M4×12
UGF-63	63	10	53	32	22	10	M4	200	12	LY-16-N	M4×12
UGF-80	80	10	70	32	22	10	M4	200	15	LY-16-N	M4×12

*1 : Allowed load for a person.

Part number specification

UGF-50

1

UGF-50 - P

1

Screw supply service

When using the screw supply service (charged separately), add **-P** to the end of the product code.

Cleanroom Wash & Packaging ➡ P.807

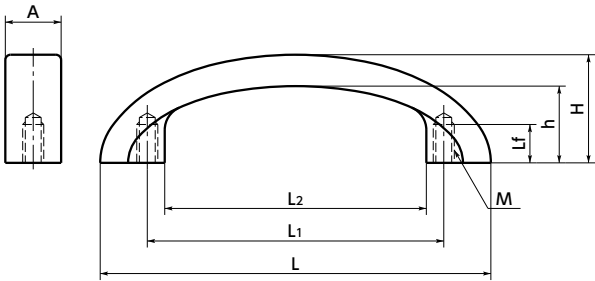
Not Available

Laser Marking ➡ P.821

Not Available

TA Plastic Pull

WEB Selection Tool WEB CAD Download



- Hex socket head cap screws for mounting (SUSXM7) are available as an option. Use the screw supply service (charged separately).

Material/Finish		RoHS2 Compliant
TA		
Main body	Phenol Resin	
Hex Socket Head Cap Screws (Screw supply service)	SUSXM7	

Part Number	L	A	H	h	L1	L2	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
TA-112	112	16	31	22	85	68	11	M6	500	22	M6×12
TA-148	148	20	36	24	125	102	11	M6	500	46	M6×12

*1 : Allowed load for a person.

- Part number specification

TA-112



TA-112-P



Screw supply service

When using the screw supply service (charged separately), add **-P** to the end of the product code.

Cleanroom Wash & Packaging ➡ P.807

Available / Add'l charge

Laser Marking ➡ P.821

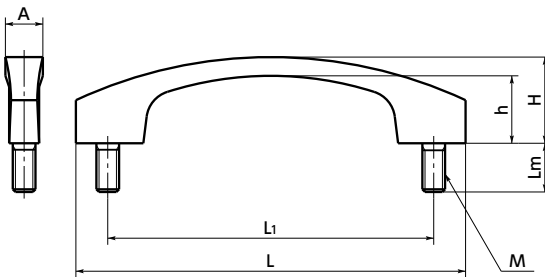
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TCY / TC Zinc Pull

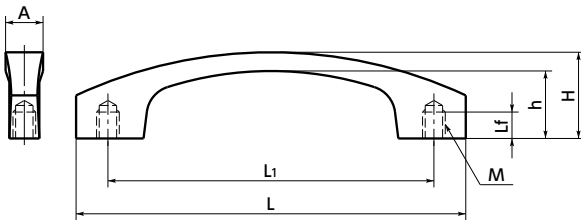
WEB Selection Tool WEB CAD Download



TCY Male Screw



TC Female Screw



- Male screw / female screw can be selected according to the product code.

TCY Male screw

TC Female screw

- For TC, hex socket head cap screws for mounting (SUSXM7) are available as an option. Use the screw supply service (charged separately).

Material/Finish		RoHS2 Compliant
TCY		
Main body	Zinc die cast Chrome Plating	Zinc die cast Chrome Plating
Hex Socket Head Cap Screws (Screw supply service)		SUSXM7

TCY Male Screw

Part Number	L	A	H	h	L1	Lm	M	Allowable load*1 (N)	Mass (g)
TCY-122	122	11	28	24	102	13	M6	1000	85

*1 : Allowed load for a person.

TC Female Screw

Part Number	L	A	H	h	L1	Lf	M	Allowable load*1 (N)	Mass (g)	Screw supply service Screw size
TC-104	104	10	23	18	87	8	M6	1000	50	M6×10
TC-122	122	11	28	24	102	10	M6	1000	80	M6×12

*1 : Allowed load for a person.

- Part number specification

TC-104



TC-104-P



Screw supply service

When using the screw supply service (charged separately), add **-P** to the end of the product code.

Cleanroom Wash & Packaging ➡ P.807

Not Available

Laser Marking ➡ P.821

Not Available

• Display equipment fixing parts

- Select a product from the items to mount and adjustment angle.

Adjustment angle	360°Rotation Type	1-Shaft Type	Fix Type
	It rotates by 360° and tilts by ±15° in all directions.	The angle can be adjusted in the single axis direction.	The item to mount is completely fixed.
Item to mount	Tablet PC	Display*	Keyboard
	DTT The built-in spring retains the angle → P.347 DTK The hex socket head cap screw fixes the angle → P.349 	DTS The angle is fixed by the clamp lever → P.351 DTSN The hexagon nut fixes the angle → P.351 	DTR → P.353
	DFT The built-in spring retains the angle → P.355 DFK The hex socket head cap screw fixes the angle → P.357 	DFS The angle is fixed by the clamp lever → P.359 DFSN The hexagon nut fixes the angle → P.359 	DFR → P.361
		DKBR The knob fixes the angle → P.363 	DKB → P.365

*Compatible with 12 - 22.9 inch displays with 75 mm x 75 mm or 100 mm x 100 mm mounting holes, which are defined for the VESA standard.

• Accessories

Type	Pulls for display angle operation	Pipe Holder	Pipe
Part Number	DPU	DPH	DAP
Shape			
Page	P.368	P.369	P.370
Characteristics	Pulls for smooth angle operations of the display. Conforms to the VESA standards.	Holder for ϕ 30 / ϕ 40 round pipe.	Cut round pipe.

- There are four types of mounting method for Mounting System for Display.
- Icons about available mounting methods are displayed in the product description pages.

(1) Front assembly

Mounted on a flat plane such as an aluminum frame and wall surface, etc.

Aluminum frame mount



(2) Back assembly

Mounted on a flat plate such as a wall panel, cover panel and sheet metal, etc.

Wall/panel Mount



(3) Aluminum Frame End Face

Mounted on $\square$ 40 aluminum frame end face.

Aluminum frame edge mount



(4) Round Pipe

Mounted on ϕ 30 - ϕ 42.7 round pipe.

Pipe



- Descriptions of other icons



This product is equipped with a counter balance spring mechanism.

As the angle after adjustment is retained by the spring force, no tool is needed. It can be securely retained even in an environment under dynamic load.

VESA75

This product is compatible with 75 mm x 75 mm mounting holes defined by the VESA standards.

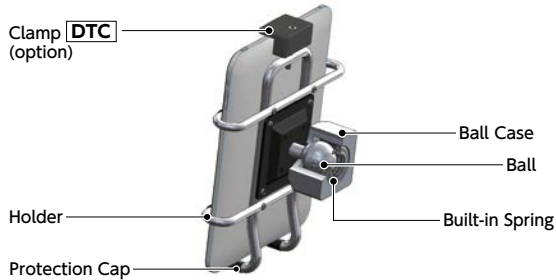
VESA100

This product is compatible with 100 mm x 100 mm mounting holes defined by the VESA standards.

DTT Tablet PC Mounting System - 360°rotation Type - Spring Retention

WEB Selection Tool WEB CAD Download Aluminum frame mount wall/panel Mount Aluminum frame edge mount Pipe

Structure



Material/Finish

RoHS2 Compliant

	DTT-AF	DTT-AA / DTT-PB
Holder	SS400 Chrome Plating	
Protection Cap	Flexible PVC (lead-free)	
Ball Case	A6063 Alumite Treatment	
Ball	S45C Trivalent Chromate Treatment	
Built-in Spring	Spring Steel	
Fixing Plate	SS400 Electrostatic Coating	—
Bracket	—	A6063 Alumite Treatment

Retention torque

Product code	Retention Torque	Reference Force
DTTH	20 N·m	Even in an environment subject to vibration, etc., the tablet PC can hardly deviate.
DTTM	15 N·m	Middle of low torque type and high torque type.
DTTL	10 N·m	Can move with torque equivalent to that for household / office PC displays.

Option

- By using the optional **DTC**, a tablet PC can be completely fixed.
- For cases where the mounting direction must be changed or bringing out the tablet PC is prohibited.

Part Number	Mass (g)
DTC	70

Material/Finish

RoHS2 Compliant

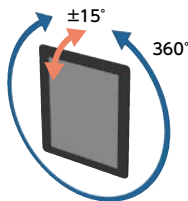
	DTC
Clamp	AC4C-F Electrostatic Coating
Clamping Screw	SUSXM7

Related Products

A tablet PC mounting system of 360° rotation type that tightens the fixing bolts to retain the angle **DTK** is available.
→ P.349



- Tablet PC fixing parts compatible with iPad*1.
*1: iPad is a trademark of Apple Inc. Compatible with iPad2 / New iPad.
- This fixes a tablet PC to a production facility or test device. Tablet PC can be mounted / unmounted easily just by inserting / removing it.
- Robust design. It has a high durability.
- The built-in spring serves to retain the angle. Tightening after adjustment is not necessary.
- For counterpart, three types of Mounting System for Display are available. **DTT-AF** For aluminum frame / For wall panel and sheet metal — **DTT-AF** For aluminum frame end mounting **DTT-AA** For round pipe — **DTT-PB**
- This is suitable for checking the tablet PC screen while both hands are in use.
- For detailed dimensions of the holder, refer to **DTR**. → P.353
- The holder can be tilted by ±15° to any direction. It can also be rotated by 360°.



- We also produce Mounting System for Display of special specifications compatible with tablet PCs of various sizes.
→ P.367



Application

Machine tool / Medical equipment / FPD production device / Semiconductor manufacturing device / Packing machine / Food machinery

Part number specification

DTT M-AA-40

Product Code **1** **2** **3**

Example of part number: DTTL-AF-M8 / DTTH-PB-40

For aluminum frame / For wall panel and sheet metal

DTT-AF



Part Number	M*1 (d)	Mass (g)
DTT*-AF-**	M4 (5)	1860
	M5 (6)	
	M6 (7)	
	M8 (9)	

Unit: mm

*1: Mounting bolts are not provided.

For aluminum frame end surface mounting

DTT-AA



Part Number	B	Mass (g)
DTT*-AA-40	40	1630

Unit: mm

*1: Hex socket low head bolts (M8 x 16 mm) are provided.

For Round Pipe

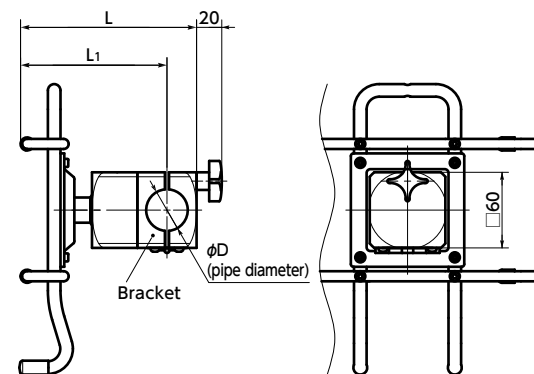
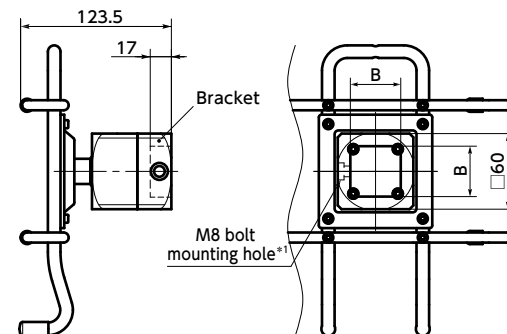
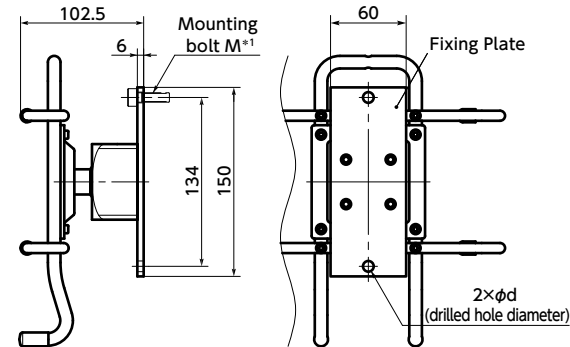
DTT-PB



Part Number	D	L1	L	Mass (g)
DTT*-PB-**	28	120.5	144.5	1780
	30			1780
	34			1770
	40	124.5	152.5	1760
	42.7			1760

Unit: mm

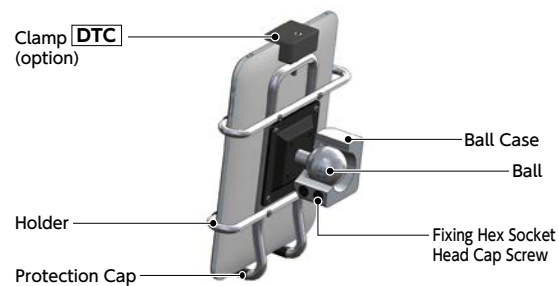
* Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ±0.5 mm.



DTK Tablet PC Mounting System - 360°rotation Type - Bolt Retention

WEB Selection Tool WEB CAD Download Aluminum frame mount wall/panel Mount Aluminum frame edge mount Pipe

Structure



Material/Finish



	DTK-AF	DTK-AA / DTK-PB
Holder	SS400 Chrome Plating	
Protection Cap	Flexible PVC (lead-free)	
Ball Case	A6063 Alumite Treatment	
Ball	S45C Trivalent Chromate Treatment	
Fixing Hex Socket Head Cap Screw (M5 x 16 mm)	SCM435 Ferrosoferric Oxide Film	
Fixing Plate	SS400 Electrostatic Coating	—
Bracket	—	A6063 Alumite Treatment

Option

- By using the optional **DTC**, a tablet PC can be completely fixed.
- For cases where the mounting direction must be changed or bringing out the tablet PC is prohibited.

Part Number	Mass (g)
DTC	70

Material/Finish



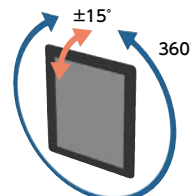
	DTC
Clamp	AC4C-F Electrostatic Coating
Clamping Screw	SUSXM7

Related Products

A tablet PC mounting system of 360° rotation type that can retain without bolt tightening **DTT** is available.
→ P.347



- Tablet PC fixing parts compatible with iPad*1.
*1: iPad is a trademark of Apple Inc. Compatible with iPad2 / New iPad.
- This fixes a tablet PC to a production facility or test device. Tablet PC can be mounted / unmounted easily just by inserting / removing it.
- Robust design. It has a high durability.
- By tightening the fixing hex socket head cap screw, securely retain the angle after adjustment.
- For counterpart, three types of Mounting System for Display are available. **DTK-AF**
For aluminum frame /
For wall panel and sheet metal — **DTK-AF**
For aluminum frame end mounting **DTK-AA**
For round pipe — **DTK-PB**
- This is suitable for checking the tablet PC screen while both hands are in use.
- For detailed dimensions of the holder, refer to **DTR**. → P.353
- The holder can be tilted by ±15° to any direction. It can also be rotated by 360°.



- We also produce Mounting System for Display of special specifications compatible with tablet PCs of various sizes.
→ P.367



Application

Machine tool / Medical equipment / FPD production device / Semiconductor manufacturing device / Packing machine / Food machinery

Part number specification

DTK-AA-40

Product Code **1** **2**

Example of part number: DTK-AF-M8 / DTK-PB-40

- For aluminum frame / For wall panel and sheet metal

DTK-AF



Part Number	M*1 (d)	Mass (g)
DTK-AF-*	M4 (5) M5 (6) M6 (7) M8 (9)	1690

Unit: mm

*1: Mounting bolts are not provided.

- For aluminum frame end surface mounting

DTK-AA



Part Number	B	Mass (g)
DTK-AA-40	40	1460

Unit: mm

*1: Hex socket low head bolts (M8 x 16 mm) are provided.

- For Round Pipe

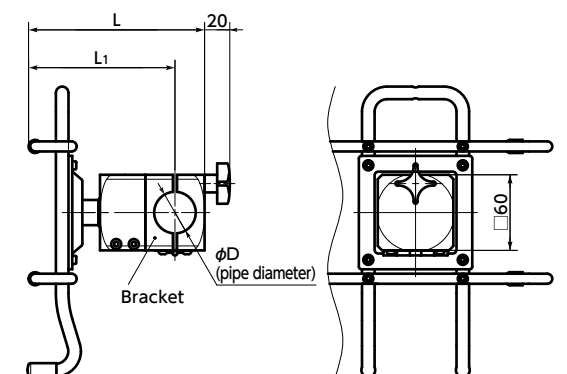
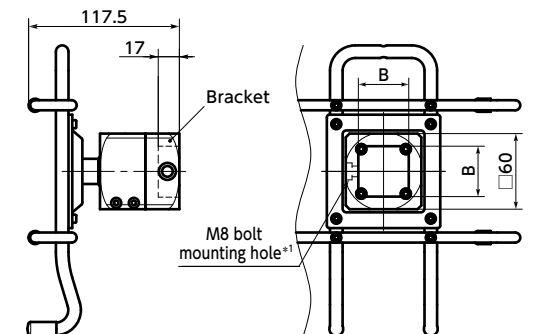
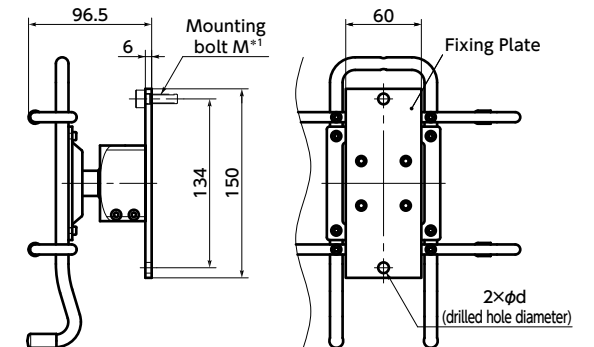
DTK-PB



Part Number	D	L1	L	Mass (g)
DTK-PB-*	28 30 34 40 42.7	114.5 118.5	138.5 146.5	1610 1610 1570 1590 1560

Unit: mm

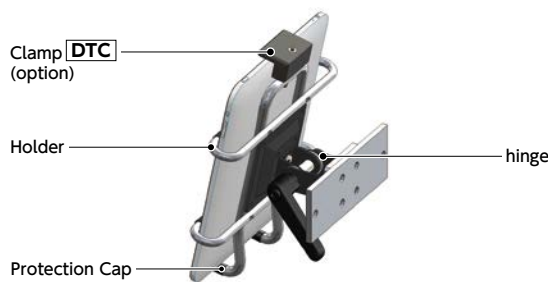
- Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ±0.5 mm.



DTS/DTSN Tablet PC Mounting System - Single Axis Type - Clamp Lever / Hexagon Nut Retention

WEB Selection Tool CAD Download Aluminum frame mount wall/panel Mount Aluminum frame edge mount Pipe

Structure



Application

Machine tool / Medical equipment / FPD production device / Semiconductor manufacturing device / Packing machine / Food machinery

Material/Finish

RoHS2 Compliant

	DTS-AF	DTS-AA DTS-PB	DTSN-AF	DTSN-AA DTSN-PB
Holder	SS400 Chrome Plating			
Protection Cap	Flexible PVC (lead-free)			
hinge	SS400 Electrostatic Coating			
Clamp Lever	Nylon 6			
Hex Nut	-	-	SS400 Trivalent Chromate Treatment	
Fixing Plate	SS400 Electrostatic Coating		SS400 Electrostatic Coating	
Bracket	-	A6063 Alumite Treatment	-	A6063 Alumite Treatment

Option

- By using the optional **DTC**, a tablet PC can be completely fixed.
- For cases where bringing out the tablet PC is prohibited.

Part Number	Mass (g)
DTC	70

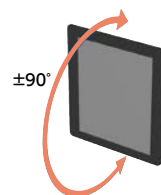
Material/Finish

RoHS2 Compliant

	DTC
Clamp	AC4C-F Electrostatic Coating
Clamping Screw	SUSXM7

- Tablet PC fixing parts compatible with iPad*1.
*1: iPad is a trademark of Apple Inc. Compatible with iPad2 / New iPad.
- This fixes a tablet PC to a production facility or test device. Tablet PC can be mounted / unmounted easily just by inserting / removing it.
- Robust design. It has a high durability.
- By tightening the clamp lever or hexagon nut, securely retain the angle after adjustment. **1**
- Clamp lever type — **DTS**
Hexagon nut type — **DTSN**
- For counterpart, three types of Mounting System for Display are available. **2**
- For aluminum frame / For wall panel and sheet metal — **DTS*-AF**
For aluminum frame end mounting **DTS*-AA**
For round pipe — **DTS*-PB**
- This is suitable for checking the tablet PC screen while both hands are in use.
- For detailed dimensions of the holder, refer to **DTR**. → P.353

- The holder can be tilted by ±90° to the single axis direction.



- We also produce Mounting System for Display of special specifications compatible with tablet PCs of various sizes.
→ P.367



Part number specification

DTS N-AA-40

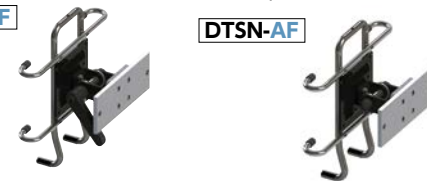
Product Code **1 2 3**

Example of part number: DTS-AF-M8 / DTSN-PB-40

- For aluminum frame / For wall panel and sheet metal

DTS-AF

DTSN-AF



Part Number	M*1 (d) 3	Mass (g)
DTS-AF-**	M4 (5)	1590
	M5 (6)	
	M6 (7)	
	M8 (9)	
DTSN-AF-**	M4 (5)	1540
	M5 (6)	
	M6 (7)	
	M8 (9)	

Unit : mm

*1: Mounting bolts are not provided.

- For aluminum frame end surface mounting

DTS-AA

DTSN-AA



Part Number	B 3	Mass (g)
DTS-AA-40	40	1360
DTSN-AA-40	40	1310

Unit : mm

*1: Hex socket low head bolts (M8 x 16 mm) are provided.

- For Round Pipe

DTS-PB

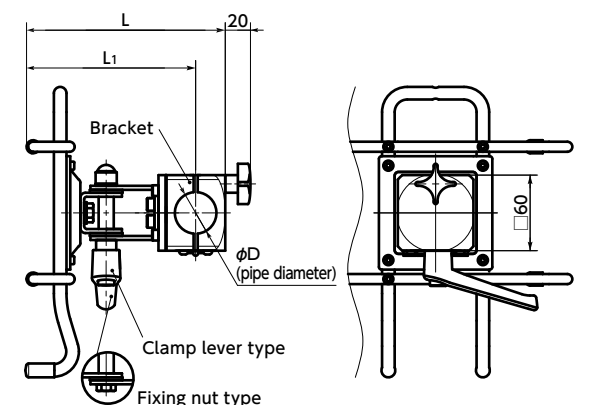
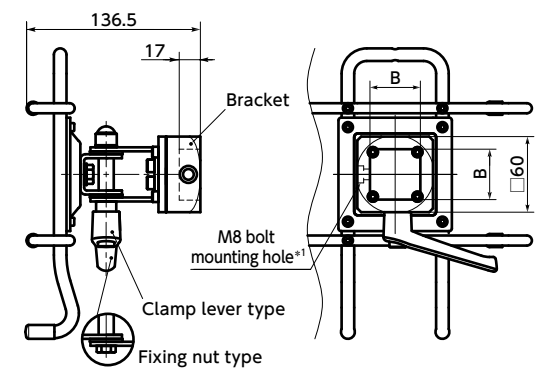
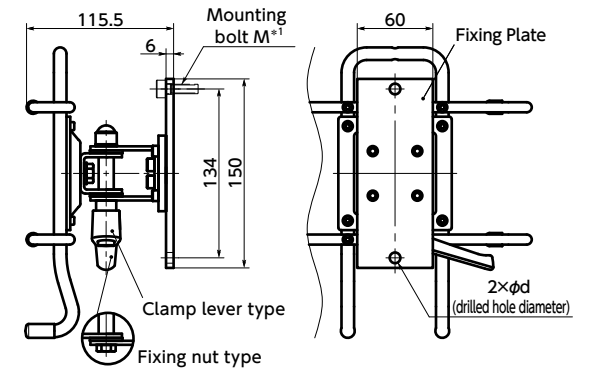
DTSN-PB



Part Number	D 3	L ₁	L	Mass (g)
DTS-PB-**	28	133.5	157.5	1510
	30		157.5	1510
	34		157.5	1470
	40	137.5	165.5	1490
	42.7		165.5	1460
DTSN-PB-**	28	133.5	157.5	1460
	30		157.5	1460
	34		157.5	1420
	40	137.5	165.5	1440
	42.7		165.5	1410

Unit : mm

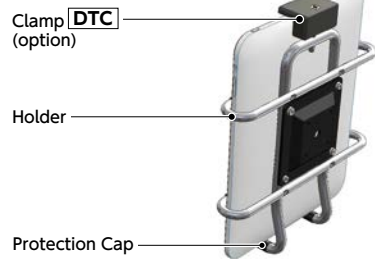
- Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ±0.5 mm.



DTR Tablet PC Mounting System - Fix Type

WEB Selection Tool
 CAD Download
 Aluminum frame mount
 wall/panel Mount
 Aluminum frame edge mount
 Pipe

Structure



Material/Finish

RoHS2 Compliant

	DTR-AF	DTR-AA / DTR-PB
Holder	SS400 Chrome Plating	
Protection Cap	Flexible PVC (lead-free)	
Fixing Plate	SS400 Electrostatic Coating	—
Bracket	—	A6063 Alumite Treatment

Option

- By using the optional **DTC**, a tablet PC can be completely fixed.
- For cases where bringing out the tablet PC is prohibited.

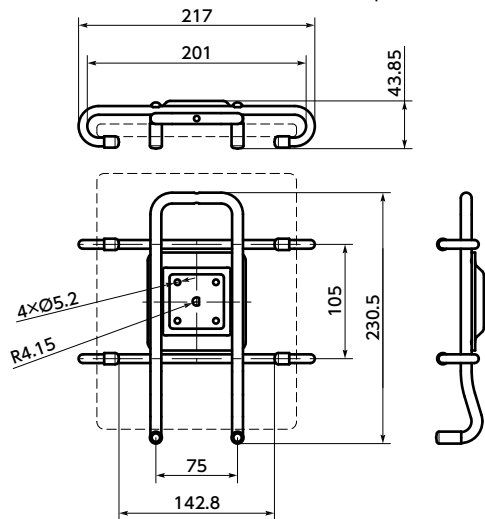
Part Number	Mass (g)
DTC	70

Material/Finish

RoHS2 Compliant

	DTC
Clamp	AC4C-F Electrostatic Coating
Clamping Screw	SUSXM7

- The holder bracket alone can be purchased.



Part Number	Mass (g)
DTR	780



- Tablet PC fixing parts compatible with iPad*1.
*1: iPad is a trademark of Apple Inc. Compatible with iPad2 / New iPad.
- This fixes a tablet PC to a production facility or test device. Tablet PC can be mounted / unmounted easily just by inserting / removing it.
- Robust design. It has a high durability.
- A type to fix the holder completely.
- For counterpart, three types of Mounting System for Display are available.
- For aluminum frame /
For wall panel and sheet metal — **DTR-AF**
For aluminum frame end mounting **DTR-AA**
For round pipe — **DTR-PB**
- This is suitable for checking the tablet PC screen while both hands are in use.
- The holder alone can be purchased.
- We also produce Mounting System for Display of special specifications compatible with tablet PCs of various sizes.
→ P.367



Application

Machine tool / Medical equipment / FPD production device / Semiconductor manufacturing device / Packing machine / Food machinery

Part number specification

DTR-AA-40

Product Code

Example of part number: DTR-AF-M8 / DTR-PB-42.7

- For aluminum frame / For wall panel and sheet metal

DTR-AF



Part Number	M*1 (d)	Mass (g)
DTR-AF-**	M4 (5)	1190
	M5 (6)	
	M6 (7)	
	M8 (9)	

Unit : mm

*1: Mounting bolts are not provided.

- For aluminum frame end surface mounting

DTR-AA



Part Number	B	Mass (g)
DTR-AA-40	40	960

Unit : mm

*1: Hex socket low head bolts (M8 x 16 mm) are provided.

- For Round Pipe

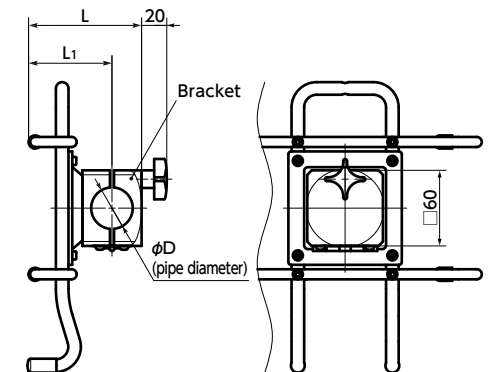
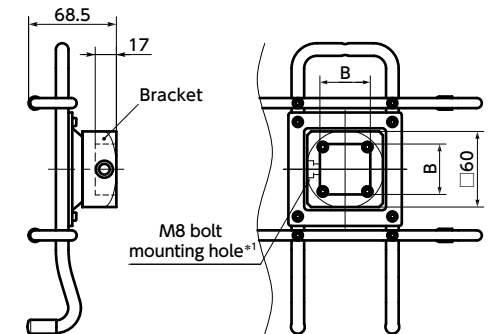
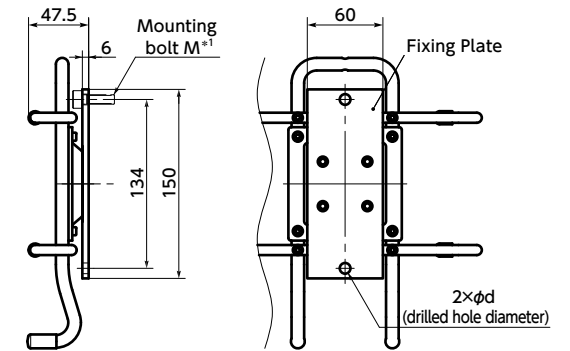
DTR-PB



Part Number	D	L1	L	Mass (g)
DTR-PB-**	28	65.5	89.5	1110
	30			1110
	34			1070
	40	69.5	97.5	1090
	42.7			1060

Unit : mm

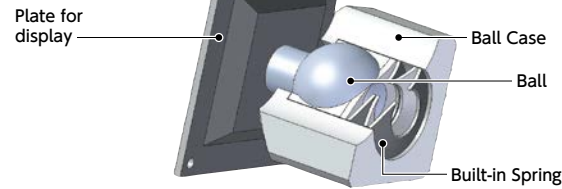
- Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ±0.5 mm.



DFT Display Mounting System - 360°rotation Type - Spring Retention

WEB Selection Tool WEB CAD Download Aluminum frame mount wall/panel Mount Aluminum frame edge mount Pipe Comply with VESA standard

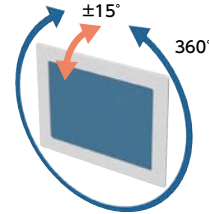
Structure



Retention torque

Product code	Retention Torque	Reference Force
DFTH	20 N·m	Even in an environment subject to vibration, etc., the display can hardly deviate.
DFTM	15 N·m	Middle to low torque type and high torque type.
DFTL	10 N·m	Can move with torque equivalent to that for household / office PC displays.

- The display can be tilted by $\pm 15^\circ$ to any direction. The display can also be rotated.



- The built-in spring serves to retain the display. Tightening after adjustment is not necessary.
- For counterpart, three types of Mounting System for Display are available.
 - For aluminum frame / For wall panel and sheet metal — **DFT-AF**
 - For aluminum frame end mounting — **DFT-AA**
 - For round pipe — **DFT-PB**

Application

Machine tool / Medical equipment / FPD production device / Semiconductor manufacturing device / Packing machine / Food machinery

Material/Finish

RoHS2 Compliant

	DFT-AF	DFT-AA / DFT-PB
Plate for display	SPHC Cation Painting	
Ball Case	A6063 Alumite Treatment	
Ball	S45C Trivalent Chromate Treatment	
Built-in Spring	Spring Steel	
Fixing Plate	SS400 Electrostatic Coating	—
Bracket	—	A6063 Alumite Treatment

Related Products

Pulls to make it smooth to adjust the display angle **DPU** is available.
→ P.368



A display mounting system of 360° rotation type that tightens the fixing bolts to retain the angle **DFK** is available.
→ P.357



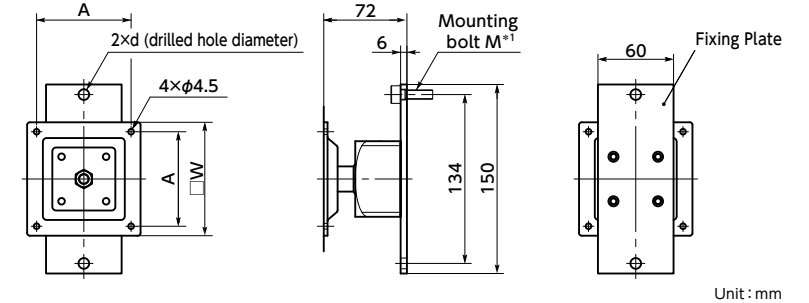
Part number specification

DFT M-75-AA-40

Product Code	1	2	3	4
Example of part number:	DFTL-100-AF-M8	/	DFTH-75-PB-40	

- For aluminum frame / For wall panel and sheet metal

DFT-AF

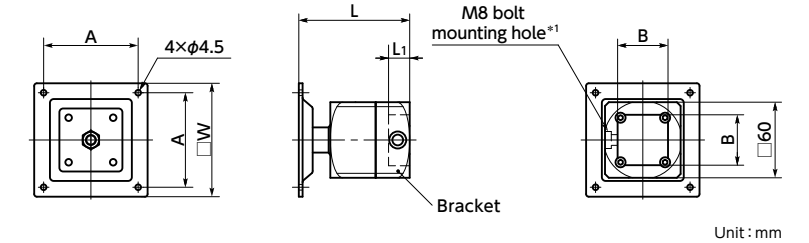


Part Number	A	M*1 (d)	W	Mass (g)	Max. loading mass
DFT*-75-AF-**-	75	M4 (5) M5 (6) M6 (7) M8 (9)	90	1300	10kg
DFT*-100-AF-**-	100	M4 (5) M5 (6) M6 (7) M8 (9)	115	1400	10kg

*1: Mounting bolts are not provided.

- For aluminum frame end surface mounting

DFT-AA

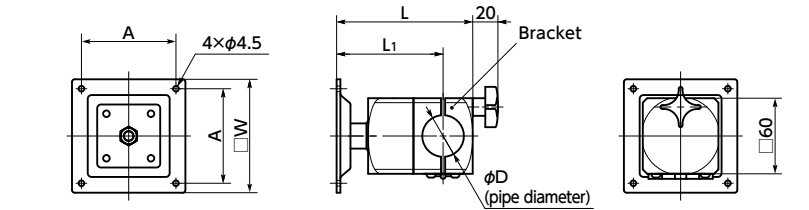


Part Number	A	B	W	L1	L	Mass (g)	Max. loading mass
DFT*-75-AA-40	75	40	90	17	93	1070	10kg
DFT*-100-AA-40	100	40	115	17	93	1170	10kg

*1: Hex socket low head bolts (M8 x 16 mm) are provided.

- For Round Pipe

DFT-PB



Unit : mm

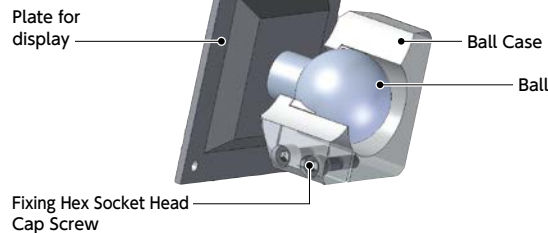
Part Number	A 	D 			W	L ₁	L	Mass (g)	Max. loading mass
DFT *-75-PB-**-	75	28	30	34	90	90	114	1210 - 1220	10kg
		40	42.7		90	94	122	1200	10kg
DFT *-100-PB-**-	100	28	30	34	115	90	114	1310 - 1320	10kg
		40	42.7		115	94	122	1300	10kg

* Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ± 0.5 mm.

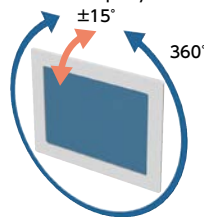
DFK Display Mounting System - 360°rotation Type - Bolt Retention

WEB Selection Tool WEB CAD Download Aluminum frame mount wall/panel Mount Aluminum frame edge mount Pipe Comply with VESA standard

Structure



- The display can be tilted by $\pm 15^\circ$ to any direction. The display can also be rotated.



- By tightening the fixing hex socket head cap screw, securely retain the angle after adjustment.
- For counterpart, three types of Mounting System for Display are available. 
 - For aluminum frame / For wall panel and sheet metal — **DFK-AF**
 - For aluminum frame end mounting — **DFK-AA**
 - For round pipe — **DFK-PB**

Application

Machine tool / Medical equipment / FPD production device / Semiconductor manufacturing device / Packing machine / Food machinery

Material/Finish



	DFK-AF	DFK-AA / DFK-PB
Plate for display	SPHC Cation Painting	
Ball Case	A6063 Alumite Treatment	
Ball	S45C Trivalent Chromate Treatment	
Fixing Hex Socket Head Cap Screw (M5 x 16 mm)	SCM435 Ferrosoferric Oxide Film	
Fixing Plate	SS400 Electrostatic Coating	—
Bracket	—	A6063 Alumite Treatment

Related Products

Pulls to make it smooth to adjust the display angle **DPU** is available.
→ P.368



A display mounting system of 360° rotation type that can retain without bolt tightening **DFT** is available.
→ P.355



Part number specification

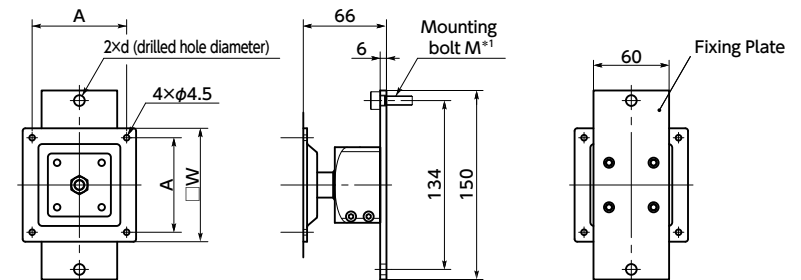
DFK-75-AA-40

Product Code   

Example of part number: DFK-100-AF-M8 / DFK-75-PB-40

For aluminum frame / For wall panel and sheet metal

DFK-AF



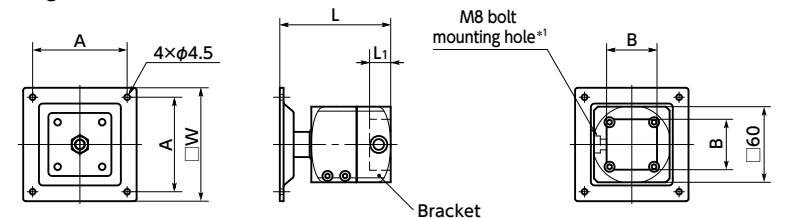
Unit : mm

Part Number	A 	M*1 (d) 					W	Mass (g)	Max. loading mass
DFK-75-AF-**	75	M4 (5)	M5 (6)	M6 (7)	M8 (9)		90	1130	10kg
DFK-100-AF-**	100	M4 (5)	M5 (6)	M6 (7)	M8 (9)		115	1230	10kg

*1 : Mounting bolts are not provided.

For aluminum frame end surface mounting

DFK-AA



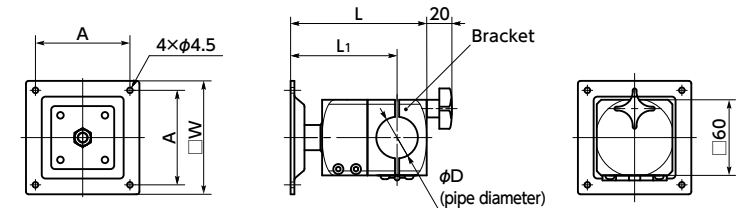
Unit : mm

Part Number	A 	B 	W	L1	L	Mass (g)	Max. loading mass
DFK-75-AA-40	75	40	90	17	87	900	10kg
DFK-100-AA-40	100	40	115	17	87	1000	10kg

*1 : Hex socket low head bolts (M8 x 16 mm) are provided.

For Round Pipe

DFK-PB



Unit : mm

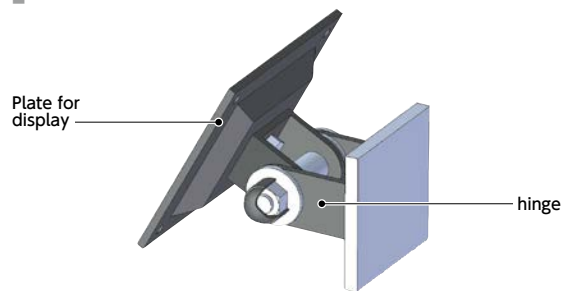
Part Number	A 	D 			W	L1	L	Mass (g)	Max. loading mass
DFK-75-PB-**	75	28	30	34	90	84	108	1010 - 1050	10kg
		40	42.7		90	88	116	1000 - 1030	10kg
DFK-100-PB-**	100	28	30	34	115	84	108	1110 - 1150	10kg
		40	42.7		115	88	116	1100 - 1130	10kg

• Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ± 0.5 mm.

DFS/DFSN Display Mounting System - Single Axis Type

WEB Selection Tool CAD Download Aluminum frame mount wall/panel Mount Aluminum frame edge mount Pipe Comply with VESA standard

Structure



Material/Finish

RoHS2 Compliant

	DFS-AF	DFS-AA	DFS-PB	DFSN-AF	DFSN-AA	DFSN-PB
Display Plate	SPHC	Cation Painting				
hinge	SS400	Electrostatic Coating				
Clamp Lever	Nylon 6					
Hex Nut	-	-		SS400	Trivalent Chromate Treatment	
Fixing Plate	SS400	Electrostatic Coating		SS400	Electrostatic Coating	
Bracket	-	A6063	Alumite Treatment	-	A6063	Alumite Treatment

Max. load weight

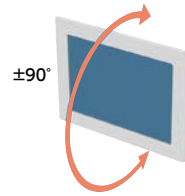
Product code	Max. load weight
DFS	6 kg
DFSN	10 kg

Related Products

Pulls to make it smooth to adjust the display angle **DPU** is available.
→ P.368



- The display can be tilted by $\pm 90^\circ$ to the single axis direction.



- By tightening the clamp lever or hex nut, securely retain the angle after adjustment. **1**

Clamp lever type — **DFS**
Hex nut type — **DFSN**

- For counterpart, three types of Mounting System for Display are available. **3**

For aluminum frame /
For wall panel and sheet metal — **DFS*-AF**
For aluminum frame end mounting **DFS*-AA**
For round pipe — **DFS*-PB**

Application

Machine tool / Medical equipment / FPD production device /
Semiconductor manufacturing device / Packing machine / Food machinery

Part number specification

DFS N-75-AA-40

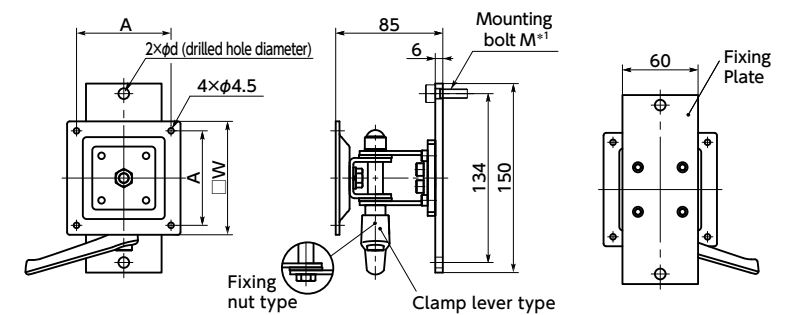
Product Code **1 2 3 4**

Example of part number: DFS-100-AF-M8 / DFSN-75-PB-40

- For aluminum frame / For wall panel and sheet metal

DFS-AF

DFSN-AF



Unit : mm

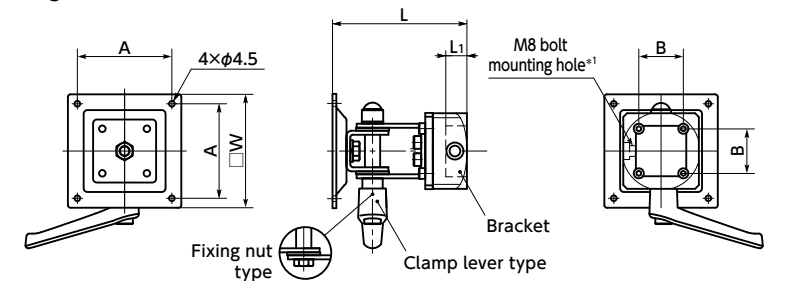
Part Number	Part Number	A 2	M*1 (d) 4	W	Mass (g)
DFS-75-A-***	DFSN-75-AF-***	75	M4 (5) M5 (6) M6 (7) M8 (9)	90	980 - 1030
DFS-100-AF-***	DFSN-100-AF-***	100	M4 (5) M5 (6) M6 (7) M8 (9)	115	1080 - 1130

*1 : Mounting bolts are not provided.

- For aluminum frame end surface mounting

DFS-AA

DFSN-AA



Unit : mm

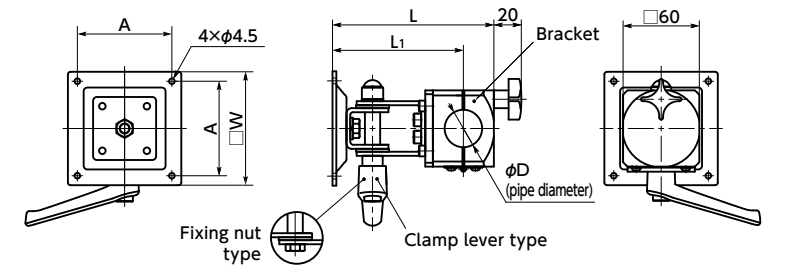
Part Number	Part Number	A 2	B 4	W	L1	L	Mass (g)
DFS-75-AA-40	DFSN-75-AA-40	75	40	90	17	106	800
DFS-100-AA-40	DFSN-100-AA-40	100	40	115	17	106	900

*1 : Hex socket low head bolts (M8 x 16 mm) are provided.

- For Round Pipe

DFS-PB

DFSN-PB



Unit : mm

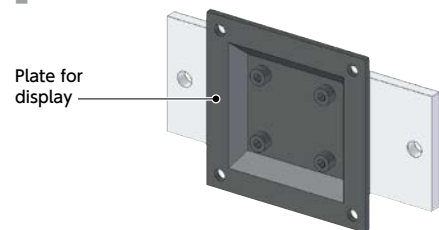
Part Number	Part Number	A 2	D 4	W	L1	L	Mass (g)
DFS-75-PB-***	DFSN-75-PB-***	75	28 40 30 42.7 34	90 90	103 107	127 135	860 - 950 850 - 930
DFS-100-PB-***	DFSN-100-PB-***	100	28 40 30 42.7 34	115 115	103 107	127 135	960 - 1050 950 - 1030

- Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ± 0.5 mm.

DFR Display Mounting System - Fix Type

WEB Selection Tool
 WEB CAD Download
 Aluminum frame mount
 wall/panel Mount
 Aluminum frame edge mount
 Pipe
 Comply with VESA standard

Structure



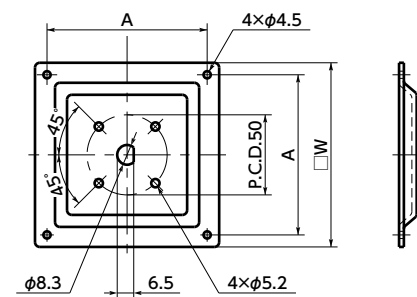
Material/Finish

	DFR-AF	DFR-AA / DFR-PB
Plate for display	SPHC Cation Painting	
Fixing Plate	SS400 Electrostatic Coating	—
Bracket	—	A6063 Alumite Treatment

RoHS2 Compliant

- The plate for display alone can be purchased.

DFR



Unit : mm

Part Number	A	W	Mass (g)	Max. loading mass
DFR-75	75	90	220	10kg
DFR-100	100	115	320	10kg

- A type to fix the display completely.
- For counterpart, three types of Mounting System for Display are available.
 - For aluminum frame / For wall panel and sheet metal — **DFR-AF**
 - For aluminum frame end mounting **DFR-AA**
 - For round pipe — **DFR-PB**

- The plate for display alone can be purchased separately.

Application

Machine tool / Medical equipment / FPD production device / Semiconductor manufacturing device / Packing machine / Food machinery

Part number specification

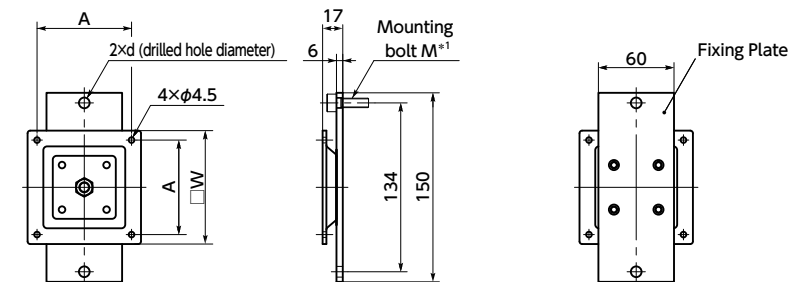
DFR 75 - AA - 40

Product Code

Example of part number: DFR-100-AF-M8 / DFR-75-PB-40

- For aluminum frame / For wall panel and sheet metal

DFR-AF



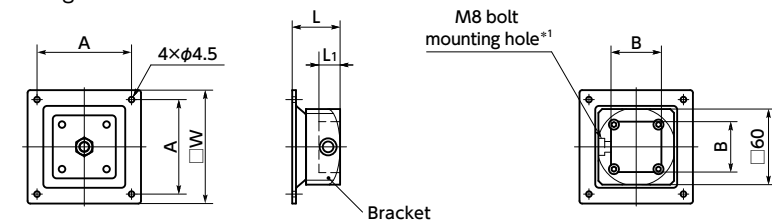
Unit : mm

Part Number	A	M*1 (d)	W	Mass (g)	Max. loading mass
DFR-75-AF-**	75	M4 (5) M5 (6) M6 (7) M8 (9)	90	630	10kg
DFR-100-AF-**	100	M4 (5) M5 (6) M6 (7) M8 (9)	115	735	10kg

*1 : Mounting bolts are not provided.

- For aluminum frame end surface mounting

DFR-AA



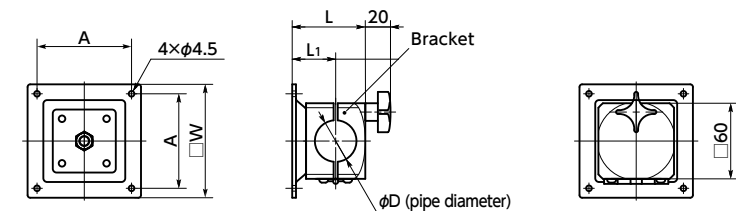
Unit : mm

Part Number	A	B	W	L1	L	Mass (g)	Max. loading mass
DFR-75-AA-40	75	40	90	17	38	400	10kg
DFR-100-AA-40	100	40	115	17	38	505	10kg

*1 : Hex socket low head bolts (M8 x 16 mm) are provided.

- For Round Pipe

DFR-PB



Unit : mm

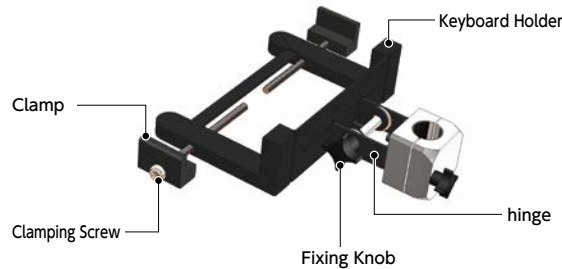
Part Number	A 	D 			W	L ₁	L	Mass (g)	Max. loading mass
DFR-75-PB-**	75	28	30	34	90	35	59	510 - 550	10kg
		40	42.7		90	39	67	500 - 530	10kg
DFR-100-PB-**	100	28	30	34	115	35	59	610 - 650	10kg
		40	42.7		115	39	67	600 - 630	10kg

* Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ±0.5 mm.

DKBR Keyboard Mounting System - Single Axis Type

WEB Selection Tool CAD Download Aluminum frame mount wall/panel Mount Aluminum frame edge mount Pipe

Structure

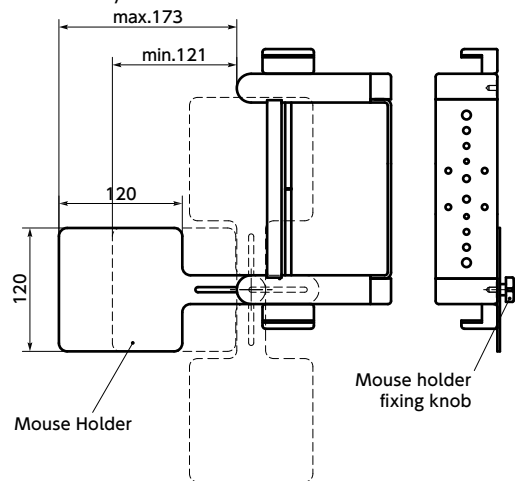


Material/Finish

	DKBR-AF	DKBR-AA / DKBR-PB
Keyboard Holder	AC4C-F Electrostatic Coating	
hinge	SPCC Electrostatic Coating	
Fixing Knob	Nylon 6	
Clamp	AC4C-F Electrostatic Coating	
Clamping Screw	SCM435 Trivalent Chromate Treatment	
Mounting Plate	SPCC Electrostatic Coating	
Bracket		A6063 Alumite Treatment

Option

- A mouse holder **DKM** is available as an option.
- This may be mounted on either side.



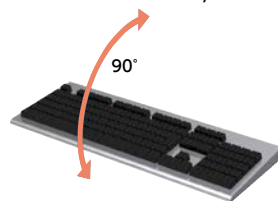
Part Number	Mass (g)
DKM	310

Material/Finish

	DKM
Mouse Holder	SPCC Cation Painting
Mouse Holder Fixing Knob	Nylon 6



- Keyboard mounting system of the single axis type.
- By tightening the clamping screw, the keyboard is securely fixed and prevent from falling.
- B5 size laptops and 500 mm wide keyboard can be loaded.
- For counterpart, three types of Mounting System for Display are available. **DKBR-AF** For aluminum frame / For wall panel and sheet metal **DKBR-AA** For aluminum frame end mounting **DKBR-PB** For round pipe
- Clamp screws of two sizes (Phillips cross recessed pan head machine screws) are supplied.
M6 x 40: Used when the keyboard width is 256 mm to 280 mm.
M6 x 140: Used when the keyboard width is 280 mm to 500 mm.
- It can be tilted by 90° in upward direction.



Application

Machine tool / Medical equipment / FPD production device / Semiconductor manufacturing device / Packing machine / Food machinery

Related Products

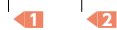
Fix type keyboard mounting system **DKB** is available.
➔ P.365



Part number specification

DKBR-500-AA-40

Product Code



Example of part number: DKBR-500-AF-M8 / DKBR-500-PB-42.7

- For aluminum frame / For wall panel and sheet metal

DKBR-AF



Part Number	M*1 (d)	Mass (g)
DKBR-500-AF-**	M4 (5)	1410
	M5 (6)	
	M6 (7)	
	M8 (9)	

*1 : Mounting bolts are not provided.

- For aluminum frame end surface mounting

DKBR-AA



Part Number	B	Mass (g)
DKBR-500-AA-40	40	1180

- Hex socket low head bolts (M8 x 16 mm) are provided.

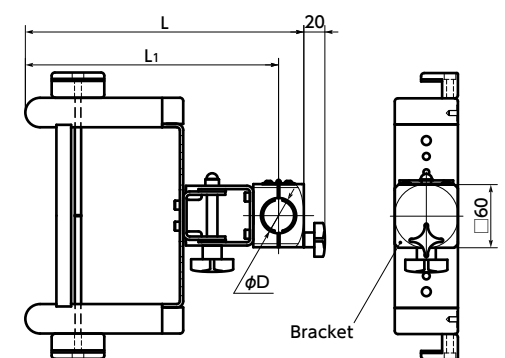
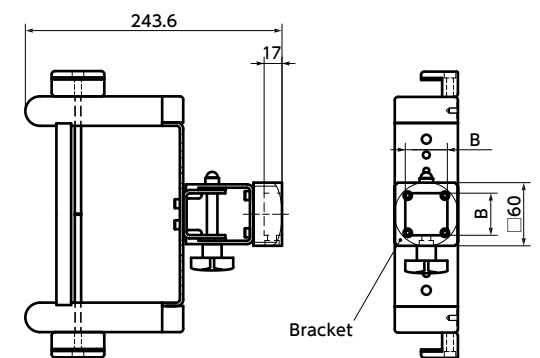
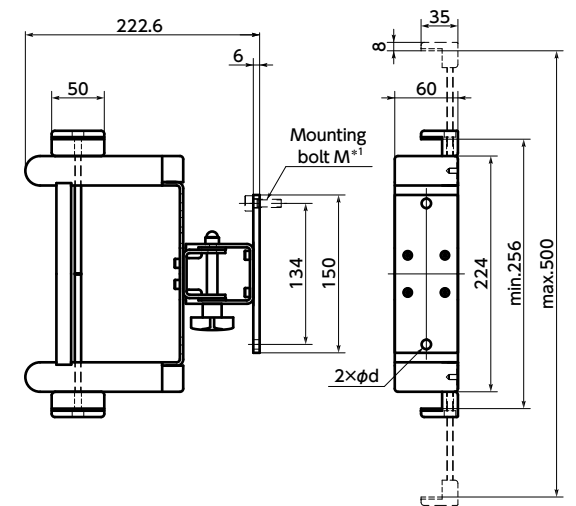
- For Round Pipe

DKBR-PB



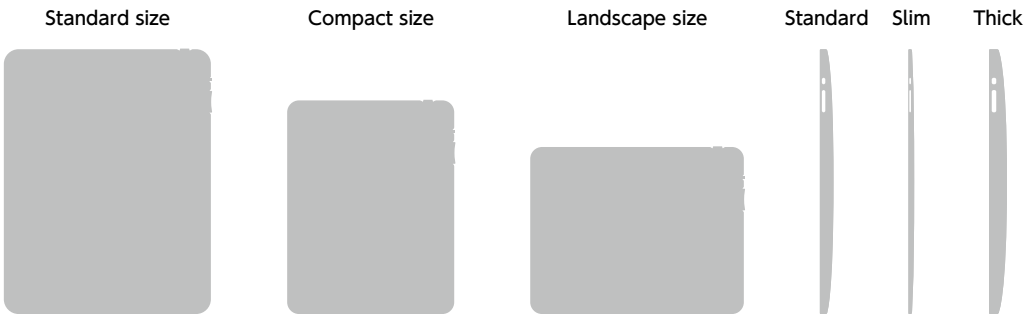
Part Number	D	L1	L	Mass (g)
DKBR-500-PB-**	28			1330
	30	240.6	264.6	1330
	34			1320
	40	244.6	272.6	1310
	42.7			1305

- Fixing rubber sheet is attached. Dimensional allowance of available round pipe is ±0.5 mm.



Special specifications

- Mounting System for Tablet PC is compatible for New iPad* and tablet PCs of various brands.
- Please contact our Customer Service with your tablet PC model number or external dimensions.



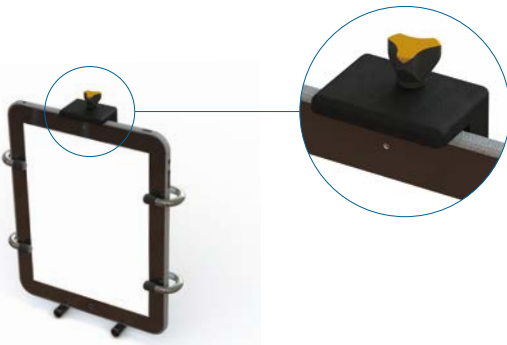
* iPad is a trademark of Apple Inc.

- We realize customer's idea.

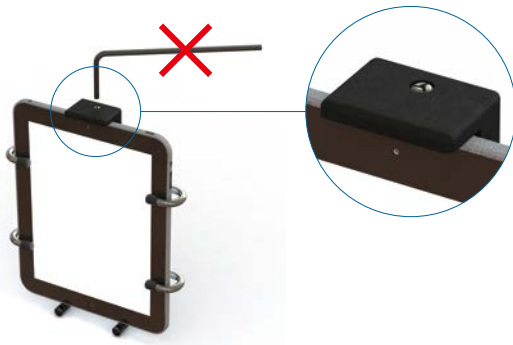
For example, the hex socket head cap screw of the clamp for tablet PC fixing part **DTT** is...



>> changed to a knob
No tool is needed.
For cases where it is mounted and removed frequently.

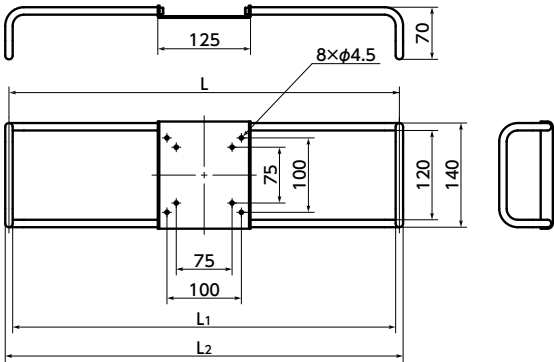


>> changed to tamper-resistance measures
It cannot be mounted or removed by normal tools.
For thorough anti-theft and secrecy measures.

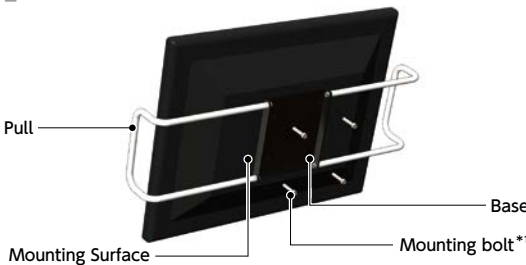


DPU Pulls for Display Angle Operations

WEB Selection Tool WEB CAD Download Comply with VESA standard



Structure



- Pulls for display angle operations.
- The display takes less moment than normally. The angle can be adjusted without worrying about display damages.
- Chrome plating for beautiful finishing.
- The mounting holes conform to VESA standards. Either of 75 mm x 75 mm and 100 mm x 100 mm can be used.



Material/Finish		RoHS2 Compliant
Pull	DPU SS400 Chrome Plating	
Base	SPHC Cationic Electrodeposition	
Hex Socket Head Cap Screw (M5 x 10 mm)	SUSXM7	

* 1 : Mounting bolts are not supplied.

⚠ Precautions for Use
Confirm that the display mounting surface is entirely level. If it is not, the **DPU** may not be mountable.

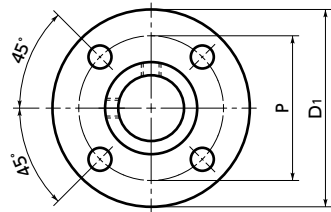
Part Number	Unit : mm				Mass (g)
	L 1	L1	L2		
DPU-525	525	515	535		1145
DPU-605	605	595	615		1245

- Part number specification

DPU-525
Product Code 1

DPH Pipe Holder

WEB Selection Tool CAD Download



- For round pipe fixing.
- We also produce products of special specifications, e.g. materials, dimensions and surface treatment. Please feel free to contact our customer service.

Material/Finish		RoHS2 Compliant
DPH		
Main body	S45C Electroless Nickel Plating	

Unit : mm										
Part Number	d 1	D	D1	H	T	P	C	h	M	Mass (g)
DPH-30-R	30	38	66	38	10	52	6.6	24	M6	295
DPH-40-R	40	48	76	38	10	62	6.6	24	M6	360

- All products are provided with hex socket set screw.

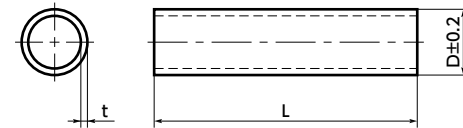
- Part number specification

DPH-30-R
Product Code 1 For Round Pipe



DAP Round Pipe - Standard Type

WEB Selection Tool CAD Download



- Aluminum Alloy Round Pipe.
- Wiring for the display can be let through the pipe. This prevents the wiring from getting caught during operations.
- We also produce products of special specifications, e.g. length and surface treatment. Please feel free to contact us.

Material/Finish		RoHS2 Compliant
DAP		
Main body	A6063 Alumite Treatment	

Unit : mm				
Part Number	D 1	L 2	t	Mass (g)
DAP-30-300	30	300	2	150
DAP-30-350	30	350	2	175
DAP-30-400	30	400	2	200
DAP-30-450	30	450	2	225
DAP-30-500	30	500	2	250
DAP-40-300	40	300	3	300
DAP-40-350	40	350	3	350
DAP-40-400	40	400	3	400
DAP-40-450	40	450	3	450
DAP-40-500	40	500	3	500

- Usage example



- Part number specification

DAP-30-300
Product Code 1 2



Set Collars/Cross Clampers

• Cross Clamper

Product Code	FCCA/FCCS	FCCA-C/FCCS-C	FCFA/FCFS	FCTA-C/FCTS-C
Page	P.372	P.373	P.374	P.375
Shape	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel
Type	Orthogonal	Orthogonal	Angle Adjustment	T-shaped
Fixing Method	Set Screw	Clamping	One-side clamping	Clamping
Applicable Shaft	Round Shaft • Square Shaft	Round Shaft • Square Shaft	Round Shaft • Square Shaft	Round Shaft • Square Shaft

• Set Collar (Standard)

Product Code	NSC	NSCS	NSCSS
Page	P.377	P.379	P.381
Shape	 Stainless Steel	 Stainless Steel	 Stainless Steel
Type	Set Screw	Clamping	Split
Bore Diameter	φ3 - φ50	φ3 - φ50	φ3 - φ50

• Set Collar (For Securing Bearings)

Product Code	NSC	NSC	NSCS	NSCS
Page	P.385	P.387	P.389	P.391
Shape	 Stainless Steel	 Stainless Steel	 Stainless Steel	 Stainless Steel
Type	Set Screw	Set Screw	Clamping	Clamping
Bore Diameter	φ3 - φ40	φ3 - φ40	φ3 - φ40	φ3 - φ40

• Cross Bracket

Product Code	FBCA-C/FBCS-C
Page	P.376
Shape	 Stainless Steel
Type	Side Mounting
Fixing method	Clamping
Applicable Shaft	Round Shaft • Square Shaft

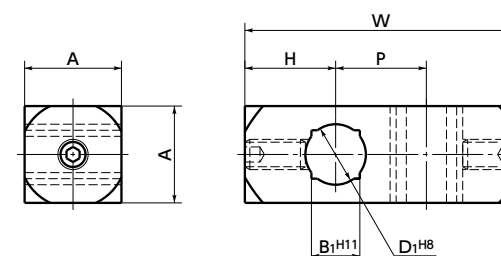
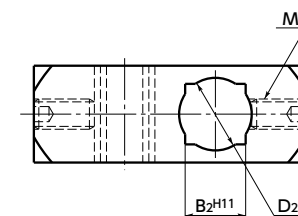
FCCA / FCCS

Cross Clamper - Set Screw Type

WEB Selection Tool

WEB CAD Download

SUS Stainless steel



- The clamper joints 2 shafts with cross.
- Fix the shafts by hex socket set screws. It is superior in cost effectiveness.
- Convenient for adjustment of side guide and sensors of the conveyance line.
- Light aluminum and stainless steel with highly corrosion-resistant are standardized.
- Compatible with both round shaft and square shaft.
- All products are provided with hex socket set screw.

• Material/Finish

	FCCA Made of Aluminum	FCCS Made of Stainless Steel
Main body	A6063 Barrel Polishing	SUS304 Barrel Polishing
Hex Socket Set Screw	SUSXM7	SUSXM7

RoHS2 Compliant

Part Number	Mass (g)	Part Number	Mass (g)	D1	D2	B1	B2	A	W	P	H	M (coarse)
FCCA-8-8	9	FCCS-8-8	27	8	8			12	32	10	11	M4
FCCA-8-10	16	FCCS-8-10	48	8	10		8	14	40	12	14	M4
FCCA-10-10	15	FCCS-10-10	45	10	10	8	8	14	40	12	14	M4
FCCA-10-12	23	FCCS-10-12	68	10	12	8	10	16	45	15	15	M5
FCCA-12-12	21	FCCS-12-12	63	12	12	10	10	16	45	15	15	M5
FCCA-10-15	41	FCCS-10-15	120	10	15	8	12	19	55	19	18	M5
FCCA-12-15	39	FCCS-12-15	115	12	15	10	12	19	55	19	18	M5
FCCA-15-15	35	FCCS-15-15	105	15	15	12	12	19	55	19	18	M5
FCCA-12-20	79	FCCS-12-20	235	12	20	10	16	25	64	24	20	M6
FCCA-15-20	75	FCCS-15-20	222	15	20	12	16	25	64	24	20	M6
FCCA-20-20	66	FCCS-20-20	194	20	20	16	16	25	64	24	20	M6

Unit : mm

• Usage example

In combination with plastic clamp lever **LEMS** (→ P.271) and scale sticker **FSS** (→ P.429).



• Part number specification

FCCA-10-15



Cleanroom Wash & Packaging → P.807

Screw Length Adjustment → P.811

Vibration Resistant → P.810

Laser Marking → P.821

Available / Add'l charge

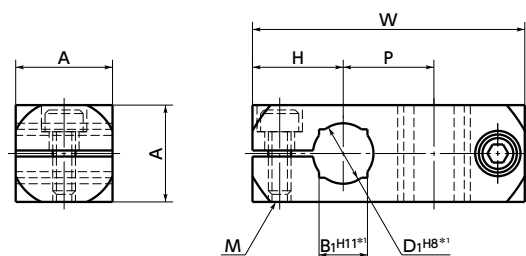
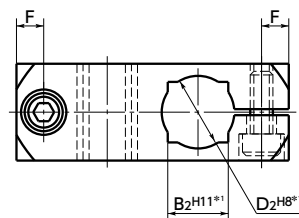
Not Available

Please feel free to contact us

Available / Add'l charge

FCCA-C / FCCS-C Cross Clamper - Clamping Type *Recommendation*

WEB Selection Tool CAD Download SUS Stainless steel



*1: Dimensional allowance before slit machining.

● Material/Finish



	FCCA-C Made of Aluminum	FCCS-C Made of Stainless Steel
Main body	A6063 Barrel Polishing	SUS304 Barrel Polishing
Hex Socket Head Cap Screw	SUSXM7	SUSXM7 Molybdenum Disulfide Coating

Part Number Aluminum	Mass (g)	Part Number Stainless steel	Mass (g)	D1*1	D2*1	B1*1	B2*1	A	W	P	H	F	M (Coarse)
FCCA-8-8-C	9	FCCS-8-8-C	26	8	8			12	32	10	11	4	M3
FCCA-8-10-C	16	FCCS-8-10-C	46	8	10		8	14	40	12	14	4.5	M4
FCCA-10-10-C	15	FCCS-10-10-C	43	10	10	8	8	14	40	12	14	4.5	M4
FCCA-10-12-C	22	FCCS-10-12-C	65	10	12	8	10	16	45	15	15	4.5	M4
FCCA-12-12-C	21	FCCS-12-12-C	61	12	12	10	10	16	45	15	15	4.5	M4
FCCA-10-15-C	39	FCCS-10-15-C	116	10	15	8	12	19	55	19	18	5.5	M5
FCCA-12-15-C	38	FCCS-12-15-C	111	12	15	10	12	19	55	19	18	5.5	M5
FCCA-15-15-C	34	FCCS-15-15-C	102	15	15	12	12	19	55	19	18	5.5	M5
FCCA-12-20-C	77	FCCS-12-20-C	229	12	20	10	16	25	64	24	20	5.5	M5
FCCA-15-20-C	73	FCCS-15-20-C	217	15	20	12	16	25	64	24	20	5.5	M5
FCCA-20-20-C	64	FCCS-20-20-C	190	20	20	16	16	25	64	24	20	5.5	M5

*1: Dimensional allowance before slit machining.

● Usage example



● Part number specification

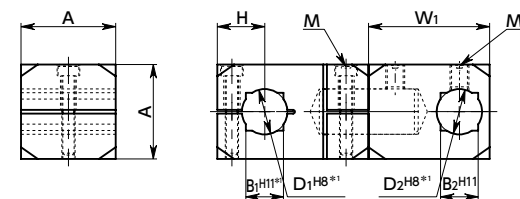
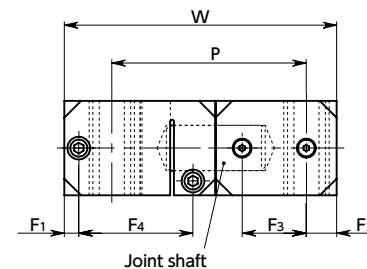
FCCS-10-15-C

Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821

Available / Add'l charge Not Available Please feel free to contact us Available / Add'l charge

FCFA / FCFS Free Cross Clamper *Recommendation*

WEB Selection Tool CAD Download SUS Stainless steel



*1: Dimensional allowance before slit machining.



- A clamper that joints 2 shafts at any angle.
- Clamping type for one side. Mounting shaft, removing shaft and angle adjustment are easy. Moreover this does not scratch the shaft.
- Convenient for fixing of side guide and sensors of the conveyance line.
- Light aluminum and stainless steel with highly corrosion-resistant are standardized.
- Compatible with both round shaft and square shaft.
- All products are provided with hex socket head cap screw and hex socket set screw.

● Material/Finish



	FCFA Made of Aluminum	FCFS Made of Stainless Steel
Main body	A6063 Barrel Polishing	SUS304 Barrel Polishing
Hex Socket Head Cap Screw	SUSXM7	SUSXM7 Molybdenum Disulfide Coating
Hex Socket Set Screw	SUSXM7	SUSXM7
Joint shaft	SUS304	SUS304

Part Number Aluminum	Mass (g)	Part Number Stainless steel	Mass (g)	D1	D2	B1	B2	A	W	W1	P	H	F1	F4	F3	F2	M (coarse)	M1 (Coarse)
FCFA-8C-8	83	FCFS-8C-8	218	8	8			22	63	28	45	11	3.7	25.8	15	7	M3	M4
FCFA-10C-10	80	FCFS-10C-10	208	10	10	8	8	22	63	28	45	11	3.7	25.8	15	7	M3	M4
FCFA-12C-12	118	FCFS-12C-12	304	12	12	10	10	25	72	32	51.5	12.5	3.8	30.2	17	8	M3	M5
FCFA-15C-15	216	FCFS-15C-15	546	15	15	12	12	30	90	40	64.5	15.5	4.5	38.5	21	10	M4	M5
FCFA-20C-20	433	FCFS-20C-20	1086	20	20	16	16	38	113	50	80	20	5.5	48.5	27	13	M5	M5

- Usage example
For fixing sensor.



● Part number specification

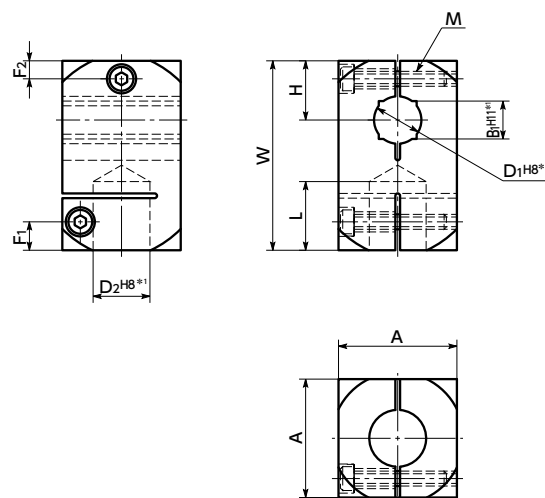
FCFS-12C-12

Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821

Available / Add'l charge Not Available Please feel free to contact us Available / Add'l charge

FCTA-C / FCTS-C T - Cross Clamper

WEB Selection Tool CAD Download SUS Stainless steel



*1 : Dimensional allowance before slit machining.

- The clamper joints 2 shafts with T-shaped cross.
- Clamping Type. Mounting shaft and removing shaft are easy. Moreover this does not scratch the shaft.
- Space-saving layout is possible.
- Convenient for fixing of side guide and sensors of the conveyance line.
- Light aluminum and stainless steel with highly corrosion-resistant are standardized.
- Compatible with both round shaft and square shaft.
- All products are provided with hex socket head cap screw.

• Material/Finish



	FCTA-C Made of Aluminum	FCTS-C Made of Stainless Steel
Main body	A6063 Barrel Polishing	SUS304 Barrel Polishing
Hex Socket Head Cap Screw	SUSXM7	SUSXM7 Molybdenum Disulfide Coating

Part Number 1	Mass (g)	Part Number 1	Mass (g)	D1	D2	B1*1	A	W	L	H	F1	F2	M (coarse)
FCTA-8-10-C	37	FCTS-8-10-C	111	8	10		22	35	12.5	11	5.5	3.7	M3
FCTA-10-10-C	36	FCTS-10-10-C	106	10	10	8	22	35	12.5	11	5.5	3.7	M3
FCTA-12-12-C	52	FCTS-12-12-C	154	12	12	10	25	40	14.5	12.5	6	3.8	M3
FCTA-15-15-C	93	FCTS-15-15-C	276	15	15	12	30	50	18	15.5	7	4.5	M4
FCTA-20-20-C	187	FCTS-20-20-C	553	20	20	16	38	63	21.5	20	9	5.5	M5

*1 : Dimensional allowance before slit machining.

• Part number specification

FCTA-15-15-C

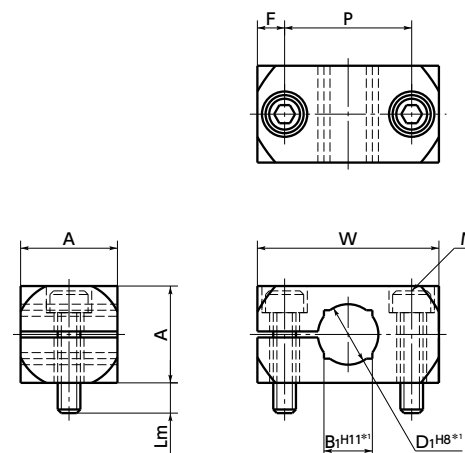


Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821

Available / Add'l charge Not Available Please feel free to contact us Available / Add'l charge

FBCA-C / FBSC-C Cross Bracket

WEB Selection Tool CAD Download SUS Stainless steel



*1 : Dimensional allowance before slit machining.

• Material/Finish



	FBCA-C Made of Aluminum	FBSC-C Made of Stainless Steel
Main body	A6063 Barrel Polishing	SUS304 Barrel Polishing
Hex Socket Head Cap Screw	SUSXM7	SUSXM7 Molybdenum Disulfide Coating

Part Number 1	Mass (g)	Part Number 1	Mass (g)	M (coarse)	D1	B1	A	W	P	F	Lm
FBCA-M4-10-C	18	FBSC-M4-10-C	55	M4	10	8	16	32	20	6	4.4
FBCA-M4-12-C	25	FBSC-M4-12-C	74	M4	12	10	19	32	20	6	5.4
FBCA-M5-10-C	19	FBSC-M5-10-C	55	M5	10	8	16	32	20	6	5.4
FBCA-M5-12-C	25	FBSC-M5-12-C	75	M5	12	10	19	32	20	6	6.4
FBCA-M6-10-C	38	FBSC-M6-10-C	111	M6	10	8	19	43	30	6.5	7.5
FBCA-M6-12-C	36	FBSC-M6-12-C	106	M6	12	10	19	43	30	6.5	7.5
FBCA-M6-15-C	45	FBSC-M6-15-C	135	M6	15	12	22	43	30	6.5	6.5
FBCA-M8-10-C	89	FBSC-M8-10-C	263	M8	10	8	25	56	40	8	8.6
FBCA-M8-12-C	87	FBSC-M8-12-C	256	M8	12	10	25	56	40	8	8.6
FBCA-M8-15-C	82	FBSC-M8-15-C	244	M8	15	12	25	56	40	8	8.6
FBCA-M8-20-C	110	FBSC-M8-20-C	327	M8	20	16	30	56	40	8	8.6

• Usage example

In combination with an aluminum frame.



• Part number specification

FBCS-M5-10-C

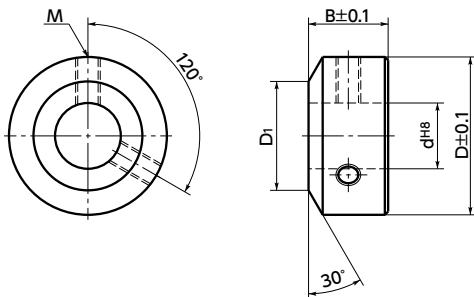


Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821

Available / Add'l charge Not Available Please feel free to contact us Available / Add'l charge

NSC Set Collar - Set Screw Type

WEB Selection Tool CAD Download SUS Stainless steel



- Standard type set collar.
- It is attached to the shaft by the set screws.
- Chamfer on one side end face is larger (bore diameter 8 mm or above).
This avoids interference of the set collar with the external wheel when the bearing is fixed.

	NSC-C	NSC-M	NSC-S
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Electroless Nickel Plating	SUS304
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7	SUSXM7

RoHS2 Compliant



NSC-C Made of Steel, Ferrosoferric Oxide Film NSC-M Made of Steel, Electroless Nickel Plating

NSC-S Made of Stainless Steel

Part Number		Part Number		Part Number		d	B	D	D1	M (coarse) *1	Mass (g)
NSC-3-6-C	NSC-3-6-M	NSC-3-6-S	3	6	7					M3	1
NSC-3-8-C	NSC-3-8-M	NSC-3-8-S	3	8	7					M3	2
NSC-4-6-C	NSC-4-6-M	NSC-4-6-S	4	6	12					M4	5
NSC-4-8-C	NSC-4-8-M	NSC-4-8-S	4	8	12					M4	6
NSC-5-6-C	NSC-5-6-M	NSC-5-6-S	5	6	14					M4	6
NSC-5-8-C	NSC-5-8-M	NSC-5-8-S	5	8	14					M4	8
NSC-5-10-C	NSC-5-10-M	NSC-5-10-S	5	10	14					M4	10
NSC-6-6-C	NSC-6-6-M	NSC-6-6-S	6	6	15					M4	6
NSC-6-8-C	NSC-6-8-M	NSC-6-8-S	6	8	15					M4	9
NSC-6-10-C	NSC-6-10-M	NSC-6-10-S	6	10	16					M4	13
NSC-8-6-C	NSC-8-6-M	NSC-8-6-S	8	6	16	13				M4	6
NSC-8-8-C	NSC-8-8-M	NSC-8-8-S	8	8	16	13				M4	9
NSC-8-10-C	NSC-8-10-M	NSC-8-10-S	8	10	18	13				M4	16
NSC-10-6-C	NSC-10-6-M	NSC-10-6-S	10	6	18	16				M4	8
NSC-10-8-C	NSC-10-8-M	NSC-10-8-S	10	8	18	16				M4	10
NSC-10-10-C	NSC-10-10-M	NSC-10-10-S	10	10	20	16				M4	17
NSC-12-8-C	NSC-12-8-M	NSC-12-8-S	12	8	22	20				M4	16
NSC-12-10-C	NSC-12-10-M	NSC-12-10-S	12	10	26	20				M5	30
NSC-12-12-C	NSC-12-12-M	NSC-12-12-S	12	12	26	20				M6	36
NSC-13-8-C	NSC-13-8-M	NSC-13-8-S	13	8	22	20				M4	15
NSC-13-10-C	NSC-13-10-M	NSC-13-10-S	13	10	26	20				M5	28
NSC-14-12-C	NSC-14-12-M	NSC-14-12-S	14	12	26	20				M5	33
NSC-15-8-C	NSC-15-8-M	NSC-15-8-S	15	8	25	24				M5	19
NSC-15-10-C	NSC-15-10-M	NSC-15-10-S	15	10	25	24				M5	24
NSC-15-12-C	NSC-15-12-M	NSC-15-12-S	15	12	28	24				M5	39

*1 : Hex socket set screw is provided.

*1 : If d dimension is 6 or below, one point.

NSC-C Made of Steel, Ferrosoferric Oxide Film NSC-M Made of Steel, Electroless Nickel Plating

NSC-S Made of Stainless Steel

Part Number		Part Number		Part Number		d	B	D	D1	M (coarse) *1	Mass (g)
NSC-16-10-C	NSC-16-10-M	NSC-16-10-S	16	10	28	24				M5	31
NSC-16-12-C	NSC-16-12-M	NSC-16-12-S	16	12	28	24				M5	37
NSC-17-10-C	NSC-17-10-M	NSC-17-10-S	17	10	30	26				M6	35
NSC-17-12-C	NSC-17-12-M	NSC-17-12-S	17	12	32	26				M6	49
NSC-18-15-C	NSC-18-15-M	NSC-18-15-S	18	15	32	29				M6	61
NSC-20-7-C	NSC-20-7-M	NSC-20-7-S	20	7	30					M5	21
NSC-20-10-C	NSC-20-10-M	NSC-20-10-S	20	10	32	29				M6	36
NSC-20-12-C	NSC-20-12-M	NSC-20-12-S	20	12	32	29				M6	83
NSC-20-15-C	NSC-20-15-M	NSC-20-15-S	20	15	32	29				M6	55
NSC-22-18-C	NSC-22-18-M	NSC-22-18-S	22	18	38	34				M8	101
NSC-25-12-C	NSC-25-12-M	NSC-25-12-S	25	12	38	37				M6	60
NSC-25-15-C	NSC-25-15-M	NSC-25-15-S	25	15	38	37				M6	73
NSC-25-18-C	NSC-25-18-M	NSC-25-18-S	25	18	42	38				M8	122
NSC-28-18-C	NSC-28-18-M	NSC-28-18-S	28	18	45	40				M8	129
NSC-30-16-C	NSC-30-16-M	NSC-30-16-S	30	16	45	42				M8	106
NSC-30-18-C	NSC-30-18-M	NSC-30-18-S	30	18	49	42				M8	156
NSC-30-20-C	NSC-30-20-M	NSC-30-20-S	30	20	49	42				M8	175
NSC-32-20-C	NSC-32-20-M	NSC-32-20-S	32	20	53	44				M8	206
NSC-35-15-C	NSC-35-15-M	NSC-35-15-S	35	15	50	47				M8	111
NSC-35-18-C	NSC-35-18-M	NSC-35-18-S	35	18	55	47				M8	187
NSC-35-20-C	NSC-35-20-M	NSC-35-20-S	35	20	59	47				M8	256
NSC-38-22-C	NSC-38-22-M	NSC-38-22-S	38	22	64	50				M10	330
NSC-40-18-C	NSC-40-18-M	NSC-40-18-S	40	18	60	55				M10	213
NSC-40-22-C	NSC-40-22-M	NSC-40-22-S	40	22	72	55				M10	438
NSC-45-22-C	NSC-45-22-M	NSC-45-22-S	45	22	75	60				M10	445
NSC-50-20-C	NSC-50-20-M	NSC-50-20-S	50	20	70	65				M10	284
NSC-50-25-C	NSC-50-25-M	NSC-50-25-S	50	25	79	65				M10	537

*1 : Hex socket set screw is provided.

- Part number specification

NSC-20-10-S

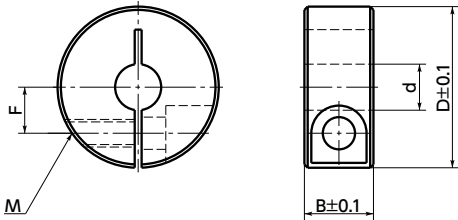


Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Please feel free to contact us	Not Available	Not Available	Available / Add'l charge

Machine Elements
Levers
Knobs
Pulls
Mounting Systems for Display
Set Collars
Cross Clampers
Handles
Grips
Scales
Stages
Ball Rollers
Plungers
Structure Components
Screws

NSCS Set Collar - Clamping Type

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Clamping type set collar.
- Installation and removing are easy. Moreover this does not scratch the shaft.
- Optimal for machines and devices that are frequently mounted/removed, e.g. slide shaft.

	NSCS-C	NSCS-M	NSCS-S
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Electroless Nickel Plating	SUS304
Hex Socket Head Cap Screw	SS400 Ferrosoferric Oxide Film (Black)	SUSXM7	SUSXM7

RoHS2 Compliant



NSCS-C Made of Steel, Ferrosoferric Oxide Film NSCS-M Made of Steel, Electroless Nickel Plating
NSCS-S Made of Stainless Steel

Part Number	Part Number	Part Number	d	B	D	F	M (coarse) *1	Mass (g)
NSCS-3-8-C	NSCS-3-8-M	NSCS-3-8-S	3	8	15	4.5	M3	9
NSCS-4-8-C	NSCS-4-8-M	NSCS-4-8-S	4	8	15	4.5	M3	9
NSCS-5-8-C	NSCS-5-8-M	NSCS-5-8-S	5	8	20	6	M3	17
NSCS-5-10-C	NSCS-5-10-M	NSCS-5-10-S	5	10	20	6	M4	21
NSCS-6-8-C	NSCS-6-8-M	NSCS-6-8-S	6	8	20	6	M3	15
NSCS-6-10-C	NSCS-6-10-M	NSCS-6-10-S	6	10	20	6	M4	20
NSCS-8-8-C	NSCS-8-8-M	NSCS-8-8-S	8	8	25	8	M3	25
NSCS-8-10-C	NSCS-8-10-M	NSCS-8-10-S	8	10	25	8	M4	31
NSCS-8-12-C	NSCS-8-12-M	NSCS-8-12-S	8	12	28	8.5	M5	49
NSCS-8-15-C	NSCS-8-15-M	NSCS-8-15-S	8	15	30	9	M6	69
NSCS-10-10-C	NSCS-10-10-M	NSCS-10-10-S	10	10	30	9	M4	44
NSCS-10-12-C	NSCS-10-12-M	NSCS-10-12-S	10	12	30	9	M5	54
NSCS-10-15-C	NSCS-10-15-M	NSCS-10-15-S	10	15	35	10	M6	93
NSCS-12-10-C	NSCS-12-10-M	NSCS-12-10-S	12	10	30	10	M4	42
NSCS-12-12-C	NSCS-12-12-M	NSCS-12-12-S	12	12	30	10	M5	51
NSCS-12-15-C	NSCS-12-15-M	NSCS-12-15-S	12	15	35	11	M6	90

*1 : Hex socket head cap screw is provided.

NSCS-C Made of Steel, Ferrosoferric Oxide Film NSCS-M Made of Steel, Electroless Nickel Plating
NSCS-S Made of Stainless Steel

Part Number	Part Number	Part Number	d	B	D	F	M (coarse) *1	Mass (g)
NSCS-13-10-C	NSCS-13-10-M	NSCS-13-10-S	13	10	30	10	M4	41
NSCS-13-15-C	NSCS-13-15-M	NSCS-13-15-S	13	15	35	11	M6	88
NSCS-15-10-C	NSCS-15-10-M	NSCS-15-10-S	15	10	32	11	M4	46
NSCS-15-12-C	NSCS-15-12-M	NSCS-15-12-S	15	12	35	12	M5	68
NSCS-15-15-C	NSCS-15-15-M	NSCS-15-15-S	15	15	40	13	M6	118
NSCS-16-10-C	NSCS-16-10-M	NSCS-16-10-S	16	10	35	12	M4	54
NSCS-16-12-C	NSCS-16-12-M	NSCS-16-12-S	16	12	35	12	M5	66
NSCS-16-15-C	NSCS-16-15-M	NSCS-16-15-S	16	15	40	13	M6	114
NSCS-17-15-C	NSCS-17-15-M	NSCS-17-15-S	17	15	40	13	M6	106
NSCS-18-15-C	NSCS-18-15-M	NSCS-18-15-S	18	15	45	15	M6	143
NSCS-20-10-C	NSCS-20-10-M	NSCS-20-10-S	20	10	40	14	M4	68
NSCS-20-12-C	NSCS-20-12-M	NSCS-20-12-S	20	12	40	14	M5	81
NSCS-20-15-C	NSCS-20-15-M	NSCS-20-15-S	20	15	45	15	M6	139
NSCS-25-12-C	NSCS-25-12-M	NSCS-25-12-S	25	12	45	17	M5	96
NSCS-25-15-C	NSCS-25-15-M	NSCS-25-15-S	25	15	50	18	M6	162
NSCS-30-15-C	NSCS-30-15-M	NSCS-30-15-S	30	15	55	20	M6	183
NSCS-35-15-C	NSCS-35-15-M	NSCS-35-15-S	35	15	60	23	M6	205
NSCS-40-18-C	NSCS-40-18-M	NSCS-40-18-S	40	18	70	26	M8	347
NSCS-45-18-C	NSCS-45-18-M	NSCS-45-18-S	45	18	75	28	M8	372
NSCS-50-22-C	NSCS-50-22-M	NSCS-50-22-S	50	22	85	32	M10	603

*1 : Hex socket head cap screw is provided.

- Part number specification

NSCS-3-8-S

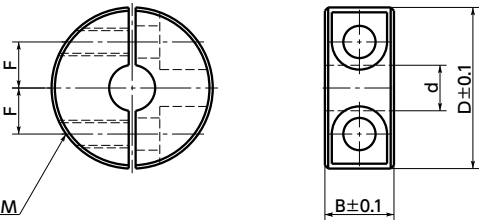


Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Please feel free to contact us	Not Available	Not Available	Available / Add'l charge

Machine Elements
Levers
Knobs
Pulls
Mounting Systems for Display
Set Collars
Cross Clampers
Handles
Grips
Scales
Stages
Ball Rollers
Plungers
Structure Components
Screws

NSCSS Set Collar - Split - type

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Split-type set collar.
- As the axial hole part can be completely split, so mounting and removing can be performed easily. Moreover this does not scratch the shaft.
- Optimal for use with machines and devices that are difficult to disassemble.

	NSCSS-C	NSCSS-M	NSCSS-S
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Electroless Nickel Plating	SUS304
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7	SUSXM7

RoHS2 Compliant

NSCSS-C Made of Steel, Ferrosoferric Oxide Film NSCSS-M Made of Steel, Electroless Nickel Plating
NSCSS-S Made of Stainless Steel

Unit : mm								
Part Number	Part Number	Part Number	d	B	D	F	M (coarse) *1	Mass (g)
NSCSS-3-8-C	NSCSS-3-8-M	NSCSS-3-8-S	3	8	15	4.5	M3	9
NSCSS-4-8-C	NSCSS-4-8-M	NSCSS-4-8-S	4	8	15	4.5	M3	7
NSCSS-5-8-C	NSCSS-5-8-M	NSCSS-5-8-S	5	8	20	5.5	M3	14
NSCSS-5-10-C	NSCSS-5-10-M	NSCSS-5-10-S	5	10	20	6	M4	20
NSCSS-6-8-C	NSCSS-6-8-M	NSCSS-6-8-S	6	8	20	6	M3	15
NSCSS-6-10-C	NSCSS-6-10-M	NSCSS-6-10-S	6	10	20	6	M4	19
NSCSS-8-8-C	NSCSS-8-8-M	NSCSS-8-8-S	8	8	25	8	M3	24
NSCSS-8-10-C	NSCSS-8-10-M	NSCSS-8-10-S	8	10	25	8	M4	30
NSCSS-8-12-C	NSCSS-8-12-M	NSCSS-8-12-S	8	12	28	8.5	M5	47
NSCSS-8-15-C	NSCSS-8-15-M	NSCSS-8-15-S	8	15	30	9	M6	63
NSCSS-10-10-C	NSCSS-10-10-M	NSCSS-10-10-S	10	10	30	9	M4	41
NSCSS-10-12-C	NSCSS-10-12-M	NSCSS-10-12-S	10	12	30	9	M5	51
NSCSS-10-15-C	NSCSS-10-15-M	NSCSS-10-15-S	10	15	35	10	M6	86
NSCSS-12-10-C	NSCSS-12-10-M	NSCSS-12-10-S	12	10	30	10	M4	40
NSCSS-12-12-C	NSCSS-12-12-M	NSCSS-12-12-S	12	12	30	10	M5	49
NSCSS-12-15-C	NSCSS-12-15-M	NSCSS-12-15-S	12	15	35	11	M6	84
NSCSS-13-10-C	NSCSS-13-10-M	NSCSS-13-10-S	13	10	30	10	M4	38
NSCSS-13-15-C	NSCSS-13-15-M	NSCSS-13-15-S	13	15	35	11	M6	80

*1 : Hex socket head cap screw is provided.



NSCSS-C Made of Steel, Ferrosoferric Oxide Film NSCSS-M Made of Steel, Electroless Nickel Plating
NSCSS-S Made of Stainless Steel

Unit : mm								
Part Number	Part Number	Part Number	d	B	D	F	M (coarse) *1	Mass (g)
NSCSS-15-10-C	NSCSS-15-10-M	NSCSS-15-10-S	15	10	32	11	M4	42
NSCSS-15-12-C	NSCSS-15-12-M	NSCSS-15-12-S	15	12	35	12	M5	64
NSCSS-15-15-C	NSCSS-15-15-M	NSCSS-15-15-S	15	15	40	13	M6	109
NSCSS-16-10-C	NSCSS-16-10-M	NSCSS-16-10-S	16	10	35	12	M4	51
NSCSS-16-12-C	NSCSS-16-12-M	NSCSS-16-12-S	16	12	35	12	M5	62
NSCSS-16-15-C	NSCSS-16-15-M	NSCSS-16-15-S	16	15	40	13	M6	107
NSCSS-17-15-C	NSCSS-17-15-M	NSCSS-17-15-S	17	15	40	13	M6	106
NSCSS-18-15-C	NSCSS-18-15-M	NSCSS-18-15-S	18	15	45	15	M6	136
NSCSS-20-10-C	NSCSS-20-10-M	NSCSS-20-10-S	20	10	40	14	M4	65
NSCSS-20-12-C	NSCSS-20-12-M	NSCSS-20-12-S	20	12	40	14	M5	77
NSCSS-20-15-C	NSCSS-20-15-M	NSCSS-20-15-S	20	15	45	15	M6	131
NSCSS-25-12-C	NSCSS-25-12-M	NSCSS-25-12-S	25	12	45	17	M5	92
NSCSS-25-15-C	NSCSS-25-15-M	NSCSS-25-15-S	25	15	50	18	M6	152
NSCSS-30-15-C	NSCSS-30-15-M	NSCSS-30-15-S	30	15	55	20	M6	171
NSCSS-35-15-C	NSCSS-35-15-M	NSCSS-35-15-S	35	15	60	23	M6	195
NSCSS-40-18-C	NSCSS-40-18-M	NSCSS-40-18-S	40	18	70	26	M8	334
NSCSS-45-18-C	NSCSS-45-18-M	NSCSS-45-18-S	45	18	75	28	M8	356
NSCSS-50-22-C	NSCSS-50-22-M	NSCSS-50-22-S	50	22	85	32	M10	576

*1 : Hex socket head cap screw is provided.

- Part number specification

NSCSS-10-15-C



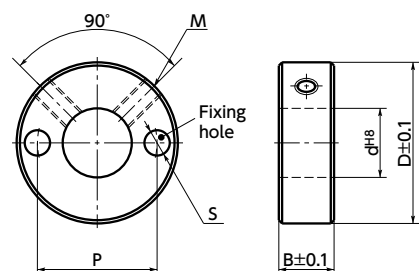
Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Please feel free to contact us	Not Available	Not Available	Available / Add'l charge

NSC Set Collar - with Installation Hole - Set Screw Type

WEB Selection Tool WEB CAD Download SUS Stainless steel



NSC-CP2



NSC-SP2



NSC-MP2

- Set collar with installation hole. It can be installed to any machine and device such as wheels, flanges and plates, by using the fixing hole.
- It is attached to the shaft by the set screws.

• Material/Finish

RoHS2 Compliant

	NSC-CP2	NSC-MP2	NSC-SP2
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Electroless Nickel Plating	SUS304
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7	SUSXM7

• Part number specification

NSC-12-12-SP2



NSC-CP2 Made of Steel, Ferrosoferric Oxide Film NSC-MP2 Made of Steel, Electroless Nickel Plating

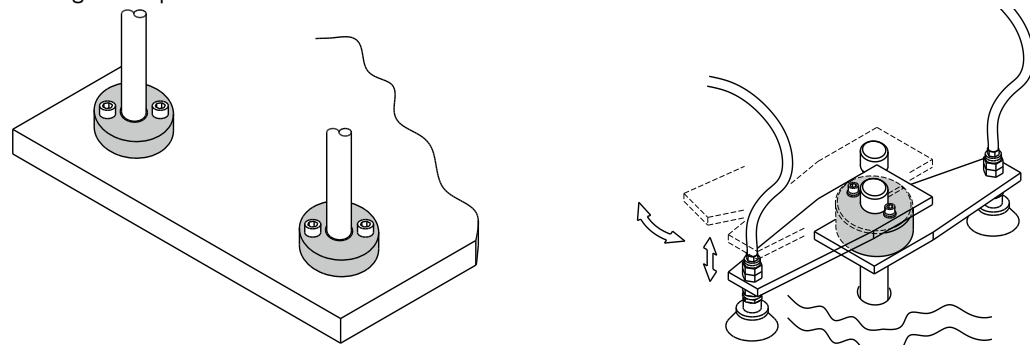
NSC-SP2 Made of Stainless Steel

Part Number	Part Number	Part Number	d	B	D	S	P	M*1 (Coarse)	Mass (g)
NSC-3-6-CP2	NSC-3-6-MP2	NSC-3-6-SP2	3	6	17	3.4	11	M3	9
NSC-4-6-CP2	NSC-4-6-MP2	NSC-4-6-SP2	4	6	18	3.4	12	M3	10
NSC-5-10-CP2	NSC-5-10-MP2	NSC-5-10-SP2	5	10	22	4.5	15	M4	25
NSC-6-10-CP2	NSC-6-10-MP2	NSC-6-10-SP2	6	10	22	4.5	15	M4	24
NSC-8-10-CP2	NSC-8-10-MP2	NSC-8-10-SP2	8	10	24	4.5	17	M4	28
NSC-10-10-CP2	NSC-10-10-MP2	NSC-10-10-SP2	10	10	26	4.5	19	M4	31
NSC-12-12-CP2	NSC-12-12-MP2	NSC-12-12-SP2	12	12	32	5.5	23	M5	57
NSC-13-12-CP2	NSC-13-12-MP2	NSC-13-12-SP2	13	12	33	5.5	24	M5	61
NSC-15-12-CP2	NSC-15-12-MP2	NSC-15-12-SP2	15	12	35	5.5	26	M5	65
NSC-16-12-CP2	NSC-16-12-MP2	NSC-16-12-SP2	16	12	40	6.6	28	M6	88
NSC-20-12-CP2	NSC-20-12-MP2	NSC-20-12-SP2	20	12	44	6.6	32	M6	102
NSC-25-15-CP2	NSC-25-15-MP2	NSC-25-15-SP2	25	15	50	6.6	37	M8	160
NSC-30-15-CP2	NSC-30-15-MP2	NSC-30-15-SP2	30	15	55	6.6	42	M8	177
NSC-35-15-CP2	NSC-35-15-MP2	NSC-35-15-SP2	35	15	60	6.6	47	M8	203
NSC-40-20-CP2	NSC-40-20-MP2	NSC-40-20-SP2	40	20	70	9	55	M10	375
NSC-50-25-CP2	NSC-50-25-MP2	NSC-50-25-SP2	50	25	86	11	68	M10	698

*1: Hex socket set screw is provided.

*1: If d dimension is 5 or below, one point.

• Usage example



Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821

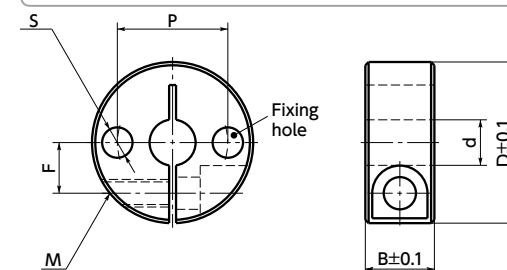
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NSCS Set Collar - with Installation Hole - Clamping Type

WEB Selection Tool WEB CAD Download SUS Stainless steel



NSCS-CP2



NSCS-MP2



NSCS-SP2

• Material/Finish

RoHS2 Compliant

	NSCS-CP2	NSCS-MP2	NSCS-SP2
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Electroless Nickel Plating	SUS304
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7	SUSXM7

NSCS-CP2 Made of Steel, Ferrosoferric Oxide Film NSCS-MP2 Made of Steel, Electroless Nickel Plating

NSCS-SP2 Made of Stainless Steel

Part Number	Part Number	Part Number	d	B	D	F	S	P	M*1 (Coarse)	Mass (g)
NSCS-6-8-CP2	NSCS-6-8-MP2	NSCS-6-8-SP2	6	8	20	6	3.5	13	M3	15
NSCS-6-10-CP2	NSCS-6-10-MP2	NSCS-6-10-SP2	6	10	20	6	3.5	13	M4	19
NSCS-8-8-CP2	NSCS-8-8-MP2	NSCS-8-8-SP2	8	8	25	8	4.5	16	M3	23
NSCS-8-10-CP2	NSCS-8-10-MP2	NSCS-8-10-SP2	8	10	25	8	4.5	18	M4	29
NSCS-8-12-CP2	NSCS-8-12-MP2	NSCS-8-12-SP2	8	12	28	8.5	5.5	18	M5	44
NSCS-8-15-CP2	NSCS-8-15-MP2	NSCS-8-15-SP2	8	15	30	9.5	5.5	20	M6	63
NSCS-10-10-CP2	NSCS-10-10-MP2	NSCS-10-10-SP2	10	10	30	9	5.5	20	M4	41
NSCS-10-12-CP2	NSCS-10-12-MP2	NSCS-10-12-SP2	10	12	30	9	5.5	20	M5	49
NSCS-10-15-CP2	NSCS-10-15-MP2	NSCS-10-15-SP2	10	15	35	11	6.6	24	M6	84
NSCS-12-10-CP2	NSCS-12-10-MP2	NSCS-12-10-SP2	12	10	30	10	5.5	22	M4	38
NSCS-12-12-CP2	NSCS-12-12-MP2	NSCS-12-12-SP2	12	12	30	10	5.5	22	M5	47
NSCS-12-15-CP2	NSCS-12-15-MP2	NSCS-12-15-SP2	12	15	35	11	6.6	24	M6	82
NSCS-13-10-CP2	NSCS-13-10-MP2	NSCS-13-10-SP2	13	10	30	10	4.5	22	M4	38
NSCS-13-15-CP2	NSCS-13-15-MP2	NSCS-13-15-SP2	13	15	35	11	6.6	24	M6	81
NSCS-15-10-CP2	NSCS-15-10-MP2	NSCS-15-10-SP2	15	10	32	11	4.5	24	M4	43
NSCS-15-12-CP2	NSCS-15-12-MP2	NSCS-15-12-SP2	15	12	35	12	5.5	26	M5	64
NSCS-15-15-CP2	NSCS-15-15-MP2	NSCS-15-15-SP2	15	15	40	13	6.6	28	M6	109
NSCS-16-10-CP2	NSCS-16-10-MP2	NSCS-16-10-SP2	16	10	35	12	4.5	25	M4	52
NSCS-16-12-CP2	NSCS-16-12-MP2	NSCS-16-12-SP2	16	12	35	12	5.5	26	M5	61
NSCS-16-15-CP2	NSCS-16-15-MP2	NSCS-16-15-SP2	16	15	40	13	6.6	28	M6	105
NSCS-20-10-CP2	NSCS-20-10-MP2	NSCS-20-10-SP2	20	10	40	14	5.5	30	M4	64
NSCS-20-12-CP2	NSCS-20-12-MP2	NSCS-20-12-SP2	20	12	40	14	5.5	30	M5	77
NSCS-20-15-CP2	NSCS-20-15-MP2	NSCS-20-15-SP2	20	15	45	15	6.6	34	M6	130
NSCS-25-12-CP2	NSCS-25-12-MP2	NSCS-25-12-SP2	25	12	45	17	5.5	36	M5	91
NSCS-25-15-CP2	NSCS-25-15-MP2	NSCS-25-15-SP2	25	15	50	18	6.6	38	M6	152
NSCS-30-15-CP2	NSCS-30-15-MP2	NSCS-30-15-SP2	30	15	55	20	6.6	44	M6	174
NSCS-35-15-CP2	NSCS-35-15-MP2	NSCS-35-15-SP2	35	15	60	23	6.6	48	M6	196
NSCS-40-18-CP2	NSCS-40-18-MP2	NSCS-40-18-SP2	40	18	70	26	9	56	M8	328
NSCS-50-22-CP2	NSCS-50-22-MP2	NSCS-50-22-SP2	50	22	85	32	11	68	M10	572

*1: Hex socket head cap screw is provided.

• Part number specification

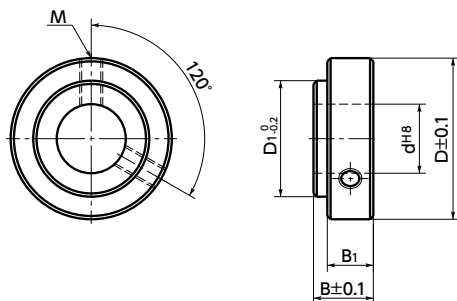
NSCS-10-10-CP2



Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821

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NSC Set Collar - For Securing Bearing - Set Screw Type

WEB Selection
ToolWEB CAD
Download

- Set collar for securing bearing.
- It can be fixed by pressing the bearing inner wheel only on the convex of the main body.
- Optimal for securing bearing when it is difficult to fix the snap ring, etc. to the shaft.
- It is attached to the shaft by the set screws.

Unit : mm									
Part Number Ferroferric oxide film	Part Number Electroless nickel plating	d	B	B1	D	D1	M (coarse)*1	Applicable bearings	Mass (g)
NSC-3-7-CB	NSC-3-7-MB	3	7.5	5	7	5	M3	693ZZ・623ZZ	1
NSC-4-7-CB	NSC-4-7-MB	4	7.5	5	8	6	M3	694ZZ・624ZZ	2
NSC-5-7-CB	NSC-5-7-MB	5	7.5	5	11	7.2	M3	695ZZ・605ZZ・625ZZ	4
NSC-6-7-CB1	NSC-6-7-MB1	6	7.5	5	13	8.4	M3	606ZZ	4
NSC-6-7-CB2	NSC-6-7-MB2	6	7.5	5	13	9.2	M3	626ZZ	5
NSC-6-7-CB3	NSC-6-7-MB3	6	7.5	5	13	8	M3	696ZZ	6
NSC-8-9-CB1	NSC-8-9-MB1	8	9.5	7	18	11.7	M4	608ZZ	12
NSC-8-9-CB2	NSC-8-9-MB2	8	9.5	7	18	11.4	M4	628ZZ	11
NSC-8-9-CB3	NSC-8-9-MB3	8	9.5	7	18	10.4	M4	698ZZ	11
NSC-10-11-CB1	NSC-10-11-MB1	10	11	8	20	14.2	M5	6000ZZ	16
NSC-10-11-CB2	NSC-10-11-MB2	10	11	8	20	16.7	M5	6200ZZ	18
NSC-10-11-CB3	NSC-10-11-MB3	10	11	8	20	13.2	M5	6900ZZ	15
NSC-12-11-CB1	NSC-12-11-MB1	12	11	8	22	17.2	M5	6001ZZ	19
NSC-12-11-CB2	NSC-12-11-MB2	12	11	8	22	17.7	M5	6201ZZ	19
NSC-12-11-CB3	NSC-12-11-MB3	12	11	8	22	15.2	M5	6901ZZ	17
NSC-15-11-CB1	NSC-15-11-MB1	15	11	8	25	20.2	M5	6002ZZ	22
NSC-15-11-CB2	NSC-15-11-MB2	15	11	8	25	21.2	M5	6202ZZ	23
NSC-15-11-CB3	NSC-15-11-MB3	15	11	8	25	18.7	M5	6902ZZ	21

*1 : Hex socket set screw is provided.

*1 : If d dimension is 5 or below, one point.

● Material/Finish

RoHS2 Compliant

	NSC-CB	NSC-MB
Main body	S45C Ferroferric Oxide Film (Black)	S45C Electroless Nickel Plating
Hex Socket Set Screw	SCM435 Ferroferric Oxide Film (Black)	SUSXM7



Unit : mm									
Part Number Ferroferric oxide film	Part Number Electroless nickel plating	d	B	B1	D	D1	M (coarse)*1	Applicable bearings	Mass (g)
NSC-17-13-CB1	NSC-17-13-MB1	17	13	10	28	22.2	M6	6003ZZ	33
NSC-17-13-CB2	NSC-17-13-MB2	17	13	10	28	24.2	M6	6203ZZ	35
NSC-17-13-CB3	NSC-17-13-MB3	17	13	10	28	20.2	M6	6903ZZ	31
NSC-20-13-CB1	NSC-20-13-MB1	20	13	10	35	25.2	M6	6004ZZ	52
NSC-20-13-CB2	NSC-20-13-MB2	20	13	10	35	27.2	M6	6204ZZ	54
NSC-20-13-CB3	NSC-20-13-MB3	20	13	10	35	24.7	M6	6904ZZ	52
NSC-25-13-CB1	NSC-25-13-MB1	25	13.5	10	38	31.2	M6	6005ZZ	55
NSC-25-13-CB2	NSC-25-13-MB2	25	13.5	10	38	33.2	M6	6205ZZ	58
NSC-25-13-CB3	NSC-25-13-MB3	25	13.5	10	38	30.2	M6	6905ZZ	54
NSC-30-15-CB1	NSC-30-15-MB1	30	15.5	12	45	38.2	M8	6006ZZ	90
NSC-30-15-CB2	NSC-30-15-MB2	30	15.5	12	45	40.2	M8	6206ZZ	94
NSC-30-15-CB3	NSC-30-15-MB3	30	15.5	12	45	35.2	M8	6906ZZ	86
NSC-35-16-CB1	NSC-35-16-MB1	35	16.5	12	50	43.2	M8	6007ZZ	106
NSC-35-16-CB2	NSC-35-16-MB2	35	16.5	12	50	46.2	M8	6207ZZ	114
NSC-35-16-CB3	NSC-35-16-MB3	35	16.5	12	50	41.2	M8	6907ZZ	101
NSC-40-18-CB1	NSC-40-18-MB1	40	18.5	14	60	48.2	M10	6008ZZ	183
NSC-40-18-CB2	NSC-40-18-MB2	40	18.5	14	60	52.2	M10	6208ZZ	195
NSC-40-18-CB3	NSC-40-18-MB3	40	18.5	14	60	46.2	M10	6908ZZ	179

*1 : Hex socket set screw is provided.

*1 : If d dimension is 5 or below, one point.

● Related Products

Set collar for stainless steel
securing bearings **NSC** is
available.

➡ P.387



● Part number specification

NSC-4-7-CB

1

Cleanroom Wash & Packaging ➡ P.807

Screw Length Adjustment ➡ P.811

Vibration Resistant ➡ P.810

Laser Marking ➡ P.821

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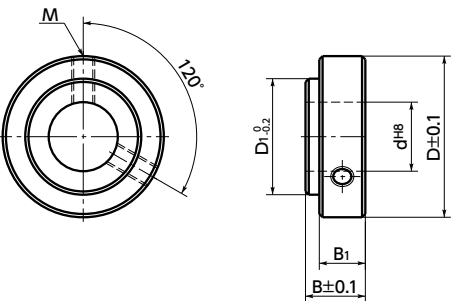
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Available / Add'l charge

NSC Set Collar (Made of Stainless Steel) - For Securing Bearing - Set Screw Type

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Set collar for securing bearing.
- It can be fixed by pressing the bearing inner wheel only on the convex of the main body.
- Optimal for securing bearing when it is difficult to fix the snap ring, etc. to the shaft.
- It is attached to the shaft by the set screws.

● Material/Finish	RoHS2 Compliant
	NSC
Main body	SUS304
Hex Socket Set Screw	SUSXM7

Unit : mm								
Part Number ◀1	d	B	B1	D	D1	M(coarse)*1	Applicable bearings	Mass (g)
NSC-3-7-SB	3	7.5	5	7	5	M3	693ZZ・623ZZ	2
NSC-4-7-SB	4	7.5	5	8	6	M3	694ZZ・624ZZ	2
NSC-5-7-SB	5	7.5	5	11	7.2	M3	695ZZ・605ZZ・625ZZ	3
NSC-6-7-SB1	6	7.5	5	13	8.4	M3	606ZZ	4
NSC-6-7-SB2	6	7.5	5	13	9.2	M3	626ZZ	5
NSC-6-7-SB3	6	7.5	5	13	8	M3	696ZZ	4
NSC-8-9-SB1	8	9.5	7	18	11.7	M4	608ZZ	12
NSC-8-9-SB2	8	9.5	7	18	11.4	M4	628ZZ	12
NSC-8-9-SB3	8	9.5	7	18	10.4	M4	698ZZ	11
NSC-10-11-SB1	10	11	8	20	14.2	M5	6000ZZ	16
NSC-10-11-SB2	10	11	8	20	16.7	M5	6200ZZ	18
NSC-10-11-SB3	10	11	8	20	13.2	M5	6900ZZ	16
NSC-12-11-SB1	12	11	8	22	17.2	M5	6001ZZ	19
NSC-12-11-SB2	12	11	8	22	17.7	M5	6201ZZ	19
NSC-12-11-SB3	12	11	8	22	15.2	M5	6901ZZ	18
NSC-15-11-SB1	15	11	8	25	20.2	M5	6002ZZ	22
NSC-15-11-SB2	15	11	8	25	21.2	M5	6202ZZ	23
NSC-15-11-SB3	15	11	8	25	18.7	M5	6902ZZ	21

*1 : Hex socket set screw is provided.
*1 : If d dimension is 5 or below, one point.



Unit : mm								
Part Number ◀1	d	B	B1	D	D1	M(coarse)*1	Applicable bearings	Mass (g)
NSC-17-13-SB1	17	13	10	28	22.2	M6	6003ZZ	33
NSC-17-13-SB2	17	13	10	28	24.2	M6	6203ZZ	35
NSC-17-13-SB3	17	13	10	28	20.2	M6	6903ZZ	32
NSC-20-13-SB1	20	13	10	35	25.2	M6	6004ZZ	54
NSC-20-13-SB2	20	13	10	35	27.2	M6	6204ZZ	55
NSC-20-13-SB3	20	13	10	35	24.7	M6	6904ZZ	53
NSC-25-13-SB1	25	13.5	10	38	31.2	M6	6005ZZ	56
NSC-25-13-SB2	25	13.5	10	38	33.2	M6	6205ZZ	59
NSC-25-13-SB3	25	13.5	10	38	30.2	M6	6905ZZ	55
NSC-30-15-SB1	30	15.5	12	45	38.2	M8	6006ZZ	92
NSC-30-15-SB2	30	15.5	12	45	40.2	M8	6206ZZ	95
NSC-30-15-SB3	30	15.5	12	45	35.2	M8	6906ZZ	87
NSC-35-16-SB1	35	16.5	12	50	43.2	M8	6007ZZ	108
NSC-35-16-SB2	35	16.5	12	50	46.2	M8	6207ZZ	116
NSC-35-16-SB3	35	16.5	12	50	41.2	M8	6907ZZ	102
NSC-40-18-SB1	40	18.5	14	60	48.2	M10	6008ZZ	185
NSC-40-18-SB2	40	18.5	14	60	52.2	M10	6208ZZ	196
NSC-40-18-SB3	40	18.5	14	60	46.2	M10	6908ZZ	180

*1 : Hex socket set screw is provided.
*1 : If d dimension is 5 or below, one point.

- Part number specification

NSC-4-7-SB

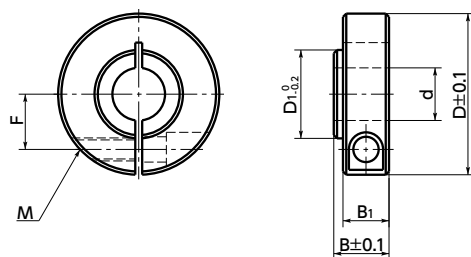


Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Available / Add'l charge	Not Available	Not Available	Available / Add'l charge

NSCS Set Collar - For Securing Bearing - Clamping Type

WEB Selection Tool

WEB CAD Download



- Set collar for securing bearings.
- It can be fixed by pressing the bearing inner wheel only on the convex of the main body.
- Optimal for securing bearing when it is difficult to fix the snap ring, etc. to the shaft.
- Clamping Type. Mounting and removing are easy. Moreover this does not scratch the shaft.

● Material/Finish



	NSCS-CB	NSCS-MB
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Electroless Nickel Plating
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7

Part Number 	Part Number 	d	B	B ₁	D	D ₁	F	M(coarse)*1	Applicable bearings	Mass (g)
Part Number  Ferrosioferric oxide film	Part Number  Electroless nickel plating									
NSCS-3-8-CB	NSCS-3-8-MB	3	8.5	7.5	15	5	4.5	M3	693ZZ・623ZZ	9
NSCS-4-8-CB	NSCS-4-8-MB	4	8.5	7.5	15	6	4.5	M3	694ZZ・624ZZ	9
NSCS-5-8-CB	NSCS-5-8-MB	5	8.5	7.5	20	7.2	6	M3	695ZZ・605ZZ・625ZZ	15
NSCS-6-8-CB1	NSCS-6-8-MB1	6	8.5	7.5	20	9.4	6.5	M3	606ZZ	15
NSCS-6-8-CB2	NSCS-6-8-MB2	6	8.5	7.5	20	9.7	6.5	M3	626ZZ	15
NSCS-6-8-CB3	NSCS-6-8-MB3	6	8.5	7.5	20	9.1	6.5	M3	696ZZ	15
NSCS-8-8-CB1	NSCS-8-8-MB1	8	8.5	7.5	20	11.7	7	M3	608ZZ	14
NSCS-8-8-CB2	NSCS-8-8-MB2	8	8.5	7.5	20	13.2	7	M3	628ZZ	15
NSCS-8-8-CB3	NSCS-8-8-MB3	8	8.5	7.5	20	11.2	7	M3	698ZZ	15
NSCS-10-11-CB1	NSCS-10-11-MB1	10	11	9	30	14.7	9	M4	6000ZZ	41
NSCS-10-11-CB2	NSCS-10-11-MB2	10	11	9	30	17.2	9	M4	6200ZZ	42
NSCS-10-11-CB3	NSCS-10-11-MB3	10	11	9	30	14.2	9	M4	6900ZZ	42
NSCS-12-11-CB1	NSCS-12-11-MB1	12	11	9	30	17.2	10	M4	6001ZZ	39
NSCS-12-11-CB2	NSCS-12-11-MB2	12	11	9	30	18.7	10	M4	6201ZZ	41
NSCS-12-11-CB3	NSCS-12-11-MB3	12	11	9	30	16.2	10	M4	6901ZZ	41
NSCS-15-12-CB1	NSCS-15-12-MB1	15	12	11	35	20.2	12	M5	6002ZZ	58
NSCS-15-12-CB2	NSCS-15-12-MB2	15	12	11	35	21.7	12	M5	6202ZZ	59
NSCS-15-12-CB3	NSCS-15-12-MB3	15	12	11	35	19.2	12	M5	6902ZZ	58

*1: Hex socket head cap screw is provided.

Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Not Available	Available / Add'l charge



Part Number 	Part Number 	d	B	B ₁	D	D ₁	F	M(coarse)*1	Applicable bearings	Mass (g)
Part Number  Ferrosioferric oxide film	Part Number  Electroless nickel plating									
NSCS-17-12-CB1	NSCS-17-12-MB1	17	12	11	35	22.2	13	M5	6003ZZ	56
NSCS-17-12-CB2	NSCS-17-12-MB2	17	12	11	35	24.2	13	M5	6203ZZ	56
NSCS-17-12-CB3	NSCS-17-12-MB3	17	12	11	35	21.2	13	M5	6903ZZ	55
NSCS-20-12-CB1	NSCS-20-12-MB1	20	12	11	40	27.2	14	M5	6004ZZ	72
NSCS-20-12-CB2	NSCS-20-12-MB2	20	12	11	40	29.2	14	M5	6204ZZ	73
NSCS-20-12-CB3	NSCS-20-12-MB3	20	12	11	40	25.2	14	M5	6904ZZ	70
NSCS-25-15-CB1	NSCS-25-15-MB1	25	15	13	45	31.7	17	M5	6005ZZ	111
NSCS-25-15-CB2	NSCS-25-15-MB2	25	15	13	45	33.2	17	M5	6205ZZ	110
NSCS-25-15-CB3	NSCS-25-15-MB3	25	15	13	45	30.2	17	M5	6905ZZ	109
NSCS-30-15-CB1	NSCS-30-15-MB1	30	15	13	55	38.2	20	M6	6006ZZ	167
NSCS-30-15-CB2	NSCS-30-15-MB2	30	15	13	55	40.2	20	M6	6206ZZ	167
NSCS-30-15-CB3	NSCS-30-15-MB3	30	15	13	55	35.2	20	M6	6906ZZ	165
NSCS-35-15-CB1	NSCS-35-15-MB1	35	15	13	60	43.2	23	M6	6007ZZ	187
NSCS-35-15-CB2	NSCS-35-15-MB2	35	15	13	60	46.2	23	M6	6207ZZ	191
NSCS-35-15-CB3	NSCS-35-15-MB3	35	15	13	60	41.2	23	M6	6907ZZ	184
NSCS-40-17-CB1	NSCS-40-17-MB1	40	17	15	70	48.2	26	M8	6008ZZ	293
NSCS-40-17-CB2	NSCS-40-17-MB2	40	17	15	70	52.2	26	M8	6208ZZ	298
NSCS-40-17-CB3	NSCS-40-17-MB3	40	17	15	70	46.2	26	M8	6908ZZ	300

*1: Hex socket head cap screw is provided.

● Related Products

Set collar for stainless steel securing bearings **NSCS** is available.

→ P.391



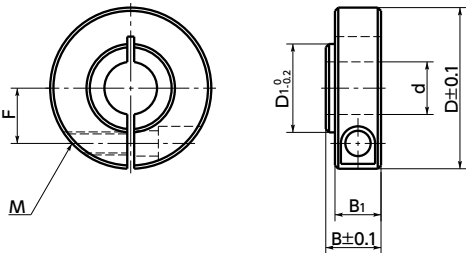
● Part number specification

NSCS-10-11-CB2



NSCS Set Collar (Made of Stainless Steel) - For Securing Bearing - Clamping Type

WEB Selection Tool CAD Download SUS Stainless steel



- Set collar for securing bearings.
- It can be fixed by pressing the bearing inner wheel only on the convex of the main body.
- Optimal for securing bearing when it is difficult to fix the snap ring, etc. to the shaft.
- Clamping Type. Mounting and removing are easy. Moreover this does not scratch the shaft.

● Material/Finish	RoHS2 Compliant
	NSCS
Main body	SUS304
Hex Socket Head Cap Screw	SUSXM7

Part Number	d	B	B ₁	D	D ₁	F	M(coarse)*1	Applicable bearings	Mass (g)
NSCS-3-8-SB	3	8.5	7.5	15	5	4.5	M3	693ZZ・623ZZ	9
NSCS-4-8-SB	4	8.5	7.5	15	6	4.5	M3	694ZZ・624ZZ	9
NSCS-5-8-SB	5	8.5	7.5	20	7.2	6	M3	695ZZ・605ZZ・625ZZ	16
NSCS-6-8-SB1	6	8.5	7.5	20	9.4	6.5	M3	606ZZ	15
NSCS-6-8-SB2	6	8.5	7.5	20	9.7	6.5	M3	626ZZ	16
NSCS-6-8-SB3	6	8.5	7.5	20	9.1	6.5	M3	696ZZ	16
NSCS-8-8-SB1	8	8.5	7.5	20	11.7	7	M3	608ZZ	14
NSCS-8-8-SB2	8	8.5	7.5	20	13.2	7	M3	628ZZ	15
NSCS-8-8-SB3	8	8.5	7.5	20	11.2	7	M3	698ZZ	15
NSCS-10-11-SB1	10	11	9	30	14.7	9	M4	6000ZZ	42
NSCS-10-11-SB2	10	11	9	30	17.2	9	M4	6200ZZ	43
NSCS-10-11-SB3	10	11	9	30	14.2	9	M4	6900ZZ	42
NSCS-12-11-SB1	12	11	9	30	17.2	10	M4	6001ZZ	40
NSCS-12-11-SB2	12	11	9	30	18.7	10	M4	6201ZZ	41
NSCS-12-11-SB3	12	11	9	30	16.2	10	M4	6901ZZ	40
NSCS-15-12-SB1	15	12	11	35	20.2	12	M5	6002ZZ	65
NSCS-15-12-SB2	15	12	11	35	21.7	12	M5	6202ZZ	65
NSCS-15-12-SB3	15	12	11	35	19.2	12	M5	6902ZZ	65

*1: Hex socket head cap screw is provided.



Part Number	d	B	B ₁	D	D ₁	F	M(coarse)*1	Applicable bearings	Mass (g)
NSCS-17-12-SB1	17	12	11	35	22.2	13	M5	6003ZZ	61
NSCS-17-12-SB2	17	12	11	35	24.2	13	M5	6203ZZ	62
NSCS-17-12-SB3	17	12	11	35	21.2	13	M5	6903ZZ	60
NSCS-20-12-SB1	20	12	11	40	27.2	14	M5	6004ZZ	78
NSCS-20-12-SB2	20	12	11	40	29.2	14	M5	6204ZZ	79
NSCS-20-12-SB3	20	12	11	40	25.2	14	M5	6904ZZ	78
NSCS-25-15-SB1	25	15	13	45	31.7	17	M5	6005ZZ	111
NSCS-25-15-SB2	25	15	13	45	33.2	17	M5	6205ZZ	112
NSCS-25-15-SB3	25	15	13	45	30.2	17	M5	6905ZZ	111
NSCS-30-15-SB1	30	15	13	55	38.2	20	M6	6006ZZ	169
NSCS-30-15-SB2	30	15	13	55	40.2	20	M6	6206ZZ	170
NSCS-30-15-SB3	30	15	13	55	35.2	20	M6	6906ZZ	165
NSCS-35-15-SB1	35	15	13	60	43.2	23	M6	6007ZZ	189
NSCS-35-15-SB2	35	15	13	60	46.2	23	M6	6207ZZ	193
NSCS-35-15-SB3	35	15	13	60	41.2	23	M6	6907ZZ	188
NSCS-40-17-SB1	40	17	15	70	48.2	26	M8	6008ZZ	298
NSCS-40-17-SB2	40	17	15	70	52.2	26	M8	6208ZZ	303
NSCS-40-17-SB3	40	17	15	70	46.2	26	M8	6908ZZ	295

*1: Hex socket head cap screw is provided.

- Part number specification

NSCS-10-11-SB2



Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821
Available / Add'l charge	Not Available	Not Available	Available / Add'l charge

• Handwheel

Product Code	HAK	PH/PHS	HDA	HSM	AV	AH
Page	P.395	P.397	P.398	P.399	P.400	P.401
Shape						
Handwheel Diameter	φ40 - φ80	φ80 - φ250	φ80 - φ200	φ80 - φ250	φ80 - φ300	φ80 - φ300
Material	Aluminum Alloy	Plastic	Aluminum Alloy	Stainless Steel	Aluminum Alloy	Aluminum Alloy

Product Code	HSN	D	F	FS
Page	P.402	P.403	P.404	P.405
Shape				
Handwheel Diameter	φ125 - φ315	φ80 - φ315	φ80 - φ315	φ40 - φ63
Material	Cast iron	Cast iron	Cast iron	Cast iron

• Revolving Grip

Product Code	GIRS	GIRA	GNTR/GNTRS	GTR	RM	GGB
Page	P.406	P.407	P.408	P.409	P.410	P.411
Shape						
Nominal Diameter of Thread	M6 - M10	M6 - M10	M5 - M10	M5 - M10	M6 - M12	M6 - M10
Grip Material	Stainless Steel	Aluminum Alloy	Nylon 6	Nylon 6	Nylon 6	Rubber

Product Code	NP
Page	P.412
Shape	
Nominal Diameter of Thread	M6 - M12
Grip Material	Nylon 6

• Fixing Grip

Product Code	GTM/GTF	GTMS/GTFS	SM	HS	GSS
Page	P.413	P.413	P.414	P.415	P.416
Shape					
Nominal Diameter of Thread	M5 - M12	M5 - M12	M4 - M16	M5 - M10	M5 - M12
Grip Material	Nylon 6	Nylon 6	Steel	Aluminum Alloy	Stainless Steel

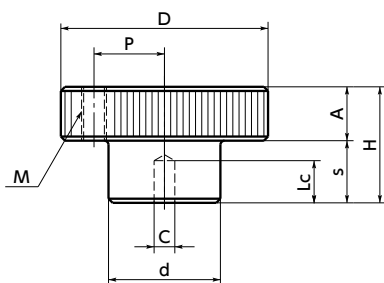
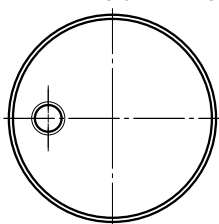
HAK Aluminum Knurled Handwheel *Recommendation*

WEB Selection Tool
WEB CAD Download



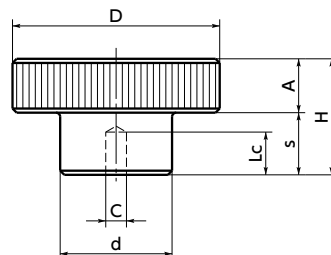
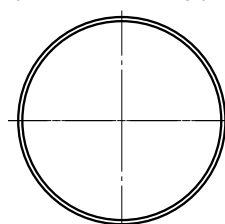
HAK

With pilot hole and grip mounting hole



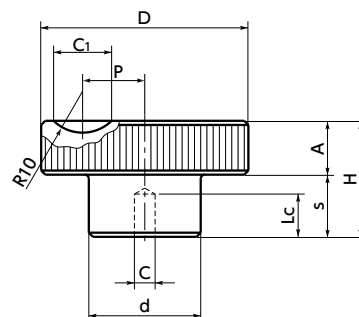
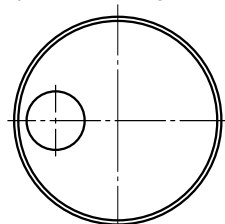
HAK-N

With pilot hole and without grip mounting hole



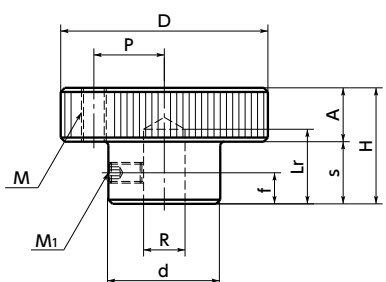
HAK-FH

With pilot hole and finger hole



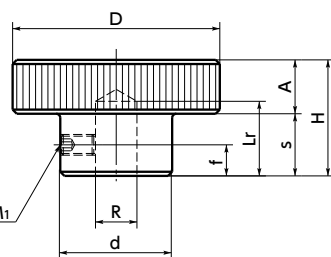
HAK-R

With reamer bore and grip mounting hole



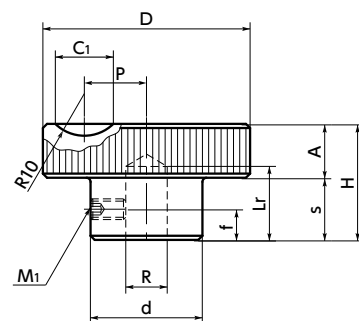
HAK-R-N

With reamer bore and without grip mounting hole



HAK-R-FH

With reamer bore and finger hole



HAK With pilot hole and grip mounting hole

HAK-N With pilot hole and without grip mounting hole

Unit : mm

Part Number With grip mounting holes	M	P	Part Number Without grip mounting holes	D	H	A	s	d	C	Lc	Mass (g)
HAK-40	M6	14.5	HAK-40-N	40	25	12	13	22	5	15	50
HAK-50	M6	17	HAK-50-N	50	28	13	15	27	5	15	87
HAK-63	M6	23	HAK-63-N	63	32	14	18	35	5	15	161
HAK-80	M6	30	HAK-80-N	80	40	15	25	45	5	15	299

HAK-R With reamer bore and grip mounting hole

HAK-R-N With reamer bore and without grip mounting hole

Unit : mm

Part Number With grip mounting holes	M	P	Part Number Without grip mounting holes	D	H	A	s	d	C	Lc	Mass (g)
HAK-40	M6	14.5	HAK-40-N	40	25	12	13	22	5	15	50
HAK-50	M6	17	HAK-50-N	50	28	13	15	27	5	15	87
HAK-63	M6	23	HAK-63-N	63	32	14	18	35	5	15	161
HAK-80	M6	30	HAK-80-N	80	40	15	25	45	5	15	299

*1 : Hex socket set screw is provided.

Cleanroom Wash & Packaging → P.807	Vibration Resistant → P.810	Laser Marking → P.821	Modification of Shaft Hole Diameter → P.815
Available / Add'l charge	Not Available	Available / Add'l charge	Please feel free to contact us

HAK-SG



- Mini handwheel made of aluminum alloy
- Bore type and with / without grip mounting hole and finger hole can be selected by a product code.

Product Code	Bore Type	Grip Mounting Hole	Finger Hole
HAK	Pilot Hole	Yes	No
HAK-N	Pilot Hole	No	No
HAK-FH	Pilot Hole	No	Yes
HAK-R	Reamer Bore	Yes	No
HAK-R-N	Reamer Bore	No	No
HAK-R-FH	Reamer Bore	No	Yes

- There are two color variations. They can be selected by the end symbol of the part number.
 - No end symbol — Black
 - End Symbol **SG** — Silver gray
- No grip is supplied with this product. Please separately order a grip. → P.394 List of grips

Material/Finish	HAK
Main body	A5056 Alumite Treatment (Various Color)

RoHS2 Compliant

HAK-FH With pilot hole / finger hole

Unit : mm

Part Number With finger hole	D	H	A	s	d	C	Lc	P	C1	Mass (g)
HAK-40-FH	40	25	12	13	22	5	15	10.5	14	49
HAK-50-FH	50	28	13	15	27	5	15	15	14	86
HAK-63-FH	63	32	14	18	35	5	15	21	14	159

HAK-R-FH With reamer bore / finger hole

Unit : mm

Part Number With finger hole	D	H	A	s	d	R	Lr	M1*1	f	P	C1	Mass (g)
HAK-40-R8-FH	40	25	12	13	22	8	15	M5	6.5	10.5	14	44
HAK-50-R10-FH	50	28	13	15	27	10	18	M5	7.5	15	14	76
HAK-63-R12-FH	63	32	14	18	35	12	22	M5	9	21	14	144

*1 : Hex socket set screw is provided.

- Part number specification

HAK-40-N-SG (If the bore type is for pilot hole)

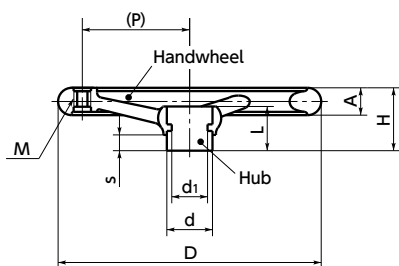
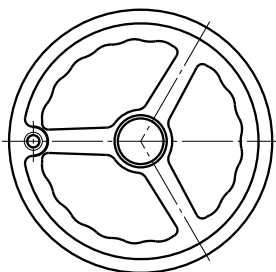
Product Code: 1 3 4

HAK-40-R 8-FH-SG (If the bore type is for reamer bore)

Product Code: 1 3 2 3 4

PH / PHS Plastic Handwheel

[WEB Selection Tool](#) [WEB CAD Download](#) **SUS** Stainless steel Shaft bore process required



- Standard model with a plastic handwheel
- There are two types of hub materials.
- PH** — Cast iron hub
- PHS** — Stainless steel hub
- Grip mounting hole is available.
- No grip is supplied with this product. Please separately order a grip. ➡ P.394 List of grips

- Material/Finish

	PH Cast Iron Hub	PHS Stainless Steel Hub
Handwheel Part	Nylon 6 (Black)	Nylon 6 (Black)
Hub Part	FC200 Ferrosoferric Oxide Film (Black)	SUS303
Grip Mounting Hole Insert	SUM22L Trivalent Chromate Treatment	SUS303

Part Number Cast iron hub	Part Number Stainless steel hub	M	D	H	A	s	d	d1	L	P	Number of spokes	Mass (g)
PH-80	PHS-80	M5	80	40	14	10	24	18	26	29	3	130
PH-100	PHS-100	M5	100	44	15	10	28	22	29	40	3	200
PH-125	PHS-125	M6	125	48	16	10	32	26	30	51	3	280
PH-140	PHS-140	M6	140	54	17	10	34	26	35	58	3	400
PH-160	PHS-160	M8	160	57	18	10	36	28	36	67	3	440
PH-200	PHS-200	M10	200	64	22	12	38	30	42	84	3	670
PH-250	PHS-250	M10	250	66	26	15	44	36	42	102	5	980

- Recommended applicable grip

Part Number Cast Iron Hub	Recommended applicable grip		Part Number Stainless Steel Hub	Recommended applicable grip	
	GTR ➡ P.409	GTM ➡ P.413		GNTRS ➡ P.408	GTMS ➡ P.413
PH-80	GTR-18 - M5	GTM-18 - M5	PHS-80	GNTRS-18 - M5	GTMS-18 - M5
PH-100	GTR-18 - M5	GTM-18 - M5	PHS-100	GNTRS-18 - M5	GTMS-18 - M5
PH-125	GTR-19 - M6	GTM-19 - M6	PHS-125	GNTRS-19 - M6	GTMS-19 - M6
PH-140	GTR-19 - M6	GTM-19 - M6	PHS-140	GNTRS-19 - M6	GTMS-19 - M6
PH-160	GTR-24 - M8	GTM-24 - M8	PHS-160	GNTRS-24 - M8	GTMS-24 - M8
PH-200	GTR-28 - M10	GTM-28 - M10	PHS-200	GNTRS-28 - M10	GTMS-28 - M10
PH-250	GTR-28 - M10	GTM-28 - M10	PHS-250	GNTRS-28 - M10	GTMS-28 - M10

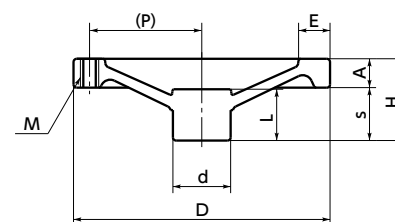
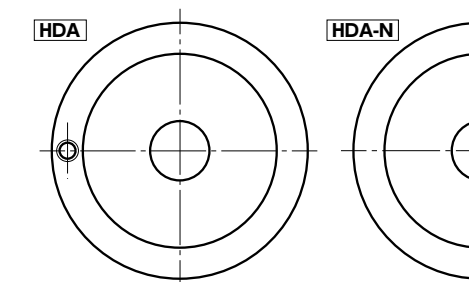
- Part number specification

PHS-80

Cleanroom Wash & Packaging ➡ P.807	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821	Modification of Shaft Hole Diameter ➡ P.815
Available / Add'l charge	Not Available	Available / Add'l charge	Available / Add'l charge

HDA Aluminum Disk Handwheel

[WEB Selection Tool](#) [WEB CAD Download](#) Shaft bore process required



- Standard model with an aluminum disk handwheel
- With / without grip mounting hole can be selected by the end symbol of the part number.
- HDA** — With grip mounting hole
- HDA-N** — Without grip mounting hole
- No grip is supplied with this product. Please separately order a grip. ➡ P.394 List of grips

- Material/Finish

	HDA
Main body	AC8A Entire Shot Blast

Part Number	M	P	Part Number	D	H	A	s	d	L	Mass (g)
HDA-80	M6	33.5	HDA-80-N	82	31	13.5	17.5	26	21	125
HDA-100	M6	43	HDA-100-N	103	38	14.5	23.5	28	25	200
HDA-125	M8	55	HDA-125-N	128	43	15.5	27.5	31	28	340
HDA-160	M10	70	HDA-160-N	164	51	18.5	32.5	36	32	630
HDA-200	M10	89	HDA-200-N	204	57	20.5	36.5	42	36	980

- Recommended applicable grip

Part Number	Recommended applicable grip			
	GTR ➡ P.409	GNTR ➡ P.408	GTM ➡ P.413	HS ➡ P.415
HDA-80	GTR-19 - M6	GNTR-19 - M6	GTM-19 - M6	HS-6
HDA-100	GTR-19 - M6	GNTR-19 - M6	GTM-19 - M6	HS-6
HDA-125	GTR-24 - M8	GNTR-24 - M8	GTM-24 - M8	HS-8
HDA-160	GTR-28 - M10	GNTR-28 - M10	GTM-28 - M10	HS-10
HDA-200	GTR-28 - M10	GNTR-28 - M10	GTM-28 - M10	HS-10

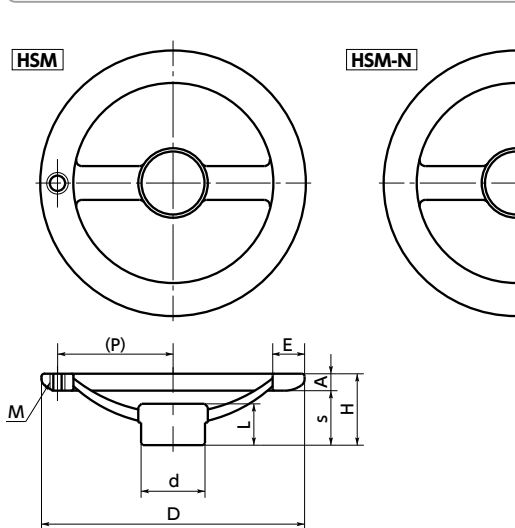
- Part number specification

HDA-80-N
Product Code

Cleanroom Wash & Packaging ➡ P.807	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821	Modification of Shaft Hole Diameter ➡ P.815
Available / Add'l charge	Not Available	Available / Add'l charge	Available / Add'l charge

HSM Stainless Steel Handwheel

WEB Selection Tool WEB CAD Download SUS Stainless steel Shaft bore process required



- Standard model with a stainless steel handwheel
- With / without grip mounting hole can be selected by the end symbol of the part number.
- HSM** — With grip mounting hole
- HSM-N** — Without grip mounting hole
- No grip is supplied with this product. Please separately order a grip. P.394 List of grips

	HSM	RoHS2 Compliant
Main body	SCS13 (Equivalent to SUS304)	

Part Number With grip mounting holes	M	P	Part Number Without grip mounting holes	D	H	A	s	d	L	E	Number of spokes	Mass (g)
HSM-80	M5	33	HSM-80-N	80	28	8	20	26	17	12	2	260
HSM-100	M5	43	HSM-100-N	100	30	8	22	26	18	13	2	320
HSM-125	M6	54	HSM-125-N	125	34	8	26	32	20	15	2	500
HSM-160	M8	71	HSM-160-N	160	42	10	32	36	24	18	2	900
HSM-200	M10	90	HSM-200-N	200	42	11	31	42	24	19	2	1300
HSM-250	M10	113	HSM-250-N	250	53	13	40	50	34	20	3	2400

Recommended applicable grip

Part Number	Recommended applicable grip	
	GSS P.416	GNTRS P.408
HSM-80	GSS-5	GNTRS-18 - M5
HSM-100	GSS-5	GNTRS-18 - M5
HSM-125	GSS-6	GNTRS-19 - M6
HSM-160	GSS-8	GNTRS-24 - M8
HSM-200	GSS-10	GNTRS-28 - M10
HSM-250	GSS-10	GNTRS-28 - M10

Part number specification

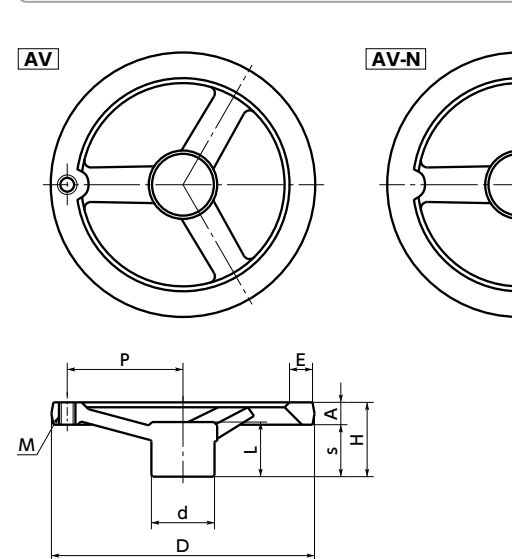
HSM-80-N

Product Code

Cleanroom Wash & Packaging P.807	Vibration Resistant P.810	Laser Marking P.821	Modification of Shaft Hole Diameter P.815
Available / Add'l charge	Not Available	Available / Add'l charge	Available / Add'l charge

AV Aluminum Offset Handwheel

WEB Selection Tool WEB CAD Download Shaft bore process required



- With / without grip mounting hole can be selected by the end symbol of the part number.
- AV** — With grip mounting hole
- AV-N** — Without grip mounting hole
- No grip is supplied with this product. Please separately order a grip. P.394 List of grips

	AV	RoHS2 Compliant
Main body	AC8A Buffing (Rim Part Only)	

Part Number With grip mounting holes	M	P	Part Number Without grip mounting holes	D	H	A	E	s	d	L	Number of spokes	Mass (g)
AV-80	M5	33	AV-80-N	80	32	9	14.5	23	28	25		95
AV-100	M5	42	AV-100-N	100	37	10	15.5	27	33	25		215
AV-125	M6	53	AV-125-N	125	44	15	14.5	29	35	30	2	225
AV-140	M6	61	AV-140-N	140	44	15	14	29	38	30	2	335
AV-160	M8	70	AV-160-N	160	52	15	16.5	37	40	35	2	415
AV-200	M10	88	AV-200-N	200	56	17	19	39	48	40	3	720
AV-250	M10	113	AV-250-N	250	61	20	22	41	52	40	3	1070
AV-300	M10	138	AV-300-N	300	65	20	20	45	58	45	3	1360

Recommended applicable grip

Part Number	Recommended applicable grip			
	GNTR P.408	GTR P.409	GTM P.413	HS P.415
AV-80	GNTR-18 - M5	GTR-18 - M5	GTM-18 - M5	HS-5
AV-100	GNTR-18 - M5	GTR-18 - M5	GTM-18 - M5	HS-5
AV-125	GNTR-19 - M6	GTR-19 - M6	GTM-19 - M6	HS-6
AV-140	GNTR-19 - M6	GTR-19 - M6	GTM-19 - M6	HS-6
AV-160	GNTR-24 - M8	GTR-24 - M8	GTM-24 - M8	HS-8
AV-200	GNTR-28 - M10	GTR-28 - M10	GTM-28 - M10	HS-10
AV-250	GNTR-28 - M10	GTR-28 - M10	GTM-28 - M10	HS-10
AV-300	GNTR-28 - M10	GTR-28 - M10	GTM-28 - M10	HS-10

Part number specification

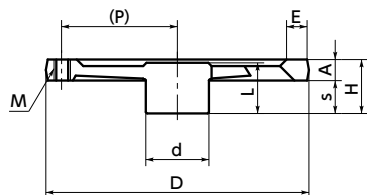
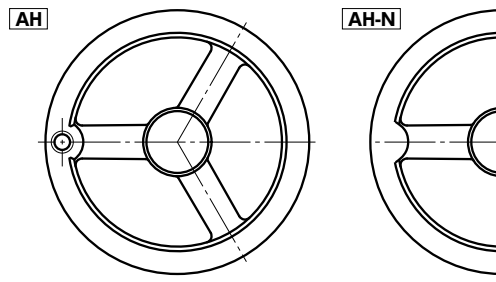
AV-80-N

Product Code

Cleanroom Wash & Packaging P.807	Vibration Resistant P.810	Laser Marking P.821	Modification of Shaft Hole Diameter P.815
Available / Add'l charge	Not Available	Available / Add'l charge	Available / Add'l charge

AH Aluminum Flat Handwheel

WEB Selection Tool WEB CAD Download Shaft bore process required



- With / without grip mounting hole can be selected by the end symbol of the part number. **AH** — With grip mounting hole **AH-N** — Without grip mounting hole
- No grip is supplied with this product. Please separately order a grip. ➔ P.394 List of grips

Material/Finish		RoHS2 Compliant
AH		
Main body	AC8A Buffing (Rim Part Only)	

													Unit : mm
Part Number With grip mounting holes	M	P	Part Number Without grip mounting holes	D 	H	A	E	s	d	L	Number of spokes	Mass (g)	
AH-80	M5	33	AH-80-N	80	26	10	15	16	28	25		95	
AH-100	M5	42	AH-100-N	100	26	11	15	15	33	25		215	
AH-125	M6	53.5	AH-125-N	125	32	14	15	18	33	30	2	225	
AH-140	M6	62	AH-140-N	140	32	14	15	18	38	30	2	335	
AH-160	M8	68	AH-160-N	160	36	15	16	21	40	35	2	415	
AH-200	M10	87.5	AH-200-N	200	41	16	17	25	48	40	3	720	
AH-250	M10	112	AH-250-N	250	42	19	20	23	52	40	3	1070	
AH-300	M10	137	AH-300-N	300	47	19	22	28	57	45	3	1360	

● Recommended applicable grip

Part Number	Recommended applicable grip			
	GNTR ➔ P.408	GTR ➔ P.409	GTM ➔ P.413	HS ➔ P.415
AH-80	GNTR-18 - M5	GTR-18 - M5	GTM-18 - M5	HS-5
AH-100	GNTR-18 - M5	GTR-18 - M5	GTM-18 - M5	HS-5
AH-125	GNTR-19 - M6	GTR-19 - M6	GTM-19 - M6	HS-6
AH-140	GNTR-19 - M6	GTR-19 - M6	GTM-19 - M6	HS-6
AH-160	GNTR-24 - M8	GTR-24 - M8	GTM-24 - M8	HS-8
AH-200	GNTR-28 - M10	GTR-28 - M10	GTM-28 - M10	HS-10
AH-250	GNTR-28 - M10	GTR-28 - M10	GTM-28 - M10	HS-10
AH-300	GNTR-28 - M10	GTR-28 - M10	GTM-28 - M10	HS-10

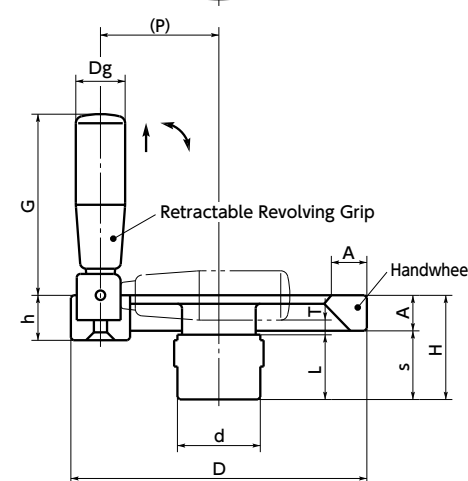
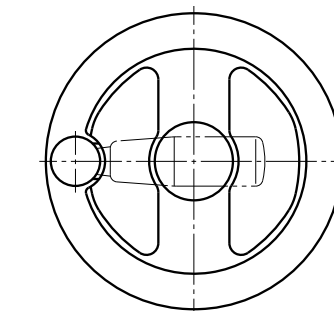
● Part number specification

AH - 80 - N
Product Code

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Available / Add'l charge	Not Available	Available / Add'l charge	Available / Add'l charge

HSN Two Spoke Handwheel

WEB Selection Tool WEB CAD Download with Grip Shaft bore process required



- Two spoke handwheel with retractable revolving grip.
- The grip is to be pulled up before tilting, so it can hardly be tilted accidentally.
- The handwheel body main body is cast iron, and the grip is phenol resin. This is a strong type that can endure high torque.

Material/Finish		RoHS2 Compliant
HSN		
Retractable Revolving Grip	Phenol Resin (Black)	
Handwheel	FC200 Electrostatic Coating (Black)	

													Unit : mm
Part Number	D	H	A	s	h	d	L	T	Dg	G	P	Number of spokes	Mass (g)
HSN-125	125	44	15	29	19	35	30	2.5	23	76.5	50	2	850
HSN-160	160	52	16	36	21.5	40	35	2.5	23	74	67	2	1300
HSN-200	200	56	17	39	18.5	48	40	2.5	26	91.5	87	2	2060
HSN-250	250	62	19	43	25.5	52	40	2.5	26	85	112	2	2960
HSN-315	315	66	21	45	24.5	63	45	2.5	26	86	144	2	4770

● Part number specification

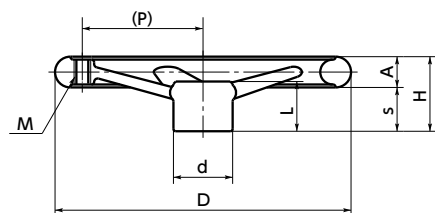
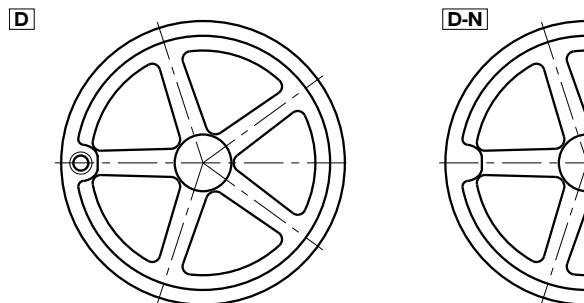
HSN - 125
Product Code

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Not Available	Not Available	Available / Add'l charge	Available / Add'l charge

D Offset Handwheel



WEB Selection Tool CAD Download Shaft bore process required



- With / without grip mounting hole can be selected by the end symbol of the part number. **D** With grip mounting hole **D-N** Without grip mounting hole
- No grip is supplied with this product. Please separately order a grip. ➔ P.394 List of grips

Material/Finish	D
Main body	FC200 Chrome Plating

Part Number With grip mounting holes	M	P	Part Number Without grip mounting holes	D	H	A	s	d	L	Number of spokes	Mass (g)
D-80	M5	27	D-80-N	80	36	14	22	24	24	3	430
D-100	M5	35.5	D-100-N	100	39	15	24	30	25	3	630
D-125	M6	46.5	D-125-N	125	40	16	24	33	28	3	755
D-140	M6	53.5	D-140-N	140	44	17	27	35	30	3	1360
D-150	M8	56	D-150-N	150	46	18	28	35	32	3	1410
D-160	M8	61	D-160-N	160	46	18	28	37	32	3	1200
D-200	M10	77	D-200-N	200	60	24	36	43	41	3	2250
D-250	M10	101.5	D-250-N	250	63	25	38	50	42	5	3710
D-300	M12	122	D-300-N	300	66	26	40	56	45	5	6150
D-315	M12	128.5	D-315-N	315	72	28	44	60	49	5	6650

Recommended applicable grip

Part Number	Recommended applicable grip
	RM ➔ P.410 SM ➔ P.414
D-80	SM-5
D-100	SM-5
D-125	RM-6 SM-6
D-140	RM-6 SM-6
D-150	RM-8 SM-8
D-160	RM-8 SM-8
D-200	RM-10 SM-10
D-250	RM-10 SM-10
D-300	RM-12 SM-12
D-315	RM-12 SM-12

Part number specification

D - 80-N

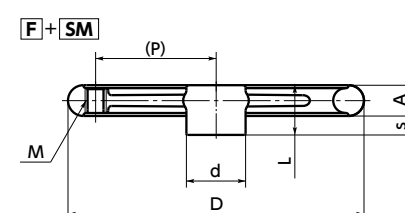
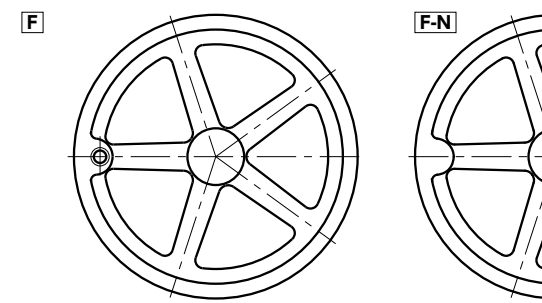
Product Code 1 2

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Not Available	Not Available	Not Available	Available / Add'l charge

F Flat Handwheel



WEB Selection Tool CAD Download Shaft bore process required



- With / without grip mounting hole can be selected by the end symbol of the part number. **F** With grip mounting hole **F-N** Without grip mounting hole
- No grip is supplied with this product. Please separately order a grip. ➔ P.394 List of grips

Material/Finish	F
Main body	FC200 Chrome Plating

Part Number With grip mounting holes	M	P	Part Number Without grip mounting holes	F	A	s	d	L	Number of spokes	Mass (g)
F-80	M5	27	F-80-N	80	14	10	24	24	3	430
F-100	M5	35.5	F-100-N	100	15	10	30	25	3	580
F-125	M6	46.5	F-125-N	125	16	12	33	28	3	810
F-140	M6	55	F-140-N	140	17	13	35	30	3	1360
F-160	M8	62	F-160-N	160	18	14	37	32	3	1410
F-200	M10	80	F-200-N	200	24	17	43	41	3	2330
F-250	M10	99	F-250-N	250	25	17	50	42	5	4030
F-315	M12	129	F-315-N	315	28	21	60	49	5	7150

Recommended applicable grip

Part Number	Recommended applicable grip
	RM ➔ P.410 SM ➔ P.414
F-80	SM-5
F-100	SM-5
F-125	RM-6 SM-6
F-140	RM-6 SM-6
F-160	RM-8 SM-8
F-200	RM-10 SM-10
F-250	RM-10 SM-10
F-315	RM-12 SM-12

Part number specification

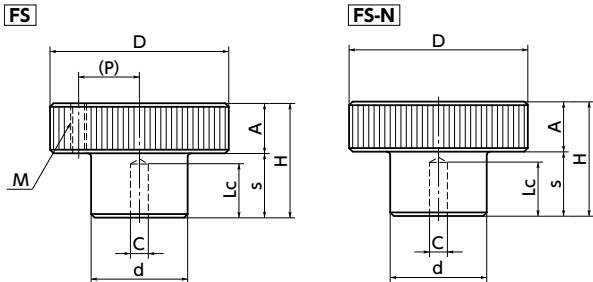
F - 80-N

Product Code 1 2

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Not Available	Not Available	Not Available	Available / Add'l charge

FS Knurled Handwheel

WEB Selection Tool WEB CAD Download



- With / without grip mounting hole can be selected by the end symbol of the part number. **FS** — With grip mounting hole **FS-N** — Without grip mounting hole
- No grip is supplied with this product. Please separately order a grip. ➔ P.394 List of grips

	FS	RoHS2 Compliant
Main body	FC200 Chrome Plating	

Unit : mm												
Part Number With grip mounting holes	M	P	Applicable recommended grip SM ➔ P.414	Part Number Without grip mounting holes	D	H	A	s	d	C	Lc	Mass (g)
FS-50	M4	17	SM-4	FS-40-N	40	28	13	15	22	5	14.5	250
FS-63	M5	23	SM-5	FS-50-N	50	32	14	18	27	5	15	415
				FS-63-N	63	40	15	25	35	5	15	750

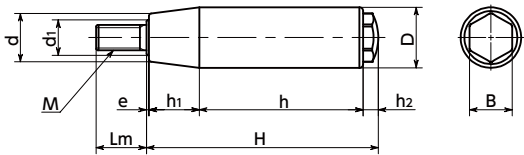
- Part number specification

FS - 50-N
Product Code **1** **2**

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Not Available	Not Available	Not Available	Please feel free to contact us

GIRS-SS Stainless Steel Revolving Grip

WEB Selection Tool WEB CAD Download SUS Stainless steel



- The revolving grip made of all stainless steel.
- It is superior in corrosion resistance and strength.
- The grip and thread parts can be disassembled so the cleaning work is easy.
- For food machinery and chemical manufacturing devices that require hygiene control.

	GIRS-SS	RoHS2 Compliant
Grip Part	SUS304	
Thread Part	SUS304	

Unit : mm												
Part Number	D	M	Lm	d	d1	e	H	h	h1	h2	B	Mass (g)
GIRS-18-M6-SS	18	M6	13	13	9	1	71	45	20	5	11	122
GIRS-20-M8-SS	20	M8	16	15	12	1	76	50	20	5	13	165
GIRS-24-M10-SS	24	M10	20	19	14	1	92	65	20	6	17	302

Related Products

There are revolving grips of the same shape with aluminum grip and steel thread part **GIRA**. ➔ P.407



Stainless steel fixed type grip **GSS**. ➔ P.416



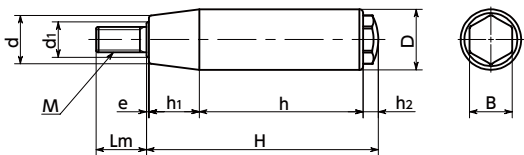
- Part number specification

GIRS-20-M8-SS
Product Code **1**

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available

GIRA-EL Aluminum Revolving Grip *Recommendation*

WEB Selection Tool
WEB CAD Download



- The revolving grip made of aluminum.
- The grip and thread parts can be disassembled so the cleaning work is easy.

- Material/Finish RoHS2 Compliant

	GIRA-EL
Grip Part	A2017 Alumite Treatment (Silver Gray)
Thread Part	SUM22 Electroless Nickel Plating

Part Number	D	M	Lm	d	d1	e	H	h	h1	h2	B	Mass (g)
GIRA-18-M6-EL	18	M6	13	13	9	1	71	45	20	5	11	71
GIRA-20-M8-EL	20	M8	16	15	12	1	76	50	20	5	13	107
GIRA-24-M10-EL	24	M10	20	19	14	1	92	65	20	6	17	192

Unit : mm

Related Products

All-stainless steel revolving grip of the same shape **GIRS** is available.
➔ P.406



Aluminum fixing type grip **HS**.
➔ P.415



- Part number specification

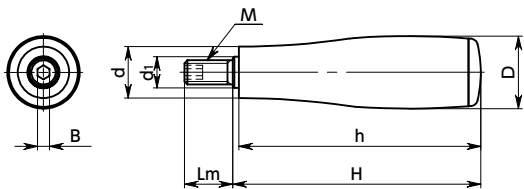
GIRA-20-M8-EL



Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available

GNTR/GNTRS Revolving Grip *Recommendation*

WEB Selection Tool
WEB CAD Download
SUS Stainless steel



- Back mounting method with hexagon socket
- The thread parts made of steel and stainless steel are standardized.

- Material/Finish RoHS2 Compliant

	GNTR Thread Part: Made of Steel	GNTRS Thread Part: Made of Stainless Steel
Grip Part	Nylon 6 (Black)	Nylon 6 (Black)
Thread Part	S5400 Trivalent Chromate Treatment	SUS303

Part Number	Part Number	D	M	Lm	d	d1	H	h	B	Mass (g)
GNTR-18-M5 Screw : Steel	GNTRS-18-M5 Screw : Stainless	18	M5	10	12	6.5	51	50	2.5	23
GNTR-19-M6	GNTRS-19-M6	19	M6	13	13	8	66	65	3	40
GNTR-24-M8	GNTRS-24-M8	24	M8	16	17	10.3	81	80	4	84
GNTR-28-M10	GNTRS-28-M10	28	M10	18	20	13	96	95	5	141

Unit : mm

- Part number specification

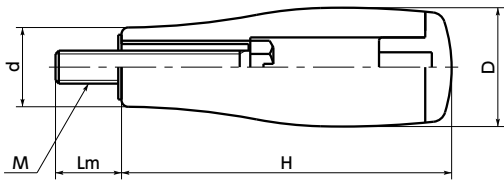
GNTRS-28-M10



Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Not Available	Available / Add'l charge	Available / Add'l charge	Not Available

GTR Revolving Grip *Recommendation*

WEB Selection Tool WEB CAD Download



- Plastic revolving grip superior in cost effectiveness

- Material/Finish

	GTR
Grip Part	Nylon 6 (Black)
Thread Part	SS400 Trivalent Chromate Treatment

Part Number	D	M	Lm	d	H	Mass (g)
GTR-18-M5	18	M5	10	12	50	15
GTR-19-M6	19	M6	13	13	65	26
GTR-24-M8	24	M8	15	17	80	50
GTR-28-M10	28	M10	20	20	95	86

Unit : mm

- Part number specification

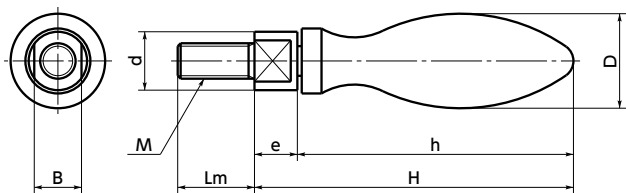
GTR-28-M10

Product Code

Cleanroom Wash & Packaging P.807	Vibration Resistant P.810	Laser Marking P.821	Modification of Shaft Hole Diameter P.815
Not Available	Not Available	Available / Add'l charge	Not Available

RM Plated Revolving Grip

WEB Selection Tool WEB CAD Download



- Material/Finish

	RM
Grip Part	SS400 Chrome Plating
Thread Part	SS400 Chrome Plating

Part Number	D	M	Lm	d	H	h	e	B	Mass (g)
RM-6	16	M6	13	10	56	48	8	8	45
RM-8	20	M8	15	13	69	60	9	10	90
RM-10	25	M10	18	16	89	77	12	14	180
RM-12	32	M12	20	20	111	98	13	17	360
RM-16	36	M16	22	22	121	107	14	19	525

Unit : mm

- Related Products

Fixing grip with the same shape is available.
 P.414



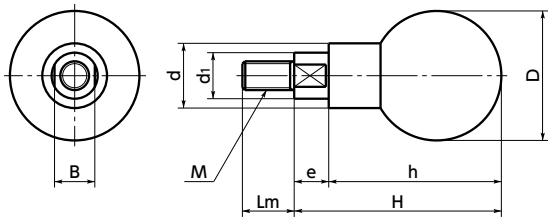
- Part number specification

RM-6

Cleanroom Wash & Packaging P.807	Vibration Resistant P.810	Laser Marking P.821	Modification of Shaft Hole Diameter P.815
Not Available	Available / Add'l charge	Not Available	Not Available

GGB Rubber Ball Revolving Grip

WEB Selection Tool CAD Download



● Material/Finish RoHS2 Compliant	
	GGB
Grip Part	EPDM (Matte Black)
Thread Part	SS400 Chrome Plating

Unit : mm										
Part Number 1	D	M	Lm	d	d1	H	e	B	h	Mass (g)
GGB-6	28	M6	13	14	10	45.5	8	8	37.5	25
GGB-8	35.5	M8	15	17.8	13	56.5	9	10	47.5	40
GGB-10	45	M10	18	22.5	16	72	12	14	60	85

● Related Products

KGB
Rubber ball-shaped knob is available.
➔ P.313



● Part number specification

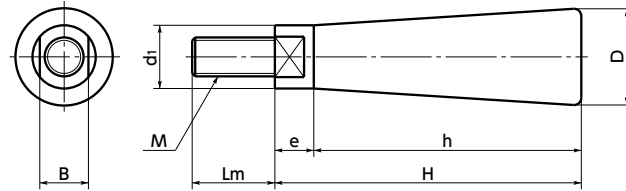
GGB-6

1

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Not Available	Available / Add'l charge	Not Available	Not Available

NP Tapered Revolving Grip

WEB Selection Tool CAD Download



● Material/Finish RoHS2 Compliant	
	NP
Grip Part	Nylon 6
Thread Part	SS400 Chrome Plating

Unit : mm									
Part Number 1	D	M	Lm	d1	H	h	e	B	Mass (g)
NP-6	16	M6	13	10	50	43	7	8	30
NP-8	20	M8	16.5	13	63.5	55.5	8	10	40
NP-10	25	M10	20	16	80	70	10	14	100
NP-12	32	M12	18	20	102	89	13	17	180

● Part number specification

NP-8

1

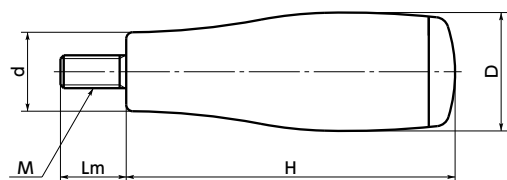
Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821	Modification of Shaft Hole Diameter ➔ P.815
Not Available	Available / Add'l charge	Available / Add'l charge	Not Available

GTM/GTMS/GTF/GTFS Fixing Grip Recommendation

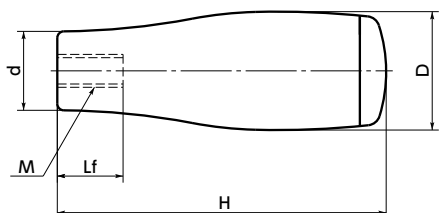


WEB Selection Tool CAD Download SUS Stainless steel

GTM GTMS Male Screw



GTF GTFS Female Screw



- The thread parts made of steel and stainless steel are standardized.
- The grip and screw are integrally-molded by insert. This enhances the thread part durability.
- Screw type (male / female) and thread part material can be selected by a product code. **1**
 - GTM** — Male screw / made of steel
 - GTMS** — Male screw / made of stainless steel
 - GTF** — Female screw / made of steel
 - GTFS** — Female screw / made of stainless steel

Material/Finish



	GTM Male Screw	GTMS Male Screw	GTF Female Screw	GTFS Female Screw
Grip Part	Nylon 6 (Black)	Nylon 6 (Black)	Nylon 6 (Black)	Nylon 6 (Black)
Thread Part	SUM22L Ferrosferric Oxide Film (Black)	SUS303	S45C Trivalent Chromate Treatment	SUS303

GTM GTMS Male Screw

Unit : mm

Part Number Steel	Part Number Stainless steel	D 2	M 3	Lm	d	H	Mass (g)
GTM-18-M5	GTMS-18-M5	18	M5	10	12	50	16
GTM-19-M6	GTMS-19-M6	19	M6	13	13	65	22
GTM-24-M8	GTMS-24-M8	24	M8	15	17	80	39
GTM-28-M10	GTMS-28-M10	28	M10	18	20	95	68
GTM-28-M12	GTMS-28-M12	28	M12	20	20	95	89

GTF GTFS Female Screw

Unit : mm

Part Number Steel	Part Number Stainless steel	D 2	M 3	Lf	d	H	Mass (g)
GTF-18-M5	GTFS-18-M5	18	M5	10	12	50	13
GTF-19-M6	GTFS-19-M6	19	M6	12	13	65	19
GTF-24-M8	GTFS-24-M8	24	M8	16	17	80	30
GTF-24-M10	GTFS-24-M10	24	M10	20	17	80	43
GTF-28-M10	GTFS-28-M10	28	M10	20	20	95	58
GTF-28-M12		28	M12	24	20	95	66

Part number specification

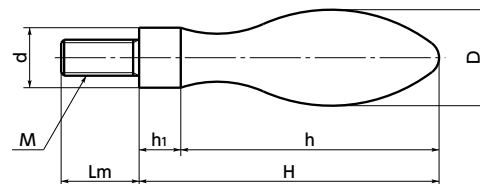
GTM-18-M5
1 2 3

Cleanroom Wash & Packaging ➡ P.807	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821	Modification of Shaft Hole Diameter ➡ P.815
Not Available	Male screw only/ Add'l charge	Available / Add'l charge	Not Available

SM Plated Fixing Grip



WEB Selection Tool CAD Download



Material/Finish



	SM
Main body	SS400 Chrome Plating



Part Number 1	D	M	Lm	d	H	h	h1	Mass (g)
SM-4	10	M4	9	7	32	28	4	10
SM-5	13	M5	10	8	40	35	5	25
SM-6	16	M6	13	10	50	43	7	45
SM-8	20	M8	15	13	64	56	8	90
SM-10	25	M10	18	16	80	70	10	180
SM-12	32	M12	20	20	100	87	13	350
SM-16	36	M16	22	22	112	98	14	500

Unit : mm

Related Products

Revolving grip **RM** with the same shape is available.
➡ P.410



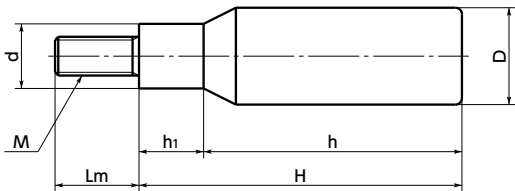
Part number specification

SM-4
1

Cleanroom Wash & Packaging ➡ P.807	Vibration Resistant ➡ P.810	Laser Marking ➡ P.821	Modification of Shaft Hole Diameter ➡ P.815
Not Available	Available / Add'l charge	Not Available	Not Available

HS Straight Fixing Grip

WEB Selection Tool WEB CAD Download



- Light aluminum grip.
- Material/Finish

RoHS2 Compliant

	HS
Main body	A2017 Alumite Treatment (Silver Gray)

Part Number	D	M	Lm	d	H	h	h1	Mass (g)
HS-5	12	M5	10	8	40	32	8	10
HS-6	15	M6	13	10	50	40	10	25
HS-8	18	M8	15	13	65	52	13	45
HS-10	20	M10	18	16	80	64	16	90

Unit : mm

- Part number specification

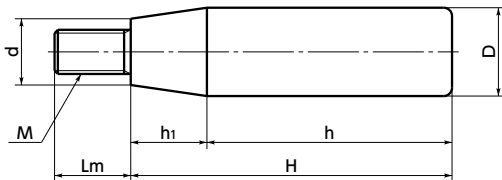
HS-5



Cleanroom Wash & Packaging → P.807	Vibration Resistant → P.810	Laser Marking → P.821	Modification of Shaft Hole Diameter → P.815
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available

GSS Stainless Steel Fixing Grip

WEB Selection Tool WEB CAD Download SUS Stainless steel



- All stainless steel grip superior in corrosion resistance and strength

- Material/Finish

RoHS2 Compliant

	GSS
Main body	SUS304

Part Number	D	M	Lm	d	H	h	h1	Mass (g)
GSS-5	10	M5	6	8	40	30	10	25
GSS-6	13	M6	7	10	50	37	13	50
GSS-8	16	M8	8	12	64	49	15	100
GSS-10	20	M10	10	15	70	50	20	150
GSS-12	25	M12	13	18	100	70	30	370

Unit : mm

- Usage example
In combination with a stainless steel handwheel
HSM (→ P.399).



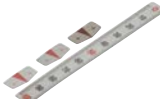
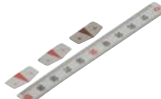
- Part number specification

GSS-5



Cleanroom Wash & Packaging → P.807	Vibration Resistant → P.810	Laser Marking → P.821	Modification of Shaft Hole Diameter → P.815
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available

● Scaling point

Product Code	FLE	FPP	FPS/FPT
Page	P.418	P.419	P.420
Shape			
Characteristics	Scale Marks Can be Enlarged	Stainless Steel Scale Indication · Plate Type Made of SUS304	Scale Indication · Plate Type Made of Polyester

● Scale

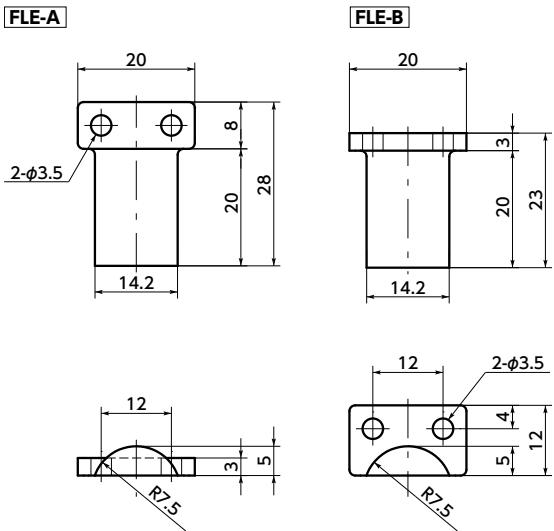
Product Code	FSP	FSP-HSR	FSP-V	FSP-V-HSR	FSS/FST	FSS-V/FST-V
Page	P.421	P.423	P.425	P.427	P.429	P.430
Shape	 <i>Recommendation</i>	 <i>NEW</i>		 <i>NEW</i>	 <i>Recommendation</i>	
Characteristics	Stainless Steel Horizontal Type · Plate Type Made of SUS304	Stainless Steel Horizontal Type · Half scale · Plate Type Made of SUS304	Stainless Steel Vertical Type · Plate Type Made of SUS304	Stainless Steel Vertical Type · Half scale · Plate Type Made of SUS304	Horizontal Type · Sticker Type Made of Polyester	Vertical Type · Sticker Type Made of Polyester
Scale Length	50 mm–200 mm	100mm - 150mm	50 mm – 200 mm	100mm - 150mm	100 mm–500 mm	100 mm – 500 mm

● Measuring Indicator

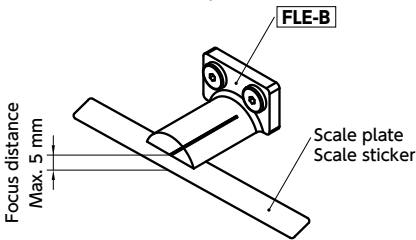
Product Code	RNCL
Page	P.431
Shape	
Characteristics	Display Counter Integrated

FLE Point Lenses

WEB Selection Tool WEB CAD Download



- Dedicated lens for the Scale Plate **FSP** (➡ P.421) and the Scale Sticker **FSS FST** (➡ P.429). It will make a scale reading easier.
- You can choose the Point Lens from the following two types of mounting methods according to your application.
FLE-A — Front mounting
FLE-B — Side mounting
- It is useful for displaying the home position of the actuator.
- Socket Head Cap Screw/Special Low Head made of stainless steel **SSH5-M3-10** (➡ P.601) for mounting is provided.
- Focus distance: Up to 5 mm



- Material/Finish RoHS2 Compliant

	FLE
Main body	Acrylic (transparent)
Thread	SUSXM7 (Equivalent to SUS304)

FSS FST ➡ P.429



- Part number specification

FLE-28-20-A

1

Part Number	Mass (g)
FLE-28-20-A	1.7
FLE-23-20-B	1.5

- Usage example
Use the Point Lens in combination with the Scale Plate **FSP** or the Scale Sticker **FSS FST**.
FSP ➡ P.421



Scale Plate / Scale sticker Length Adjustment ➡ P.812

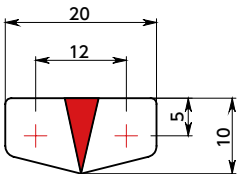
Not Available

FPP Point Plates

WEB Selection Tool WEB CAD Download SUS Stainless steel

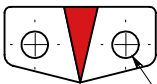


FPP



Thickness: 0.55 mm

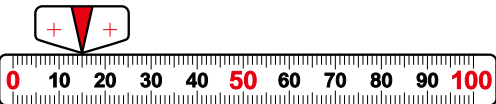
FPP-K



Thickness: 0.55 mm 2-φ3.5

Part Number	Mass (g)
FPP	0.8
FPP-K	0.7

- Usage example
In combination with the Scale Plate **FSP** (→ P.421).



Related Products

Special low head bolt **SSHS** whose height of the head is low is available as a mounting bolt. → P.601



Scale Plate / Scale sticker Length Adjustutment → P.812
Not Available

FPP-K



FPP



- Use the Point Plate in combination with the Scale Plate **FSP** (→ P.421) or the Scale Sticker **FSS** **FST** (→ P.429).
- It is useful to use it as the home position indication plate for the actuator.
- FPP** — Without mounting holes. With adhesive tape. Simply stick the Point Plate on machines/devices.
- FPP-K** — With mounting holes. Tighten the Point Plate with screws.

Material/Finish	FPP
Main body	SUS304

RoHS2 Compliant

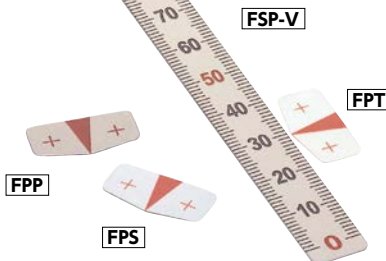
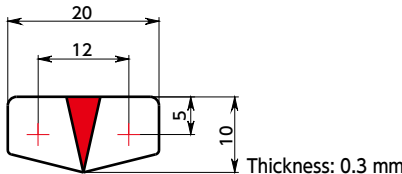
- Part number specification

FPP-K

1

FPS / FPT Point Stickers

WEB Selection Tool WEB CAD Download



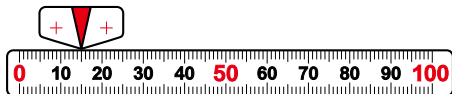
- Use the Point Sticker in combination with the Scale Plate **FSP** (→ P.421) or the Scale Sticker **FSS** **FST** (→ P.429).
- Sticker type that can simply stick on machines / devices.
- It is useful to use it as the home position indication plate for the actuator.
- FPS** — Aluminum evaporation coating
- FPT** — Transparent

Material/Finish	FPS	FPT
Main body	Polyester Aluminum evaporation coating	Polyester (transparent)

FPS Aluminum evaporation coating FPT Transparent

Part Number	Mass (g)
FPS	0.1
FPT	0.1

- Usage example
In combination with the Scale Sticker **FSS** **FST** (→ P.429).



Scale Plate / Scale sticker Length Adjustutment → P.812
Not Available

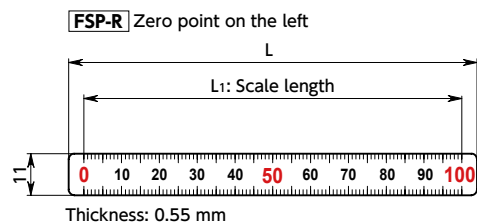
- Part number specification

FPS

1

FSP Scale Plates (Horizontal Type) *Recommendation*

WEB Selection Tool WEB CAD Download SUS Stainless steel



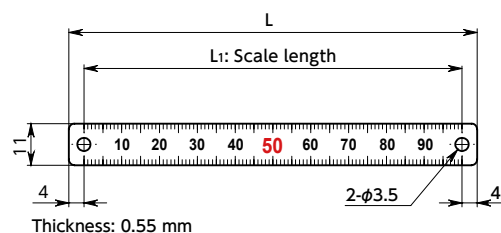
FSP-L Zero point on the right



FSP-C Center distribution



FSP-R-K Zero point on the left



FSP-L-K Zero point on the right



FSP-C-K Center distribution



* 0, 50, 100, 150 and 200 are red.

- Horizontal type scale plate. As the adhesive tape is provided, you can simply stick it on machines / devices to use.
- It is useful to align the adjustment shaft for a conveyance line and a slide table.
- Scale lengths of 50 / 100 / 150 / 200 mm are standardized.
- Made of stainless steel. It is highly corrosion-resistant.
- Corners are rounded. It is hard to remove.
- **FSP-K** has mounting holes. After sticking, it can be secured more firmly with screws.
- Adhesive tape is not provided with **FSP-50-*-K**. Tighten the Scale Plate with screws.
- **FSP** — Without mounting holes
FSP-K — With mounting holes
- Select the scale type from three types, and with or without mounting holes by the end symbol of the part number.

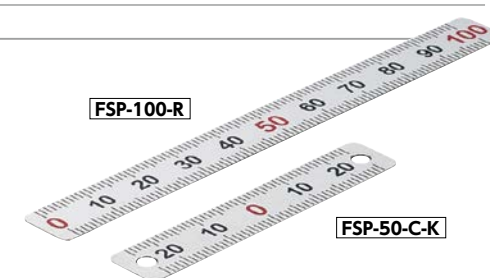
End Symbol	Scale	Mounting hole
R	Zero point on the left	No
R-K	Zero point on the left	Yes
L	Zero point on the right	No
L-K	Zero point on the right	Yes
C	Center distribution	No
C-K	Center distribution	Yes

- Material/Finish RoHS2 Compliant

	FSP
Main body	SUS304

⚠ Precautions for Use

- **FSP** Use the scale of the Scale Plate as a general guideline.
- Thoroughly remove oil and dust on the sticking surface before sticking.



Part Number	L1	L	Mass (g)
FSP-50-R	50	58	2.6
FSP-100-R	100	108	4.8
FSP-150-R	150	158	7
FSP-200-R	200	208	9.2
FSP-50-L	50	58	2.6
FSP-100-L	100	108	4.8
FSP-150-L	150	158	7
FSP-200-L	200	208	9.2
FSP-50-C	50	58	2.6
FSP-100-C	100	108	4.8
FSP-150-C	150	158	7
FSP-200-C	200	208	9.2
FSP-50-R-K	50	58	2.5
FSP-100-R-K	100	108	4.7
FSP-150-R-K	150	158	6.9
FSP-200-R-K	200	208	9.1
FSP-50-L-K	50	58	2.5
FSP-100-L-K	100	108	4.7
FSP-150-L-K	150	158	6.9
FSP-200-L-K	200	208	9.1
FSP-50-C-K	50	58	2.5
FSP-100-C-K	100	108	4.7
FSP-150-C-K	150	158	6.9
FSP-200-C-K	200	208	9.1

● Related Products

Special low head bolt **SSHS**
whose height of the head is low
is available as a mounting bolt.
➔ P.601



- Part number specification

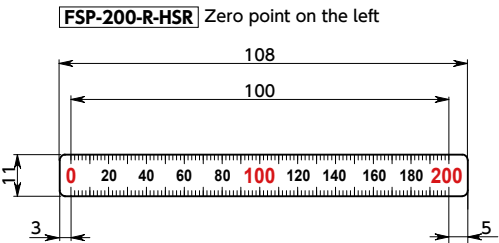
FSP-200-R-K
Product Code **1** **2**

Scale Plate / Scale sticker Length Adjustment ➔ P.812

Please feel free to contact us

FSP-HSR Scale Plate (Horizontal Type) - Half scale NEW

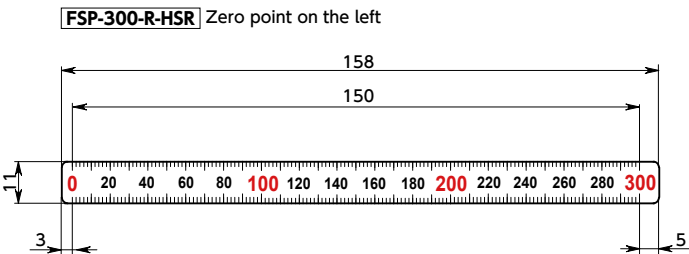
WEB Selection Tool WEB CAD Download SUS Stainless steel



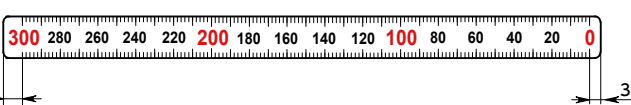
FSP-200-L-HSR Zero point on the right



Thickness: 0.55 mm



FSP-300-L-HSR Zero point on the right



Thickness: 0.55 mm

- Horizontal type scale plate scaled down by half.
- Values of 20/40/60... are displayed on a 10 mm/20 mm/30 mm... scale.
- By using it in a feed mechanism using double-ended screws to move in both directions, you can read the actual travel distance.
- As the adhesive tape is provided, you can simply stick it on machines / devices to use.
- Made of stainless steel. They have excellent corrosion resistance.
- Corners are rounded. It is hard to remove.
- Material/Finish

RoHS2 Compliant

	FSP-HSR
Main body	SUS304

Unit : mm

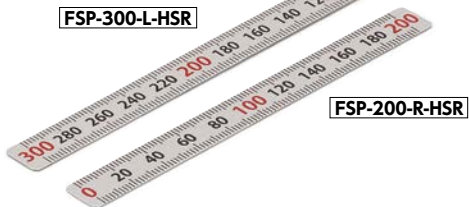
Part Number	Mass (g)
FSP-200-R-HSR	4.8
FSP-200-L-HSR	4.8
FSP-300-R-HSR	7
FSP-300-L-HSR	7

Scale Plate / Scale sticker Length Adjustment → P.812

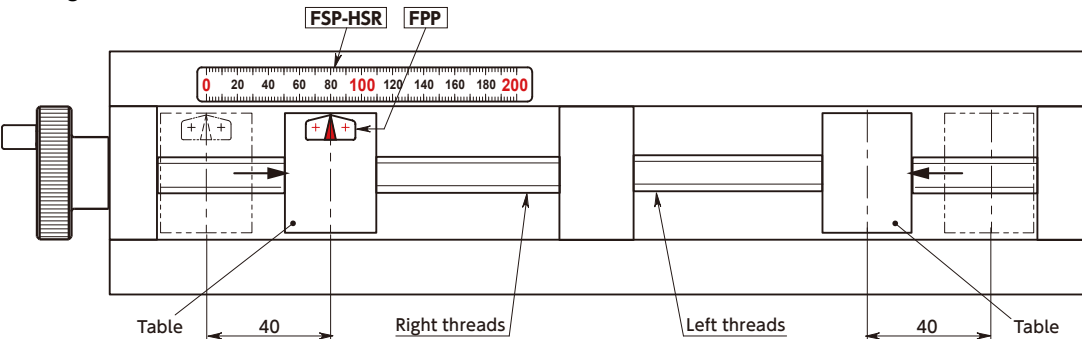
Available / Add'l charge

⚠ Precautions for Use

- **FSP-HSR** Use the scale of the Scale Plate as a general guideline.
- Thoroughly remove oil and dust on the sticking surface before sticking.
- Mounting hole processing is available upon request.



- Usage example
For reading actual travel distance in feed mechanisms using double-ended screws to move in both directions. When the left-side table travels 40 mm, the right-side table also travels 40 mm, for a total of 80 mm travel. Using **FSP-HSR** enables confirmation of this total travel distance.



• Related Products

Half-scale vertical type scale plate **FSP-V-HSR** is available.
→ P.427



Actual-scale horizontal type scale plate **FSP** is available.
→ P.421



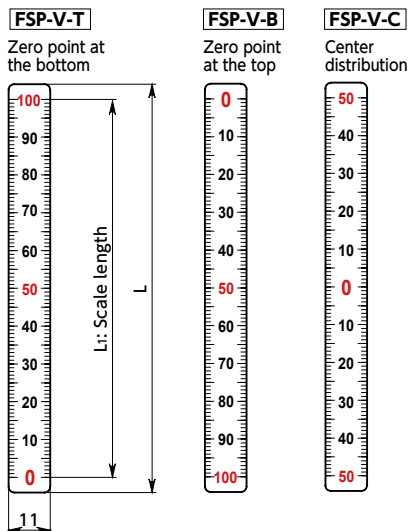
- Part number specification

FSP-200-R-HSR

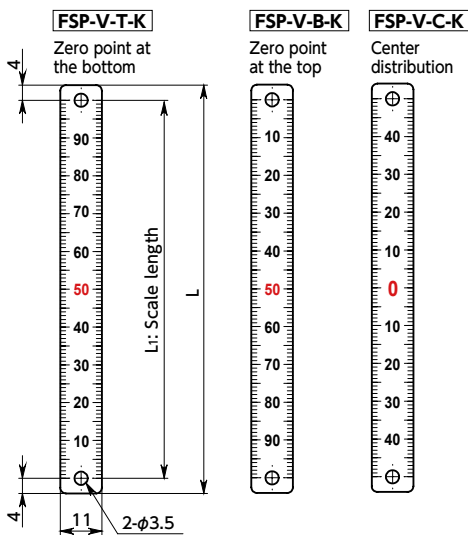


FSP-V Scale Plates (Vertical Type)

WEB Selection Tool WEB CAD Download SUS Stainless steel



Thickness: 0.55 mm



Thickness: 0.55 mm

* 0, 50, 100, 150 and 200 are red.

- Vertical type scale plate. As the adhesive tape is provided, you can simply stick it on machines / devices to use.
- It is useful to align the adjustment shaft for a conveyance line and a slide table.
- Scale lengths of 50 / 100 / 150 / 200 mm are standardized.
- Made of stainless steel. It is highly corrosion-resistant.
- Corners are rounded. It is hard to remove.
- FSP-V-K** has mounting holes. After sticking, it can be secured more firmly with screws.
- Adhesive tape is not provided with **FSP-50V-*K**. Tighten the Scale Plate with screws.
- FSP-V** ————— Without mounting holes
FSP-V-K ————— With mounting holes
- Select the scale type from three types, and with or without mounting holes by the end symbol of the part number.

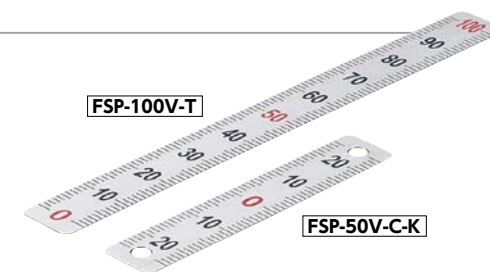
End Symbol	Scale	Mounting hole
T	Zero point at the bottom	No
T-K	Zero point at the bottom	Yes
B	Zero point at the top	No
B-K	Zero point at the top	Yes
C	Center distribution	No
C-K	Center distribution	Yes

- Material/Finish RoHS2 Compliant

	FSP-V
Main body	SUS304

⚠ Precautions for Use

- FSP-V** Use the scale of the Scale Plate as a general guideline.
- Thoroughly remove oil and dust on the sticking surface before sticking.



Part Number	L1	L	Mass (g)
FSP-50V-T	50	58	2.6
FSP-100V-T	100	108	4.8
FSP-150V-T	150	158	7
FSP-200V-T	200	208	9.2
FSP-50V-B	50	58	2.6
FSP-100V-B	100	108	4.8
FSP-150V-B	150	158	7
FSP-200V-B	200	208	9.2
FSP-50V-C	50	58	2.6
FSP-100V-C	100	108	4.8
FSP-150V-C	150	158	7
FSP-200V-C	200	208	9.2
FSP-50V-T-K	50	58	2.5
FSP-100V-T-K	100	108	4.7
FSP-150V-T-K	150	158	6.9
FSP-200V-T-K	200	208	9.1
FSP-50V-B-K	50	58	2.5
FSP-100V-B-K	100	108	4.7
FSP-150V-B-K	150	158	6.9
FSP-200V-B-K	200	208	9.1
FSP-50V-C-K	50	58	2.5
FSP-100V-C-K	100	108	4.7
FSP-150V-C-K	150	158	6.9
FSP-200V-C-K	200	208	9.1

• Related Products

Point Lens **FLE**, which is useful to read the scale, is available.
➔ P.418



Special low head bolt **SSHS** whose height of the head is low is available as a mounting bolt.
➔ P.601



• Part number specification

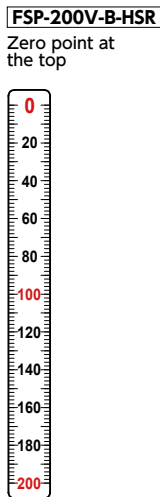
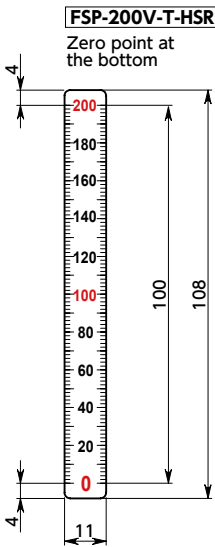
FSP-200 V - T-K
Product Code Product Code

Scale Plate / Scale sticker Length Adjustment ➔ P.812

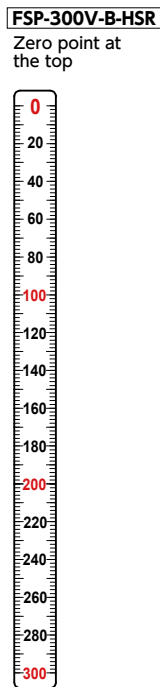
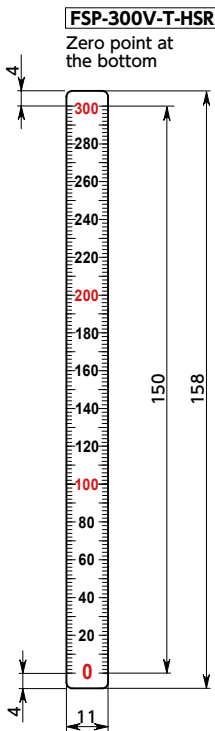
Please feel free to contact us

FSP-V-HSR Scale Plate (Vertical Type) - Half scale NEW

WEB Selection Tool WEB CAD Download SUS Stainless steel



Thickness: 0.55 mm



Thickness: 0.55 mm

- Vertical type scale plate scaled down by half.
- Values of 20/40/60... are displayed on a 10 mm/20 mm/30 mm... scale.
- By using it in a feed mechanism using double-ended screws to move in both directions, you can read the actual travel distance.
- As the adhesive tape is provided, you can simply stick it on machines / devices to use.
- Made of stainless steel. They have excellent corrosion resistance.
- Corners are rounded. It is hard to remove.
- Material/Finish

RoHS2 Compliant

	FSP-V-HSR
Main body	SUS304

⚠ Precautions for Use

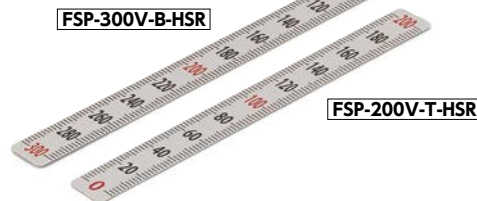
- **FSP-V-HSR** Use the scale of the Scale Plate as a general guideline.
- Thoroughly remove oil and dust on the sticking surface before sticking.

Part Number	Mass (g)	Unit : mm
FSP-200V-T-HSR	4.8	
FSP-200V-B-HSR	4.8	
FSP-300V-T-HSR	7	
FSP-300V-B-HSR	7	

- Mounting hole processing is available upon request.

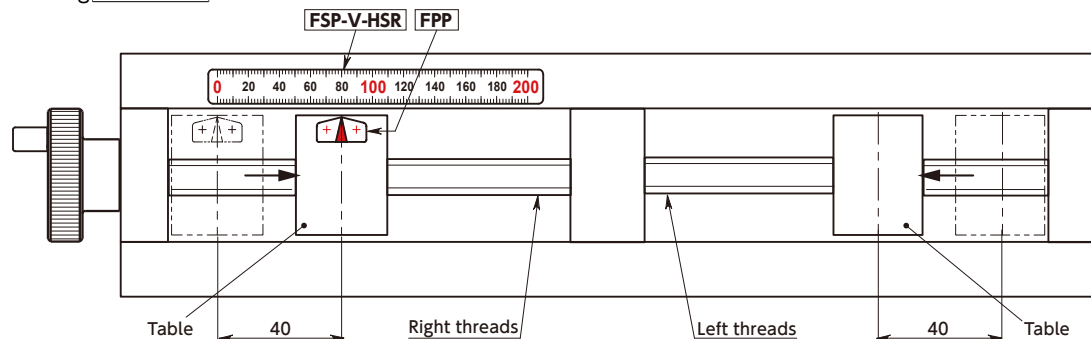


FSP-300V-B-HSR



FSP-200V-T-HSR

- Usage example
For reading actual travel distance in feed mechanisms using double-ended screws to move in both directions. When the left-side table travels 10 mm, the right-side table also travels 10 mm, for a total of 20 mm travel. Using **FSP-V-HSR** enables confirmation of this total travel distance.



• Related Products

Half-scale horizontal type scale plate **FSP-HSR** is available.
➡ P.423



Actual-scale vertical type scale plate **FSP-V** is available.
➡ P.425



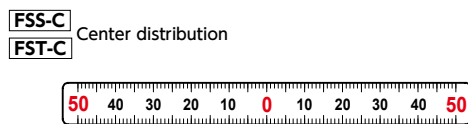
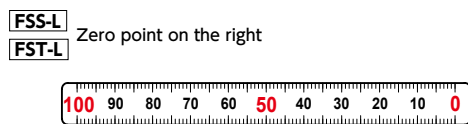
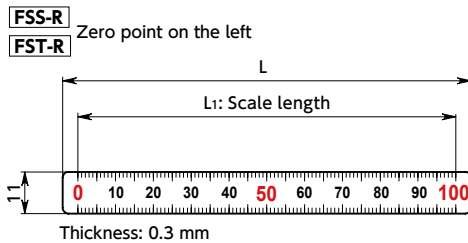
- Part number specification

FSP-200V-T-HSR

➡

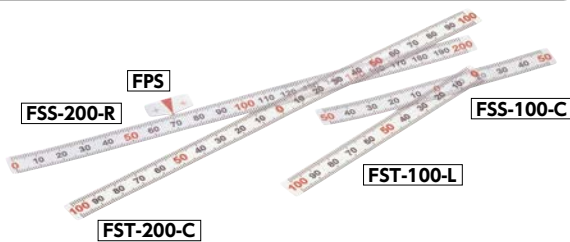
Scale Plate / Scale sticker Length Adjustment ➡ P.812

Available / Add'l charge

FSS / FST Scale Stickers (Horizontal Type) *Recommendation*WEB Selection Tool
WEB CAD Download

* Multiples of 0 and 50 are red.

FSS Aluminum evaporation coating		FST Transparent		Unit : mm
Part Number	End Symbol	L1	L	Mass (g)
FSS-100-R	1	100	108	0.5
FSS-200-R	2	200	208	1
FSS-300-R	3	300	308	1.5
FSS-500-R	4	500	508	2.5
FSS-100-L	1	100	108	0.5
FSS-200-L	2	200	208	1
FSS-300-L	3	300	308	1.5
FSS-500-L	4	500	508	2.5
FSS-100-C	1	100	108	0.5
FSS-200-C	2	200	208	1
FSS-300-C	3	300	308	1.5
FSS-500-C	4	500	508	2.5
FST-100-R	1	100	108	0.5
FST-200-R	2	200	208	1
FST-300-R	3	300	308	1.5
FST-100-L	1	100	108	0.5
FST-200-L	2	200	208	1
FST-300-L	3	300	308	1.5
FST-100-C	1	100	108	0.5
FST-200-C	2	200	208	1
FST-300-C	3	300	308	1.5



- Horizontal scale of the sticker type. Simply stick it on machines / devices.
- Scale lengths of 100 / 200 / 300 / 500 mm are standardized for **FSS**.
Scale length of 100 / 200 / 300 mm are standardized for **FST**.
- **FSS** ——— Aluminum evaporation coating
FST ——— Transparent
- Made of polyester which is flexible. You can stick it on a curved surface like a post / a shaft, and cut it into a custom size to use it.
- Corners are rounded. It is hard to remove.
- Select the scale type from three types by the end symbol of the part number.

End Symbol	Scale
R	Zero point on the left
L	Zero point on the right
C	Center distribution

Material/Finish		RoHS2 Compliant
	FSS	FST
Main body	Polyester Aluminum evaporation coating	Polyester (transparent)

- ⚠ **Precautions for Use**
- **FSS** **FST** Use the scale of the Scale Sticker as a general guideline.
- Thoroughly remove oil and dust on the sticking surface before sticking.

- Part number specification

FSS-200-R

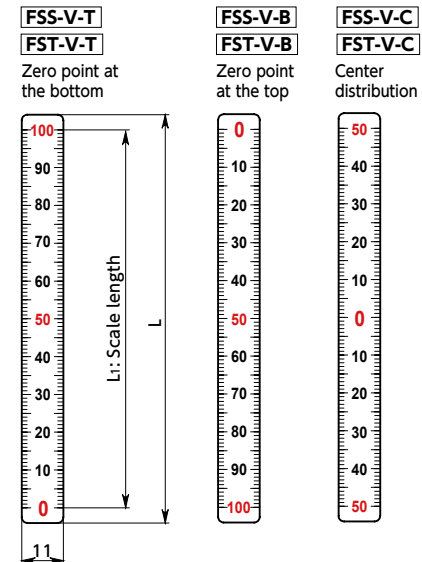
1 2 3

Scale Plate / Scale sticker Length Adjustment → P.812

Available / Add'l charge

FSS-V / FST-V Scale Stickers (Vertical Type)

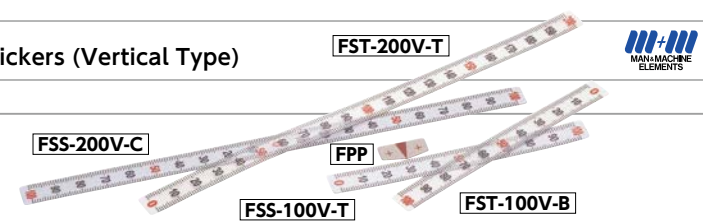
FST-200V-T

WEB Selection Tool
WEB CAD Download

Thickness: 0.3 mm

* Multiples of 0 and 50 are red.

FSS Aluminum evaporation coating		FST Transparent		Unit : mm
Part Number	End Symbol	L1	L	Mass (g)
FSS-100V-T	1	100	108	0.5
FSS-200V-T	2	200	208	1
FSS-300V-T	3	300	308	1.5
FSS-500V-T	4	500	508	2.5
FSS-100V-B	1	100	108	0.5
FSS-200V-B	2	200	208	1
FSS-300V-B	3	300	308	1.5
FSS-500V-B	4	500	508	2.5
FSS-100V-C	1	100	108	0.5
FSS-200V-C	2	200	208	1
FSS-300V-C	3	300	308	1.5
FSS-500V-C	4	500	508	2.5
FST-100V-T	1	100	108	0.5
FST-200V-T	2	200	208	1
FST-300V-T	3	300	308	1.5
FST-100V-B	1	100	108	0.5
FST-200V-B	2	200	208	1
FST-300V-B	3	300	308	1.5
FST-100V-C	1	100	108	0.5
FST-200V-C	2	200	208	1
FST-300V-C	3	300	308	1.5



- Vertical scale of the sticker type. Simply stick it on machines / devices.
- Scale lengths of 100 / 200 / 300 / 500 mm are standardized for **FSS-V**.
Scale lengths of 100 / 200 / 300 mm are standardized for **FST-V**.
- **FSS-V** ——— Aluminum evaporation coating
FST-V ——— Transparent
- Made of polyester which is flexible. You can stick it on a curved surface like a post / a shaft, and cut it into a custom size to use it.
- Corners are rounded. It is hard to remove.
- Select the scale type from three types by the end symbol of the part number.

End Symbol	Scale
T	Zero point at the bottom
B	Zero point at the top
C	Center distribution

Material/Finish		RoHS2 Compliant
	FSS	FST
Main body	Polyester Aluminum evaporation coating	Polyester (transparent)

- ⚠ **Precautions for Use**
- **FSS-V** **FST-V** Use the scale of the Scale Sticker as a general guideline.
- Thoroughly remove oil and dust on the sticking surface before sticking.
- Usage example
In combination with the Cross Clamper **FCCA-C** **FCCS-C** (→ P.373) and the Clamp Lever.



- Part number specification

FSS-200 V - T

1 2 3

Product Code

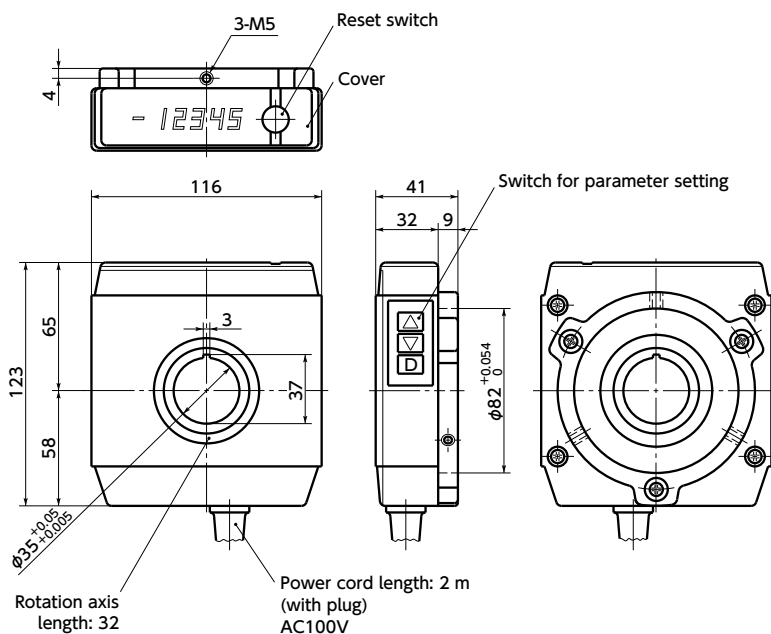
Scale Plate / Scale sticker Length Adjustment → P.812

Available / Add'l charge

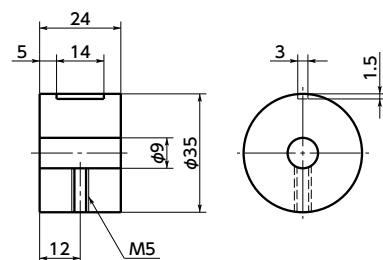
NBK

WEB ▶ <https://www.nbk1560.com>

Main body



Collar



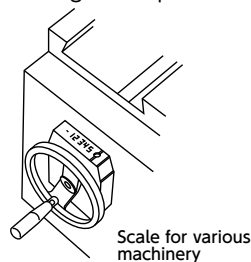
● Performance

Max. Number of Display Digits	Six digits / Red seven segment LED
Range of Count	Length measurement: 999999 ~ -99999 Angle $\pm 360.00^\circ$ Length measurement: Decimal, binary Angle in sexagesimal: 1 / 5 / 10 minute(s) Angle in decimal: 0.01 / 0.1 / 1° for reading
Count Mode	
Position of Decimal Point	Custom setting by parameter
Lead Value	Custom setting by parameter
Memory	Nonvolatile memory, backup for 10 years
Max. Allowable Speed	700 min ⁻¹
Power Source	100 V AC $\pm 10\%$ (50 / 60 Hz)
Power Code	With 2 m plug
Power Consumption	2.2 W
Vibration-resistance	49 G for 30 minutes
Shock-resistance	Durability 294 G, three times each for X / Y and Z direction
Range of Allowable Operating Temperature	0°C to 45°C
Range of Storage Temperature	-20°C to 80°C

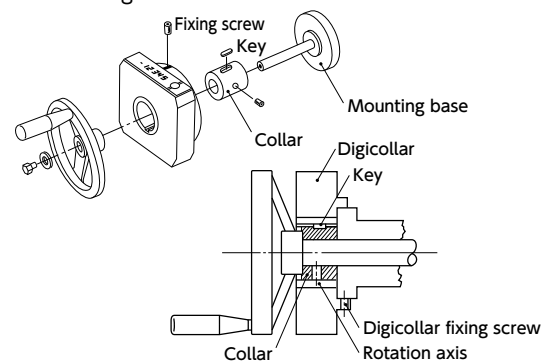
Part Number 	Mass (g)
RNCL-300	900

- Collar (hex socket set screw with key) is provided.

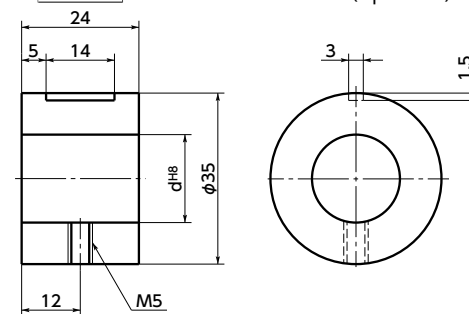
● Usage example



● Mounting



- ① Process the mounting base in accordance with the mounting-pilot section of the main body ($\phi 820$ to $+0.054$) (Recommended dimension: $\phi 82f7$).
- ② Process the collar to match the shaft diameter. Bore diameter collar **RNCL-R** (optional) is available.
- ③ After mounting the shaft to the collar, set-in the main body to the mounting base, and then secure it with fixing screws.

● **RNCL-R** Bore diameter collar (optional)

● Material/Finish



	RNCL-R
Main body	SUM22L Ferroferric Oxide Film (Black)

● Dimensions

Unit : mm

Part Number 	d	Mass (g)
RNCL-R18	18	136
RNCL-R20	20	125
RNCL-R22	22	112
RNCL-R24	24	98
RNCL-R25	25	90
RNCL-R26	26	83

- With hex socket set screw without key.
- Use the key provided with the main body of the Digicollar.

● Measuring unit

Correct digital display of the feed rate is possible by just setting it to the feed rotation axis.

- Preset function to set the current value to the home position is provided.
- The custom decimal point position can be set (range from 1 to 0.0001 mm).
- It can be applied to any lead value by setting the parameter. It can be converted to millimeter or inch.
- A nonvolatile memory stores the count value / the parameter setting values for 10 years.
- 100 V AC (50 / 60 Hz) supported.
- Dust-proof structure is provided, however, it is not protected from water / oil.
Front: IP62
Back: IP50
- Bore diameter of the attached collar is $\phi 9$ mm. Shaft hole processing can be performed upon the order. Please feel free to contact our customer service.
- Bore diameter collar whose shaft hole is already processed **RNCL-R** (optional) is available.

● Part number specification

RNCL-300 Main body of Digicollar**RNCL-R18** Bore diameter collar (optional)

• Rack-and-pinion Stage

Product Code	TAR-X	TAR-XY	TAR-Z	TAR	TAR
Page	P.435	P.436	P.437	P.438	P.439
Shape					
Moving Axis	X-axis	X-axis/Y-axis	Z-axis	X-axis	X-axis
Stage Face (mm)	25×50	25×50	25×50	34×60・34×80	25×30
Travel Distance	±10 mm	±10 mm	±10 mm	±15 mm・±25 mm	±25 mm~±65 mm

• Precision Stage

Product Code	TAR-D	TKSP / TAKS
Page	P.441	P.442
Shape		
Moving Axis	X-axis	Rotation
Stage Face (mm)	38×60・38×80	φ60・φ98
Travel Distance	±15 mm・±25 mm	360°

• Screw Stage

Product Code	TAS	TAS-XY
Page	P.443	P.444
Shape		
Moving Axis	X-axis	X-axis/Y-axis
Stage Face (mm)	24×30・20×60	24×30・20×60
Travel Distance	±4 mm・±7.5 mm	±4 mm・±7.5 mm

• Block Stage

Product Code	TAS	TAS
Page	P.445	P.446
Shape		
Moving Axis	X-axis	X-axis/Y-axis
Stage Face (mm)	25×25・40×40	25×25・40×40
Travel Distance	±3 mm・±7 mm	±3 mm・±7 mm

• Cross Stage

Product Code	TAM-S	TAM-SXY
Page	P.447	P.449
Shape		
Moving Axis	X-axis	X-axis/Y-axis
Stage Face (mm)	40×40~120×120	40×40~120×120
Travel Distance	±6.5 mm・±12.5 mm	±6.5 mm・±12.5 mm

• Tilting Stage

Product Code	TGOH
Page	P.451
Shape	
Moving Axis	X-axis
Stage Face (mm)	25×25~60×60
Travel Distance	±20°

• Jackscrew

Product Code	TLJK
Page	P.453
Shape	
Moving Axis	Z-axis
Stage Face (mm)	80×132~160×220
Travel Distance	22 mm~70 mm

Selection
Navigator

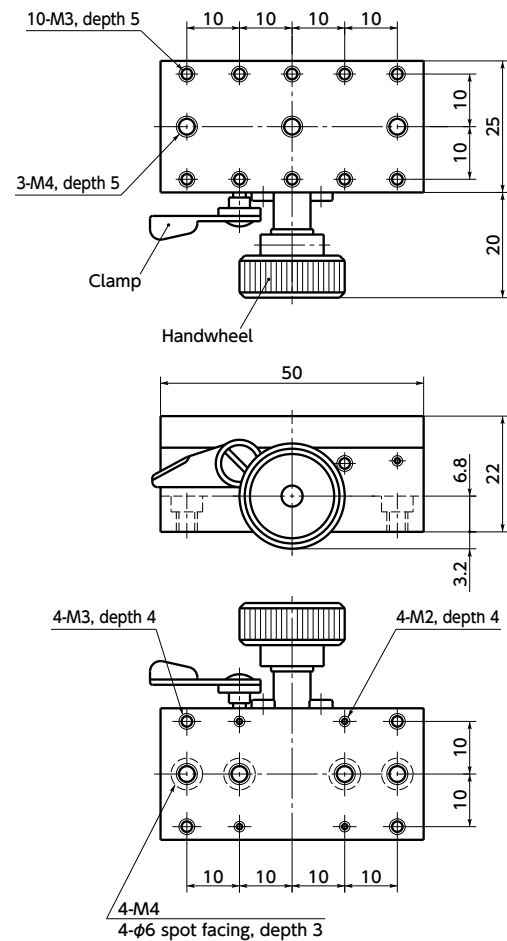


CAD Data
Download

<https://www.nbk1560.com/>

TAR-X Miniature X - axis Rack - and - Pinion Stages

WEB Selection Tool CAD Download



- Rack-and-pinion method allows for quicker feeding.
- Dovetail groove method is adopted for the travel guide. A rattle correction function is provided.
- As the main body is directly mounted without a mounting spacer, the main body is thin and compact.

Material/Finish		RoHS2 Compliant
TAR-X		
Stage	Brass Black chrome plating	
Main body	Brass Coating (Silver)	

⚠ Precautions for Use
As the feeding handwheel is beyond the main body bottom surface, it cannot be directly mounted to a flat plane. Relief by a spacer, etc. is necessary.

Unit : mm					
Part Number	Stage Face	Travel Guide	Travel distance	Stroke (mm/Rotation)	Mass (g)
TAR-2550X	25×50	Dovetail Groove Method	±10	20	220

Unit : mm					
Part Number	Straightness	Parallelism	Display Resolution	Position Resolution	Withstand load (N)
TAR-2550X	0.02	0.05	0.1	0.1	78.5

- Pan head machine screws for mounting (M3 x 8) are provided.
- Mounting
Spot facing is performed on the screw hole for mounting. Therefore, fixing from vertical directions is possible.
- Fixing from above (both ends only)——M3
- Fixing from beneath——M2/M3/M4

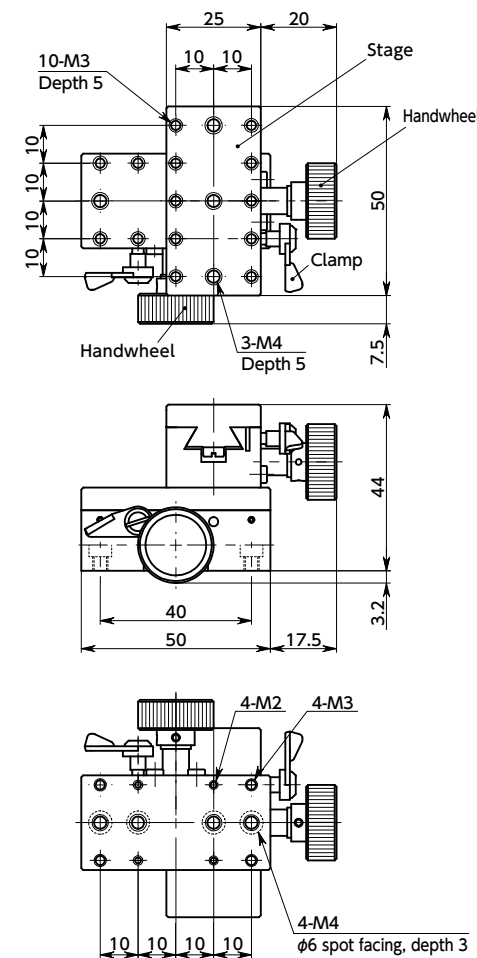
- Part number specification

TAR-2550X



TAR-XY Miniature X / Y - axis Rack - and - Pinion Stages

WEB Selection Tool CAD Download



- Two axes (X and Y axes) can be moved.
- Rack-and-pinion method allows for quicker feeding.
- Dovetail groove method is adopted for the travel guide. A rattle correction function is provided.
- As the main body is directly mounted without a mounting spacer, the main body is thin and compact.

Material/Finish		RoHS2 Compliant
TAR-XY		
Stage	Brass Black chrome plating	
Main body	Brass Coating (Silver)	

⚠ Precautions for Use
As the X-axis feeding handwheel is beyond the main body bottom surface, it cannot be directly mounted to a flat plane. Relief by a spacer, etc. is necessary.

Unit : mm					
Part Number	Stage Face	Travel Guide	Travel distance	Stroke (mm/Rotation)	Mass (g)
TAR-2550XY	25×50	Dovetail Groove Method	±10	20	440

Unit : mm					
Part Number	Straightness	Parallelism	Display Resolution	Position Resolution	Withstand load (N)
TAR-2550XY	0.02	0.1	0.1	0.1	78.5

- Pan head machine screws for mounting (M3 x 8) are provided.
- Mounting
Spot facing is performed on the screw hole for mounting. Therefore, fixing from vertical directions is possible.
- Fixing from above (both ends only)——M3
- Fixing from beneath——M4

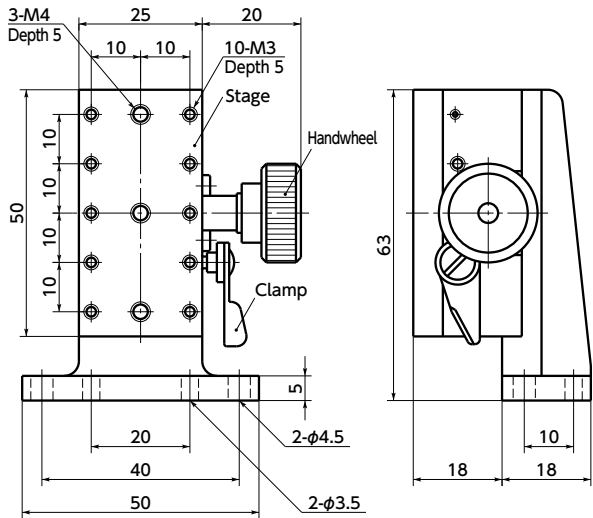
- Part number specification

TAR-2550XY



TAR-Z Miniature Z - axis Rack - and - Pinion Stages

WEB Selection Tool WEB CAD Download



- Z-axis stage on the vertical stage surface.
- Rack-and-pinion method allows for quicker feeding.
- Dovetail groove method is adopted for the travel guide. A rattle correction function is provided.

Material/Finish



	TAR-Z
Stage	Brass Black chrome plating
Main body	Brass Coating (Silver)
Lower surface spacer	Aluminum Alloy Alumite Treatment (Black)

Part Number	Stage Face	Travel Guide	Travel distance	Stroke (mm/Rotation)	Mass (g)
TAR-2550Z	25×50	Dovetail Groove Method	± 10	20	300

Unit : mm

Part Number	Straightness	Squareness	Display Resolution	Position Resolution	Withstand load (N)
TAR-2550Z	0.03	0.05	0.1	0.1	9.8

Unit : mm

- Pan head machine screws for mounting (M3 x 10 and M4 x 10) are provided.

Part number specification

TAR-2550Z

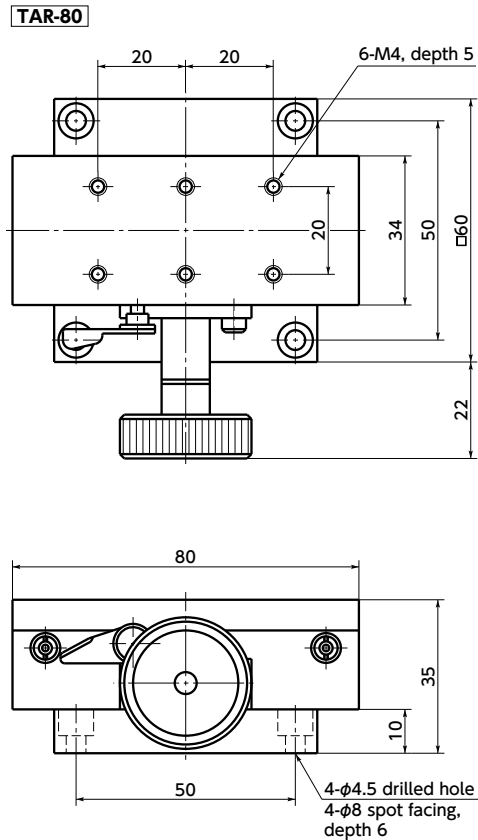
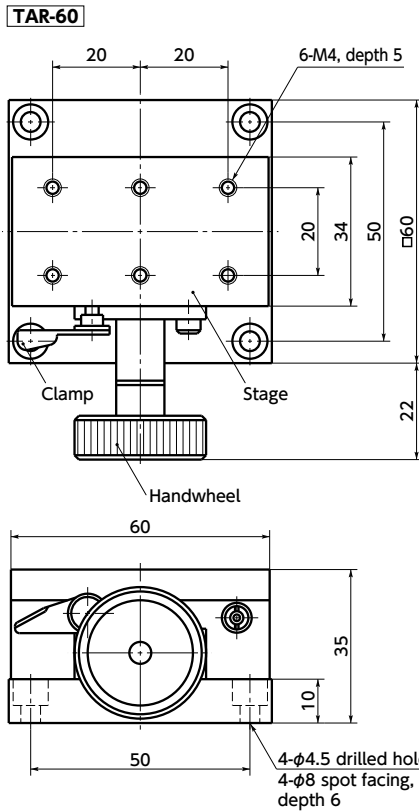


TAR X - axis Rack - and - Pinion Stages

WEB Selection Tool WEB CAD Download



TAR-80



- Part number specification

TAR-60



- Rack-and-pinion method allows for quicker feeding.
- Dovetail groove method is adopted for the travel guide. A rattle correction function is provided.

Material/Finish



	TAR
Stage	Brass Black chrome plating
Main Body	Brass Coating (Silver)
Lower surface spacer	Aluminum Alloy Alumite Treatment (Black)

Part Number	Stage Face	Travel Guide	Travel distance	Stroke (mm/Rotation)	Mass (g)
TAR-60	34×60	Dovetail Groove Method	± 15	20	500
TAR-80	34×80	Dovetail Groove Method	± 25	20	800

Unit : mm

Part Number	Straightness	Parallelism	Display Resolution	Position Resolution	Withstand load (N)
TAR-60	0.02	0.06	0.1	0.1	147
TAR-80	0.03	0.06	0.1	0.1	196

Unit : mm

- Pan hex socket head cap screws for mounting (M4 x 8) are provided.

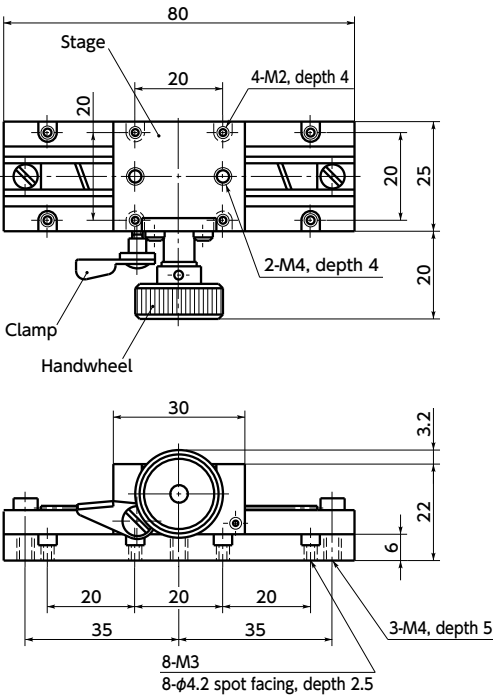
Machine Elements
Levers
Knobs
Pulls
Mounting Systems for Display
Set Collars
Cross Clampers
Handles
Grips
Scales
Stages
Ball Rollers
Plungers
Structure Components
Screws

TAR Miniature X - axis Rack - and - Pinion Stages

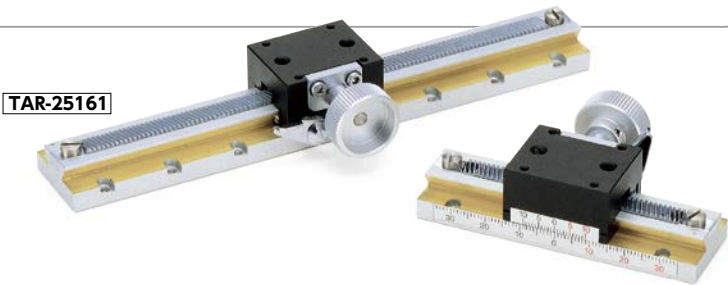
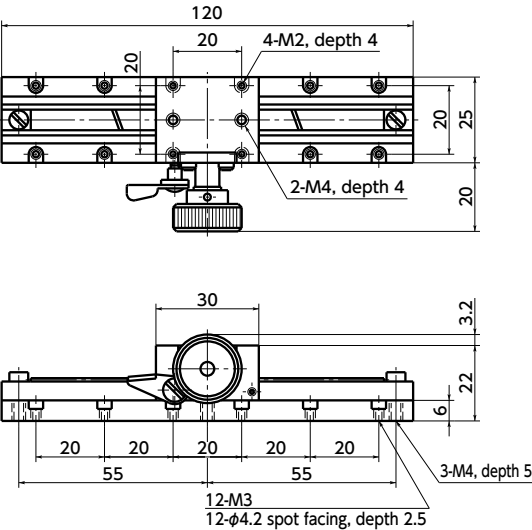
WEB Selection Tool
WEB CAD Download



TAR-2581



TAR-25121

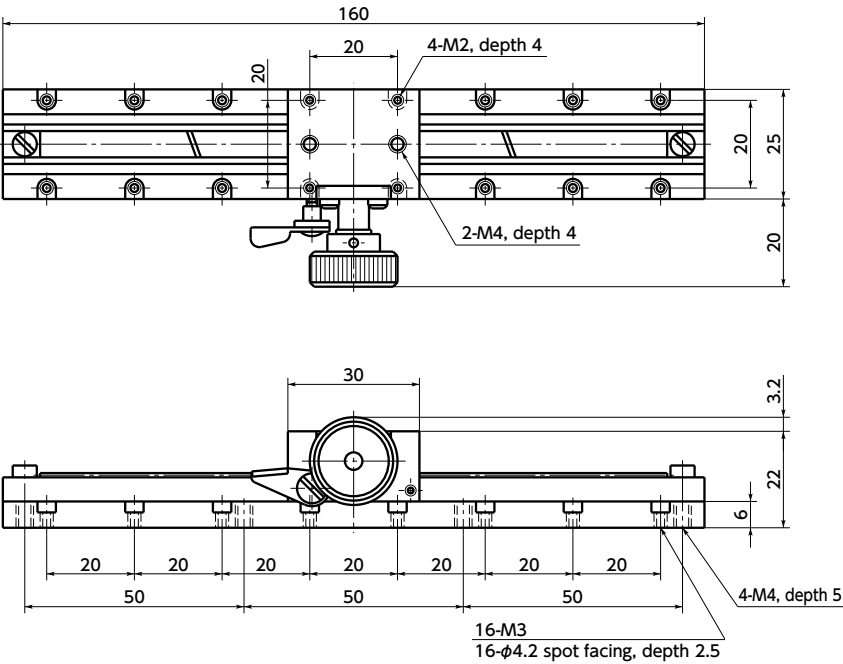


TAR-2581

- Rack-and-pinion method allows for quicker feeding.
- Even when the entire stage surface is moved by stroke, the stage surface does not run off the main body. The feeding handwheel travel area and main body area are the necessary installation area.
- Dovetail groove method is adopted for the travel guide. A rattle correction function is provided.
- Mounting holes and fixing holes are machined on both upper and lower surfaces. It is possible to turn over the stage and use the lower surface as a stage surface.

Material/Finish		RoHS2 Compliant
TAR		
Stage	Brass Black chrome plating	
Lower surface spacer	Brass Chrome Plating	

TAR-25161



Unit : mm					
Part Number	Stage Face	Travel Guide	Travel distance	Stroke (mm/Rotation)	Mass (g)
TAR-2581	25×30	Dovetail Groove Method	±25	20	220
TAR-25121	25×30	Dovetail Groove Method	±45	20	300
TAR-25161	25×30	Dovetail Groove Method	±65	20	360

Unit : mm					
Part Number	Straightness	Parallelism	Display Resolution	Position Resolution	Withstand load (N)
TAR-2581	0.03	0.05	0.1	0.1	49
TAR-25121	0.04	0.08	0.1	0.1	49
TAR-25161	0.05	0.08	0.1	0.1	49

- Pan head machine screws for mounting (M2 x 6) are provided.
- Mounting
Spot facing is performed on the screw hole for mounting. Therefore, fixing from vertical directions is possible.
- Fixing from above——M2
- Fixing from beneath——M3/M4

- Part number specification

TAR-2581



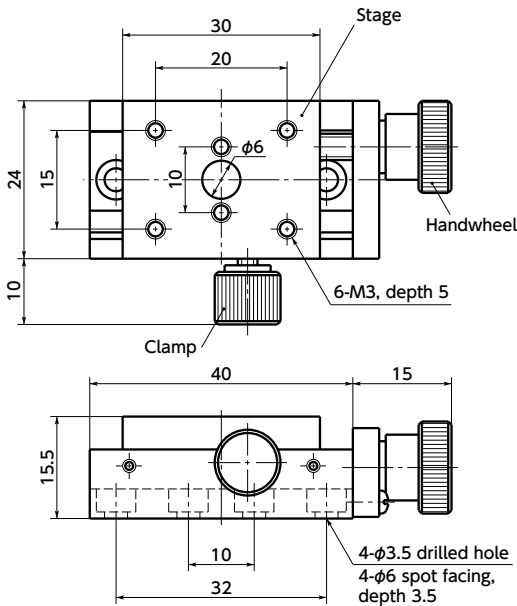
Machine Elements
Levers
Knobs
Pulls
Mounting Systems for Display
Set Collars
Cross Clampers
Handles
Grips
Scales
Stages
Ball Rollers
Plungers
Structure Components
Screws

TAS X - axis Screw Stages

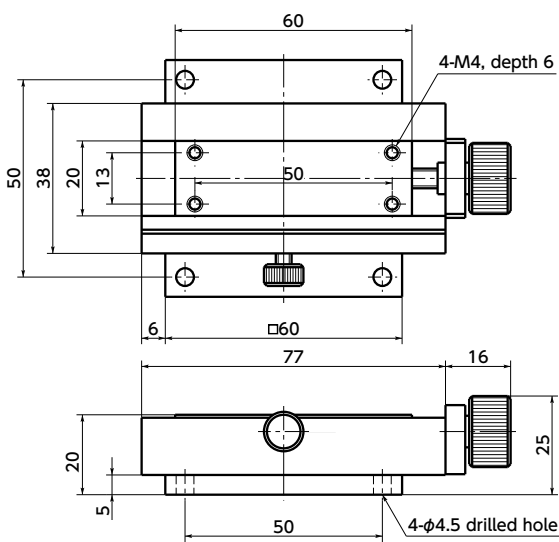
WEB Selection Tool WEB CAD Download



TAS-30



TAS-60



Part Number	Stage Face	Travel Guide	Travel distance	Screw Pitch	Mass (g)
TAS-30	24×30	Dovetail Groove Method	±4	0.5	200
TAS-60	18×60	Dovetail Groove Method	±7.5	0.5	500

Part Number	Straightness	Parallelism	Position Resolution	Withstand load (N)
TAS-30	0.02	0.05	0.01	68.7
TAS-60	0.02	0.05	0.01	147

● Pan head machine screws for mounting (M3 x 5 **TAS-30**) and hex socket head cap screw (M4 x 10 **TAS-60**) are provided.

TAS-60



TAS-30



- Screws are used for micromotion feed.
- Dovetail groove method is adopted for the travel guide. A rattle correction function is provided.

Material/Finish

RoHS2 Compliant

	TAS-30	TAS-60
Stage	Brass Black chrome plating	Brass Black chrome plating
Main body	Brass Coating (Silver)	Brass Coating (Black)
Lower surface spacer	Aluminum Alloy Alumite Treatment (Black)	Aluminum Alloy Alumite Treatment (Black)



Precautions for Use

TAS-60 has the feeding handwheel above the stage surface. There may be interference depending on the shape of work fixed on the stage.

Part number specification

TAS-30



TAS-XY XY - axis Screw Stages

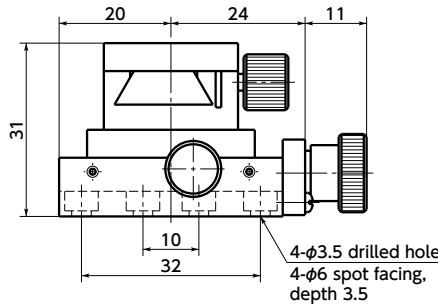
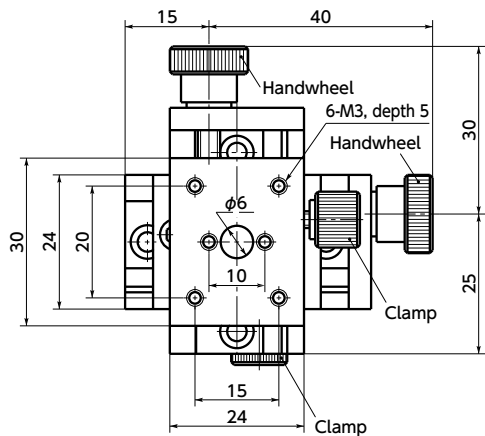
WEB Selection Tool WEB CAD Download



TAS-60XY



TAS-30XY



Precautions for Use

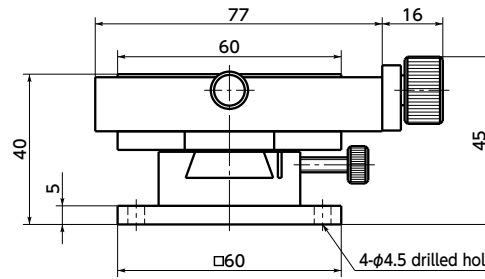
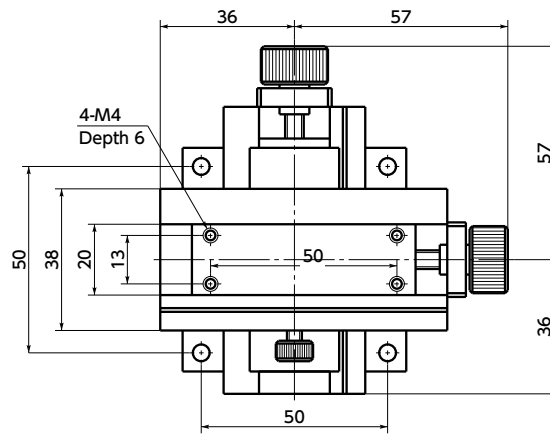
TAS-60XY has the feeding handwheel above the stage surface. There may be interference depending on the shape of work fixed on the stage.

Part number specification

TAS-30XY



TAS-60XY



- Two axes (X and Y axes) can be moved.
- Screws are used for micromotion feed.
- Dovetail groove method is adopted for the travel guide. A rattle correction function is provided.

Material/Finish

RoHS2 Compliant

	TAS-30XY	TAS-60XY
Stage	Brass Black chrome plating	Brass Black chrome plating
Main body	Brass Coating (Silver)	Brass Coating (Black)
Lower surface spacer	Aluminum Alloy Alumite Treatment (Black)	Aluminum Alloy Alumite Treatment (Black)

Part Number	Stage Face	Travel Guide	Travel distance	Screw Pitch	Mass (g)
TAS-30XY	24×30	Dovetail Groove Method	±4	0.5	400
TAS-60XY	18×60	Dovetail Groove Method	±7.5	0.5	900

Part Number	Straightness	Parallelism	Position Resolution	Withstand load (N)
TAS-30XY	0.02	0.1	0.01	68.7
TAS-60XY	0.02	0.1	0.01	147

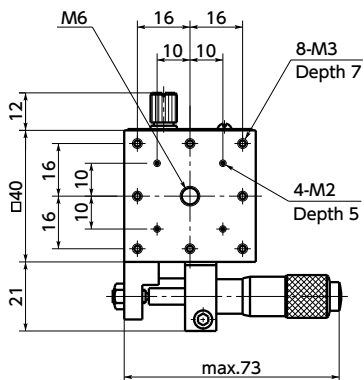
● Pan head machine screws for mounting (M3 x 5 **TAS-30XY**) and hex socket head cap screw (M4 x 10 **TAS-60XY**) are provided.

TAM X - axis Aluminum Cross Roller Stages

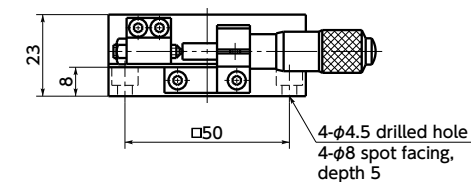
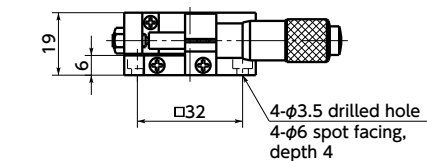
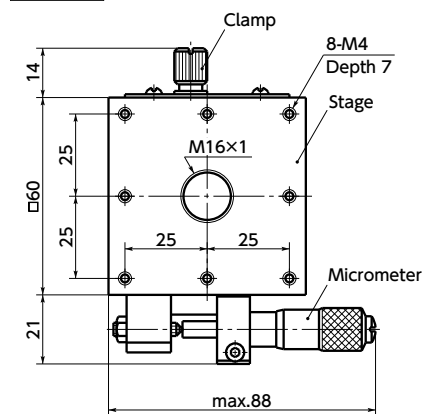
WEB Selection Tool
WEB CAD Download



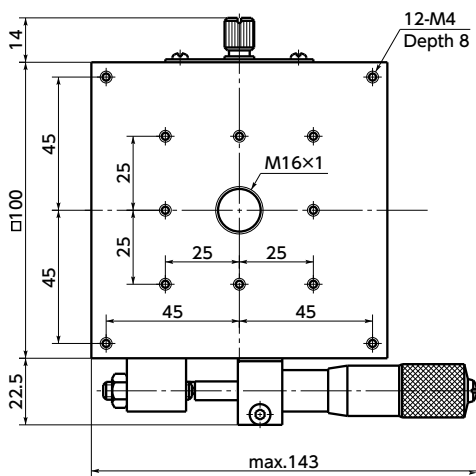
TAM-40S



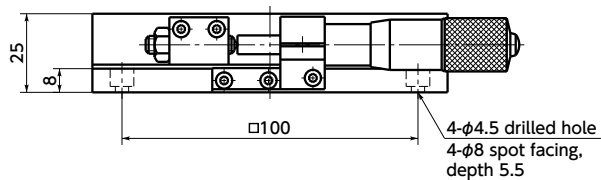
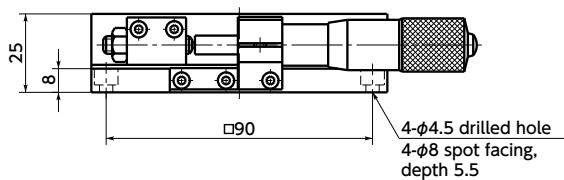
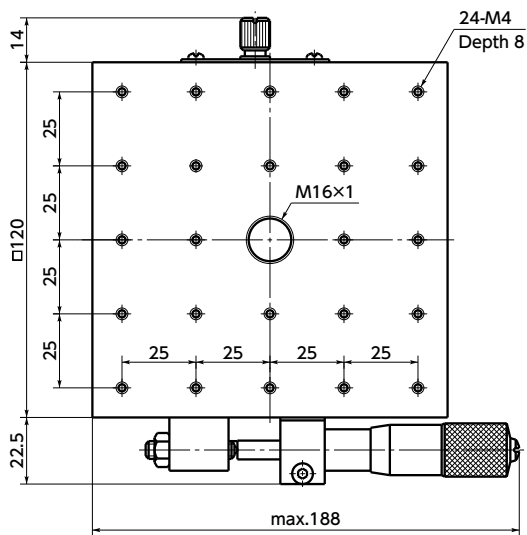
TAM-60S



TAM-100S



TAM-120S



- 4 stage size types.
- Made of Aluminum. Light weight.
- For travel guide, V-groove rail and cross roller system are adopted. It is high-precision.
- Feed system by micrometer. Feeding display resolution is 0.01 mm.

Material/Finish	TAM-S
Stage	Aluminum Alloy Alumite Treatment (Black)
Main body	Aluminum Alloy Alumite Treatment (Black)

- Mounting parts are supplied with each product.

Part Number	Supplied Items
TAM-40S	Pan Head Machine Screw (M3 x 6) and Spring Washer
TAM-60S	Hex Socket Head Cap Screw (M4 x 8)
TAM-100S	Hex Socket Head Cap Screw (M4 x 8) and Spring Washer
TAM-120S	Hex Socket Head Cap Screw (M4 x 8) and Spring Washer

Part Number	Stage Face	Travel Guide	Travel distance	Mass (g)
TAM-40S	40×40	V-groove rail and Cross roller system	±6.5	200
TAM-60S	60×60	V-groove rail and Cross roller system	±6.5	300
TAM-100S	100×100	V-groove rail and Cross roller system	±12.5	900
TAM-120S	120×120	V-groove rail and Cross roller system	±20	1300

Part Number	Straightness	Pitch	Yaw	Parallelism	Moving parallelism	Display Resolution	Position Resolution	Withstand load (N)
TAM-40S	0.002	40"	25"	0.03	0.01	0.01	0.003	49
TAM-60S	0.002	25"	15"	0.03	0.01	0.01	0.003	196
TAM-100S	0.002	25"	15"	0.05	0.015	0.01	0.003	490
TAM-120S	0.002	40"	25"	0.05	0.015	0.01	0.003	588

- Mounting
 - ① Turn the micrometer right to feed the stage to the end.
 - ② Then two mounting holes appear. Temporarily fix it with the supplied screws.
 - ③ Turn the micrometer right to return the stage back.
 - ④ Then two mounting holes appear. Temporarily fix it with the supplied screws.
 - ⑤ Check the position and then fix it.



- Part number specification

TAM-60S

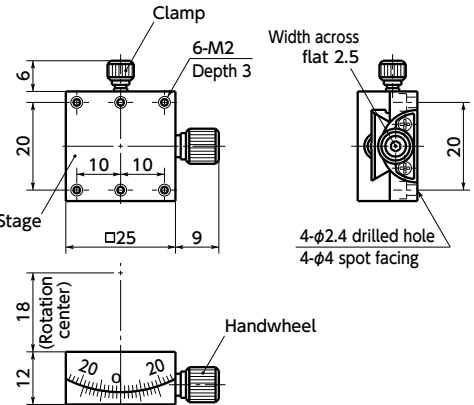


TGOH X-axis Tilting Stages

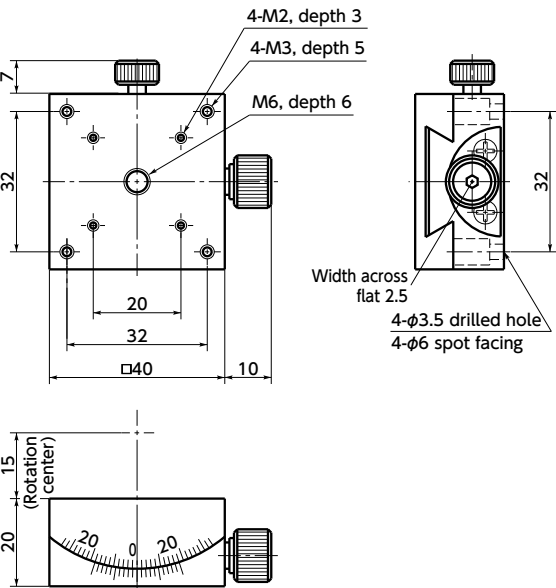
WEB Selection Tool WEB CAD Download



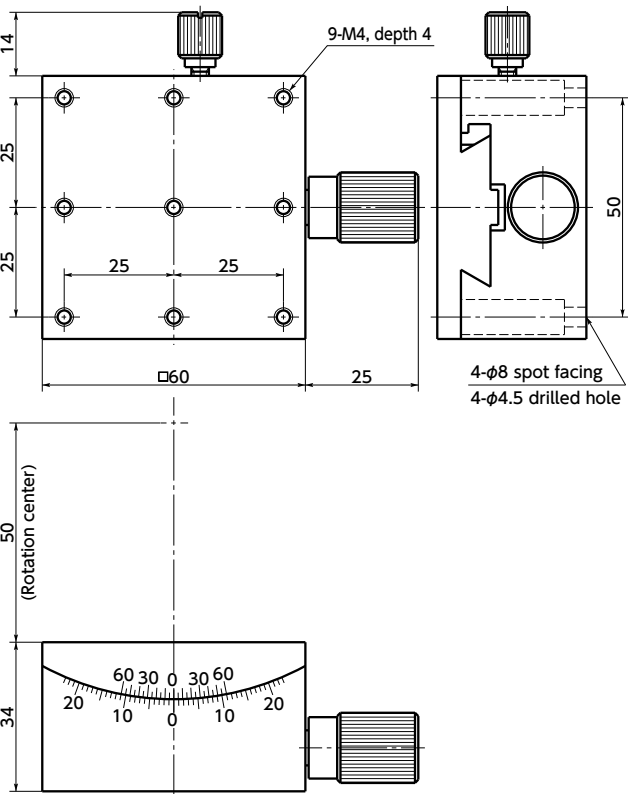
TGOH-251



TGOH-6



TGOHN-3



- Goniometer stages used for tilted rotation.
- Compact state with minimum projection.
Effective when there are space constraints or for assembly.
- Dovetail groove method is adopted for the travel guide. A rattle correction function is provided.

Material/Finish		RoHS2 Compliant
TGOH		
Stage	Brass Black chrome plating	
Main body	Brass Black chrome plating	



Unit : mm					
Part Number	Stage Face	Travel Guide	Travel distance	Stroke (°/Rotation)	Mass (g)
TGOH-251	25×25	Dovetail Groove Method	±20°	3.1	70
TGOH-6	40×40	Dovetail Groove Method	±20°	2.83	250
TGOHN-3	60×60	Dovetail Groove Method	±20°	1.03	1000

Unit : mm					
Part Number	Rotation position displacement	Parallelism	Display Resolution	Position Resolution	Withstand load (N)
TGOH-251	0.1	0.05	6'	3'	19.6
TGOH-6	0.1	0.05	6'	2'	68.7
TGOHN-3	0.1	0.05	5'	2'	98

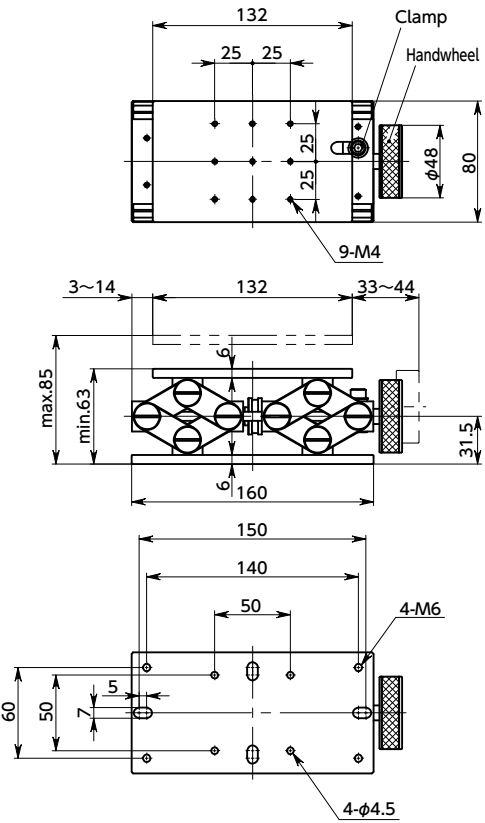
- Pan head machine screws for mounting (M2 x 4 TGOH-251 and M3 x 6 TGOH-6) and hex socket head cap screw (M4 x 8 TGOHN-3) are provided.
- Mounting
 - ① Turn the handwheel right to feed the stage to the end.
 - ② Then two mounting holes appear. Temporarily fix it with the supplied screws.
 - ③ Turn the handwheel right to return the stage back.
 - ④ Then two mounting holes appear. Temporarily fix it with the supplied screws.
 - ⑤ Check the position and then fix the stage by tightening all screws.

- Part number specification

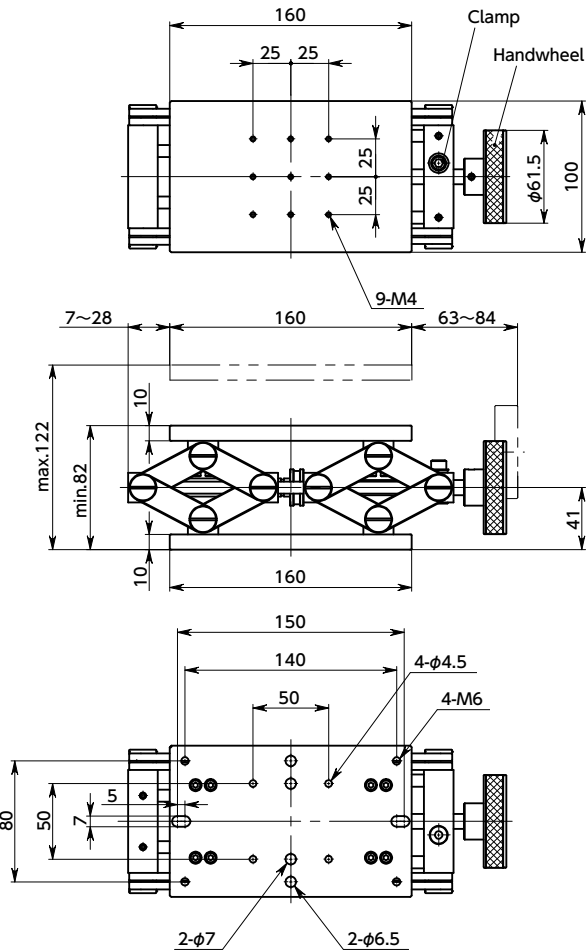
TGOH-251



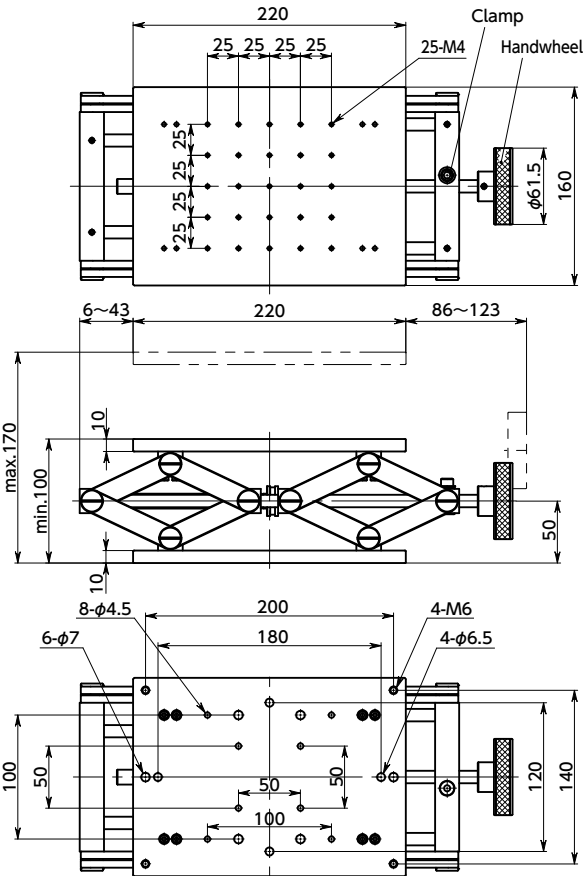
TLJK-1



TLJK-2



TLJK-3



- For vertical micromotion of heavy object.
- Turn the handwheel to make smooth and parallel up / down movement.
- The stage position can be fixed by clamping the handwheel axis.
- Made of Aluminum.Light weight.

Material/Finish		RoHS2 Compliant
TLJK		
Stage	Aluminum Alloy Alumite Treatment (Black)	
Lower surface spacer	Aluminum Alloy Alumite Treatment (Black)	

Unit : mm							
Part Number	Stage Face	Travel Guide	Travel distance	Parallelism	Position Resolution	Withstand load (N)	Mass (g)
TLJK-1	80×132	Pantograph Mechanism	22	0.1	0.1	196	2300
TLJK-2	100×160	Pantograph Mechanism	40	0.1	0.1	245	3400
TLJK-3	160×220	Pantograph Mechanism	70	0.1	0.1	294	5900

● Hexagon wrench for mounting and hex socket head cap screws (M6 x 12 TLJK-1 and M6 x 16 TLJK-2 TLJK-3) are provided.

- Part number specification

TLJK-1



• Ball Rollers

	Set Screw Type					Hex Head Screw Type
Part Number	BRUSS-S	BRUSS-N	BRUSS-P	BRUSN-N	BRUSP-P	BRUHS-S
Shape						
	Stainless Steel	Stainless Steel	Stainless Steel			Stainless Steel
Page	P.459	P.459	P.459	P.459	P.459	P.461
Materials	Body : SUSXM7 Ball : SUS440C	Body : SUSXM7 Ball : Polyacetal	Body : SUSXM7 Ball : PEEK	Body : Polyacetal Ball : Polyacetal	Body : PEEK Ball : PEEK	Body : SUS304 Ball : SUS440C
Characteristics	Compact All Stainless Steel	Compact Plastic Ball	Compact PEEK Ball	Compact Plastic With Drain Hole	Compact PEEK With Drain Hole	All Stainless Steel
Size	M8 - M20	M8 - M20	M8 - M16	M8 - M20	M8 - M16	M5 - M20

	Hex Head Screw Type			Press Fit Type		
Part Number	BRUHS-N	BRUHN-N	BRUHP-P	BRUPS-S	BRUPS-N	BRUPN-N
Shape						
	Stainless Steel			Stainless Steel	Stainless Steel	
Page	P.461	P.461	P.461	P.463	P.463	P.463
Materials	Body : SUS304 Ball : Polyacetal	Body : Polyacetal Ball : Polyacetal	Body : PEEK Ball : PEEK	Body : SUS304 Ball : SUS440C	Body : SUS304 Ball : Polyacetal	Body : Polyacetal Ball : Polyacetal
Characteristics	Plastic Ball	Plastic With Drain Hole	PEEK With Drain Hole	All Stainless Steel	Plastic Ball	Plastic With Drain Hole
Size	M5 - M20	M4 - M10	M5 - M10	φ 7.5 - φ 30	φ 7.5 - φ 30	φ 5 - φ 10

	Insert Type		Cap Screw Type		Round Type	
Part Number	BRUIN-N	BRUIP-P	BRUCS-S	BRUCS-N	BRURS-S	BRURS-N
Shape						
			Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Page	P.464	P.464	P.465	P.465	P.466	P.466
Materials	Body : Polyacetal Ball : Polyacetal	Body : PEEK Ball : PEEK	Body : SUS304 Ball : SUS440C	Body : SUS304 Ball : Polyacetal	Body : SUS304 Ball : SUS440C	Body : SUS304 Ball : Polyacetal
Characteristics	Plastic With Drain Hole	PEEK With Drain Hole	All Stainless Steel	Plastic Ball	All Stainless Steel	Plastic Ball
Size	φ 5 - φ 24	φ 7 - φ 13	M10 - M20	M10 - M20	φ 22 - φ 42	φ 22 - φ 42

• Ball Roller Units

	Hex Head Screw Type		Press Fit Type	
Part Number	BRAHS-S	BRAHS-N	BRAPS-S	BRAPS-N
Shape				
Page	P.467	P.467	P.468	P.468
Materials	Body : SUS304 Ball : SUS440C	Body : SUS304 Ball : Polyacetal	Body : SUS304 Ball : SUS440C	Body : SUS304 Ball : Polyacetal
Characteristics	Used with BRUHS-S	Used with BRUHS-N	Used with BRUPS-S	Used with BRUPS-N
Size	200mm - 600mm	200mm - 600mm	200mm - 600mm	200mm - 600mm

• Ball Rollers with Plunger Function

	Set Screw Type		Press Fit Type	Insert Type	Flange Type
Part Number	BRPSS-S	BRPSS-N	BRPPS-S	BRPIN-N	BRPMS-S
Shape					
	Stainless Steel	Stainless Steel	Stainless Steel		Stainless Steel
Page	P.469	P.469	P.470	P.471	P.472
Materials	Body : SUSXM7 Ball : SUS440C	Body : SUSXM7 Ball : Polyacetal	Body : SUS304 Ball : SUS440C	Body : Polyacetal Ball : Polyacetal	Body : SUS304 Ball : SUS440C
Characteristics	With Plunger Function All Stainless Steel	With Plunger Function Plastic Ball	With Plunger Function All Stainless Steel	With Plunger Function Plastic With Drain Hole	With Plunger Function All Stainless Steel
Size	M6 - M16	M6 - M16	φ 14 - φ 22	φ 7 - φ 24	M16 - M24

• Downward Ball Rollers

	Flange Type		Hex Head Screw Type	Tap-Hole Type	Flanged Head
Part Number	BRDRF	BRDSF	BRDH	BRDT	BRDB
Shape					
Page	P.473	P.473	P.474	P.475	P.476
Materials	Body : S45C Ball : SUJ2	Body : S45C Ball : SUJ2	Body : S45C Ball : SUJ2	Body : S45C Ball : SUJ2	Body : S45C Ball : SUJ2
Characteristics	Downward Ball Roller Round Flange Type	Downward Ball Roller Square Flange Type	Downward Ball Roller	Downward Ball Roller Tap - Hole Attachment	Downward Ball Roller
Size	φ 40 - φ 60	φ 40 - φ 60	M12 - M20	φ 24 - φ 38	φ 24 - φ 38

• Tools

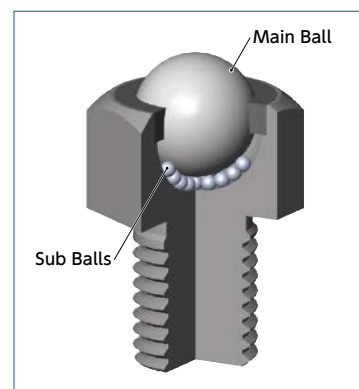
	Special Wrenches
Part Number	BRW
Shape	
Page	P.465 • P.472
Materials	S45C
Characteristics	Wrench for BRUCS • BRPMS



Smooth Conveyance of Heavy Objects

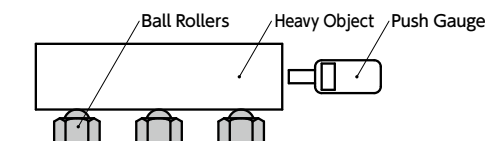
NBK Ball Rollers

The main ball is surrounded by several sub balls to ensure the ball rolls smoothly. The coefficient of friction is low so workpiece can be moved with a small force. Smooth 360 degrees rolling makes the change of conveyance direction easy.



Starting Coefficient of Friction

- A heavy object (SS400, surface polished) is placed in 3 ball rollers and then pushed using a push gauge to calculate the starting coefficient of friction μ .



• Upward Type

Part Number	μ
BRU*S-S (Body and Main Ball: Stainless Steel)	0.03
BRU*S-N (Body: Stainless Steel/ Main Ball: Polyacetal)	0.04
BRU*N-N (Body and Main Ball: Polyacetal)	0.08
BRU*P-P (Body and Main Ball: PEEK)	0.08

• Plunger Type

Part Number	μ
BRPSS-S (Body and Main Ball: Stainless Steel)	0.15
BRPSS-N (Body: Stainless Steel/ Main Ball: Polyacetal)	0.1
BRPPS-S (Body and Main Ball: Stainless Steel)	0.03
BRPIN-N (Body and Main Ball: Polyacetal)	0.15
BRPMS-S (Body and Main Ball: Stainless Steel)	0.03

• Downward Type

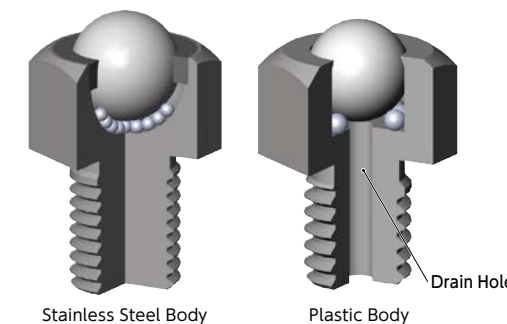
Part Number	μ
BRD* (Body and Main Ball: Steel)	0.03

- Values in chart are from actual measurements in testing. They are not guaranteed values.

A Full Lineup of Ball Rollers

• Upward Types

This is the standard type of ball rollers. We offer various types of ball rollers, including set screws, hexagon head screws, and cap screws. In addition to our all-stainless steel types with excellent corrosion resistibility, we offer plastic ball types to prevent damage to workpiece, as well as PEEK plastic types for clean environments. Types with a plastic body has a drain hole. These ball rollers are intended for food production lines and other applications that require cleaning. Our lineup includes a wide variety of sizes from M5 to M20. These ball rollers cover conveyance from small workpiece to heavy objects.



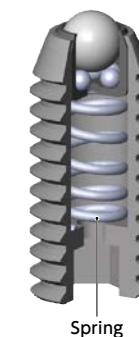
Types with a stainless steel body cannot be used in downward or sideward facing applications due to the alignment of the sub-ball. Types with a plastic body can be used in both downward and sideward facing applications.

• Plunger Type

This type of ball roller is equipped with a spring plunger function. Their internal springs receive loads evenly even when the load is unbalanced. This roller can also be used as a general ball plunger for fixing and locating workpiece. The smooth rotation of the ball reduces friction between the main ball and receiving side.

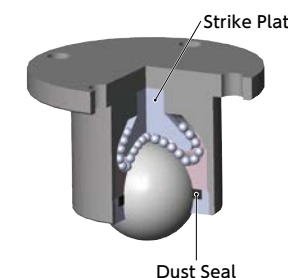
• Plunger Type Loads

Initial Load (min.)	Load when the main ball starts to sink completely
Maximum Load (max.)	Load when the main ball has sunk



• Downward Type

This ball roller can be used in a downward and sideward facing position. The internal strike plate maintains the appropriate contact status of the main and sub-balls no matter the direction. The dustproof seal prevents the ingress of dirt and dust. The body, main ball, and sub balls are made of steel. These rollers have excellent durability. These rollers can be used in applications such as casters of push carts for transport.



Special Support

- Also, ball rollers with special specifications such as dimensions, shapes, materials, surface treatments, and cleanroom washing are available.

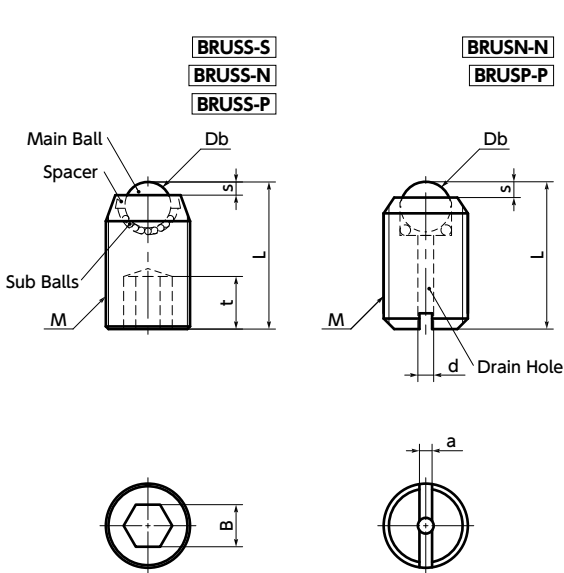


Cleanroom Wash and Packaging



BRUSS/BRUSN/BRUSP Ball Rollers - Set Screw Type

WEB Selection Tool CAD Download SUS Stainless steel



- Set screw type ball rollers for upward applications.
- We offer a full lineup of this type of ball roller. You can select from the following main body and main ball combinations: stainless steel, polyacetal, and PEEK.
- **BRUSS** has a small coefficient of friction and can move workpiece with less force. ➡ P.457
- **BRUSP-P** is intended for applications that require cleanliness, heat resistance, or chemical resistance, such as FPD production equipment and semiconductor devices.
- **BRUSN-N** and **BRUSP-P** have drain holes and are intended for food production lines and other applications that require cleaning.
- Application
FPD production equipment, semiconductor devices, food production lines, and packaging lines

- ⚠ Precautions for Use**
- **BRUSS** is for upward applications only. If it is used for downward and sideward applications, the product may be damaged or the ball may malfunction.
 - **BRUSN-N** and **BRUSP-P** can be used in upward, downward, and sideward applications.

● Material/Finish RoHS2 Compliant

	BRUSS-S	BRUSN-N	BRUSP-P
Main Body	SUSXM7 (Equivalent to SUS304)	SUSXM7 (Equivalent to SUS304)	SUSXM7 (Equivalent to SUS304)
Main Ball	SUS440C (Hardness 55HRC or Higher)	Polyacetal/White	PEEK/Light Brown
Sub-ball	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)
Spacer	SUS304	SUS304	

BRUSS-S **BRUSN-N** Main Body: Made of Stainless Steel Unit : mm

BRUSS-S Main Ball : Stainless Steel		BRUSN-N Main Ball : Polyacetal		Common dimensions							Qty per pack
Part Number	Withstand load (N)	Part Number	Withstand load (N)	M	L	s	Db	B	t	Mass (g)	
BRUSS-8-S	5	BRUSS-8-N	1	M8	14	1.3	4.76	4	5	3.1	1
BRUSS-10-S	14	BRUSS-10-N	7	M10	16	1.2	4.76	5	6	5.8	1
BRUSS-12-S	41	BRUSS-12-N	27	M12	20	1.5	5.56	6	8	10	1
BRUSS-16-S	55	BRUSS-16-N	34	M16	25	2.5	8.73	8	10	22	1
BRUSS-20-S	62	BRUSS-20-N	55	M20	30	3.5	10.32	10	12	43	1

BRUSP-P Main Body: Made of Stainless Steel / Main Ball: PEEK Unit : mm

Part Number	M	L	s	Db	B	t	Withstand load (N)	Mass (g)	Qty per pack
BRUSS-8-P	M8	14	1.3	4.76	4	5	1	2.6	1
BRUSS-10-P	M10	16	1.8	6.35	5	6	8	4.4	1
BRUSS-12-P	M12	20	2.3	7.94	6	8	15	7.7	1
BRUSS-16-P	M16	25	2.7	9.53	8	10	25	18	1

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810
1 pc. in 1 bag	Please feel free to contact us	Not Available	Not Available

● Material/Finish RoHS2 Compliant

	BRUSN-N	BRUSP-P
Main Body	Polyacetal/White	PEEK/Light Brown
Main Ball	Polyacetal/White	PEEK/Light Brown
Sub Ball	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)

BRUSN-N Main Body and Main Ball : Polyacetal Unit : mm

Part Number	M	L	s	Db	a	d	Withstand load (N)	Mass (g)	Qty per pack
BRUSN-8-N	M8	14	1.5	4.76	1.2	1.5	2	0.73	1
BRUSN-10-N	M10	16	1.7	5.56	1.5	2.5	4	1.2	1
BRUSN-16-N	M16	25	2.8	8.73	2	3	7	5.1	1
BRUSN-20-N	M20	30	3.5	10.32	3	3.5	11	9.5	1

BRUSP-P Main Body and Main Ball : PEEK Unit : mm

Part Number	M	L	s	Db	a	d	Withstand load (N)	Mass (g)	Qty per pack
BRUSP-8-P	M8	14	1.5	4.76	1.5	1.2	2	0.68	1
BRUSP-10-P	M10	16	2	6.35	1.5	2.5	5	1.5	1
BRUSP-12-P	M12	20	2.5	7.94	2	3	6	2	1
BRUSP-16-P	M16	25	3	9.53	2	3.5	8	4.8	1

- Part number specification

BRUSS-12-N

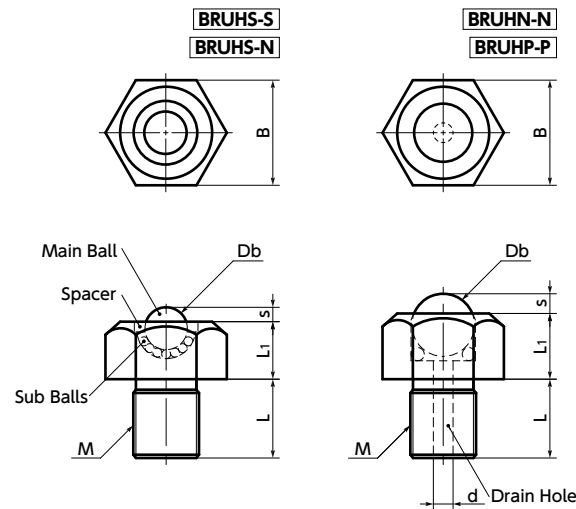
Product Code M Main Ball : "S" or "N" or "P"

Select the part number.



BRUHS/BRUHN/BRUHP Ball Rollers - Hex Head Screw Type

WEB Selection Tool CAD Download SUS Stainless steel



⚠ Precautions for Use

- **BRUHS** is for upward applications only. If it used for downward or sideward applications, the product may be damaged or the ball may malfunction.
- **BRUHN-N** and **BRUHP-P** can be used in upward, downward, and sideward facing applications.



- Hexagon head screw type ball rollers for upward applications. They can be installed or removed by using a open-ended spanner or ring spanner.
- You can select from the following main body and main ball combinations : stainless steel, polyacetal, and PEEK.
- **BRUHP-P** is intended for applications that require cleanliness, heat resistance, or chemical resistance, such as FPD production equipment and semiconductor devices.
- **BRUHN-N** and **BRUHP-P** have drain holes and are intended for food production lines and other applications that require cleaning.
- **BRUHS** has a small coefficient of friction and can move workpiece with less force.

● Application

FPD production equipment, semiconductor devices, food production lines, and packaging lines

● Material/Finish



	BRUHS-S	BRUHS-N	BRUHN-N	BRUHP-P
Main Body	SUS304	SUS304	Polyacetal/White	PEEK/Light Brown
Main Ball	SUS440C (Hardness 55HRC or Higher)	Polyacetal/White	Polyacetal/White	PEEK/Light Brown
Sub Ball	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)
Spacer	SUS304	SUS304		

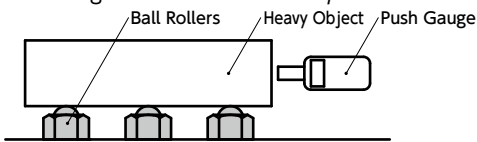
BRUHS-S BRUHS-N Main Body: Made of Stainless Steel

Unit : mm

BRUHS-S Main Ball : Stainless Steel		BRUHS-N Main Ball : Polyacetal		Common dimensions							Qty per pack
Part Number	Withstand load (N)	Part Number	Withstand load (N)	M	L	L1	s	Db	B	Mass (g)	
BRUHS-5-S	12	BRUHS-5-N	6	M5	6	5	1.1	4	8	2.6	1
BRUHS-6-S	14	BRUHS-6-N	7	M6	8	6	1.2	4.76	10	4.8	1
BRUHS-8-S	41	BRUHS-8-N	27	M8	10	7	1.5	5.56	13	10	1
BRUHS-10-S	55	BRUHS-10-N	34	M10	12	10	2.5	8.73	17	24	1
BRUHS-12-S	62	BRUHS-12-N	55	M12	15	11	3.5	10.32	19	35	1
BRUHS-16-S	343	BRUHS-16-N	69	M16	20	15	5.3	15.87	24	83	1
BRUHS-20-S	412	BRUHS-20-N	82	M20	25	18	6.3	19.05	30	158	1

● Starting coefficient of friction measurement

A heavy object of the max withstand load is loaded on 3 ball rollers. The force to move the heavy object was measured with a push gauge, and the starting coefficient of friction μ was calculated.



Part Number	Starting Coefficient of Friction μ
BRUHS-S (Main Body and Main Ball : Stainless Steel)	0.03
BRUHS-N (Main Body : Stainless Steel/ Main Ball : Polyacetal)	0.04
BRUHN-N (Main Body and Main Ball : Polyacetal)	0.08
BRUHP-P (Main Body and Main Ball : PEEK)	0.08

- Values in chart are from actual measurements in testing.They are not guaranteed values.

BRUHN-N Main Body and Main Ball : Polyacetal

Unit : mm

Part Number	M	L	L1	s	Db	B	d	Withstand load (N)	Mass (g)	Qty per pack
BRUHN-4-N	M4	5	4	1	3.18	7	0.8	1	0.33	1
BRUHN-5-N	M5	6	5	1.5	4.76	8	1.5	2	0.48	1
BRUHN-6-N	M6	8	6	1.7	5.56	10	2.5	4	0.91	1
BRUHN-8-N	M8	10	8	2.8	8.73	13	3	7	2.2	1
BRUHN-10-N	M10	12	10	3.5	10.32	17	3.5	11	4.5	1

BRUHP-P Main Body and Main Ball : PEEK

Unit : mm

Part Number	M	L	L1	s	Db	B	d	Withstand load (N)	Mass (g)	Qty per pack
BRUHP-5-P	M5	6	5	1.5	4.76	8	1.5	2	0.48	1
BRUHP-6-P	M6	8	6	2	6.35	10	2.5	5	0.91	1
BRUHP-8-P	M8	10	8	2.5	7.94	13	3	6	2	1
BRUHP-10-P	M10	12	10	3	9.53	17	3.5	8	4.1	1

● Part number specification

BRUHS-12-N

Product Code M Main Ball : "S" or "N" or "P"

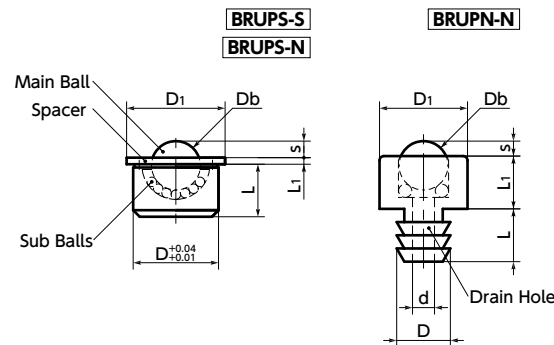
Select the part number.

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810
1 pc. in 1 bag	Please feel free to contact us	Not Available	Not Available

BRUPS/BRUPN Ball Rollers - Press Fit Type

WEB Selection Tool CAD Download SUS Stainless steel

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⚠ Precautions for Use

- **BRUPS** is for upward applications only. If it is used for downward or sideward applications, the product may be damaged or the ball may malfunction.
- **BRUPN-N** can be used in upward, downward, and sideward applications.

● Part number specification

BRUPS-15-N

Product Code D Main Ball : "N" or "S"

Select the part number.

● Material/Finish

	BRUPS-S	BRUPS-N	BRUPN-N
Main Body	SUS304	SUS304	Polyacetal/White
Main Ball	SUS440C (Hardness 55HRC or Higher)	Polyacetal/White	Polyacetal/White
Sub Ball	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)
Spacer	SUS304	SUS304	

RoHS2 Compliant

BRUPS-S BRUPS-N Main Body: Made of Stainless Steel

Unit : mm

BRUPS-S Main Ball : Stainless Steel		BRUPS-N Main Ball : Polyacetal		Common dimensions							
Part Number	Withstand load (N)	Part Number	Withstand load (N)	D	D1	L	L1	s	Db	Mass (g)	Qty per pack
BRUPS-7.5-S	12	BRUPS-7.5-N	6	7.5	9	4	1	1.1	4	1.7	1
BRUPS-9-S	14	BRUPS-9-N	7	9	11	5	1	1.2	4.76	3.2	1
BRUPS-11-S	41	BRUPS-11-N	27	11	13	6	1	1.5	5.56	5.3	1
BRUPS-15-S	55	BRUPS-15-N	34	15	17	9	1	2.5	8.73	13	1
BRUPS-18-S	62	BRUPS-18-N	55	18	20	10	1	3.5	10.32	21	1
BRUPS-24-S	343	BRUPS-24-N	69	24	26	14	1.5	5.3	15.87	55	1
BRUPS-30-S	412	BRUPS-30-N	82	30	32	17	2	6.3	19.05	106	1

BRUPN Main Body and Main Ball : Polyacetal

Unit : mm

Part Number	D	D1	L	L1	s	Db	d	Withstand load (N)	Mass (g)	Qty per pack
BRUPN-5-N	5.1	8	5	5	1.5	4.76	1.5	2	0.42	1
BRUPN-6-N	6.1	10	6	6	1.7	5.56	2.5	4	0.83	1
BRUPN-8-N	8.1	13	8	8	2.8	8.73	3	7	2	1
BRUPN-10-N	10.1	17	10	10	3.5	10.32	3.5	11	4.1	1

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810
1 pc. in 1 bag	Please feel free to contact us	Not Available	Not Available

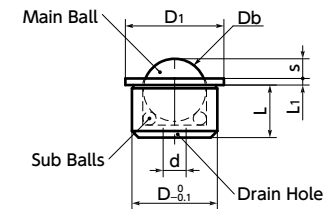
NBK

WEB ▶ <https://www.nbk1560.com>

BRUIN/BRUIP Ball Rollers - Insert Type

WEB Selection Tool CAD Download

e-nedzi.com®



Precautions for Use

Insert type ball roller. Do not press fit.

Use a clearance fit when fitting with the attachment hole. If a tight fit is used, the product may be damaged or the ball may malfunction.

● Part number specification

BRUIN-15-N

Product Code D Main Ball : "N" or "P"

Select the part number.

● Material/Finish

	BRUIN-N	BRUIP-P
Main Body	Polyacetal/White	PEEK/Light brown
Main Ball	Polyacetal/White	PEEK/Light brown
Sub-Ball	SUS440C (Hardness 55HRC or higher)	SUS440C (Hardness 55HRC or higher)

RoHS2 Compliant

BRUIN-N Main Body and Main Ball : Polyacetal

Unit : mm

Part Number	D	D1	L	L1	s	Db	d	Withstand load (N)	Mass (g)	Qty per pack
BRUIN-5-N	5	7	3	0.8	1	3.18	0.8	1	0.12	1
BRUIN-7-N	7	9	4	1	1.5	4.76	1.5	2	0.37	1
BRUIN-9-N	9	11	5	1	1.7	5.56	2.5	4	0.68	1
BRUIN-13-N	13	15	7	1	2.8	8.73	3	7	1.8	1
BRUIN-15-N	15	17	8	1	3.5	10.32	3.5	11	2.6	1
BRUIN-20-N	20	22	11.5	1.5	5.2	15.87	5.3	14	6.7	1
BRUIN-24-N	24	26	15	1.5	6.6	19.05	6.4	21	12	1

BRUIP-P Main Body and Main Ball : PEEK

Unit : mm

Part Number	D	D1	L	L1	s	Db	d	Withstand load (N)	Mass (g)	Qty per pack
BRUIP-7-P	7	9	4	1	1.5	4.76	1.5	2	0.34	1
BRUIP-9-P	9	11	5	1	2	6.35	2.5	5	0.63	1
BRUIP-11-P	11	13	7	1	2.5	7.94	3	6	1.1	1
BRUIP-13-P	13	15	8	1	3	9.53	3.5	8	1.8	1

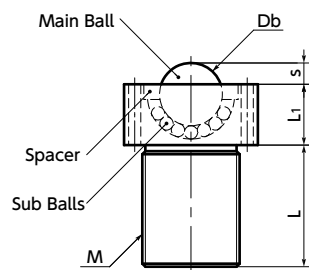
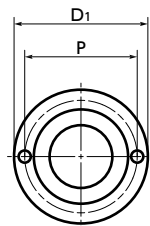
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810
1 pc. in 1 bag	Please feel free to contact us	Not Available	Not Available

NBK

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BRUCS Ball Rollers - Cap Screw Type

WEB Selection Tool CAD Download SUS Stainless steel

**BRUCS-N**

- These are cap screw type ball rollers with stainless steel bodies for upward applications.
- Install and remove by using **BRW** Specialty Wrench.
- Because a wrench spacer is not required, they can be attached in proximity.
- Application

FPD production equipment, semiconductor devices, food production lines, and packaging lines

• Material/Finish

RoHS2 Compliant

	BRUCS-S	BRUCS-N
Main Body	SUS304	SUS304
Main Ball	SUS440C (Hardness 55HRC or Higher)	Polyacetal/White
Sub Ball	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)
Spacer	SUS304	SUS304



Precautions for Use

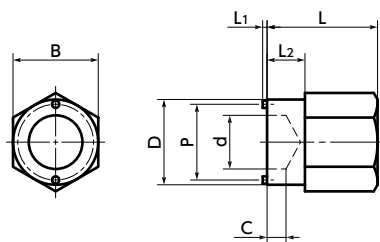
These ball rollers are for upward applications only. If it is used for downward and sideward applications, the product may be damaged or the ball may malfunction.

BRUCS-S | **BRUCS-N**

BRUCS-S Main Ball : Stainless Steel		BRUCS-N Main Ball : Polyacetal		Common dimensions									Unit : mm
Part Number	Withstand load (N)	Part Number	Withstand load (N)	M	L	L1	s	D1	Db	P	Applicable wrench	Mass (g)	Qty per pack
BRUCS-10-S	55	BRUCS-10-N	34	M10	12	10	2.5	18.5	8.73	15	BRW-10	26	1
BRUCS-12-S	62	BRUCS-12-N	55	M12	15	11	3.5	22	10.32	18.5	BRW-12	42	1
BRUCS-16-S	343	BRUCS-16-N	69	M16	20	15	5.3	27	15.88	23	BRW-16	92	1
BRUCS-20-S	412	BRUCS-20-N	82	M20	25	18	6.3	33	19.05	29	BRW-20	170	1

• Dedicated wrench

Part Number	L	L1	L2	B	C	D	d	P	Mass (g)	Qty per pack
BRW-10	25	1.4	8	19	3	18.5	10	15	55	1
BRW-12	30	1.4	10	24	4	22	12	18.5	102	1
BRW-16	35	1.4	12	27	6	27	17	23	153	1
BRW-20	40	1.4	14	30	7	33	20	29	220	1



• Part number specification

BRUCS-12-N

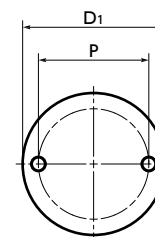
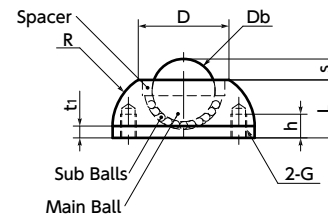
Product Code M Main Ball : "S" or "N"

Select the part number.

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810
1 pc. in 1 bag	Please feel free to contact us	Not Available	Not Available

BRURS Ball Rollers - Round Type

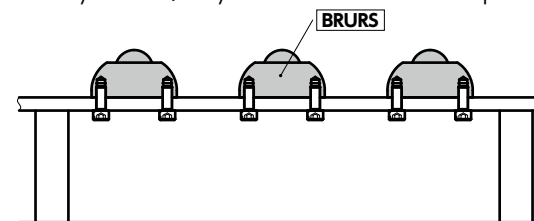
WEB Selection Tool CAD Download SUS Stainless steel



Precautions for Use

These ball rollers are for upward applications only. If it is used for downward and sideward applications, the product may be damaged or the ball may malfunction.

- Because they are fixed using screw holes in the body section, they can be attached to thin plates.

**BRURS-S** Main Ball: Made of Stainless Steel

Part Number	D1	D	L	s	t1	Db	R	G	h	P	Withstand load (N)	Mass (g)	Qty per pack
BRURS-22-S	22	14	9.5	2.5	2	8.73	10	M3	4.5	16	55	22	1
BRURS-28-S	28	17.5	11.5	3.5	2.5	10.32	10.5	M3	4.5	22	62	34	1
BRURS-36-S	36	23	14.7	5.3	3	15.88	14	M4	6	28	343	98	1
BRURS-42-S	42	28	18.7	6.3	4	19.05	20	M4	6	34	412	215	1

BRURS-N Main Ball : Polyacetal

Part Number	D1	D	L	s	t1	Db	R	G	h	P	Withstand load (N)	Mass (g)	Qty per pack
BRURS-22-N	22	14	9.5	2.5	2	8.73	10	M3	4.5	16	34	20	1
BRURS-28-N	28	17.5	11.5	3.5	2.5	10.32	10.5	M3	4.5	22	55	42	1
BRURS-36-N	36	23	14.7	5.3	3	15.88	14	M4	6	28	69	85	1
BRURS-42-N	42	28	18.7	6.3	4	19.05	20	M4	6	34	82	192	1

• Part number specification

BRURS-22-N

Product Code D1 Main Ball : "S" or "N"

Select the part number.

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810
1 pc. in 1 bag	Please feel free to contact us	Not Available	Not Available

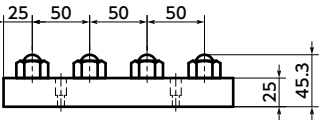
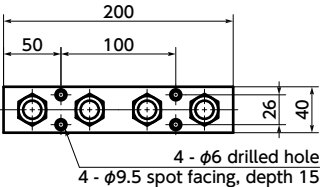
BRAHS Ball Roller Units - Press Fit Type

WEB Selection Tool WEB CAD Download

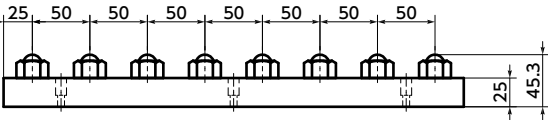
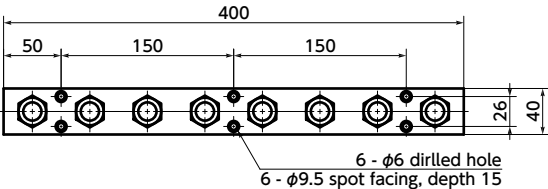
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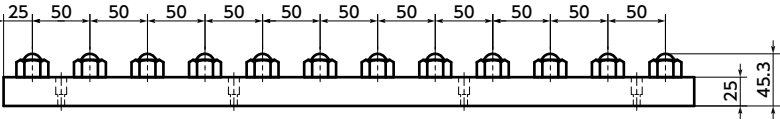
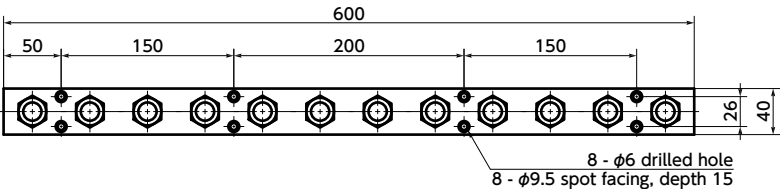
BRAHS-200



BRAHS-400



BRAHS-600



BRAHS-S | BRAHS-N

BRAHS-S Main Ball : Stainless Steel			BRAHS-N Main Ball : Polyacetal				Unit : mm	
Part Number	Ball Roller Pack Part No.	Withstand Load of One Ball Roller (N)	Part Number	Ball Roller Pack Part No.	Withstand Load of One Ball Roller (N)	Mass (g)	Qty per pack	
BRAHS-200-S	BRUHS-16-S	343	BRAHS-200-N	BRUHS-16-N	69	801	1	
BRAHS-400-S	BRUHS-16-S	343	BRAHS-400-N	BRUHS-16-N	69	1605	1	
BRAHS-600-S	BRUHS-16-S	343	BRAHS-600-N	BRUHS-16-N	69	2408	1	

1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810
1 pc. in 1 bag Not Available Not Available Not Available

- This unit product combines **BRUHS** (Hex head screw type) with an aluminum frame. The ball rollers can be aligned simply by attaching the frame.
- BRAHS-S** uses **BRUHS-S** ball rollers, which are all stainless steel.
- The main ball of **BRAHS-N** is made of polyacetal. Workpiece is not damaged.

Application

FPD production equipment, semiconductor devices, food production lines, and packaging lines

Material/Finish

RoHS2 Compliant

	BRAHS-S	BRAHS-N
Frame	A6063 Anodized	A6063 Anodized
Ball Roller Body	SUS304	SUS304
Main Ball	SUS440C (Hardness 55HRC or Higher)	Polyacetal/White
Sub Ball	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)

Part number specification

BRAHS - 400 - N

Product Code Frame Length Main Ball : "S" or "N"

Select the part number.

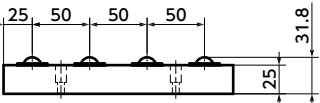
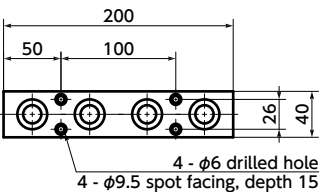
BRAPS Ball Roller Units - Press Fit Type

WEB Selection Tool WEB CAD Download

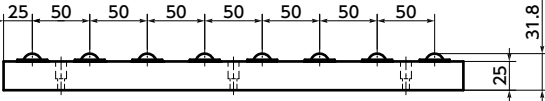
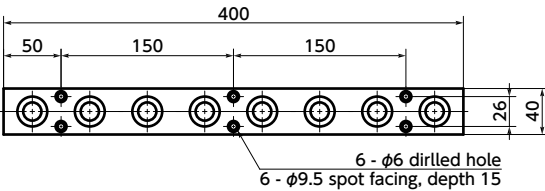
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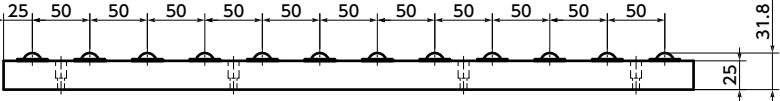
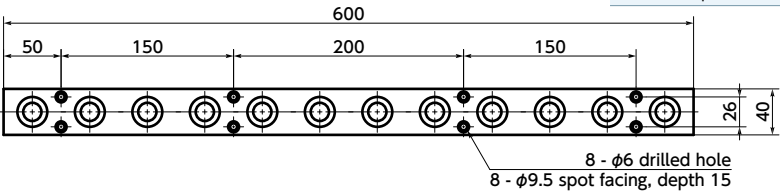
BRAPS-200



BRAPS-400



BRAPS-600



BRAPS-S | BRAPS-N

BRAPS-S Main Ball : Stainless Steel			BRAPS-N Main Ball : Polyacetal				Unit : mm	
Part Number	Ball Roller Pack Part No.	Withstand Load of One Ball Roller (N)	Part Number	Ball Roller Pack Part No.	Withstand Load of One Ball Roller (N)	Mass (g)	Qty per pack	
BRAPS-200-S	BRUPS-24-S	343	BRAPS-200-N	BRUPS-24-N	69	618	1	
BRAPS-400-S	BRUPS-24-S	343	BRAPS-400-N	BRUPS-24-N	69	1243	1	
BRAPS-600-S	BRUPS-24-S	343	BRAPS-600-N	BRUPS-24-N	69	1873	1	

1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810
1 pc. in 1 bag Not Available Not Available Not Available

- This unit product combines **BRUPS** (Press fit type) with an aluminum frame. The ball rollers can be aligned simply by attaching the frame.
- The bodies of the ball rollers are pressed in the frame, so the height can be reduced.
- BRAPS-S** uses **BRUPS-S** ball rollers, which are all stainless steel.
- The main ball of **BRAPS-N** is made of polyacetal. Workpiece is not damaged.

Application

FPD production equipment, semiconductor devices, food production lines, and packaging lines

Material/Finish

RoHS2 Compliant

	BRAPS-S	BRAPS-N
Frame	A6063 Anodized	A6063 Anodized
Ball Roller Body	SUS304	SUS304
Main Ball	SUS440C (Hardness 55HRC or Higher)	Polyacetal/White
Sub Ball	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)

Part number specification

BRAPS - 400 - N

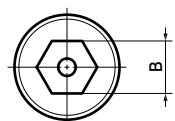
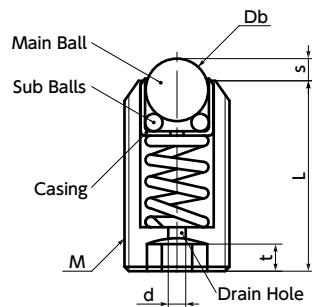
Product Code Frame Length Main Ball : "S" or "N"

Select the part number.

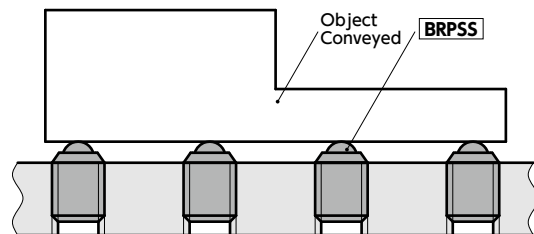
BRPSS Ball Rollers with Spring Plunger Function - Set Screw Type

WEB Selection Tool CAD Download SUS Stainless steel

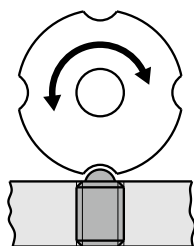
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- Usage example
When there is unbalanced weight.



- For indexing, etc.
Use as a spring plunger.



- These are set screw type ball rollers with spring plunger function.
- Their internal springs receive loads evenly even when the load is unbalanced.
- These rollers can also be used as a general spring plunger with ball for fixing and locating workpiece. The smooth rotation of the ball reduces friction between the main ball and receiving side.
- **BRPSS-S** — All Stainless Steel
- **BRPSS-N** — Main Ball : Polyacetal
- These ball rollers have drain holes and are intended for food production lines and other applications that require cleaning.

● Application

FPD production equipment, semiconductor devices, food production lines, and packaging lines

● Material/Finish



	BRPSS-S	BRPSS-N
Main Body	SUSXM7 (S.S. Grade : A2)	SUSXM7 (S.S. Grade : A2)
Main Ball	SUS440C (Hardness 55HRC or Higher)	Polyacetal/White
Sub Ball	SUS440C (Hardness 55HRC or Higher)	SUS440C (Hardness 55HRC or Higher)
Casing	SUS304	SUS304
Spring	SUS631J1	SUS631J1

● Part number specification

BRPSS-12-N

Product Code M Main Ball : "S" or "N"

Select the part number.

BRPSS-S BRPSS-N

Unit : mm

BRPSS-S Main Ball : Stainless Steel	BRPSS-N Main Ball : Polyacetal	Common dimensions									Qty per pack
Part Number	Part Number	M	L	s	Db	B	t	d	Load (N) min./max.	Mass (g)	
BRPSS-5-S	BRPSS-5-N	M5	12	0.7	2.38	2.5	2	1.2	4.4 / 19.6	0.94	1
BRPSS-6-S	BRPSS-6-N	M6	13	0.8	3	3	2.5	1.5	8.1 / 29.6	1.4	1
BRPSS-8-S	BRPSS-8-N	M8	15	1.3	4	4	2.5	2	12.6 / 39.8	3.1	1
BRPSS-10-S	BRPSS-10-N	M10	16	1.6	5	5	3	2.5	13.5 / 44.4	5.3	1
BRPSS-12-S	BRPSS-12-N	M12	20	2.3	7.14	6	3	3	16.1 / 46.9	9.3	1
BRPSS-16-S	BRPSS-16-N	M16	25	3.1	9.53	8	3	4	26.1 / 88.2	22	1

1 Individual Sales → P.809

Cleanroom Wash & Packaging → P.807

Screw Length Adjustment → P.811

Vibration Resistant → P.810

1 pc. in 1 bag

Please feel free to contact us

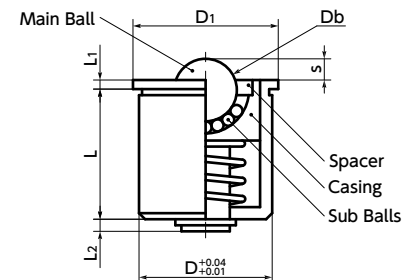
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Not Available

BRPPS Ball Rollers with Spring Plunger Function - Press Fit Type

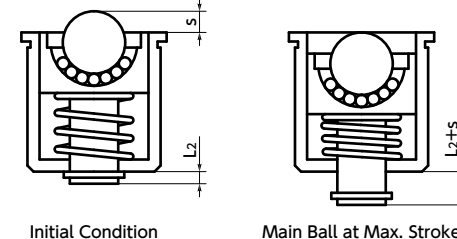
WEB Selection Tool CAD Download SUS Stainless steel

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⚠ Precautions for Use

- These ball rollers are for upward applications only. If it is used for downward and sideward applications, the product may be damaged or the ball may malfunction.
- The bottom section moves the stroke distance of the main ball. Take care with the depth of the attachment hole.



- These are press fit type ball rollers with spring plunger function.
- Because the body section is press fitted, the height can be reduced.
- Their internal springs receive loads evenly even when the load is unbalanced.
- These rollers can also be used as a general spring plunger with ball for fixing and locating workpiece. The smooth rotation of the ball reduces friction between the main ball and receiving side.
- Recommended dimensional allowance of attachment hole is H7.

● Application

Conveyance, fixing and locating work, torque limiting, and indexing

● Material/Finish



	BRPPS-S
Main Body	SUS304
Main Ball	SUS440C (Hardness 55HRC or Higher)
Sub Ball	SUS440C (Hardness 55HRC or Higher)
Spacer	SUS304
Casing	SUS304
Spring	SUS631J1

Unit : mm

Part Number	D	D1	L	s	L1	L2	Db	Load (N) min./max.	Mass (g)	Qty per pack
BRPPS-14-S	14	16	14	1.5	1.5	1.5	5.56	23 / 30	16	1
BRPPS-18-S	18	20	17	2.5	1.5	2	8.73	24 / 38	31	1
BRPPS-22-S	22	24	21.5	3.5	1.5	2	10.32	24 / 55	55	1

● Part number specification

BRPPS-14-S

Product Code D Stainless Steel Main Ball

Select the part number.

1 Individual Sales → P.809

Cleanroom Wash & Packaging → P.807

Screw Length Adjustment → P.811

Vibration Resistant → P.810

1 pc. in 1 bag

Please feel free to contact us

Not Available

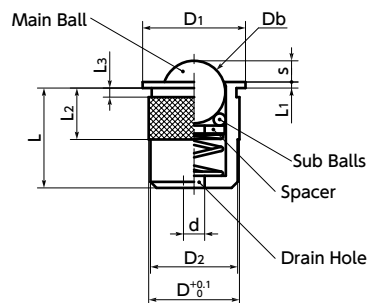
Not Available

BRPIN Ball Rollers with Spring Plunger Function - Insert Type

WEB Selection Tool

WEB CAD Download

e-nedzi.com®



Material/Finish

RoHS2 Compliant

	BRPIN-N
Main Body	Polyacetal/White
Main Ball	Polyacetal/White
Sub Ball	SUS440C (Hardness 55HRC or Higher)
Spacer	Polyacetal/White
Spring	SUS631J1

- These are insert type ball rollers with spring plunger function.
- Because the body section is inserted, the height can be reduced.
- Use an adhesive to secure these rollers.
- Their internal springs receive loads evenly even when the load is unbalanced.
- These rollers can also be used as a general spring plunger with ball for fixing and locating workpiece. The smooth rotation of the ball reduces friction between the main ball and receiving side.
- Both the body and main ball are polyacetal. Workpiece is not damaged.
- These ball rollers have drain holes and are intended for food production lines and other applications that require cleaning.

Application

Conveyance, fixing and locating work, torque limiting, and indexing

⚠ Precautions for Use

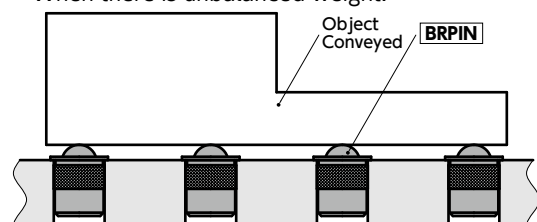
These are insert type ball rollers. Use a clearance fit when fitting with the attachment hole.

Unit : mm

Part Number	D	D1	D2	L	s	L1	L2	L3	Db	d	Load (N) min./max.	Mass (g)	Qty per pack
BRPIN-7-N	7	9	7	7.5	1.5	1	7.5	1	4.76	1.5	0.1 / 2	0.49	1
BRPIN-9-N	9	11	8.4	10	1.7	1	7	1	5.56	2.5	0.2 / 4	0.92	1
BRPIN-13-N	13	15	12.4	15	2.8	1	7	1.2	8.73	3	0.3 / 7	2.7	1
BRPIN-15-N	15	17	14.7	16.5	3.5	1	8.5	1.5	10.32	3.5	0.3 / 11	3.9	1
BRPIN-20-N	20	22	19.4	22.5	5.2	1.5	10.5	1.5	15.88	5.3	0.3 / 14	9.3	1
BRPIN-24-N	24	26	23.4	29	6.6	1.5	13.5	1.5	19.05	6.4	0.3 / 21	17	1

Usage example

When there is unbalanced weight.



Part number specification

BRPIN-13-N

Product Code D Polyacetal Main Ball

Select the part number.

Individual Sales → P.809

Cleanroom Wash & Packaging → P.807

Screw Length Adjustment → P.811

Vibration Resistant → P.810

1 pc. in 1 bag

Please feel free to contact us

Not Available

Not Available

NBK

WEB ▶ <https://www.nbk1560.com>

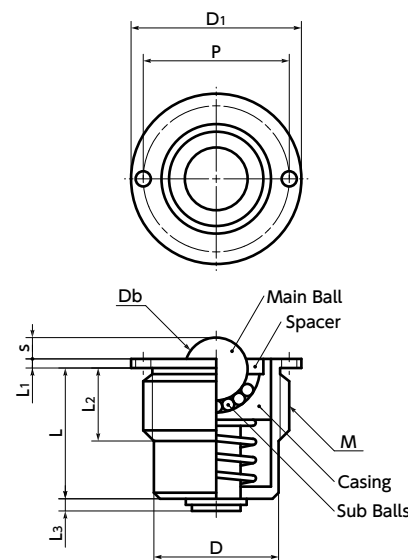
BRPMS Ball Roller with Spring Plunger Function - Flange Type

WEB Selection Tool

WEB CAD Download

SUS Stainless steel

e-nedzi.com®



Application

Conveyance, fixing and locating work, torque limiting, and indexing

Material/Finish

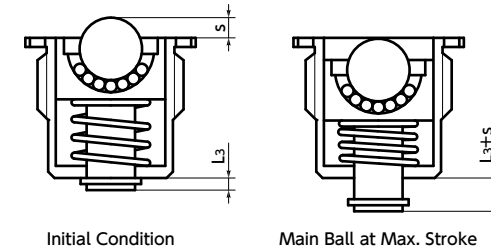
RoHS2 Compliant

	BRPMS-S
Main Body	SUS304
Main Ball	SUS440C (Hardness 55HRC or Higher)
Sub Ball	SUS440C (Hardness 55HRC or Higher)
Spacer	SUS304
Casing	SUS304
Spring	SUS631J1

- These are flange type ball rollers with spring plunger function.
- The attachment height can be easily determined.
- Install and remove by using **BRW** Specialty Wrench.
- Their internal springs receive loads evenly even when the load is unbalanced.
- These rollers can also be used as a general spring plunger with ball for fixing and locating workpiece. The smooth rotation of the ball reduces friction between the main ball and receiving side.

⚠ Precautions for Use

- These ball rollers are for upward applications only. If it is used for downward and sideward applications, the product may be damaged or the ball may malfunction.
- The bottom section moves the stroke distance of the main ball. Take care with the depth of the attachment hole.

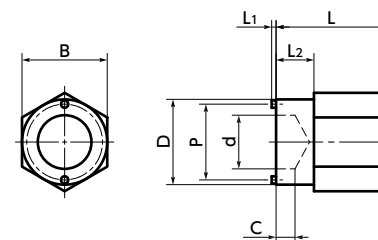


Unit : mm

Part Number	M (fine)	L	s	L1	L2	L3	D1	D	Db	P	Applicable wrench	Load (N) min./max.	Mass (g)	Qty per pack
BRPMS-16-S	M16×1.5	14	1.5	1.5	9	1.5	19	13.5	5.56	15	BRW-10	23 / 30	18	1
BRPMS-20-S	M20×1.5	17	2.5	1.5	10	2	24	16.5	8.73	18.5	BRW-12	24 / 38	30	1
BRPMS-24-S	M24×1.5	21.5	3.5	1.5	12	2	28	20.5	10.32	23	BRW-16	24 / 55	54	1

Dedicated wrench

Part Number	L	L1	L2	B	C	D	d	P	Mass (g)	Qty per pack
BRW-10	25	1.4	8	19	3	18.5	10	15	55	1
BRW-12	30	1.4	10	24	4	22	12	18.5	102	1
BRW-16	35	1.4	12	27	6	27	17	23	153	1
BRW-20	40	1.4	14	30	7	33	20	29	220	1



Part number specification

BRPMS-20-S

Product Code M Stainless Steel Main Ball

Select the part number.

Individual Sales → P.809

Cleanroom Wash & Packaging → P.807

Screw Length Adjustment → P.811

Vibration Resistant → P.810

1 pc. in 1 bag

Please feel free to contact us

Not Available

Not Available

NBK

WEB ▶ <https://www.nbk1560.com>

472

BRDRF / BRDSF

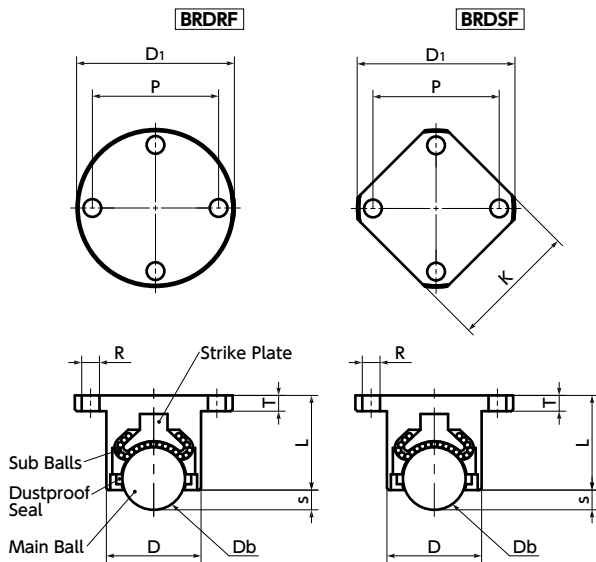
Downward Ball Rollers - Flange Type (Round/Square)

e-nedzi.com®



WEB Selection Tool

WEB CAD Download



- These ball rollers can be used in downward and sideward applications such as with casters of push carts for transport.
- The dustproof seal prevents the ingress of dirt and dust.
- The body, main ball, and sub-balls are made of steel. These rollers have excellent durability.

• Application

FPD production equipment, semiconductor devices, food production lines, and packaging lines

• Material/Finish



	BRDRF	BRDSF
Main Body	S45C Electroless Nickel Plating	S45C Electroless Nickel Plating
Main Ball	SUJ2 (Hardness 55HRC or Higher)	SUJ2 (Hardness 55HRC or Higher)
Sub Ball	SUJ2 (Hardness 55HRC or Higher)	SUJ2 (Hardness 55HRC or Higher)
Strike Plate	SCM415 (Hardness 50 HRC or Higher)	SCM415 (Hardness 50 HRC or Higher)
Dustproof Seal	Felt	Felt

BRDRF Round Flange Type

Unit : mm

Part Number	D1	D	L	s	T	Db	P	R	Withstand load (N)	Mass (g)	Qty per pack
BRDRF-40	40	24	24	5	4	15.88	32	4.5	900	104	1
BRDRF-50	50	30	28	6	5	19.05	40	5.5	1100	191	1
BRDRF-60	60	38	37	8	6	25.4	49	6.5	1200	386	1

BRDSF Square Flange Type

Unit : mm

Part Number	D1	D	K	L	s	T	Db	P	R	Withstand load (N)	Mass (g)	Qty per pack
BRDSF-40	40	24	32	24	5	4	15.88	32	4.5	900	96	1
BRDSF-50	50	30	40	28	6	5	19.05	40	5.5	1100	174	1
BRDSF-60	60	38	48	37	8	6	25.4	49	6.5	1200	358	1

• Part number specification

BRDRF - 50

Product Code D1

Select the part number.

1 Individual Sales → P.809

Cleanroom Wash & Packaging → P.807

Screw Length Adjustment → P.811

Vibration Resistant → P.810

1 pc. in 1 bag

Not Available

Not Available

Not Available

NBK

WEB ▶ <https://www.nbk1560.com>

BRDH

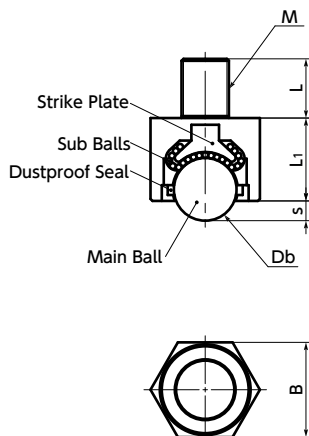
Downward Ball Rollers - Hex Head Screw Type

e-nedzi.com®



WEB Selection Tool

WEB CAD Download



- These ball rollers can be used in downward and sideward applications such as with casters of push carts for transport.
- The dustproof seal prevents the ingress of dirt and dust.
- The body, main ball, and sub-balls are made of steel. These rollers have excellent durability.

• Application

FPD production equipment, semiconductor devices, food production lines, and packaging lines

• Material/Finish



	BRDH
Main Body	S45C Electroless Nickel Plating
Main Ball	SUJ2 (Hardness 55HRC or Higher)
Sub Ball	SUJ2 (Hardness 55HRC or Higher)
Strike Plate	SCM415 (Hardness 50 HRC or Higher)
Dustproof Seal	Felt

Unit : mm

Part Number	M	L	L1	s	Db	B	Withstand load (N)	Mass (g)	Qty per pack
BRDH-12	M12	20	21	5	15.88	24	900	92	1
BRDH-16	M16	25	25	6	19.05	30	1100	175	1
BRDH-20	M20	30	34	8	25.4	38	1200	375	1

• Related Products

Upward Ball Rollers

→ P.459 - 466



Ball Rollers with Spring Plunger

Function

→ P.469 - 472



• Part number specification

BRDH - 12

Product Code M

Select the part number.

1 Individual Sales → P.809

Cleanroom Wash & Packaging → P.807

Screw Length Adjustment → P.811

Vibration Resistant → P.810

1 pc. in 1 bag

Not Available

Not Available

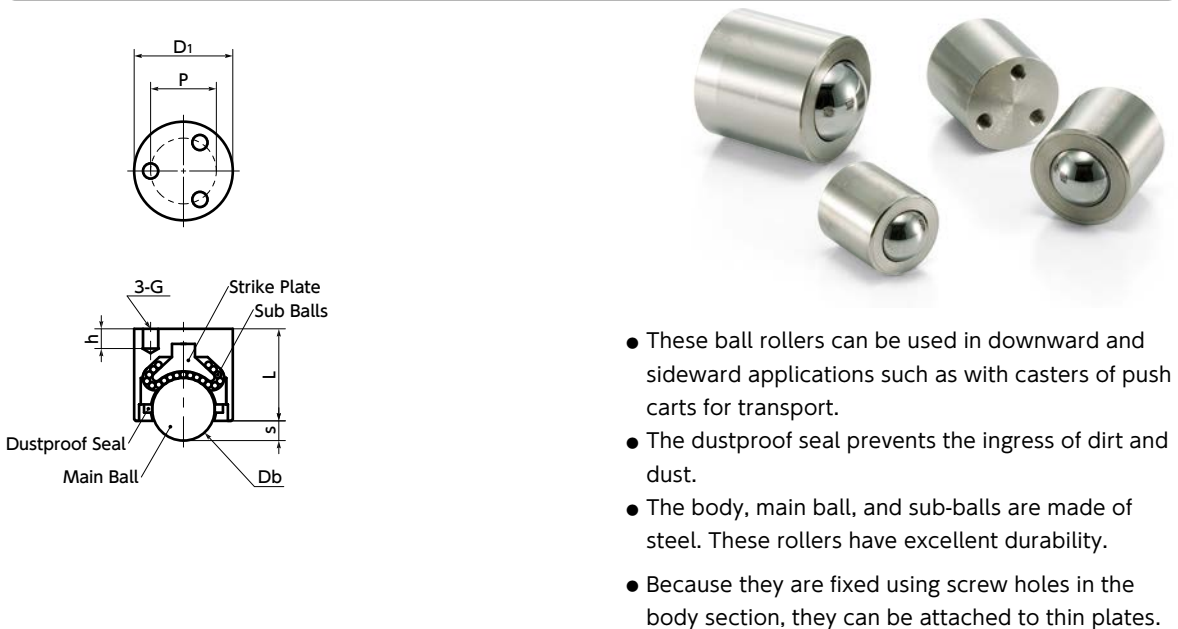
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NBK

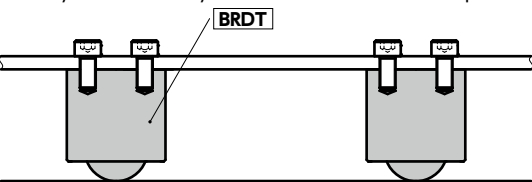
WEB ▶ <https://www.nbk1560.com>

BRDT Downward Ball Rollers - Tap Hole Type

e-nedzi.com



- These ball rollers can be used in downward and sideward applications such as with casters of push carts for transport.
- The dustproof seal prevents the ingress of dirt and dust.
- The body, main ball, and sub-balls are made of steel. These rollers have excellent durability.
- Because they are fixed using screw holes in the body section, they can be attached to thin plates.



• Application
FPD production equipment, semiconductor devices, food production lines, and packaging lines

	BRDT
Main Body	S45C Electroless Nickel Plating
Main Ball	SUJ2 (Hardness 55HRC or Higher)
Sub Ball	SUJ2 (Hardness 55HRC or Higher)
Strike Plate	SCM415 (Hardness 50 HRC or Higher)
Dustproof Seal	Felt

Part Number	D1	L	s	Db	G	h	P	Withstand load (N)	Mass (g)	Qty per pack
BRDT-24	24	24	5	15.88	M4	6	16	900	78	1
BRDT-30	30	28	6	19.05	M5	6	20	1100	142	1
BRDT-38	38	37	8	25.4	M6	8	26	1200	305	1

• Part number specification

BRDT-30

Product Code

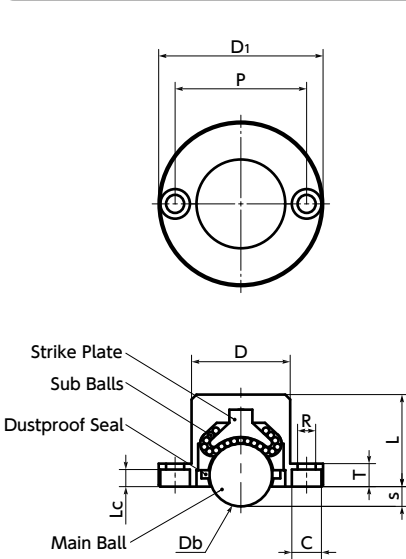
D1

Select the part number.

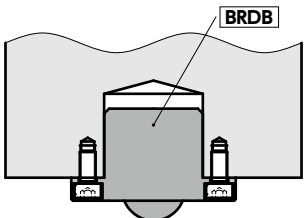
Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810
1 pc. in 1 bag	Not Available	Not Available	Not Available

BRDB Downward Ball Rollers - Flange Type

e-nedzi.com



- These ball rollers can be used in downward and sideward applications such as with casters of push carts for transport.
- The dustproof seal prevents the ingress of dirt and dust.
- The body, main ball, and sub-balls are made of steel. These rollers have excellent durability.
- When these ball rollers are attached, the body sticks out only a small amount, which conserves space.



• Application
FPD production equipment, semiconductor devices, food production lines, and packaging lines

	BRDB
Main Body	S45C Electroless Nickel Plating
Main Ball	SUJ2 (Hardness 55HRC or Higher)
Sub Ball	SUJ2 (Hardness 55HRC or Higher)
Strike Plate	SCM415 (Hardness 50 HRC or Higher)
Dustproof Seal	Felt

Part Number	D	D1	L	s	T	Db	P	R	C	Lc	Withstand load (N)	Mass (g)	Qty per pack
BRDB-24	24	40	24	5	6	15.88	32	4.5	7.5	4.2	900	115	1
BRDB-30	30	50	28	6	7	19.05	40	5.5	9	5.2	1100	207	1
BRDB-38	38	60	37	8	8	25.4	49	6.5	10.5	6.2	1200	407	1

• Part number specification

BRDB-30

Product Code

D

Select the part number.

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810
1 pc. in 1 bag	Not Available	Not Available	Not Available

● Ball Plunger

Product Code	PAF/PAFS	FP/MP	MPS
Page	P.479 / P.481	P.483	P.484
Shape	 <i>Recommendation</i>		
Characteristics	Stainless Steel	Stainless Steel	Stainless Steel
Thread Size	M3 - M16	M2 - M16	M2 - M16

● Pin Plunger

Product Code	PSS/PSSS	PSP	PSPS	PLP
Page	P.485	P.487	P.489	P.490
Shape	 <i>Recommendation</i>		 <i>Recommendation</i>	
Characteristics	Stainless Steel	Stainless Steel	Stainless Steel	
Thread Size	M4 - M16	M3 - M12	M4 - M12	M12 - M30

● Accessory for Spring Stop/Plunger

Product Code	PST/PSTS/PST-N	PPW	PHL	BB
Page	P.491	P.492	P.493	P.494
Shape			 <i>Recommendation</i>	
Product name	Stainless Steel	Wrenches for Pin Plunger	Stainless Steel	Ball Buttons

● Locating Pin

Product Code	PJP	PJA	PJB
Page	P.495	P.496	P.497
Shape			
Product name	Stepped Locating Pins	Bushing for Locating Pin	Bushing for Locating Pin

We design and produce plungers for you with the optimum specifications (shape, dimensions, load, material, etc.) according to your operating conditions.

Please specify the following conditions when you contact us.

- Type...Ball type or pin type (for the ball type, let us know if you add a spacer or not)
- Shape/Dimensions...Nominal diameter of thread, screw pitch, thread length, ball or pin diameter, stroke, and overall length
- Load...Min. load (initial load)/Max. load
- Material/Finish...Main unit, ball or pin, spring
- Vibration Resistant Treatment...Required/Not required
- Operating Conditions...Temperature, atmosphere, service life, etc.

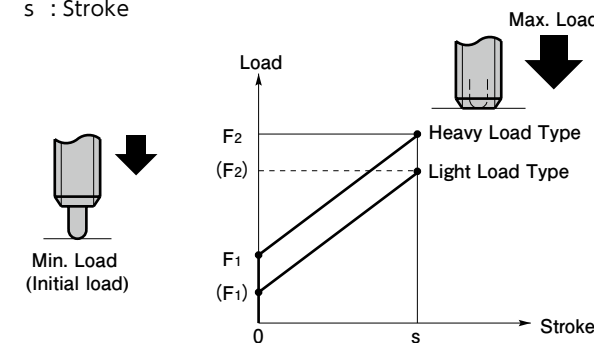


Plunger Load

- Min. load (initial load):
It is the load that the plunger ball or pin starts sinking.
- Max. load:
It is the load that the plunger ball or pin has sunk completely.
- The plunger load changes in a linear manner between the min. and the max. The plunger spring constant K can be computed in the following formula:

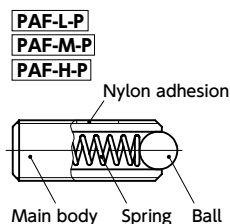
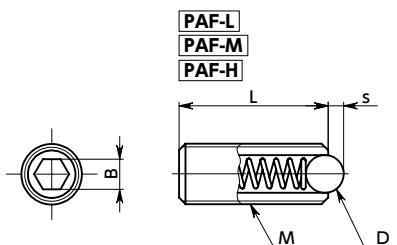
$$K = \frac{F_2 - F_1}{s}$$

K : Spring constant
F₁ : Min. load (initial load)
F₂ : Max. load
s : Stroke



⚠ Precautions for Use

In general, the heavy load type has shorter service life than the light load type.
We recommend using the light load type for frequent use.

PAF Miniature Ball Plunger *Recommendation*WEB Selection
ToolCAD
Download

- Cost-effective ball plunger.
- Light load, heavy load and super heavy load types with and without vibration resistant treatment are available.
- We also produce products of special specifications, e.g. dimensions, load and materials. → P.478
- Load types and with / without vibration resistant treatment can be selected by a product code.

Product Code	Load Type	Vibration resistant treatment
PAF-L	Light Load	No
PAF-L-P	Light Load	Yes
PAF-M	Heavy load	No
PAF-M-P	Heavy load	Yes
PAF-H	Super heavy load	No
PAF-H-P	Super heavy load	Yes

PAF-L	PAF-L-P	Light Load	PAF-M	PAF-M-P	Heavy Load	Unit : mm				
Part Number	M (Coarse)	s	L	D	B	Applicable ball button BB → P.494	Load (N) min./max.	Mass (g)	Loosening stopper	
PAF-3-L	M3	0.5	6	1.5	1.5		1 / 2	0.4	—	
PAF-4-L	M4	0.8	8	2.5	2	BB-5	2 / 4.9	0.4	—	
PAF-5-L	M5	0.8	11	3	2.5	BB-5	2.9 / 9.8	0.9	—	
PAF-6-L	M6	0.8	12	3	3	BB-6	4.9 / 15	1.5	—	
PAF-8-L	M8	1	14	4	4	BB-6	6.9 / 20	3.2	—	
PAF-10-L	M10	1.2	15	5	5	BB-8	8.8 / 25	5.4	—	
PAF-12-L	M12	1.8	19	7.1	6	BB-10	9.8 / 29	10	—	
PAF-16-L	M16	2.5	24	9.5	8	BB-12	16 / 49	24	—	
PAF-3-L-P	M3	0.5	6	1.5	1.5		1 / 2	0.4	O	
PAF-4-L-P	M4	0.8	8	2.5	2	BB-5	2 / 4.9	0.4	O	
PAF-5-L-P	M5	0.8	11	3	2.5	BB-5	2.9 / 9.8	0.9	O	
PAF-6-L-P	M6	0.8	12	3	3	BB-6	4.9 / 15	1.5	O	
PAF-8-L-P	M8	1	14	4	4	BB-6	6.9 / 20	3.2	O	
PAF-10-L-P	M10	1.2	15	5	5	BB-8	8.8 / 25	5.4	O	
PAF-12-L-P	M12	1.8	19	7.1	6	BB-10	9.8 / 29	10	O	
PAF-16-L-P	M16	2.5	24	9.5	8	BB-12	16 / 49	24	O	
PAF-3-M	M3	0.5	6	1.5	1.5		1.5 / 2.9	0.4	—	
PAF-4-M	M4	0.8	8	2.5	2	BB-5	3.9 / 9.8	0.4	—	
PAF-5-M	M5	0.8	11	3	2.5	BB-5	4.9 / 20	0.9	—	
PAF-6-M	M6	0.8	12	3	3	BB-6	9.8 / 29	1.5	—	
PAF-8-M	M8	1	14	4	4	BB-6	13 / 39	3.2	—	
PAF-10-M	M10	1.2	15	5	5	BB-8	19 / 49	5.4	—	
PAF-12-M	M12	1.8	19	7.1	6	BB-10	20 / 59	10	—	
PAF-16-M	M16	2.5	24	9.5	8	BB-12	29 / 98	24	—	
PAF-3-M-P	M3	0.5	6	1.5	1.5		1.5 / 2.9	0.4	O	
PAF-4-M-P	M4	0.8	8	2.5	2	BB-5	3.9 / 9.8	0.4	O	
PAF-5-M-P	M5	0.8	11	3	2.5	BB-5	4.9 / 20	0.9	O	
PAF-6-M-P	M6	0.8	12	3	3	BB-6	9.8 / 29	1.5	O	
PAF-8-M-P	M8	1	14	4	4	BB-6	13 / 39	3.2	O	
PAF-10-M-P	M10	1.2	15	5	5	BB-8	19 / 49	5.4	O	
PAF-12-M-P	M12	1.8	19	7.1	6	BB-10	20 / 59	10	O	
PAF-16-M-P	M16	2.5	24	9.5	8	BB-12	29 / 98	24	O	

Cleanroom Wash & Packaging → P.807	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Available / Add'l charge	Not Available



RoHS2 Compliant

● Material/Finish

	PAF-L	PAF-L-P	PAF-M	PAF-M-P	PAF-H	PAF-H-P
Main body	SCM435 Ferrosoferric Oxide Film (Black)	SCM435 Ferrosoferric Oxide Film (Black)	SCM435 Ferrosoferric Oxide Film (Black)	SCM435 Ferrosoferric Oxide Film (Black)	SCM435*1 Trivalent Chromate Treatment	SCM435*1 Trivalent Chromate Treatment
Ball	SUJ2 (hardness: 55 - 60 HRC)	SUJ2 (hardness: 55 - 60 HRC)	SUJ2*1 (hardness: 55 - 60 HRC) Ferrosoferric Oxide Film	SUJ2*1 (hardness: 55 - 60 HRC) Ferrosoferric Oxide Film	SUJ2 (hardness: 55 - 60 HRC)	SUJ2 (hardness: 55 - 60 HRC)
Spring	SWPB	SWPB	SWPB	SWPB	SWPB	SWPB
Vibration resistant treatment		Nylon adhesion (Nylon 11)		Nylon adhesion (Nylon 11)		Nylon adhesion (Nylon 11)

*1 : Load types can be selected by the surface treatment of the main body and ball.

PAF-H	PAF-H-P	Super Heavy Load	Unit : mm							
Part Number	M (Coarse)	s	L	D	B	Applicable ball button BB → P.494	Load (N) min./max.	Mass (g)	Loosening stopper	
PAF-3-H	M3	0.5	6	1.5	1.5		2.2 / 5	0.4	—	
PAF-4-H	M4	0.8	8	2.5	2	BB-5	2.5 / 12.5	0.4	—	
PAF-5-H	M5	0.8	11	3	2.5	BB-5	11.2 / 24.1	0.9	—	
PAF-6-H	M6	0.8	12	3	3	BB-6	17.7 / 33.4	1.5	—	
PAF-8-H	M8	1	14	4	4	BB-6	21.4 / 45.3	3.2	—	
PAF-10-H	M10	1.2	15	5	5	BB-8	23.5 / 60	5.4	—	
PAF-12-H	M12	1.8	19	7.1	6	BB-10	24.1 / 63.7	10	—	
PAF-16-H	M16	2.5	24	9.5	8	BB-12	43.6 / 116.3	24	—	
PAF-3-H-P	M3	0.5	6	1.5	1.5		2.2 / 5	0.4	O	
PAF-4-H-P	M4	0.8	8	2.5	2	BB-5	2.5 / 12.5	0.4	O	
PAF-5-H-P	M5	0.8	11	3	2.5	BB-5	11.2 / 24.1	0.9	O	
PAF-6-H-P	M6	0.8	12	3	3	BB-6	17.7 / 33.4	1.5	O	
PAF-8-H-P	M8	1	14	4	4	BB-6	21.4 / 45.3	3.2	O	
PAF-10-H-P	M10	1.2	15	5	5	BB-8	23.5 / 60	5.4	O	
PAF-12-H-P	M12	1.8	19	7.1	6	BB-10	24.1 / 63.7	10	O	
PAF-16-H-P	M16	2.5	24	9.5	8	BB-12	43.6 / 116.3	24	O	

● Related Products

Stainless steel mini ball plunger

PAFS with the same shape is available.

→ P.481



Use a ball button BB with excellent abrasion resistance on the recipient.

→ P.494



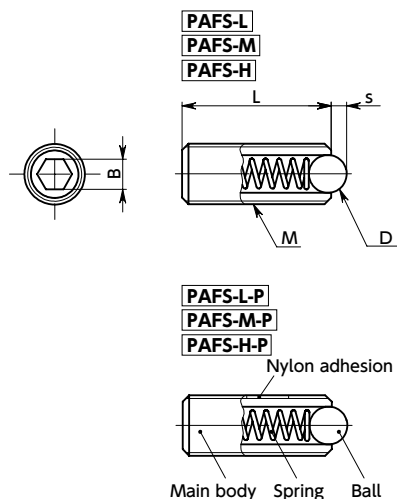
● Part number specification

PAF-4-H-P

1

PAFS Miniature Ball Plunger (Made of Stainless Steel) *Recommendation*

WEB Selection Tool CAD Download SUS Stainless steel



- Cost-effective ball plunger.
- Light load, heavy load and super heavy load types with and without vibration resistant treatment are available.
- The main body, ball and spring are made of stainless steel.
- We also produce products of special specifications, e.g. dimensions, load and materials. → P.478
- Load types and with / without vibration resistant treatment can be selected by a product code.

Product Code	Load Type	Vibration resistant treatment
PAFS-L	Light Load	No
PAFS-L-P	Light Load	Yes
PAFS-M	Heavy load	No
PAFS-M-P	Heavy load	Yes
PAFS-H	Super heavy load	No
PAFS-H-P	Super heavy load	Yes

PAFS-L	PAFS-L-P	Light Load	PAFS-M	PAFS-M-P	Heavy Load	Unit : mm				
Part Number	M (Coarse)	s	L	D	B	Applicable ball button BB → P.494	Load (N) min./max.	Mass (g)	Loosening stopper	
PAFS-3-L	M3	0.5	6	1.5	1.5		1 / 2	0.4	—	
PAFS-4-L	M4	0.8	8	2.5	2	BB-5	2 / 4.9	0.4	—	
PAFS-5-L	M5	0.8	11	3	2.5	BB-5	2.9 / 9.8	0.9	—	
PAFS-6-L	M6	0.8	12	3	3	BB-6	4.9 / 15	1.5	—	
PAFS-8-L	M8	1	14	4	4	BB-6	6.9 / 20	3.2	—	
PAFS-10-L	M10	1.2	15	5	5	BB-8	8.8 / 25	5.4	—	
PAFS-12-L	M12	1.8	19	7.1	6	BB-10	9.8 / 29	10	—	
PAFS-16-L	M16	2.5	24	9.5	8	BB-12	16 / 49	24	—	
PAFS-3-L-P	M3	0.5	6	1.5	1.5		1 / 2	0.4	○	
PAFS-4-L-P	M4	0.8	8	2.5	2	BB-5	2 / 4.9	0.4	○	
PAFS-5-L-P	M5	0.8	11	3	2.5	BB-5	2.9 / 9.8	0.9	○	
PAFS-6-L-P	M6	0.8	12	3	3	BB-6	4.9 / 15	1.5	○	
PAFS-8-L-P	M8	1	14	4	4	BB-6	6.9 / 20	3.2	○	
PAFS-10-L-P	M10	1.2	15	5	5	BB-8	8.8 / 25	5.4	○	
PAFS-12-L-P	M12	1.8	19	7.1	6	BB-10	9.8 / 29	10	○	
PAFS-16-L-P	M16	2.5	24	9.5	8	BB-12	16 / 49	24	○	
PAFS-3-M	M3	0.5	6	1.5	1.5		1.5 / 2.9	0.4	—	
PAFS-4-M	M4	0.8	8	2.5	2	BB-5	3.9 / 9.8	0.4	—	
PAFS-5-M	M5	0.8	11	3	2.5	BB-5	4.9 / 20	0.9	—	
PAFS-6-M	M6	0.8	12	3	3	BB-6	9.8 / 29	1.5	—	
PAFS-8-M	M8	1	14	4	4	BB-6	13 / 39	3.2	—	
PAFS-10-M	M10	1.2	15	5	5	BB-8	19 / 49	5.4	—	
PAFS-12-M	M12	1.8	19	7.1	6	BB-10	20 / 59	10	—	
PAFS-16-M	M16	2.5	24	9.5	8	BB-12	29 / 98	24	—	
PAFS-3-M-P	M3	0.5	6	1.5	1.5		1.5 / 2.9	0.4	○	
PAFS-4-M-P	M4	0.8	8	2.5	2	BB-5	3.9 / 9.8	0.4	○	
PAFS-5-M-P	M5	0.8	11	3	2.5	BB-5	4.9 / 20	0.9	○	
PAFS-6-M-P	M6	0.8	12	3	3	BB-6	9.8 / 29	1.5	○	
PAFS-8-M-P	M8	1	14	4	4	BB-6	13 / 39	3.2	○	
PAFS-10-M-P	M10	1.2	15	5	5	BB-8	19 / 49	5.4	○	
PAFS-12-M-P	M12	1.8	19	7.1	6	BB-10	20 / 59	10	○	
PAFS-16-M-P	M16	2.5	24	9.5	8	BB-12	29 / 98	24	○	

Cleanroom Wash & Packaging → P.807

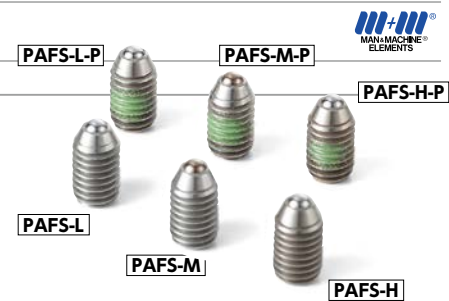
Vibration Resistant → P.810

Laser Marking → P.821

Please feel free to contact us

Available / Add'l charge

Not Available



RoHS2 Compliant

● Material/Finish

	PAFS-L	PAFS-L-P	PAFS-M	PAFS-M-P	PAFS-H	PAFS-H-P
Main body	SUSXM7	SUSXM7	SUSXM7	SUSXM7	SUSXM7*1 Temper Color (Brown)	SUSXM7*1 Temper Color (Brown)
Ball	SUS440C (hardness: 55 - 60 HRC)	SUS440C (hardness: 55 - 60 HRC)	SUS440C*2 (hardness: 55 - 60 HRC) Temper Color (Brown)	SUS440C*2 (hardness: 55 - 60 HRC) Temper Color (Brown)	SUS440C (hardness: 55 - 60 HRC)	SUS440C (hardness: 55 - 60 HRC)
Spring	SUS631J1	SUS631J1	SUS631J1	SUS631J1	SUS631J1	SUS631J1
Vibration resistant treatment		Nylon adhesion (Nylon 11)		Nylon adhesion (Nylon 11)		Nylon adhesion (Nylon 11)

*1 : Load types can be selected by the surface treatment of the main body and ball.

*2 : The ball surface treatment was changed for identification of load types.

PAFS-H PAFS-H-P Super Heavy Load

Part Number	M (Coarse)	s	L	D	B	Applicable ball button BB → P.494	Load (N) min./max.	Mass (g)	Loosening stopper	Unit : mm
PAFS-3-H	M3	0.5	6	1.5	1.5		2.2 / 5	0.4	—	
PAFS-4-H	M4	0.8	8	2.5	2	BB-5	2.5 / 12.5	0.4	—	
PAFS-5-H	M5	0.8	11	3	2.5	BB-5	11.2 / 24.1	0.9	—	
PAFS-6-H	M6	0.8	12	3	3	BB-6	17.7 / 33.4	1.5	—	
PAFS-8-H	M8	1	14	4	4	BB-6	21.4 / 45.3	3.2	—	
PAFS-10-H	M10	1.2	15	5	5	BB-8	23.5 / 60	5.4	—	
PAFS-12-H	M12	1.8	19	7.1	6	BB-10	24.1 / 63.7	10	—	
PAFS-16-H	M16	2.5	24	9.5	8	BB-12	43.6 / 116.3	24	—	
PAFS-3-H-P	M3	0.5	6	1.5	1.5		2.2 / 5	0.4	○	
PAFS-4-H-P	M4	0.8	8	2.5	2	BB-5	2.5 / 12.5	0.4	○	
PAFS-5-H-P	M5	0.8	11	3	2.5	BB-5	11.2 / 24.1	0.9	○	
PAFS-6-H-P	M6	0.8	12	3	3	BB-6	17.7 / 33.4	1.5	○	
PAFS-8-H-P	M8	1	14	4	4	BB-6	21.4 / 45.3	3.2	○	
PAFS-10-H-P	M10	1.2	15	5	5	BB-8	23.5 / 60	5.4	○	
PAFS-12-H-P	M12	1.8	19	7.1	6	BB-10	24.1 / 63.7	10	○	
PAFS-16-H-P	M16	2.5	24	9.5	8	BB-12	43.6 / 116.3	24	○	

● Related Products

Steel ball plunger [PAF] with the same shape is available.

→ P.479



Use a ball button [BB] with excellent abrasion resistance on the recipient.

→ P.494



● Part number specification

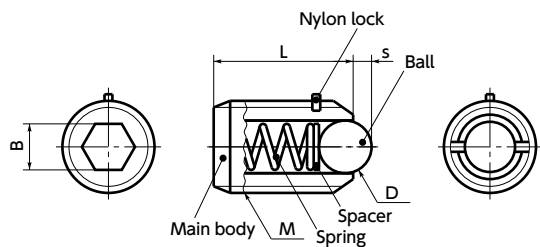
PAFS-4-H-P

1

FP / MP Miniature Ball Plunger - with Nylon Lock



WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish



	FP	MP
Main body	S45C Ferroferric Oxide Film (Black)	Equivalent to SUS304
Ball	SUJ2 (hardness: 55 - 60 HRC)	SUJ2 (hardness: 55 - 60 HRC)
Spacer	SUS304	SUS304
Spring	SWPB	SWPB
Vibration resistant treatment	Nylon Lock	Nylon Lock

- Insert a spacer between the ball and spring (Except for M2 / M3). The ball rotates.
- With nylon lock for vibration resistant treatment (Except for M2/ M3 / M4).
- We also produce products of special specifications, e.g. dimensions, load and materials. ➔ P.478
- Main body materials and load types can be selected according to the product code.

Product Code	Material	Load Type
FP	Steel	Light Load
MP	Stainless Steel	Heavy load

FP	Made of Steel / Light Load	MP	Made of Stainless Steel / Heavy Load					Unit : mm	
Part Number	M(coarse) 2	s	L	D	B	Applicable ball button BB → P.494	Load(N) min./max.	Mass (g)	Loosening stopper
FP-2	M2	0.2	5	1	0.9		0.7 / 1.4	0.1	—
FP-3	M3	0.5	7	1.5	1.5		1 / 2	0.4	—
FP-4	M4	0.8	9	2.5	2	BB-5	2 / 4.9	0.5	—
FP-5	M5	0.8	12	3	2.5	BB-5	2.9 / 9.8	1	○
FP-6	M6	0.8	13	3	3	BB-6	4.9 / 15	1.7	○
FP-8	M8	1	15	4	4	BB-6	6.9 / 20	3.5	○
FP-10	M10	1.2	16	5	5	BB-8	8.8 / 25	6	○
FP-12	M12	1.8	20	7	6	BB-10	9.8 / 29	11	○
FP-16	M16	2.5	25	9.5	8	BB-12	16 / 49	25	○
MP-2	M2	0.2	5	1	0.9		1.2 / 2	0.1	—
MP-3	M3	0.5	7	1.5	1.5		1.5 / 2.9	0.4	—
MP-4	M4	0.8	9	2.5	2	BB-5	3.9 / 9.8	0.5	—
MP-5	M5	0.8	12	3	2.5	BB-5	4.9 / 20	1	○
MP-6	M6	0.8	13	3	3	BB-6	9.8 / 29	1.7	○
MP-8	M8	1	15	4	4	BB-6	13 / 39	3.5	○
MP-10	M10	1.2	16	5	5	BB-8	19 / 49	6	○
MP-12	M12	1.8	20	7	6	BB-10	20 / 59	11	○
MP-16	M16	2.5	25	9.5	8	BB-12	29 / 98	25	○

Related Products

A plunger type ball roller whose ball rotates smoothly is available.

➔ P.469 - 472



Part number specification

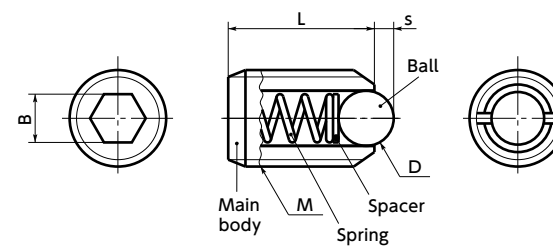
FP-2
1 2

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821
Please feel free to contact us	with Vibration Resistant Treatment	Not Available

MPS Miniature Ball Plunger (Made of Stainless Steel)



WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish



	MPS
Main body*1	Equivalent to SUS304
Ball	SUS440C (hardness: 55 - 60 HRC)
Spacer	SUS304
Spring	SUS631J1

*1 : Hexagon socket part is colored for identification. **MPS** Red / **MPS-Z** Blue

- There is a spacer between the ball and spring (Except for M2 / M3). The ball rotates.
- Made of all stainless steel. It is highly corrosion-resistant and heat-resistant.
- We also produce products of special specifications, e.g. dimensions, load and materials. ➔ P.478
- Load type can be selected according to the end symbol of the part number. 2
No end symbol — Heavy load
End symbol **Z** — Super heavy load

MPS	Heavy Load	MPS-Z	Super Heavy Load	Unit : mm				
Part Number	M (coarse)	s	L	D	B	Applicable ball button BB ➔ P.494	Load (N) min./max.	Mass (g)
MPS-2	M2	0.2	5	1	0.9		1.2 / 2	0.1
MPS-3	M3	0.5	7	1.5	1.5		1.5 / 2.9	0.4
MPS-4	M4	0.8	9	2.5	2	BB-5	3.9 / 9.8	0.5
MPS-5	M5	0.8	12	3	2.5	BB-5	4.9 / 20	1
MPS-6	M6	0.8	13	3	3	BB-6	9.8 / 29	1.7
MPS-8	M8	1	15	4	4	BB-6	13 / 39	3.5
MPS-10	M10	1.2	16	5	5	BB-8	19 / 49	6
MPS-12	M12	1.8	20	7	6	BB-10	20 / 59	11
MPS-16	M16	2.5	25	9.5	8	BB-12	29 / 98	25
MPS-3-Z	M3	0.5	7	1.5	1.5		2.2 / 5	0.4
MPS-4-Z	M4	0.8	9	2.5	2	BB-5	2.5 / 12.5	0.5
MPS-5-Z	M5	0.8	12	3	2.5	BB-5	11.2 / 24.1	1
MPS-6-Z	M6	0.8	13	3	3	BB-6	17.7 / 33.4	1.7
MPS-8-Z	M8	1	15	4	4	BB-6	21.4 / 45.3	3.5
MPS-10-Z	M10	1.2	16	5	5	BB-8	23.5 / 60	6
MPS-12-Z	M12	1.8	20	7	6	BB-10	24.1 / 63.7	11
MPS-16-Z	M16	2.5	25	9.5	8	BB-12	43.6 / 116.3	25

Related Products

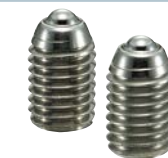
Use a ball button **BB** with excellent abrasion resistance on the recipient.

➔ P.494



A plunger type ball roller whose ball rotates smoothly is available.

➔ P.469 - 472



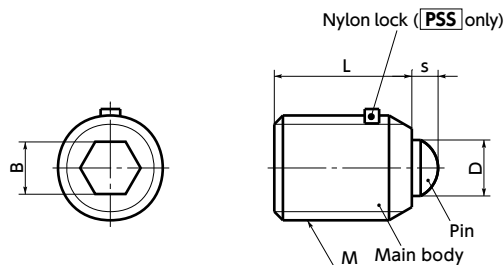
Part number specification

MPS-8-Z
Product Code 1 2

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821
Please feel free to contact us	Available / Add'l charge	Not Available

PSS / PSSS Small Plunger

WEB Selection Tool CAD Download SUS Stainless steel



- **PSSS-1** **PSSS-3** is all made of stainless steel. It is highly corrosion-resistant.
- **PSS-2** **PSS-1** has a nylon lock for vibration resistant treatment (Except for M4).
- We also produce products of special specifications, e.g. dimensions, load and materials. ➔ P.478
- Materials and load types can be selected by a product code.

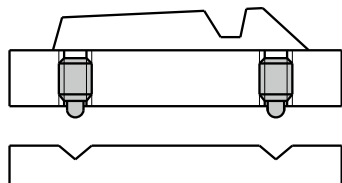
Product Code	Material	Load Type
PSS-2	Steel	Light Load
PSS-1	Steel	Heavy load
PSSS-1	Stainless Steel	Heavy load
PSSS-3	Stainless Steel	Super heavy load

PSS-2 Light Load PSS-1 Heavy Load

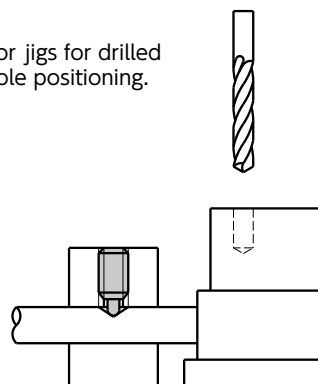
Part Number Made of Steel	M (coarse)	s	L	D	B	Applicable ball button BB ➔ P.494	Load (N) min./max.	Mass (g)	Loosening stopper
PSS-4-2	M4	1.2	9	2.1	2	BB-4	1.6 / 5	0.6	—
PSS-5-2	M5	1.5	12	2.65	2.5	BB-5	2 / 7.8	1	○
PSS-6-2	M6	1.5	13	3.2	3	BB-8	2.9 / 9.8	1.5	○
PSS-8-2	M8	2	15	4	4	BB-8	2.9 / 9.8	3	○
PSS-10-2	M10	2.5	16	5	5	BB-10	4.9 / 15	5.5	○
PSS-12-2	M12	3.5	20	6	6	BB-12	4.9 / 15	10	○
PSS-16-2	M16	4.5	22	8	8	BB-12	9.8 / 29	20	○
PSS-4-1	M4	1.2	9	2.1	2	BB-4	2 / 9	0.6	—
PSS-5-1	M5	1.5	12	2.65	2.5	BB-5	4.9 / 15	1	○
PSS-6-1	M6	1.5	13	3.2	3	BB-8	5.9 / 20	1.5	○
PSS-8-1	M8	2	15	4	4	BB-8	5.9 / 20	3	○
PSS-10-1	M10	2.5	16	5	5	BB-10	9.8 / 29	5.5	○
PSS-12-1	M12	3.5	20	6	6	BB-12	9.8 / 29	10	○
PSS-16-1	M16	4.5	22	8	8	BB-12	20 / 59	20	○

● Usage example

For die positioning.



For jigs for drilled hole positioning.



Cleanroom Wash & Packaging ➔ P.807

Please feel free to contact us

Vibration Resistant ➔ P.810

Available / Add'l charge

Laser Marking ➔ P.821

Not Available

● Material/Finish

RoHS2 Compliant

	PSS-2*1	PSS-1*1	PSSS-1 / PSSS-3*2
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Ferrosoferric Oxide Film (Black)	Equivalent to SUS304
Pin	S45C (hardness: 56 - 60 HRC) Trivalent Chromate Treatment	S45C (hardness: 56 - 60 HRC) Ferrosoferric Oxide Film (Black)	SUS440C (hardness: 55 - 60 HRC)
Spring	SWPB	SWPB	SUS631J1
Vibration Resistant Treatment	Nylon Lock	Nylon Lock	

*1 : To distinguish between **PSS-1** and **PSS-2**, pin surface treatment is different.

*2 : To distinguish between **PSSS-3** and **PSSS-1**, a red mark is prepared on the hexagon socket.

PSSS-1 Heavy Load PSSS-3 Super Heavy Load

Part Number Made of Stainless Steel	M (coarse)	s	L	D	B	Applicable ball button BB ➔ P.494	Load (N) min./max.	Mass (g)
PSSS-4-1	M4	1.2	9	2.1	2	BB-4	2 / 9	0.6
PSSS-5-1	M5	1.5	12	2.65	2.5	BB-5	4.9 / 15	1
PSSS-6-1	M6	1.5	13	3.2	3	BB-8	5.9 / 20	1.5
PSSS-8-1	M8	2	15	4	4	BB-8	5.9 / 20	3
PSSS-10-1	M10	2.5	16	5	5	BB-10	9.8 / 29	5.5
PSSS-12-1	M12	3.5	20	6	6	BB-12	9.8 / 29	10
PSSS-16-1	M16	4.5	22	8	8	BB-12	20 / 59	20
PSSS-4-3	M4	1.2	9	2.1	2	BB-4	4 / 11.5	0.6
PSSS-5-3	M5	1.5	12	2.65	2.5	BB-5	6 / 24.2	1
PSSS-6-3	M6	1.5	13	3.2	3	BB-8	9.4 / 29.5	1.5
PSSS-8-3	M8	2	15	4	4	BB-8	13.5 / 43.7	3
PSSS-10-3	M10	2.5	16	5	5	BB-10	19.1 / 53.3	5.5
PSSS-12-3	M12	3.5	20	6	6	BB-12	24.5 / 58.8	10
PSSS-16-3	M16	4.5	22	8	8	BB-12	26.6 / 78.7	20

● Related Products

Use a ball button **BB** with excellent abrasion resistance on the recipient.
➔ P.494



● Part number specification

PSSS-5-1

PSP Short Stroke Plunger

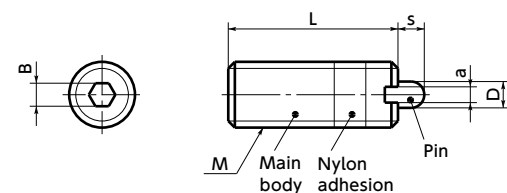
WEB Selection Tool
CAD Download



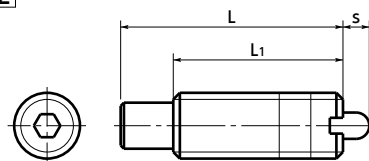
PSP

PSP-N

PSP-S



PSP-Z



PSP Light Load	PSP-S Heavy Load	PSP-Z Super Heavy Load	Unit : mm									
Part Number Steel Pin	M (Coarse)	s	L	L1	D	a	B	Applicable ball button BB → P.494	Key Part No. PPW → P.492	Load (N) min./max.	Mass (g)	Loosening stopper
PSP-3-1.5	M3	1.5	10		1.1	0.4	0.9	BB-4		0.49 / 1	0.3	—
PSP-3-3	M3	3	15		1.1	0.4	0.9	BB-4		0.29 / 1	0.6	—
PSP-4-2	M4	2	15		1.6	0.6	1.3	BB-4		1 / 2	0.7	—
PSP-4-4	M4	4	24		1.6	0.6	1.3	BB-4		0.59 / 2	1.6	—
PSP-5B-3	M5	3	13		2	1.2	1.5	BB-5	PPW-5	1 / 7.8	1.2	○
PSP-5-3	M5	3	20		2	1.2	1.5	BB-5	PPW-5	2 / 9.8	2	○
PSP-5-5	M5	5	27		2	1.2	1.5	BB-5	PPW-5	2 / 9.8	3	○
PSP-6-3	M6	3	25		2.5	1.3	2	BB-6	PPW-6	2.9 / 9.8	3	○
PSP-6-5	M6	5	30		2.5	1.3	2	BB-6	PPW-6	2 / 9.8	4	○
PSP-8-3	M8	3	25		3.1	1.5	2.5	BB-8	PPW-8	5.9 / 9.8	6	○
PSP-8-4	M8	4	25		3.1	1.5	2.5	BB-8	PPW-8	2.9 / 9.8	6	○
PSP-8-5	M8	5	27		3.1	1.5	2.5	BB-8	PPW-8	2 / 9.8	9	○
PSP-10-5	M10	5	30		3.8	1.5	3	BB-8	PPW-10	2.9 / 15	11	○
PSP-12-5	M12	5	30		5.5	2.7	4	BB-10	PPW-12	2 / 9.8	15	○
PSP-3-1.5-S	M3	1.5	10		1.1	0.4	0.9	BB-4		0.49 / 2.9	0.3	—
PSP-3-3-S	M3	3	15		1.1	0.4	0.9	BB-4		0.78 / 2.9	0.6	—
PSP-4B-2-S	M4	2	12		1.6	0.6	0.9	BB-4		2 / 9.8	0.7	—
PSP-4-2-S	M4	2	15		1.6	0.6	1.3	BB-4		2.9 / 8.8	0.7	—
PSP-4-4-S	M4	4	24		1.6	0.6	1.3	BB-4		2 / 8.8	1.6	—
PSP-5-3-S	M5	3	20		2	1.2	1.5	BB-5	PPW-5	3.9 / 20	2	○
PSP-5-5-S	M5	5	27		2	1.2	1.5	BB-5	PPW-5	2.9 / 19.6	3	○
PSP-6-3-S	M6	3	25		2.5	1.3	2	BB-6	PPW-6	7.8 / 25	3	○
PSP-6-5-S	M6	5	30		2.5	1.3	2	BB-6	PPW-6	4.9 / 29.4	4	○
PSP-8-3-S	M8	3	25		3.1	1.5	2.5	BB-8	PPW-8	14.7 / 29.4	6	○
PSP-8-4-S	M8	4	25		3.1	1.5	2.5	BB-8	PPW-8	7.8 / 29	6	○
PSP-8-5-S	M8	5	27		3.1	1.5	2.5	BB-8	PPW-8	7.8 / 29.4	9	○
PSP-10-5-S	M10	5	30		3.8	1.5	3	BB-8	PPW-10	9.8 / 49	11	○
PSP-12-5-S	M12	5	30		5.5	2.7	4	BB-10	PPW-12	9.8 / 49	15	○
PSP-8-3-Z	M8	3	27	27	3.1	1.5	2.5	BB-8	PPW-8	35.3 / 41.2	7	○
PSP-8-5-Z	M8	5	35	30	3.1	1.5	2.5	BB-8	PPW-8	14.7 / 41.2	10	○
PSP-10-5-Z	M10	5	35	30	3.8	1.5	3	BB-8	PPW-10	15.7 / 62.8	11	○
PSP-12-5-Z	M12	5	43	35	5.5	2.7	4	BB-10	PPW-12	37.2 / 98.1	21	○

Cleanroom Wash & Packaging → P.807 Vibration Resistant → P.810 Laser Marking → P.821
Please feel free to contact us with Vibration Resistant Treatment Not Available

- With nylon adhesion for vibration resistant treatment (Except for M3 / M4).
- Pins of **PSP-N** are made of plastic. This does not scratch the work.
- We also produce products of special specifications, e.g. dimensions, load and materials. → P.478
- Pin materials and load types can be selected by a product code.

Product Code	Pin Material	Load Type
PSP	Steel	Light Load
PSP-N	Plastic	Light Load
PSP-S	Steel	Heavy load
PSP-Z	Steel	Super heavy load

Material/Finish

RoHS2 Compliant

	PSP	PSP-N	PSP-S	PSP-Z
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Ferrosoferric Oxide Film (Black)	S45C Ferrosoferric Oxide Film (Black)	S45C Electroless Nickel Plating
Pin	S45C (hardness: 56 - 60 HRC) Trivalent Chromate Treatment	Polyacetal (White)	S45C (hardness: 56 - 60 HRC) Ferrosoferric Oxide Film (Black)	S45C (hardness: 56 - 60 HRC) Ferrosoferric Oxide Film (Black)
Spring	SWPB	SWPB	SWPB	SWPB
Vibration resistant treatment	Nylon adhesion	Nylon adhesion	Nylon adhesion	Nylon adhesion

PSP-N Light Load

Unit : mm

Part Number Plastic Pin	M (Coarse)	s	L	D	a	B	Applicable ball button BB → P.494	Key Part No. PPW → P.492	Load (N) min./max.	Mass (g)	Loosening stopper
PSP-5-3-N	M5	3	20	2	1.2	1.5	BB-5	PPW-5	2 / 9.8	2	○
PSP-5-5-N	M5	5	27	2	1.2	1.5	BB-5	PPW-5	2 / 9.8	3	○
PSP-6-3-N	M6	3	25	2.5	1.3	2	BB-6	PPW-6	5.9 / 9.8	3	○
PSP-6-5-N	M6	5	30	2.5	1.3	2	BB-6	PPW-6	2 / 9.8	4	○
PSP-8-3-N	M8	3	25	3.1	1.5	2.5	BB-8	PPW-8	5.9 / 9.8	6	○
PSP-8-5-N	M8	5	27	3.1	1.5	2.5	BB-8	PPW-8	2.9 / 9.8	9	○
PSP-10-5-N	M10	5	30	3.8	1.5	3	BB-8	PPW-10	5.9 / 14.7	11	○
PSP-12-5-N	M12	5	30	5.5	2.7	4	BB-10	PPW-12	5.9 / 14.7	15	○

Related Products

Short stroke plunger made of stainless steel **PSPS** is available.
→ P.489



A dedicated plunger wrench **PPW** for mounting or removal from the pin side is available.
→ P.492



- Part number specification

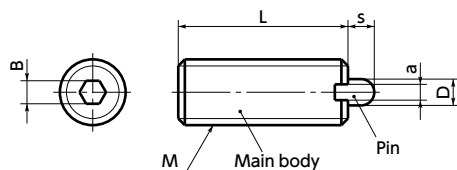
PSP-5-5-S



PSPS Short Stroke Plunger - Stainless Steel



WEB Selection Tool CAD Download SUS Stainless steel



● Material/Finish



	PSPS-S / PSPS-Z	PSPS-NS / PSPS-NZ
Main body	Equivalent to SUS304	Equivalent to SUS304
Pin	SUS440C (hardness: 55 - 60 HRC)	Polyacetal (White)
Spring	SUS631J1	SUS631J1

● Hexagon socket part is colored for identification. **PSPS-S**

PSPS-NS Red / **PSPS-Z** **PSPS-NZ** Blue



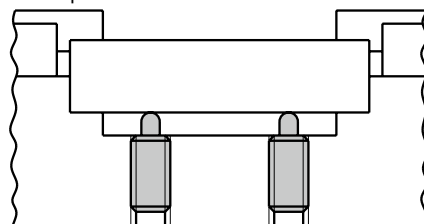
- Short stroke plunger made of stainless steel. It is highly corrosion-resistant.
- Pins of **PSPS-NS** **PSPS-NZ** are made of plastic. This does not scratch the work.
- We also produce products of special specifications, e.g. dimensions, load and materials. ➔ P.478
- Pin materials and load types can be selected by the end symbol of the part number.

End Symbol of the Part Number	Pin Material	Load Type
S	Stainless Steel	Heavy load
Z	Stainless Steel	Super heavy load
NS	Plastic	Heavy load
NZ	Plastic	Super heavy load

PSPS		PSPS-NS	Heavy Load	PSPS-Z	PSPS-NZ	Super Heavy Load										Unit : mm
Part Number	Part Number	M	s	L	D	a	B	Applicable ball button	Key	Part No.	Load (N)	Mass (g)				
Stainless steel pin	Plastic pin	(Coarse)						BB	⇒ P.494	PPW	⇒ P.492	min./max.				
PSPS-4-2-S	PSPS-4-2-NS	M4	2	15	1.6	0.6	1.3	BB-4			2 / 8.8	0.7				
PSPS-5-3-S	PSPS-5-3-NS	M5	3	20	2	1.2	1.5	BB-5		PPW-5	2.7 / 16.3	2				
PSPS-6-3-S	PSPS-6-3-NS	M6	3	25	2.5	1.3	2	BB-6		PPW-6	8 / 26.4	3				
PSPS-8-3-S	PSPS-8-3-NS	M8	3	25	3.1	1.5	2.5	BB-8		PPW-8	14.7 / 27	6				
PSPS-10-5-S	PSPS-10-5-NS	M10	5	30	3.8	1.5	3	BB-8		PPW-10	8.2 / 45.7	11				
PSPS-12-5-S	PSPS-12-5-NS	M12	5	30	5.5	2.7	4	BB-10		PPW-12	18.2 / 49	15				
PSPS-4-2-Z	PSPS-4-2-NZ	M4	2	15	1.6	0.6	1.3	BB-4			6.1 / 13.8	0.7				
PSPS-5-3-Z	PSPS-5-3-NZ	M5	3	20	2	1.2	1.5	BB-5		PPW-5	6.8 / 22	2				
PSPS-6-3-Z	PSPS-6-3-NZ	M6	3	25	2.5	1.3	2	BB-6		PPW-6	15.8 / 35.6	3				
PSPS-8-3-Z	PSPS-8-3-NZ	M8	3	25	3.1	1.5	2.5	BB-8		PPW-8	21.9 / 36.3	6				
PSPS-10-5-Z	PSPS-10-5-NZ	M10	5	30	3.8	1.5	3	BB-8		PPW-10	24.5 / 58.6	11				
PSPS-12-5-Z	PSPS-12-5-NZ	M12	5	30	5.5	2.7	4	BB-10		PPW-12	34.9 / 63.6	15				

● Usage example

For product extrusion.



● Part number specification

PSPS-6-3-NS

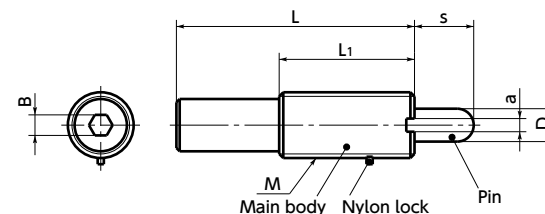
Product Code 1 2 3

Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821
Please feel free to contact us	Available / Add'l charge	Not Available

PLP Long Stroke Plunger

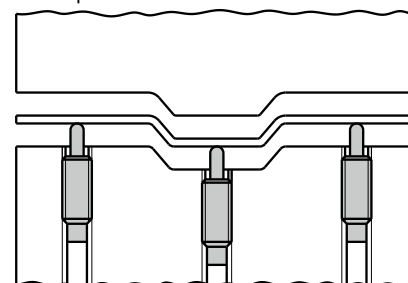


WEB Selection Tool CAD Download



● Usage example

For prevention of adhesion.



- For usage of oil breaker, knock out and positioner, etc.
- With nylon lock for vibration resistant treatment.
- **PLP-S** Light load
- **PLP-SS** Heavy load
- We also produce products of special specifications, e.g. dimensions, load and materials. ➔ P.478

● Material/Finish



	PLP-S	PLP-SS
Main body	S45C Ferrosoferric Oxide Film (Black)	S45C Ferrosoferric Oxide Film (Black)
Pin	S45C (hardness: 56 - 60 HRC) Trivalent Chromate Treatment	S45C Ferrosoferric Oxide Film (Black)
Spring	SWPB	SWPB
Vibration resistant treatment	Nylon Lock	Nylon Lock

PLP-S Light Load PLP-SS Heavy Load

Part Number	M (Coarse)	s	L1	L	D	a	B	Applicable ball button	Key Part No.	Load (N)	Mass (g)	Loosening stopper
PLP-16B-10-S	M16	10	35	50	8	3.2	5	BB-12	PPW-16	9.8 / 49	45	O
PLP-16-10-S	M16	10	35	60	8	3.2	5	BB-12	PPW-16	13 / 39	52	O
PLP-16-15-S	M16	15	35	60	8	3.2	5	BB-12	PPW-16	9.8 / 39	52	O
PLP-16-20-S	M16	20	35	60	8	3.2	5	BB-12	PPW-16	13 / 39	52	O
PLP-16-30-S	M16	30	35	125	8	3.2	5	BB-12	PPW-16	18 / 39	100	O
PLP-24-15-S	M24	15	45	60	10	3.5	8	BB-16	PPW-24	20 / 98	105	O
PLP-30-20-S	M30	20	45	70	15	3.5	14	BB-16	PPW-30	29 / 150	185	O
PLP-12-10-SS	M12	10	35	43	5.5	2.7	4	BB-10	PPW-12	6.9 / 39	21	O
PLP-16B-10-SS	M16	10	35	50	8	3.2	5	BB-12	PPW-16	20 / 98	45	O
PLP-16-10-SS	M16	10	35	60	8	3.2	5	BB-12	PPW-16	26 / 78	52	O
PLP-16-15-SS	M16	15	35	60	8	3.2	5	BB-12	PPW-16	15 / 78	52	O
PLP-16-20-SS	M16	20	35	85	8	3.2	5	BB-12	PPW-16	17 / 78	70	O
PLP-16-30-SS	M16	30	35	125	8	3.2	5	BB-12	PPW-16	20 / 78	100	O
PLP-24-15-SS	M24	15	45	60	10	3.5	8	BB-16	PPW-24	39 / 200	105	O
PLP-30-20-SS	M30	20	45	70	15	3.5	14	BB-16	PPW-30	49 / 290	185	O

● Related Products

A dedicated plunger wrench **PPW** for mounting or removal from the pin side is available. ➔ P.492



● Part number specification

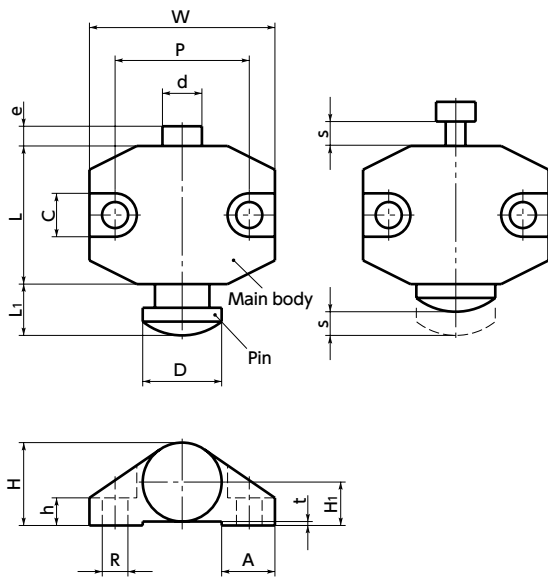
PLP-16-20-S

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Cleanroom Wash & Packaging ➔ P.807	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821
Not Available	with Vibration Resistant Treatment	Not Available

PST / PSTS Spring Stop

WEB Selection Tool CAD Download SUS Stainless steel



- For locating work.
 - Pin materials can be selected by a product code.
- PST** — Steel pin
PSTS — Stainless steel pin
PST-N — Plastic pin

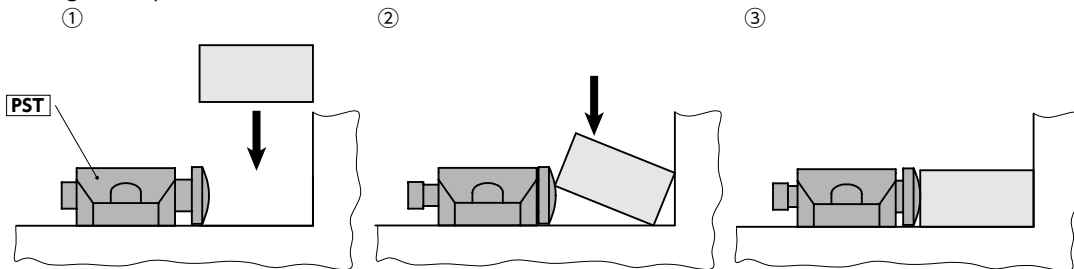
● Material/Finish



	PST	PSTS	PST-N
Main body	Equivalent to SUS303	Equivalent to SUS303	Equivalent to SUS303
Pin	S45C (hardness: 40 - 45 HRC) Ferrosoferric Oxide Film (Black)	SUS440C (hardness: 55 - 60 HRC)	Polyacetal (hardness: 94 HRM)
Spring	SUS631J1	SUS631J1	SUS631J1

PST	Steel Pin	PSTS	Stainless Steel Pin	PST-N Plastic Pin													Unit : mm	
Part Number	D 	s	L	L ₁	d	H	H ₁	h	W	e	A	t	P	C	R	Load (N) min./max.	Mass (g)	
PST-10	10	3	20	6	5.5	10.5	5.5	4.8	23	3	6.5	0.5	17	6	3.4	21 / 43	60	
PST-15	15	4.5	26	9	7	15.5	8	6	34	4	11	1	25	8	4.5	39 / 84	70	
PST-20	20	6	35	13	8.5	21	11	7	47	5	13.5	1	34	11	6.6	32 / 161	180	
PST-10-N	10	3	20	6	5.5	10.5	5.5	4.8	23	3	6.5	0.5	17	6	3.4	21 / 43	60	
PST-15-N	15	4.5	26	9	7	15.5	8	6	34	4	11	1	25	8	4.5	39 / 84	70	
PST-20-N	20	6	35	13	8.5	21	11	7	47	5	13.5	1	34	11	6.6	32 / 161	180	
PSTS-10	10	3	20	6	5.5	10.5	5.5	4.8	23	3	6.5	0.5	17	6	3.4	21 / 43	60	
PSTS-15	15	4.5	26	9	7	15.5	8	6	34	4	11	1	25	8	4.5	39 / 84	70	
PSTS-20	20	6	35	13	8.5	21	11	7	47	5	13.5	1	34	11	6.6	32 / 161	180	

● Usage example



● Part number specification

PST-10-N

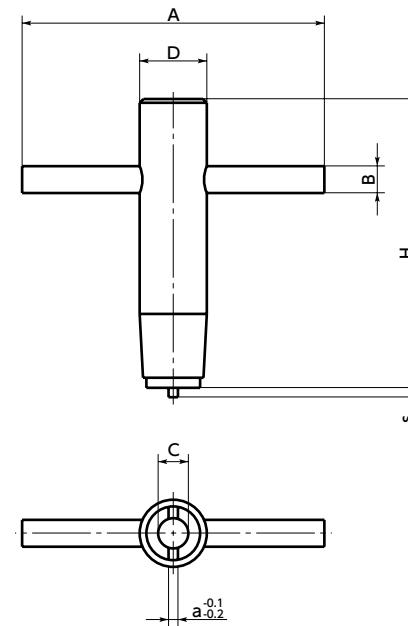
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Cleanroom Wash & Packaging → P.807 Vibration Resistant → P.810 Laser Marking → P.821

Please feel free to contact us Not Available Not Available

PPW Wrench for Pin Plunger

WEB Selection Tool CAD Download



- Short stroke plunger **PSP** (→ P.487) **PSPS** (→ P.489)
- Long stroke plunger **PLP** (→ P.490)
- Dedicated wrench for mounting and removal of above plungers.
- For applicable wrench part number, please refer to each product page of the above plungers.
- This unit allows you to be mounted/removed from the pin side.

● Material/Finish



	PPW
Main body	S45C Ferrosoferric Oxide Film (Black)

Part Number	A	B	D	H	s	a	C	Mass (g)
PPW-5	40	3	6	38.5	1.1	1	2.6	10
PPW-6	40	3	6	38.5	1.4	1.3	3.3	10
PPW-8	45	4	8	43	1.4	1.5	3.5	20
PPW-10	45	4	10	43	1.4	1.5	4.5	30
PPW-12	50	5	12	48	2	2	6.5	40
PPW-16	70	8	16	50	2	2	8.5	85
PPW-24	80	12	24	60	2.9	3	13	230
PPW-30	100	15	30	70	2.4	3.5	16.5	400

● Part number specification

PPW-5

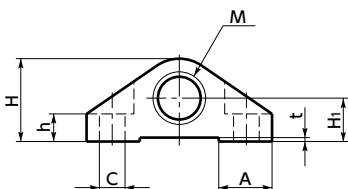
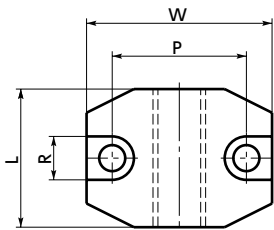
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Cleanroom Wash & Packaging → P.807 Vibration Resistant → P.810 Laser Marking → P.821

Not Available Not Available Not Available

PHL Plunger Holder

WEB Selection Tool WEB CAD Download SUS Stainless steel



● Holder for mounting plunger.

● Material/Finish

RoHS2 Compliant

	PHL
Main body	Equivalent to SUS303

Unit : mm												
Part Number	M (coarse)	L	H	H ₁	h	W	A	t	P	R	C	Mass (g)
PHL-M5-A	M5	20	10.5	5.5	4.8	23	6.5	0.5	17	6	3.4	21
PHL-M6-A	M6	20	10.5	5.5	4.8	23	6.5	0.5	17	6	3.4	20
PHL-M8-A	M8	26	15.5	8	6	34	11	1	25	8	4.5	54
PHL-M10-A	M10	26	15.5	8	6	34	11	1	25	8	4.5	52
PHL-M12-A	M12	35	21	11	7	47	13.5	1	34	11	6.6	135
PHL-M16-A	M16	35	21	11	7	47	13.5	1	34	11	6.6	130

● Part number specification

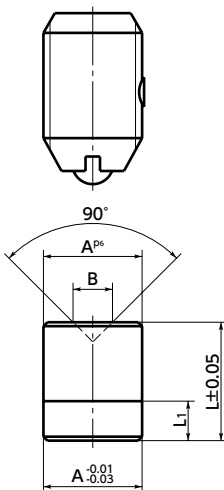
PHL - M6 - A

Product Code Product Code

Cleanroom Wash & Packaging → P.807	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Not Available	Not Available

BB Ball Button

WEB Selection Tool WEB CAD Download



- Use this for the recipient that requires abrasion resistance and accurate locating.
- Especially effective for plungers for heavy load.
- It can be used for pin type plungers, as well as ball type plungers.
- For applicable ball button, please refer to each product page of the plungers.
- Heat treatment and polishing applied. It is easy to press fit or press.
- Machine the holes for ball button **BB** mounting so that they are transition fit or stationary fit.

● Material/Finish

RoHS2 Compliant

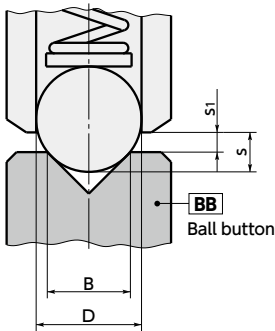
	BB
Main body	SK4 (hardness: 60 - 62 HRC) - Polishing

Unit : mm					
Part Number	A	L	L ₁	B	Mass (g)
BB-4	4	5	2	1.5	0.5
BB-5	5	6	2	2	1
BB-6	6	8	2	2	2
BB-8	8	10	2	3	4
BB-10	10	12	3	4	6.5
BB-12	12	14	3	6	12
BB-16	16	18	3	8	26

● Effective stroke s_1 formula

- If $D \leq \sqrt{2} B$
$$s_1 = s - \left(\frac{D+B}{2} - \frac{\sqrt{2}}{2} D \right)$$
- If $D > \sqrt{2} B$
$$s_1 = s - \frac{D - \sqrt{D^2 - B^2}}{2}$$

s_1 : Effective stroke
 s : Total stroke of the plunger
 D : Diameter of plunger ball or pin
 B : Diameter of recipient hole of the ball button **BB**

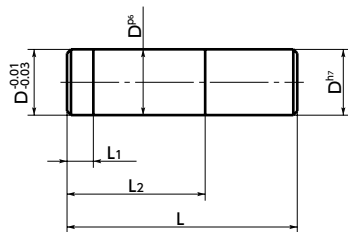


● Part number specification

BB - 4

Product Code Product Code

Cleanroom Wash & Packaging → P.807	Vibration Resistant → P.810	Laser Marking → P.821
Not Available	Not Available	Not Available

PJP Locating PinWEB Selection
ToolWEB CAD
Download

- Parallel pin for locating.
- Stepped type with different dimensional allowance at both ends.
- Bushing for locating pin **PJA** (⇒ P.496)
Use it in combination with **PJB** (⇒ P.497).

• Material/Finish RoHS2 Compliant	
	PJP
Main body	SUJ2 (hardness: 58 HRC or above) - Polishing

Part Number	D 1			L 2	L1	L2	Mass (g)
		p6	h7				
PJP-3-10	3	+0.012 +0.006	0 -0.010	10	1	7	0.6
PJP-3-15	3	+0.012 +0.006	0 -0.010	15	1	10	0.8
PJP-3-20	3	+0.012 +0.006	0 -0.010	20	1	13	1.1
PJP-4-10	4	+0.020 +0.012	0 -0.012	10	1.5	7	1
PJP-4-15	4	+0.020 +0.012	0 -0.012	15	1.5	10	1.5
PJP-4-20	4	+0.020 +0.012	0 -0.012	20	1.5	13	2
PJP-5-10	5	+0.020 +0.012	0 -0.012	10	1.5	7	1.6
PJP-5-15	5	+0.020 +0.012	0 -0.012	15	1.5	10	2.4
PJP-5-18	5	+0.020 +0.012	0 -0.012	18	1.5	12	2.8
PJP-5-20	5	+0.020 +0.012	0 -0.012	20	1.5	13	3.1
PJP-6-10	6	+0.020 +0.012	0 -0.012	10	1.5	7	2.3
PJP-6-15	6	+0.020 +0.012	0 -0.012	15	1.5	10	3.4
PJP-6-18	6	+0.020 +0.012	0 -0.012	18	1.5	12	4.1
PJP-6-20	6	+0.020 +0.012	0 -0.012	20	1.5	13	4.5
PJP-8-20	8	+0.024 +0.015	0 -0.015	20	2	13	8
PJP-8-25	8	+0.024 +0.015	0 -0.015	25	2	16	10
PJP-8-30	8	+0.024 +0.015	0 -0.015	30	2	19	12
PJP-10-25	10	+0.024 +0.015	0 -0.015	25	2	16	16
PJP-10-30	10	+0.024 +0.015	0 -0.015	30	2	19	19
PJP-12-40	12	+0.029 +0.018	0 -0.018	40	2	25	36

- Part number specification

PJP-5-15Product Code 1 2

Cleanroom Wash & Packaging → P.807

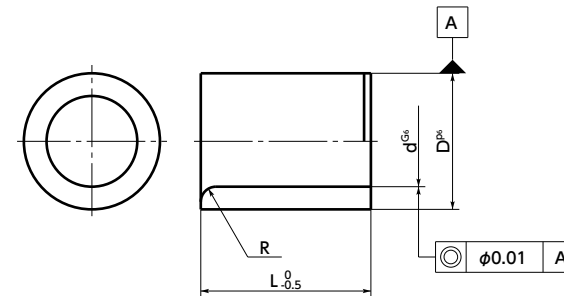
Not Available

Vibration Resistant → P.810

Not Available

Laser Marking → P.821

Not Available

PJA Bushing for Locating Pin - Straight TypeWEB Selection
ToolWEB CAD
Download

- Use it in combination with stepped locating pin **PJP** (⇒ P.495).

- Material/Finish RoHS2 Compliant

PJA	
Main body	SK5 (hardness: 60 HRC or above)

Part Number	d 1	L 2							D	R	Applicable positioning pin PJP ⇒ P.495	Mass (g)
		6	8	10	12	16	20	25				
PJA-3	3								7	0.8	PJP-3-**	1.5 - 3
PJA-4	4								8	1	PJP-4-**	2.5 - 4.8
PJA-5	5								10	1	PJP-5-**	3.8 - 7.5
PJA-6	6								10	1	PJP-6-**	3.2 - 6.4
PJA-8	8								12	2	PJP-8-**	5 - 10
PJA-10	10								15	2	PJP-10-**	7.8 - 16
PJA-12	12								18	2	PJP-12-**	19 - 28

- Part number specification

PJA-5-12Product Code 1 2

Cleanroom Wash & Packaging → P.807

Not Available

Vibration Resistant → P.810

Not Available

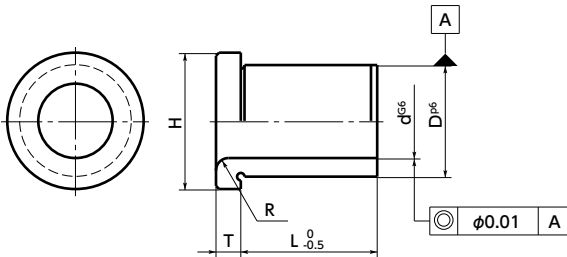
Laser Marking → P.821

Not Available

PJB Bushing for Locating Pin - Flange Type

WEB Selection Tool

WEB CAD Download



- Use it in combination with stepped locating pin **PJP** (⇒ P.495).
- Material/Finish RoHS2 Compliant

	PJB
Main body	SK5 (hardness: 60 HRC or above)

Unit : mm													
Part Number	d 1	L 2						D	R	H	T	Applicable positioning pin PJP ⇒ P.495	Mass (g)
PJB-3	3	6	8	10	12			7	0.8	11	2.5	PJP-3-**	3.3 - 4.8
PJB-4	4		8	10	12	16		8	1	12	3	PJP-4-**	4.8 - 7.2
PJB-5	5		8	10	12	16		10	1	14	3	PJP-5-**	7 - 11
PJB-6	6		8	10	12	16		10	1	14	3	PJP-6-**	6.2 - 9.5
PJB-8	8			10	12	16	20	12	2	16	4	PJP-8-**	9.9 - 15
PJB-10	10			10	12	16	20	15	2	19	4	PJP-10-**	14 - 22
PJB-12	12					16	20	18	2	22	4	PJP-12-**	27 - 37

- Part number specification
PJB - 6 - 16

Product Code	1	2
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Cleanroom Wash & Packaging ⇒ P.807	Vibration Resistant ⇒ P.810	Laser Marking ⇒ P.821
Not Available	Not Available	Not Available



<https://www.nbk1560.com/>

Structure Components

● Plate for fixing DIN Rail

Product Code	EDP
Page	P.500
Shape	
Characteristics	Bracket for DIN Rail

● Stud Bolt/ Joint Nut

Product Code	SHS	SJN/SJNS
Page	P.505	P.506
Shape		 Stainless Steel
Nominal Diameter of Thread	M4 - M16	M2.5 - M20
Applicable Roller Chain Nominal Number	—	—

● Hexagon Post/Spring Post

Product Code	SHA-EL/SHAS	SHB-EL/SHBS	SPOS
Page	P.509	P.510	P.511
Shape		 Stainless Steel	 Stainless Steel
Characteristics	One-side Male Screw One-side Female Screw	Both-side Female Screw	For Tensile Coil Spring
Nominal Diameter of Thread	M3 - M8	M3 - M8	M3 - M12

● Roller Chain Bolt/Roller Chain Nut

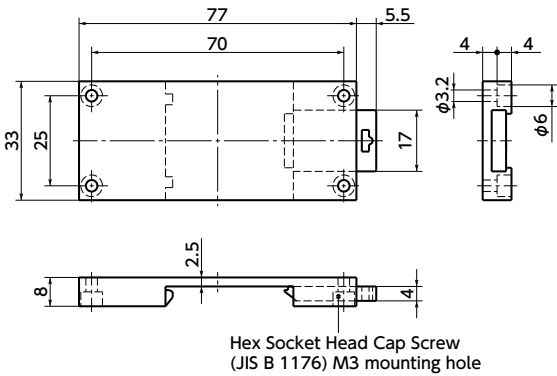
Product Code	SRC	SRCS	SRF/SRFS
Page	P.501	P.503	P.504
Shape		 Stainless Steel	 Stainless Steel
Nominal Diameter of Thread	M2.5 - M20	M2.5 - M20	M6 - M20
Applicable Roller Chain Nominal Number	No. 11 - No. 100	No. 11 - No. 100	No. 35 - No. 100

● Turn Buckle

Product Code	STR/STRS	STB
Page	P.507	P.508
Shape	 Stainless Steel	
Nominal Diameter of Thread	—	M4 - M16
Applicable Roller Chain Nominal Number	No. 11 - No. 100	—

EDP Plate for fixing DIN Rail

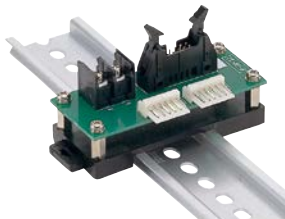
WEB Selection Tool WEB CAD Download



Hex Socket Head Cap Screw (JIS B 1176) M3 mounting hole

Part Number	EDP-70
Mass (g)	15

● Usage example



- The bracket to be assembled to DIN rail.
- Printed board, etc. can be mounted to the DIN rail by one-touch operation.
- It can be mounted by just pressing the DIN rail front face.
- To remove it, pull up the lever or slide it over the rail.
- Use the hex socket head cap screws (JIS B 1176): M3 to mount the work.

Material/Finish	EDP
Main body	Polyacetal (Black)
Spring	SUS631J1

RoHS2 Compliant

● Part number specification

EDP-70

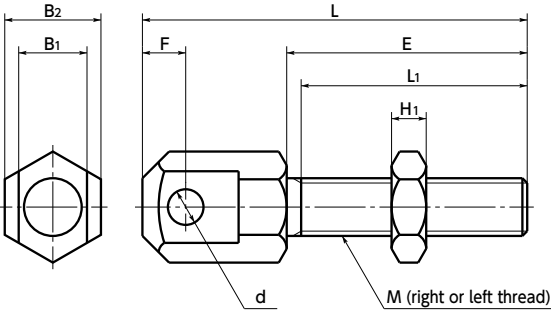


Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Not Available	Not Available	Please feel free to contact us

Machine Elements
Levers
Knobs
Pulls
Mounting Systems for Display
Set Collars
Cross Clampers
Handles
Grips
Scales
Stages
Ball Rollers
Plungers
Structure Components
Screws

SRC Roller Chain Bolt

WEB Selection Tool
WEB CAD Download



- Wide variations from roller chain nominal diameter No. 11 through 100.
- Right thread or left thread can be selected according to the end symbol of the part number. **3**
- **SRC-R** — Right thread
- **SRC-L** — Left thread
- All products are provided with hexagon nuts (3 types).
- For linkage with a roller chain, a roller chain joint link or offset link is required.

	SRC	RoHS2 Compliant
Main body	S45C (hardness: 35 - 40 HRC) Ferrosoferric Oxide Film (Black)	
Nut	SS400 Ferrosoferric Oxide Film (Black)	

- ⚠ **Precautions for Use**
- If a roller chain bolt is used for a suspension device, implement safety measures to keep people off from beneath the device.
- Roller chain bolts are consumables. Regular inspection and replacement are necessary.
- The max. loads indicated in the dimension table are tensile values.

Related Products

A nut type roller chain nut **SRF** is available.
➔ P.504



Use a turn buckle **STR** **STB** for chain tension adjustment.
STR ➔ P.507 **STB** ➔ P.508



Part number specification

SRC- 25 - 18 - L
Product Code **1** **2** **3**

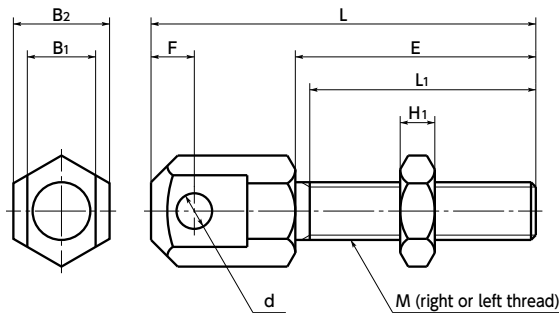
SRC-R Right thread		SRC-L Left thread												Unit : mm
Part Number	Applicable Roller Chain Nominal Number 1	E 2	M (coarse)	L ₁	L	F	d	B ₁	B ₂	H ₁	Max. load (N)	Mass (g)		
SRC-11-10-R	11	10	M2.5	9.1	17.2	1.8	1.7	2.4	5	1.6	300	1.8		
SRC-11-15-R	11	15	M2.5	14.1	22.2	1.8	1.7	2.4	5	1.6	300	2		
SRC-11-20-R	11	20	M2.5	19.1	27.2	1.8	1.7	2.4	5	1.6	300	2.2		
SRC-15-12-R	15	12	M3	10	20.6	2.2	1.7	3.4	6	1.8	440	2.8		
SRC-15-18-R	15	18	M3	16	26.6	2.2	1.7	3.4	6	1.8	440	3.1		
SRC-15-25-R	15	25	M3	23	33.6	2.2	1.7	3.4	6	1.8	440	3.5		
SRC-25-18-R	25	18	M4	16.5	28.2	3	2.4	4.8	7	2.4	780	5		
SRC-25-25-R	25	25	M4	23.5	35.2	3	2.4	4.8	7	2.4	780	6		
SRC-25-40-R	25	40	M4	38.5	50.2	3	2.4	4.8	7	2.4	780	7		
SRC-35-25-R	35	25	M6	23.5	40	4.5	3.7	7.4	10	3.6	1960	12		
SRC-35-32-R	35	32	M6	30.5	47	4.5	3.7	7.4	10	3.6	1960	14		
SRC-35-55-R	35	55	M6	53.5	70	4.5	3.7	7.4	10	3.6	1960	18		
SRC-40-33-R	40	33	M8	31	52.5	6	4	11.2	13	5	3530	30		
SRC-40-40-R	40	40	M8	38	59.5	6	4	11.2	13	5	3530	33		
SRC-40-70-R	40	70	M8	68	89.5	6	4	11.2	13	5	3530	44		
SRC-50-41-R	50	41	M10	39	65	7.5	5.2	13.8	17	6	5680	60		
SRC-50-50-R	50	50	M10	48	74	7.5	5.2	13.8	17	6	5680	66		
SRC-50-75-R	50	75	M10	73	99	7.5	5.2	13.8	17	6	5680	80		
SRC-60-49-R	60	49	M12	47	78	9	6	17.8	19	7	8230	100		
SRC-60-63-R	60	63	M12	61	92	9	6	17.8	19	7	8230	120		
SRC-60-100-R	60	100	M12	98	129	9	6	17.8	19	7	8230	150		
SRC-80-60-R	80	60	M16	57	98	12	8	22.6	24	10	15400	210		
SRC-80-80-R	80	80	M16	77	118	12	8	22.6	24	10	15400	240		
SRC-80-115-R	80	115	M16	112	153	12	8	22.6	24	10	15400	300		
SRC-100-70-R	100	70	M20	65	117	15	9.6	27.5	30	12	23900	440		
SRC-100-100-R	100	100	M20	95	147	15	9.6	27.5	30	12	23900	520		
SRC-100-145-R	100	145	M20	140	192	15	9.6	27.5	30	12	23900	630		
SRC-11-10-L	11	10	M2.5	9.1	17.2	1.8	1.7	2.4	5	1.6	300	1.8		
SRC-15-12-L	15	12	M3	10	20.6	2.2	1.7	3.4	6	1.8	440	2.8		
SRC-25-18-L	25	18	M4	16.5	28.2	3	2.4	4.8	7	2.4	780	5		
SRC-35-25-L	35	25	M6	23.5	40	4.5	3.7	7.4	10	3.6	1960	12		
SRC-40-33-L	40	33	M8	31	52.5	6	4	11.2	13	5	3530	30		
SRC-50-41-L	50	41	M10	39	65	7.5	5.2	13.8	17	6	5680	60		
SRC-60-49-L	60	49	M12	47	78	9	6	17.8	19	7	8230	100		
SRC-80-60-L	80	60	M16	57	98	12	8	22.6	24	10	15400	210		
SRC-100-70-L	100	70	M20	65	117	15	9.6	27.5	30	12	23900	440		

Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Laser Marking ➔ P.821
Not Available	Available / Add'l charge	Available / Add'l charge	Not Available

Machine Elements
Levers
Knobs
Pulls
Mounting Systems for Display
Set Collars
Cross Clampers
Handles
Grips
Scales
Stages
Ball Rollers
Plungers
Structure Components
Screws

SRCS Roller Chain Bolt

WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish

	SRCS
Main body	SUS303
Nut	SUS303

RoHS2 Compliant

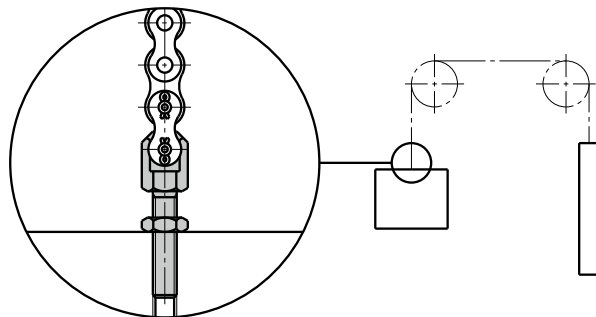
- Wide variations from roller chain nominal diameter No. 11 through 100.
- Right thread or left thread can be selected according to the end symbol of the part number.
 - SRCS-R** Right thread
 - SRCS-L** Left thread
- All products are provided with hexagon nuts (3 types).
- For linkage with a roller chain, a roller chain joint link or offset link is required.

SRCS-R Right thread SRCS-L Left thread

Part Number	Applicable Roller Chain Nominal Number	E	M (coarse)	L1	L	F	d	B1	B2	H1	Max. load (N)	Mass (g)
SRCS-11-10-R	11	10	M2.5	9.1	17.2	1.8	1.7	2.4	5	1.6	240	1.8
SRCS-25-18-R	25	18	M4	16.5	28.2	3	2.4	4.8	7	2.4	680	5
SRCS-35-25-R	35	25	M6	23.5	40	4.5	3.7	7.4	10	3.6	1570	12
SRCS-40-33-R	40	33	M8	31	52.5	6	4	11.2	13	5	2840	30
SRCS-50-41-R	50	41	M10	39	65	7.5	5.2	13.8	17	6	4510	60
SRCS-60-49-R	60	49	M12	47	78	9	6	17.8	19	7	6570	100
SRCS-80-60-R	80	60	M16	57	98	12	8	22.6	24	10	12300	210
SRCS-100-70-R	100	70	M20	65	117	15	9.6	27.5	30	12	19200	440
SRCS-11-10-L	11	10	M2.5	9.1	17.2	1.8	1.7	2.4	5	1.6	240	1.8
SRCS-25-18-L	25	18	M4	16.5	28.2	3	2.4	4.8	7	2.4	680	5
SRCS-35-25-L	35	25	M6	23.5	40	4.5	3.7	7.4	10	3.6	1570	12
SRCS-40-33-L	40	33	M8	31	52.5	6	4	11.2	13	5	2840	30
SRCS-50-41-L	50	41	M10	39	65	7.5	5.2	13.8	17	6	4510	60
SRCS-60-49-L	60	49	M12	47	78	9	6	17.8	19	7	6570	100
SRCS-80-60-L	80	60	M16	57	98	12	8	22.6	24	10	12300	210
SRCS-100-70-L	100	70	M20	65	117	15	9.6	27.5	30	12	19200	440

Usage example

For balance weight connection.



Precautions for Use

- If a roller chain bolt is used for a suspension device, implement safety measures to keep people off from beneath the device.
- Roller chain bolts are consumables. Regular inspection and replacement are necessary.
- The max. loads indicated in the dimension table are tensile values.

Part number specification

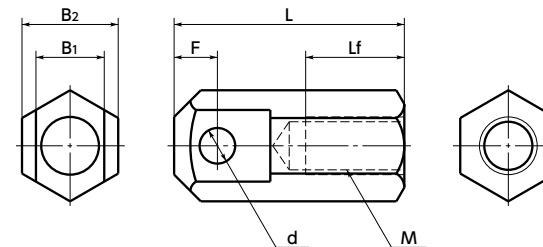
SRCS-40-33-R

Product Code 1 2 3

Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
Available / Add'l charge Available / Add'l charge Available / Add'l charge Not Available

SRF / SRFS Roller Chain Nut

WEB Selection Tool CAD Download SUS Stainless steel



- Please use it for linkage of the roller chain with a machine or device.
- For linkage with a roller chain, a roller chain joint link or offset link is required.

Material/Finish

	SRF Made of Steel	SRFS Made of Stainless Steel
Main body	S45C (hardness: 35 - 45 HRC) Ferrosoferric Oxide Film (Black)	SUS303

RoHS2 Compliant

Precautions for Use

- If a roller chain nut is used for a suspension device, implement safety measures to keep people off from beneath the device.
- Roller chain nuts are consumables. Regular inspection and replacement are necessary.
- The max. loads indicated in the dimension table are tensile values.

Part Number	Max. load (N)	Part Number	Max. load (N)	Applicable Roller Chain Nominal Number	M (Coarse)	Lf	L	F	d	B1	B2	Mass (g)
SRF-35	1960	SRFS-35	1570	35	M6	10	24	4.5	3.7	7.4	10	12
SRF-40	3530	SRFS-40	2840	40	M8	14	30	6	4	11.2	13	25
SRF-50	5680	SRFS-50	4510	50	M10	15	38	7.5	5.2	13.8	17	54
SRF-60	8230	SRFS-60	6570	60	M12	18	42	9	6	17.8	19	75
SRF-80	15400	SRFS-80	12300	80	M16	20	52	12	8	22.6	24	148
SRF-100	23900			100	M20	25	65	15	9.6	27.5	30	292

Part number specification

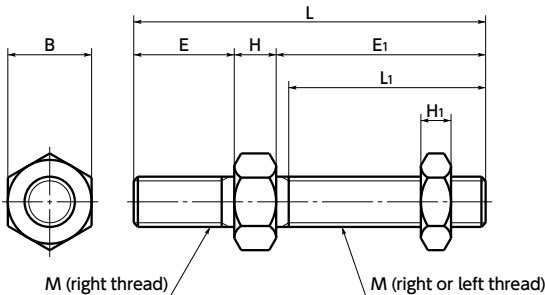
SRFS-35

1

Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Laser Marking → P.821
S.S. only/ Add'l charge Not Available Not Available Not Available

SHS Hexagon Stud Bolt

WEB Selection Tool WEB CAD Download



- For rod end shaft bearing height adjustment, etc.
- Right thread or left thread can be selected according to the end symbol of the part number.

SHS-R — Right thread

SHS-L — Left thread

- All products are provided with hexagon nuts (3 types).

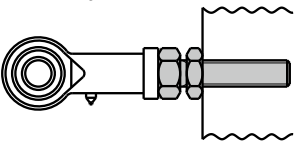
- Material/Finish

	SHS
Main body	S45C (hardness: 35 - 40 HRC) Ferrosoferric Oxide Film (Black)
Nut	SS400 Ferrosoferric Oxide Film (Black)

SHS-R Right thread **SHS-L** Left thread

Part Number	M (coarse)	L ₁	E ₁	E	H	H ₁	L	B	Mass (g)
SHS-M4-R	M4	16.5	18	8	3.2	2.4	29.2	7	4
SHS-M6-R	M6	23.5	25	12	5	3.6	42	10	10
SHS-M8-R	M8	31	33	16	6.5	5	55.5	13	25
SHS-M10-R	M10	39	41	20	8	6	69	17	45
SHS-M12-R	M12	47	49	24	10	7	83	19	80
SHS-M16-R	M16	57	60	32	13	10	105	24	170
SHS-M4-L	M4	16.5	18	8	3.2	2.4	29.2	7	4
SHS-M6-L	M6	23.5	25	12	5	3.6	42	10	10
SHS-M8-L	M8	31	33	16	6.5	5	55.5	13	25
SHS-M10-L	M10	39	41	20	8	6	69	17	45
SHS-M12-L	M12	47	49	24	10	7	83	19	80
SHS-M16-L	M16	57	60	32	13	10	105	24	170

- Usage example
For adjustment of rod end shaft bearing.



- Part number specification

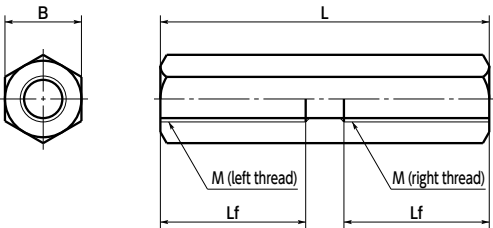
SHS-M10-R

Product Code

Cleanroom Wash & Packaging P.807	Screw Length Adjustment P.811	Vibration Resistant P.810	Laser Marking P.821
Not Available	Available / Add'l charge	Available / Add'l charge	Not Available

SJN / SJNS Joint Nut

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Material/Finish

	SJN Made of Steel	SJNS Made of Stainless Steel
Main body	SUM22L Ferrosoferric Oxide Film (Black)	SUS303

Part Number	Part Number	M (Coarse)	L	Lf	B	Mass (g)
SJN-M2.5	SJNS-M2.5	M2.5	20	8	5	3
SJN-M3		M3	22	9	6	4
SJN-M4	SJNS-M4	M4	33	14	7	8
SJN-M6	SJNS-M6	M6	43	19	10	20
SJN-M8	SJNS-M8	M8	55	25	13	45
SJN-M10	SJNS-M10	M10	67	31	17	95
SJN-M12	SJNS-M12	M12	81	38	19	130
SJN-M16	SJNS-M16	M16	95	45	24	260
SJN-M20	SJNS-M20	M20	105	50	30	390

- Part number specification

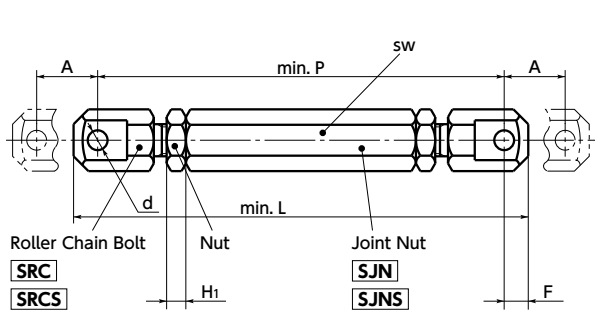
SJN-M12

Cleanroom Wash & Packaging P.807	Screw Length Adjustment P.811	Vibration Resistant P.810	Laser Marking P.821
S.S. only/ Add'l charge	Not Available	Not Available	Please feel free to contact us

STR / STRS Turn Buckle - Dedicated to Roller Chain



WEB Selection Tool WEB CAD Download SUS Stainless steel



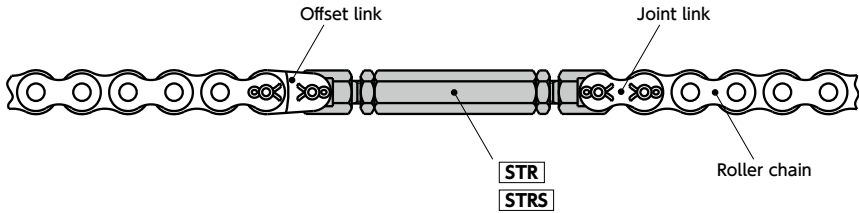
- For chain tension adjustment.
- Use the same thread fitting length for both-side roller chain bolt **SRC** **SRCs**.
- For linkage with a roller chain, a roller chain joint link or offset link is required.
- Material/Finish RoHS2 Compliant

	STR	STRS
	Made of Steel	Made of Stainless Steel
Joint Nut SJN SJNS	SUM22L Ferrosoferric Oxide Film (Black)	SUS303
Roller Chain Bolt SRC SRCs	S45C (hardness: 35 - 45 HRC) Ferrosoferric Oxide Film (Black)	SUS303
Nut	SS400 Ferrosoferric Oxide Film (Black)	SUS303

Part Number Steel	Part Number Stainless steel	Applicable Roller Chain Nominal Number	min.L	min.P	A	sw	d	H ₁	F	Mass (g)
STR-11	STRS-11	11	40	36.4	4	5	1.4	2.4	1.8	6.6
STR-15		15	46	41.6	5	6	1.6	2.4	2.2	9.6
STR-25	STRS-25	25	62	56	7.5	7	2.4	2.4	3	18
STR-35	STRS-35	35	85	76	10	10	3.7	3.6	4.5	44
STR-40	STRS-40	40	110	98	13	13	4.1	5	6	105
STR-50	STRS-50	50	135	120	16	17	5.2	6	7.5	215
STR-60	STRS-60	60	161	143	20	19	6.1	7	9	330
STR-80	STRS-80	80	201	177	21	24	8.1	10	12	680
STR-100	STRS-100	100	239	209	20	30	9.7	12	15	1270

• For detailed dimensions, refer to roller chain bolt **SRC** (⇒ P.501) **SRCs** (⇒ P.503) and joint nut **SJN** **SJNS** (⇒ P.506).

- Usage example



- Part number specification

STR-25

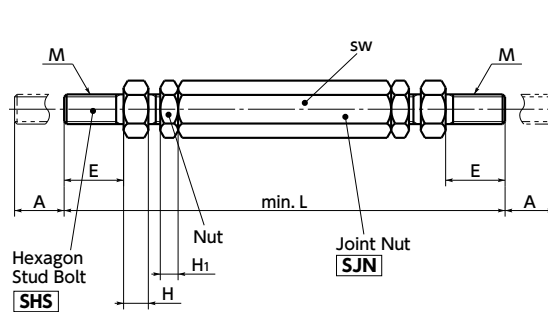


Cleanroom Wash & Packaging ⇒ P.807	Screw Length Adjustment ⇒ P.811	Vibration Resistant ⇒ P.810	Laser Marking ⇒ P.821
S.S. only/ Add'l charge	Not Available	Not Available	Please feel free to contact us

STB Turn Buckle - General Purpose Male Screw Type



WEB Selection Tool WEB CAD Download



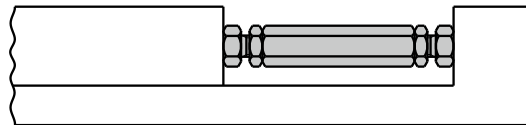
- For slide position adjustment, etc.
- Use the same thread fitting length for both-side hexagon stud bolt **SHS**.

	STB
Joint Nut SJN	SUM22L Ferrosoferric Oxide Film (Black)
Hex Stud Bolts SHS	S45C (hardness: 35 - 45 HRC) Ferrosoferric Oxide Film (Black)
Nut	SS400 Ferrosoferric Oxide Film (Black)

Part Number	M (Coarse)	min.L	E	A	sw	H	H ₁	Mass (g)
STB-M4	M4	64	8	7.5	7	3.2	2.4	16
STB-M6	M6	89	12	10	10	5	3.6	40
STB-M8	M8	116	16	13	13	6.5	5	115
STB-M10	M10	143	20	16	17	8	6	185
STB-M12	M12	171	24	20	19	10	7	290
STB-M16	M16	217	32	21	24	13	10	600

• For detailed dimensions, refer to hexagon stud bolt **SHS** (⇒ P.505) and joint nut **SJN** (⇒ P.506).

- Usage example



- Part number specification

STB-M6

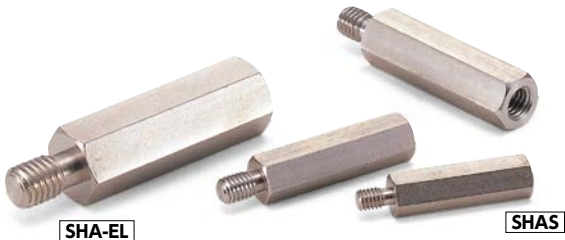
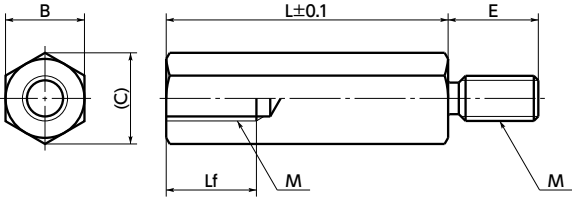


Cleanroom Wash & Packaging ⇒ P.807	Screw Length Adjustment ⇒ P.811	Vibration Resistant ⇒ P.810	Laser Marking ⇒ P.821
Not Available	Available / Add'l charge	Available / Add'l charge	Please feel free to contact us

SHA-EL / SHAS Hexagon Post



WEB Selection Tool WEB CAD Download SUS Stainless steel



- Hexagon post for one side is male screw and the other side is female screw.
- Two or more hexagon posts can be used in combination.
- Material/Finish RoHS2 Compliant

	SHA-EL Made of Steel	SHAS Made of Stainless Steel
Main body	SUM22L Electroless Nickel Plating	SUS304

Dimensions

Part Number Steel	Part Number Stainless steel	M (coarse thread)	B	C	E	Lf	Mass (g)
SHA-M3-EL	SHAS-M3	M3	6	6.9	4.5	6	3.5 - 9.6
SHA-M4-EL	SHAS-M4	M4	7	8.1	6	8	6.4 - 26
SHA-M5-EL	SHAS-M5	M5	8	9.2	7.5	10	8.2 - 42
SHA-M6-EL	SHAS-M6	M6	10	11.5	9	12	16 - 100
SHA-M8-EL	SHAS-M8	M8	13	15	12	16	38 - 170

SHA-EL Made of Steel SHAS Made of Stainless Steel

Part Number	L (mm)	15	20	25	30	35	40	45	50	60	70	80	90	100	120	150
SHA-M3-EL		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHA-M4-EL			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHA-M5-EL			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHA-M6-EL				●	●	●	●	●	●	●	●	●	●	●	●	●
SHA-M8-EL					●	●	●	●	●	●	●	●	●	●	●	●
SHAS-M3		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHAS-M4			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHAS-M5			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHAS-M6				●	●	●	●	●	●	●	●	●	●	●	●	●
SHAS-M8					●	●	●	●	●	●	●	●	●	●	●	●

- Part number specification

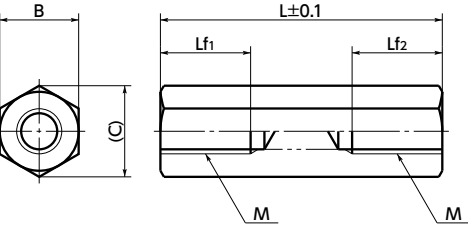
SHA-M5-80-EL

Cleanroom Wash & Packaging P.807	Screw Length Adjustment P.811	Vibration Resistant P.810	Laser Marking P.821
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SHB-EL / SHBS Hexagon Post



WEB Selection Tool WEB CAD Download SUS Stainless steel



- Hexagon post for both-side female screw.
- Material/Finish RoHS2 Compliant

	SHB-EL Made of Steel	SHBS Made of Stainless Steel
Main body	SUM22L Electroless Nickel Plating	SUS304

Dimensions

Part Number Steel	Part Number Stainless steel	M (coarse thread)	B	C	Lf1	Lf2	Mass (g)
SHB-M3-EL	SHBS-M3	M3	6	6.9	6	6	2.9 - 9
SHB-M4-EL	SHBS-M4	M4	7	8.1	8	8	5 - 25
SHB-M5-EL	SHBS-M5	M5	8	9.2	10	10	5.5 - 40
SHB-M6-EL	SHBS-M6	M6	10	11.5	12	12	11 - 98
SHB-M8-EL	SHBS-M8	M8	13	15	16	16	27 - 168

SHB-EL Made of Steel SHBS Made of Stainless Steel

Part Number	L (mm)	15	20	25	30	35	40	45	50	60	70	80	90	100	120	150
SHB-M3-EL		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHB-M4-EL			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHB-M5-EL			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHB-M6-EL				●	●	●	●	●	●	●	●	●	●	●	●	●
SHB-M8-EL					●	●	●	●	●	●	●	●	●	●	●	●
SHBS-M3		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHBS-M4			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHBS-M5			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHBS-M6				●	●	●	●	●	●	●	●	●	●	●	●	●
SHBS-M8					●	●	●	●	●	●	●	●	●	●	●	●

- Part number specification

SHB-M4-40-EL

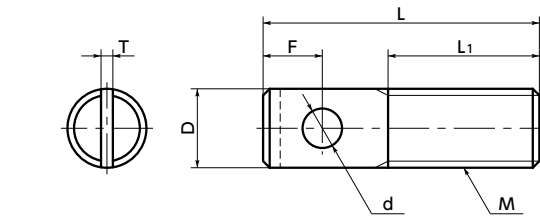
Cleanroom Wash & Packaging P.807	Screw Length Adjustment P.811	Vibration Resistant P.810	Laser Marking P.821
Available / Add'l charge	Not Available	Not Available	Available / Add'l charge

SPOS Spring Post

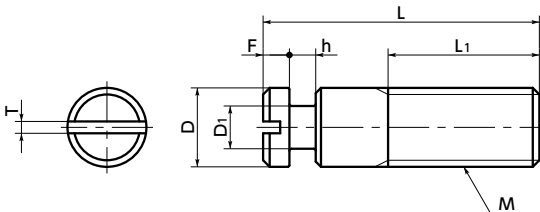
WEB Selection Tool WEB CAD Download SUS Stainless steel



SPOS-A



SPOS-B



SPOS-A

SPOS-B

- Post for tensile coil spring.
- There are bore type and groove type. 3
- SPOS-A Bore type
- SPOS-B Groove type

Material/Finish	SPOS
Main body	SUS303

RoHS2 Compliant

SPOS-A Bore type

Part Number	M (coarse) 1	L 2	L1	D	F	d	T	Mass (g)
SPOS-M3-10-A	M3	10	5	3	3	1.5	1.2	0.6
SPOS-M3-15-A	M3	15	10	3	3	1.5	1.2	0.9
SPOS-M4-15-A	M4	15	10	4	3	2	1.2	1.5
SPOS-M4-20-A	M4	20	10	4	3	2	1.2	2
SPOS-M4-25-A	M4	25	10	4	3	2	1.2	2.5
SPOS-M5-20-A	M5	20	10	5	5	2	1.2	3.5
SPOS-M5-25-A	M5	25	10	5	5	2	1.2	4
SPOS-M5-30-A	M5	30	10	5	5	2	1.2	4.5
SPOS-M6-25-A	M6	25	16	6	5	2	1.2	6.8
SPOS-M6-30-A	M6	30	16	6	5	2	1.2	7.4
SPOS-M6-40-A	M6	40	16	6	5	2	1.2	8

Unit : mm

SPOS-B Groove type

Part Number	M (coarse) 1	L 2	L1	D	D1	F	h	T	Mass (g)
SPOS-M3-15-B	M3	15	10	3	1.8	3	1	1.2	0.8
SPOS-M3-20-B	M3	20	10	3	1.8	3	1	1.2	1.1
SPOS-M3-25-B	M3	25	10	3	1.8	3	1	1.2	1.4
SPOS-M3-30-B	M3	30	10	3	1.8	3	1	1.2	1.6
SPOS-M3-35-B	M3	35	10	3	1.8	3	1	1.2	1.9
SPOS-M4-15-B	M4	15	10	4	2	3	1.2	1.2	1.5
SPOS-M4-20-B	M4	20	10	4	2	3	1.2	1.2	1.8
SPOS-M4-25-B	M4	25	10	4	2	3	1.2	1.2	2.1
SPOS-M4-30-B	M4	30	10	4	2	3	1.2	1.2	2.4
SPOS-M4-35-B	M4	35	10	4	2	3	1.2	1.2	2.7
SPOS-M4-40-B	M4	40	10	4	2	3	1.2	1.2	3
SPOS-M5-15-B	M5	15	8	5	3	4	2	1.2	3
SPOS-M5-20-B	M5	20	10	5	3	4	2	1.2	3.5
SPOS-M5-25-B	M5	25	10	5	3	4	2	1.2	3.8
SPOS-M5-30-B	M5	30	10	5	3	4	2	1.2	4
SPOS-M5-35-B	M5	35	10	5	3	4	2	1.2	4.3
SPOS-M5-40-B	M5	40	10	5	3	4	2	1.2	4.5
SPOS-M6-15-B	M6	15	7	6	3.6	4	3	1.2	3.2
SPOS-M6-20-B	M6	20	12	6	3.6	4	3	1.2	5
SPOS-M6-25-B	M6	25	16	6	3.6	4	3	1.2	6.8
SPOS-M6-30-B	M6	30	16	6	3.6	4	3	1.2	7
SPOS-M6-35-B	M6	35	16	6	3.6	4	3	1.2	7.1
SPOS-M6-40-B	M6	40	16	6	3.6	4	3	1.2	7.3
SPOS-M6-45-B	M6	45	16	6	3.6	4	3	1.2	7.5
SPOS-M6-50-B	M6	50	16	6	3.6	4	3	1.2	7.7
SPOS-M6-60-B	M6	60	16	6	3.6	4	3	1.2	8
SPOS-M8-20-B	M8	20	11	8	5	4	3	1.2	13
SPOS-M8-25-B	M8	25	16	8	5	4	3	1.2	14
SPOS-M8-30-B	M8	30	20	8	5	4	3	1.2	15
SPOS-M8-35-B	M8	35	20	8	5	4	3	1.2	15.7
SPOS-M8-40-B	M8	40	20	8	5	4	3	1.2	16.3
SPOS-M8-45-B	M8	45	20	8	5	4	3	1.2	17
SPOS-M8-50-B	M8	50	20	8	5	4	3	1.2	17.7
SPOS-M8-60-B	M8	60	20	8	5	4	3	1.2	19
SPOS-M10-35-B	M10	35	22	10	6	4	3	1.2	23
SPOS-M10-40-B	M10	40	25	10	6	4	3	1.2	24
SPOS-M10-45-B	M10	45	25	10	6	4	3	1.2	26.8
SPOS-M10-50-B	M10	50	25	10	6	4	3	1.2	29.5
SPOS-M10-60-B	M10	60	25	10	6	4	3	1.2	35
SPOS-M12-50-B	M12	50	30	12	6.5	4	4	1.8	42
SPOS-M12-60-B	M12	60	30	12	6.5	4	4	1.8	50.5
SPOS-M12-70-B	M12	70	30	12	6.5	4	4	1.8	59

Unit : mm

- Part number specification

SPOS-M6-30-A

Product Code 1 2 3

Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Laser Marking → P.821
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available

● Clamping Screw/Clamping Bolt

Product Code	SCS-R/SCSS-R	SCS-R(INCH)/SCSS-R(INCH)	SCS-N/SCS-BR/SCSS-CE	SCS-F-R	SCS-F-F	SCS-F/SCSS-F
Page	P.515	P.516	P.517	P.519	P.520	P.521
Shape	 <i>Recommendation</i> Stainless Steel	 <i>Recommendation</i> Stainless Steel NEW	 <i>Special Material Balls</i> Stainless Steel	 <i>Fine Screw Threads Recommendation</i> Stainless Steel	 <i>Fine Screw Threads Recommendation</i> Stainless Steel	 <i>Recommendation</i> Stainless Steel
Ball Shape	Full Ball	Full Ball	Full Ball	Full Ball	Flat Ball	Flat Ball
Thread Size	M3 - M16	M3 - M16	M3 - M12	M6 - M12	M6 - M12	M4 - M16

Product Code	SCS-F(INCH)/SCSS-F(INCH)	SCS-FB/SCSS-FB	SCS-GB/SCSS-GB	SCB-R/SCBS-R	SCB-R(INCH)/SCBS-R(INCH)	SCBS-CE
Page	P.522	P.523	P.524	P.525	P.526	P.527
Shape	 <i>Recommendation</i> Stainless Steel NEW	 <i>Recommendation</i> Stainless Steel <i>Additional Size</i>	 <i>Recommendation</i> Stainless Steel <i>Additional Size</i>	 <i>Recommendation</i> Stainless Steel	 <i>Recommendation</i> Stainless Steel NEW	 <i>Special Material Balls</i> Stainless Steel
Ball Shape	Flat Ball	Flat Ball • Reversal Protection	Indented Ball • Reversal Protection	Full Ball	Full Ball	Full Ball
Thread Size	M4 - M16	M6 - M16	M6 - M16	M4 - M16	M4 - M16	M4 - M12

Product Code	SCB-F/SCBS-F	SCB-F(INCH)/SCBS-F(INCH)	SCB-FB/SCBS-FB	SCB-GB/SCBS-GB
Page	P.529	P.530	P.531	P.532
Shape	 <i>Recommendation</i> Stainless Steel	 <i>Recommendation</i> Stainless Steel NEW	 <i>Recommendation</i> Stainless Steel <i>Additional Size</i>	 <i>Recommendation</i> Stainless Steel <i>Additional Size</i>
Ball Shape	Flat Ball	Flat Ball	Flat Ball • Reversal Protection	Indented Ball • Reversal Protection
Thread Size	M4 - M16	M4 - M16	M6 - M16	M6 - M16

● Ball Shape of Clamping Screw/Clamping Bolt



Full Ball



Flat Ball

Flat Ball/with Reversal
Protection MechanismIndented Ball/with Reversal
Protection Mechanism

● Stopper Bolt/Stopper Screw

Product Code	SSB-A	SSB-B/SSBS-B	SUB	SUS	SAN-B/SANS-B
Page	P.537	P.538	P.539	P.540	P.541
Shape	 <i>Recommendation</i>	 <i>Recommendation</i> Stainless Steel			 <i>Fine Screw Threads</i> Stainless Steel
Characteristics	Screw Tip Quenching	Hexagon Head Quenching	With Urethane Pad	With Urethane Pad	Screw Tip Quenching
Thread Size	M4 - M16	M3 - M16	M4 - M10	M4 - M10	M4 - M16

● Accessory for Stopper Bolt/Stopper Screw

Product Code	SBN	SPM
Page	P.542	P.543
Shape		
Product name	Locating Blocks	Stop Pins
Usage	For Securing the Stopper Bolt	Recipient of SSB SAN
Thread Size	—	M3 - M12

● Positioning

Product Code	SAT	SAK-A/SAK-B
Page	P.544	P.545
Shape		
Product name	Adjust Bolt	Blocks for Adjust Bolts
Usage	Positioning • Centering	For Fixing SAT
Thread Size	M6 - M12	—

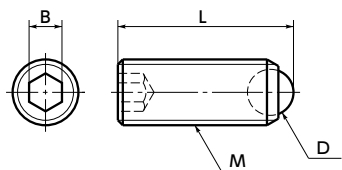
● Screw Adaptor

Product Code	SADS-LC	SADS-RF	SADS-SD	SAD-FT/SADS-FT
Page	P.533	P.534	P.535	P.536
Shape	 <i>Recommendation</i> Stainless Steel	 <i>Recommendation</i> Stainless Steel	 <i>Recommendation</i> Stainless Steel	 <i>Recommendation</i> Stainless Steel
Conversion Type	Left threads	Fine Screw Threads	Threads with Different Diameters	Long threads
Thread Size	M4 - M10	M4 - M10	M4 - M12	M4 - M10

SCS-R / SCSS-R Clamping Screw - Full Ball



WEB Selection Tool WEB CAD Download SUS Stainless steel



Material/Finish

RoHS2 Compliant

	SCS-R Made of Steel	SCSS-R Made of Stainless Steel
Thread	SCM435	SUSXM7
Part	Ferrosoferric Oxide Film (Black)	
Ball	SUJ2 (hardness: 55 - 60 HRC)	SUS440C (hardness: 55 - 60 HRC)

Part number specification

SCS-M6-25-R



- Point contact by full ball securely fixes a work.
- For tool holder set screw, pressure piece and stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please feel free to contact our customer service.

Unit : mm

Part Number Steel	Allowable load (N)	Part Number Stainless steel	Allowable load (N)	M (Coarse)	L	D	B	Mass (g)
SCS-M3-5-R	2700	SCSS-M3-5-R	1620	M3	5.2	1.5	1.5	0.3
SCS-M3-10-R	2700	SCSS-M3-10-R	1620	M3	10.2	1.5	1.5	0.6
SCS-M4-6-R	3500	SCSS-M4-6-R	2040	M4	6.5	2.5	2	0.4
SCS-M4-10-R	3500	SCSS-M4-10-R	2040	M4	10.5	2.5	2	0.7
SCS-M4-16-R	3500	SCSS-M4-16-R	2040	M4	16.5	2.5	2	1
SCS-M5-8-R	5000	SCSS-M5-8-R	3000	M5	8.6	3	2.5	0.8
SCS-M5-12-R	5000	SCSS-M5-12-R	3000	M5	12.6	3	2.5	1.3
SCS-M5-20-R	5000	SCSS-M5-20-R	3000	M5	20.6	3	2.5	2.3
SCS-M6-10-R	9000	SCSS-M6-10-R	4500	M6	10.8	4	3	1.5
SCS-M6-16-R	9000	SCSS-M6-16-R	4500	M6	16.8	4	3	2.5
SCS-M6-20-R	9000	SCSS-M6-20-R	4500	M6	20.8	4	3	3.4
SCS-M6-25-R	9000	SCSS-M6-25-R	4500	M6	25.8	4	3	4
SCS-M8-10-R	15000	SCSS-M8-10-R	9000	M8	11.2	5.5	4	2.5
SCS-M8-12-R	15000	SCSS-M8-12-R	9000	M8	13.2	5.5	4	3.2
SCS-M8-20-R	15000	SCSS-M8-20-R	9000	M8	21.2	5.5	4	5.7
SCS-M8-25-R	15000	SCSS-M8-25-R	9000	M8	26.2	5.5	4	7.7
SCS-M8-30-R	15000	SCSS-M8-30-R	9000	M8	31.2	5.5	4	9
SCS-M10-12-R	24000	SCSS-M10-12-R	14400	M10	13.7	7	5	5
SCS-M10-16-R	24000	SCSS-M10-16-R	14400	M10	17.7	7	5	7
SCS-M10-20-R	24000	SCSS-M10-20-R	14400	M10	21.7	7	5	9.5
SCS-M10-25-R	24000	SCSS-M10-25-R	14400	M10	26.7	7	5	11
SCS-M10-35-R	24000	SCSS-M10-35-R	14400	M10	36.7	7	5	16
SCS-M12-16-R	30000	SCSS-M12-16-R	18000	M12	18	8.5	6	10
SCS-M12-20-R	30000	SCSS-M12-20-R	18000	M12	22	8.5	6	12.5
SCS-M12-30-R	30000	SCSS-M12-30-R	18000	M12	32	8.5	6	20
SCS-M12-40-R	30000	SCSS-M12-40-R	18000	M12	42	8.5	6	28
SCS-M16-20-R	73000	SCSS-M16-20-R	43800	M16	23.3	12	8	22
SCS-M16-25-R	73000	SCSS-M16-25-R	43800	M16	28.3	12	8	28
SCS-M16-35-R	73000	SCSS-M16-35-R	43800	M16	38.3	12	8	41
SCS-M16-50-R	73000	SCSS-M16-50-R	43800	M16	53.3	12	8	48

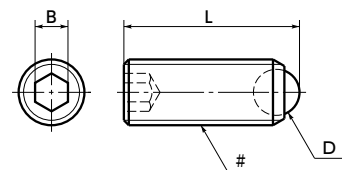
Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810
Please feel free to contact us	Available / Add'l charge	Not Available	Available / Add'l charge

SCS-R(INCH) / SCSS-R(INCH) Clamping Screws - Full Ball (Inch Thread)

NEW



WEB Selection Tool WEB CAD Download



- Point contact by the full ball securely fixes the workpiece.
- For tool holder set screws, pressure pieces and stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please contact our customer service.

Material/Finish

RoHS2 Compliant

	SCS-R(INCH) Made of Steel	SCSS-R(INCH) Made of Stainless Steel
Thread	Alloy steel	
Part	Ferrosoferric Oxide Film (Black)	Equivalent to SUS304
Ball	SUJ2 (Hardness: 55 - 60 HRC)	SUS440C (Hardness: 55 - 60 HRC)

Unit : Inch

Part Number Steel	Part Number Stainless Steel	# Nominal of Thread	L	D	B	Mass (g)
SCS-#6-32-1 / 4-R	SCSS-#6-32-1 / 4-R	No.6-32UNC	0.260	0.059	1 / 16	0.4
SCS-#8-32-3 / 8-R	SCSS-#8-32-3 / 8-R	No.8-32UNC	0.394	0.098	5 / 64	0.8
SCS-#10-24-1 / 2-R	SCSS-#10-24-1 / 2-R	No.10-24UNC	0.528	0.118	3 / 32	1.4
SCS-#10-24-5 / 8-R	SCSS-#10-24-5 / 8-R	No.10-24UNC	0.654	0.118	3 / 32	1.8
SCS-#10-32-1 / 2-R	SCSS-#10-32-1 / 2-R	No.10-32UNF	0.528	0.118	3 / 32	1.6
SCS-#10-32-5 / 8-R	SCSS-#10-32-5 / 8-R	No.10-32UNF	0.654	0.118	3 / 32	1.9
SCS-1 / 4-20-1 / 2-R	SCSS-1 / 4-20-1 / 2-R	1/4-20UNC	0.531	0.157	1 / 8	2.6
SCS-1 / 4-20-5 / 8-R	SCSS-1 / 4-20-5 / 8-R	1/4-20UNC	0.657	0.157	1 / 8	3.2
SCS-5 / 16-18-1 / 2-R	SCSS-5 / 16-18-1 / 2-R	5/16-18UNC	0.543	0.219	5 / 32	4.4
SCS-5 / 16-18-3 / 4-R	SCSS-5 / 16-18-3 / 4-R	5/16-18UNC	0.795	0.219	5 / 32	6.3
SCS-5 / 16-18-7 / 8-R	SCSS-5 / 16-18-7 / 8-R	5/16-18UNC	0.917	0.219	5 / 32	7.3
SCS-3 / 8-16-5 / 8-R	SCSS-3 / 8-16-5 / 8-R	3/8-16UNC	0.689	0.281	3 / 16	8.0
SCS-3 / 8-16-3 / 4-R	SCSS-3 / 8-16-3 / 4-R	3/8-16UNC	0.815	0.281	3 / 16	9.4
SCS-1 / 2-13-3 / 4-R	SCSS-1 / 2-13-3 / 4-R	1/2-13UNC	0.827	0.313	1 / 4	17.5
SCS-1 / 2-13-1 1 / 2-R	SCSS-1 / 2-13-1 1 / 2-R	1/2-13UNC	1.575	0.313	1 / 4	32.7

- All dimensions are in inches.

Part number specification

SCS-#6-32-1/4-R

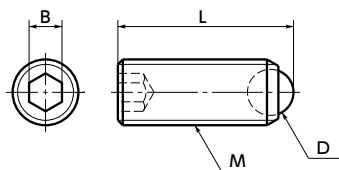


SCS-R(INCH) and SCSS-R(INCH) are sold only for North America.

Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810
Not Available	Available / Add'l charge	Not Available	Available / Add'l charge

SCS-N / SCS-BR / SCSS-CE Clamping Screw - Special Material Full Ball

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Clamping screw with an integral special ball (full ball type).
- Point contact by full ball securely fixes a work.
- For tool holder set screw, pressure piece and stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please feel free to contact our customer service.

● Material/Finish



	SCS-N Plastic Ball	SCS-BR Brass Ball	SCSS-CE Ceramic Ball
Thread Part	SCM435 Ferrosoferric Oxide Film (Black)	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Ball	Polyacetal (hardness: 94 HRM)	Brass (hardness: 75 - 125 HV)	Alumina (purity 99 % or above, hardness 1100 HV)

SCS-N Plastic Ball	SCS-BR Brass Ball	Unit : mm				
Part Number	M (Coarse)	L	D	B	Mass (g)	
SCS-M3-5-N	M3	5.2	1.5	1.5	0.1	
SCS-M3-10-N	M3	10.2	1.5	1.5	0.3	
SCS-M4-6-N	M4	6.5	2.5	2	0.4	
SCS-M4-10-N	M4	10.5	2.5	2	0.7	
SCS-M4-16-N	M4	16.5	2.5	2	1	
SCS-M5-8-N	M5	8.6	3	2.5	0.8	
SCS-M5-12-N	M5	12.6	3	2.5	1.3	
SCS-M5-20-N	M5	20.6	3	2.5	2.3	
SCS-M6-10-N	M6	10.8	4	3	1.5	
SCS-M6-16-N	M6	16.8	4	3	2.5	
SCS-M6-20-N	M6	20.8	4	3	3.4	
SCS-M6-25-N	M6	25.8	4	3	4	
SCS-M4-6-BR	M4	6.5	2.5	2	0.4	
SCS-M4-10-BR	M4	10.5	2.5	2	0.7	
SCS-M4-16-BR	M4	16.5	2.5	2	1	
SCS-M5-8-BR	M5	8.6	3	2.5	0.8	
SCS-M5-12-BR	M5	12.6	3	2.5	1.3	
SCS-M5-20-BR	M5	20.6	3	2.5	2.3	
SCS-M6-10-BR	M6	10.8	4	3	1.5	
SCS-M6-16-BR	M6	16.8	4	3	2.5	
SCS-M6-20-BR	M6	20.8	4	3	3.4	
SCS-M6-25-BR	M6	25.8	4	3	4	

SCSS-CE Ceramic Ball	Unit : mm				
Part Number	M (Coarse)	L	D	B	Mass (g)
SCSS-M4-6-CE	M4	6.5	2.5	2	0.4
SCSS-M4-10-CE	M4	10.5	2.5	2	0.7
SCSS-M4-16-CE	M4	16.5	2.5	2	1
SCSS-M5-8-CE	M5	8.6	3	2.5	0.8
SCSS-M5-12-CE	M5	12.6	3	2.5	1.3
SCSS-M5-20-CE	M5	20.6	3	2.5	2.3
SCSS-M6-10-CE	M6	10.8	4	3	1.5
SCSS-M6-16-CE	M6	16.8	4	3	2.5
SCSS-M6-25-CE	M6	25.8	4	3	4
SCSS-M8-12-CE	M8	13.2	5.5	4	3.2
SCSS-M8-20-CE	M8	21.2	5.5	4	5.7
SCSS-M8-30-CE	M8	31.2	5.5	4	9
SCSS-M10-16-CE	M10	17.7	7	5	7
SCSS-M10-25-CE	M10	26.7	7	5	11
SCSS-M10-35-CE	M10	36.7	7	5	16
SCSS-M12-20-CE	M12	22	8.5	6	12.5
SCSS-M12-30-CE	M12	32	8.5	6	20
SCSS-M12-40-CE	M12	42	8.5	6	28

● Related Products

Clamping screw have variations such as coarse and fine screw threads, flat ball, indented ball, brass ball and plastic ball, etc.
➔ P.515 - 524



● Part number specification

SCSS-M4-16-CE

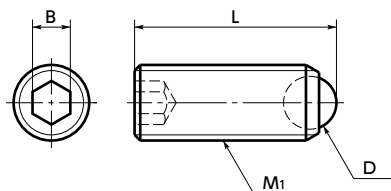


Cleanroom Wash & Packaging ➔ P.807	Screw Combination ➔ P.813	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810
Please feel free to contact us	Available / Add'l charge	Not Available	Available / Add'l charge

SCS-F-R Clamping Screw (Fine Screw Thread) - Full Ball

WEB Selection Tool WEB CAD Download

Recommendation



Material/Finish

RoHS2 Compliant

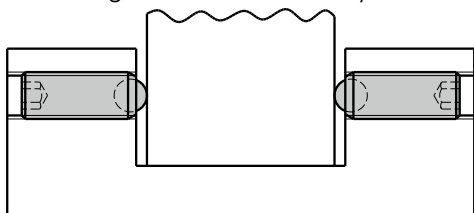
	SCS-F-R
Thread Part	SCM435 Ferrosoferric Oxide Film (Black)
Ball	SUJ2 (hardness: 55 - 60 HRC)

- Clamping screw of the fine screw threaded type for easy fine adjustment of threading amount.
- Point contact by full ball securely fixes a work.
- For tool holder set screw, pressure piece and stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please feel free to contact our customer service.

Part Number	M1 (fine)	L	D	B	Allowable load (N)	Mass (g)
SCS-M6F-10-R	M6×0.75	10.8	4	3	9000	1.5
SCS-M6F-16-R	M6×0.75	16.8	4	3	9000	2.5
SCS-M6F-20-R	M6×0.75	20.8	4	3	9000	3.4
SCS-M6F-25-R	M6×0.75	25.8	4	3	9000	4
SCS-M8F-12-R	M8×1.0	13.2	5.5	4	15000	3.2
SCS-M8F-20-R	M8×1.0	21.2	5.5	4	15000	5.7
SCS-M8F-25-R	M8×1.0	26.2	5.5	4	15000	7.7
SCS-M8F-30-R	M8×1.0	31.2	5.5	4	15000	9
SCS-M10F-16-R	M10×1.0	17.7	7	5	24000	7
SCS-M10F-20-R	M10×1.0	21.7	7	5	24000	9.5
SCS-M10F-25-R	M10×1.0	26.7	7	5	24000	11
SCS-M10F-35-R	M10×1.0	36.7	7	5	24000	16
SCS-M12F-20-R	M12×1.5	22	8.5	6	30000	12.5
SCS-M12F-30-R	M12×1.5	32	8.5	6	30000	20
SCS-M12F-40-R	M12×1.5	42	8.5	6	30000	28

Usage example

For fixing of works that are easily scratched.



Related Products

Clamping screw have variations such as coarse and fine screw threads, flat ball, indented ball, brass ball and plastic ball, etc.
➡ P.515 - 524



Part number specification

SCS-M6F-25-R

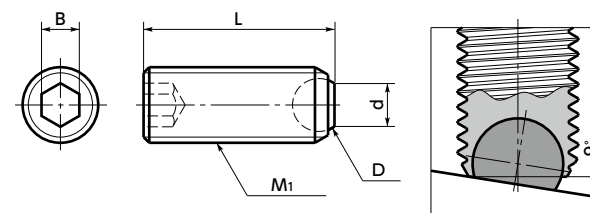


Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810
Not Available	Not Available	Not Available	Available / Add'l charge

SCS-F-F Clamping Screw (Fine Screw Thread) - Flat Ball

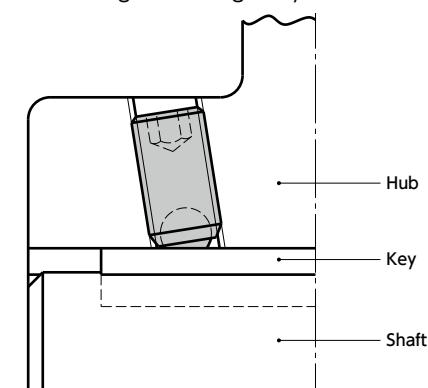
WEB Selection Tool WEB CAD Download

Recommendation



Usage example

For fixing of rotating body hub and shaft.



Part number specification

SCS-M6F-25-F



- Clamping screw of the fine screw threaded type for easy fine adjustment of threading amount.
- Surface contact by a flat ball. This does not scratch the work.
- The ball rotates flexibly by up to 9°. It securely clamps even when the mating part is tilted.
- For tool holder set screw, pressure piece and stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please feel free to contact our customer service.

Material/Finish

RoHS2 Compliant

	SCS-F-F
Thread Part	SCM435 Ferrosoferric Oxide Film (Black)
Ball	SUJ2 (hardness: 55 - 60 HRC)

Related Products

Clamping screw have variations such as coarse and fine screw threads, flat ball, indented ball, brass ball and plastic ball, etc.
➡ P.515 - 524

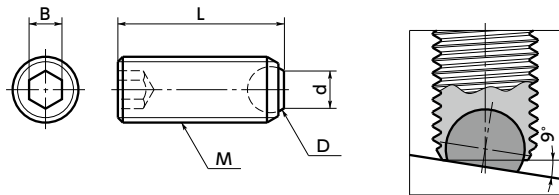


Part Number	M1 (fine)	L	D	d	B	Allowable load (N)	Mass (g)
SCS-M6F-10-F	M6×0.75	10	4	3.2	3	9000	1.5
SCS-M6F-16-F	M6×0.75	16	4	3.2	3	9000	2.5
SCS-M6F-20-F	M6×0.75	20	4	3.2	3	9000	3.4
SCS-M6F-25-F	M6×0.75	25	4	3.2	3	9000	4
SCS-M8F-12-F	M8×1.0	12	5.5	4.5	4	15000	3.2
SCS-M8F-20-F	M8×1.0	20	5.5	4.5	4	15000	5.7
SCS-M8F-25-F	M8×1.0	25	5.5	4.5	4	15000	7.7
SCS-M8F-30-F	M8×1.0	30	5.5	4.5	4	15000	9
SCS-M10F-16-F	M10×1.0	16	7	6	5	24000	7
SCS-M10F-20-F	M10×1.0	20	7	6	5	24000	9.5
SCS-M10F-25-F	M10×1.0	25	7	6	5	24000	11
SCS-M10F-35-F	M10×1.0	35	7	6	5	24000	16
SCS-M12F-20-F	M12×1.5	20	8.5	7.2	6	30000	12.5
SCS-M12F-30-F	M12×1.5	30	8.5	7.2	6	30000	20
SCS-M12F-40-F	M12×1.5	40	8.5	7.2	6	30000	28

Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810
Not Available	Not Available	Not Available	Available / Add'l charge

SCS-F / SCSS-F Clamping Screw - Flat Ball

WEB Selection Tool WEB CAD Download SUS Stainless steel



● Material/Finish

RoHS2 Compliant

	SCS-F Made of Steel	SCSS-F Made of Stainless Steel
Thread	SCM435	SUSXM7
Part	Ferrosoferric Oxide Film (Black)	
Ball	SUJ2 (hardness: 55 - 60 HRC)	SUS440C (hardness: 55 - 60 HRC)

- Surface contact by a flat ball. This does not scratch the work.
- The ball rotates flexibly by up to 9°. It securely clamps even when the mating part is tilted.
- For tool holder set screw, pressure piece and stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please feel free to contact our customer service.

Unit : mm

Part Number Steel	Allowable load (N)	Part Number Stainless steel	Allowable load (N)	M (Coarse)	L	D	d	B	Mass (g)
SCS-M4-6-F	3500	SCSS-M4-6-F	2040	M4	6	2.5	2	2	0.4
SCS-M4-10-F	3500	SCSS-M4-10-F	2040	M4	10	2.5	2	2	0.7
SCS-M4-16-F	3500	SCSS-M4-16-F	2040	M4	16	2.5	2	2	1
SCS-M5-8-F	5000	SCSS-M5-8-F	3000	M5	8	3	2.5	2.5	0.8
SCS-M5-12-F	5000	SCSS-M5-12-F	3000	M5	12	3	2.5	2.5	1.3
SCS-M5-20-F	5000	SCSS-M5-20-F	3000	M5	20	3	2.5	2.5	2.3
SCS-M6-10-F	9000	SCSS-M6-10-F	4500	M6	10	4	3.2	3	1.5
SCS-M6-16-F	9000	SCSS-M6-16-F	4500	M6	16	4	3.2	3	2.5
SCS-M6-20-F	9000	SCSS-M6-20-F	4500	M6	20	4	3.2	3	3.4
SCS-M6-25-F	9000	SCSS-M6-25-F	4500	M6	25	4	3.2	3	4
SCS-M8-10-F	15000	SCSS-M8-10-F	9000	M8	10	5.5	4.5	4	2.5
SCS-M8-12-F	15000	SCSS-M8-12-F	9000	M8	12	5.5	4.5	4	3.2
SCS-M8-20-F	15000	SCSS-M8-20-F	9000	M8	20	5.5	4.5	4	5.7
SCS-M8-25-F	15000	SCSS-M8-25-F	9000	M8	25	5.5	4.5	4	7.7
SCS-M8-30-F	15000	SCSS-M8-30-F	9000	M8	30	5.5	4.5	4	9
SCS-M10-12-F	24000	SCSS-M10-12-F	14400	M10	12	7	6	5	5
SCS-M10-16-F	24000	SCSS-M10-16-F	14400	M10	16	7	6	5	7
SCS-M10-20-F	24000	SCSS-M10-20-F	14400	M10	20	7	6	5	9.5
SCS-M10-25-F	24000	SCSS-M10-25-F	14400	M10	25	7	6	5	11
SCS-M10-35-F	24000	SCSS-M10-35-F	14400	M10	35	7	6	5	16
SCS-M12-16-F	30000	SCSS-M12-16-F	18000	M12	16	8.5	7.2	6	10
SCS-M12-20-F	30000	SCSS-M12-20-F	18000	M12	20	8.5	7.2	6	12.5
SCS-M12-30-F	30000	SCSS-M12-30-F	18000	M12	30	8.5	7.2	6	20
SCS-M12-40-F	30000	SCSS-M12-40-F	18000	M12	40	8.5	7.2	6	28
SCS-M16-20-F	73000	SCSS-M16-20-F	43800	M16	20	12	10.7	8	22
SCS-M16-25-F	73000	SCSS-M16-25-F	43800	M16	25	12	10.7	8	28
SCS-M16-35-F	73000	SCSS-M16-35-F	43800	M16	35	12	10.7	8	41
SCS-M16-50-F	73000	SCSS-M16-50-F	43800	M16	50	12	10.7	8	48

● Part number specification

SCSS-M6-25-F



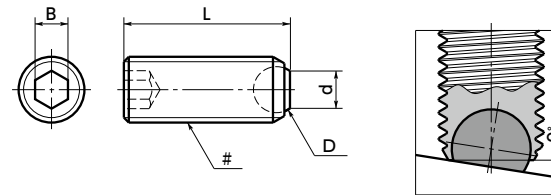
Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Please feel free to contact us	Available / Add'l charge	Not Available	Available / Add'l charge

NBK

WEB ▶ <https://www.nbk1560.com>

SCS-F(INCH) / SCSS-F(INCH) Clamping Screws - Flat Ball (Inch Thread)

WEB Selection Tool WEB CAD Download



SCS-F

SCSS-F

- Contact surface is a flat ball. Workpiece is not damaged.
- The ball rotates flexibly up to 9°. It securely clamps even when the mating part is tilted.
- For tool holder set screw and pressure piece stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please contact our customer service.

● Material/Finish

RoHS2 Compliant

	SCS-F(INCH) Made of Steel	SCSS-F(INCH) Made of Stainless Steel
Thread	Alloy steel	Equivalent to SUS304
Part	Ferrosoferric Oxide Film (Black)	
Ball	SUJ2 (Hardness: 55 - 60 HRC)	SUS440C (Hardness: 55 - 60 HRC)

Unit : Inch

Part Number Steel	Part Number Stainless Steel	# Nominal of Thread	L	D	d	B	Mass (g)
SCS-#8-32-3 / 8-F	SCSS-#8-32-3 / 8-F	No.8-32UNC	3/8	0.098	0.079	5 / 64	0.8
SCS-#10-24-1 / 2-F	SCSS-#10-24-1 / 2-F	No.10-24UNC	1/2	0.118	0.098	3 / 32	1.4
SCS-#10-24-5 / 8-F	SCSS-#10-24-5 / 8-F	No.10-24UNC	5/8	0.118	0.098	3 / 32	1.8
SCS-#10-32-1 / 2-F	SCSS-#10-32-1 / 2-F	No.10-32UNF	1/2	0.118	0.098	3 / 32	1.6
SCS-#10-32-5 / 8-F	SCSS-#10-32-5 / 8-F	No.10-32UNF	5/8	0.118	0.098	3 / 32	1.9
SCS-1 / 4-20-1 / 2-F	SCSS-1 / 4-20-1 / 2-F	1/4-20UNC	1/2	0.157	0.126	1 / 8	2.6
SCS-1 / 4-20-5 / 8-F	SCSS-1 / 4-20-5 / 8-F	1/4-20UNC	5/8	0.157	0.126	1 / 8	3.2
SCS-5 / 16-18-1 / 2-F	SCSS-5 / 16-18-1 / 2-F	5/16-18UNC	1/2	0.219	0.177	5 / 32	4.4
SCS-5 / 16-18-3 / 4-F	SCSS-5 / 16-18-3 / 4-F	5/16-18UNC	3/4	0.219	0.177	5 / 32	6.3
SCS-5 / 16-18-7 / 8-F	SCSS-5 / 16-18-7 / 8-F	5/16-18UNC	7/8	0.219	0.177	5 / 32	7.3
SCS-3 / 8-16-5 / 8-F	SCSS-3 / 8-16-5 / 8-F	3/8-16UNC	5/8	0.281	0.236	3 / 16	8.0
SCS-3 / 8-16-3 / 4-F	SCSS-3 / 8-16-3 / 4-F	3/8-16UNC	3/4	0.281	0.236	3 / 16	9.4
SCS-1 / 2-13-3 / 4-F	SCSS-1 / 2-13-3 / 4-F	1/2-13UNC	3/4	0.313	0.276	1 / 4	17.5
SCS-1 / 2-13-1 1 / 2-F	SCSS-1 / 2-13-1 1 / 2-F	1/2-13UNC	1 1/2	0.313	0.276	1 / 4	32.7

- All dimensions are in inches.

● Part number specification

SCS-#8-32-3/8-F



SCS-F(INCH) and SCSS-F(INCH) are sold only for North America.

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Not Available	Available / Add'l charge	Not Available	Available / Add'l charge

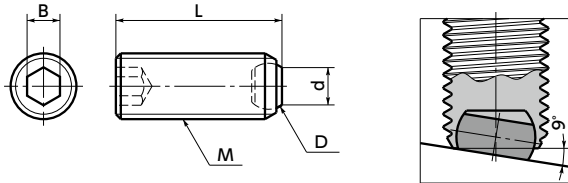
NBK

WEB ▶ <https://www.nbk1560.com>

SCS-FB / SCSS-FB Clamping Screw - Flat Ball - with Reversal Protection Mechanism Additional Size



WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish



	SCS-FB Made of Steel	SCSS-FB Made of Stainless Steel
Thread Part	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Ball	SUJ2 (hardness: 55 - 60 HRC) Ferrosoferric Oxide Film (Black)	SUS440C (hardness: 55 - 60 HRC) Temper Color (Brown)

Part number specification

SCS-M6-25-FB



Part Number	Part Number	M (Coarse)	L	D	d	B	Mass (g)
SCS-M4-6-FB	SCSS-M4-6-FB	M4	6	2.5	2	2	0.4
SCS-M4-10-FB	SCSS-M4-10-FB	M4	10	2.5	2	2	0.7
SCS-M4-16-FB	SCSS-M4-16-FB	M4	16	2.5	2	2	1
SCS-M5-8-FB	SCSS-M5-8-FB	M5	8	3	2.5	2.5	0.8
SCS-M5-12-FB	SCSS-M5-12-FB	M5	12	3	2.5	2.5	1.3
SCS-M5-20-FB	SCSS-M5-20-FB	M5	20	3	2.5	2.5	2.3
SCS-M6-10-FB	SCSS-M6-10-FB	M6	10	4	3.2	3	1.5
SCS-M6-16-FB	SCSS-M6-16-FB	M6	16	4	3.2	3	2.5
SCS-M6-20-FB	SCSS-M6-20-FB	M6	20	4	3.2	3	3.4
SCS-M6-25-FB	SCSS-M6-25-FB	M6	25	4	3.2	3	4
SCS-M8-10-FB	SCSS-M8-10-FB	M8	10	5.5	4.5	4	2.5
SCS-M8-12-FB	SCSS-M8-12-FB	M8	12	5.5	4.5	4	3.2
SCS-M8-20-FB	SCSS-M8-20-FB	M8	20	5.5	4.5	4	5.7
SCS-M8-25-FB	SCSS-M8-25-FB	M8	25	5.5	4.5	4	7.7
SCS-M8-30-FB	SCSS-M8-30-FB	M8	30	5.5	4.5	4	9
SCS-M10-12-FB	SCSS-M10-12-FB	M10	12	7	6	5	5
SCS-M10-16-FB	SCSS-M10-16-FB	M10	16	7	6	5	7
SCS-M10-20-FB	SCSS-M10-20-FB	M10	20	7	6	5	9.5
SCS-M10-25-FB	SCSS-M10-25-FB	M10	25	7	6	5	11
SCS-M10-35-FB	SCSS-M10-35-FB	M10	35	7	6	5	16
SCS-M12-16-FB	SCSS-M12-16-FB	M12	16	8.5	7.2	6	10
SCS-M12-20-FB	SCSS-M12-20-FB	M12	20	8.5	7.2	6	12.5
SCS-M12-30-FB	SCSS-M12-30-FB	M12	30	8.5	7.2	6	20
SCS-M12-40-FB	SCSS-M12-40-FB	M12	40	8.5	7.2	6	28
SCS-M16-20-FB	SCSS-M16-20-FB	M16	20	12	10.7	8	22
SCS-M16-25-FB	SCSS-M16-25-FB	M16	25	12	10.7	8	28
SCS-M16-35-FB	SCSS-M16-35-FB	M16	35	12	10.7	8	41
SCS-M16-50-FB	SCSS-M16-50-FB	M16	50	12	10.7	8	48

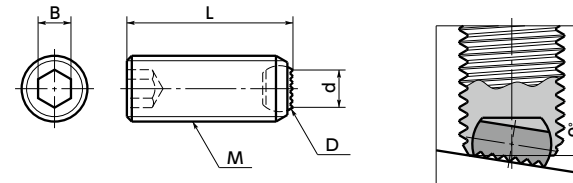
Unit : mm

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810
Please feel free to contact us Available / Add'l charge Not Available Available / Add'l charge

SCS-GB / SCSS-GB Clamping Screw - Indented Ball - with Reversal Protection Mechanism Additional Size



WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish



	SCS-GB Made of Steel	SCSS-GB Made of Stainless Steel
Thread Part	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Ball	SUJ2 (hardness: 55 - 60 HRC)	SUS440C (hardness: 55 - 60 HRC)

Part number specification

SCS-M6-25-GB



Part Number	Part Number	M (Coarse)	L	D	d	B	Mass (g)
SCS-M4-6-GB	SCSS-M4-6-GB	M4	6	2.5	2	2	0.4
SCS-M4-10-GB	SCSS-M4-10-GB	M4	10	2.5	2	2	0.7
SCS-M4-16-GB	SCSS-M4-16-GB	M4	16	2.5	2	2	1
SCS-M5-8-GB	SCSS-M5-8-GB	M5	8	3	2.5	2.5	0.8
SCS-M5-12-GB	SCSS-M5-12-GB	M5	12	3	2.5	2.5	1.3
SCS-M5-20-GB	SCSS-M5-20-GB	M5	20	3	2.5	2.5	2.3
SCS-M6-10-GB	SCSS-M6-10-GB	M6	10	4	3.2	3	1.5
SCS-M6-16-GB	SCSS-M6-16-GB	M6	16	4	3.2	3	2.5
SCS-M6-20-GB	SCSS-M6-20-GB	M6	20	4	3.2	3	3.4
SCS-M6-25-GB	SCSS-M6-25-GB	M6	25	4	3.2	3	4
SCS-M8-10-GB	SCSS-M8-10-GB	M8	10	5.5	4.5	4	2.5
SCS-M8-12-GB	SCSS-M8-12-GB	M8	12	5.5	4.5	4	3.2
SCS-M8-20-GB	SCSS-M8-20-GB	M8	20	5.5	4.5	4	5.7
SCS-M8-25-GB	SCSS-M8-25-GB	M8	25	5.5	4.5	4	7.7
SCS-M8-30-GB	SCSS-M8-30-GB	M8	30	5.5	4.5	4	9
SCS-M10-12-GB	SCSS-M10-12-GB	M10	12	7	6	5	5
SCS-M10-16-GB	SCSS-M10-16-GB	M10	16	7	6	5	7
SCS-M10-20-GB	SCSS-M10-20-GB	M10	20	7	6	5	9.5
SCS-M10-25-GB	SCSS-M10-25-GB	M10	25	7	6	5	11
SCS-M10-35-GB	SCSS-M10-35-GB	M10	35	7	6	5	16
SCS-M12-16-GB	SCSS-M12-16-GB	M12	16	8.5	7.2	6	10
SCS-M12-20-GB	SCSS-M12-20-GB	M12	20	8.5	7.2	6	12.5
SCS-M12-30-GB	SCSS-M12-30-GB	M12	30	8.5	7.2	6	20
SCS-M12-40-GB	SCSS-M12-40-GB	M12	40	8.5	7.2	6	28
SCS-M16-20-GB	SCSS-M16-20-GB	M16	20	12	10.7	8	22
SCS-M16-25-GB	SCSS-M16-25-GB	M16	25	12	10.7	8	28
SCS-M16-35-GB	SCSS-M16-35-GB	M16	35	12	10.7	8	41
SCS-M16-50-GB	SCSS-M16-50-GB	M16	50	12	10.7	8	48

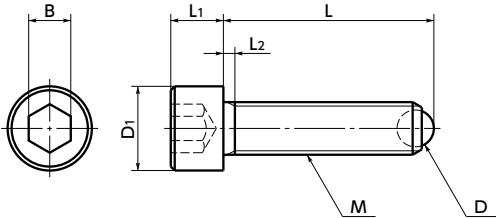
Unit : mm

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810
Please feel free to contact us Available / Add'l charge Not Available Available / Add'l charge

SCBS-CE Clamping Bolt - Ceramic Ball



WEB Selection Tool WEB CAD Download SUS Stainless steel



● Material/Finish

	SCBS-CE
Thread Part	SUSXM7
Ball	Alumina (purity 99 % or above, hardness 1100 HV)

- Clamping bolt with an integral ceramic ball.
- Point contact by full ball securely fixes a work.
- For tool holder set screw, pressure piece and stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please feel free to contact our customer service.

Unit : mm

Part Number	M (Coarse)	L	D1	D	L1	L2	B	Mass (g)
SCBS-M4-10-CE	M4	10.5	7	2.5	4	2.1	3	1.5
SCBS-M4-16-CE	M4	16.5	7	2.5	4	2.1	3	1.9
SCBS-M4-25-CE	M4	25.5	7	2.5	4	2.1	3	2.5
SCBS-M5-12-CE	M5	12.6	8.5	3	5	2.4	4	2.9
SCBS-M5-20-CE	M5	20.6	8.5	3	5	2.4	4	3.9
SCBS-M5-30-CE	M5	30.6	8.5	3	5	2.4	4	5
SCBS-M6-16-CE	M6	16.8	10	4	6	3	5	5.6
SCBS-M6-25-CE	M6	25.8	10	4	6	3	5	7.6
SCBS-M6-40-CE	M6	40.8	10	4	6	3	5	11
SCBS-M8-20-CE	M8	21.2	13	5.5	8	3.5	6	13.5
SCBS-M8-35-CE	M8	36.2	13	5.5	8	3.5	6	19
SCBS-M8-50-CE	M8	51.2	13	5.5	8	3.5	6	25
SCBS-M10-25-CE	M10	26.7	16	7	10	4.5	8	26
SCBS-M10-40-CE	M10	41.7	16	7	10	4.5	8	34
SCBS-M10-60-CE	M10	61.7	16	7	10	4.5	8	47
SCBS-M12-30-CE	M12	32	18	8.5	12	5	10	40
SCBS-M12-50-CE	M12	52	18	8.5	12	5	10	56
SCBS-M12-80-CE	M12	82	18	8.5	12	5	10	83

● Related Products

Clamping bolt have variations such as coarse and fine screw threads, flat ball, indented ball, brass ball and plastic ball, etc.
➡ P.525 - 532



● Part number specification

SCBS-M6-25-CE



Cleanroom Wash & Packaging ➡ P.807	Screw Combination ➡ P.813	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810
Please feel free to contact us	Not Available	Not Available	Available / Add'l charge

Selection Navigator



CAD Data Download

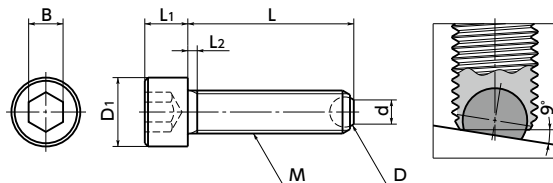
<https://www.nbk1560.com/>

SCB-F / SCBS-F Clamping Bolt - Flat Ball

Recommendation



WEB Selection Tool CAD Download SUS Stainless steel



● Material/Finish



	SCB-F Made of Steel	SCBS-F Made of Stainless Steel
Thread Part	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Ball	SUJ2 (hardness: 55 - 60 HRC)	SUS440C (hardness: 55 - 60 HRC)

● Part number specification

SCBS-M6-20-F

Part Number Steel	Allowable load (N)	Part Number Stainless steel	Allowable load (N)	M (coarse)	L	D1	D	d	L1	L2	B	Mass (g)
SCB-M4-10-F	3500	SCBS-M4-10-F	2040	M4	10	7	2.5	2	4	2.1	3	1.5
SCB-M4-12-F	3500	SCBS-M4-12-F	2040	M4	12	7	2.5	2	4	2.1	3	1.7
SCB-M4-16-F	3500	SCBS-M4-16-F	2040	M4	16	7	2.5	2	4	2.1	3	1.9
SCB-M4-20-F	3500	SCBS-M4-20-F	2040	M4	20	7	2.5	2	4	2.1	3	2.2
SCB-M4-25-F	3500	SCBS-M4-25-F	2040	M4	25	7	2.5	2	4	2.1	3	2.5
SCB-M5-12-F	5000	SCBS-M5-12-F	3000	M5	12	8.5	3	2.5	5	2.4	4	2.9
SCB-M5-16-F	5000	SCBS-M5-16-F	3000	M5	16	8.5	3	2.5	5	2.4	4	3.4
SCB-M5-20-F	5000	SCBS-M5-20-F	3000	M5	20	8.5	3	2.5	5	2.4	4	3.9
SCB-M5-25-F	5000	SCBS-M5-25-F	3000	M5	25	8.5	3	2.5	5	2.4	4	4.4
SCB-M5-30-F	5000	SCBS-M5-30-F	3000	M5	30	8.5	3	2.5	5	2.4	4	5
SCB-M6-16-F	9000	SCBS-M6-16-F	4500	M6	16	10	4	3.2	6	3	5	5.6
SCB-M6-20-F	9000	SCBS-M6-20-F	4500	M6	20	10	4	3.2	6	3	5	6.5
SCB-M6-25-F	9000	SCBS-M6-25-F	4500	M6	25	10	4	3.2	6	3	5	7.6
SCB-M6-30-F	9000	SCBS-M6-30-F	4500	M6	30	10	4	3.2	6	3	5	8.7
SCB-M6-40-F	9000	SCBS-M6-40-F	4500	M6	40	10	4	3.2	6	3	5	11
SCB-M8-20-F	15000	SCBS-M8-20-F	9000	M8	20	13	5.5	4.5	8	3.5	6	13.5
SCB-M8-30-F	15000	SCBS-M8-30-F	9000	M8	30	13	5.5	4.5	8	3.5	6	17.5
SCB-M8-35-F	15000	SCBS-M8-35-F	9000	M8	35	13	5.5	4.5	8	3.5	6	19
SCB-M8-40-F	15000	SCBS-M8-40-F	9000	M8	40	13	5.5	4.5	8	3.5	6	21.5
SCB-M8-50-F	15000	SCBS-M8-50-F	9000	M8	50	13	5.5	4.5	8	3.5	6	25
SCB-M10-25-F	24000	SCBS-M10-25-F	14400	M10	25	16	7	6	10	4.5	8	26
SCB-M10-30-F	24000	SCBS-M10-30-F	14400	M10	30	16	7	6	10	4.5	8	29
SCB-M10-40-F	24000	SCBS-M10-40-F	14400	M10	40	16	7	6	10	4.5	8	34
SCB-M10-50-F	24000	SCBS-M10-50-F	14400	M10	50	16	7	6	10	4.5	8	39
SCB-M10-60-F	24000	SCBS-M10-60-F	14400	M10	60	16	7	6	10	4.5	8	47
SCB-M12-30-F	30000	SCBS-M12-30-F	18000	M12	30	18	8.5	7.2	12	5	10	40
SCB-M12-50-F	30000	SCBS-M12-50-F	18000	M12	50	18	8.5	7.2	12	5	10	56
SCB-M12-80-F	30000	SCBS-M12-80-F	18000	M12	80	18	8.5	7.2	12	5	10	83
SCB-M16-40-F	73000	SCBS-M16-40-F	43800	M16	40	24	12	10.7	16	6	14	91
SCB-M16-60-F	73000	SCBS-M16-60-F	43800	M16	60	24	12	10.7	16	6	14	122
SCB-M16-80-F	73000	SCBS-M16-80-F	43800	M16	80	24	12	10.7	16	6	14	154

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810
Please feel free to contact us Not Available Not Available Available / Add'l charge

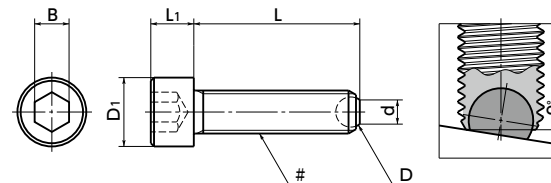
NBK

WEB ▶ <https://www.nbk1560.com>**SCB-F(INCH)/SCBS-F(INCH)** Clamping Bolts - Flat Ball (Inch Thread)

NEW



WEB Selection Tool CAD Download



- Contact surface is a flat ball. Workpiece is not damaged.
- The ball rotates flexibly up to 9°. It securely clamps even when the mating part is tilted.
- For tool holder set screw and pressure piece stopper.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please contact our customer service.

● Material/Finish



	SCB-F(INCH) Made of Steel	SCBS-F(INCH) Made of Stainless Steel
Thread Part	Alloy steel Ferrosoferric Oxide Film (Black)	Equivalent to SUS304
Ball	SUJ2 (Hardness: 55 - 60 HRC)	SUS440C (Hardness: 55 - 60 HRC)

Part Number Steel	Part Number Stainless Steel	# Nominal of Thread	L	D1	D	d	L1	B	Mass (g)
SCB-#8-32-1 / 2-F	SCBS-#8-32-1 / 2-F	No.8-32UNC	1/2	0.270	0.098	0.079	0.164	9 / 64	2.3
SCB-#10-24-1 / 2-F	SCBS-#10-24-1 / 2-F	No.10-24UNC	1/2	0.312	0.118	0.098	0.190	5 / 32	3.3
SCB-#10-24-5 / 8-F	SCBS-#10-24-5 / 8-F	No.10-24UNC	5/8	0.312	0.118	0.098	0.190	5 / 32	3.6
SCB-#10-32-1 / 2-F	SCBS-#10-32-1 / 2-F	No.10-32UNF	1/2	0.312	0.118	0.098	0.190	5 / 32	3.4
SCB-#10-32-5 / 8-F	SCBS-#10-32-5 / 8-F	No.10-32UNF	5/8	0.312	0.118	0.098	0.190	5 / 32	3.7
SCB-1 / 4-20-5 / 8-F	SCBS-1 / 4-20-5 / 8-F	1/4-20UNC	5/8	0.375	0.157	0.126	0.250	3 / 16	6.7
SCB-1 / 4-20-3 / 4-F	SCBS-1 / 4-20-3 / 4-F	1/4-20UNC	3/4	0.375	0.157	0.126	0.250	3 / 16	7.2
SCB-1 / 4-20-1 1 / 4-F	SCBS-1 / 4-20-1 1 / 4-F	1/4-20UNC	1 1/4	0.375	0.157	0.126	0.250	3 / 16	9.6
SCB-5 / 16-18-7 / 8-F	SCBS-5 / 16-18-7 / 8-F	5/16-18UNC	7/8	0.469	0.219	0.177	0.312	1 / 4	13.9
SCB-5 / 16-18-1 1 / 4-F	SCBS-5 / 16-18-1 1 / 4-F	5/16-18UNC	1 1/4	0.469	0.219	0.177	0.312	1 / 4	16.8
SCB-5 / 16-18-1 1 / 2-F	SCBS-5 / 16-18-1 1 / 2-F	5/16-18UNC	1 1/2	0.469	0.219	0.177	0.312	1 / 4	18.7
SCB-3 / 8-16-1-F	SCBS-3 / 8-16-1-F	3/8-16UNC	1	0.562	0.281	0.236	0.375	5 / 16	23.8
SCB-3 / 8-16-1 1 / 2-F	SCBS-3 / 8-16-1 1 / 2-F	3/8-16UNC	1 1/2	0.562	0.281	0.236	0.375	5 / 16	29.4
SCB-1 / 2-13-2-F	SCBS-1 / 2-13-2-F	1/2-13UNC	2	0.750	0.313	0.276	0.500	3 / 8	70.4

● All dimensions are in inches.

● Part number specification

SCB-#8-32-1/2-F

SCB-F(INCH) and SCBS-F(INCH) are sold only for North America.

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810
Not Available Not Available Not Available Available / Add'l charge

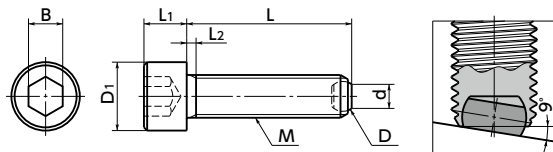
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SCB-FB / SCBS-FB

Clamping Bolt - Flat Ball - with Reversal Prevention Mechanism *Additional Size*

WEB Selection Tool WEB CAD Download SUS Stainless steel



Material/Finish

RoHS2 Compliant

	SCB-FB Made of Steel	SCBS-FB Made of Stainless Steel
Thread Part	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Ball	SUJ2 (hardness: 55 - 60 HRC) Ferrosoferric Oxide Film (Black)	SUS440C (hardness: 55 - 60 HRC) Temper Color (Brown)

Part number specification

SCB-M6-20-FB



SCBS-FB SCB-FB

- All sizes are standardized with full thread.
- The ball rotates flexibly by up to 9°. The reversal prevention mechanism always ensures secure clamping on the flat plane on the ball.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please feel free to contact our customer service.

Unit : mm

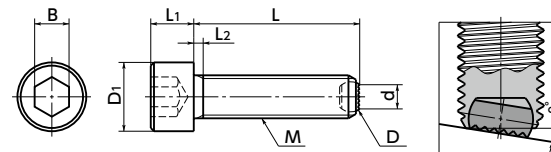
Part Number Steel	Part Number Stainless steel	M (Coarse)	L	D1	D	d	L1	L2	B	Mass (g)
SCB-M4-10-FB	SCBS-M4-10-FB	M4	10	7	2.5	2	4	2.1	3	1.5
SCB-M4-12-FB	SCBS-M4-12-FB	M4	12	7	2.5	2	4	2.1	3	1.7
SCB-M4-16-FB	SCBS-M4-16-FB	M4	16	7	2.5	2	4	2.1	3	1.9
SCB-M4-20-FB	SCBS-M4-20-FB	M4	20	7	2.5	2	4	2.1	3	2.2
SCB-M4-25-FB	SCBS-M4-25-FB	M4	25	7	2.5	2	4	2.1	3	2.5
SCB-M5-12-FB	SCBS-M5-12-FB	M5	12	8.5	3	2.5	5	2.4	4	2.9
SCB-M5-16-FB	SCBS-M5-16-FB	M5	16	8.5	3	2.5	5	2.4	4	3.4
SCB-M5-20-FB	SCBS-M5-20-FB	M5	20	8.5	3	2.5	5	2.4	4	3.9
SCB-M5-25-FB	SCBS-M5-25-FB	M5	25	8.5	3	2.5	5	2.4	4	4.4
SCB-M5-30-FB	SCBS-M5-30-FB	M5	30	8.5	3	2.5	5	2.4	4	5
SCB-M6-16-FB	SCBS-M6-16-FB	M6	16	10	4	3.2	6	3	5	5.6
SCB-M6-20-FB	SCBS-M6-20-FB	M6	20	10	4	3.2	6	3	5	6.5
SCB-M6-25-FB	SCBS-M6-25-FB	M6	25	10	4	3.2	6	3	5	7.6
SCB-M6-30-FB	SCBS-M6-30-FB	M6	30	10	4	3.2	6	3	5	8.7
SCB-M6-40-FB	SCBS-M6-40-FB	M6	40	10	4	3.2	6	3	5	11
SCB-M8-20-FB	SCBS-M8-20-FB	M8	20	13	5.5	4.5	8	3.5	6	13.5
SCB-M8-30-FB	SCBS-M8-30-FB	M8	30	13	5.5	4.5	8	3.5	6	17.5
SCB-M8-35-FB	SCBS-M8-35-FB	M8	35	13	5.5	4.5	8	3.5	6	19
SCB-M8-40-FB	SCBS-M8-40-FB	M8	40	13	5.5	4.5	8	3.5	6	21.5
SCB-M8-50-FB	SCBS-M8-50-FB	M8	50	13	5.5	4.5	8	3.5	6	25
SCB-M10-25-FB	SCBS-M10-25-FB	M10	25	16	7	6	10	4.5	8	26
SCB-M10-30-FB	SCBS-M10-30-FB	M10	30	16	7	6	10	4.5	8	29
SCB-M10-40-FB	SCBS-M10-40-FB	M10	40	16	7	6	10	4.5	8	34
SCB-M10-50-FB	SCBS-M10-50-FB	M10	50	16	7	6	10	4.5	8	39
SCB-M10-60-FB	SCBS-M10-60-FB	M10	60	16	7	6	10	4.5	8	47
SCB-M12-30-FB	SCBS-M12-30-FB	M12	30	18	8.5	7.2	12	5	10	40
SCB-M12-50-FB	SCBS-M12-50-FB	M12	50	18	8.5	7.2	12	5	10	56
SCB-M12-80-FB	SCBS-M12-80-FB	M12	80	18	8.5	7.2	12	5	10	83
SCB-M16-40-FB	SCBS-M16-40-FB	M16	40	24	12	10.7	16	6	14	91
SCB-M16-60-FB	SCBS-M16-60-FB	M16	60	24	12	10.7	16	6	14	122
SCB-M16-80-FB	SCBS-M16-80-FB	M16	80	24	12	10.7	16	6	14	154

Cleanroom Wash & Packaging ➡ P.807 Screw Combination ➡ P.813 Screw Length Adjustment ➡ P.811 Vibration Resistant ➡ P.810
Please feel free to contact us Not Available Not Available Available / Add'l charge

SCB-GB / SCBS-GB

Clamping Bolt - Knurled Ball - with Reversal Prevention Mechanism *Additional Size*

WEB Selection Tool WEB CAD Download SUS Stainless steel



Material/Finish

RoHS2 Compliant

	SCB-GB Made of Steel	SCBS-GB Made of Stainless Steel
Thread Part	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Ball	SUJ2 (hardness: 55 - 60 HRC)	SUS440C (hardness: 55 - 60 HRC)

Part number specification

SCBS-M6-20-GB



- The ball rotates flexibly by up to 9°. The reversal prevention mechanism ensures secure clamping.
- Even coarse surface such as casting surface can be securely clamped by the knurled ball.
- We also produce products of special specifications, e.g. nominal diameter of thread, length and surface treatment. Please feel free to contact our customer service.

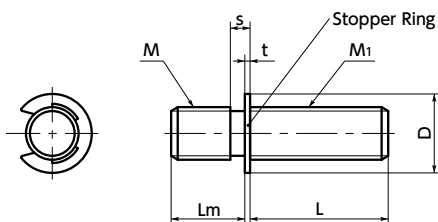
Unit : mm

Part Number Steel	Part Number Stainless steel	M (Coarse)	L	D1	D	d	L1	L2	B	Mass (g)
SCB-M4-10-GB	SCBS-M4-10-GB	M4	10	7	2.5	2	4	2.1	3	1.5
SCB-M4-12-GB	SCBS-M4-12-GB	M4	12	7	2.5	2	4	2.1	3	1.7
SCB-M4-16-GB	SCBS-M4-16-GB	M4	16	7	2.5	2	4	2.1	3	1.9
SCB-M4-20-GB	SCBS-M4-20-GB	M4	20	7	2.5	2	4	2.1	3	2.2
SCB-M4-25-GB	SCBS-M4-25-GB	M4	25	7	2.5	2	4	2.1	3	2.5
SCB-M5-12-GB	SCBS-M5-12-GB	M5	12	8.5	3	2.5	5	2.4	4	2.9
SCB-M5-16-GB	SCBS-M5-16-GB	M5	16	8.5	3	2.5	5	2.4	4	3.4
SCB-M5-20-GB	SCBS-M5-20-GB	M5	20	8.5	3	2.5	5	2.4	4	3.9
SCB-M5-25-GB	SCBS-M5-25-GB	M5	25	8.5	3	2.5	5	2.4	4	4.4
SCB-M5-30-GB	SCBS-M5-30-GB	M5	30	8.5	3	2.5	5	2.4	4	5
SCB-M6-16-GB	SCBS-M6-16-GB	M6	16	10	4	3.2	6	3	5	5.6
SCB-M6-20-GB	SCBS-M6-20-GB	M6	20	10	4	3.2	6	3	5	6.5
SCB-M6-25-GB	SCBS-M6-25-GB	M6	25	10	4	3.2	6	3	5	7.6
SCB-M6-30-GB	SCBS-M6-30-GB	M6	30	10	4	3.2	6	3	5	8.7
SCB-M6-40-GB	SCBS-M6-40-GB	M6	40	10	4	3.2	6	3	5	11
SCB-M8-20-GB	SCBS-M8-20-GB	M8	20	13	5.5	4.5	8	3.5	6	13.5
SCB-M8-30-GB	SCBS-M8-30-GB	M8	30	13	5.5	4.5	8	3.5	6	17.5
SCB-M8-35-GB	SCBS-M8-35-GB	M8	35	13	5.5	4.5	8	3.5	6	19
SCB-M8-40-GB	SCBS-M8-40-GB	M8	40	13	5.5	4.5	8	3.5	6	21.5
SCB-M8-50-GB	SCBS-M8-50-GB	M8	50	13	5.5	4.5	8	3.5	6	25
SCB-M10-25-GB	SCBS-M10-25-GB	M10	25	16	7	6	10	4.5	8	26
SCB-M10-30-GB	SCBS-M10-30-GB	M10	30	16	7	6	10	4.5	8	29
SCB-M10-40-GB	SCBS-M10-40-GB	M10	40	16	7	6	10	4.5	8	34
SCB-M10-50-GB	SCBS-M10-50-GB	M10	50	16	7	6	10	4.5	8	39
SCB-M10-60-GB	SCBS-M10-60-GB	M10	60	16	7	6	10	4.5	8	47
SCB-M12-30-GB	SCBS-M12-30-GB	M12	30	18	8.5	7.2	12	5	10	40
SCB-M12-50-GB	SCBS-M12-50-GB	M12	50	18	8.5	7.2	12	5	10	56
SCB-M12-80-GB	SCBS-M12-80-GB	M12	80	18	8.5	7.2	12	5	10	83
SCB-M16-40-GB	SCBS-M16-40-GB	M16	40	24	12	10.7	16	6	14	91
SCB-M16-60-GB	SCBS-M16-60-GB	M16	60	24	12	10.7	16	6	14	122
SCB-M16-80-GB	SCBS-M16-80-GB	M16	80	24	12	10.7	16	6	14	154

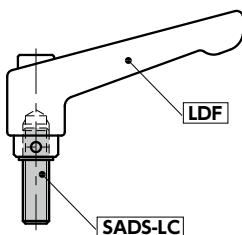
Cleanroom Wash & Packaging ➡ P.807 Screw Combination ➡ P.813 Screw Length Adjustment ➡ P.811 Vibration Resistant ➡ P.810
Please feel free to contact us Not Available Not Available Available / Add'l charge

SADS-LC Screw Adaptor - Left-handed Threaded Type

WEB Selection Tool CAD Download SUS Stainless steel



- Usage example
In combination with a clamp lever.



- By combining with female screw products such as a lever and knob, this may be used as a left-handed screw lever or knob.
- For screw fixing, use a pin stopper or anaerobic adhesive agent. If it is repeatedly tightened, a pin stopper is recommended.
- Use a stopper ring to accurately determine the threaded length.

- Material/Finish



	SADS-LC
Thread Part	SUS303
Stopper Ring	Equivalent to SUS304

Dimensions

Unit : mm

Part Number	M (Right-hand screw)	M1 (Left-hand screw)	Lm	s	t	D	Mass (g)
SADS-M4-LC	M4	M4	4.5	1.4	0.6	7	0.9 - 2.5
SADS-M5-LC	M5	M5	4.5	1.6	0.6	9	1.5 - 6.3
SADS-M6-LC	M6	M6	5.5	2	0.6	9	2.2 - 11
SADS-M8-LC	M8	M8	6.5	2.5	0.8	12	3.9 - 26
SADS-M10-LC	M10	M10	8.5	3	0.8	16	8.2 - 41

SADS-LC Made of Stainless Steel

Part Number	L (mm)								
	12	16	20	25	32	40	50	63	80
SADS-M4-LC	●	●	●	●	●	●	●		
SADS-M5-LC	●	●	●	●	●	●	●		
SADS-M6-LC	●	●	●	●	●	●	●	●	
SADS-M8-LC	●	●	●	●	●	●	●	●	●
SADS-M10-LC		●	●	●	●	●	●	●	●

Related Products

Screw adaptor with variable screw diameter **SADS-SD** are available.
→ P.535



- Part number specification

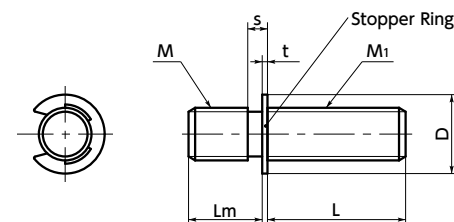
SADS-M5-32-LC

Product Code Left Threaded Type

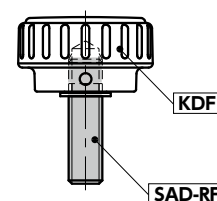
Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SADS-RF Screw Adaptor - Fine Threaded Type

WEB Selection Tool CAD Download SUS Stainless steel



- Usage example
In combination with a dimple knob.



- By combining with female screw products such as a lever and knob, this may be used as a fine threaded screw lever or knob.
- For screw fixing, use a pin stopper or anaerobic adhesive agent. If it is repeatedly tightened, a pin stopper is recommended.
- Use a stopper ring to accurately determine the thread length.

- Material/Finish



	SADS-RF
Thread Part	SUS303
Stopper Ring	Equivalent to SUS304

Dimensions

Unit : mm

Part Number	M (coarse)	M1 (fine)	Lm	s	t	D	Mass (g)
SADS-M4-RF	M4	M4×0.5	4.5	1.4	0.6	7	0.9 - 2.5
SADS-M5-RF	M5	M5×0.5	4.5	1.6	0.6	9	1.5 - 6.3
SADS-M6-RF	M6	M6×0.75	5.5	2	0.6	9	2.2 - 11
SADS-M8-RF	M8	M8×1	6.5	2.5	0.8	12	3.9 - 26
SADS-M10-RF	M10	M10×1.25	8.5	3	0.8	16	8.2 - 41

SADS-RF Made of Stainless Steel

Part Number	L (mm)								
	12	16	20	25	32	40	50	63	80
SADS-M4-RF	●	●	●	●	●	●	●		
SADS-M5-RF	●	●	●	●	●	●	●		
SADS-M6-RF	●	●	●	●	●	●	●	●	
SADS-M8-RF	●	●	●	●	●	●	●	●	●
SADS-M10-RF		●	●	●	●	●	●	●	●

Related Products

Long-threaded type screw adaptor **SADS-FT** are available.
→ P.536



- Part number specification

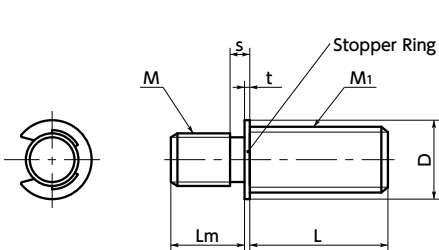
SADS-M5-32-RF

Product Code Fine Screw Threaded Type

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SADS-SD Screw Adaptor - Thread Size Conversion Type

WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish

RoHS2 Compliant

	SADS-SD
Thread Part	SUS303
Stopper Ring	Equivalent to SUS304

- By combining with female screw products such as a lever and knob, this may be used as a lever or knob of any non-standard screw diameter.
- For screw fixing, use a pin stopper or anaerobic adhesive agent.
- If it is repeatedly tightened in combination with a lever or knob, a pin stopper is recommended.
- Use a stopper ring to accurately determine the threaded length.

Dimensions

Unit : mm

Part Number	M (coarse) 1	M1 (coarse) 2	Lm	s	t	D	Mass (g)
SADS-M4-M5-SD	M4	M5	4.5	1.4	0.6	7	1.9 - 6.7
SADS-M5-M4-SD	M5	M4	4.5	1.6	0.6	7	1.5 - 3.1
SADS-M5-M6-SD	M5	M6	4.5	1.6	0.6	9	2.7 - 12
SADS-M6-M5-SD	M6	M5	5.5	1.6	0.6	9	2.5 - 7.3
SADS-M6-M8-SD	M6	M8	5.5	2	0.6	9	4.9 - 27
SADS-M8-M6-SD	M8	M6	6.5	2	0.6	9	4.3 - 13
SADS-M8-M10-SD	M8	M10	6.5	2.5	0.8	12	10 - 43
SADS-M10-M8-SD	M10	M8	8.5	2.5	0.8	12	8.2 - 30
SADS-M10-M12-SD	M10	M12	8.5	3	0.8	16	16 - 64

SADS-SD Made of Stainless Steel

Part Number	L (mm) 3								
	12	16	20	25	32	40	50	63	80
SADS-M4-M5-SD	●	●	●	●	●	●	●		
SADS-M5-M4-SD	●	●	●	●	●	●	●		
SADS-M5-M6-SD	●	●	●	●	●	●	●	●	
SADS-M6-M5-SD	●	●	●	●	●	●	●		
SADS-M6-M8-SD	●	●	●	●	●	●	●	●	●
SADS-M8-M6-SD	●	●	●	●	●	●	●	●	
SADS-M8-M10-SD		●	●	●	●	●	●	●	●
SADS-M10-M8-SD	●	●	●	●	●	●	●	●	●
SADS-M10-M12-SD		●	●	●	●	●	●	●	●

Part number specification

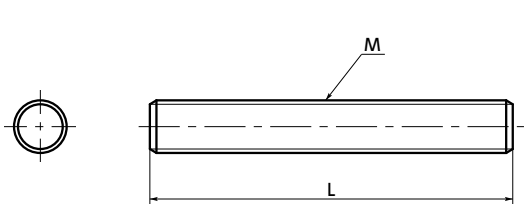
SADS-M10-M12-80-SD

Product Code 1 2 3 Thread Size Conversion Type

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SAD-FT / SADS-FT Screw Adaptor - Long Threaded Type

WEB Selection Tool CAD Download SUS Stainless steel



- By combining with female screw products such as a lever and knob, this may be used as a long screw lever or knob.
- For screw fixing, use a pin stopper or anaerobic adhesive agent.
- If it is repeatedly tightened in combination with a lever or knob, a pin stopper is recommended.

Material/Finish

RoHS2 Compliant

	SAD-FT Made of Steel	SADS-FT Made of Stainless Steel
Thread Part	SWRM6K Trivalent Chromate Treatment	SUS304

Dimensions

Unit : mm

Part Number	Part Number Stainless steel	M (coarse) 2	Mass (g)
SAD-M4-FT	SADS-M4-FT	M4	4 - 10
SAD-M5-FT	SADS-M5-FT	M5	6.2 - 16
SAD-M6-FT	SADS-M6-FT	M6	11 - 22
SAD-M8-FT	SADS-M8-FT	M8	20 - 40
SAD-M10-FT	SADS-M10-FT	M10	36 - 72

SAD-FT Made of Steel SADS-FT Made of Stainless Steel

Part Number	L (mm) 3					
	40	50	60	80	100	120
SAD-M4-FT	●	●	●	●	●	
SAD-M5-FT	●	●	●	●	●	
SAD-M6-FT		●	●	●	●	
SAD-M8-FT		●	●	●	●	
SAD-M10-FT			●	●	●	●
SADS-M4-FT	●	●	●	●	●	
SADS-M5-FT	●	●	●	●	●	
SADS-M6-FT		●	●	●	●	
SADS-M8-FT		●	●	●	●	
SADS-M10-FT			●	●	●	●

Related Products

There are variations of screw adaptor.
→ P.533 - 536



Part number specification

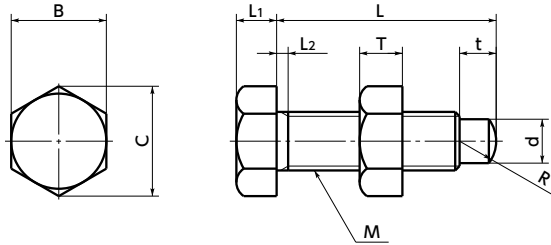
SAD-M5-100-FT

1 2 3 Long Threaded Type

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
S.S. only/ Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SSB-A Stopper Bolt - Tip Sphere Type

WEB Selection Tool CAD Download



Material/Finish

RoHS2 Compliant

Part	SSB-A
Thread	S45C, sphere part quenching (hardness: 45 HRC or above) Ferrosoferric Oxide Film (Black)
Nut	SS400 Trivalent Chromate Treatment

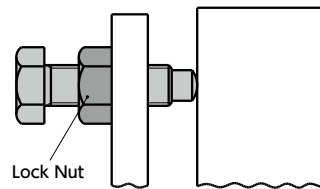
Dimensions

Part Number	M (coarse)	t	L2	T	d	R	L1	B	C	Mass (g)
SSB-M4-A	M4	3	2.1	3.2	2	3	2.8	7	8.1	2.6 - 5.2
SSB-M5-A	M5	3	2.4	4	3	3	3.5	8	9.2	4.5 - 9.7
SSB-M6-A	M6	3.5	3	5	4.5	4	4	10	11.5	7.2 - 15
SSB-M8-A	M8	5	3.7	6.5	6	5	5.5	13	15	15 - 40
SSB-M10-A	M10	5.5	4.5	8	7	5	7	17	19.6	38 - 63
SSB-M12-A	M12	7	5.2	10	9	8	8	19	21.9	54 - 99
SSB-M16-A	M16	9	6	13	12	10	10	24	27.7	111 - 158

Part Number	L (mm)	10	15	20	25	30	35	40	50	60	70	80
SSB-M4-A	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M5-A	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M6-A	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M8-A	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M10-A	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M12-A	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M16-A	●	●	●	●	●	●	●	●	●	●	●	●

Usage example

Use the lock nut on an opposite side of the side that receives the force.



Related Products

A locating block **[SBN]** is available for stopper bolt mounting.
→ P.542



Part number specification

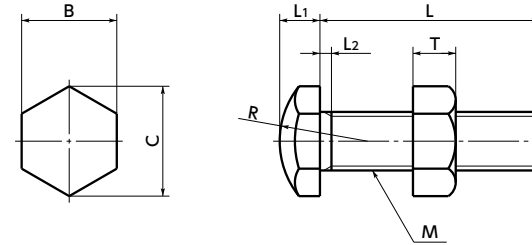
SSB-M8-40-A

Product Code 1 2 Tip Sphere Type

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Not Available	Not Available	Not Available	Available / Add'l charge

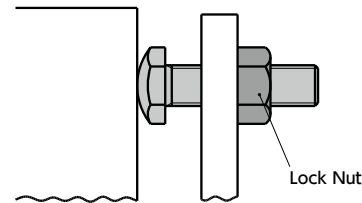
SSB-B / SSBS-B Stopper Bolt - Head Sphere Type

WEB Selection Tool CAD Download SUS Stainless steel



Usage example

Use the lock nut on an opposite side of the side that receives the force.



Hexagon head is round.

Round part has already been quenched. It is highly abrasion-resistant.

All products are provided with lock nut.

Material/Finish

RoHS2 Compliant

Part	SSB-B Made of Steel	SSBS-B Made of Stainless Steel
Thread	S45C Sphere part quenching (hardness: 45 HRC or above) Ferrosoferric Oxide Film (Black)	SUS410 Sphere part quenching (hardness: 40 HRC or above)
Nut	SS400 Trivalent Chromate Treatment	SUS304

Dimensions

Part Number	Part Number	M (coarse)	L2	T	R	L1	B	C	Mass (g)
SSB-M3-B		M3	1.5	2.4	6	2	5.5	6.4	1 - 2
SSB-M4-B		M4	2.1	3.2	8	2.8	7	8.1	2.3 - 5.2
SSB-M5-B		M5	2.4	4	8	3.5	8	9.2	3.7 - 9.7
SSB-M6-B	SSBS-M6-B	M6	3	5	10	4	10	11.5	7.2 - 15
SSB-M8-B	SSBS-M8-B	M8	3.7	6.5	12	5.5	13	15	15 - 40
SSB-M10-B		M10	4.5	8	16	7	17	19.6	38 - 63
SSB-M12-B		M12	5.2	10	20	8	19	21.9	54 - 99
SSB-M16-B		M16	6	13	25	10	24	27.7	108 - 155

SSB-B Made of Steel SSBS-B Made of Stainless Steel

Part Number	L (mm)	10	15	20	25	30	35	40	50	60	70	80
SSB-M3-B	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M4-B	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M5-B	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M6-B	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M8-B	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M10-B	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M12-B	●	●	●	●	●	●	●	●	●	●	●	●
SSB-M16-B	●	●	●	●	●	●	●	●	●	●	●	●
SSBS-M6-B	●	●	●	●	●	●	●	●	●	●	●	●
SSBS-M8-B	●	●	●	●	●	●	●	●	●	●	●	●

Related Products

The stop pin with excellent abrasion resistance **[SPM]** is available for the stopper bolt recipient.
→ P.543

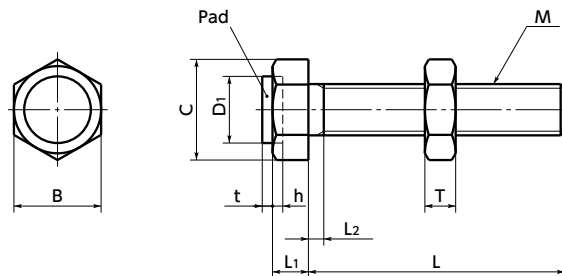


Part number specification

SSB-M10-30-B

Product Code 1 2 Head Sphere Type

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Please feel free to contact us	Not Available	Available / Add'l charge	Available / Add'l charge

SUB Stopper Bolt with Urethane PadWEB Selection
ToolWEB CAD
Download

- For work locating and stopping.
- Urethane pad is adhered.
- Impact is absorbed by the urethane pad.
- All products are provided with lock nut.

• Material/Finish



	SUB
Thread Part	SS400 Nickel Plating
Pad	Polyurethane (hardness: 90 HDA)
Lock Nut	SS400 Trivalent Chromate Treatment

Dimensions

Unit : mm

Part Number	M (coarse)	L2	L1	D1	t	h	B	C	T	Mass (g)
SUB-M4	M4	3	2.8	5	1.5	1.5	7	8.1	2.4	2.1 - 4.1
SUB-M5	M5	3	3.5	6	1.5	1.5	8	9.2	3.2	3.3 - 6.6
SUB-M6	M6	3	4	8	2	2	10	11.5	3.6	6.3 - 11.7
SUB-M8	M8	3	5.5	10	2	2	13	15	5	12.7 - 23
SUB-M10	M10	3	7	13	2	2	17	19.6	6	24 - 39

Part Number	L (mm)							
	15	20	25	30	35	40	45	50
SUB-M4	●	●	●	●	●	●		
SUB-M5	●	●	●	●	●	●		
SUB-M6		●	●	●	●	●	●	●
SUB-M8		●	●	●	●	●	●	●
SUB-M10		●	●	●	●	●	●	●

• Part number specification

SUB-M4-35Product Code **1** **2**

Cleanroom Wash & Packaging → P.807

Screw Combination → P.813

Screw Length Adjustment → P.811

Vibration Resistant → P.810

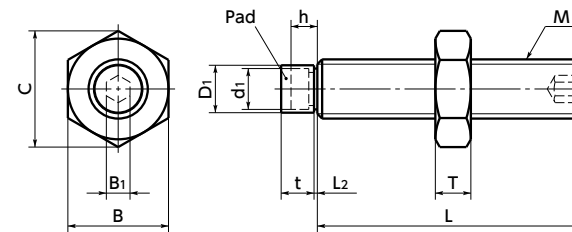
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Please feel free to contact us

NBK

<https://www.nbk1560.com>**SUS** Stopper Screw with Urethane PadWEB Selection
ToolWEB CAD
Download

- For work locating and stopping.
- Urethane pad is adhered.
- Impact is absorbed by the urethane pad.
- All products are provided with lock nut.

• Material/Finish



	SUS
Thread Part	SCM435 Nickel Plating
Pad	Polyurethane (hardness: 90 HDA)
Lock Nut	SS400 Trivalent Chromate Treatment

Dimensions

Unit : mm

Part Number	M (coarse)	t	L2	D1	B	C	B1	T	h	d1	Mass (g)
SUS-M4	M4	4.5	0.5	3.1	7	8.1	2	2.4	3	1.6	1.6 - 3.1
SUS-M5	M5	4.5	0.5	4	8	9.2	2.5	3.2	3	2.2	3 - 6.1
SUS-M6	M6	4.5	0.5	4.8	10	11.5	3	3.6	3	2.6	5.6 - 11
SUS-M8	M8	5.5	0.5	6.5	13	15	4	5	4	5.1	13 - 20
SUS-M10	M10	5.5	0.5	8.3	17	19.6	5	6	4	6.9	21 - 31

Part Number	L (mm)									
	10	15	20	25	30	35	40	45	50	60
SUS-M4	●	●	●	●	●	●				
SUS-M5	●	●	●	●	●	●	●			
SUS-M6		●	●	●	●	●	●		●	
SUS-M8				●	●	●	●	●	●	
SUS-M10					●	●	●	●	●	●

• Related Products

A stopper bolt with bolt-type urethane pad **SUB** is available.
→ P.539



• Part number specification

SUS-M5-40Product Code **1** **2**

Cleanroom Wash & Packaging → P.807

Screw Combination → P.813

Screw Length Adjustment → P.811

Vibration Resistant → P.810

Not Available

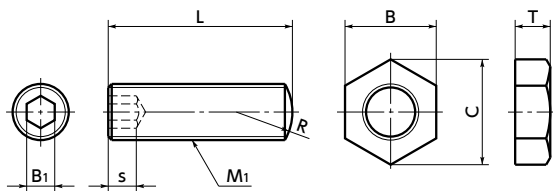
Available / Add'l charge

Not Available

Please feel free to contact us

NBK

<https://www.nbk1560.com>

SAN-B / SANS-B Stopper ScrewWEB Selection Tool WEB CAD Download **SUS** Stainless steel

● Part number specification

SAN-M5-20-BProduct Code **1** **2** Type with Hex Socket

- Fine threaded type stopper screw. Fine adjustment is easy.
- For work locating and stopping.
- Round area has already been quenched. It is highly abrasion-resistant.
- All products are provided with lock nut.

● Material/Finish



	SAN-B Made of Steel	SANS-B Made of Stainless Steel
Thread	S45C	SUS420J2
Part	Sphere part quenching (hardness: 45 - 50 HRC) Trivalent Chromate Treatment	Sphere part quenching (hardness: 40 - 50 HRC)
Nut	S5400 Trivalent Chromate Treatment	SUS304

Dimensions

Unit : mm

Part Number Steel	Part Number Stainless steel	M1 (fine) 1	s	B1	R	B	C	T	Mass (g)
SAN-M4-B	SANS-M4-B	M4×0.5	4	2	4	7	8.1	4	2.3 - 3.2
SAN-M5-B	SANS-M5-B	M5×0.5	4	2.5	5	8	9.2	4	3.1 - 4.6
SAN-M6-B	SANS-M6-B	M6×0.75	5	3	6	10	11.5	4	4.5 - 13
SAN-M8-B	SANS-M8-B	M8×0.75	6	4	8	13	15	5	9.7 - 23
SAN-M10-B	SANS-M10-B	M10×1	8	5	10	17	19.6	6	23 - 35
SAN-M12-B	SANS-M12-B	M12×1	10	6	12	19	21.9	6	37 - 68
SAN-M16-B	SANS-M16-B	M16×1.5	14	8	16	24	27.7	8	90 - 150

SAN-B Made of Steel **SANS-B** Made of Stainless Steel

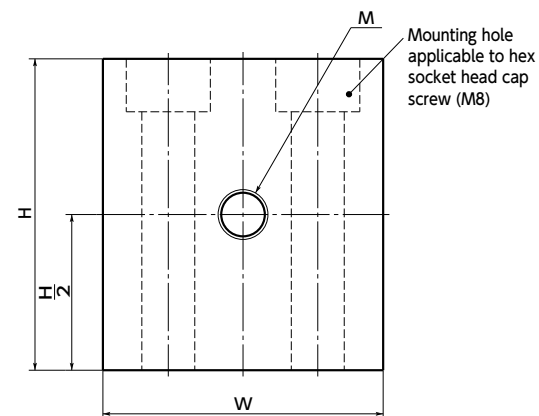
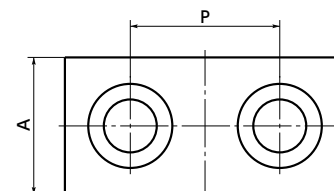
Part Number	L (mm) 2									
	20	25	30	35	40	50	60	80	100	
SAN-M4-B	●		●							
SAN-M5-B	●		●							
SAN-M6-B	●		●	●	●	●	●			
SAN-M8-B		●	●		●	●	●			
SAN-M10-B					●	●	●			
SAN-M12-B							●	●		
SAN-M16-B							●	●	●	
SANS-M4-B	●		●							
SANS-M5-B	●		●							
SANS-M6-B	●		●	●	●	●	●			
SANS-M8-B		●	●		●	●	●			
SANS-M10-B					●	●	●			
SANS-M12-B					●		●	●		
SANS-M16-B							●	●	●	

Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810

Please feel free to contact us Not Available Not Available Available / Add'l charge

SBN Locating Block

WEB Selection Tool WEB CAD Download



- Please combine with Stopper Bolt **SSB-A** (→ P.537) **SSB-B** **SSBS-B** (→ P.538) used for locating.

● Material/Finish



	SBN
Main body	S5400 Nickel Plating

Part Number	M (coarse) 1	H 2	W	P	A	Mass (g)
SBN-6-30-A	M6	30	45	24	22	192
SBN-8-30-A	M8	30	45	24	22	172
SBN-10-30-A	M10	30	50	28	22	167
SBN-12-30-A	M12	30	50	28	22	134

Unit : mm

● Part number specification

SBN-10-30-AProduct Code **1** **2** Coarse Thread Type

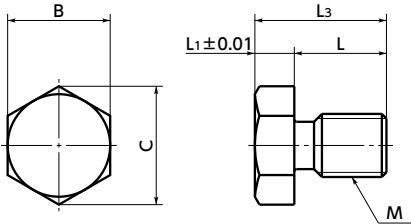
Cleanroom Wash & Packaging → P.807 Screw Combination → P.813 Screw Length Adjustment → P.811 Vibration Resistant → P.810

Not Available Not Available Not Available Please feel free to contact us

Machine Elements
Levers
Knobs
Pulls
Mounting Systems for Display
Set Collars
Cross Clampers
Handles
Grips
Scales
Stages
Ball Rollers
Plungers
Structure Components
Screws

SPM Stop Pin

WEB Selection Tool
WEB CAD Download



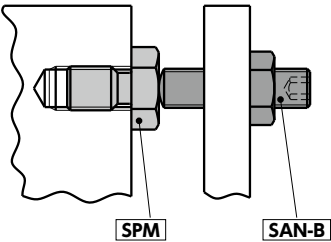
- Use this as a recipient of the stopper bolt **SSB-A** (→ P.537) **SSB-B** (→ P.538) and stopper screw **SAN-B** (→ P.541).
- The hexagon head end face has already been quenched. It is highly abrasion-resistant.

- Material/Finish RoHS2 Compliant

	SPM
Main body	S45C end face quenching (hardness: 35 HRC or above) - Polishing Trivalent Chromate Treatment

Unit : mm							
Part Number	M (coarse)	L3	L1	L	B	C	Mass (g)
SPM-M3	M3	7	2	5	6	6.9	0.6
SPM-M4	M4	8.8	2.8	6	7	8.1	1.3
SPM-M5	M5	10.5	3.5	7	8	9.2	2.4
SPM-M6	M6	12	4	8	10	11.5	4.5
SPM-M8	M8	15	5	10	13	15	9.5
SPM-M10	M10	20	6	14	17	19.6	20
SPM-M12	M12	23	7	16	19	21.9	31

- Usage example
In combination with a stopper screw **SAN-B**.



- Part number specification

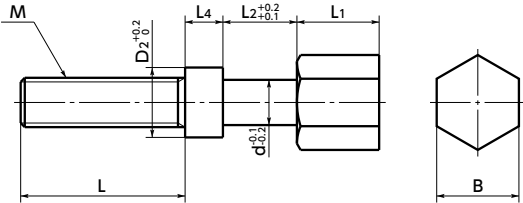
SPM - M10

Product Code

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Not Available	Not Available	Not Available	Available / Add'l charge

SAT Adjust Bolt

WEB Selection Tool
WEB CAD Download



- For work and jig locating and centering, etc.
- Please combine with the block **SAK-A** **SAK-B**.
→ P.545
- Adjust bolt **SAT** and block **SAK-A** **SAK-B** combination

Part Number	Blocks for applicable adjust bolt	
SAT-M6	SAK-6-A	SAK-6-B
SAT-M8	SAK-8-A	SAK-8-B
SAT-M10	SAK-10-A	SAK-10-B
SAT-M12	SAK-12-A	SAK-12-B

- Material/Finish RoHS2 Compliant

	SAT
Main body	S45C Nickel Plating

Unit : mm													
Part Number	M (coarse)	L					L4	L1	D2	B	d	L2	Mass (g)
SAT-M6	M6	20	30	35	40	50	4.6	10	8.5	10	5.5	9	14 - 20.5
SAT-M8	M8		30		40	50	6	15	11.5	13	7.5	12	36 - 48
SAT-M10	M10		30		40	50	7	15	15.5	17	9.5	16	64 - 82
SAT-M12	M12		30		40	50	7	20	17.5	19	11.5	19	100 - 125

- Part number specification

SAT - M8 - 40

Product Code

Cleanroom Wash & Packaging → P.807	Screw Combination → P.813	Screw Length Adjustment → P.811	Vibration Resistant → P.810
Not Available	Not Available	Available / Add'l charge	Available / Add'l charge

Machine Elements
Levers
Knobs
Pulls
Mounting Systems for Display
Set Collars
Cross Clampers
Handles
Grips
Scales
Stages
Ball Rollers
Plungers
Structure Components
Screws

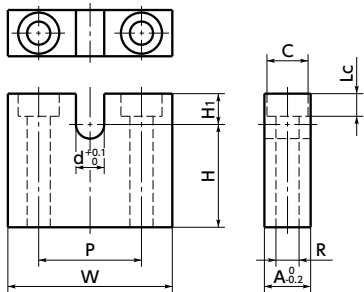
SAK-A / SAK-B Block for Adjust Bolt



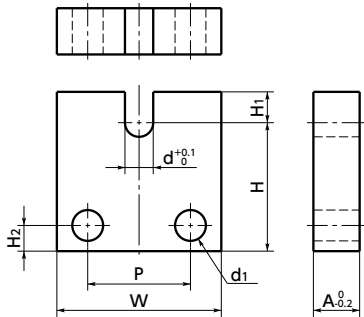
WEB Selection Tool

WEB CAD Download

SAK-A



SAK-B



- Block for fixing Adjust bolt **SAT**.
- You can choose it from the following two types according to your application.   
 - SAK-A** — Mounting from above
 - SAK-B** — Mounting from front
- Please combine with the adjust bolt **SAT**.
→ P.544

Material/Finish		RoHS2 Compliant
SAK-A / SAK-B		
Main body	SS400 Nickel Plating	

SAK-A Mounting from above

Part Number	Nominal	 H				A	H ₁	P	W	d	R	C	Lc	Mass (g)
SAK-6-A	6	10		20	30	9	6	20	32	5.5	4.5	8	4.4	28 - 60
SAK-8-A	8	10		20	30	12	8	26	38	7.5	5.5	9.5	5.4	49 - 113
SAK-10-A	10		15		30	16	10	32	50	9.5	9	14	8.6	117 - 200
SAK-12-A	12		15		30	19	11	40	65	11.5	9	14	8.6	197 - 329

SAK-B Mounting from front

Part Number	Nominal	 H	A	H1	H2	P	W	d	d1	Mass (g)
SAK-6-B	6	25	9	6	5	20	32	5.5	6	62
SAK-8-B	8	25	12	8	6	26	38	7.5	7	102
SAK-10-B	10	35	16	10	9	32	50	9.5	9.5	186
SAK-12-B	12	40	19	11	12	40	65	11.5	11.5	293

- Part number specification

SAK-10-30-A (For **SAK-A**)

Product Code   

SAK-8-B (For **SAK-B**)

Product Code  

 Cleanroom Wash & Packaging → P.807	 Screw Combination → P.813	 Screw Length Adjustment → P.811	 Vibration Resistant → P.810
Not Available	Not Available	Not Available	Not Available

Safety Precautions (Machine Elements)

In order to use our products safely, please read these "safety precautions", and "precautions" and "handling methods" on each product page, before use.
After reading the precautions and methods, store this catalog so that it can be reviewed when necessary.

Warning

If handled incorrectly, personal injury or physical damage may occur.

- Make sure to switch off the power of machines before attaching and removing products. Hands and fingers may touch the machine and cause injury if it is operated suddenly.
- Our products are manufactured for use with general purpose instruments and machines. When using these products with instruments and machines that require safety, use a prototype to confirm usability.
- To prevent danger, check for looseness of screws and perform other maintenance on regular basis.
- Do not disassemble or modify products.

Precautions

If handled incorrectly, death or serious injury may occur.

- Do not use products in environments that may negatively affect them.
- Take care when handling products. If products are dropped, they may become damaged or deformed. In addition, take care when performing work to avoid back pain when moving objects or dropping items on feet.
- The mechanical properties, physical properties, chemical resistance, heat resistance temperature, and other data listed on the product pages in this catalog are reference values. These values may change due to performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.
- To prevent a negative impact on the environment, have a professional disposal company dispose of these products.
- Take care to avoid burns when handling products. Heat transferred from the surrounding machines may cause products to reach high temperatures immediately after operation stops.

Special Screws

Select a product from category	P.551	Miniature Screws	P.681
Select a product from application	P.553	Captive Screws/Full Thread Screws	P.689
Vacuum Application Screws	P.563	Functional Screws	P.701
Low profile Screws/Small Head Screws	P.593	Inch Screws	P.708
High Performance S.S. Screws	P.621	Tamper Resistance Screws	P.713
Titanium Screws	P.633	Hexalobular Socket Head Screws	P.723
Special Material Screws	P.645	Plugs	P.727
Chemical Resistance Screws	P.663	Plastic Screws	P.733
Screws with Special Surface Treatment	P.671	Washers/Lock Nuts	P.780



Problems solved with NBK® special screws!

Fallen out screws can be very dangerous!



Captive Screws

Standard screws cannot fit here...

Special screws built to your needs.



Reduce weight for energy saving!



Titanium Screws

There are a lot of seizing here...



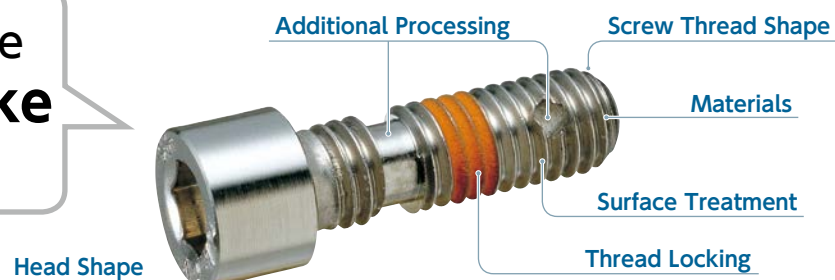
Screws with Special Surface Treatment

No dust! No oil!



Cleanroom Wash & Packaging Service

We can make a screw like this one



Additional Processing

Screw Length Adjustment Through Hole Processing Necking Screw Tip Processing Head Processing Horizontal Hollow Processing



To meet customer's desired length



To release machine gas



To prevent screws from falling out



To improve locationing



To decrease head diameter



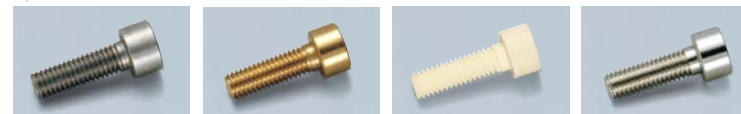
To prevent loosening

Surface Treatments



Materials

Special Materials



Pure Titanium Phosphor Bronze Ceramic Molybdenum
Inconel, Hastelloy, Nickel, Super Invar, SUS316L, SUS310S, Aluminum, and more.

Plastic



VESPEL® PEEK PC Conductive PEEK
Others such as conductive resins, PCTFE, POM, PI, and more.

Vibration Resistant



Nylon Deposition Nylon Lock

Screw Thread Shape • Standards



Thread Pitches: Coarse, Fine, Very Fine, Unified and Whitworth

Head Shape



Ordering Standard Products

Select a product from category

→ P.551

Select a product from application

→ P.553

Ordering Special Products

Feel free to contact us.

<https://www.nbk1560.com/>

Select a product from categories

Vacuum Application Screws → P.563

Screws have gas ventilation holes for vacuum drawing of machines and have excellent corrosion resistance under vacuum environments.



Low Profile Screws Small Head Screws → P.593

Compact head screws. Suitable for reducing the size of applications.



High Performance S.S. Fasteners → P.621

High performance stainless steel screws have excellent strength, heat resistance, and corrosion resistance compared to standard stainless steel screws.



Titanium Screws → P.633

Screws made of titanium. They are lightweight, nonmagnetic, and chemically resistant.



Special Material Fasteners → P.645

Screws made of special materials such as Inconel, Molybdenum and Hastelloy to provide excellent heat, chemical, corrosion resistance.



Chemical Resistance Screws → P.663

Screws with special materials, surface treatments, and shapes for applications that require chemical resistance.



Screws with Special Surface Treatment → P.671

Screws with surface treatment for seizing prevention and reflection resistance.



Miniature Screws → P.681

Small-diameter screws lower than M2.6 size for precision instruments.



Captive Screws Full Thread Screws → P.689

Screws for falling out prevention and screws with full thread.



Inch Screws → P.708

Screws for equipment and facilities that use inch-screw specifications.



Hexalobular Socket Head Screws → P.723

Screws with strength socket heads. For repeating installations and removals.



Plastic Screws → P.733

Various types of plastic screws made from materials such as VESPEL®, PEEK, and PTFE (Teflon).



Functional Screws → P.701

Screws for fixing and locating clamping screws and ball plungers.



Tamper Resistance Screws → P.713

Screws which cannot be installed or removed easily with standard tools to prevent theft and tampering.



Plugs → P.727

Screw plugs for oil hydraulic equipment and pneumatic devices are available.



Washers and vibration resistant treatment → P.780

Washers with abundant outside diameter and thickness variations, and vibration resistant treatment parts are available.



Select a product from application → P.553 - 558

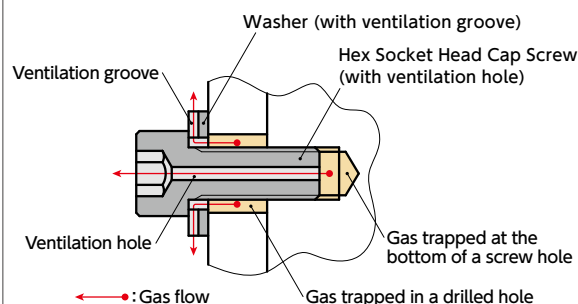


Select a product from application

Select a product
from category → P.551

Vacuum

- Bolts with ventilation holes and washers with ventilation grooves support equipment vacuuming.



- The surface of the screw head has been roughened with blasting to prevent the deposition from peeling off.



	Listed page
Hex Socket Head Cap Screws with Special Low Profile - Head Shot Blast	→ P.590

- Aluminum alloy and ceramic cover caps prevent corrosion of bolts due to the process gas and plasma in the vacuum chamber.



	Listed page
Cover Caps	
Socket Head Cap Screws for Cover Caps	→ P.591

With ventilation hole/ventilation groove	Listed page
Screws	→ P.565 - 582
Washers	→ P.583 - P.584
Hexagon Posts	→ P.585 - P.586
Clamping Set Screws	→ P.587
Clamping Cap Screws	→ P.588
Miniature Ball Plungers	→ P.589

Low Outgas

- Screws using material/surface treatment with low outgassing. Outgassing is extremely low even in vacuum environments.



Material and Surface Treatment	Listed page
Special Chemical Polish	→ P.565
Stainless Steel Black	→ P.675
Low temperature black chrome treatment	→ P.676
VESPEL®	→ P.739 - 742
PEEK	→ P.743 - 754

Cleanroom Specification

- Screws are washed and packed in cleanrooms.



Particle Measurement Results

Specimen: SUS303 $\phi 19 \times 20$

Test Method: Automatic Submerged Particle Counter Measurement

Number of particles floating in ultra-pure water Unit: pc

Particle Size	Ultrasonic Cleaning	IPA Cleaning	Unprocessed
$\geq 0.3\mu\text{m}$	220,000	7,000,000	210,000,000
$\geq 0.5\mu\text{m}$	51,000	1,900,000	37,000,000
$\geq 0.7\mu\text{m}$	15,000	640,000	9,700,000
$\geq 1.0\mu\text{m}$	3,100	160,000	1,400,000
$\geq 2.0\mu\text{m}$	280	29,000	240,000

Refer to the cleanroom washing and packaging service for more information. → P.807

Chemical Resistance

- Screws with excellent chemical resistance protect the thread and screw head from chemicals.



- PTFE (Teflon) cover cap protects the screw head from chemicals.



	Listed page
Cover Caps	
Socket Head Cap Screws for Cover Caps	→ P.667

- Bolt head only has Teflon coating with excellent chemical resistance.



	Listed page
Hex head screw (Teflon coating for head)	→ P.669

Metal's chemical resistance

Material	Chemical Resistance	Listed page
Hastelloy	High	→ P.653
Monel 400		→ P.647
Titanium		→ P.633 - 643
Inconel		→ P.648 - 649
SUS316L (HiMo)		→ P.625
SUS310S		→ P.628

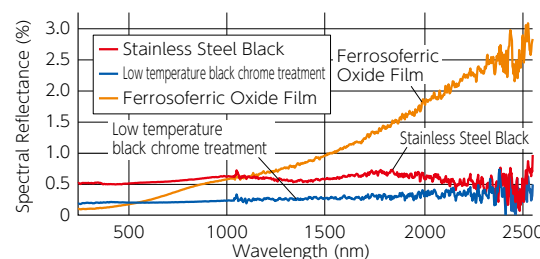
Resin's chemical resistance

Material	Chemical Resistance	Listed page
PTFE (Teflon)	High	→ P.769 - 770
PVDF		→ P.771 - 772
H-PVC		→ P.775 - 776
PP		→ P.773 - 774
PEEK		→ P.743 - 754

• Chemical resistance changes with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.

Antireflection

- Low temperature black chrome treatment/stainless steel black has a very low spectral reflectance, making it ideal for optical equipment that requires antireflection.



Special Surface Treated Screw	Spectral Reflectance	Listed page
Stainless Steel Black	1.5% or less	→ P.675 - P.789
Low temperature black chrome treatment	1.5% or less	→ P.676

Heat-resistance

- These are highly heat-resistant screws even for metal/resin. Select according to the operating environment.



Material	Tensile Strength (N/mm ²)				Listed page
	200°C	500°C	800°C	1000°C	
SUS316L	560	500	250	—	→ P.627
SUS310S	580	500	200	—	→ P.628
Inconel 600	560	530	200	70	→ P.648 - 649
Molybdenum	590	450	290	210	→ P.650
Carbon Steel	450	230	40	—	
SUS304	500	420	160	—	

Material	Continuous operating temperature (°C)	Listed page
Ceramic	1500	→ P.659 - 661
VESPEL®	288 - 350	→ P.739 - 742
PTFE (Teflon)	260	→ P.769 - 770



Select a product from application

Select a product
from category → P.551

Seizing Prevention

- By reducing the friction coefficient of the threaded surface through plating and coating, the required axial force can be obtained even at low tightening torque. As a result, the generation of frictional heat in tightening can be suppressed, making it effective in preventing galling and seizing.

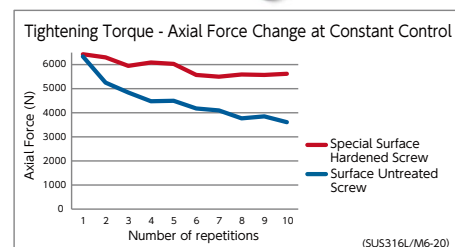


Low Temperature Black Chrome Treatment

Special Surface Treated Screw	Axial Force (kN)	Listed page
Low temperature black chrome treatment	9.2	→ P.676
Teflon coating	8.7	→ P.677
Molybdenum disulfide coating	6.7	→ P.674
Fluorine coating	5	→ P.673
Gold coating	4.3	→ P.678
No surface treatment	2.3	—

- Stainless steel/M5/tightening torque: values measured at 5N·m.

- Galling and seizing are prevented by curing the screw surface using NBK's own processing technology. There is nothing adhering to the surface, eliminating concerns about contamination due to stripping. Furthermore, it is effective in preventing galling and seizing even at high temperatures.



Surface hardening treatment	Listed page
	→ P.679

High Strength

- Screws made of high-strength titanium, stainless steel, resin and surface treatment. For applications that require strength in addition to the properties of the material and surface treatment.



Ti-6Al-4V (64 Titanium)

Functional Stainless Steel Screws	Tensile Strength (N/mm ²)	Listed page
SUS316L HiMo	800 · 1000	→ P.625

Titanium Screws	Tensile Strength (N/mm ²)	Listed page
Ti-6Al-4V (64 Titanium)	895 or Higher	→ P.635
Ti-15-3-3-3 (β Titanium)	705 - 945	→ P.637 · P.639

Plastic screw	Tensile Strength (N/mm ²)	Listed page
RENY	285	→ P.761 - 768

Tightening Hole Damage Prevention

- Hexalobular hole shape allows minimal damage from tools compared to hex hole or cross hole. It is ideal for repeated use at a high tightening torque.



Hexalobular Socket Head Cap Screws with Special Low Profile



Hexalobular Socket Pan Head Machine Screws	Hexalobular Socket Flat Head Machine Screws
--	---

	Listed page
Hexalobular Socket Head Cap Screws with Low Profile	→ P.605
Hexalobular Socket Head Cap Screws with Special Low Profile	→ P.606
Hexalobular Socket Head Cap Screws with Extreme Low Profile	→ P.607
Hexalobular Socket Pan Head Machine Screws	→ P.724
Hexalobular Socket Flat Head Machine Screws	→ P.725

Non-magnetic

- Non-magnetic screws with low permeability. For FPD manufacturing equipment, semiconductor manufacturing equipment and electronic equipment requiring non-magnetic properties.



	Amplitude Permeability (μ)	Listed page
Pure Titanium	1.0001	→ P.636 · P.638 · P.640 - 643
Phosphor Bronze	1.0001	→ P.657
Ti-6Al-4V (64 Titanium)	1.0002	→ P.635
Ti-15-3-3-3 (β Titanium)	1.0002	→ P.637 · P.639
SUS316L	1.006	→ P.627
SUS316 HiMo	1.007	→ P.625

Lightweight

- For applications that require lighter weight such as automobiles, aircraft, aerospace equipment, medical equipment, robots, etc.



Metal screw	Specific Gravity	Listed page
Aluminum	2.64	→ P.658
Ti-6Al-4V (64 Titanium)	4.43	→ P.635
Pure Titanium	4.51	→ P.636 · P.638 · P.640 - 643
Ti-15-3-3-3 (β Titanium)	4.8	→ P.637 · P.639
Iron	7.8	—

Plastic screw	Specific Gravity	Listed page
PC	1.2	→ P.777 - 778
RENY	1.65	→ P.761 - 768

Electrical Insulation

- Screws with excellent electrical insulating properties. For electrical and electronic equipment and the like requiring electrical insulating properties.



	Volume Resistivity (×10 ¹⁴ Ω·m)	Listed page
PTFE (Teflon)	>100	→ P.769 - 770
PEEK	4.9	→ P.743 - 754
PC	4	→ P.777 - 778
Ceramic	>0.01	→ P.659 - 661
Iron	10×10 ⁻⁸ Ω·m	—

Simple Operation

- Screws with washers incorporated. They do not require washers to be embedded, simplifying the assembly.



	Listed page
Hex Socket Head Cap Screws with Captive Washer and Ventilation Hole	→ P.567
Socket Button Head Cap Screws with Flange	→ P.611
Hex Socket Head Cap Screws with Magnetic Captive Washer	→ P.631



Select a product from application

Select a product
from category → P.551

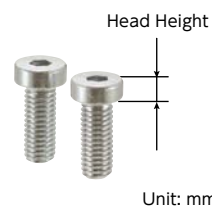
Space-saving.

- Screws with low head. Suitable for reducing the size of equipment and devices.



Hex Socket Head Cap Screws with Special Low Profile

Low Head Screws	Listed page
Hex Socket Head Cap Screws with Ventilation Hole with Low Profile	→ P.574
Hex Socket Head Cap Screws with Low Profile	→ P.595
Hex Socket Head Cap Screws with Special Low Profile	→ P.599 - 604
Hexalobular Socket Head Cap Screws with Low Profile	→ P.605 - 607
Aluminum Hexalobular Socket Head Cap Screws with Extreme Low Profile	→ P.609
Hex Head Screw / Special Low Head	→ P.610
Hex Socket Head Cap Captive Screws with Low Profile	→ P.697
Tamper Resistant Special Low Profile Cap Screws	→ P.714



Unit: mm

Comparison of low-head and standard screw head heights

	Hex Socket Head Cap Screw JIS B 1176	Hex Socket Head Cap Screws with Low Profile	Hex Socket Head Cap Screws with Special Low Profile	Hexalobular Socket Head Cap Screws with Extreme Low Profile
M2	2	1.3	1.1	0.5
M2.5	2.5	1.6	1.3	—
M2.6	2.6	—	—	0.6
M3	3	2	1.3	0.8
M4	4	2.8	1.5	0.9
M5	5	3.5	1.5	1
M6	6	4	1.5	1.2
M8	8	5	1.5	—
M10	10	6	1.5	—

- Screws with small head diameter.



Hex Socket Head Cap Screws with Small Head

Small Head Screws	Listed page
Cross Recessed Flat Head Machine Screws with Small Head	→ P.614
Hex Socket Head Cap Screws with Small Head	→ P.615
Hex Socket Head Cap Screws with Low & Small Head	→ P.617
Hex Socket Head Cap Screws with Extreme Low & Small Head	→ P.619



Unit: mm

Comparison of small-head and standard screw head diameters

	Hex Socket Head Cap Screw JIS B 1176	Hex Socket Head Cap Screws with Small Head
M2	3.8	3
M2.5	4.5	3.8
M3	5.5	4.5
M4	7	5.5
M5	8.5	7
M6	10	8.5
M8	13	11
M10	16	13.5

- Small-diameter screws of M2.6 or less.



Pan Head Machine Screws for Precision Instruments



Resin Screws
(PEEK / small countersunk screws for precision equipment)



Set Screws for Precision Instruments

	Listed page
Miniature Screw Series	→ P.681 - 688

Theft Prevention

- This prevents mounting and removing with commercial screwdrivers or wrenches. Dedicated tools are required for these screws, providing effective theft prevention.



Triwing Pan Head Machine Screws



Flat Head Bolts with Hexalobular Socket (with Pin)

	Listed page
Tamper Resistant Special Low Profile Cap Screws	→ P.714
Flat Head Bolts with Hexalobular Socket (with Pin)	→ P.717
Button Head Cap Screws (with Pin)	→ P.718 · P.719
Two Hole Pan Head Machine Screws	→ P.721
Triwing Pan Head Machine Screws	→ P.722

- Theft prevention nuts and one-sided pan-head screws can be mounted using commercially available tools. Crime can be prevented without compromising the workability of mounting.



Theft Prevention Nuts



One Side Pan Head Machine Screws

	Listed page
Theft Prevention Nuts	→ P.715
One Side Pan Head Machine Screws	→ P.720

Fixing and Positioning

- Clamping bolts, ball plungers, etc. suitable for fixing and positioning.



Clamping Screws with Eccentric Head



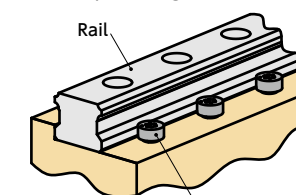
Clamping Screws

Clamping Bolts

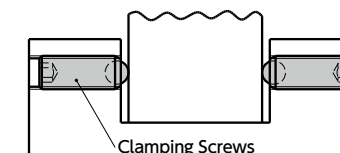


Miniature Ball Plungers

- For fixing linear guideway rails and workpieces that can be easily damaged.



Clamping Screws with Eccentric Head



Clamping Screws

	Listed page
Clamping Set Screws with Ventilation Hole	→ P.587
Clamping Cap Screws with Ventilation Hole	→ P.588
Spring Plungers with Ball with Ventilation Hole	→ P.589
Clamping Screws with Eccentric Head	→ P.702 - 706
Hex Socket Head Cap Screws - Fine Pitch Thread	→ P.707



Select a product from application

Select a product
from category → P.551

Fallout/Loss Prevention

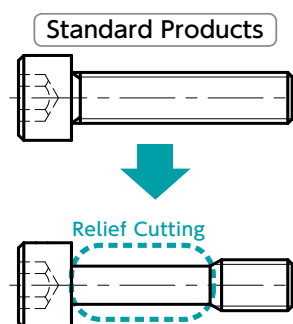
- Screws and washers suitable for screw fallout prevention. For CE Marking compatibility.



Hex Socket Head Cap Captive Screws

	Listed page
Captive screw	→ P.689 - 699

- Captive processing service is available to provide screws with relief cut and fallout prevention functions.



	Listed page
Captive Processing Service	→ P.806

- Since a flat washer is incorporated into the screw, the washer will not be lost. Furthermore, the magnetic detection type has a built-in magnetic flat washer, allowing magnetism detection.



Hex Socket Head Cap Screws with Captive Washer and Ventilation Hole



Hex Socket Head Cap Screws with Magnetic Captive Washer

	Listed page
Hex Socket Head Cap Screws with Captive Washer and Ventilation Hole	→ P.567
Hex Socket Head Cap Screws with Magnetic Captive Washer	→ P.631

Vibration Resistant

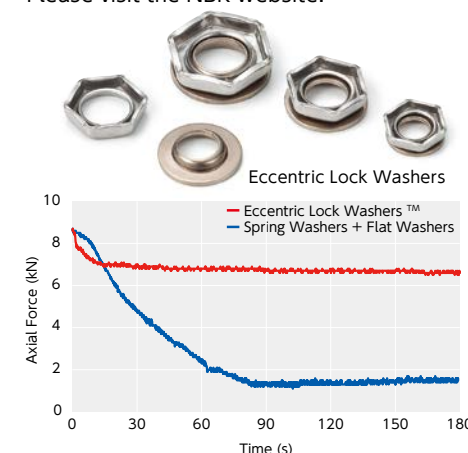
- Screw components highly effective for prevention of screw loosening due to vibration or seating surface falling.



	Listed page
Socket Button Head Cap Screws with Flange	→ P.611
Hex Lock Nuts - Titanium	→ P.642
Eccentric Lock Washers	→ P.781
Ribbed Lock Washers	→ P.791
High Intensity Flat Washers	→ P.795
Hex Lock Nuts	→ P.797

In addition to the above products, an anti-loosening service for screws is available. → P.810

- Prevents screw loosening with eccentric lock washers in combination with commercially available hex nuts. Video displays Junker and NAS vibration tests, demonstrating high loosening-prevention performance. Please visit the NBK website.



Prevention of air/liquid leakage

- Plugs and seal washers prevent leakage of gas or liquid.



	Listed page
Plugs	→ P.727 - 732
Locking and Sealing Rings	→ P.790
Seal Washers	→ P.793

Decoration

- The mounting surface has been beautifully decorated with a distinctive color and shape.



	Listed page
Stainless Steel Black	→ P.675 - P.789
Special Low Profile Cap Screws	→ P.599 - 604 - P.606
Hexalobular Socket Head Cap Screws with Extreme Low Profile	→ P.607 - P.609
Gold coating	→ P.678
Two Hole Pan Head Machine Screws	→ P.721
Plastic Screws - Cross Recessed Pan Head Machine Screws - PC	→ P.777
Bezel Washers	→ P.796

Select a product from application

Consult us any time about screws.

Please feel free to contact us.

Material


Pure Titanium


Phosphor Bronze


Molybdenum


Aluminum


VESPEL*


PEEK

Others, PC, RENY, PVDF, Ceramic, Titanium Palladium, Inconel 718 or Equivalent, Nitronic 60 or Equivalent, etc.

Surface treatment


Trivalent Chromate Treatment


Electroless Nickel Plating


Stainless Steel Black


Special Chemical Polishing


Electrolytic Polishing


Gold Coating


Gold Plating


Silver Plating


Chrome Plating

Others, Molybdenum Disulfide Coating, Teflon Coating, TiN Coating, Nickel Plating, Tuffride Treatment (Salt Bath Soft Nitriding Treatment), etc.

Additional Modification

Screw Cutting

For required screw length



Through-hole Processing

For ventilation devices



Relief Cutting

For Fallout Prevention



Screw Tip Treatment

For Positioning, etc.



Head Treatment

For Large Head Diameter



Lateral Hole Treatment

For Loosening Prevention



Selection Navigator

CAD Data Download

<https://www.nbk1560.com/>

Special Screws

Vacuum Application

Low Profile, Small Head

High Performance SS

Titanium

Special Material

Chemical Resistance

Special Surface Treatment

Miniature

Captive/ Full Thread

Functional

Inch

Tamper Resistance

Hexalobular Socket Head

Plugs

Plastic

Washers/ Lock Nuts

561

NBK

<https://www.nbk1560.com/>

Special Screws

Vacuum Application

Low Profile, Small Head

High Performance SS

Titanium

Special Material

Chemical Resistance

Special Surface Treatment

Miniature

Captive/ Full Thread

Functional

Inch

Tamper Resistance

Hexalobular Socket Head

Plugs

Plastic

Washers/ Lock Nuts

562



• Socket Head Cap Screws (with Ventilation Hole)

	Socket Head Cap Screws					
Part Number	SVSS	SVSS-PC	SVSQS	SVSS (INCH)	SVSS-MOS	SVSS-AG
Shape						
Page	P.565	P.565	P.567	P.568	P.569	P.570
Materials	SUSXM7	SUSXM7 Chemical Polish	SUSXM7	SUSXM7	SUSXM7 MoS2 Shot	SUSXM7 Silver Plating
Characteristics	Standard	Low Outgas	Built-in Washers	Inch Screws	Seizing Prevention	Seizing Prevention
Size	M2 - M12	M3 - M12	M3 - M12	No.4-40UNC - 1/4-20UNC	M3 - M8	M3 - M8

	Socket Head Cap Screws			Socket Head Cap Screws with Low Profile	Socket Head Cap Screws with Special Low Profile	Hex Socket Countersunk Head Screws
Part Number	SVSX-88	SVSL	SVST	SVLS	SVSHS	SVFCS
Shape						
Page	P.571	P.572	P.573	P.574	P.575	P.576
Materials	SUS316L HiMo	SUS316L	TB340C (Grade 2 Titanium)	SUSXM7	SUSXM7	SUSXM7
Characteristics	High Strength (Strength Class 8.8)	Corrosion Resistance	Lightweight • Nonmagnetic • Chemical Resistance	Low Profile Small Space	Special Low Profile Small Space	Hex Socket Counter- sunk Head Screws Small Space
Size	M3 - M6	M3 - M12	M3 - M5	M3 - M10	M3 - M6	M3 - M8

• Hex Head Screws (with Ventilation Hole)

	Hex Head Screws
Part Number	SVHS
Shape	
Page	P.577
Materials	SUSXM7
Characteristics	Hex Head Screws
Size	M3 - M8

• Cross Recessed Machine Screws (with Ventilation Hole)

	Cross Recessed Flat Head Machine Screws		Phillips Cross Recessed Pan Head Machine Screws	
Part Number	SVFS	SVFT	SVPS	SVPT
Shape				
Page	P.578	P.579	P.580	P.581
Materials	SUSXM7	TW270 (Grade 1 Titanium)	SUSXM7	TW270 (Grade 1 Titanium)
Characteristics	Flat Head Machine Screws Small Space	Lightweight • Nonmagnetic • Chemical Resistance	Pan Head Machine Screw	Lightweight • Nonmagnetic • Chemical Resistance
Size	M2 - M6	M3 - M5	M3 - M8	M3 - M4

• Hex Socket Set Screws (with Ventilation Hole)

	Phillips Cross Recessed Set Screws
Part Number	SVTS
Shape	
Page	P.582
Materials	SUSXM7
Characteristics	Set Screw
Size	M3 - M8

• Washers (with Ventilation Grooves)

	Washers		
Part Number	SWAS-VF	SWAS-VF-PC	SWAT-VF
Shape			
Page	P.583	P.583	P.584
Materials	SUS304	SUS304 Chemical Polishing	TP340C (Grade 1 Titanium)
Characteristics	Standard	Low Outgas	Lightweight • Nonmagnetic
Size	Nominal 3 to 12	Nominal 3 to 12	Nominal 3 to 5

• Hex Posts (with Ventilation Hole)

	Hex Posts	
Part Number	SHVAS	SHVBS
Shape		
Page	P.585	P.586
Materials	SUS304	SUS304
Characteristics	Single - end Female Screw Type	Double - end Female Screw Type
Size	M3 - M8	M3 - M8

• Fixing and Locating (with Ventilation Hole)

	Clamping Set Screws		Clamping Cap Screws		Spring Plunger with Ball
Part Number	SCSS-VR	SCSS-VF	SCBS-VR	SCBS-VF	PVFS
Shape					
Page	P.587	P.587	P.588	P.588	P.589
Materials	Body : SUSXM7 Ball : SUS440C	Body : SUSXM7 Ball : SUS440C	Body : SUSXM7 Ball : SUS440C	Body : SUSXM7 Ball : SUS440C	Body : Stainless Steel (A2) Ball : SUS440C
Characteristics	For Fixing • Full Ball	For Fixing • Flat Ball	For Fixing • Full Ball	For Fixing • Flat Ball	For Locating
Size	M5 - M10	M5 - M10	M5 - M10	M5 - M10	M5 - M10

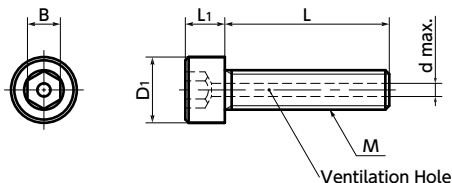
• High Performance Socket Head Cap Screws

	Socket Head Cap Screws with Special Low Profile	Cover Caps		Socket Head Cap Screws for Cover Caps
Part Number	SSHs-HB	SCAP-AL	SCAP-CE	SNCPS
Shape				
Page	P.590	P.591	P.591	P.591
Materials	SUSXM7 Blasting (Head Only)	A5056	Al ₂ O ₃ 99.5% Alumina	SUSXM7
Characteristics	Peeling Prevention for Deposits	Low Outgas • Corrosion Resistance	Heat Resistance • Chemical Resistance • Electrical Insulation	For Cover Caps
Size	M3 - M6	M3 to M10	M3 to M10	M3 - M10



SVSS Hex Socket Head Cap Screws with Ventilation Hole

WEB Selection Tool CAD Download SUS Stainless steel Vacuum Cleanroom wash & packaging



- Material/Finish RoHS2 Compliant

	SVSS	SVSS-PC
Main Body	SUSXM7 (Equivalent to SUS304)	SUSXM7 (Equivalent to SUS304) Chemical Polish
Strength Class	A2-70	A2-70

- Part number specification

SVSS - M5 - 25 - PC

Product Code

Order in number of packs.
Also sold separately from 1 piece up.

- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Cleanroom wash and cleanroom packing are completed.
- SVSS-PC** has an improved surface coarseness by chemical polishing. Outgas quantity is extremely low. Suitable for the use under medium vacuum environments.
- Ventilation holes are made using a method that has little effect on metal structure. The occurrence of outgas under vacuum environment and brittle fracture during usage are suppressed respectively.

- Application

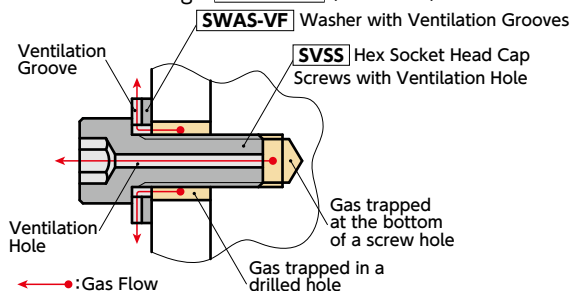
Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

Unit : mm

SVSS	SVSS-PC	Common dimensions																					
No Surface Treatment	Chemical Polish																						
Part Number	Part Number	M	L																D1	L1	B	d	Mass (g)
		1	2																				
SVSS-M2		M2	3	4	5	6	8	10										3.8	2	1.5	0.8	0.16 - 0.3	
SVSS-M2.5		M2.5		4	5	6	8	10	12									4.5	2.5	2	1	0.35 - 0.59	
SVSS-M3	SVSS-M3-PC	M3			5	6	8	10	12	16								5.5	3	2.5	1.2	0.67 - 1.2	
SVSS-M4	SVSS-M4-PC	M4			5	6	8	10	12	16	20	25	30	35				7	4	3	1.5	1.4 - 4.2	
SVSS-M5	SVSS-M5-PC	M5				6	8	10	12	16	20	25	30	35	40			8.5	5	4	1.5	2.2 - 7.1	
SVSS-M6	SVSS-M6-PC	M6					8	10	12	16	20	25	30	35	40	45	50	10	6	5	2	4.3 - 13	
SVSS-M8	SVSS-M8-PC	M8							12	16	20	25	30	35	40	45	50	60	13	8	6	2	11 - 29
SVSS-M10	SVSS-M10-PC	M10								16	20	25	30	35	40	45	50	60	16	10	8	3	21 - 46
SVSS-M12	SVSS-M12-PC	M12											30	35	40	45	50	60	18	12	10	3	39 - 63

- Usage example

Gas trapped at the bottom of a screw hole is released through **SVSS**, and gas trapped in a drilled hole is released through **SWAS-VF** ().



Individual Sales Cleanroom Wash & Packaging Screw Length Adjustment Vibration Resistant Modification process for captive use
Available / Add'l charge Cleanroom washed and packed Available / Add'l charge Not Available Please feel free to contact us

- Related Products

SVSQS Socket Head Cap Screws with Captive Washer and Ventilation Holes



SVST Socket Head Cap Screws - Titanium



SVSHS Hex Socket Head Cap Screws with Special Low Profile



SVFCS Hex Socket Countersunk Head Screws



SVSS-MOS Socket Head Cap Screws with MoS2 Shot



SVSS No Surface Treatment

Part Number	Qty*1 per pack
SVSS-M2	10
SVSS-M2.5	10
SVSS-M3	20
SVSS-M4	20*2
SVSS-M5	10
SVSS-M6	10
SVSS-M8	10*2
SVSS-M10	5
SVSS-M12	5

*1 : Also sold separately from 1 piece up.

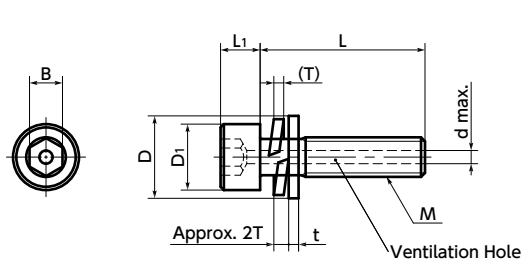
*2 : Quantity per pack for **SVSS-M4-30** and **SVSS-M4-35** is 10 pieces. Quantity per pack for **SVSS-M8-60** is 5 pieces.

SVSS-PC Special Chemical Polishing

Part Number	Qty*1 per pack
SVSS-M3-PC	20
SVSS-M4-PC	20*2
SVSS-M5-PC	10
SVSS-M6-PC	10
SVSS-M8-PC	10*2
SVSS-M10-PC	5
SVSS-M12-PC	5

*1 : Also sold separately from 1 piece up.

*2 : Quantity per pack for **SVSS-M4-30-PC** and **SVSS-M4-35-PC** is 10 pieces. Quantity per pack for **SVSS-M8-60-PC** is 5 pieces.



● Part number specification

SVSQS-M5-25



Order in number of packs.
Also sold separately from 1 piece up. ➡ P.809

- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Flat washers and spring washers are captive, therefore prevent separation from screws.
- It is unnecessary to assemble washers. It simplifies work when wearing gloves in a clean room.
- Cleanroom wash and cleanroom packing are completed. ➡ P.807

● Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish

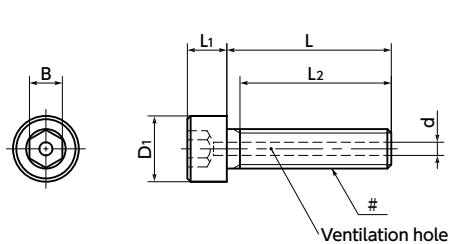
	SVSQS
Screw Body	SUSXM7 (Equivalent to SUS304)
Screw Body Tensile Strength	A2-70
Plain Washer	SUS304
Spring Washer	SUS304

Part Number	M	L												D1	D	L1	B	t	T	d	Mass (g)
		5	6	8	10	12	16	20	25	30	35	40	45								
SVSQS-M3	M3													5.5	7	3	2.5	0.5	0.7	1.2	0.9 - 1.4
SVSQS-M4	M4													7	9	4	3	0.8	1	1.5	2.1 - 4.7
SVSQS-M5	M5													8.5	10	5	4	1	1.3	1.5	3.4 - 8
SVSQS-M6	M6													10	12.5	6	5	1.6	1.5	2	6.9 - 15
SVSQS-M8	M8													13	17	8	6	1.6	2	2	15 - 29
SVSQS-M10	M10													16	21	10	8	2	2.5	3	29 - 47
SVSQS-M12	M12													18	24	12	10	2.5	3	3	51 - 66

Part Number	Qty*1 per pack
SVSQS-M3	20
SVSQS-M4	10
SVSQS-M5	10
SVSQS-M6	10
SVSQS-M8	10
SVSQS-M10	5
SVSQS-M12	5

*1 : Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us



● Application

Vacuum device / Vacuum container / FPD production device / Semiconductor manufacturing device / Electron microscope

● Material/Finish

	SVSS(INCH)
Main body	Equivalent to SUS304
Strength Class	A2-50

- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Inch thread type.
- The ventilation hole is machined by a method that has less effect on metal structure. It suppress the brittle failure and generation of outgas in a vacuum environment during use.
- Cleanroom wash and cleanroom packing are completed. ➡ P.807

Part Number	# Nominal of Thread	L												D1	L1	L2 min.	B	d max. (mm)	Mass (g)
		1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/8						
SVSS- # 4-40	No.4-40UNC													0.183	0.112	Full Thread	3/32	1	0.51 - 1.1
SVSS- # 5-40	No.5-40UNC													0.205	0.125	Full Thread	3/32	1.2	0.78 - 1.4
SVSS- # 6-32	No.6-32UNC													0.226	0.138	Full Thread	7/64	1.2	0.98 - 1.7
SVSS- # 8-32	No.8-32UNC													0.27	0.164	0.88	7/64	1.5	1.6 - 3.2
SVSS- # 10-24	No.10-24UNC													0.312	0.19	0.88	5/32	1.5	2.3 - 4.4
SVSS- # 10-32	No.10-32UNF													0.312	0.19	0.88	5/32	1.5	2.3 - 4.6
SVSS-1/4-20	1/4-20UNC													0.375	0.25	1	3/16	2	4.3 - 13

Part Number	Qty per pack*1
SVSS- # 4-40	10
SVSS- # 5-40	10
SVSS- # 6-32	10
SVSS- # 8-32	10
SVSS- # 10-24	10
SVSS- # 10-32	10
SVSS-1/4-20	10

*1 : Also sold separately from 1 piece up. ➡ P.809

● Part number specification

SVSS- # 4-40 - 1/4



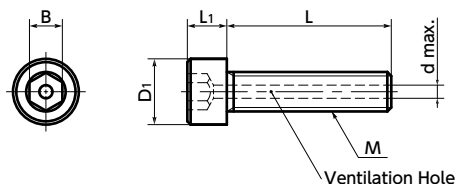
Order in number of packs.
Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

SVSS-MOS Hex Socket Head Cap Screws with Ventilation Hole - MoS₂ Shot

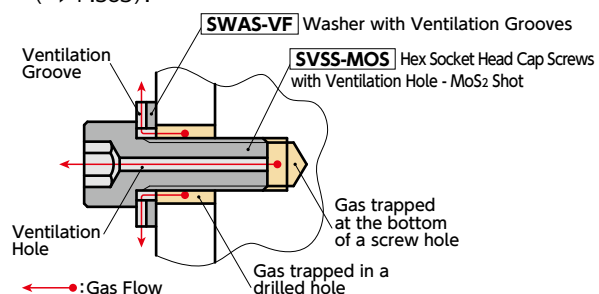
WEB Selection Tool
 WEB CAD Download
 Vacuum
 Cleanroom wash & packaging
 Seizing Prevention
 SUS Stainless steel

e-nedzi.com®



● Usage example

Gas trapped at the bottom of a screw hole is released through **SVSS-MOS**, and gas trapped in a drilled hole is released through **SWAS-VF** (→ P.583).



● Part number specification

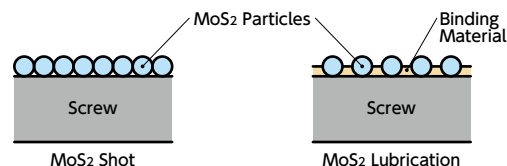
SVSS-M5-20-MOS

Product Code **1** **2** Product Code

Order in number of packs.

Also sold separately from 1 piece up. → P.809

- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- The MoS₂ particles shot by shot blast increase the lubrication of the screw and prevent seizing.
- Unlike a general MoS₂ lubrication, MoS₂ shot does not use a bonding agent so it is easy to identify contained materials.



● Application

Seizing Prevention

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish



	SVSS-MOS
Main Body	SUSXM7 (Equivalent to SUS304)
	MoS ₂ Shot
Strength Class	A2-70

Unit : mm

Part Number	M	1	L	2							D1	L1	B	d	Mass (g)
SVSS-M3-MOS	M3	6	8	10	12	16					5.5	3	2.5	1.2	0.71 - 1.2
SVSS-M4-MOS	M4	6	8	10	12	16	20	25			7	4	3	1.5	1.5 - 3.2
SVSS-M5-MOS	M5	6	8	10	12	16	20	25			8.5	5	4	1.5	2.2 - 4.8
SVSS-M6-MOS	M6		8	10	12	16	20	25	30		10	6	5	2	4.3 - 8.3
SVSS-M8-MOS	M8				12	16	20	25	30	35	13	8	6	2	11 - 19

Part Number	Qty*1 per pack
SVSS-M3-MOS	20
SVSS-M4-MOS	10
SVSS-M5-MOS	10
SVSS-M6-MOS	10
SVSS-M8-MOS	10

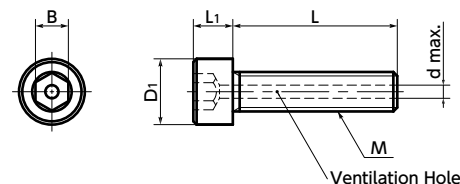
*1 : Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Cleanroom washed and packed	Not Available	Not Available	Not Available

SVSS-AG Hex Socket Head Cap Screws with Ventilation Hole - Silver Plating

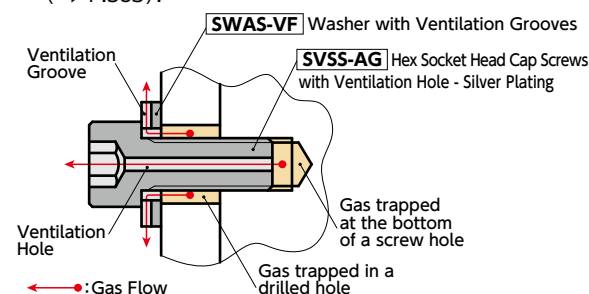
WEB Selection Tool
 WEB CAD Download
 Vacuum
 Cleanroom wash & packaging
 Seizing Prevention
 Electric conducting property
 SUS Stainless steel

e-nedzi.com®



● Usage example

Gas trapped at the bottom of a screw hole is released through **SVSS-AG**, and gas trapped in a drilled hole is released through **SWAS-VF** (→ P.583).



- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Silver plating. Excellent lubrication and electroconductivity. For the prevention of screw seizing and use in conductive sections of electronic parts.

● Electric Resistance

Silver: $1.6\mu\Omega \cdot \text{cm}$ (Gold: $2.3\mu\Omega \cdot \text{cm}$)

* This is the performance of the silver material.

● Application

Seizing Prevention

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish



	SVSS-AG
Main Body	SUSXM7 (S.S. grade : A2)
	Silver Plating
Strength Class	A2-70

● Part number specification

SVSS-M5-20-AG

Product Code **1** **2** Product Code

Unit : mm

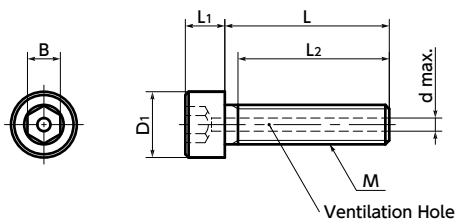
Part Number	M	1	L	2							D1	L1	B	d	Mass (g)
SVSS-M3-AG	M3	6	8	10	12	16					5.5	3	2.5	1.2	0.71 - 1.2
SVSS-M4-AG	M4	6	8	10	12	16	20	25			7	4	3	1.5	1.5 - 3.2
SVSS-M5-AG	M5	6	8	10	12	16	20	25			8.5	5	4	1.5	2.2 - 4.8
SVSS-M6-AG	M6		8	10	12	16	20	25	30		10	6	5	2	4.3 - 8.3
SVSS-M8-AG	M8				12	16	20	25	30	35	13	8	6	2	11 - 19

Part Number	Qty per pack
SVSS-M3-AG	1
SVSS-M4-AG	1
SVSS-M5-AG	1
SVSS-M6-AG	1
SVSS-M8-AG	1

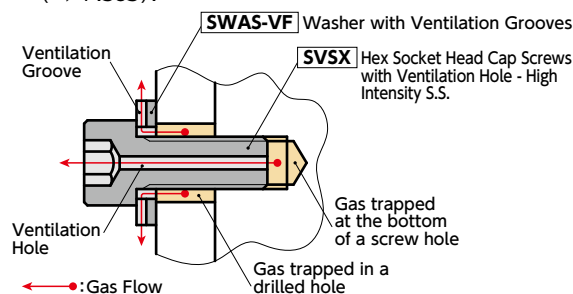
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

SVSX Hex Socket Head Cap Screws with Ventilation Hole - High Intensity S.S.

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- Usage example
Gas trapped at the bottom of a screw hole is released through **SVSX**, and gas trapped in a drilled hole is released through **SWAS-VF** (→ P.583).



- Part number specification

SVSX - M5 - 25 - 88

Product Code	1	2	Strength Class

- Made of high strength stainless steel (Strength class 8.8).
- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Excellent heat resistance and corrosion resistance.
- Nonmagnetic.
- About the characteristics of SUS316L HiMo → P.625

- Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

- Material/Finish



	SVSX
Main Body	SUS316L HiMo
Strength Class	8.8

- Related Products

For ventilation of drilled hole, please use **SWAS-VF**.
→ P.583



SVSX, which does not have a ventilation hole, is available.
→ P.625



Part Number	M	1	L	2	D1	L1	L2*1	B	d	Mass (g)
SVSX-M3-88	M3	6	8	10 12 16 20 25	5.5	3	18(L=25)	2.5	1.2	0.71 - 1.6
SVSX-M4-88	M4	6	8	10 12 16 20 25	7	4	Full Thread	3	1.5	1.5 - 3.2
SVSX-M5-88	M5			10 12 16 20 25 30	8.5	5	22(L=30)	4	1.5	2.7 - 5.6
SVSX-M6-88	M6			12 16 20 25 30 10 6	10	6	Full Thread	5	2	5.1 - 8.3

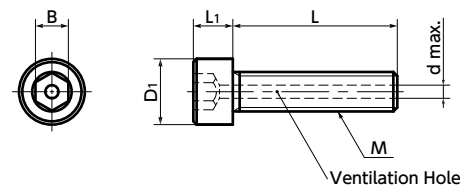
*1: If the "L" value is other than the value in parentheses, the screw is full thread.

Part Number	Qty per pack
SVSX-M3-88	1
SVSX-M4-88	1
SVSX-M5-88	1
SVSX-M6-88	1

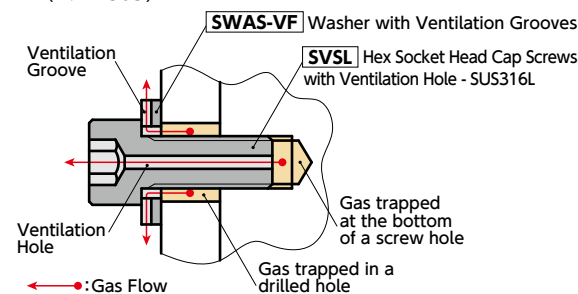
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

SVSL Hex Socket Head Cap Screws with Ventilation Hole - SUS316L

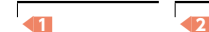
e-nedzi.com®



- Usage example
Gas trapped at the bottom of a screw hole is released through **SVSL**, and gas trapped in a drilled hole is released through **SWAS-VF** (→ P.583).



- Part number specification

SVSL-M5-25

Order in number of packs.
Also sold separately from 1 piece up. → P.809

Part Number	M	L	2	D1	L1	B	d	Mass (g)
SVSL-M3	M3	5	6 8 10 12 16	5.5	3	2.5	1.2	0.67 - 1.2
SVSL-M4	M4	5	6 8 10 12 16 20 25	7	4	3	1.5	1.4 - 3.2
SVSL-M5	M5		6 8 10 12 16 20 25	8.5	5	4	1.5	2.2 - 4.8
SVSL-M6	M6		8 10 12 16 20 25 30	10	6	5	2	4.3 - 8.3
SVSL-M8	M8			12 16 20 25 30 35	13	8	6	2 11 - 19
SVSL-M10	M10			16 20 25 30 35 40	16	10	8	3 21 - 33
SVSL-M12	M12				18 12 10 3	39 - 50		

Part Number	Qty*1 per pack
SVSL-M3	20
SVSL-M4	20
SVSL-M5	10
SVSL-M6	10
SVSL-M8	10
SVSL-M10	5
SVSL-M12	5

*1: Also sold separately from 1 piece up. → P.809



- Made of SUS316L. Excellent corrosion resistance.
- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Cleanroom wash and cleanroom packing are completed. → P.807

- Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

- Material/Finish



	SVSL
Main Body	SUS316L
Strength Class	A4-70

- Related Products

For ventilation of drilled hole, please use **SWAS-VF**.
→ P.583

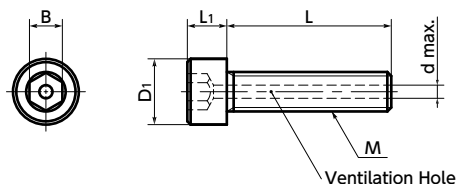


SVST Hex Socket Head Cap Screws with Ventilation Hole - Titanium

e-nedzi.com®

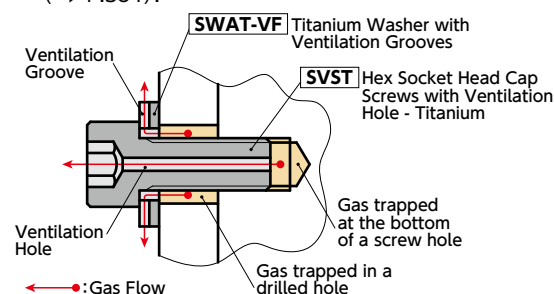


WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging Non-Magnetic



● Usage example

Gas trapped at the bottom of a screw hole is released through **SVST**, and gas trapped in a drilled hole is released through **SWAT-VF** (→ P.584).



● Part number specification

SVST-M5-20

- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Chemical polishing and brightening processing improve the quality of the surface. Outgas quantity is extremely low.
- Nonmagnetic.
- Cleanroom wash and cleanroom packing are completed. → P.807
- The features of brightening processing and titanium → P.633

● Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish



	SVST
Main Body	TB340C (Grade 2 Titanium)

● Related Products

SNST Titanium Socket Head Cap Screw without Ventilation hole is available.
→ P.636



Part Number	M	L	D1	L1	B	d	Mass (g)	Qty per pack
SVST-M3-5	M3	5	5.5	3	2.5	1.2	0.38	1
SVST-M3-6	M3	6	5.5	3	2.5	1.2	0.4	1
SVST-M3-8	M3	8	5.5	3	2.5	1.2	0.45	1
SVST-M3-10	M3	10	5.5	3	2.5	1.2	0.5	1
SVST-M3-12	M3	12	5.5	3	2.5	1.2	0.54	1
SVST-M3-16	M3	16	5.5	3	2.5	1.2	0.66	1
SVST-M3-20	M3	20	5.5	3	2.5	1.2	0.77	1
SVST-M4-8	M4	8	7	4	3	1.5	0.94	1
SVST-M4-10	M4	10	7	4	3	1.5	1	1
SVST-M4-12	M4	12	7	4	3	1.5	1.1	1
SVST-M4-16	M4	16	7	4	3	1.5	1.3	1
SVST-M5-10	M5	10	8.5	5	4	1.5	1.5	1
SVST-M5-12	M5	12	8.5	5	4	1.5	1.7	1
SVST-M5-16	M5	16	8.5	5	4	1.5	2	1
SVST-M5-20	M5	20	8.5	5	4	1.5	2.3	1
SVST-M5-25	M5	25	8.5	5	4	1.5	2.7	1

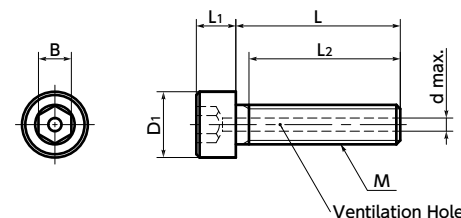
1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
1 unit in 1 bag Cleanroom washed and packed Available / Add'l charge Not Available Please feel free to contact us

SVLS Socket Head Cap Screws with Ventilation Hole with Low Profile

e-nedzi.com®



WEB Selection Tool CAD Download Vacuum Protrusion Cleanroom wash & packaging SUS Stainless steel



● Application



Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish

	SVLS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Socket head cap screws have low head heights. These screws are intended for the reduction of the size of machinery and device and applications with limited overhead space.
- Cleanroom wash and cleanroom packing are completed. → P.807

Unit : mm																	
Part Number	M	L 									D1	L1	B*2	t	L2*1	d	Mass (g)
																	
SVLS-M3	M3	6	8	10	12						5.5	2	2	1.5	Full Thread	1.2	0.53 - 0.78
SVLS-M4	M4	6	8	10	12	16					7	2.8	2.5	2.3	Full Thread	1.5	1.1 - 1.9
SVLS-M5	M5		8	10	12	16	20				8.5	3.5	3	2.7	Full Thread	1.5	1.8 - 3.3
SVLS-M6	M6		8	10	12	16	20				10	4	4	3	Full Thread	2	3.1 - 5.3
SVLS-M8	M8			10	12	16	20	25	30	35	13	5	5	3.8	22(L=35)	2	7.2 - 16
SVLS-M10	M10					16	20	25	30		16	6	6	4.5	Full Thread	3	15 - 22

*1: If the "L" value is other than the value in parentheses, the screw is full thread.

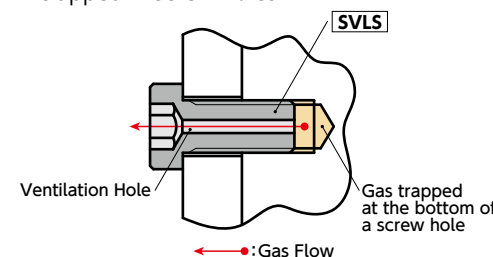
*2: The hexagonal width across flats of **SVLS-M10** has been changed from 7 mm to 6 mm.

Part Number	Qty ^{*1} per pack
SVLS-M3	20
SVLS-M4	20
SVLS-M5	10
SVLS-M6	10
SVLS-M8	10
SVLS-M10	5

*1: Also sold separately from 1 piece up. → P.809

● Usage example

Effective with vacuum devices and vacuum chambers that require the exhaustion of gas trapped in screw holes.



● Part number specification

SVLS-M5-20

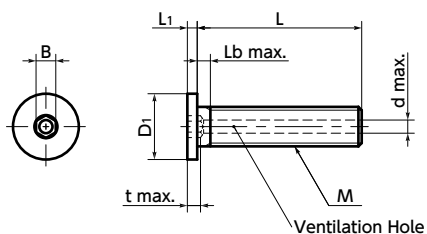
Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
Available / Add'l charge Cleanroom washed and packed Available / Add'l charge Not Available Please feel free to contact us

SVSHS Socket Head Cap Screws with Ventilation Hole with Special Low Profile

WEB Selection Tool CAD Download Vacuum Protusion Cleanroom wash & packaging SUS Stainless steel

e-nedzi.com



● Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish

RoHS2 Compliant

	SVSHS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

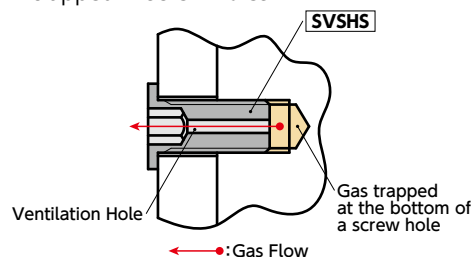
Part Number	M	L	L1	Lb	B	t	d	Mass (g)
SVSHS-M3	M3	6	8	10	1.5	2	1.2	0.53 - 0.7
SVSHS-M4	M4	6	8	10	1.6	2.5	1.5	1.1 - 1.9
SVSHS-M5	M5	6	8	10	2	3	1.5	1.5 - 3.3
SVSHS-M6	M6	6	8	10	2.5	4	2	2.7 - 5.3

Part Number	Qty*1 per pack
SVSHS-M3	20
SVSHS-M4	20
SVSHS-M5	10
SVSHS-M6	10

*1 : Also sold separately from 1 piece up. ➔ P.809

● Usage example

Effective with vacuum devices and vacuum chambers that require the exhaustion of gas trapped in screw holes.

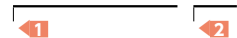


● Related Products

SSH Socket Head Cap Screws with Special Low Profile without ventilation hole is available.
➔ P.599



● Part number specification

SVSHS-M5-20

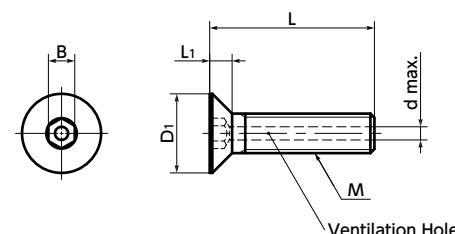
Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Not Available

SVFCS Hex Socket Countersunk Head Screws with Ventilation Hole

WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging SUS Stainless steel

e-nedzi.com



● Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish

RoHS2 Compliant

	SVFCS
Main Body	SUSXM7 (Equivalent to SUS304)

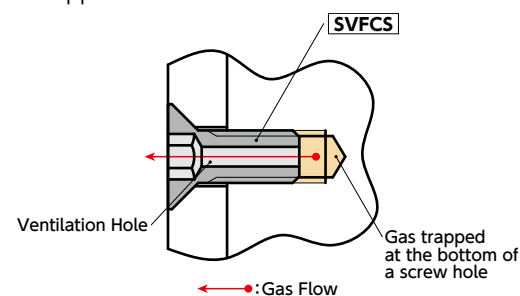
Part Number	M	L	L1	Lb	B	t	d	Mass (g)
SVFCS-M3	M3	5	6	8	10	12	1.2	0.49 - 0.77
SVFCS-M4	M4	6	8	10	12	16	1.5	1 - 1.8
SVFCS-M5	M5	8	10	12	16	20	1.5	2.2 - 3.6
SVFCS-M6	M6	10	12	16	20	25	2	3.9 - 6.5
SVFCS-M8	M8	12	16	20	25	30	2	8.9 - 15

Part Number	Qty*1 per pack
SVFCS-M3	20
SVFCS-M4	20
SVFCS-M5	10
SVFCS-M6	10
SVFCS-M8	10

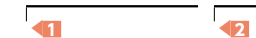
*1 : Also sold separately from 1 piece up. ➔ P.809

● Usage example

Effective with vacuum devices and vacuum chambers that require the exhaustion of gas trapped in screw holes.



● Part number specification

SVFCS-M5-20

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

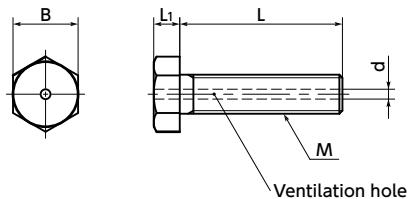
1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Not Available

SVHS Hexagon Head Bolts (with Ventilation Hole)

e-nedzi.com®



WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging SUS Stainless steel



● Material/Finish



	SVHS
Main body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-70

- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- The ventilation hole is machined by a method that has less effect on metal structure. It suppress the brittle failure and generation of outgas in a vacuum environment during use.
- For locations with narrow top space and hex wrench cannot be used.
- Cleanroom wash and cleanroom packing are completed. ➔ P.807

● Application

Vacuum device / Vacuum container / FPD production device / Semiconductor manufacturing device / Electron microscope

Unit : mm														
Part Number	M	L 									L1	B	d max.	Mass (g)
SVHS-M3	M3	6	8	10	12	16					2	5.5	1.2	0.67 - 1.1
SVHS-M4	M4		8	10	12	16	20				2.8	7	1.5	1.6 - 2.5
SVHS-M5	M5			10	12	16	20	25			3.5	8	1.5	2.8 - 4.7
SVHS-M6	M6				12	16	20	25	30		4	10	2	4.9 - 8.1
SVHS-M8	M8					16	20	25	30	35	5.3	13	2	11 - 18

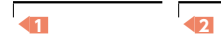
Part Number	Qty per pack*1
SVHS-M3	10
SVHS-M4	10
SVHS-M5	10
SVHS-M6	10
SVHS-M8	10

*1: Also sold separately from 1 piece up. ➔ P.809

● Related Products

For ventilation of drilled hole, please use **SWAS-VF**. ➔ P.583**SWAS-VF** Washer (with Ventilation Groove)

● Part number specification

SVHS-M5-25

Order in number of packs. Also sold separately from 1 piece up. ➔ P.809

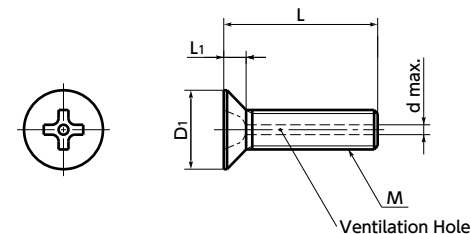
Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

SVFS Cross Recessed Flat Head Machine Screws with Ventilation Hole

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WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging SUS Stainless steel



● Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish



	SVFS
Main Body	SUSXM7 (Equivalent to SUS304)

- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- The flat head does not protrude after tightening.
- Cleanroom wash and cleanroom packing are completed. ➔ P.807

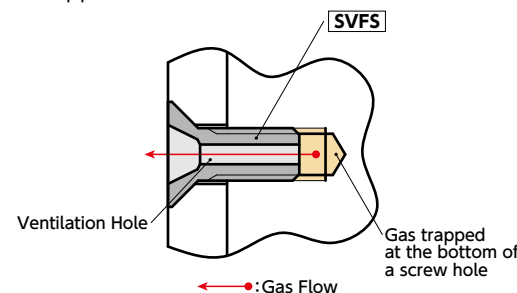
Unit : mm														
Part Number	M	L									D1	L1	d	Mass (g)
SVFS-M2	M2	3	4	5	6	8					4	1.2	0.8	0.13 - 0.21
SVFS-M2.6	M2.6		4	5	6	8	10				5.2	1.5	1	0.27 - 0.46
SVFS-M3	M3			5	6	8	10	12			6	1.75	1.2	0.49 - 0.77
SVFS-M4	M4				6	8	10	12	16		8	2.3	1.5	1 - 1.8
SVFS-M5	M5					8	10	12	16		10	2.8	1.5	2.2 - 3.1
SVFS-M6	M6						10	12	16	20	12	3.4	2	3.9 - 5.6

Part Number	Qty*1 per pack
SVFS-M2	10
SVFS-M2.6	10
SVFS-M3	20
SVFS-M4	20
SVFS-M5	10
SVFS-M6	10

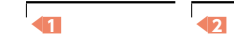
*1: Also sold separately from 1 piece up. ➔ P.809

● Usage example

Effective with vacuum devices and vacuum chambers that require the exhaustion of gas trapped in screw holes.

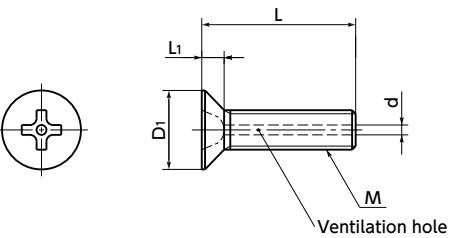


● Part number specification

SVFS-M4-12

Order in number of packs. Also sold separately from 1 piece up. ➔ P.809

Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Not Available



- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Flat head screw type whose head does not protrude after tightening.
- The surface is reformed by special chemical polishing and bright heat treatment. The amount of outgas is ultralow.
- Nonmagnetic.
- Cleanroom wash and cleanroom packing are completed. ➔ P.807
- About bright heat treatment and titanium properties ➔ P.633

● Application
Vacuum device / Vacuum container / FPD production device / Semiconductor manufacturing device / Electron microscope

● Material/Finish		RoHS2 Compliant
	SVFT	
Main body	TW270 (Type 1 titanium)	

Unit : mm									
Part Number	M	L					D1	L1	d max.
SVFT-M3	M3	6	8	10	12		6	1.75	1.2
SVFT-M4	M4	6	8	10	12		8	2.3	1.5

Part Number	Qty per pack*1
SVFT-M3	10
SVFT-M4	10

*1 : Also sold separately from 1 piece up. ➔ P.809

● Related Products

Phillips cross recessed flat head titanium machine screw without ventilation hole **SNFT** is available. ➔ P.640



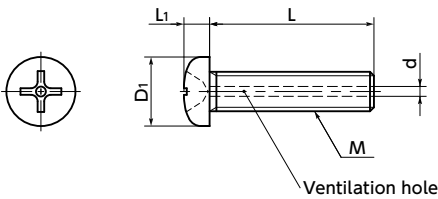
● Part number specification

SVFT-M4-12



Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us



- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Cleanroom wash and cleanroom packing are completed. ➔ P.807

● Application
Vacuum device / Vacuum container / FPD production device / Semiconductor manufacturing device / Electron microscope

● Material/Finish		RoHS2 Compliant
	SVPS	
Main body	SUSXM7 (Equivalent to SUS304)	

Unit : mm												
Part Number	M	L						D1	L1	d max.	Mass (g)	
SVPS-M3	M3	8	10	12	16			5.5	2	1.2	0.61 - 0.94	
SVPS-M4	M4		10	12	16	20		7	2.6	1.5	1.3 - 2.1	
SVPS-M5	M5			12	16	20	25	9	3.3	1.5	2.7 - 4.2	
SVPS-M6	M6			12	16	20	25	10.5	3.9	2	4.3 - 7.4	
SVPS-M8	M8					20	25	14	5.2	2	11 - 16	

Part Number	Qty per pack*1
SVPS-M3	10
SVPS-M4	10
SVPS-M5	10
SVPS-M6	10
SVPS-M8	10

*1 : Also sold separately from 1 piece up. ➔ P.809

● Related Products

For ventilation of drilled hole, please use **SWAS-VF**. ➔ P.583



SWAS-VF Washer (with Ventilation Groove)

● Part number specification

SVPS-M4-12



Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

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SVPT

Phillips Cross Recessed Pan Head Titanium Machine Screws (with Ventilation Hole)

WEB Selection Tool

WEB CAD Download

Vacuum

Cleanroom wash & packaging

Non-Magnetic

Lightweight



- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Chemical polishing and brightening processing improve the quality of the surface. Outgas quantity is extremely low.
- Nonmagnetic.
- Cleanroom wash and cleanroom packing are completed. ➡ P.807
- The features of brightening processing and titanium ➡ P.633

● Application

Vacuum device / Vacuum container / FPD production device / Semiconductor manufacturing device / Electron microscope

● Material/Finish

SVPT

RoHS2 Compliant

Main body	TW270 (Type 1 titanium)
-----------	-------------------------

Unit : mm

Part Number	M	L	D1	L1	d max.	Mass (g)
SVPT-M3	M3	6 8 10 12 16 20	5.5	2	1.2	0.31 - 0.63
SVPT-M4	M4	6 8 10 12 16 20 25	7	2.6	1.5	0.59 - 1.4
SVPT-M5	M5	8 10 12 16 20 25 30	9	3.3	1.5	1.3 - 2.8

Part Number	Qty per pack*1
SVPT-M3	10
SVPT-M4	10
SVPT-M5	10

*1 : Also sold separately from 1 piece up. ➡ P.809

● Related Products

Phillips cross recessed pan head titanium machine screw without ventilation hole **SNPT** is available. ➡ P.638



● Part number specification

SVPT-M4-12



Order in number of packs.
Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

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SVTS

Hex Socket Set Screws (with Ventilation Hole)

WEB Selection Tool

WEB CAD Download

Vacuum

Cleanroom wash & packaging

SUS Stainless steel



- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Cleanroom wash and cleanroom packing are completed. ➡ P.807

● Application

Vacuum device / Vacuum container / FPD production device / Semiconductor manufacturing device / Electron microscope

● Material/Finish

SVTS

RoHS2 Compliant

Main body	SUSXM7 (Equivalent to SUS304)
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Unit : mm

Part Number	M	L	B	a	t max.	d max.	Mass (g)
SVTS-M3	M3	4 6 8 10 15	1.5	0.4	0.3	1.2	0.2 - 0.7
SVTS-M4	M4	6 8 10 15 20	2	0.4	0.3	1.5	0.4 - 1.6
SVTS-M5	M5	6 8 10 12 15 20 25	2.5	0.5	0.5	1.5	0.7 - 3.1
SVTS-M6	M6	8 10 12 15 20 25 30	3	0.5	0.5	2	1.4 - 5.3
SVTS-M8	M8	10 12 20 25 30 35	4	0.6	0.5	2	3.2 - 11.2

Part Number	Qty per pack*1
SVTS-M3	20
SVTS-M4	20
SVTS-M5	20
SVTS-M6	20
SVTS-M8	20

*1 : Also sold separately from 1 piece up. ➡ P.809

● Part number specification

SVTS-M5-10



Order in number of packs.
Also sold separately from 1 piece up. ➡ P.809

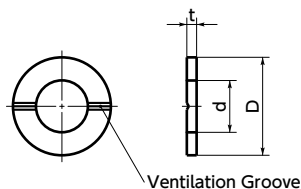
1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Cleanroom washed and packed	Not Available	Not Available	Not Available

SWAS-VF Washers with Ventilation Grooves

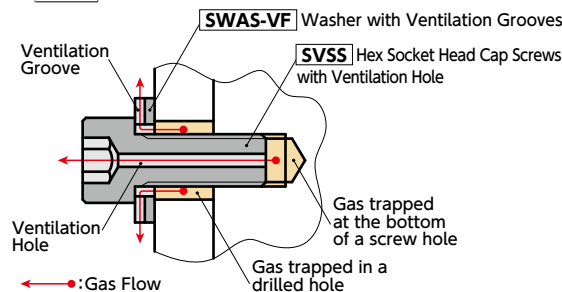
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WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging SUS Stainless steel



- Usage example
Gas trapped in drilled holes is released through **SWAS-VF**, and gas trapped in screw holes is released by screws with ventilation holes such as **SVSS** (→ P.565).



- The ventilation groove easily releases gas trapped in the drill holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Cleanroom wash and cleanroom packing are completed. → P.807
- **SWAS-VF-PC** has an improved surface coarseness by chemical polishing. Outgas quantity is extremely low. Suitable for the use under medium vacuum environments.
- Combine this item with screws with ventilation holes, such as **SVSS** Socket Head Cap Screw with Ventilation Hole. → P.565

● Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish



	SWAS-VF	SWAS-VF-PC
Main Body	SUS304	SUS304 Chemical Polish

SWAS-VF No Surface Treatment	SWAS-VF-PC Chemical Polish	Common dimensions					Qty*1 per pack
Part Number 1	Part Number 1	Nominal	d	D	t	Mass (g)	
SWAS-3-VF	SWAS-3-VF-PC	3	3.2	7	0.5	0.12	20
SWAS-4-VF	SWAS-4-VF-PC	4	4.3	9	0.8	0.31	20
SWAS-5-VF	SWAS-5-VF-PC	5	5.3	10	1	0.44	10
SWAS-6-VF	SWAS-6-VF-PC	6	6.4	12.5	1.6	1.1	10
SWAS-8-VF	SWAS-8-VF-PC	8	8.4	17	1.6	2.1	10
SWAS-10-VF	SWAS-10-VF-PC	10	10.5	21	2	4	5
SWAS-12-VF	SWAS-12-VF-PC	12	13	24	2.5	6.2	5

*1: Also sold separately from 1 piece up. → P.809

● Related Products

SVSS
Socket Head Cap Screws with Ventilation Hole
→ P.565



SVSS-MOS
Socket Head Cap Screws with Ventilation Hole - MoS₂ Shot
→ P.569



● Part number specification

SWAS-5-VF-PC



Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Cleanroom washed and packed	Not Available	Not Available	Not Available

NBK

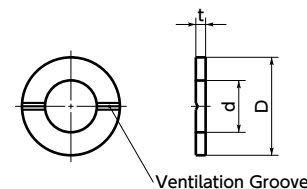
WEB ▶ <https://www.nbk1560.com>

SWAT-VF Washers with Ventilation Grooves - Titanium

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WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging Non-Magnetic



- The ventilation groove easily releases gas trapped in the drill holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Cleanroom wash and cleanroom packing are completed. → P.807
- Combine this item with **SVST** Socket Head Cap Screws with Ventilation Hole-titanium (→ P.573).

● Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

● Material/Finish



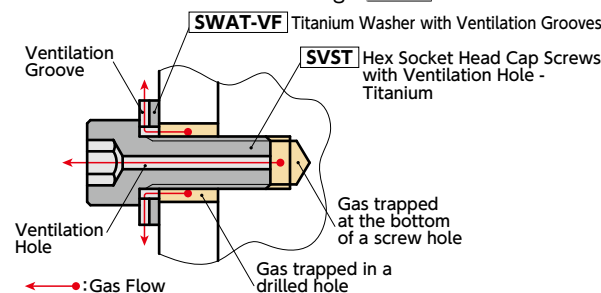
	SWAT-VF
Main Body	TP340C (Grade 2 Titanium)

Part Number 1	Nominal	d	D	t	Mass (g)	Qty per pack
SWAT-3-VF	3	3.2	7	0.5	0.068	1
SWAT-4-VF	4	4.3	9	0.8	0.18	1
SWAT-5-VF	5	5.3	10	1	0.25	1

Unit : mm

● Usage example

Gas trapped at the bottom of a screw hole is released through **SWAT-VF**, and gas trapped in a drilled hole is released through **SVST** (→ P.573).



● Related Products

SWAT Titanium Washers without a ventilation groove is available. → P.643



● Part number specification

SWAT-4-VF



1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

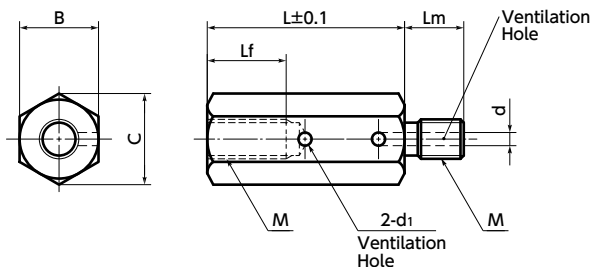
NBK

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SHVAS Hex Posts with Ventilation Hole

WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging SUS Stainless steel

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Material/Finish



	SHVAS
Main Body	SUS304

- Hexagon posts with single-end male and single-end female threads.
- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.
- Two or more hexagon posts can be connected for use.

Application

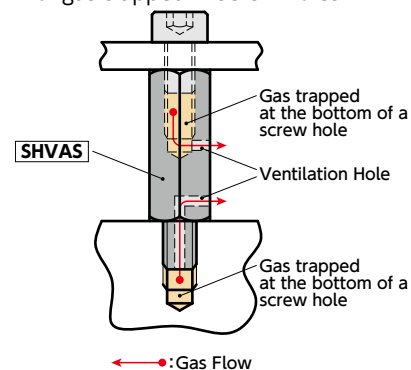
Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

Part Number	M	L	2	B	C (Approx.)	Lm	Lf	d	d1	Mass (g)
SHVAS-M3	M3	15	20 25 30 35 40	6	6.9	4.5	6	1.2	1.5	3.6 - 9.6
SHVAS-M4	M4		20 25 30 35 40 45 50 60 70 80	7	8.1	6	8	1.5	1.5	6.5 - 26
SHVAS-M5	M5		20 25 30 35 40 45 50 60 70 80 90 100	8	9.2	7.5	10	1.5	1.5	8.3 - 43
SHVAS-M6	M6		25 30 35 40 45 50 60 70 80 90 100 120 150	10	11.5	9	12	2	1.5	16 - 100
SHVAS-M8	M8		35 40 45 50 60 70 80 90 100 120 150 13	15	12	16	2	1.5	39	- 170

Part Number	Qty per pack
SHVAS-M3	1
SHVAS-M4	1
SHVAS-M5	1
SHVAS-M6	1
SHVAS-M8	1

Usage example

These screws are effective with vacuum devices and vacuum chambers that require the elimination of gas trapped in screw holes.



Part number specification

SHVAS-M4-40



1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

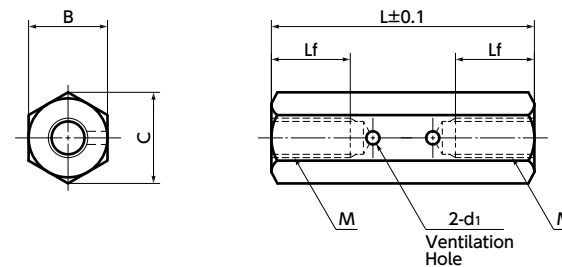
NBK

<https://www.nbk1560.com>

SHVBS Hex Posts with Ventilation Hole

WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging SUS Stainless steel

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- Hexagon posts with double-ended female threads.
- The ventilation hole easily releases gas trapped in the screw holes of equipment and machines, and supports vacuum drawing of vacuum devices.

Application

Vacuum devices, vacuum chambers, FPD production equipment, semiconductor devices, and electron microscopes

Material/Finish



	SHVBS
Main Body	SUS304

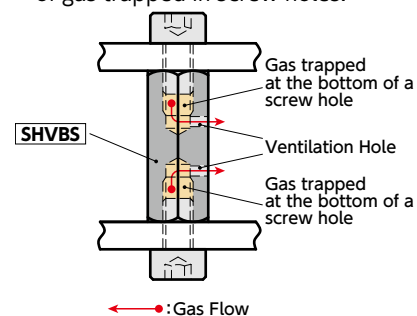
Part Number	M	L	2	B	C (Approx.)	Lf	d1*1	Mass (g)
SHVBS-M3	M3	15	20 25 30 35 40	6	6.9	6	1.5	3.1 - 9.1
SHVBS-M4	M4		20 25 30 35 40 45 50 60 70 80	7	8.1	8	1.5	5.4 - 25
SHVBS-M5	M5		20 25 30 35 40 45 50 60 70 80 90 100	8	9.2	10	1.5	6.1 - 40
SHVBS-M6	M6		25 30 35 40 45 50 60 70 80 90 100 120 150	10	11.5	12	1.5	13 - 96
SHVBS-M8	M8		35 40 45 50 60 70 80 90 100 120 150 13	15	16	1.5	30	- 161

*1: Depending on the "L" dimension, there may be only one ventilation hole.

Part Number	Qty per pack
SHVBS-M3	1
SHVBS-M4	1
SHVBS-M5	1
SHVBS-M6	1
SHVBS-M8	1

Usage example

These screws are effective with vacuum devices and vacuum chambers that require the elimination of gas trapped in screw holes.



Part number specification

SHVBS-M4-40



1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

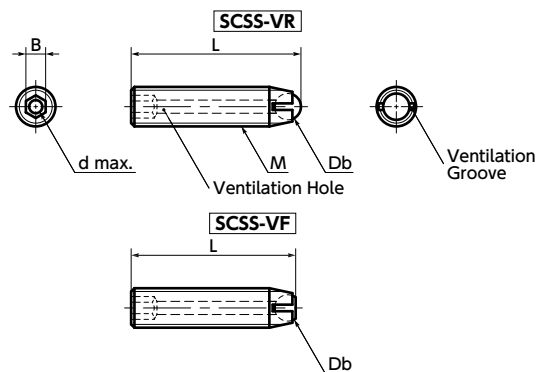
NBK

<https://www.nbk1560.com>

SCSS Clamping Set Screws with Ventilation Hole

WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging SUS Stainless steel

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● Application

Fixing and locating workpiece, Vacuum devices, FPD production equipment, semiconductor devices

● Material/Finish



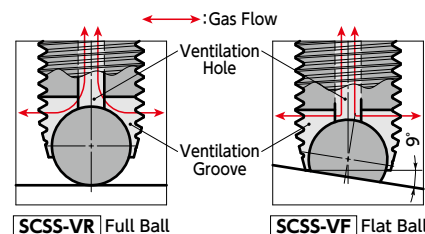
	SCSS
Main Body	SUSXM7 (Equivalent to SUS304)
Ball	SUS440C (Hardness 55 - 60HRC) Thin Fluorine Coating

● Part number specification

SCSS-M6-25-VR



- This screw is used to secure work in vacuum devices and vacuum chambers, such as FPD production equipment and semiconductor devices.
- Cleanroom wash and cleanroom packing are completed. → P.807
- The thin fluorine coating keeps the ball highly lubricated, even after cleanroom washing.
- Ventilation holes and grooves easily release gas trapped in machines.
- **SCSS-VR** has a full ball to firmly secure work at the contact point.
- The contact surface of **SCSS-VF** is a flat ball. Workpiece is not damaged. The ball rotates flexibly up to 9°. Clamps securely even the inclined surface.



SCSS-VR Full Ball

SCSS-VF Flat Ball

Unit : mm

SCSS-VR Full Ball		SCSS-VF Flat Ball		Common dimensions					Qty per pack
Part Number 	L	Part Number 	L	M	Db	B	d	Mass (g)	
SCSS-M5-8-VR	8.6	SCSS-M5-8-VF	8	M5	3	2.5	1.5	0.8	1
SCSS-M5-12-VR	12.6	SCSS-M5-12-VF	12	M5	3	2.5	1.5	1.3	1
SCSS-M5-20-VR	20.6	SCSS-M5-20-VF	20	M5	3	2.5	1.5	2.3	1
SCSS-M6-10-VR	10.8	SCSS-M6-10-VF	10	M6	4	3	2	1.5	1
SCSS-M6-16-VR	16.8	SCSS-M6-16-VF	16	M6	4	3	2	2.5	1
SCSS-M6-20-VR	20.8	SCSS-M6-20-VF	20	M6	4	3	2	3.4	1
SCSS-M6-25-VR	25.8	SCSS-M6-25-VF	25	M6	4	3	2	4	1
SCSS-M8-10-VR	11.2	SCSS-M8-10-VF	10	M8	5.5	4	2	2.5	1
SCSS-M8-12-VR	13.2	SCSS-M8-12-VF	12	M8	5.5	4	2	3.2	1
SCSS-M8-20-VR	21.2	SCSS-M8-20-VF	20	M8	5.5	4	2	5.7	1
SCSS-M8-25-VR	26.2	SCSS-M8-25-VF	25	M8	5.5	4	2	7.7	1
SCSS-M8-30-VR	31.2	SCSS-M8-30-VF	30	M8	5.5	4	2	9	1
SCSS-M10-16-VR	17.7	SCSS-M10-16-VF	16	M10	7	5	3	5	1
SCSS-M10-20-VR	21.7	SCSS-M10-20-VF	20	M10	7	5	3	7	1
SCSS-M10-25-VR	26.7	SCSS-M10-25-VF	25	M10	7	5	3	9.5	1
SCSS-M10-35-VR	36.7	SCSS-M10-35-VF	35	M10	7	5	3	11	1

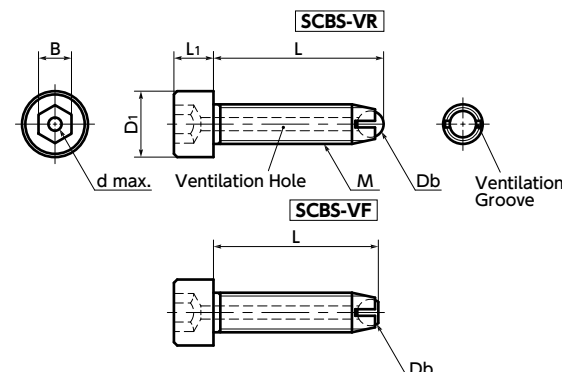
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

SCBS Clamping Cap Screws with Ventilation Hole

WEB Selection Tool CAD Download Vacuum Cleanroom wash & packaging SUS Stainless steel

SCBS-VR

e-nedzi.com



SCBS-VF

● Application

Fixing and locating workpiece, Vacuum devices, FPD production equipment, semiconductor devices

● Material/Finish



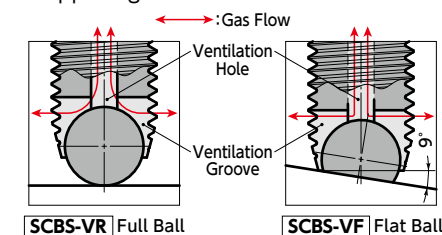
	SCBS
Main Body	SUSXM7 (Equivalent to SUS304)
Ball	SUS440C (Hardness 55 - 60HRC) Thin Fluorine Coating

● Part number specification

SCBS-M6-40-VR



- This screw is used to secure work in vacuum devices and vacuum chambers, such as FPD production equipment and semiconductor devices.
- Cleanroom wash and cleanroom packing are completed. → P.807
- The thin fluorine coating keeps the ball highly lubricated, even after cleanroom washing.
- Ventilation holes and grooves easily release gas trapped in machines.
- **SCBS-VR** has a full ball to firmly secure workpiece at the contact point.
- The contact surface of **SCBS-VF** is a flat ball. Workpiece is not damaged. The ball rotates flexibly up to 9°. It clamps securely even when the opposing surface is tilted.



SCBS-VR Full Ball

SCBS-VF Flat Ball

Unit : mm

SCBS-VR Full Ball		SCBS-VF Flat Ball		Common dimensions							Qty per pack
Part Number 	L	Part Number 	L	M	D1	L1	Db	B	d	Mass (g)	
SCBS-M5-12-VR	12.6	SCBS-M5-12-VF	12	M5	8.5	5	3	4	1.5	2.9	1
SCBS-M5-16-VR	16.6	SCBS-M5-16-VF	16	M5	8.5	5	3	4	1.5	3.4	1
SCBS-M5-20-VR	20.6	SCBS-M5-20-VF	20	M5	8.5	5	3	4	1.5	3.9	1
SCBS-M5-25-VR	25.6	SCBS-M5-25-VF	25	M5	8.5	5	3	4	1.5	4.4	1
SCBS-M5-30-VR	30.6	SCBS-M5-30-VF	30	M5	8.5	5	3	4	1.5	5	1
SCBS-M6-16-VR	16.8	SCBS-M6-16-VF	16	M6	10	6	4	5	2	5.6	1
SCBS-M6-20-VR	20.8	SCBS-M6-20-VF	20	M6	10	6	4	5	2	6.5	1
SCBS-M6-25-VR	25.8	SCBS-M6-25-VF	25	M6	10	6	4	5	2	7.6	1
SCBS-M6-30-VR	30.8	SCBS-M6-30-VF	30	M6	10	6	4	5	2	8.7	1
SCBS-M6-40-VR	40.8	SCBS-M6-40-VF	40	M6	10	6	4	5	2	11	1
SCBS-M8-20-VR	21.2	SCBS-M8-20-VF	20	M8	13	8	5.5	6	2	14	1
SCBS-M8-30-VR	31.2	SCBS-M8-30-VF	30	M8	13	8	5.5	6	2	18	1
SCBS-M8-40-VR	41.2	SCBS-M8-40-VF	40	M8	13	8	5.5	6	2	22	1
SCBS-M8-50-VR	51.2	SCBS-M8-50-VF	50	M8	13	8	5.5	6	2	25	1
SCBS-M10-25-VR	26.7	SCBS-M10-25-VF	25	M10	16	10	7	8	3	26	1
SCBS-M10-30-VR	31.7	SCBS-M10-30-VF	30	M10	16	10	7	8	3	29	1
SCBS-M10-40-VR	41.7	SCBS-M10-40-VF	40	M10	16	10	7	8	3	34	1
SCBS-M10-50-VR	51.7	SCBS-M10-50-VF	50	M10	16	10	7	8	3	39	1
SCBS-M10-60-VR	61.7	SCBS-M10-60-VF	60	M10	16	10	7	8	3	47	1

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

Selection Tool

CAD Download

Vacuum

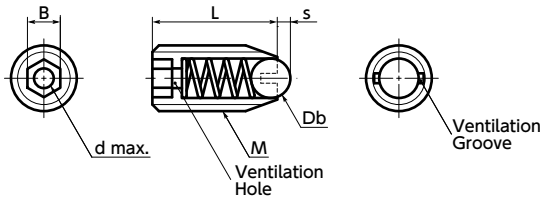
Cleanroom wash & packaging

SUS Stainless steel

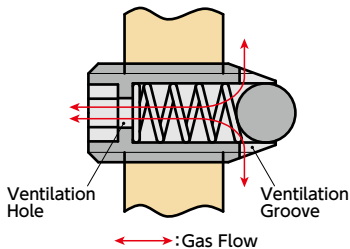
PVFS

Spring Plungers with Ball with Ventilation Hole

e-nedzi.com



- For positioning in vacuum devices and vacuum chambers, such as FPD production equipment and semiconductor devices.
- Cleanroom wash and cleanroom packing are completed. ➔ P.807
- The thin fluorine coating keeps the ball highly lubricated, even after cleanroom washing.
- Ventilation holes and grooves easily release gas trapped in machines.



• Application

Fixing and locating workpiece, Vacuum devices, FPD production equipment, semiconductor devices

• Material/Finish



	PVFS
Main Body	Equivalent to SUS304
Ball	SUS440C (Hardness 55 - 60HRC) Thin Fluorine Coating
Spring	SUS631J1

Unit : mm

Part Number	M	s	L	Db	B	d	Load (N) min./max.	Mass (g)	Qty per pack
PVFS-5	M5	0.9	12	3	2.5	1.5	5.7 / 9.6	0.9	1
PVFS-6	M6	1	14	3.5	3	2	6.9 / 13	1.5	1
PVFS-8	M8	1.5	16	5	4	2	9.5 / 16	3.5	1
PVFS-10	M10	2	19	6	5	3	16 / 28	7	1

• Part number specification

PVFS-6

1

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 unit in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

Selection Tool

CAD Download

Vacuum

Protrusion

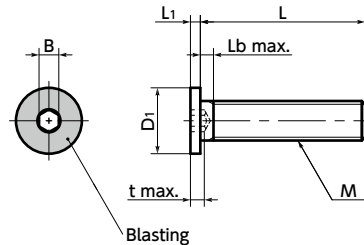
Cleanroom wash & packaging

SUS Stainless steel

SSHS-HB

Socket Head Cap Screws with Special Low Profile - Head Shot Blast

e-nedzi.com



• Material/Finish



	SSHS-HB
Main Body	SUSXM7 (S.S. grade : A2) Blasted (Head Only)
Strength Class	A2-50

• Part number specification

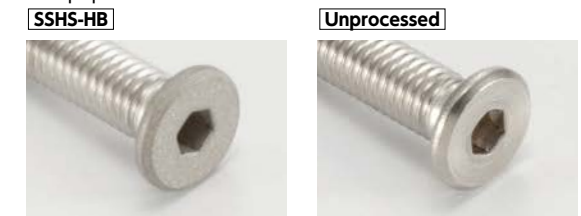
SSHS - M5 - 16 - HB

Product Code 1 2 Product Code

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809



- Socket head cap screws with special low profile with blasted head surface.
- The surface of the screw head is coarsened by blasting.
- It prevent deposits on the screw head from peeling during vacuum deposition and other film formation equipment.



- Also, screws with blasted heads with special specifications are available, including dimensions and shape.



• Application

Film formation equipment, vacuum devices, FPD production equipment, and semiconductor devices

Part Number	M	1	L	2					D1	L1	Lb	B	t	Max. Torque (N · m)	Mass (g)
SSHS-M3-HB	M3	6	8	10	12				6	1.3	1.5	1.5	2	0.6	0.44 - 0.69
SSHS-M4-HB	M4	6	8	10	12	16			8	1.5	1.6	2	2.5	1.5	0.89 - 1.6
SSHS-M5-HB	M5		8	10	12	16	20		9	1.5	2	3	3	3.1	0.98 - 2.5
SSHS-M6-HB	M6			10	12	16	20	25	10	1.5	2.5	3	4	5.3	1.9 - 4.8

Part Number	Qty*1 per pack
SSHS-M3-HB	10
SSHS-M4-HB	10
SSHS-M5-HB	10
SSHS-M6-HB	10

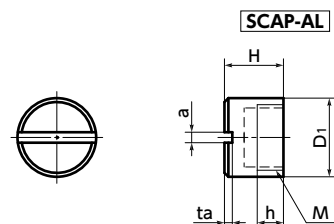
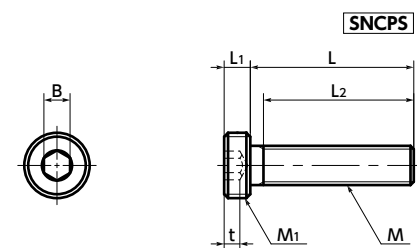
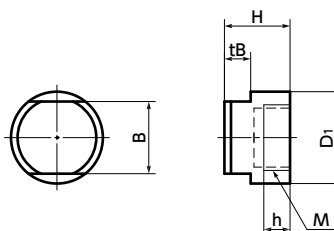
*1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Cleanroom washed and packed	Available / Add'l charge	Not Available	Available / Add'l charge



SCAP/SNCPS Cover Caps / Socket Head Cap Screws for Cover Caps

WEB Selection Tool CAD Download SUS Stainless steel Vacuum Cleanroom wash & packaging

**SCAP-CE****SCAP-CE + SNCPS**

- Combine **SCAP** Cover Cap and **SNCPS** Socket Head Cap Screw for Cover Cap.
- These caps prevent the corrosion of screw heads due to vacuum chamber processing gas and plasma.
- SCAP** has 2 material types as standard.
SCAP-AL Aluminum alloy
SCAP-CE Ceramic
- The screw connection section is made of stainless steel, so this product has a higher tightening strength than aluminum or ceramic screws.
- Cleanroom wash and cleanroom packing are completed. → P.807
- Other requested materials such as Inconel*1 and Hastelloy*1 can be used for Cover Caps.
*1: Inconel is a registered trademark of Special Metals Corporation.
*1: Hastelloy is a registered trademark of Haynes International, Inc.

Material/Finish

RoHS2 Compliant

	SCAP-AL Cover Caps	SCAP-CE Cover Caps	SNCPS Cap Screws
Main Body	A5056	Al ₂ O ₃ (99.5% Alumina)	SUSXM7 (Equivalent to SUS304)
Strength Class			A2-50

SCAP-AL Cover Caps : Aluminum Alloy (A5056)

Unit : mm

Part Number	M	H	D1	h	a	ta	Recommendation Torque (N·m)	SNCPS Part.No	Mass (g)	Qty per pack
SCAP-3-AL	M5×0.5	5	7	2	0.8	0.6	0.1	SNCPS-M3	0.4	1
SCAP-4-AL	M6×0.75	7	8	2.8	1.2	1	0.15	SNCPS-M4	0.6	1
SCAP-5-AL	M8×0.75	8	10	3.5	1.2	1	0.3	SNCPS-M5	1	1
SCAP-6-AL	M10×0.75	9	12	4	1.6	1.2	0.4	SNCPS-M6	1.5	1
SCAP-8-AL	M12×1	11	14	5	2	1.8	0.6	SNCPS-M8	2.3	1
SCAP-10-AL	M16×1	12	18	6	2.5	2	0.8	SNCPS-M10	3.7	1

SCAP-CE Cover Caps : Ceramic (Al₂O₃)

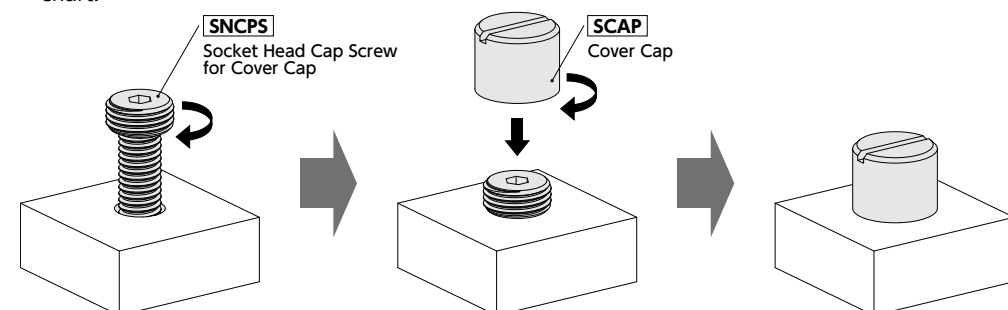
Unit : mm

Part Number	M	H	D1	h	B	tB	Recommendation Torque (N·m)	SNCPS Part.No	Mass (g)	Qty per pack
SCAP-3-CE	M5×0.5	6	9	2	7	3	0.1	SNCPS-M3	1.2	1
SCAP-4-CE	M6×0.75	8	10	2.8	8	3	0.15	SNCPS-M4	2	1
SCAP-5-CE	M8×0.75	9	12	3.5	9	3	0.3	SNCPS-M5	3	1
SCAP-6-CE	M10×0.75	10	14	4	11	4	0.4	SNCPS-M6	4.3	1
SCAP-8-CE	M12×1	11	16	5	13	4	0.6	SNCPS-M8	5.8	1
SCAP-10-CE	M16×1	12	20	6	17	4	0.8	SNCPS-M10	9.2	1

1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
1 pc. in 1 bag Cleanroom washed and packed S.S. only/ Add'l charge Male screw only/ Add'l charge Not Available

Usage

After tightening **SNCPS** Socket Head Cap Screw for Cover Cap, assemble **SCAP** Cover Cap so that it covers the head of **SNCPS**.
Ensure that the tightening torque of **SCAP** does not exceed the recommendation torque in the chart.



Precautions for Use

Corrosion resistance changes depending on use conditions. Always carry out tests under conditions same as actual conditions before use.

Related Products

SCAP-PT Cover Cap made of PTFE (Teflon), which has excellent chemical resistance, is available.
→ P.667



Part number specification

SCAP-6-AL **SCAP** Cover Cap**SNCPS-M6-20** **SNCPS** Cap Screw for Cover CapOrder the **SCAP** and **SNCPS** individually.

SNCPS Socket Head Cap Screw for Cover Cap

Unit : mm

Part Number	M	L	M1	L1	B	t	L2*1	SCAP Part.No	Mass (g)
SNCPS-M3	M3	6 8 10 12	M5×0.5	2	2	1.5	Full Thread	SCAP-3	0.53 - 0.78
SNCPS-M4	M4	8 10 12 16	M6×0.75	2.8	2.5	2.3	Full Thread	SCAP-4	1.3 - 1.9
SNCPS-M5	M5	10 12 16 20	M8×0.75	3.5	3	2.7	Full Thread	SCAP-5	2 - 3.3
SNCPS-M6	M6	12 16 20 25	M10×0.75	4	4	3	Full Thread	SCAP-6	3.8 - 6.4
SNCPS-M8	M8	16 20 25 30 35	M12×1	5	5	3.8	22(L=35)	SCAP-8	9 - 16
SNCPS-M10	M10	20 25 30 35 40	M16×1	6	6	4.5	26(L=40)	SCAP-10	17 - 27

*1: If the "L" value is other than the value in parentheses, the screw is full thread.

Part Number	Qty per pack
SNCPS-M3	1
SNCPS-M4	1
SNCPS-M5	1
SNCPS-M6	1
SNCPS-M8	1
SNCPS-M10	1

Low Profile Screws

	Socket Head Cap Screws with Low Profile			Socket Head Cap Screws with Special Low Profile		
Part Number	SLH	SLHS	SLHL	SSH	SSHs / SSLH	SSHs-FT
Shape						
Page	P.595	P.597	P.598	P.599	P.601	P.603
Materials	SWCH45K	SUSXM7	SUS316L	SCM435	SUSXM7 SUS316L	SUS304
Characteristics	Low Profile Small Space	Low Profile Small Space	Low Profile Small Space	Special Low Profile Small Space	Special Low Profile Small Space	Full Thread • Special Low Profile Small Space
Size	M2 - M10	M2 - M10	M3 - M6	M2 - M10	M2 - M10	M3 - M10

	Socket Head Cap Screws with Special Low Profile	Hexalobular Socket Head Cap Screws with Low Profile				Key for Hexalobular Socket Head Screw
Part Number	SSHT	SSTS	SET / SETS	SETA	SLT / SLTS	SKX
Shape						
Page	P.604	P.606	P.607	P.609	P.605	P.726
Materials	TW340 (Grade 2 Titanium)	SUSXM7	SWCH SUSXM7	A5056	SAE1022 SUSMX7	Alloyed Steel
Characteristics	Lightweight • Nonmagnetic • Chemical Resistance Low Profile • Small Space	Hexalobular Socket Special Low Profile • Small Space	Hexalobular Socket Extra Low Profile • Small Space	Super Special Low Head With Hexalobular Socket Space-saving	Hexalobular Socket Low Profile • Small Space	Hexalobular Socket
Size	M3 - M6	M2 - M8	M2 - M6	M3 - M6	M2 - M6	No.4 - No.45

	Hex Head Screw / Special Low Head	Socket Head Cap Screws with Low Profile	Socket Button Head Cap Screws with Flange
Part Number	SNHS-LH	SLP	SFB / SFBS
Shape			
Page	P.610	P.613	P.611
Materials	SUS304	Equivalent to S45C	SCM435 SUSXM7
Characteristics	Low head space-saving	Pilot Recess Low Profile • Small Space	With Flange Small Space
Size	M4 - M8	M4 - M8	M3 - M8

Small Head Screws

	Socket Head Cap Screws with Small Head	Socket Head Cap Screws with Low & Small Head	Socket Head Cap Screws with Special Low & Small Head	Cross Recessed Flat Head Machine Screws with Small Head
Part Number	SNS-SD	SLH-SD	SSH-SD	SNF-SD
Shape				
Page	P.615	P.617	P.619	P.614
Materials	SCM435 SUSXM7	SWCH45K SUSXM7	SCM435 SUSXM7	SWCH SUSXM7
Characteristics	Small Head Small Space	Low Profile • Small Head Small Space	Special Low Profile • Small Head Small Space	Low Profile • Small Head Small Space
Size	M2 - M10	M3 - M10	M2 - M10	M3 - M6

Comparison of the Dimensions of Low Profile Screws and Small Head Screws

Comparison of the Head Heights of Low Profile Screws and Standard Screws

	Socket Head Cap Screws JIS B 1176	SLH	SSH	SLP	SSTS	SET	SLT	SFB
M2	2	1.3	1.1	—	1.2	0.5	—	—
M2.5	2.5	1.6	1.3	—	1.3	—	—	—
M2.6	2.6	—	—	—	—	0.6	—	—
M3	3	2	1.3	—	1.3	0.8	2.4	1.65
M4	4	2.8	1.5	2.8	1.5	0.9	3.1	2.2
M5	5	3.5	1.5	3.5	1.5	1	3.65	2.75
M6	6	4	1.5	4	1.5	1.2	4.4	3.3
M8	8	5	1.5	5	1.5	—	—	4.4
M10	10	6	1.5	—	—	—	—	—

Comparison of the Head Diameter of Small Head Screws and Standard Screws

	Socket Head Cap Screws JIS B 1176	SNS-SD	SLH-SD	SSH-SD
M3	5.5	4.5	4.5	5
M4	7	5.5	5.5	6
M5	8.5	7	7	8
M6	10	8.5	8.5	9
M8	13	11	11	11
M10	16	13.5	13.5	13.5

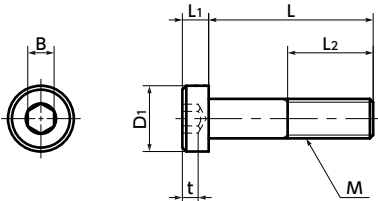
	Cross Recessed Flat Head Machine Screws JIS B 1111 *	SNF-SD
M3	6	5
M4	8	6
M5	10	8
M6	12	10

* These are values for cross recessed flat head machine screws not based on ISO 7046 prescribed in the appendix.



SLH Socket Head Cap Screws with Low Profile

WEB Selection Tool WEB CAD Download Protrusion



	SLH	SLH-TZB
Material/Finish	SWCH45K Ferrosoferric Oxide Film (Black)	SWCH45K Trivalent Chromate Treatment
Strength Class	8.8	8.8

RoHS2 Compliant

- Socket head cap screws have low head heights.
- Intended for reducing the size of devices and applications with limited overhead space.
- Also, **SVLS** Socket Head Cap Screws with Low Profile with Ventilation Hole is available. ➔ P.574

Application

Reducing the size of equipment and devices

SLH Steel - Ferrosoferric Oxide Coating

Unit : mm

Part Number	M	1	L	2	D1	L1	B	t	L2*1	Max. Torque (N·m)	Mass (g)
SLH-M2	M2	5	6	8	10	12				0.3	0.13 - 0.29
SLH-M2.5	M2.5	5	6	8	10	12				0.5	0.26 - 0.47
SLH-M3	M3		6	8	10	12	16	20		1.4	0.53 - 1.2
SLH-M4	M4		6	8	10	12	16	20	25	3.4	1.1 - 2.8
SLH-M5	M5			8	10	12	16	20	25 30 35	6	1.8 - 5.7
SLH-M6	M6			8	10	12	16	20	25 30 35 40 45	10	3.1 - 11
SLH-M8	M8				10	12	16	20	25 30 35 40 45 50	27	7.2 - 22
SLH-M10	M10					16	20	25	30 35 40 45 50	46	15 - 33

*1 : If the "L" value is other than the value in parentheses, the screw is full thread.

Part Number	Qty*1 per pack
SLH-M2	50
SLH-M2.5	50
SLH-M3	50
SLH-M4	50
SLH-M5	50
SLH-M6	20
SLH-M8	20
SLH-M10	10

*1 : Also sold separately from 1 piece up. ➔ P.809

SLH-TZB Steel - Trivalent Chromate Treatment

Unit : mm

Part Number	M	1	L	2	D1	L1	B	t	L2*1	Max. Torque (N·m)	Mass (g)
SLH-M2-TZB	M2	5	6	8	10	12				0.3	0.13 - 0.29
SLH-M2.5-TZB	M2.5	5	6	8	10	12				0.5	0.26 - 0.47
SLH-M3-TZB	M3		6	8	10	12				1.4	0.53 - 0.78
SLH-M4-TZB	M4			8	10	12	16	20	25 30	3.4	1.3 - 3.3
SLH-M5-TZB	M5			8	10	12	16	20	25 30 35	6	1.8 - 5.7
SLH-M6-TZB	M6				10	12	16	20	25 30 35	10	3.5 - 8.7
SLH-M8-TZB	M8					12	16	20	25 30 35	27	7.8 - 16
SLH-M10-TZB	M10						16	20	25 30 35	46	15 - 24

*1 : If the "L" value is other than the value in parentheses, the screw is full thread.

Part Number	Qty*1 per pack
SLH-M2-TZB	50
SLH-M2.5-TZB	50
SLH-M3-TZB	50
SLH-M4-TZB	50
SLH-M5-TZB	50
SLH-M6-TZB	20
SLH-M8-TZB	20
SLH-M10-TZB	10

*1 : Also sold separately from 1 piece up. ➔ P.809

Part number specification

SLH - M5 - 20 - TZB

Product Code 1 2 3

Order in number of packs.

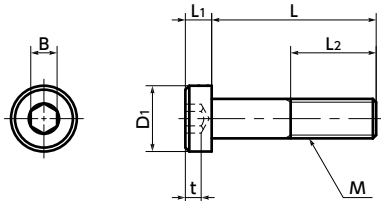
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Please feel free to contact us

SLHS Hex Socket Head Cap Screws with Low Profile (SUSXM7)

WEB Selection Tool WEB CAD Download Protrusion SUS Stainless steel

e-nedzi.com®



● Material/Finish

RoHS2 Compliant

	SLHS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

- Socket head cap screws have low head heights.
- Intended for reducing the size of devices and applications with limited overhead space.
- Also, **[SVLS]** Socket Head Cap Screws with Low Profile with Ventilation Hole is available. ➔ P.574

● Application

Reducing the size of equipment and devices

SLHS SUSXM7

Unit : mm

Part Number	M	L	D1	L1	B*2	t	L2*1	Max. Torque (N·m)	Mass (g)
SLHS-M2	M2	5 6 8 10 12	3.8	1.3	1.3	0.7	Full Thread	0.18	0.13 - 0.29
SLHS-M2.5	M2.5	5 6 8 10 12	4.5	1.6	1.5	1	Full Thread	0.36	0.26 - 0.47
SLHS-M3	M3	5 6 8 10 12 16 20	5.5	2	2	1.5	12(L=20)	0.6	0.5 - 1.2
SLHS-M4	M4	6 8 10 12 16 20 25	7	2.8	2.5	2.3	Full Thread	1.5	1.1 - 2.8
SLHS-M5	M5	8 10 12 16 20 25 30 35	8.5	3.5	3	2.7	16(L≥30)	3.1	1.8 - 5.7
SLHS-M6	M6	8 10 12 16 20 25 30 35 40 45	10	4	4	3	18(L≥30)	5.3	3.1 - 11
SLHS-M8	M8	10 12 16 20 25 30 35 40 45 50	13	5	5	3.8	22(L≥35)	12	7.2 - 22
SLHS-M10	M10	16 20 25 30 35 40 45 50	16	6	6	4.5	32(L≥45)	25	15 - 33

*1 : If the "L" value is other than the value in parentheses, the screw is full thread.

*2 : The hexagonal width across flat of **[SLHS-M10]** has been changed from 7 mm to 6 mm.

Part Number	Qty*1 per pack
SLHS-M2	50
SLHS-M2.5	50
SLHS-M3	50
SLHS-M4	50
SLHS-M5	50
SLHS-M6	20
SLHS-M8	20
SLHS-M10	10

*1 : Also sold separately from 1 piece up. ➔ P.809

● Part number specification

SLHS-M5 - 20

1 2

Order in number of packs.

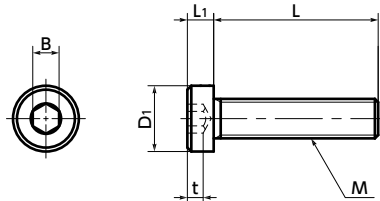
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SLHL Socket Head Cap Screw - Low Profile - SUS316L

WEB Selection Tool WEB CAD Download Protrusion Heat-resistance Chemical-proof Non-Magnetic High strength SUS Stainless steel

e-nedzi.com®



- To distinguish from **[SLHS]**, following processing are made.

[SLHL-M3] **[SLHL-M4]** : Cup-pointed at screw tips

[SLHL]

[SLHS]



[SLHL-M5] **[SLHL-M6]** : Indicated as "A4" on the top of screw heads

[SLHL]



- Socket head cap screws with low profile made of SUS316L.
- Intended for reducing the size of devices and applications with limited overhead space.
- Compared to SUS304, SUS316L has excellent hydrogen embrittlement resistance, fluorine and chlorine gas resistance, and heat resistance. This screw also has corrosion resistance against chemical products and seawater environments that matches or exceeds SUS304.
- SUS316L is non-magnetic.

● Application

Reducing the size of equipment and devices
FPD production equipment/Semiconductor devices/
Aquatic applications/General industrial machines

● Material/Finish

RoHS2 Compliant

	SLHL
Main Body	SUS316L
Strength Class	A4-70

- Do not exceed the max. tightening torque.

● Part number specification

SLHL-M5 - 16

1 2

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809

SLHL SUS316L

Unit : mm

Part Number	M	L	D1	L1	B	t	Max. Torque (N·m)	Mass (g)
SLHL-M3	M3	6 8 10	5.5	2	2	1.5	1.2	0.53 - 0.7
SLHL-M4	M4	6 8 10 12	7	2.8	2.5	2.3	3.2	1.1 - 1.6
SLHL-M5	M5	8 10 12 16	8.5	3.5	3	2.7	6.4	1.8 - 2.8
SLHL-M6	M6	10 12 16 20	10	4	4	3	11	3.5 - 5.3

Part Number	Qty*1 per pack
SLHL-M3	20
SLHL-M4	20
SLHL-M5	10
SLHL-M6	10

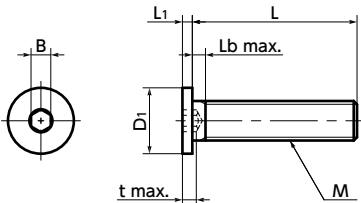
*1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge



SSH Socket Head Cap Screws with Special Low Profile

WEB Selection Tool WEB CAD Download Protrusion



● Material/Finish RoHS2 Compliant

	SSH	SSH-EL
Main Body	SCM435 Ferrosoferric Oxide Coating (Black)	SCM435 Electroless Nickel Plating
Strength Class	Thread : 10.9 Head*1 : 5.8 (M2 - M8) 4.8 (M10)	Thread : 10.9 Head*1 : 5.8 (M2 - M8) 4.8 (M10)

*1 : Do not exceed the max. tightening torque. Though strength is increased through heat treatment, the head strength is less than that of thread.



- The head height for all screws is 1.5 mm or less.
- Intended for reducing the size of devices and applications with limited overhead space.
- Also, **SVSHS** Socket Head Cap Screws with Special Low Profile with Ventilation Hole (➡ P.575), and **SSHS-FT** Socket Head Cap Screws with Special Low Profile with long thread (➡ P.603) are available.

● Application

Reducing the size of equipment and devices

SSH Made of Steel · Ferrosoferric Oxide Film

Unit : mm

Part Number	M	L										D1	L1	Lb	B	t	Max. Torque (N·m)	Mass (g)
SSH-M2	M2	4	5	6	8	10	12					4	1.1	1.2	1.3	1.2	0.3	0.11 - 0.29
SSH-M2.5	M2.5	4	5	6	8	10	12					5	1.3	1.4	1.3	1.5	0.4	0.23 - 0.47
SSH-M3	M3	4	5	6	8	10	12					6	1.3	1.5	1.5	2	0.7	0.36 - 0.69
SSH-M4	M4			6	8	10	12	16	20			8	1.5	1.6	2	2.5	1.7	0.89 - 1.9
SSH-M5	M5			6	8	10	12	16	20	25		9	1.5	2	3	3	6.2	0.73 - 3.1
SSH-M6	M6			6	8	10	12	16	20	25	30	10	1.5	2.5	3	4	6.3	1.2 - 5.5
SSH-M8	M8				8	10	12	16	20	25	30	13	1.5	3	4	5	14	3 - 10
SSH-M10	M10					10	12	16	20	25	30	16	1.5	3.5	5	6	27	4.6 - 15

SSH-EL Made of Steel · Electroless Nickel Plating

Unit : mm

Part Number	M	L										D1	L1	Lb	B	t	Max. Torque (N·m)	Mass (g)
SSH-M2-EL	M2	4	5	6	8	10	12					4	1.1	1.2	1.3	1.2	0.3	0.11 - 0.29
SSH-M2.5-EL	M2.5	4	5	6	8	10	12					5	1.3	1.4	1.3	1.5	0.4	0.23 - 0.47
SSH-M3-EL	M3	4	5	6	8	10	12					6	1.3	1.5	1.5	2	0.7	0.36 - 0.69
SSH-M4-EL	M4			6	8	10	12	16	20			8	1.5	1.6	2	2.5	1.7	0.89 - 1.9
SSH-M5-EL	M5			6	8	10	12	16	20	25		9	1.5	2	3	3	6.2	0.73 - 3.1
SSH-M6-EL	M6			6	8	10	12	16	20	25	30	10	1.5	2.5	3	4	6.3	1.2 - 5.5
SSH-M8-EL	M8				8	10	12	16	20	25	30	13	1.5	3	4	5	14	3 - 10
SSH-M10-EL	M10					10	12	16	20	25	30	16	1.5	3.5	5	6	27	4.6 - 15

Part Number	Qty*1 per pack
SSH-M2	10
SSH-M2.5	10
SSH-M3	10
SSH-M4	10
SSH-M5	10
SSH-M6	10
SSH-M8	10
SSH-M10	10

*1 : Also sold separately from 1 piece up. ➡ P.809

Part Number	Qty*1 per pack
SSH-M2-EL	10
SSH-M2.5-EL	10
SSH-M3-EL	10
SSH-M4-EL	10
SSH-M5-EL	10
SSH-M6-EL	10
SSH-M8-EL	10
SSH-M10-EL	10

*1 : Also sold separately from 1 piece up. ➡ P.809

● Part number specification

SSH-M5-20-EL

Product Code

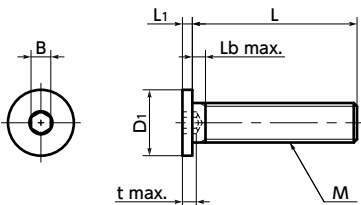
Order in number of packs.
Also sold separately from 1 piece up. ➡ P.809

Individual Sales ➡ P.809 Cleanroom Wash & Packaging ➡ P.807 Screw Length Adjustment ➡ P.811 Vibration Resistant ➡ P.810 Modification process for captive use ➡ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Please feel free to contact us



SSHS/SSHL Socket Head Cap Screw with Special Low Profile - Stainless Steel

WEB Selection Tool CAD Download SUS Stainless steel Protusion



Material/Finish



	SSHS	SSHL
Main Body	SUSXM7 (Equivalent to SUS304)	SUS316L
Strength Class	A2-50	A4-70

Do not exceed the max. tightening torque.

To distinguish from **SSHS**, **SSHL** has a cup point tip.



- Socket head cap screws with special low profile made of stainless steel.
- The head height for all screws is 1.5 mm or less. Intended for reducing the size of devices and applications with limited overhead space.
- The following two types of stainless materials are available as standard.
 - SSHS** —SUSXM7 (S.S. grade : A2)
 - SSHL** —SUS316L
- Compared to SUS304, SUS316L has excellent hydrogen embrittlement resistance, fluorine and chlorine gas resistance, and heat resistance. This screw also has corrosion resistance against chemical products and seawater environments that matches or exceeds SUS304.
- SUS316L is non-magnetic.
- Application
 - Reducing the size of equipment and devices

SSHS SUSXM7														Unit : mm				
Part Number	M	L										D1	L1	Lb	B	t	Max. Torque (N · m)	Mass (g)
SSHS-M2	M2	4	5	6	8	10	12				4	1.1	1.2	1.3	1.2	0.18	0.11 - 0.29	
SSHS-M2.5	M2.5	4	5	6	8	10	12				5	1.3	1.4	1.3	1.5	0.36	0.23 - 0.47	
SSHS-M3	M3	4	5	6	8	10	12				6	1.3	1.5	1.5	2	0.6	0.36 - 0.69	
SSHS-M4	M4		5	6	8	10	12	16			8	1.5	1.6	2	2.5	1.5	0.83 - 1.6	
SSHS-M5	M5			6	8	10	12	16	20	25	9	1.5	2	3	3	3.1	0.73 - 3.3	
SSHS-M6	M6			6	8	10	12	16	20	30	10	1.5	2.5	3	4	5.3	1.2 - 5.5	
SSHS-M8	M8				8	10	12	16	20	30	13	1.5	3	4	5	12	3 - 10	
SSHS-M10	M10					10	12	16	20	30	16	1.5	3.5	5	6	25	4.6 - 15	

Part Number	Qty*1 per pack
SSHS-M2	10
SSHS-M2.5	10
SSHS-M3	10
SSHS-M4	10
SSHS-M5	10
SSHS-M6	10
SSHS-M8	10
SSHS-M10	10

*1 : Also sold separately from 1 piece up. → P.809

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SSHL SUS316L

Unit : mm

Part Number	M	L				D1	L1	Lb	B	t	Max. Torque (N·m)	Mass (g)
SSHL-M3	M3	6	8	10		6	1.3	1.5	1.5	2	1	0.44 - 0.61
SSHL-M4	M4	6	8	10		8	1.5	1.6	2	2.5	2	0.89 - 1.2
SSHL-M5	M5		8	10	12	9	1.5	2	3	3	5	0.98 - 1.5

Part Number	Qty*1 per pack
SSHL-M3	10
SSHL-M4	10
SSHL-M5	10

*1 : Also sold separately from 1 piece up. → P.809

Related Products

Steel special low head bolt **SSH** is available. → P.599



SVSHS Socket Head Cap Screws with Special Low Profile with Ventilation Hole. → P.575



SSHS-FT Socket Head Cap Screws with Special Low Profile with long thread. → P.603



Part number specification

SSHL-M5-12

1 2

Order in number of packs.
Also sold separately from 1 piece up. → P.809

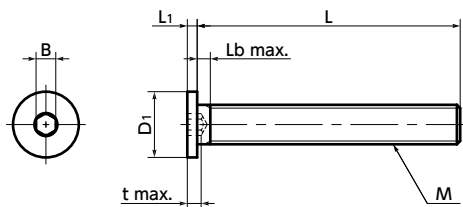
SSHS-FT

Socket Head Cap Screws with Special Low Profile - Full Thread

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WEB Selection Tool CAD Download Protrusion Full Thread SUS Stainless steel



- Full thread socket head cap screws with special low Profile.
- The head height for all screws is 1.5 mm or less.
- Intended for reducing the size of devices and applications with limited overhead space.

● Application

Reducing the size of equipment and devices

● Material/Finish

RoHS2 Compliant

	SSHS-FT
Main Body	SUS304

Part Number	M	1	L	2						D1	L1	Lb	B	t	Max. Torque (N·m)	Mass (g)
SSHS-M3-FT	M3	16	20	25	30	40	50			6	1.3	1.5	1.5	2	1	0.89 - 2.6
SSHS-M4-FT	M4		20	25	30	40	50	60		8	1.5	1.6	2	2.5	2	2 - 5
SSHS-M5-FT	M5				30	40	50	60	70	9	1.5	2	3	3	3.5	4.1 - 10
SSHS-M6-FT	M6					40	50	60	70	10	1.5	2.5	3	4	5	8.2 - 15
SSHS-M8-FT	M8					40	50	60	70	13	1.5	3	4	5	10	14 - 26
SSHS-M10-FT	M10					40	50	60	70	16	1.5	3.5	5	6	18	20 - 39

Unit : mm

Part Number	Qty per pack
SSHS-M3-FT	1
SSHS-M4-FT	1
SSHS-M5-FT	1
SSHS-M6-FT	1
SSHS-M8-FT	1
SSHS-M10-FT	1

● Part number specification

SSHS-M8-60-FT

Product Code 1 2 Product Code

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

NBK

WEB ▶ <https://www.nbk1560.com>

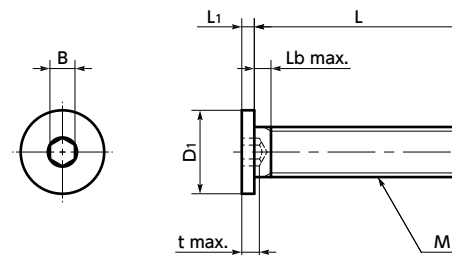
SSHT

Socket Head Cap Screws - Special Low Profile - Pure Titanium

e-nedzi.com®



WEB Selection Tool CAD Download Protrusion Cleanroom wash & packaging Chemical-proof Non-Magnetic Lightweight



● Material/Finish

RoHS2 Compliant

	SSHT
Main Body	TW435(Grade2 Titanium)

- Socket head cap screws with special low profile made of pure titanium.
- The head height for all screws is 1.5 mm or less.
- Specific gravity is approximately 60% of stainless steel.
- Useful for space and weight saving of devices.
- Nonmagnetic.
- Excellent chemical and seawater resistance.
- Chemical polishing and brightening processing improve the screw surface. Furthermore, the screws are cleanroom washed, cleanroom packed, and comply with clean specifications that require no oil or foreign matter deposits.
- About the features of titanium ➡ P.633

● Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots.

Reducing the size of equipment and devices. FPD production equipment, semiconductor devices, electrical and electronic equipment, aquatic applications, and electrochemical plating

Unit : mm														
Part Number	M	L					D1	L1	Lb	B	t	Max. Torque (N · m)	Mass (g)	
SSHT-M3	M3	6	8	10			6	1.3	1.5	1.5	2	0.6	0.25 - 0.35	
SSHT-M4	M4		8	10	12		8	1.5	1.6	2	2.5	1.2	0.59 - 0.76	
SSHT-M5	M5			10	12	16	9	1.5	2	3	3	2.5	0.7 - 1.12	
SSHT-M6	M6			10	12	16	10	1.5	2.5	3	4	5	1.1 - 1.7	

Unit : mm

Part Number	Qty per pack
SSHT-M3	1
SSHT-M4	1
SSHT-M5	1
SSHT-M6	1

● Part number specification

SSHT-M3-10

Product Code 1 2 Product Code

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

NBK

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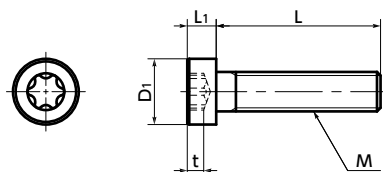
604

SLT/SLTS Hexalobular Socket Head Cap Screws with Extreme Low Profile

e-nedzi.com®



WEB Selection Tool CAD Download Protrusion SUS Stainless steel



● Material/Finish



	SLT-TZB	SLTS
Main Body	SAE1022 Trivalent Chromate Treatment	SUSXM7 (Equivalent to SUS304)
Strength Class	8.8	A2-50

● Part number specification

SLT - M5 - 20 - TZB

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809

- Hexalobular*1 socket head cap screws with low profiles.

- Intended for reducing the size of devices and applications with limited overhead space.

- The hexalobular*1 shape can withstand high tightening torque. ➔ P.723

*1 : The hexalobular shape is prescribed by JIS B 1015 : 2008 (ISO 10664 : 2005) "Hexalobular internal driving feature for bolts and screws"

- Install and remove by using **SKX** Specialty Hexalobular Key. ➔ P.726

- Application

Reducing the size of equipment and devices

Unit : mm

SLT-TZB Steel - Trivalent Chromate Treatment	SLTS Stainless steel	Common dimensions																
Part Number	Part Number	M	2	L	3							D1	L1	Applicable wrench	Hexalobular Socket No.	t	Mass (g)	
	SLTS-M2	M2	4	5	6	8	10					3.8	1.55	SKX-6	6	0.84	0.11 - 0.23	
	SLTS-M2.5	M2.5		5	6	8	10	12				4.5	1.85	SKX-8	8	0.91	0.26 - 0.47	
SLT-M3-TZB	SLTS-M3	M3			6	8	10	12	16			5.5	2.4	SKX-10	10	1.27	0.53 - 0.98	
SLT-M4-TZB	SLTS-M4	M4			6	8	10	12	16	20		7	3.1	SKX-20	20	1.66	1.1 - 2.3	
SLT-M5-TZB	SLTS-M5	M5				8	10	12	16	20	25	8.5	3.65	SKX-25	25	1.91	1.8 - 4.1	
SLT-M6-TZB	SLTS-M6	M6				8	10	12	16	20	25	30	10	4.4	SKX-30	30	2.29	3.1 - 7.1

SLT-TZB Steel - Trivalent Chromate Treatment

Part Number	Qty*1 per pack
SLT-M3-TZB	50
SLT-M4-TZB	50
SLT-M5-TZB	50
SLT-M6-TZB	20

*1 : Also sold separately from 1 piece up. ➔ P.809

SLTS Stainless Steel

Part Number	Qty*1 per pack
SLTS-M2	50
SLTS-M2.5	50
SLTS-M3	50
SLTS-M4	50
SLTS-M5	50
SLTS-M6	20

*1 : Also sold separately from 1 piece up. ➔ P.809

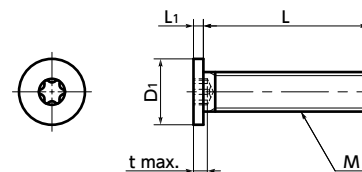
1 Individual Sales ➔ P.809 Cleanroom Wash & Packaging ➔ P.807 Screw Length Adjustment ➔ P.811 Vibration Resistant ➔ P.810 Modification process for captive use ➔ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Please feel free to contact us

SSTS Hexalobular Socket Head Cap Screws with Special Low Profile

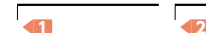
e-nedzi.com®



WEB Selection Tool CAD Download Protrusion SUS Stainless steel



● Part number specification

SSTS-M5-12

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809

- The head height for all screws is 1.5 mm or less.
- Intended for reducing the size of devices and applications with limited overhead space.

- The hexalobular*1 shape can withstand high tightening torque. ➔ P.723

*1 : The hexalobular shape is prescribed by JIS B 1015 : 2008 (ISO 10664 : 2005) "Hexalobular internal driving feature for bolts and screws"

- Install and remove by using **SKX** Specialty Hexalobular Key. ➔ P.726

- Application

Reducing the size of equipment and devices

● Material/Finish



	SSTS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

Unit : mm

Part Number	M	L									D1	L1	Applicable wrench	Hexalobular Socket No.	t	Max. Torque (N·m)	Mass (g)
SSTS-M2	M2	4	5	6	8						4	1.2	SKX-5	5	0.9	0.18	0.11 - 0.19
SSTS-M2.5	M2.5	4	5	6	8						5	1.3	SKX-6	6	1	0.36	0.23 - 0.35
SSTS-M3	M3		5	6	8	10					6	1.3	SKX-8	8	1.1	0.65	0.4 - 0.61
SSTS-M4	M4			6	8	10	12				8	1.5	SKX-10	10	1.5	1.5	0.89 - 1.3
SSTS-M5	M5			6	8	10	12	16			9	1.5	SKX-15	15	1.8	3.1	0.73 - 2
SSTS-M6	M6				8	10	12	16	20		10	1.5	SKX-20	20	2.1	5.3	1.6 - 3.8
SSTS-M8	M8				8	10	12	16	20	13	1.5	SKX-25	25	2.4	12	3	- 6.7

Part Number	Qty*1 per pack
SSTS-M2	10
SSTS-M2.5	10
SSTS-M3	10
SSTS-M4	10
SSTS-M5	10
SSTS-M6	10
SSTS-M8	10

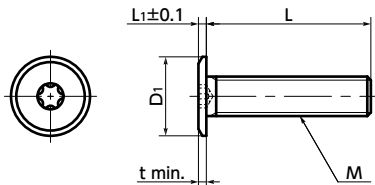
*1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809 Cleanroom Wash & Packaging ➔ P.807 Screw Length Adjustment ➔ P.811 Vibration Resistant ➔ P.810 Modification process for captive use ➔ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge

SETA Aluminum Super Special Low Head Bolt with Hexalobular Socket NEW

WEB Selection Tool WEB CAD Download Protrusion Lightweight

e-nedzi.com



● Application

Space-saving equipment and devices

● Material/Finish



	SETA
Main unit	A5056



- Aluminum Alloy Super Special Low Head Bolt with Hexalobular Socket
- Specific gravity is approx. 33% of that of stainless steel.
- No electrocorrosion due to contact with aluminum alloy.
- Hexalobular socket *1 bolt with extra-low profile.
- For space-saving of equipment/device and applications with a limited top space.
- Hexalobular socket *1 shape can withstand high tightening torque. ➔ P.723

*1 : The shape of hexalobular socket is defined in JIS B 1015 : 2008 (ISO 10664 : 2005) "Hexalobular Socket for Male Screw Parts."

- Use a dedicated wrench **SKX** for mounting and removing. ➔ P.726



- We also produce alumite-treated products. Please feel free to contact our customer service.

Unit : mm												
Part Number 1	M	L 2						D1	L1	Applicable wrench	Hexalobular Socket No.	Max. Torque (N·m)
SETA-M3	M3	6	8	10				7 _{-0.5}	0.8	SKX-6	6	0.14 - 0.19
SETA-M4	M4		8	10	12	16		8 _{-0.5}	0.9	SKX-8	8	0.25 - 0.47
SETA-M5	M5			10	12	16	20	9 _{-0.5}	1	SKX-10	10	0.51 - 0.90
SETA-M6	M6			10	12	16	20	12 _{-0.6}	1.2	SKX-20	20	0.80 - 1.41

Part Number	Qty per pack*1
SETA-M3	10
SETA-M4	10
SETA-M5	10
SETA-M6	10

*1 : Also sold separately from 1 piece up. ➔ P.809

● Part number specification

SETA-M3-8



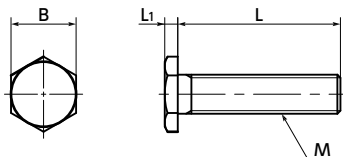
Place order by a bag.
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SNHS-LH Hex Head Screw / Special Low Head NEW

WEB Selection Tool WEB CAD Download Protrusion SUS Stainless steel

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- Hexagon Head Bolt with low head.
- For space-saving of equipment/device and applications with a limited top space.

● Application

Reducing the size of equipment and devices

● Material/Finish



	SNHS-LH
Main body	Equivalent to SUS304

Part Number	M 1	L 2							L1	B	Unit : mm	
		8	10	12	15	20	25	30			Mass (g)	
SNHS-M4-LH	M4								1.5	7	1.2 - 2.9	
SNHS-M5-LH	M5								2	8	1.9 - 4.7	
SNHS-M6-LH	M6								2	10	3.2 - 6.9	
SNHS-M8-LH	M8								2	13	7.8 - 12	

Part Number	Qty per pack
SNHS-M4-LH	10
SNHS-M5-LH	10
SNHS-M6-LH	10
SNHS-M8-LH	10

● Also sold separately from 1 piece up. ➔ P.809

● Part number specification

SNHS-M5-25-LH



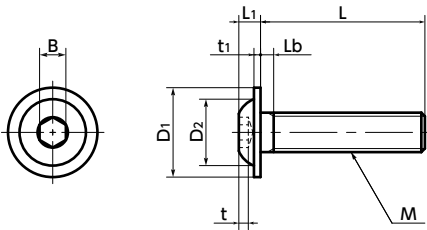
Place order by a bag.
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge



SFB/SFBS Socket Button Head Cap Screws with Flange New Variation Added

WEB Selection Tool WEB CAD Download SUS Stainless steel Protrusion



- Socket button head cap screws with wide bearing surface and are resistant to looseness.
- Intended for reducing the size of devices and applications with limited overhead space.
- Compared to **SFB** (Ferrosoferric Oxide Coating), **SFB-EL** (Electroless nickel plating) has excellent corrosion resistance.

● Application

Reducing the size of equipment and devices

● Material/Finish



	SFB	SFBS	SFB-EL
Main Body	SCM435AD Ferrosoferric Oxide Coating (Black)	SUSXM7 (Equivalent to SUS304)	SCM435AD Electroless nickel plating
Strength Class	10.9	A2-50	10.9

SFB Steel - Ferrosoferric Oxide Coating

Unit : mm

Part Number	M	L	D1	D2	L1	t1	B	t	Lb	Max. Torque (N·m)	Mass (g)
SFB-M3	M3	6 8 10 12 16 20 25	7	5.2	1.65	0.6	2	1.05	1	1	0.52 - 0.78
SFB-M4	M4	6 8 10 12 16 20 25	9.2	6.8	2.2	0.7	2.5	1.3	1.4	2	1 - 2
SFB-M5	M5	8 10 12 16 20 25	11.4	8.5	2.75	0.9	3	1.6	1.6	4	2 - 4
SFB-M6	M6	8 10 12 16 20 25	13.6	10.1	3.3	1	4	2.1	2	8	3 - 5.9
SFB-M8	M8	10 12 16 20 25	17	12.6	4.4	1.4	5	2.6	2.5	12	6.8 - 11

Part Number	Qty*1 per pack
SFB-M3	50
SFB-M4	50
SFB-M5	20
SFB-M6	20
SFB-M8	20

*1 : Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809 Cleanroom Wash & Packaging ➡ P.807 Screw Length Adjustment ➡ P.811 Vibration Resistant ➡ P.810 Modification process for captive use ➡ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Please feel free to contact us

SFBS Made of Stainless Steel

Unit : mm

Part Number	M	L	D1	D2	L1	t1	B	t	Lb	Max. Torque (N·m)	Mass (g)
SFBS-M3	M3	6 8 10 12 16 20 25	7	5.2	1.65	0.6	2	1.05	1	0.25	0.52 - 0.78
SFBS-M4	M4	6 8 10 12 16 20 25	9.2	6.8	2.2	0.7	2.5	1.3	1.4	0.5	1 - 2
SFBS-M5	M5	8 10 12 16 20 25	11.4	8.5	2.75	0.9	3	1.6	1.6	1	2 - 4
SFBS-M6	M6	8 10 12 16 20 25	13.6	10.1	3.3	1	4	2.1	2	2	3 - 5.2

Part Number	Qty*1 per pack
SFBS-M3	20
SFBS-M4	20
SFBS-M5	20
SFBS-M6	20

*1 : Also sold separately from 1 piece up. ➡ P.809

SFB-EL Steel -Electroless nickel plating

Unit : mm

Part Number	M	L	D1	D2	L1	t1	B	t	Lb	Max. Torque (N·m)	Mass (g)
SFB-M3-EL	M3	6 8 10 12 16 20 25	7	5.2	1.65	0.6	2	1.05	1	1	0.52 - 0.78
SFB-M4-EL	M4	6 8 10 12 16 20 25	9.2	6.8	2.2	0.7	2.5	1.3	1.4	2	1 - 2
SFB-M5-EL	M5	8 10 12 16 20 25	11.4	8.5	2.75	0.9	3	1.6	1.6	4	2 - 4
SFB-M6-EL	M6	8 10 12 16 20 25	13.6	10.1	3.3	1	4	2.1	2	8	3 - 5.9
SFB-M8-EL	M8	10 12 16 20 25	17	12.6	4.4	1.4	5	2.6	2.5	12	6.8 - 11

Part Number	Qty*1 per pack
SFB-M3-EL	20
SFB-M4-EL	20
SFB-M5-EL	20
SFB-M6-EL	20
SFB-M8-EL	20

*1 : Also sold separately from 1 piece up. ➡ P.809

● Part number specification

SFB-M5 - 20 - EL



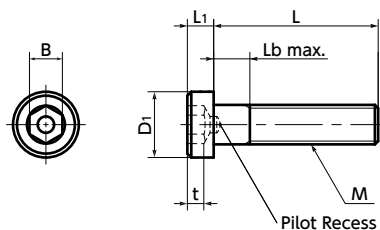
Select "L", and then Order in number of packs.
Also sold separately from 1 piece up. ➡ P.809

SLP Socket Head Cap Screws with Low Profile with Pilot Recess

e-nedzi.com®



WEB Selection Tool WEB CAD Download Protrusion



● Part number specification

SLP-M6-20



Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809



- These socket head cap screws have low head heights.
- Intended for reducing the size of devices and applications with limited overhead space.
- Install and remove by using **SKP** Specialty Key. As the pilot recess guides securely, you can tighten at higher torque more safely. (Commercially available hex keys can also be used for tightening.)

● Application

Reducing the size of equipment and devices

● Material/Finish



	SLP
Main Body	Equivalent to S45C Ferrosoferric Oxide Film (Black)
Strength Class	8.8

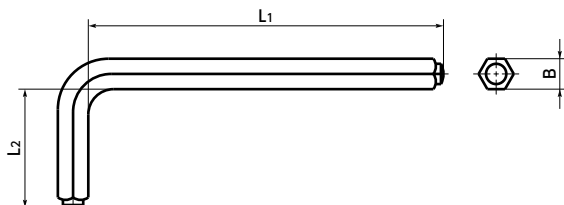
Part Number	M	L					D1	L1	B	t	Lb	Max. Torque (N・m)	Mass (g)
SLP-M4	M4	8	10				7	2.8	3	1.6	3.5	2	1.3 - 1.4
SLP-M5	M5		10	12	16	20	8.5	3.5	4	2	4.2	6	2 - 3.3
SLP-M6	M6		10	12	16	20	10	4	5	2.5	5.5	9	3.5 - 5.3
SLP-M8	M8			12	16	20	13	5	6	3	7	20	7.8 - 10

Unit : mm

Part Number	Qty*1 per pack
SLP-M4	20
SLP-M5	20
SLP-M6	20
SLP-M8	20

*1 : Also sold separately from 1 piece up. ➔ P.809

● Dedicated wrench



Part Number	B Nominal of Key	L1	L2	with Screw	Mass (g)	Qty per pack
SKP-3	3	63	20	SLP-M4	5	1
SKP-4	4	71	25	SLP-M5	10	1
SKP-5	5	80	28	SLP-M6	28	1
SKP-6	6	90	32	SLP-M8	34	1

1 Individual Sales ➔ P.809 2 Cleanroom Wash & Packaging ➔ P.807 3 Screw Length Adjustment ➔ P.811 4 Vibration Resistant ➔ P.810 5 Modification process for captive use ➔ P.806

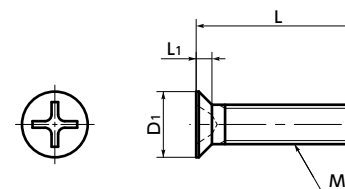
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Please feel free to contact us

SNF-SD / SNFS-SD Cross Recessed Flat Head Machine Screws with Small Head

e-nedzi.com®



WEB Selection Tool WEB CAD Download Small Head SUS Stainless steel



● Part number specification

SNF-M5-20-SD-TZB



Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809



- Cross Recessed flat head machine screws with small head diameters. This makes it possible to reduce the spot facing diameters compared to standard flat head machine screws.
- Since the head height is lower than that of standard flat head screws. Suitable for connecting thin plates.

● Application

Reducing the size of equipment and devices

● Material/Finish



	SNF-SD-TZB	SNFS-SD
Main Body	SWCH Trivalent Chromate Treatment	SUSXM7 (Equivalent to SUS304)

SNF-SD-TZB	SNFS-SD	Common dimensions											Unit: mm		
Steel - Trivalent Chromate Treatment	Stainless steel														
Part Number	Part Number	M	2	L	3							D1	L1	Mass (g)	
SNF-M3-SD-TZB		M3	5	6	8	10	12					5	1.3	0.41 - 0.69	
SNF-M4-SD-TZB	SNFS-M4-SD	M4		6	8	10	12	16				6	1.3	0.73 - 1.5	
SNF-M5-SD-TZB	SNFS-M5-SD	M5			8	10	12	16	20			8	1.8	1.7 - 3.1	
SNF-M6-SD-TZB	SNFS-M6-SD	M6				10	12	16	20	25		10	2.3	3.2 - 5.8	

Unit : mm

SNF-SD-TZB Steel - Trivalent Chromate Treatment

Part Number	Qty*1 per pack
SNF-M3-SD-TZB	20
SNF-M4-SD-TZB	20
SNF-M5-SD-TZB	20
SNF-M6-SD-TZB	20

*1 : Also sold separately from 1 piece up. ➔ P.809

SNFS-SD Stainless Steel

Part Number	Qty*1 per pack
SNFS-M4-SD	20
SNFS-M5-SD	20
SNFS-M6-SD	20

*1 : Also sold separately from 1 piece up. ➔ P.809

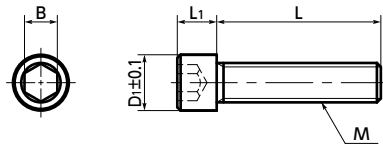
1 Individual Sales ➔ P.809 2 Cleanroom Wash & Packaging ➔ P.807 3 Screw Length Adjustment ➔ P.811 4 Vibration Resistant ➔ P.810 5 Modification process for captive use ➔ P.806

Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Not Available



SNS-SD/SNSS-SD Socket Head Cap Screws with Small Head

WEB Selection Tool CAD Download SUS Stainless steel Small Head



⚠ Precautions for Use

- Since the head bearing surface area is small, bearing surface pressure become high.
- Using the following formula as a reference, ensure that the bearing surface pressure due to screw tightening does not exceed the permitted surface pressure of the intended fastening material.

$$P = \frac{As}{A}$$

P: Bearing surface pressure (N/mm²)
 σ : Bolt stress (N/mm²)
 As: Screw effective sectional area (mm²)
 A: Bearing surface area (mm²)

Bearing surface area $A = \pi \frac{(D_1^2 - d^2)}{4}$

D₁: Head diameter (mm)
 d: Drilled hole diameter (mm)

● Head Diameter and Screw Effective Cross-sectional Area

Part Number	Head Diameter (mm)	Screw effective cross-sectional area (mm ²)
SNS-M3-SD	4.5	5.03
SNS-M4-SD	5.5	8.78
SNS-M5-SD	7	14.2
SNS-M6-SD	8.5	20.1
SNS-M8-SD	11	36.6
SNS-M10-SD	13.5	58

SNS-SD Steel - Ferrosioferic Oxide Coating

Part Number	M 	L 											D1	L1	B	Mass (g)
SNS-M3-SD	M3	5	6	8	10	12						4.5	3	2.5	0.5 - 0.8	
SNS-M4-SD	M4		6	8	10	12	16	20	25			5.5	4	3	1.1 - 2.6	
SNS-M5-SD	M5			8	10	12	16	20	25			7	4.5	4	2.1 - 4.2	
SNS-M6-SD	M6			8	10	12	16	20	25	30		8.5	5.5	5	3.4 - 7.2	
SNS-M8-SD	M8				10	12	16	20	25	30	35	11	7.5	6	7.8 - 16	
SNS-M10-SD	M10						16	20	25	30	35	40	13.5	9.5	8	17 - 29

Part Number	Qty per pack*1
SNS-M3-SD	10
SNS-M4-SD	10
SNS-M5-SD	10
SNS-M6-SD	10
SNS-M8-SD	10
SNS-M10-SD	10

*1: Also sold separately from 1 piece up. → P.809

Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
 Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Please feel free to contact us



- Socket head cap screws with small head diameters. Able to reduce the spot facing diameters compared to standard socket head cap screws.

● Application

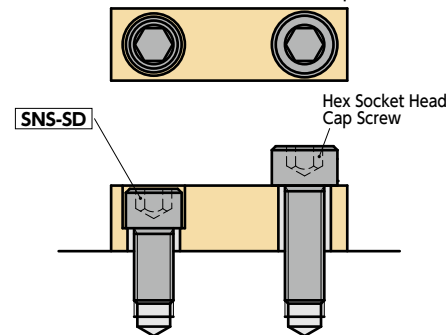
Reducing the size of equipment and devices

● Material/Finish

	SNS-SD	SNS-SD-EL	SNSS-SD
Main Body	SCM435 Ferrosioferic Oxide Coating (Black)	SCM435 Electroless Nickel Plating	SUSXM7 (Equivalent to SUS304)
Strength Class	12.9	12.9	A2-70

● Usage example

It is possible to perform spot facing and hide the head in locations where spot facing is not possible with standard socket head cap screws.



● Part number specification

SNS - M5 - 20 - SD

1 2 3 1

Order in number of packs.

Also sold separately from 1 piece up. → P.809

SNS-SD-EL Steel - Electroless Nickel Plating

Part Number	M	L											D1	L1	B	Mass (g)
SNS-M3-SD-EL	M3	5	6	8	10	12						4.5	3	2.5	0.5 - 0.8	
SNS-M4-SD-EL	M4		6	8	10	12	16	20	25			5.5	4	3	1.1 - 2.6	
SNS-M5-SD-EL	M5			8	10	12	16	20	25			7	4.5	4	2.1 - 4.2	
SNS-M6-SD-EL	M6			8	10	12	16	20	25	30		8.5	5.5	5	3.4 - 7.2	
SNS-M8-SD-EL	M8				10	12	16	20	25	30	35	11	7.5	6	7.8 - 16	
SNS-M10-SD-EL	M10						16	20	25	30	35	40	13.5	9.5	8	17 - 29

Part Number	Qty per pack*1
SNS-M3-SD-EL	10
SNS-M4-SD-EL	10
SNS-M5-SD-EL	10
SNS-M6-SD-EL	10
SNS-M8-SD-EL	10
SNS-M10-SD-EL	10

*1: Also sold separately from 1 piece up. → P.809

SNSS-SD Stainless Steel

Part Number	M	L											D1	L1	B	Mass (g)		
SNSS-M2-SD	M2	3	4	5	6							3	2	1.5	0.088 - 0.15			
SNSS-M2.5-SD	M2.5		4	5	6	8						3.8	2.5	2	0.26 - 0.38			
SNSS-M3-SD	M3			5	6	8	10	12				4.5	3	2.5	0.5 - 0.8			
SNSS-M4-SD	M4				6	8	10	12	16	20	25	5.5	4	3	1.1 - 2.6			
SNSS-M5-SD	M5					8	10	12	16	20	25	7	4.5	4	2.1 - 4.2			
SNSS-M6-SD	M6					8	10	12	16	20	25	30	8.5	5.5	5	3.4 - 7.2		
SNSS-M8-SD	M8						10	12	16	20	25	30	35	11	7.5	6	7.8 - 16	
SNSS-M10-SD	M10								16	20	25	30	35	40	13.5	9.5	8	17 - 29

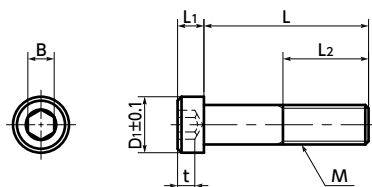
Part Number	Qty per pack*1
SNSS-M2-SD	10
SNSS-M2.5-SD	10
SNSS-M3-SD	10
SNSS-M4-SD	10
SNSS-M5-SD	10
SNSS-M6-SD	10
SNSS-M8-SD	10
SNSS-M10-SD	10

*1: Also sold separately from 1 piece up. → P.809



SLH-SD/SLHS-SD Socket Head Cap Screws with Low & Small Head

WEB Selection Tool CAD Download SUS Stainless steel Protrusion Small Head



⚠ Precautions for Use

- Since the head bearing surface area is small, bearing surface pressure become high.
- Using the following formula as a reference, ensure that the bearing surface pressure due to screw tightening does not exceed the permitted surface pressure of the intended fastening material.

$$P = \sigma \frac{A_s}{A}$$

P: Bearing surface pressure (N/mm²)
σ: Bolt stress (N/mm²)
As: Screw effective sectional area (mm²)
A: Bearing surface area (mm²)

Head diameter: D₁
Intended fastening material
Drilled hole diameter: d

Bearing surface area $A = \pi \frac{(D_1^2 - d^2)}{4}$

D₁: Head diameter (mm)
d: Drilled hole diameter (mm)

● Head Diameter and Screw Effective Cross-sectional Area

Part Number	Head Diameter (mm)	Screw effective cross-sectional area (mm ²)
SLH-M3-SD	4.5	5.03
SLH-M4-SD	5.5	8.78
SLH-M5-SD	7	14.2
SLH-M6-SD	8.5	20.1
SLH-M8-SD	11	36.6
SLH-M10-SD	13.5	58

SLH-SD Steel - Ferrosferic Oxide Coating

Part Number	M	2	L									D ₁	L ₁	B	t	L ₂ *1	Mass (g)
SLH-M3-SD	M3	6	8	10	12							4.5	2	2	1.5	Full Thread	0.5 - 0.7
SLH-M4-SD	M4	6	8	10	12	16	20	25				5.5	2.8	2.5	2.3	Full Thread	0.9 - 2.4
SLH-M5-SD	M5		8	10	12	16	20	25				7	3	3	2.2	Full Thread	1.7 - 3.8
SLH-M6-SD	M6		8	10	12	16	20	25	30			8.5	3.5	4	2.5	18(L=30)	2.6 - 6.5
SLH-M8-SD	M8			10	12	16	20	25	30	35		11	4.5	5	3.3	22(L=35)	5.9 - 14
SLH-M10-SD	M10					16	20	25	30	35	40	13.5	5.5	6	4	Full Thread	13 - 25

*1: If the "L" value is not in parentheses, the screw is full thread.

Part Number	Qty per pack*1
SLH-M3-SD	10
SLH-M4-SD	10
SLH-M5-SD	10
SLH-M6-SD	10
SLH-M8-SD	10
SLH-M10-SD	10

*1: Also sold separately from 1 piece up. → P.809

Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Please feel free to contact us



- Socket head cap screws with low profiles and small head diameters. Able to reduce the spot facing diameters compared to standard socket head cap screws with low profiles.

● Application

Reducing the size of equipment and devices

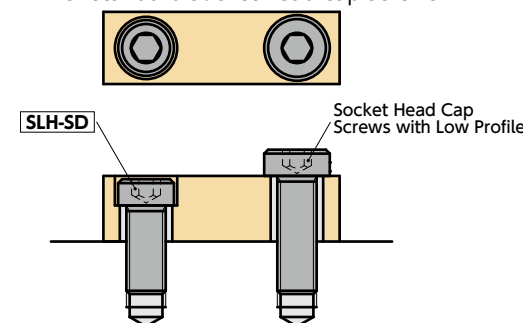
● Material/Finish

	SLH-SD	SLH-SD-EL	SLHS-SD
Main Body	SWCH45K Ferrosferic Oxide Film (Black)	SWCH45K Electroless Nickel Plating	SUSXM7 (Equivalent to SUS304)
Strength Class	8.8	8.8	A2-50

RoHS2 Compliant

● Usage example

It is possible to perform spot facing and hide the head in locations where spot facing is not possible with standard socket head cap screws.



● Part number specification

SLH-M5-20-SD-EL

1 2 3 4

Order in number of packs.

Also sold separately from 1 piece up. → P.809

SLH-SD-EL Steel - Electroless Nickel Plating

Part Number	M	2	L	3							D1	L1	B	t	L2*1	Mass (g)	
SLH-M3-SD-EL	M3	6	8	10	12						4.5	2	2	1.5	Full Thread	0.5 - 0.7	
SLH-M4-SD-EL	M4	6	8	10	12	16	20	25			5.5	2.8	2.5	2.3	Full Thread	0.9 - 2.4	
SLH-M5-SD-EL	M5		8	10	12	16	20	25			7	3	3	2.2	Full Thread	1.7 - 3.8	
SLH-M6-SD-EL	M6		8	10	12	16	20	25	30		8.5	3.5	4	2.5	18(L=30)	2.6 - 6.5	
SLH-M8-SD-EL	M8			10	12	16	20	25	30	35	11	4.5	5	3.3	22(L=35)	5.9 - 14	
SLH-M10-SD-EL	M10					16	20	25	30	35	40	13.5	5.5	6	4	Full Thread	13 - 25

*1: If the "L" value is not in parentheses, the screw is full thread.

Part Number	Qty per pack*1
SLH-M3-SD-EL	10
SLH-M4-SD-EL	10
SLH-M5-SD-EL	10
SLH-M6-SD-EL	10
SLH-M8-SD-EL	10
SLH-M10-SD-EL	10

*1: Also sold separately from 1 piece up. → P.809

SLHS-SD Stainless Steel

Part Number	M	2	L	3							D1	L1	B	t	L2*1	Mass (g)	
SLHS-M3-SD	M3	6	8	10	12						4.5	2	2	1.5	Full Thread	0.5 - 0.7	
SLHS-M4-SD	M4	6	8	10	12	16	20	25			5.5	2.8	2.5	2.3	Full Thread	0.9 - 2.4	
SLHS-M5-SD	M5		8	10	12	16	20	25			7	3	3	2.2	Full Thread	1.7 - 3.8	
SLHS-M6-SD	M6		8	10	12	16	20	25	30		8.5	3.5	4	2.5	18(L=30)	2.6 - 6.5	
SLHS-M8-SD	M8			10	12	16	20	25	30	35	11	4.5	5	3.3	22(L=35)	5.9 - 14	
SLHS-M10-SD	M10					16	20	25	30	35	40	13.5	5.5	6	4	Full Thread	13 - 25

*1: If the "L" value is not in parentheses, the screw is full thread.

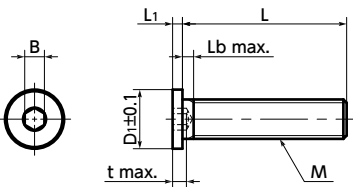
Part Number	Qty per pack*1
SLHS-M3-SD	10
SLHS-M4-SD	10
SLHS-M5-SD	10
SLHS-M6-SD	10
SLHS-M8-SD	10
SLHS-M10-SD	10

*1: Also sold separately from 1 piece up. → P.809



SSH-SD/SSHS-SD Socket Head Cap Screws with Extreme Low & Small Head

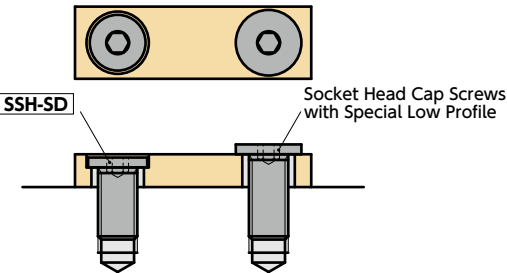
WEB Selection Tool CAD Download SUS Stainless steel Protrusion Small Head



- Socket head cap screws with special low profiles and small head diameters. This makes it possible to reduce the spot facing diameter compared to standard socket head cap screws with special low profiles.

- Application
Reducing the size of equipment and devices

- Usage example
It is possible to perform spot facing and hide the head in locations where spot facing is not possible with standard socket head cap screws with special low profiles.



- ⚠ Precautions for Use
 - Since the head bearing surface area is small, bearing surface pressure becomes high.
 - Using the following formula as a reference, ensure that the bearing surface pressure due to screw tightening does not exceed the permitted surface pressure of the intended fastening material.

$$P = \sigma \frac{A_s}{A}$$

P : Bearing surface pressure (N/mm²)
σ : Bolt stress (N/mm²)
As : Screw effective sectional area (mm²)
A : Bearing surface area (mm²)
$$A = \pi \frac{(D_1^2 - d^2)}{4}$$

D₁ : Head diameter (mm)
d : Drilled hole diameter (mm)

● Head Diameter and Screw Effective Cross-sectional Area

Part Number	Head Diameter (mm)	Screw effective cross-sectional area (mm ²)
SSH-M3-SD	5	5.03
SSH-M4-SD	6	8.78
SSH-M5-SD	8	14.2
SSH-M6-SD	9	20.1
SSH-M8-SD	11	36.6
SSH-M10-SD	13.5	58

SSH-SD Made of Steel · Ferrosoferric Oxide Film

Unit : mm

Part Number	M	2	L	3						D1	L1	Lb	B	t	Max. Torque*1 (N·m)	Mass (g)
SSH-M3-SD	M3	6	8	10	12					5	1.3	1.5	1.5	2	1	0.4 - 0.7
SSH-M4-SD	M4	6	8	10	12	16				6	1.5	1.6	2	2.5	2	0.7 - 1.5
SSH-M5-SD	M5	6	8	10	12	16	20			8	1.5	2	3	3	3.5	1.2 - 2.9
SSH-M6-SD	M6	6	8	10	12	16	20	25	30	9	1.5	2.5	3	4	5	1.6 - 5.8
SSH-M8-SD	M8		8	10	12	16	20	25	30	11	1.5	3	4	5	10	3.1 - 10
SSH-M10-SD	M10			10	12	16	20	25	30	13.5	1.5	3.5	5	6	18	5.7 - 16

*1 : The maximum tightening torque of the screw body.

Part Number	Qty per pack*1
SSH-M3-SD	10
SSH-M4-SD	10
SSH-M5-SD	10
SSH-M6-SD	10
SSH-M8-SD	10
SSH-M10-SD	10

*1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809 Cleanroom Wash & Packaging ➔ P.807 Screw Length Adjustment ➔ P.811 Vibration Resistant ➔ P.810 Modification process for captive use ➔ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Please feel free to contact us

- Material/Finish ◀ 1 RoHS2 Compliant

	SSH-SD	SSH-SD-EL	SSHS-SB
Main Body	SCM435 Ferrosoferric Oxide Coating (Black)	SCM435 Electroless Nickel Plating	SUSXM7 (Equivalent to SUS304)
Strength Class	Thread : 10.9 Head*1 : 5.8 (M3 - M8) 4.8 (M10)	Thread : 10.9 Head*1 : 5.8 (M3 - M8) 4.8 (M10)	A2-50

*1 : Do not exceed the maximum tightening torque. While strength is increased through heat treatment, the head strength is less than the thread strength.

- Part number specification

SSH-M5-20-SD-EL
1 2 3 4

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

SSH-SD-EL Made of Steel · Electroless Nickel Plating

Unit : mm

Part Number	M	2	L	3						D1	L1	Lb	B	t	Max. Torque*1 (N·m)	Mass (g)
SSH-M3-SD-EL	M3	6	8	10	12					5	1.3	1.5	1.5	2	1	0.4 - 0.7
SSH-M4-SD-EL	M4	6	8	10	12	16				6	1.5	1.6	2	2.5	2	0.7 - 1.5
SSH-M5-SD-EL	M5	6	8	10	12	16	20			8	1.5	2	3	3	3.5	1.2 - 2.9
SSH-M6-SD-EL	M6	6	8	10	12	16	20	25	30	9	1.5	2.5	3	4	5	1.6 - 5.8
SSH-M8-SD-EL	M8		8	10	12	16	20	25	30	11	1.5	3	4	5	10	3.1 - 10
SSH-M10-SD-EL	M10			10	12	16	20	25	30	13.5	1.5	3.5	5	6	18	5.7 - 16

*1 : The maximum tightening torque of the screw body.

Part Number	Qty per pack*1
SSH-M3-SD-EL	10
SSH-M4-SD-EL	10
SSH-M5-SD-EL	10
SSH-M6-SD-EL	10
SSH-M8-SD-EL	10
SSH-M10-SD-EL	10

*1 : Also sold separately from 1 piece up. ➔ P.809

SSHS-SD Made of Stainless Steel

Part Number	M	L								D ₁	L ₁	L _b	B	t	Max. Torque*1 (N·m)	Mass (g)	
SSHS-M2-SD	M2	5	6	8						3.2	1.1	1.2	1.3	1.2	0.2	0.087 - 0.15	
SSHS-M2.5-SD	M2.5	5	6	8						4	1.3	1.4	1.3	1.5	0.4	0.19 - 0.28	
SSHS-M3-SD	M3		6	8	10	12				5	1.3	1.5	1.5	2	0.6	0.4 - 0.7	
SSHS-M4-SD	M4		6	8	10	12	16			6	1.5	1.6	2	2.5	1.2	0.7 - 1.5	
SSHS-M5-SD	M5		6	8	10	12	16	20		8	1.5	2	3	3	2.5	1.2 - 2.9	
SSHS-M6-SD	M6		6	8	10	12	16	20	25	30	9	1.5	2.5	3	4	5	1.6 - 5.8
SSHS-M8-SD	M8			8	10	12	16	20	25	30	11	1.5	3	4	5	7	3.1 - 10
SSHS-M10-SD	M10				10	12	16	20	25	30	13.5	1.5	3.5	5	6	18	5.7 - 16

*1 : The maximum tightening torque of the screw body.

Part Number	Qty per pack*1
SSHS-M2-SD	10
SSHS-M2.5-SD	10
SSHS-M3-SD	10
SSHS-M4-SD	10
SSHS-M5-SD	10
SSHS-M6-SD	10
SSHS-M8-SD	10
SSHS-M10-SD	10

*1 : Also sold separately from 1 piece up. ➔ P.809



Corrosion Resistance

	Duplex Stainless Steel Hexagon Head Screw	Duplex Stainless Steel Hexagon Nuts
Part Number	SNHDS	SHNDS
Shape	 NEW	 NEW
Page	P.623	P.624
Materials	UNS S31803	UNS S31803
Characteristics	Corrosion Resistance High Strength • Magnetic	Corrosion Resistance High Strength • Magnetic
Size	M12 - M24	M12 - M24

High Strength

	Socket Head Cap Screws
Part Number	SNSX
Shape	
Page	P.625
Materials	SUS316L HiMo
Characteristics	High Strength • Heat Resistance • Corrosion Resistance Nonmagnetic
Size	M3 - M12

Heat Resistance

	Socket Head Cap Screws		Hex Nuts • Washers
Part Number	SNSL	SNSJ	SHNJ/SWAJ
Shape			
Page	P.627	P.628	P.629
Materials	SUS316L	SUS310S	SUS310S
Characteristics	Heat Resistance • Corrosion Resistance • Nonmagnetic	Heat Resistance • Chemical Resistance	Heat Resistance • Chemical Resistance
Size	M3 - M8	M3 - M10	M3 - M10

For Magnetic Detection

	Socket Head Cap Screws with Magnetic Captive Washers	Hex Nuts • Washers
Part Number	SNSQS-PM	SHNS-PM/SWAS-PM
Shape		
Page	P.631	P.632
Materials	Body : SUSXM7 Washers : NSSC-180	Hex Nuts : NSSC-550 Washers : NSSC-180
Characteristics	Magnetic • Corrosion Resistance	Magnetic • Corrosion Resistance
Size	M3 - M6	M4 - M10

Properties of High Performance Stainless Steel Screws

Mechanical Properties

Properties	SUS316L HiMo SNSX-88	SUS316L HiMo SNSX-109	SUS316L*1 SNSL	SUS310S SNSJ	UNS S31803 SNHDS	SUSXM7*2
Tensile Strength (N/mm ²)	800	1,000	700	520	620	700
0.2% Proof Stress (N/mm ²)	640	900	450	205	450	450
Elongation (mm)	0.3d	0.2d	0.4d	—	—	0.4d
Magnetic	Non-Magnetic	Non-Magnetic	Non-Magnetic	Non-Magnetic	Magnetic	Non-Magnetic

*1 Values for Strength Class A4 - 70.

*2 Values for Strength Class A2 - 70.

• Values in chart are for reference only. They are not guaranteed values.

Yield load (N)

Thread	SUS316L HiMo SNSX-88	SUS316L HiMo SNSX-109	SUS316L*1 SNSL	SUS310S SNSJ	UNS S31803 SNHDS	SUSXM7*2
M3	3,200	—	2,300	1,030	2,300	2,300
M4	5,600	—	4,000	1,790	4,000	4,000
M5	9,100	—	6,400	2,910	6,400	6,400
M6	12,900	18,100	9,000	4,120	9,000	9,000
M8	23,400	32,900	16,500	7,500	16,500	16,500
M10	—	52,200	26,100	11,800	26,100	26,100
M12	—	75,800	37,900	—	37,900	37,900

*1 Values for Strength Class A4 - 70.

*2 Values for Strength Class A2 - 70.

• Values in chart are for reference only. They are not guaranteed values.

Proof Stress by Temperature (N/mm²)

Part Number • Material	20℃	100℃	200℃	300℃	400℃	500℃	600℃
SUS316L HiMo SNSX-88	640	576	576	544	512	480	448
SUS316L HiMo SNSX-109	900	855	855	855	810	810	765
SUSXM7	450	382	360	337	315	—	—
SCM435	1,100	1,020	925	825	—	—	—

• Values in chart are for reference only. They are not guaranteed values.

Non-Magnetic

Part Number • Material	Amplitude Permeability
SUS316L HiMo SNSX-88	1.006
SUS316L HiMo SNSX-109	1.007
SUS316L SNSL	1.006
SUSXM7	1.4

• Values in chart are for reference only. They are not guaranteed values.

SNHDS Duplex Stainless Steel Hexagon Head Screw NEW

WEB Selection Tool

WEB CAD Download

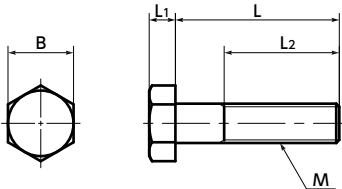
Chemical-proof

High strength

Magnetic

SUS Stainless steel

e-nedzi.com®



- Made of duplex stainless steel, combining the best of austenitic and ferritic steel.
 - Excellent strength and corrosion resistance compared to SUS316L.
 - It has magnetism.
 - For applications in chloride environments such as seawater.
- Application
- Seawater desalination equipment / Seawater intake pump / Offshore instruments / Food machinery / Food production line

● Material/Finish RoHS2 Compliant

	SNHDS
Main body	UNS S31803

● Mechanical property

	UNS S31803	SUS316L
Tensile strength (N/mm²)	620 or above	480 or above
0.2% Proof Stress (N/mm²)	450 or above	175 or above
Extension (%)	18 or above	40 or above
Hardness (HRB)	(106 or less)	90 or less

- Values in chart are for reference only. They are not guaranteed values.

Unit : mm

Part Number	M	L							B	L1	L2	Mass (g)
SNHDS-M12	M12	30	40	50	60				19	8	30	42 - 68
SNHDS-M16	M16		40	50	60	70			24	10	38	96 - 143
SNHDS-M20	M20			50	60	70	80		30	13	46	185 - 258
SNHDS-M24	M24				60	70	80	90	36	15	54	314 - 420

Part Number	Qty per pack
SNHDS-M12	1
SNHDS-M16	1
SNHDS-M20	1
SNHDS-M24	1

● Part number specification

SNHDS - M20 - 60

Product Code

1

2

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SHNDS Duplex Stainless Steel Hexagon Nuts NEW

WEB Selection Tool

WEB CAD Download

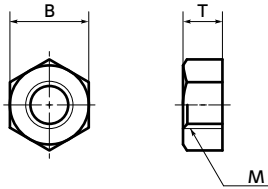
Chemical-proof

High strength

Magnetic

SUS Stainless steel

e-nedzi.com®



- Made of duplex stainless steel, combining the best of austenitic and ferritic steel.
 - Excellent strength and corrosion resistance compared to SUS316L.
 - It has magnetism.
 - For applications in chloride environments such as seawater.
- Application
- Seawater desalination equipment / Seawater intake pump / Offshore instruments / Food machinery / Food production line

● Material/Finish RoHS2 Compliant

	SHNDS
Main body	UNS S31803

● Mechanical property

	UNS S31803	SUS316L
Tensile strength (N/mm²)	620 or above	480 or above
0.2% Proof Stress (N/mm²)	450 or above	175 or above
Extension (%)	18 or above	40 or above
Hardness (HRB)	(106 or less)	90 or less

- Values in chart are for reference only. They are not guaranteed values.

Unit : mm

Part Number	M	B	T	Mass(g)	Qty per pack
SHNDS-M12	M12	19	10	16	1
SHNDS-M16	M16	24	13	31	1
SHNDS-M20	M20	30	16	61	1
SHNDS-M24	M24	36	19	102	1

● Part number specification

SHNDS-M20

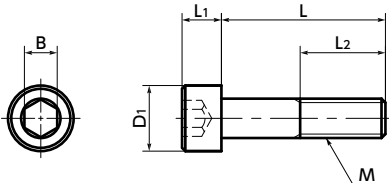
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1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available



SNSX Hex Socket Head Cap Screws - High Intensity S.S.

WEB Selection Tool CAD Download SUS Stainless steel Heat-resistance Chemical-proof Non-Magnetic High strength



● Application

FPD production equipment, semiconductor devices, sputtering equipment, aquatic applications, and general industrial machines

● Material/Finish

RoHS2 Compliant

	SNSX-88	SNSX-109
Main Body	SUS316L HiMo	SUS316L HiMo
Strength Class	8.8	10.9

SNSX-88														Unit : mm	
Part Number	M	L								Strength Class	D1	L1	B	L2*1	Mass (g)
SNSX-M3-88	M3	6	8	10	12	16	20	25		8.8	5.5	3	2.5	18(L=25)	0.71 - 1.6
SNSX-M4-88	M4	6	8	10	12	16	20	25		8.8	7	4	3	Full Thread	1.5 - 3.2
SNSX-M5-88	M5			10	12	16	20	25	30	8.8	8.5	5	4	22(L=30)	2.7 - 5.6
SNSX-M6-88	M6				12	16	20	25	30	8.8	10	6	5	Full Thread	5.1 - 8.3
SNSX-M8-88	M8					16	20	25	30	8.8	13	8	6	28(L=40)	12 - 21

*1 : If the " L " value is other than the value in parentheses, the screw is full thread.

Part Number	Qty per pack
SNSX-M3-88	1
SNSX-M4-88	1
SNSX-M5-88	1
SNSX-M6-88	1
SNSX-M8-88	1

SNSX-109														Unit : mm	
Part Number	M	L								Strength Class	D1	L1	B	L2*1	Mass (g)
SNSX-M6-109	M6	16	20	25	30	40	50			10.9	10	6	5	24(L≥40)	5.8 - 13
SNSX-M8-109	M8	16	20	25	30	40	50			10.9	13	8	6	28(L≥40)	12 - 25
SNSX-M10-109	M10		20	25	30	40	50			10.9	16	10	8	32(L=50)	23 - 39
SNSX-M12-109	M12				30	40	50			10.9	18	12	10	Full Thread	39 - 55

*1 : If the " L " value is other than the value in parentheses, the screw is full thread.

Part Number	Qty per pack
SNSX-M6-109	1
SNSX-M8-109	1
SNSX-M10-109	1
SNSX-M12-109	1

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Please feel free to contact us	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

● Mechanical property

Part Number・Strength Class\Property	Tensile Strength (N / mm ²)	Proof Stress (N / mm ²)	Elongation after Break Minimum (mm)
A2-50・A4-50	500	210	0.6d
A2-70・A4-70	700	450	0.4d
SNSX-88 8.8	800	640	0.3d
SNSX-109 10.9	1,000	900	0.2d

● Values in chart are for reference only. They are not guaranteed values.

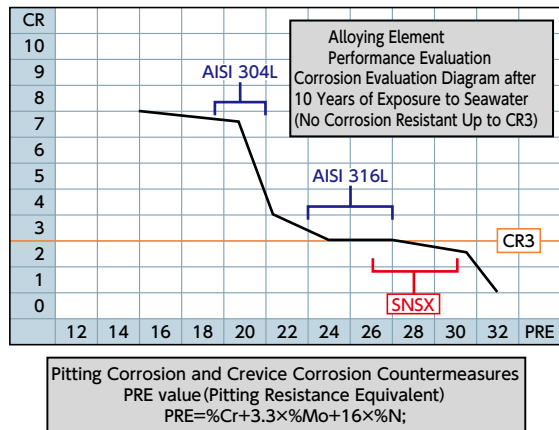
● Durability by temperature (N/mm²)

Part Number・Material	20℃	100℃	200℃	300℃	400℃	500℃	600℃
SNSX-88 SUS316L HiMo	640	576	576	544	512	480	448
SNSX-109 SUS316L HiMo	900	855	855	855	810	810	765
SUSXM7	450	382	360	337	315	—	—
SCM435	1,100	1,020	925	825	—	—	—

● Values in chart are for reference only. They are not guaranteed values.

● Result of corrosion test by metal materials
SUS316L HiMo steel used in SNSX is a special steel alloy with reduced carbon and increased Cr, Ni, and Mo. Reducing carbon shows an increased resistance to grain boundary corrosion cracking, and adding Cr and Mo increases resistance to pitting corrosion and crevice corrosion. In addition, adding Ni effectively reduces the risk of stress corrosion cracking.

The chart above shows the degree of corrosion after 10 years of exposure to conditions similar to seawater environment, and there was no corrosion for CR3 or lower.



● Sulfuric acid corrosion test (H2SO4, 50℃ and mm / year)

Part Number・Material\Density	3%	10%	20%
SUS304	1.08	3	—
SUS316, SUS316L	0	0.3	1.3
SNSX-88 SNSX-109	0	0	0.44

● Values in chart are for reference only. They are not guaranteed values.

● Magnetic permeability comparison

Part Number・Material	Amplitude Permeability
SNSX-88 SUS316L HiMo	1.006
SNSX-109 SUS316L HiMo	1.007
SNSL SUS316L	1.015
SUSXM7	1.4

● Values in chart are for reference only. They are not guaranteed values.

● Related Products

SNSX, a type with a ventilation hole is available.
→ P.571



● Part number specification

SNSX - M3 - 25 - 88

Product Code 1 2 3

SHNJ / SWAJ

Hex Nuts / Washers - SUS310S

WEB Selection Tool

CAD Download

Cleanroom wash & packaging

Heat-resistance

Chemical-proof

SUS Stainless steel

SHNJ

SWAJ-F

B

T

M

t

D

d

SHNJ

SWAJ-F

● Mechanical property

	SUS310S
Tensile Strength (N/mm ²)	520 or Higher
0.2% Proof Stress (N/mm ²)	205 or Higher
Elongation (%)	40 or Higher
Hardness (HRB)	90 or Less

● Values in chart are for reference only. They are not guaranteed values.

● Physical property

	SUS310S
Specific Gravity	7.98
Heat Resistance Temperature*1 (°C)	700
Electric Resistance (μΩ · m)	0.78
Specific Heat (J/kg · K)	500
Thermal Conductivity (W / (m · K))	14
Linear Expansion Coefficient (K ⁻¹)	15.9 × 10 ⁻⁶

*1 : This is the heat resistance temperature of the SUS310S material.

● Values in chart are for reference only. They are not guaranteed values.

● When heated to 700 deg C, tensile strength drops approximately 60% and proof stress drops approximately 40%.

● Make sure to carry out tests under the same condition of actual use in advance to confirm safety.

● Compared to SUS304, SUS310S has excellent heat resistance, oxidation resistance, and nitric acid resistance compared to SUS304.

● Austenitic series stainless steel with high Ni content, which is effective for corrosion resistance and high temperature characteristics.

● Use in combination with **SNSJ** Socket Head Cap Screw (SUS310S) ➡ P.628

● Cleanroom wash and cleanroom packing are completed. ➡ P.807

● Application

FPD production equipment, semiconductor devices, nitric acid plants, and aquatic applications

● Material/Finish

RoHS2 Compliant

	SHNJ	SWAJ-F
Main Body	SUS310S	SUS310S

● Part number specification

SHNJ-M5

1

SHNJ Hex Nuts

Unit : mm

Part Number	M	B	T	Mass (g)	Qty per pack
SHNJ-M3	M3	5.5	2.4	0.35	1
SHNJ-M4	M4	7	3.2	0.81	1
SHNJ-M5	M5	8	4	1.2	1
SHNJ-M6	M6	10	5	2.5	1
SHNJ-M8	M8	13	6.5	5.6	1
SHNJ-M10	M10	17	8	12	1

SWAJ-F Washers

Unit : mm

Part Number	Nominal	d	D	t	Mass (g)	Qty per pack
SWAJ-3-F	3	3.2	7	0.5	0.12	1
SWAJ-4-F	4	4.3	9	0.8	0.31	1
SWAJ-5-F	5	5.3	10	1	0.45	1
SWAJ-6-F	6	6.5	13	1	0.79	1
SWAJ-8-F	8	8.5	18	1.5	2.4	1
SWAJ-10-F	10	10.5	22	1.5	3.5	1

1 Individual Sales ➡ P.809

Cleanroom Wash & Packaging ➡ P.807

Screw Length Adjustment ➡ P.811

Vibration Resistant ➡ P.810

Modification process for captive use ➡ P.806

1 pc. in 1 bag

Cleanroom washed and packed

Not Available

Not Available

Not Available

Selection Navigator

NBK

CAD Data Download

<https://www.nbk1560.com/>

Special Screws
Vacuum Application
Low Profile, Small Head
High Performance SS.
Titanium
Special Material
Chemical Resistance
Special Surface Treatment
Miniature
Captive/ Full Thread
Functional
Inch
Tamper Resistance
Hexalobular Socket Head
Plugs
Plastic
Washers/ Lock Nuts

629

NBK <https://www.nbk1560.com>

630

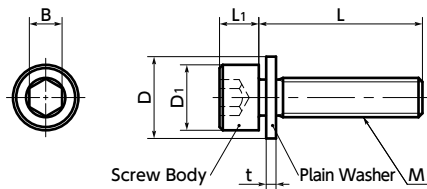
SNSQS-PM

Hex Socket Head Cap Screws with Magnetic Captive Washer

e-nedzi.com®



WEB Selection Tool WEB CAD Download iMagnetic Easy operation SUS Stainless steel



- Socket head cap screws have built-in magnetic stainless steel washers.
- They can be detected magnetically even if the screw falls out from food industry machines and get mixed in food products in factories.
- The washer is built in below the neck so it does not fall off. Attaching the washer is not required.
- Washer's corrosion resistance is as same as SUS304.

• Application

With magnetic detection
Food industry machines, food production lines,
and food packaging lines

• Material/Finish



	SNSQS-PM
Screw Body	SUSXM7 (Equivalent to SUS304)
Screw Body Tensile Strength	A2-50
Plain Washer	NSSC-180 (Equivalent to SUS430J1L)

Part Number	M	L	D1	D	L1	B	t	Mass (g)
SNSQS-M3-PM	M3	8	10	12	16	5.5	0.5	0.92 - 1.3
SNSQS-M4-PM	M4	10	12	16	20	7	0.8	2.1 - 3
SNSQS-M5-PM	M5	12	16	20	25	8.5	1	3.4 - 5.2
SNSQS-M6-PM	M6	12	16	20	25	10	1.5	6.2 - 8.7

Part Number	Qty per pack
SNSQS-M3-PM	1
SNSQS-M4-PM	1
SNSQS-M5-PM	1
SNSQS-M6-PM	1

• Part number specification

SNSQS - M5 - 25 - PM

Product Code 1 2 Product Code

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available

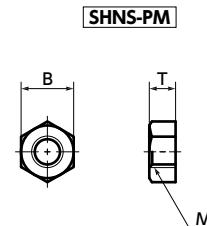
SHNS-PM / SWAS-PM

Hex Nuts/Washers - Magnetic S.S.

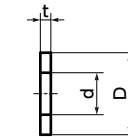
e-nedzi.com®



WEB Selection Tool WEB CAD Download iMagnetic SUS Stainless steel



SWAS-F-PM



- Made of magnetic stainless steel.
- They can be detected magnetically even if the screw falls out from food industry machines and gets mixed in food products in factories.
- Same corrosion resistance as SUS304.

• Application

With magnetic detection
Food industry machines, food production lines,
and food packaging lines

• Material/Finish



	SHNS-PM	SWAS-PM
Main Body	NSSC-550	NSSC-180 (Equivalent to SUS430J1L)

SHNS-PM Hex Nuts

Unit : mm

Part Number	M	B	T	Mass (g)	Qty*1 per pack
SHNS-M4-PM	M4	7	3.2	0.69	10
SHNS-M5-PM	M5	8	4	1.1	10
SHNS-M6-PM	M6	10	5	2.2	10
SHNS-M8-PM	M8	13	6.5	4.7	5
SHNS-M10-PM	M10	17	8	10	5

*1 : Also sold separately from 1 piece up. → P.809

SWAS-F-PM Washers

Unit : mm

Part Number	Nominal	d	D	t	Mass (g)	Qty*1 per pack
SWAS-3-F-PM	3	3.2	7	0.5	0.12	10
SWAS-4-F-PM	4	4.3	9	0.8	0.31	10
SWAS-5-F-PM	5	5.3	10	1	0.45	10
SWAS-6-F-PM	6	6.4	12.5	1.5	1.1	10
SWAS-8-F-PM	8	8.4	17	1.5	2	5
SWAS-10-F-PM	10	10.5	21	2	4.1	5

*1 : Also sold separately from 1 piece up. → P.809

• Part number specification

SWAS-5-F-PM

1

Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available



• Socket Head Cap Screws • Cross Recessed Machine Screws

	Socket Head Cap Screws		Cross Recessed Machine Screws			
Part Number	SNSTG	SNST	SNPTG	SNPT	SNFTG	SNFT
Shape						
Page	P.635	P.636	P.637	P.638	P.639	P.640
Materials	Ti-6Al-4V (64 Titanium)	TB340C (Grade 2 Titanium)	Ti-15-3-3-3 (β Titanium)	TW270 (Grade 1 Titanium)	Ti-15-3-3-3 (β Titanium)	TW270 (Grade 1 Titanium)
Characteristics	High Strength • Lightweight • Nonmagnetic • Corrosion Resistance	Lightweight • Nonmagnetic • Chemical Resistance	High Strength • Lightweight • Nonmagnetic • Corrosion Resistance	Lightweight • Nonmagnetic • Chemical Resistance	High Strength • Lightweight • Nonmagnetic • Corrosion Resistance	Lightweight • Nonmagnetic • Chemical Resistance
Size	M3 - M10	M3 - M6	M3 - M5	M2 - M5	M3 - M5	M3 - M4

• Nuts • Washers

	Hex Nuts	Hex Lock Nuts	Washers
Part Number	SHNT	SWUT	SWAT
Shape			
Page	P.641	P.642	P.643
Materials	TW270 (Grade 1 Titanium) TW340 (Grade 2 Titanium)	FRS-9901 (Equivalent to TW340)	TP340C (Grade 2 Titanium)
Characteristics	Lightweight • Nonmagnetic • Chemical Resistance With Flange	Lightweight • Nonmagnetic • Chemical Resistance Vibration Resistant	Lightweight • Nonmagnetic • Chemical Resistance
Size	M3 - M10	M3 - M10	Nominal 3 to 10

- Titanium screws by NBK receive chemical polishing and brightening processing to improve their surfaces. Furthermore, the screws are cleanroom washed and comply with clean specifications that require no oil or foreign matter deposits.

Titanium Screws by NBK
Chemically Polishing and
Brightening Processing

Unprocessed



Properties of Titanium

• Physical Properties

Properties	TB340C (Pure Titanium)	Ti-6Al-4V (64 Titanium)	Ti-15-3-3-3 (β Titanium)
Specific Gravity	4.51	4.43	4.8
Melting Point (°C)	1668	1540	—
Longitudinal Elastic Modulus (GPa)	106	113	90
Thermal Conductivity (W / (m · K))	17.16	7.5	—
Linear Expansion Coefficient (K ⁻¹)	8.4×10 ⁻⁶	8.8×10 ⁻⁶	—
Electric Resistance (μΩ · m)	0.55	1.7	—
Amplitude Permeability (μ)	1.0001	1.0002	1.0002

• Values in chart are for reference only. They are not guaranteed values.

• Mechanical Properties

Properties	TB340C (Pure Titanium)	Ti-6Al-4V (64 Titanium)	Ti-15-3-3-3 (β Titanium)	SUSXM7*
Tensile Strength (N/mm ²)	340 - 510	895 or Higher	705 - 945	500
0.2% Proof Stress (N/mm ²)	215 or Higher	825 or Higher	690 - 835	210
Elongation (%)	23 or Higher	10 or Higher	12 or Higher	—

*Values for Strength Class A2 - 50.

• Values in chart are for reference only. They are not guaranteed values.

• Tension Rupture Load (N)

Thread	TB340C (Pure Titanium)	Ti-6Al-4V (64 Titanium)	Ti-15-3-3-3 (β Titanium)	SUSXM7*
M3	3210	5240	4170	2500
M4	5610	8850	7520	4400
M5	9080	14700	11900	7100
M6	12800	20800	—	10100
M8	—	33700	—	18300
M10	—	58900	—	29000

*Values for Strength Class A2 - 50.

• Values in chart are for reference only. They are not guaranteed values.

• Magnetic Flux Density

	Titanium	SUSXM7
Magnetic Flux Density (T)	0	5×10 ⁻⁵

Measuring device : 5080 Gauss (Tesla) Meter by F.W.BELL

Measuring conditions : DC magnetic field measuring mode Probe and sample separation distance: 5 mm

• Chemical Resistance

(Partially excerpted from "World of Titanium" by Japan Titanium Society)

Chemical Name	Composition (%)	Corrosion Resistibility		
		Pure Titanium	SUS304	Hastelloy*
Hydrochloric Acid	10 30	○ ×	×	○ ○
Sulfuric Acid	10 50	△ ×	— ×	○ ○
Nitric Acid	10 50	○ ○	○ ○	— —
Nitrohydrochloric Acid (HCl : HNO ₃)	3:01	○	×	△
Chromic Acid	5	○	—	○
Hydrofluoric Acid	5	×	×	△
Phosphoric Acid (Ventilation)	50	△	○	○
Ferric Chloride	10 - 30	○	×	○
Cupric Chloride	10 - 30	○	×	○
Sodium Chloride	10 - 40	○	○	○
Calcium Chloride	50	○	○	○
Ammonium Chloride	40	○	—	○
Magnesium Chloride	40	○	○	○
Ferrous Sulfate	10 - 50	○	○	○
Ammonia	10 - 30	○	○	○
Sodium Hydroxide	50	○	○	—
Sodium Carbonate	10	○	○	○
Hydrogen Sulfide	Dry Gas Wet Gas	○ ○	△ ○	○ ○
Hydrogen Sulfide	Dry Gas Wet Gas	×	—	○ △
Sulfur Dioxide	Dry Gas Wet Gas	○ ○	—	—
Seawater	High Speed Stream	○	—	—
Formic Acid	10 - 50	○	○	○
Lactic Acid	50	○	○	○
Oxalic Acid	20	×	—	○
Citric Acid	10 - 50	○	○	○

Testing Temperature : Room Temperature

○ : <0.127 mm/year △ : 0.508 - 1.27 mm/year

○ : 0.127 - 0.508 mm/year × : >1.27 mm/year

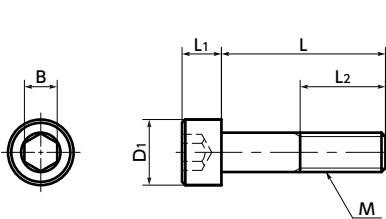
*Hastelloy is a registered trademark of Haynes International, Inc.

 Important Information about
Chemical Resistance Data

- A test piece was used to acquire the test data.
- Chemical resistance changes with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.

SNST Hex Socket Head Cap Screws - Titanium

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Chemical-proof Non-Magnetic Lightweight



Physical property

	TB340C (Grade 2 Titanium)
Specific Gravity	4.51
Melting Point (°C)	1668
Longitudinal Elastic Modulus (GPa)	106
Thermal Conductivity (W/(m·K))	17.16
Linear Expansion Coefficient (K ⁻¹)	8.4×10 ⁻⁶
Electric Resistance (μΩ·m)	0.55
Amplitude Permeability (μ)	1.0001 (Nonmagnetic)

Values in chart are for reference only. They are not guaranteed values.

Mechanical property

	TB340C (Grade 2 Titanium)
Tensile Strength (N/mm ²)	340 - 510
0.2% Proof Stress (N/mm ²)	215 or Higher
Elongation (%)	23 or Higher

Values in chart are for reference only. They are not guaranteed values.

Part number specification

SNST-M5-20



- Specific gravity is approximately by 60% of stainless steel.
- Nonmagnetic.
- Excellent chemical and seawater resistance.
- About the features of titanium ➡ P.633

- Chemical polishing and brightening processing improve the screw surface. Furthermore, the screws are cleanroom washed, cleanroom packed, and comply with clean specifications that require no oil or foreign matter deposits.



Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, aquatic applications, and electrochemical plating

Material/Finish

	SNST
Main Body	TB340C (Grade 2 Titanium)

Unit : mm																					
Part Number	M	L													D1	L1	B	L2*1	Tension*2 Rupture Load (N)	Torsional*2 Torque (N・m)	Mass (g)
1																					
SNST-M3	M3	5	6	8	10	12	16	20							5.5	3	2.5	Full Thread	3210	1.5	0.38 - 0.77
SNST-M4	M4			8	10	12	16	20	25	30					7	4	3	20(L=30)	5610	3.4	0.94 - 2.1
SNST-M5	M5				10	12	16	20	25	30	35				8.5	5	4	22(L≥30)	9080	7.1	1.5 - 3.6
SNST-M6	M6				10	12	16	20	25	30	35	40	45	50	10	6	5	24(L≥35)	12800	12	2.7 - 7.5

*1 : If the " L " value is not in parentheses, the screw is full thread.

*2 : Values in chart are for reference only. They are not guaranteed values.

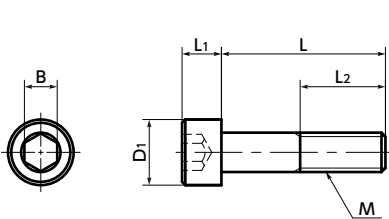
Part Number	Qty per pack
SNST-M3	1
SNST-M4	1
SNST-M5	1
SNST-M6	1

1 Individual Sales ➡ P.809 Cleanroom Wash & Packaging ➡ P.807 Screw Length Adjustment ➡ P.811 Vibration Resistant ➡ P.810 Modification process for captive use ➡ P.806

1 unit in 1 bag Cleanroom washed and packed Available / Add'l charge Available / Add'l charge Available / Add'l charge

SNSTG Hex Socket Head Cap Screws - High Intensity Titanium Alloy

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Non-Magnetic High strength Lightweight



Physical property

	Ti-6Al-4V (64 Titanium)
Specific Gravity	4.43
Melting Point (°C)	1540
Longitudinal Elastic Modulus (GPa)	113
Thermal Conductivity (W/(m·K))	7.5
Linear Expansion Coefficient (K ⁻¹)	8.8×10 ⁻⁶
Electric Resistance (μΩ·m)	1.7
Amplitude Permeability (μ)	1.0002 (Nonmagnetic)

Values in chart are for reference only. They are not guaranteed values.

Mechanical property

	Ti-6Al-4V (64 Titanium)
Tensile Strength (N/mm ²)	895 or Higher
0.2% Proof Stress (N/mm ²)	825 or Higher
Elongation (%)	10 or Higher

Values in chart are for reference only. They are not guaranteed values.

- Screws made of high strength titanium alloy.
- Specific gravity is approximately 60% of stainless steel.

- Nonmagnetic.
- These screws are resistant to corrosion and are particularly strong against seawater.
- Chemical polishing and brightening processing improve the screw surface. Furthermore, the screws are cleanroom washed, cleanroom packed, and comply with clean specifications that require no oil or foreign matter deposits.

- About the properties of titanium ➡ P.633

Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, and aquatic applications

Material/Finish

	SNSTG
Main Body	Ti-6Al-4V (64 Titanium)

Part number specification

SNSTG-M5-20



Unit : mm																			
Part Number	M	L												D ₁	L ₁	B	L ₂ *1	Tension*2 Rupture Load (N)	Mass (g)
SNSTG-M3	M3	6	8	10	12	16	20							5.5	3	2.5	Full Thread	5240	0.4 - 0.77
SNSTG-M4	M4		8	10	12	16	20	25	30					7	4	3	Full Thread	8850	0.94 - 2.1
SNSTG-M5	M5			10	12	16	20	25	30	35				8.5	5	4	Full Thread	14700	1.5 - 3.6
SNSTG-M6	M6			10	12	16	20	25	30	35	40	45	50	10	6	5	45(L=50)	20800	2.7 - 7.5
SNSTG-M8	M8					16	20	25	30	35	40	45	50	13	8	6	45(L=50)	33700	6.9 - 14
SNSTG-M10	M10					16	20	25	30	35	40	45	50	16	10	8	45(L=50)	58900	12 - 22

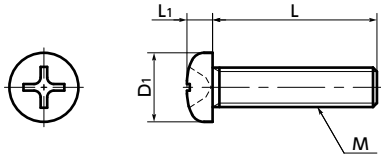
*1 : If the " L " value is not in parentheses, the screw is full thread.

*2 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNSTG-M3	1
SNSTG-M4	1
SNSTG-M5	1
SNSTG-M6	1
SNSTG-M8	1
SNSTG-M10	1

1 Individual Sales ➡ P.809 Cleanroom Wash & Packaging ➡ P.807 Screw Length Adjustment ➡ P.811 Vibration Resistant ➡ P.810 Modification process for captive use ➡ P.806

1 unit in 1 bag Cleanroom washed and packed Available / Add'l charge Available / Add'l charge Available / Add'l charge



Physical property

	Ti-15-3-3-3 (β Titanium)
Specific Gravity	4.8
Longitudinal Elastic Modulus (GPa)	90
Amplitude Permeability (μ)	1.0002 (Nonmagnetic)

• Values in chart are for reference only. They are not guaranteed values.

Mechanical property

	Ti-15-3-3-3 (β Titanium)
Tensile Strength (N/mm²)	705 - 945
0.2% Proof Stress (N/mm²)	690 - 835
Elongation (%)	12 or Higher

• Values in chart are for reference only. They are not guaranteed values.

- Screws made of high strength titanium alloy.
- Specific gravity is approximately 60% of stainless steel.
- Nonmagnetic.
- These screws are resistant to corrosion and are particularly strong against seawater.
- About the properties of titanium ➡ P.633
- Chemical polishing and brightening processing improve the screw surface. Furthermore, the screws are cleanroom washed, cleanroom packed, and comply with clean specifications that require no oil or foreign matter deposits.

SNPTG

Unprocessed



Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, and aquatic applications

Material/Finish

RoHS2 Compliant

	SNPTG
Main Body	Ti-15-3-3-3 (β Titanium)

Part number specification

SNPTG-M5-20

1

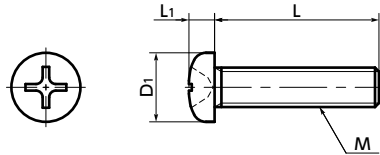
2

Part Number	M	L	D1	L1	Tension*1 Rupture Load (N)	Mass (g)
SNPTG-M3	M3	6 8 10 12 15 20	5.5	2	4170	0.33 - 0.68
SNPTG-M4	M4	6 8 10 12 15 20 25	7	2.6	7520	0.63 - 1.5
SNPTG-M5	M5	8 10 12 15 20 25	9	3.3	11900	1.4 - 2.6

*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNPTG-M3	1
SNPTG-M4	1
SNPTG-M5	1

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge



Physical property

	TW270 (Grade 1 Titanium)
Specific Gravity	4.51
Melting Point (°C)	1668
Longitudinal Elastic Modulus (GPa)	106
Thermal Conductivity (W/(m·K))	17.16
Linear Expansion Coefficient (K ⁻¹)	8.4×10 ⁻⁶
Electric Resistance (μΩ·m)	0.55
Amplitude Permeability (μ)	1.0001 (Nonmagnetic)

• Values in chart are for reference only. They are not guaranteed values.

Mechanical property

	TW270 (Grade 1 Titanium)
Tensile Strength (N/mm²)	270 - 410
0.2% Proof Stress (N/mm²)	165 or Higher
Elongation (%)	27 or Higher

• Values in chart are for reference only. They are not guaranteed values.

Part number specification

SNPT-M5-20

1

2

- Specific gravity is approximately 60% of stainless steel.
- Nonmagnetic.
- Excellent chemical and seawater resistance.
- Chemical polishing and brightening processing improve the screw surface. Furthermore, the screws are cleanroom washed, cleanroom packed, and comply with clean specifications that require no oil or foreign matter deposits.
- About the features of titanium ➡ P.633

Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, aquatic applications, and electrochemical plating

Material/Finish

RoHS2 Compliant

	SNPT
Main Body	TW270 (Grade 1 Titanium)

Related Products

SHNT Titanium Hex Nut,
SWUT Titanium Hex Lock Nut,
and SWAT Titanium Washer
are available.
➡ P.641 - 643

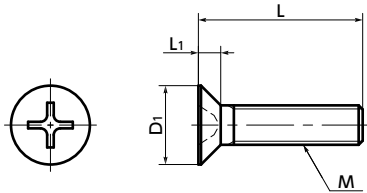


Part Number	M	L	D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SNPT-M2	M2	5 6 8 10	3.5	1.3	840	0.3	0.09 - 0.14
SNPT-M2.5	M2.5	5 6 8 10 12	4.5	1.7	1380	0.5	0.17 - 0.3
SNPT-M3	M3	6 8 10 12 16 20	5.5	2	2360	1	0.31 - 0.63
SNPT-M4	M4	6 8 10 12 16 20 25	7	2.6	4120	2.4	0.59 - 1.4
SNPT-M5	M5	8 10 12 16 20 25 30	9	3.3	6670	5.1	1.3 - 2.8

*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNPT-M2	1
SNPT-M2.5	1
SNPT-M3	1
SNPT-M4	1
SNPT-M5	1

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge



Physical property

	Ti-15-3-3-3 (β Titanium)
Specific Gravity	4.8
Longitudinal Elastic Modulus (GPa)	90
Amplitude Permeability (μ)	1.0002 (Nonmagnetic)

• Values in chart are for reference only. They are not guaranteed values.

Mechanical property

	Ti-15-3-3-3 (β Titanium)
Tensile Strength (N/mm ²)	705 - 945
0.2% Proof Stress (N/mm ²)	690 - 835
Elongation (%)	12 or Higher

• Values in chart are for reference only. They are not guaranteed values.

Part number specification

SNFTG-M5-20



- Screws made of high strength titanium alloy.
- Specific gravity is approximately 60% of stainless steel.
- Nonmagnetic.
- These screws are resistant to corrosion and are particularly strong against seawater.
- About the properties of titanium ➡ P.633
- Chemical polishing and brightening processing improve the screw surface. Furthermore, the screws are cleanroom washed, cleanroom packed, and comply with clean specifications that require no oil or foreign matter deposits.



Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, and aquatic applications

Material/Finish



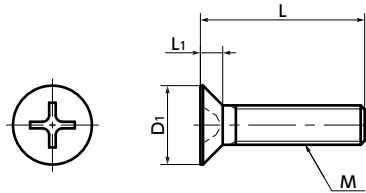
	SNFTG
Main Body	Ti-15 - 3 - 3 - 3 (β Titanium)

Unit : mm											
Part Number	M	L							D1	L1	Tension*1 Rupture Load (N)
SNFTG-M3	M3	6	8	10	12	15	20		6	1.75	4170
SNFTG-M4	M4		8	10	12	15	20	25	8	2.3	7520
SNFTG-M5	M5		8	10	12	15	20	25	10	2.8	11900

*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNFTG-M3	1
SNFTG-M4	1
SNFTG-M5	1

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Available / Add'l charge	Not Available



Physical property

	TW270 (Grade 1 Titanium)
Specific Gravity	4.51
Melting Point (°C)	1668
Longitudinal Elastic Modulus (GPa)	106
Thermal Conductivity (W / (m · K))	17.16
Linear Expansion Coefficient (K ⁻¹)	8.4×10 ⁻⁶
Electric Resistance (μΩ · m)	0.55
Amplitude Permeability (μ)	1.0001 (Nonmagnetic)

• Values in chart are for reference only. They are not guaranteed values.

Mechanical property

	TW270 (Grade 1 Titanium)
Tensile Strength (N/mm ²)	270 - 410
0.2% Proof Stress (N/mm ²)	165 or Higher
Elongation (%)	27 or Higher

• Values in chart are for reference only. They are not guaranteed values.



- Specific gravity is approximately 60% of stainless steel.
- Nonmagnetic.
- Excellent chemical and seawater resistance.
- Chemical polishing and brightening processing improve the screw surface. Furthermore, the screws are cleanroom washed, cleanroom packed, and comply with clean specifications that require no oil or foreign matter deposits.
- About the features of titanium ➡ P.633
- Also, titanium screws with special specifications such as ventilation holes, dimensions, shapes, cleanroom washing, and special packaging are available.Please contact our customer service.



Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, aquatic applications, and electrochemical plating

Material/Finish



	SNFT
Main Body	TW270 (Grade 1 Titanium)

Part number specification

SNFT-M4-10



Unit : mm									
Part Number	M	L				D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N · m)
SNFT-M3	M3	6	8	10		6	1.75	2360	1
SNFT-M4	M4	6	8	10	12	8	2.3	4120	2.4

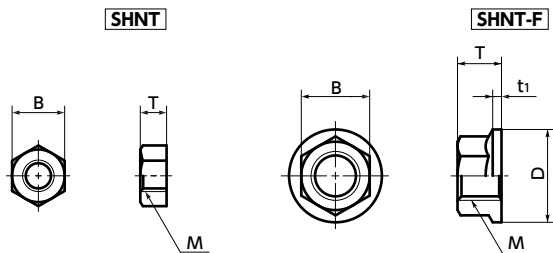
*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNFT-M3	1
SNFT-M4	1

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Available / Add'l charge	Not Available

SHNT Hex Nuts - Titanium

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Chemical-proof Non-Magnetic Lightweight



Physical property

	TW270 (Grade 1 Titanium)	TW340 (Grade 2 Titanium)
Specific Gravity	4.51	4.51
Melting Point (°C)	1668	1668
Longitudinal Elastic Modulus (GPa)	106	106
Thermal Conductivity (W/(m·K))	17.16	17.16
Linear Expansion Coefficient (K ⁻¹)	8.4×10 ⁻⁶	8.4×10 ⁻⁶
Electric Resistance (μΩ·m)	0.55	0.55
Amplitude Permeability (μ)	1.0001 (Nonmagnetic)	1.0001 (Nonmagnetic)

• Values in chart are for reference only. They are not guaranteed values.

Mechanical property

	TW270 (Grade 1 Titanium)	TW340 (Grade 2 Titanium)
Tensile Strength (N/mm ²)	270 - 410	340 - 510
0.2% Proof Stress (N/mm ²)	165 or Higher	215 or Higher
Elongation (%)	27 or Higher	23 or Higher

• Values in chart are for reference only. They are not guaranteed values.

- Specific gravity is approximately 60% of stainless steel.
- Nonmagnetic.
- Excellent chemical and seawater resistance.
- Chemical polishing and brightening processing improve the screw surface. Furthermore, the screws are cleanroom washed, cleanroom packed, and comply with clean specifications that require no oil or foreign matter deposits.

Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, aquatic applications, and electrochemical plating

Material/Finish



	SHNT	SHNT-F
Main body	TW270 (Grade 1 Titanium)	TW340 (Grade 2 Titanium)

Part number specification

SHNT-M6-F



SHNT Hex Nuts - Titanium

Unit : mm

Part Number	M	B	T	Mass (g)	Qty per pack
SHNT-M3	M3	5.5	2.4	0.2	1
SHNT-M4	M4	7	3.2	0.46	1
SHNT-M5	M5	8	4	0.69	1
SHNT-M6	M6	10	5	1.4	1
SHNT-M8	M8	13	6.5	3.1	1
SHNT-M10	M10	17	8	6.5	1

SHNT-F Hex Flange Nuts - Titanium

Unit : mm

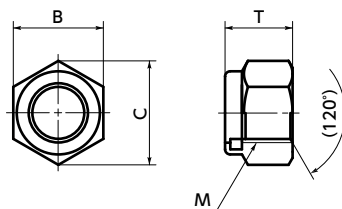
Part Number	M	B	T	t ₁	D	Mass (g)	Qty per pack
SHNT-M3-F	M3	5.5	3.7	0.8	8	0.4	1
SHNT-M4-F	M4	7	4.2	0.8	10	0.72	1
SHNT-M5-F	M5	8	5.5	1.1	12	1.3	1
SHNT-M6-F	M6	10	6	1.5	14	1.9	1
SHNT-M8-F	M8	12	7.5	1.5	17	3.3	1
SHNT-M10-F	M10	14	9	1.8	19	4.8	1

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available



SWUT Hex Lock Nuts - Titanium

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Non-Magnetic Lightweight Vibration resistant treatment



- Specific gravity is approximately 60% of stainless steel.
- These nuts are equipped with vibration resistant patch to prevent screw from loosening.
- Continuous Max. Operating Temperature : -40 to 120 deg C

Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, and loosening prevention

Material/Finish



	SWUT
Main Body	FRS-9901 (Equivalent to TW340)
Nylon Ring	Nylon 66

Part Number	M	B	C (Approx.)	T	Mass (g)	Qty per pack
SWUT-M3	M3	5.5	6.4	4	0.27	1
SWUT-M4	M4	7	8.1	5	0.52	1
SWUT-M5	M5	8	9.2	6.5	0.77	1
SWUT-M6	M6	10	11.5	8	1.8	1
SWUT-M8	M8	13	15	9.8	3.5	1
SWUT-M10	M10	17	19.6	12	7.3	1

Related Products

SWUS Hexagon Lock Nut made of stainless steel is available.
→ P.797



Part number specification

SWUT-M6



1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

SWAT Washers - Titanium

Selection Tool

CAD Download

Cleanroom wash & packaging

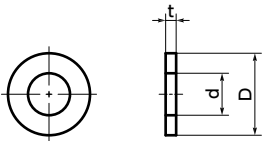
Chemical-proof

Non-Magnetic

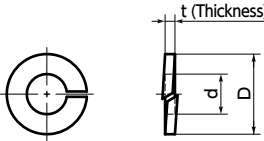
Lightweight

e-nedzi.com

SWAT-F



SWAT-S





SWAT-F

SWAT-S

Physical property

	TP340C (Grade 2 Titanium)
Specific Gravity	4.51
Melting Point (°C)	1668
Longitudinal Elastic Modulus (GPa)	106
Thermal Conductivity (W/(m·K))	17.16
Linear Expansion Coefficient (K ⁻¹)	8.4×10 ⁻⁶
Electric Resistance (μΩ·m)	0.55
Amplitude Permeability (μ)	1.0001 (Nonmagnetic)

Values in chart are for reference only. They are not guaranteed values.

Application

Lightweight applications in automobiles, aircrafts, spacecrafts, and robots FPD production equipment, semiconductor devices, electrical and electronic equipment, aquatic applications, and electrochemical plating

Material/Finish

SWAT

TP340C (Grade 2 Titanium)

RoHS2 Compliant

SWAT-F Plain Washers - Titanium

Unit : mm

Part Number	Nominal	d	D	t	Mass (g)	Qty per pack
SWAT-3-F	3	3.2	7	0.5	0.068	1
SWAT-4-F	4	4.3	9	0.8	0.18	1
SWAT-5-F	5	5.3	10	1	0.25	1
SWAT-6-F	6	6.4	12.5	1.6	0.65	1
SWAT-8-F	8	8.4	17	1.6	1.2	1
SWAT-10-F	10	10.5	21	2	2.3	1

SWAT-S Spring Washers - Titanium

Unit : mm

Part Number	Nominal	d	D	t	Mass (g)	Qty per pack
SWAT-3-S	3	3.1	5.9	0.7	0.062	1
SWAT-4-S	4	4.1	7.6	1	0.15	1
SWAT-5-S	5	5.1	9.2	1.3	0.27	1
SWAT-6-S	6	6.1	12.2	1.5	0.59	1
SWAT-8-S	8	8.2	15.4	2	1.2	1
SWAT-10-S	10	10.2	18.4	2.5	2.1	1

Related Products

SWAT-VF

Titanium Washer with Ventilation Grooves is available.

➔ P.584



Part number specification

SWAT-6-F

1

Individual Sales ➔ P.809

Cleanroom Wash & Packaging ➔ P.807

Screw Length Adjustment ➔ P.811

Vibration Resistant ➔ P.810

Modification process for captive use ➔ P.806

1 pc. in 1 bag

Cleanroom washed and packed

Not Available

Not Available

Not Available

Selection Navigator



CAD Data Download

<https://www.nbk1560.com/>



● Monel400

	Hex Socket Head Cap Screws (Monel 400 equiv.)
Part Number	SNSMN
Shape	 NEW
Page	P.647
Materials	Monel 400 equiv.
Characteristics	Chemical-proof Heat-resistance
Size	M3 - M6

● Inconel

	Socket Head Cap Screws	Hex Nuts • Washers
Part Number	SNSI	SHNI / SWAI
Shape		
Page	P.648	P.649
Materials	NCF600	NCF600
Characteristics	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance
Size	M3 - M8	M3 - M8

● Molybdenum

	Socket Head Cap Screws	Hex Socket Countersunk Head Screw	Hex Nuts • Washers
Part Number	SNSM	SNFCM	SHNM / SWAM
Shape		 NEW	
Page	P.650	P.651	P.652
Materials	Pure Molybdenum	Pure Molybdenum	Pure Molybdenum
Characteristics	Heat Resistance	Heat Resistance	Heat Resistance
Size	M3 - M8	M2 - M4	M3 - M8

● Hastelloy

	Socket Head Cap Screws	
Part Number	SNSH-C276	SNSH-C22
Shape		
Page	P.653	P.654
Materials	NW0276	NW6022
Characteristics	Chemical Resistance	Chemical Resistance
Size	M3 - M8	M3 - M8

● Nickel

	Socket Head Cap Screws
Part Number	SNSN
Shape	
Page	P.655
Materials	NW2201 (Ni99.0%)
Characteristics	Chemical Resistance • Heat Resistance
Size	M3 - M8

● Super Invar

	Socket Head Cap Screws
Part Number	SNSIV
Shape	
Page	P.656
Materials	Super Invar
Characteristics	Low Expansion
Size	M3 - M8

● Phospor Bronze

	Socket Head Cap Screws
Part Number	SNSP
Shape	
Page	P.657
Materials	C5191
Characteristics	Nonmagnetic
Size	M3 - M8

● Aluminum

	Socket Head Cap Screws	Hexalobular Socket Head Cap Screws with Low Profile
Part Number	SNSA	SETA
Shape		 NEW
Page	P.658	P.609
Materials	A5056	A5056
Characteristics	Lightweight	Hexalobular Socket Extra Low Profile / Small Space
Size	M3 - M8	M3 - M6

● Ceramic

	Socket Head Cap Screws	Hex Head Screws	Hex Nuts
Part Number	SCX-C	SCX-H	SCX-N
Shape	 Additional Size	 Additional Size	
Page	P.659	P.659	P.661
Materials	Al ₂ O ₃ (99.5% Alumina)	Al ₂ O ₃ (99.5% Alumina)	Al ₂ O ₃ (99.5% Alumina)
Characteristics	Chemical Resistance • Heat Resistance • Electrical Insulation	Chemical Resistance • Heat Resistance • Electrical Insulation	Chemical Resistance • Heat Resistance • Electrical Insulation
Size	M3 - M10	M3 - M10	M3 - M10

Properties of Screws Made of Special Materials

● Mechanical Properties

Properties	Inconel* (NCF600) SNSI	Pure Molybdenum SNSM SNFCM	Hastelloy*C-276 (NW0276) SNSH-C276	Hastelloy*C-22 (NW6022) SNSH-C22	Monel 400 equiv. (UNS N0400) SNSMN	Nickel (NW2201) SNSN	Super Invar SNSIV	Phosphor Bronze (C5191) SNSP	Aluminum Alloy (A5056) SNSA
Tensile Strength (N/mm ²)	548 - 695	515	793	786	517 - 620	343 - 411	470	590 or Higher	294
0.2% Proof Stress (N/mm ²)	205 - 352	380	400	365	172 - 345	68 - 166	333	—	245
Elongation (%)	35 - 55	15	60	57	35 - 60	40 - 60	43	8	12
Hardness	65 - 85 (HRB)	—	—	92 (HRB)	60 - 80 (HRB)	75 - 100 (HB)	143 (HV)	—	98 (HB)

● Values in chart are for reference only. They are not guaranteed values.

● Physical Properties

Properties	Inconel* (NCF600) SNSI	Pure Molybdenum SNSM SNFCM	Hastelloy*C-276 (NW0276) SNSH-C276	Hastelloy*C-22 (NW6022) SNSH-C22	Monel 400 equiv. (UNS N0400) SNSMN	Nickel (NW2201) SNSN	Super Invar SNSIV	Phosphor Bronze (C5191) SNSP	Aluminum Alloy (A5056) SNSA
Specific Gravity	8.42	10.2	8.89	8.61	8.80	8.89	8.15	8.83	2.64
Longitudinal Elastic Modulus (GPa)	207	327	205	209	179	206	132	105	71.7
Thermal Conductivity (W/(m·K))	16.7	142	—	—	22	79.5	10.47	67	112
Linear Expansion Coefficient (K ⁻¹)	13.4×10 ⁻⁶	5.1×10 ⁻⁶	11.2×10 ⁻⁶	12.4×10 ⁻⁶	14.2×10 ⁻⁶ (100℃)	13.4×10 ⁻⁶	0.69×10 ⁻⁶	18×10 ⁻⁶	24.1×10 ⁻⁶
Electric Resistance (μΩ·m)	1.0	0.058	1.3	1.2	0.5	0.085	0.77	0.13	0.064

● Values in chart are for reference only. They are not guaranteed values.

● Chemical Resistance of Inconel*, Hastelloy*, and Nickel Screws

Chemical Name	Temperature	Inconel*	Hastelloy*	Nickel
Dilute Sulfuric Acid	Room Temperature Boiling Point	A D	AA A	A D
Concentrate Sulfuric Acid	Room Temperature Boiling Point	C D	AA D	C D
Dilute Hydrochloric Acid	Room Temperature Boiling Point	B D	AA D	A D
Concentrate Hydrochloric Acid	Room Temperature Boiling Point	D D	AA B	D D
Dilute Nitric Acid	Room Temperature Boiling Point	D —	AA AA	D D
Concentrate Nitric Acid	Room Temperature Boiling Point	A —	AA D	D D
Dilute Phosphoric Acid	Room Temperature Boiling Point	AA —	AA AA	AA D
Concentrate Phosphoric Acid	Room Temperature Boiling Point	AA —	AA B	AA D
Sodium Hydroxide (Diluted)	Room Temperature Boiling Point	AA C	— —	AA AA
Sodium Hydroxide (Diluted)	Room Temperature Boiling Point	AA C	— —	AA AA

AA : Excellent

C : Useable under certain conditions

A : Good

D : Non Useable

B : Useable

*Inconel is a registered trademark of Special Metals Corporation.

Hastelloy is a registered trademark of Haynes International, Inc.

● Chemical Resistance of Ceramic Screws

Chemical Name	Temperature	Hour	Effect
35% Hydrochloric Acid	Boiling	30 minutes	●
70% Nitric Acid	Boiling	30 minutes	●
98% Sulfuric Acid	Boiling	30 minutes	●
90% Phosphoric Acid	Boiling	30 minutes	○
60% Hydrofluoric Acid	20℃	24 hours	△
10% Potassium Hydroxide	80℃	7 Days	●
Potassium Hydroxide	500℃(Boiling)	24 hours	△
Sodium Hydroxide	500℃(Boiling)	24 hours	○
Sodium Carbonate	900℃(Boiling)	24 hours	○
Sodium Sulfate	1000℃(Boiling)	24 hours	●
Potassium Fluoride	90℃(Boiling)	4 hours	×

● : No Corrosion

△ : Moderate Corrosion

○ : Slight Corrosion

× : Heavy Corrosion

⚠ Important Information about Chemical Resistance Data

- A test piece was used to acquire the test data. Chemical resistance changes with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.

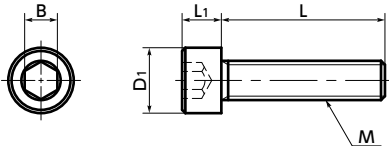
● Magnetic Flux Density of Phosphor Bronze Screws

	Phosphor Bronze	SUSXM7(S.S. grade: A2)
Magnetic Flux Density (T)	0	5×10 ⁻⁵

Measuring device : 5080 Gauss (Tesla) Meter by F.W.BELL

Measuring conditions : DC magnetic field measuring mode

Probe and sample separation distance: 5 mm



● Mechanical property

	UNS N04400 (Monel 400 equiv.)	SUS304
Tensile strength (N/mm²)	517 - 620	520 or above
0.2% Proof Stress (N/mm²)	172 - 345	205 or Higher
Extension (%)	35 - 60	40 or above
Hardness (HRB)	60 - 80	90 or less

● Values in chart are for reference only. They are not guaranteed values.

● Physical property

	UNS N04400 (Monel 400 equiv.)	SUS304
Specific gravity	8.80	7.93
Longitudinal elastic modulus (GPa)	179	193
Specific heat (J/kg·K)	427	500
Electric resistivity (μΩ·m)	0.5	0.7
Heat thermal conductivity (W/(m·K))	22	17
Linear expansion coefficient (K ⁻¹)	14.2 x 10 ⁻⁶ (100°C)	17.3 x 10 ⁻⁶

● Values in chart are for reference only. They are not guaranteed values.

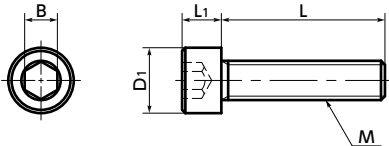
Part Number	M	L	D1	L1	B	Tension Rupture Load*1 (N)	Mass (g)
SNSMN-M3	M3	6 8 10 12	5.5	3	2.5	2600	0.8 - 1.1
SNSMN-M4	M4	8 10 12 16 20	7	4	3	4530	1.9 - 3
SNSMN-M5	M5	10 12 16 20 25	8.5	5	4	7340	3 - 5.4
SNSMN-M6	M6	12 16 20 25 30	10	6	5	10300	5.7 - 9.4

*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNSMN-M3	1
SNSMN-M4	1
SNSMN-M5	1
SNSMN-M6	1

● Part number specification

SNSMN-M5-16



● Mechanical property

	Inconel (NCF600)	SUS304
Tensile Strength (N/mm²)	548 - 695	520 or Higher
0.2% Proof Stress (N/mm²)	205 - 352	205 or Higher
Elongation (%)	35 - 55	40 or Higher
Hardness (HRB)	65 - 85	90 or Less

● Values in chart are for reference only. They are not guaranteed values.

● Physical property

	Inconel (NCF600)	SUS304
Specific Gravity	8.42	7.93
Longitudinal Elastic Modulus (GPa)	207	193
Specific Heat (J/kg·K)	444	500
Electric Resistance (μΩ·m)	1.0	0.7
Thermal Conductivity (W/(m·K))	16.7	17
Linear Expansion Coefficient (K ⁻¹)	13.4 x 10 ⁻⁶	17.3 x 10 ⁻⁶

● Values in chart are for reference only. They are not guaranteed values.



- Screws show excellent corrosion resistance against oxidizing and reducing by inorganic and organic acids. ➔ P.646
- Excellent resistance to stress corrosion cracking caused by hydrogen sulfide ions.
- Nearly complete corrosion resistance against ammonia.
- Excellent heat resistance and creep resistance. High strength even near 600 deg C.

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

● Material/Finish

	SNSI
Main Body	UNS N06600 (Inconel*1600 equiv.)

*1 : Inconel is a registered trademark of Special Metals Corporation.

● Part number specification

SNSI-M5-16



Part Number	M	L	D1	L1	B	Tension*1 Rupture Load (N)	Mass (g)
SNSI-M3	M3	6 8 10 12 16 20	5.5	3	2.5	2750	0.77 - 1.5
SNSI-M4	M4	8 10 12 16 20 25	7	4	3	4810	1.8 - 3.4
SNSI-M5	M5	10 12 16 20 25	8.5	5	4	7780	2.9 - 5.2
SNSI-M6	M6	12 16 20 25 30	10	6	5	11000	5.5 - 9
SNSI-M8	M8	16 20 25 30 35	13	8	6	20000	13 - 21

*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNSI-M3	1
SNSI-M4	1
SNSI-M5	1
SNSI-M6	1
SNSI-M8	1

SNFCM

Hexagon Socket Countersunk Head Screw - Molybdenum

NEW

WEB Selection Tool

WEB CAD Download

Cleanroom wash & packaging

Heat-resistance

e-nedzi.com®



● Mechanical property

	Pure molybdenum	SUS304
Tensile strength (N/mm ²)	515	520 or above
0.2% Proof Stress (N/mm ²)	380	205 or Higher
Extension (%)	15	40 or above

● Values in chart are for reference only. They are not guaranteed values.

● Physical property

	Pure molybdenum	SUS304
Specific gravity	10.2	7.93
Longitudinal elastic modulus (Gpa)	327	193
Electric resistivity (μΩ · m)	0.058	0.7
Heat thermal conductivity (W/(m · K))	142	17
Linear expansion coefficient (K ⁻¹)	5.1 x 10 ⁻⁶	17.3 x 10 ⁻⁶

● Values in chart are for reference only. They are not guaranteed values.

● Made of pure molybdenum.

● Melting point: 2623°C. Excellent heat resistance.

● The flat head does not protrude after tightening.

● Cleanroom wash and cleanroom packing are completed. ➡ P.807

● Application

Sputtering equipment and high temperature furnaces

● Material/Finish

RoHS2 Compliant

	SNFCM
Main body	Pure molybdenum

⚠ Precautions for Use

Note that in an oxidizing atmosphere, sublimation will begin at 600°C or higher.

Unit : mm

Part Number ◀1	M	L ◀2						D1	L1	B	Tension Rupture Load*1 (N)	Mass (g)
SNFCM-M2	M2	5	6	8	10			4	1.2	1.3	1130	0.21 - 0.33
SNFCM-M3	M3		6	8	10	12		6	1.75	2	2760	0.69 - 1.0
SNFCM-M4	M4			8	10	12	16	8	2.3	2.5	4820	1.5 - 2.4

*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNFCM-M2	1
SNFCM-M3	1
SNFCM-M4	1

● Part number specification

SNFCM-M2-6
◀1◀2

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Available / Add'l charge	Not Available

SHNM / SWAM

Hex Nuts/Washers - Molybdenum

WEB Selection Tool

WEB CAD Download

Cleanroom wash & packaging

Heat-resistance

e-nedzi.com®

● Mechanical property

	Pure Molybdenum	SUS304
Tensile Strength (N/mm ²)	515	520 or Higher
0.2% Proof Stress (N/mm ²)	380	205 or Higher
Elongation (%)	15	40 or Higher

● Values in chart are for reference only. They are not guaranteed values.

● Physical property

	Pure Molybdenum	SUS304
Specific Gravity	10.2	7.93
Longitudinal Elastic Modulus (GPa)	327	193
Electric Resistance (μΩ · m)	0.058	0.7
Thermal Conductivity (W/(m · K))	142	17
Linear Expansion Coefficient (K ⁻¹)	5.1 x 10 ⁻⁶	17.3 x 10 ⁻⁶

● Values in chart are for reference only. They are not guaranteed values.

● These nuts and washers are made of pure molybdenum.

● Melting Point: 2623 deg C. Excellent heat resistance.

● Application

Sputtering equipment and high temperature furnaces

● Material/Finish

RoHS2 Compliant

	SHNM	SWAM
Main Body	Pure Molybdenum	Pure Molybdenum

⚠ Precautions for Use

Note that in an oxidizing atmosphere, sublimation will begin at 600°C or higher.

SHNM Hex Nuts - Molybdenum

Unit : mm

Part Number ◀1	M	B	T	Mass (g)	Qty per pack
SHNM-M3	M3	5.5	2.4	0.44	1
SHNM-M4	M4	7	3.2	1	1
SHNM-M5	M5	8	4	1.6	1
SHNM-M6	M6	10	5	3.2	1
SHNM-M8	M8	13	6.5	7.1	1

SWAM-F Plain Washers - Molybdenum

Unit : mm

Part Number ◀1	Nominal	d	D	t	Mass (g)	Qty per pack
SWAM-3-F	3	3.2	7	0.5	0.16	1
SWAM-4-F	4	4.3	9	0.8	0.4	1
SWAM-5-F	5	5.3	10	1	0.58	1
SWAM-6-F	6	6.4	12.5	1.6	1.5	1
SWAM-8-F	8	8.4	17	1.6	2.8	1

● Part number specification

SHNM-M5
◀1

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 pc. in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

NBK

<https://www.nbk1560.com>

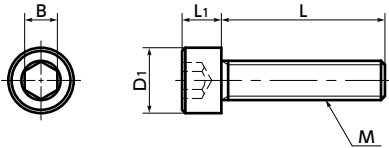
NBK

<https://www.nbk1560.com>

SNSH-C276 Socket Head Cap Screw - Hastelloy C - 276 equiv.

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Chemical-proof

e-nedzi.com®



Mechanical property

	HastelloyC-276	SUS304
Tensile Strength (N/mm ²)	793	520 or Higher
0.2% Proof Stress (N/mm ²)	400	205 or Higher
Elongation (%)	60	40 or Higher

• Values in chart are for reference only. They are not guaranteed values.

Physical property

	HastelloyC-276	SUS304
Specific Gravity	8.89	7.93
Longitudinal Elastic Modulus (GPa)	205	193
Specific Heat (J/kg·K)	427	500
Electric Resistance (μΩ·m)	1.3	0.7
Linear Expansion Coefficient (K ⁻¹)	11.2×10 ⁻⁶	17.3×10 ⁻⁶

• Values in chart are for reference only. They are not guaranteed values.

- Hastelloy C-276 is a general type of Hastelloy.
- Excellent corrosion resistance against oxidizing and reducing salts. ➡ P.646
- Cleanroom wash and cleanroom packing are completed. ➡ P.807
- Also, **SNSH-C22** Socket Head Screw-Hastelloy (Hastelloy C-22), which is also resistant to wet chlorine gas, hypochlorite, and chlorine dioxide is available. ➡ P.654

Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

Material/Finish



	SNSH-C276
Main Body	UNS N10276(Hastelloy*1C-276 equiv.)

* 1 : Hastelloy is a registered trademark of Haynes International, Inc.

Unit : mm

Part Number	M	1	L	2							D1	L1	B	Tension*1 Rupture Load (N)	Mass (g)
SNSH-M3-C276	M3	6	8	10	12	16	20				5.5	3	2.5	3980	0.81 - 1.6
SNSH-M4-C276	M4		8	10	12	16	20	25			7	4	3	6960	1.9 - 3.6
SNSH-M5-C276	M5			10	12	16	20	25			8.5	5	4	11200	3.1 - 5.4
SNSH-M6-C276	M6				12	16	20	25	30		10	6	5	15900	5.8 - 9.5
SNSH-M8-C276	M8					16	20	25	30	35	13	8	6	29000	14 - 22

* 1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNSH-M3-C276	1
SNSH-M4-C276	1
SNSH-M5-C276	1
SNSH-M6-C276	1
SNSH-M8-C276	1

Part number specification

SNSH - M5 - 16 - C276

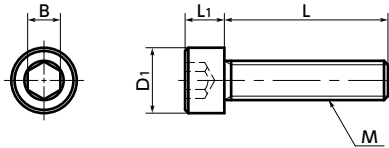
Product Code 1 2 Product Code

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SNSH-C22 Socket Head Cap Screw - Hastelloy C - 22 equiv.

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Chemical-proof

e-nedzi.com®



Mechanical property

	Hastelloy C-22	SUS304
Tensile Strength (N/mm ²)	786	520 or Higher
0.2% Proof Stress (N/mm ²)	365	205 or Higher
Elongation (%)	57	40 or Higher
Hardness (HRB)	92	90 or Less

• Values in chart are for reference only. They are not guaranteed values.

Physical property

	Hastelloy C-22	SUS304
Specific Gravity	8.61	7.93
Longitudinal Elastic Modulus (GPa)	209	193
Specific Heat (J/kg·K)	381	500
Electric Resistance (μΩ·m)	1.2	0.7
Linear Expansion Coefficient (K ⁻¹)	12.4×10 ⁻⁶	17.3×10 ⁻⁶

• Values in chart are for reference only. They are not guaranteed values.

- Hastelloy C-22 is one of the few metals that is resistant to wet chlorine gas, hypochlorite, and chlorine dioxide.
- Excellent corrosion resistance against oxidizing and reducing acids and salts. ➡ P.646
- For aquatic applications that use sea and salt water.
- Cleanroom wash and cleanroom packing are completed. ➡ P.807

Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

Material/Finish



	SNSH-C22
Main Body	UNS N06022(Hastelloy*1C-22 equiv.)

* 1 : Hastelloy is a registered trademark of Haynes International, Inc.

Unit : mm

Part Number	M	1	L	2							D1	L1	B	Tension*1 Rupture Load (N)	Mass (g)
SNSH-M3-C22	M3	6	8	10	12	16	20				5.5	3	2.5	3950	0.79 - 1.5
SNSH-M4-C22	M4		8	10	12	16	20	25			7	4	3	6900	1.8 - 3.5
SNSH-M5-C22	M5			10	12	16	20	25			8.5	5	4	11100	3 - 5.3
SNSH-M6-C22	M6				12	16	20	25	30		10	6	5	15700	5.6 - 9.2
SNSH-M8-C22	M8					16	20	25	30	35	13	8	6	28700	13 - 21

* 1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SNSH-M3-C22	1
SNSH-M4-C22	1
SNSH-M5-C22	1
SNSH-M6-C22	1
SNSH-M8-C22	1

Part number specification

SNSH - M5 - 16 - C22

Product Code 1 2 Product Code

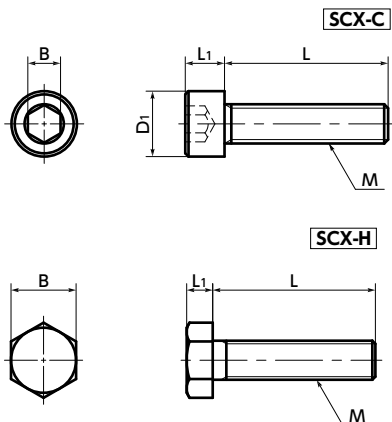
1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge



SCX Ceramic Bolt

Additional Size

WEB Selection Tool WEB CAD Download Heat-resistance Chemical-proof



- Ceramic made from 99.5% high-purity alumina.
- Usable continually at 1500°C.
- Types can be selected by the end symbol of the part number. **3**
- **SCX-C** — Socket Head Cap Screws
- **SCX-H** — Hex Head Screws
- Excellent heat resistance, chemical resistance, and electrical insulation.
- The properties of ceramic screws → P.662
- Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

- Material/Finish

	SCX-C	SCX-H
Main Body	Al ₂ O ₃ (99.5% Alumina)	Al ₂ O ₃ (99.5% Alumina)

SCX-C Hex Socket Head Cap Screws

Unit : mm

Part Number 1	M	L 2	D1	L1	B	Mass (g)
SCX-M3-C	M3	5 6 8	5.5	3	2	0.34 - 0.4
SCX-M4-C	M4	5 6 8 10 12	7	4	2.5	0.71 - 0.98
SCX-M5-C	M5	8 10 12 16 20	8.5	5	3	1.2 - 2
SCX-M6-C	M6	10 12 16 20	10	6	4	2.4 - 3.3
SCX-M8-C	M8	12 16 20 25	13	8	5	5.5 - 7.5
SCX-M10-C	M10	12 16 20 25 30	16	10	6	9.5 - 14

Part Number	Qty per pack
SCX-M3-C	1
SCX-M4-C	1
SCX-M5-C	1
SCX-M6-C	1
SCX-M8-C	1
SCX-M10-C	1

⚠ Precautions for Use

- When tightening ceramic screws, use a torque driver or torque wrench and do not exceed the torsional torque. The recommendation torque is 50% of the torsional torque.

M	Torsional Torque (N · m)
M3	0.04
M4	0.05
M5	0.10
M6	0.15
M8	0.30
M10	0.50

- Values in chart are for reference only. They are not guaranteed values.

- Ceramic screws may be damaged by impact. Take care when handling these screws.

- Also, ceramics screws with special specifications such as ventilation holes, dimensions, shapes, and cleanroom washing are available. Please contact us for details.



SCX-H Hex Head Screws

Unit : mm

Part Number	M 1	L 2	B	L1	Mass (g)
SCX-M3-H	M3	5 6 8	5.5	2	0.31 - 0.38
SCX-M4-H	M4	5 6 8 10 12	7	2.8	0.66 - 0.94
SCX-M5-H	M5	8 10 12 16 20	8	3.5	1.3 - 2
SCX-M6-H	M6	10 12 16 20	10	4	2.2 - 3.1
SCX-M8-H	M8	12 16 20 25	13	5.3	5.1 - 7.2
SCX-M10-H	M10	12 16 20 25 30	16	6.4	9.9 - 14

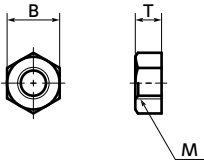
Part Number	Qty per pack
SCX-M3-H	1
SCX-M4-H	1
SCX-M5-H	1
SCX-M6-H	1
SCX-M8-H	1
SCX-M10-H	1

- Part number specification

SCX-M5-16-C

Product Code **1** **2** **3**

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available



- Ceramic made from 99.5% high-purity alumina.
- Usable continually at 1500°C.
- They have excellent heat resistance, chemical resistance, and electrical insulation.
- The properties of ceramic screws ➔ P.662
- Application
FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

Material/Finish		RoHS2 Compliant
	SCX-N	
Main Body	Al ₂ O ₃ (99.5% Alumina)	

SCX-N Hex Nuts						Unit : mm
Part Number	M	B	T	Mass (g)	Qty per pack	
SCX-M3-N	M3	5.5	2.3	0.16	1	
SCX-M4-N	M4	7	3.1	0.38	1	
SCX-M5-N	M5	8	4.6	0.68	1	
SCX-M6-N	M6	10	5	1.2	1	
SCX-M8-N	M8	13	6.7	2.8	1	
SCX-M10-N	M10	16	8.2	5.1	1	

- Part number specification
- SCX-M5-N

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available

The Properties of Ceramic Screws

Physical Properties

	Al ₂ O ₃ (99.5% Alumina)
Specific Gravity	3.9 - 3.939
Flexural Strength (N/mm ²)	360
Volume Resistivity (Ω · m)	> 10 ¹²
Thermal Conductivity (W / (m · K))	32 (20°C)
Linear Expansion Coefficient (K ⁻¹)	7.2 × 10 ⁻⁶ (40 - 400°C)
Vickers Hardness (GPa)	15.5
Maximum Duty Temperature (°C)	1500

• Values in chart are for reference only. They are not guaranteed values.

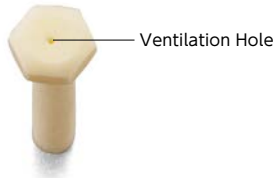
Chemical Resistance

Chemical Name	Temperature	Hour	Effect
35% Hydrochloric Acid	Boiling	30 minutes	○
70% Nitric Acid	Boiling	30 minutes	○
98% Sulfuric Acid	Boiling	30 minutes	○
90% Phosphoric Acid	Boiling	30 minutes	○
60% Hydrofluoric Acid	20°C	24 hours	△
10% Potassium Hydroxide	80°C	7 Days	○
Potassium Hydroxide	500°C (Boiling)	24 hours	△
Sodium Hydroxide	500°C (Boiling)	24 hours	○
Sodium Carbonate	900°C (Boiling)	24 hours	○
Sodium Sulfate	1000°C (Boiling)	24 hours	○
Potassium Fluoride	90°C (Boiling)	4 hours	×

◎ : No Corrosion △ : Moderate Corrosion
○ : Slight Corrosion × : Heavy Corrosion

- ⚠ Precautions for Ceramic Screws
- When tightening ceramic screws, use a torque driver or torque wrench and do not exceed the torsional torque. The recommended torque is 50% of the torsional torque.
 - Values in chart are for reference only. They are not guaranteed values.
 - Heat resistance and chemical resistance change with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.
 - Ceramic screws may be damaged by impact. Take care when handling these screws.
 - Also, ceramics screws with special specifications such as ventilation holes, dimensions, shapes, and cleanroom washing are available. Please contact us for details.

M	Torsional Torque (N · m)
M3	0.04
M4	0.05
M5	0.10
M6	0.15
M8	0.30
M10	0.50





• Cover Caps • Socket Head Cap Screws for Cover Caps

	Cover Caps	Socket Head Cap Screws for Cover Caps
Part Number	SCAP-PT	SNCPS
Shape		
Page	P.667	P.667
Materials	PTFE (Teflon)	SUSXM7
Characteristics	Chemical Resistance	For Cover Caps
Size	M3 to M10	M3 - M10

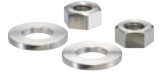
• Coating

	Hex Head Screws	Sealing Washers
Part Number	SNHS-HTF	SWS-HTF
Shape		
Page	P.669	P.670
Materials	SUSXM7 Teflon Coating (Head Only)	Body : SUS304 Teflon Coating Seal : Fluororubber
Characteristics	Fluororubber	Fluororubber
Size	M3 - M8	Nominal 3 to 8

• Titanium

	Socket Head Cap Screws	Cross Recessed Pan Head Machine Screws	Cross Recessed Flat Head Machine Screws	Hex Nuts	Hex Lock Nuts	Washers
Part Number	SNST	SNPT	SNFT	SHNT	SWUT	SWAT
Shape						
Page	P.636	P.638	P.640	P.641	P.642	P.643
Materials	TB340C (Grade 2 Titanium)	TW270 (Grade 1 Titanium)	TW270 (Grade 1 Titanium)	TW270 (Grade 1 Titanium) TW340 (Grade 2 Titanium)	FRS-9901 (Equivalent to TW340)	TP340C (Grade 2 Titanium)
Characteristics	Chemical Resistance • Lightweight • Nonmagnetic	Chemical Resistance • Lightweight • Nonmagnetic	Chemical Resistance • Lightweight • Nonmagnetic	Chemical Resistance • Lightweight • Nonmagnetic With Flange	Chemical Resistance • Lightweight • Nonmagnetic Vibration Resistant	Chemical Resistance • Lightweight • Nonmagnetic
Size	M3 - M6	M3 - M5	M3 - M4	M3 - M10	M3 - M10	Nominal 3 to 10

• Inconel

	Socket Head Cap Screws	Hex Nuts • Washers
Part Number	SNSI	SHNI / SWAI
Shape		
Page	P.648	P.649
Materials	NCF600	NCF600
Characteristics	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance
Size	M3 - M8	M3 - M8

• Hastelloy

	Socket Head Cap Screws
Part Number	SNSH-C276 SNSH-C22
Shape	
Page	P.653 P.654
Materials	NW0276 NW6022
Characteristics	Chemical Resistance • Heat Resistance
Size	M3 - M8

• Nickel

	Socket Head Cap Screws
Part Number	SNSN
Shape	
Page	P.655
Materials	NW2201 (Ni99.0%)
Characteristics	Chemical Resistance • Heat Resistance
Size	M3 - M8

• Ceramic

	Socket Head Cap Screws	Hex Head Screws	Hex Nuts
Part Number	SCX-C	SCX-H	SCX-N
Shape			
Page	P.659	P.659	P.661
Materials	Al ₂ O ₃ (99.5% Alumina)	Al ₂ O ₃ (99.5% Alumina)	Al ₂ O ₃ (99.5% Alumina)
Characteristics	Chemical Resistance • Heat Resistance • Electrical Insulation	Chemical Resistance • Heat Resistance • Electrical Insulation	Chemical Resistance • Heat Resistance • Electrical Insulation
Size	M3 - M10	M3 - M10	M3 - M10

• PEEK (Polyetheretherketone)

	Socket Head Cap Screws	Socket Head Cap Screws	Low Head Bolt with Hexagon Socket	Micro Screws	Cross Recessed Pan Head Machine Screws	Cross Recessed Flat Head Machine Screws
Part Number	SPE-C	SPE-FT	SPE-LC	SPE-MC	SPE-P	SPE-F
Shape						
Page	P.744	P.745	P.746	P.747	P.749	P.750
Materials	PEEK	PEEK	PEEK	PEEK	PEEK	PEEK
Characteristics	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance • Full Thread	Small Space Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance
Size	M3 - M8	M3 - M6	M3 - M6	M1.2 - M1.6	M1.7 - M8	M2 - M8

	Hex Socket Set Screws	Hex Head Screws	Hex Nuts • Washers	Screw Plugs
Part Number	SPE-T	SPE-H	SPE-N/SPE-W	SPE-R
Shape				
Page	P.751	P.752	P.753	P.754
Materials	PEEK	PEEK	PEEK	PEEK
Characteristics	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance
Size	M3 - M8	M4 - M10	M2 - M10	R ¹ / ₈ - R ³ / ₈

• PTFE (Tetrafluoroethylene: Teflon)

	Hex Head Screws	Hex Nuts • Washers
Part Number	SPT-H	SPT-N / SPT-W
Shape		
Page	P.769	P.770
Materials	PTFE (Teflon)	PTFE (Teflon)
Characteristics	Chemical Resistance • Heat Resistance • Electrical Insulation	Chemical Resistance • Heat Resistance • Electrical Insulation
Size	M3 - M12	M3 - M12



Chemical Resistance of Chemical Resistance Screws

• Chemical Resistance of Teflon® Coating

Chemical Name	Temperature (°C)	Teflon® Coating (For SNHS-HTF and SWS-HTF)
10% Hydrochloric Acid	25	○
	50	○
	75	○
10% Nitric Acid	25	○
	70	○
30% Sulfuric Acid	25	○
	70	○
10% Sodium Hydroxide	25	○
	70	○
10% Ammonium Hydroxide	25	○
	70	○
Acetone	25	○
	50	○
Carbon Tetrachloride	25	○
	50	○
95% Ethyl Alcohol	25	○
	50	○
Ethyl Acetate	25	○
	50	○
Toluene	25	○
	50	○
Benzene	78	○

○ : No Corrosion ○ : Slight Corrosion
*Teflon is a registered trademark of DuPont.

• Chemical Resistance of Inconel®, Hastelloy®, and Nickel

Chemical Name	Temperature	Inconel®	Hastelloy®	Nickel
Dilute Sulfuric Acid	Room Temperature	A	AA	A
	Boiling Point	D	A	D
Concentrate Sulfuric Acid	Room Temperature	C	AA	C
	Boiling Point	D	D	D
Dilute Hydrochloric Acid	Room Temperature	B	AA	A
	Boiling Point	D	D	D
Concentrate Hydrochloric Acid	Room Temperature	D	AA	D
	Boiling Point	D	B	D
Dilute Nitric Acid	Room Temperature	D	AA	D
	Boiling Point	—	AA	D
Concentrate Nitric Acid	Room Temperature	A	AA	D
	Boiling Point	—	D	D
Dilute Phosphoric Acid	Room Temperature	AA	AA	AA
	Boiling Point	—	AA	D
Concentrate Phosphoric Acid	Room Temperature	AA	AA	AA
	Boiling Point	—	B	D
Sodium Hydroxide (Diluted)	Room Temperature	AA	—	AA
	Boiling Point	C	—	AA
Sodium Hydroxide (Concentrated)	Room Temperature	AA	—	AA
	Boiling Point	C	—	AA

AA : Excellent C : Useable under certain conditions
A : Good D : Non Useable
B : Useable
*Inconel is a registered trademark of Special Metals Corporation.
Hastelloy is a registered trademark of Haynes International, Inc.

• Chemical Resistance of Titanium

Chemical Name	Composition (%)	Corrosion Resistance	
		Pure Titanium	SUS304
Hydrochloric Acid	10	○	×
	30	×	×
Sulfuric Acid	10	△	—
	50	×	×
Nitric Acid	10	○	○
	50	○	○
Nitrohydrochloric Acid (HCl : HNO ₃)	3:1	○	×
Chromic Acid	5	○	—
Hydrofluoric Acid	5	×	×
Phosphoric Acid	50 (Ventilation)	△	○
	10 - 30	○	×
Cupric Chloride	10 - 30	○	×
Sodium Chloride	10 - 40	○	○
Calcium Chloride	50	○	○
Ammonium Chloride	40	○	—
Magnesium Chloride	40	○	○
Ferrous Sulfate	10 - 50	○	○
Ammonia	10 - 30	○	○
Sodium Hydroxide	50	○	○
Sodium Carbonate	10	○	○
Hydrogen Sulfide	Dry Gas	○	△
	Wet Gas	○	○
Hydrogen Sulfide	Dry Gas	×	—
	Wet Gas	○	—
Sulfur Dioxide	Dry Gas	○	—
	Wet Gas	○	—
Seawater	High Speed Stream	○	—
	10 - 50	○	○
Formic Acid	50	○	○
Lactic Acid	20	×	—
Oxalic Acid	10 - 50	○	○

Testing Temperature : Room Temperature
○ : <0.127 mm/year △ : 0.508 - 1.27 mm/year
○ : 0.127 - 0.508 mm/year × : >1.27 mm/year

⚠ Important Information about Chemical Resistance Data

- A test piece was used to acquire the test data.
- Chemical resistance changes with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.

• Chemical Resistance of Ceramic

Chemical Name	Temperature	Hour	Effect
35% Hydrochloric Acid	Boiling	30 minutes	○
70% Nitric Acid	Boiling	30 minutes	○
98% Sulfuric Acid	Boiling	30 minutes	○
90% Phosphoric Acid	Boiling	30 minutes	○
60% Hydrofluoric Acid	20°C	24 hours	△
10% Potassium Hydroxide	80°C	7 Days	○
Potassium Hydroxide	500°C (Boiling)	24 hours	△
Sodium Hydroxide	500°C (Boiling)	24 hours	○
Sodium Carbonate	900°C (Boiling)	24 hours	○
Sodium Sulfate	1000°C (Boiling)	24 hours	○
Potassium Fluoride	90°C (Boiling)	4 hours	×

○ : No Corrosion △ : Moderate Corrosion
○ : Slight Corrosion × : Heavy Corrosion

• Chemical Resistance of Plastics

Chemical Name	PTFE	PEEK	VESPEL® SP-1	VESPEL® SCP-5000	PPS	H-PVC	RENY	PC	PP	PVDF
10% Hydrochloric Acid	○	○	○	○	○	○	×	○	○	○
10% Sulfuric Acid	○	○	○	○	○	○	×	○	○	○
50% Sulfuric Acid	○	×	×	△	×	○	×	△	—	○
10% Nitric Acid	○	○	△	△	○	○	×	○	○	○
50% Nitric Acid	○	×	×	×	×	△	×	△	—	○
10% Hydrofluoric Acid	○	—	△	△	△	△	×	○	○	○
50% Hydrofluoric Acid	○	×	×	×	×	△	×	△	△	△
Phosphoric Acid	○	○	—	—	△	○	×	○	○	○
Formic Acid	○	△	△	△	○	△	×	○	○	○
Phosphoric Acid	○	○	○	○	○	○	×	○	○	○
Citric Acid	○	○	○	○	○	○	△	○	○	○
Chromic Acid	○	○	—	—	△	○	×	○	○	○
Boric Acid	○	○	○	○	○	○	△	○	○	○
Methyl Alcohol	○	○	△	△	○	○	—	△	—	○
Glycol	○	○	○	○	○	—	—	○	—	—
Ammonia	○	○	×	△	○	○	○	×	○	○
10% Sodium Hydroxide	○	○	×	△	○	○	○	—	○	○
10% Potassium Hydroxide	○	○	×	△	△	○	○	×	○	○
Calcium Hydroxide	○	○	—	—	△	○	×	○	○	○
Water	○	○	○	○	○	○	△	○	○	○
Hydrogen Sulfide (Gas)	○	○	—	—	○	—	○	○	○	○
Sulfur Dioxide	○	○	—	—	△	—	○	○	○	—
Ammonium Nitrate	○	○	—	—	○	—	○	○	○	○
Sodium Nitrate	○	○	—	—	○	—	○	×	○	○
Calcium Carbonate	○	○	—	—	○	—	○	×	○	○
Calcium Chloride	○	○	—	—	○	○	○	○	○	○
Magnesium Chloride	○	○	—	—	○	○	○	○	○	○
Magnesium Sulfate	○	○	—	—	○	—	○	○	○	○
Zinc Sulfate	○	○	—	—	○	—	○	○	○	○
Hydrogen Peroxide	○	○	△	△	△	○	△	○	○	○

○ : Usable △ : Usable under certain conditions × : Non-usable
• A test piece was used to acquire the test data at room temperature (23 °C).

⚠ Important Information about Chemical Resistance Data

- A test piece was used to acquire the test data.
- Chemical resistance changes with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.



SCAP-PT / SNCPS Cover Caps - PTFE (Teflon) / Socket Head Cap Screws for Cover Caps

WEB Selection Tool CAD Download SUS Stainless steel Cleanroom wash & packaging Chemical-proof



- Combine **SCAP-PT** Cover Caps and **SNCPS** Socket Head Cap Screws for Cover Caps.
- The PTFE (Teflon) cover protects the screw head from corrosion caused by chemicals.
- PTFE is a plastic with excellent chemical resistance, and most chemicals cannot penetrate it.
- Chemical Resistance of PTFE → P.665
- Since the screw portion is stainless steel, they can be used with higher tightening forces than PTFE screws.
- Tightening with the recommendation torque has a sealing effect and the bearing surface of the cover cap fits the attachment surface tightly. Airtight testing at 0.6 MPa confirmed that there is no leakage.
- Also, make cover caps from requested materials such as Hastelloy*1 and PEEK are available.
- *1: Hastelloy is a registered trademark of Haynes International, Inc.

Application
FPD production equipment, semiconductor fabrication wet processes, printed circuit board etching devices, metallic surface treatment equipment and facilities, cleaning equipment, and chemical plants

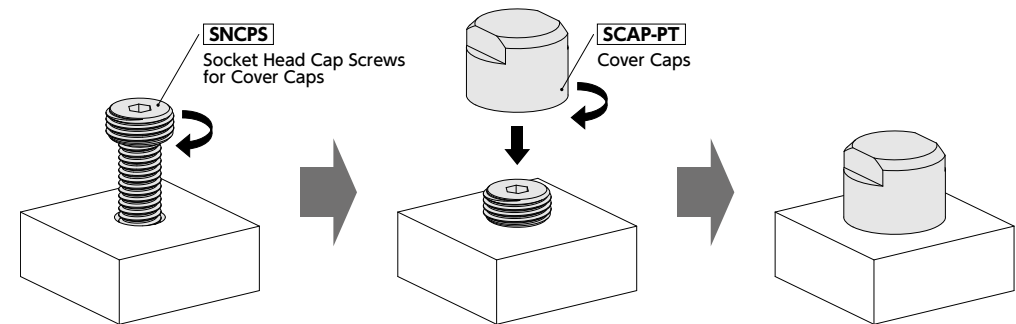
Material/Finish		RoHS2 Compliant
	SCAP-PT Cover Caps	SNCPS Socket Head Cap Screws
Main Body	PTFE (Tetrafluoroethylene : Teflon*1)	SUSXM7 (Equivalent to SUS304)
Strength Class		A2-50

*1: Teflon is a registered trademark of DuPont.

SCAP-PT Cover Caps										Unit : mm
Part Number	M	H	D1	h	B	tB	Recommendation Torque (N・m)	SNCPS Part.No	Mass (g)	Qty per pack
SCAP-3-PT	M5×0.5	6	9	2	7	3	0.04	SNCPS-M3	0.65	1
SCAP-4-PT	M6×0.75	8	10	2.8	8	3	0.08	SNCPS-M4	1.1	1
SCAP-5-PT	M8×0.75	9	12	3.5	9	3	0.2	SNCPS-M5	1.6	1
SCAP-6-PT	M10×0.75	10	14	4	11	4	0.35	SNCPS-M6	2.3	1
SCAP-8-PT	M12×1	11	16	5	13	4	0.45	SNCPS-M8	3.1	1
SCAP-10-PT	M16×1	12	20	6	17	4	0.6	SNCPS-M10	4.8	1

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Cleanroom washed and packed	S.S. only/ Add'l charge	S.S. only/ Add'l charge	Not Available

- Usage
After tightening **SNCPS** Socket Head Cap Screw for Cover Cap, attach **SCAP-PT** Cover Cap so that it covers the head of **SNCPS**.
Ensure that the tightening torque of **SCAP-PT** does not exceed the recommendation torque in the chart.



Related Products

SCAP-AL aluminum alloy for use in vacuum chambers are available.
→ P.591

SCAP-CE ceramic cover cap for use in vacuum chambers are available.
→ P.591

Part number specification

SCAP-6-PT **SCAP-PT** Cover Caps

SNCPS-M6-20 **SNCPS** Socket Head Cap Screws for Cover Caps

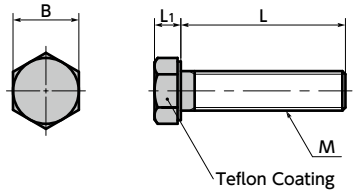
Order **SCAP-PT** and **SNCPS** individually.

SNCPS Socket Head Cap Screws for Cover Caps

Part Number	M	L	M1	L1	B	t	L2*1	SCAP-PT Part.No	Mass (g)
SNCPS-M3	M3	6 8 10 12	M5×0.5	2	2	1.5	Full Thread	SCAP-3	0.53 - 0.78
SNCPS-M4	M4	8 10 12 16	M6×0.75	2.8	2.5	2.3	Full Thread	SCAP-4	1.3 - 1.9
SNCPS-M5	M5	10 12 16 20	M8×0.75	3.5	3	2.7	Full Thread	SCAP-5	2 - 3.3
SNCPS-M6	M6	12 16 20 25	M10×0.75	4	4	3	Full Thread	SCAP-6	3.8 - 6.4
SNCPS-M8	M8	16 20 25 30 35	M12×1	5	5	3.8	22(L=35)	SCAP-8	9 - 16
SNCPS-M10	M10	20 25 30 35 40	M16×1	6	6	4.5	26(L=40)	SCAP-10	17 - 27

*1: If the "L" value is other than the value in parentheses, the screw is full thread.

Part Number	Qty per pack
SNCPS-M3	1
SNCPS-M4	1
SNCPS-M5	1
SNCPS-M6	1
SNCPS-M8	1
SNCPS-M10	1



- ⚠ Precautions for Use
- Friction during tightening may remove the coating. Take care not to tighten too much. Apply the recommendation torque or lower for tightening.
 - For tightening, use a socket wrench with a hexagonal socket.



- Only the screw head is coated with Teflon. This increases the chemical resistance of the screw head.
- Chemical Resistance of Teflon Coating ➔ P.665
- To increase chemical resistance, the coating membrane is thickened (to approximately 50 μm). The screw thread is not coated so thread precision is not affected.
- Use with **SWS-HTF** Sealing Washer - Teflon Coating to prevent chemical liquids from moving from the bearing surface to the thread. ➔ P.670
- Application
FPD production equipment, semiconductor fabrication wet processes, printed circuit board etching devices, metallic surface treatment equipment and facilities, cleaning equipment, and chemical plants

Material/Finish		RoHS2 Compliant
		SNHS-HTF
Main Body	SUSXM7 (Equivalent to SUS304)*2 Teflon*1 Coating (Head Only)	

* 1 : Teflon is a registered trademark of DuPont.
* 2 : The baking finish during coating changes the color of the screw thread.

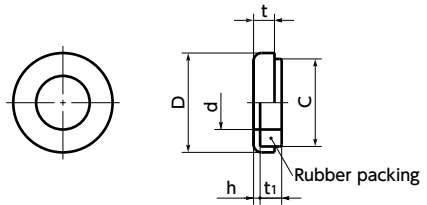
Part Number	M 1 L 2								L1	B	Recommendation Torque (N・m)	Mass (g)
SNHS-M3-HTF	M3	6	8	10	12	16			2	5.5	0.5	0.67 - 1.1
SNHS-M4-HTF	M4		8	10	12	16	20		2.8	7	1.1	1.6 - 2.5
SNHS-M5-HTF	M5			10	12	16	20	25	3.5	8	2.2	2.8 - 4.7
SNHS-M6-HTF	M6				12	16	20	25	30	4	3.8	4.9 - 8.1
SNHS-M8-HTF	M8					16	20	25	30	35	9.2	11 - 18

Part Number	Qty per pack
SNHS-M3-HT	1
SNHS-M4-HTF	1
SNHS-M5-HTF	1
SNHS-M6-HTF	1
SNHS-M8-HTF	1

- Part number specification

SNHS - M5 - 20 - HTF	
Product Code	1 2 Product Code

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available



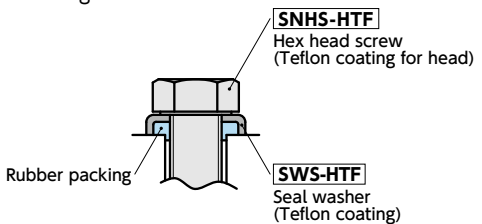
- Part numbers for **SWS-HTF** have been changed. New and old part numbers are as follows.

Old Part Number	New Part Number
SWS-3-TF	SWS-3-HTF
SWS-4-TF	SWS-4-HTF
SWS-5-TF	SWS-5-HTF
SWS-6-TF	SWS-6-HTF
SWS-8-TF	SWS-8-HTF

- ⚠ Precautions for Use
- Friction with the screw bearing surface during tightening may remove the coating. Take care not to tighten too much.
 - When combining with **SNHS-HTF**, use the recommendation torque of **SNHS-HTF** or less for tightening.

Part Number 1	Nominal	d	D	h	t	t1	C	Mass (g)	Qty per pack
SWS-3-HTF	3	3.2	7	0.5	2.2	2.2	6.3	0.2	1
SWS-4-HTF	4	4.2	8	0.5	2.1	2.3	7.2	0.2	1
SWS-5-HTF	5	5.2	9.5	0.8	2.7	2.8	8.2	0.6	1
SWS-6-HTF	6	6.2	11.5	1	3	3	9.8	1	1
SWS-8-HTF	8	8.2	15.2	1	3.2	3.3	13.4	1.8	1

- Usage example
Use with **SNHS-HTF** Hex Head Screws-Teflon Coating for Head (➔ P.669) to prevent chemical liquids from moving from the bearing surface to the thread.
- Airtight test at 0.6 MPa confirmed that there is no leakage.



- Related Products

SWS Sealing Washer, which is not Teflon coated is available.
➔ P.793



- Sealing washers with a built-in rubber seal.
- Sealing washers prevent the leakage of gas and liquid from the bearing surface of the screw head.
- The washer body is coated with Teflon. The rubber seal is made of fluororubber, which has excellent chemical resistance.
- Chemical Resistance of Teflon Coating ➔ P.665

- Application

FPD production equipment / Semiconductor fabrication wet processes / Printed circuit board etching devices / Metallic surface treatment equipment and facilities / Cleaning equipment / Chemical plants

Material/Finish		RoHS2 Compliant
		SWS-HTF
Main Body	SUS304 Teflon*1 Coating	
Rubber Packing	Fluoro-rubber	

* 1 : Teflon is a registered trademark of DuPont. Unit : mm

- Part number specification

SWS-6-HTF
1

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available



• Socket Head Cap Screws

Socket Head Cap Screws						
Part Number	SNSS-FC	SNSS-MO	SNSS-BK	SNSS-RY	SNSS-TF	SNSS-AUS
Shape						
Page	P.673	P.674	P.675	P.676	P.677	P.678
Materials	SUSXM7 Fluorine Coating	SUSXM7 Molybdenum Disulfide Coating	SUSXM7 Super Black	SUSXM7 Low Temperature Black Chrome Treatment Chemical Resistance	SUSXM7 Teflon Coating	SUSXM7 Gold Coating
Characteristics	Seizing Prevention	Seizing Prevention	Reflection Resistance Corrosion Resistance	Reflection Resistance Seizing Prevention	Chemical Resistance Seizing Prevention	Seizing Prevention
Size	M3 - M10	M3 - M10	M2 - M10	M3 - M10	M3 - M10	M3 - M10

• Chemical Proof Screws

	Socket Head Cap Screws	
Part Number	SNSL-PN	SNS-EL
Shape		
Page	P.679	P.680
Materials	SUS316L Surface Hardening Treatment Seizing Prevention	SCM435 Electroless Nickel Plating
Characteristics	Peeling Prevention for Deposits	High Strength
Size	M3 - M8	M3 - M10

	Hex Head Screws	Sealing Washers
Part Number	SNHS-HTF	SWS-HTF
Shape		 <i>Revised Part number</i>
Page	P.669	P.670
Materials	SUSXM7 Teflon Coating (Head Only)	Body : SUS304 Teflon Coating Seal : Fluororubber
Characteristics	Chemical Resistance	Chemical Resistance
Size	M3 - M8	Nominal 3 to 8

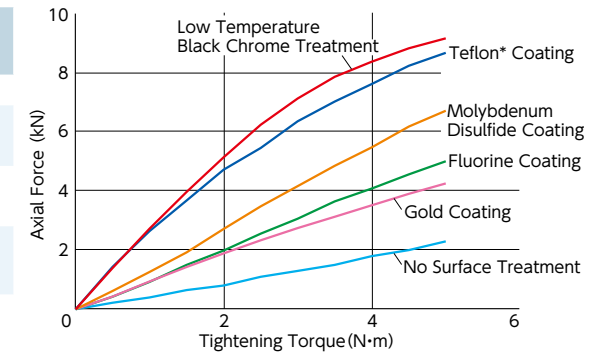
• High Performance Socket Head Cap Screws

Socket Head Cap Screws with Special Low Profile	
Part Number	SSHS-HB
Shape	
Page	P.590
Materials	SUSXM7 Blasting (Head Only)
Characteristics	Peeling Prevention for Deposits
Size	M3 - M6

Properties of Screws with Special Surface Treatment

• Comparison of Axial Force by Surface Treatment

Surface Treatment	Tightening Torque (N·m)	Stress (N/mm ²)	Axial Force (kN)
No Surface Treatment	5	146	2.3
Fluorine Coating [SNSS-FC]	5	317	5.0
Molybdenum Disulfide [SNSS-MO]	5	425	6.7
Low Temperature Black Chrome Treatment [SNSS-RY]	5	584	9.2
Teflon* Coating [SNSS-TF]	5	552	8.7
Gold Coating [SNSS-AUS]	5	273	4.3



Test piece : Stainless Steel Socket Head Cap Screw M5×25

Strength Class : A2 - 70

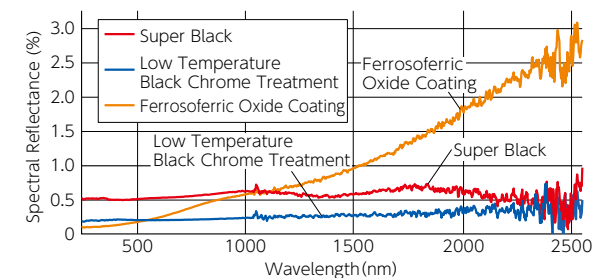
● Values in chart are for reference only. They are not guaranteed values.

● The permanent elongation 0.2% proof stress of strength class A2 - 70 is 450 N/mm². It is recommended to use at an axial force at which stress at tightening is 70% or less of the permanent elongation 0.2% proof stress.

*Teflon is a registered trademark of DuPont.

The main cause of seizing is frictional heat on the thread peak surface generated during tightening. The test results above confirmed that special surface treatment decreases the coefficient of friction of the thread peak surface and makes it possible to obtain higher axial force compared to untreated surfaces with the same tightening torque. As a result, the tightening torque and frictional heat can be reduced, preventing the risk of seizing.

• Comparison of Spectral Reflectance by Surface Treatment

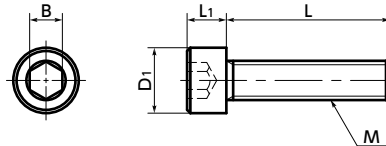


Low temperature black chrome treatment and super black result in extremely low spectral reflectance, which is optimal for optical instruments that require diffuse reflection prevention.

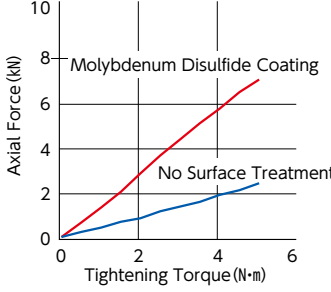


SNSS-MO Hex Socket Head Cap Screws - MoS₂ Coating

WEB Selection Tool WEB CAD Download Seizing Prevention SUS Stainless steel



- Tightening property (reference)
Part Number : SNSS-M5 - 25-MO
➔ P.672



- Excellent corrosion resistance and abrasion resistance.
- The coating has excellent lubricating ability and is intended to prevent seizing of screws.

● Application

Seizing prevention
FPD production equipment, semiconductor devices,
and general industrial machines

● Material/Finish



	SNSS-MO
Main Body	SUSXM7 (Equivalent to SUS304) Molybdenum Disulfide Coating
Strength Class	A2-70

Part Number	M	L											D1	L1	B	Mass (g)	
			5	6	8	10	12	16	20	25	30	35	40				
SNSS-M3-MO	M3	5	6	8	10	12	16	20						5.5	3	2.5	0.67 - 1.4
SNSS-M4-MO	M4		6	8	10	12	16	20	25					7	4	3	1.5 - 3.2
SNSS-M5-MO	M5			8	10	12	16	20	25					8.5	5	4	2.5 - 4.8
SNSS-M6-MO	M6				10	12	16	20	25	30				10	6	5	4.7 - 8.3
SNSS-M8-MO	M8						16	20	25	30	35			13	8	6	12 - 19
SNSS-M10-MO	M10							20	25	30	35	40		16	10	8	23 - 33

Part Number	Qty*1 per pack
SNSS-M3-MO	10
SNSS-M4-MO	10
SNSS-M5-MO	10
SNSS-M6-MO	10
SNSS-M8-MO	10
SNSS-M10-MO	10

*1 : Also sold separately from 1 piece up. ➔ P.809

● Part number specification

SNSS-M5-16-MO

Product Code 1 2 Product Code

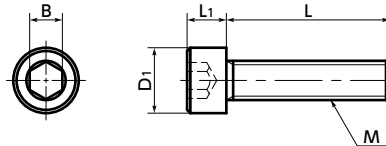
Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

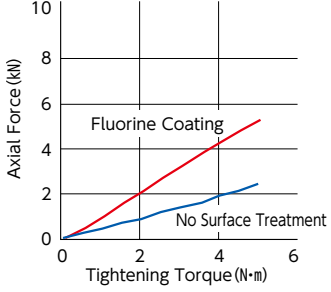


SNSS-FC Hex Socket Head Cap Screws - Fluorine Coating

WEB Selection Tool WEB CAD Download Seizing Prevention SUS Stainless steel



- Tightening property (reference)
Part Number : SNSS-M5 - 25-FC
➔ P.672



- Coating with good cost performance.
- Excellent lubricating ability and suitable for seizing prevention of screws.

● Application

Seizing prevention
FPD production equipment, semiconductor devices,
and general industrial machines

● Material/Finish



	SNSS-FC
Main Body	SUSXM7 (S.S. Grade : A2) Fluorine Coating
Strength Class	A2-70

Part Number	M	L											D1	L1	B	Mass (g)	
			5	6	8	10	12	16	20	25	30	35	40				
SNSS-M3-FC	M3	5	6	8	10	12	16	20						5.5	3	2.5	0.67 - 1.4
SNSS-M4-FC	M4		6	8	10	12	16	20	25					7	4	3	1.5 - 3.2
SNSS-M5-FC	M5			8	10	12	16	20	25					8.5	5	4	2.5 - 4.8
SNSS-M6-FC	M6				10	12	16	20	25	30				10	6	5	4.7 - 8.3
SNSS-M8-FC	M8						16	20	25	30	35			13	8	6	12 - 19
SNSS-M10-FC	M10							20	25	30	35	40		16	10	8	23 - 33

Part Number	Qty*1 per pack
SNSS-M3-FC	10
SNSS-M4-FC	10
SNSS-M5-FC	10
SNSS-M6-FC	10
SNSS-M8-FC	10
SNSS-M10-FC	10

*1 : Also sold separately from 1 piece up. ➔ P.809

● Part number specification

SNSS-M5-16-FC

Product Code 1 2 Product Code

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

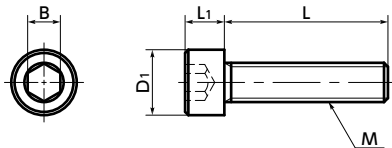
1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

SNSS-BK

Hex Socket Head Cap Screws - Super Black



WEB Selection Tool CAD Download Antireflection SUS Stainless steel



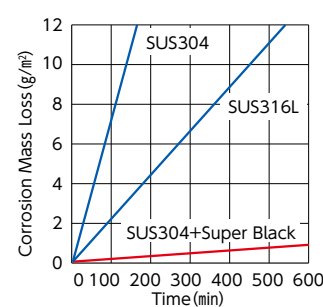
Material/Finish

RoHS2 Compliant

	SNSS-BK
Main Body	SUSXM7 (Equivalent to SUS304) Stainless Steel Black
Strength Class	A2-70

Corrosion-resistant comparison

Ferric Chloride Corrosion Testing (JIS G 0578)



This graph compares corrosion weight loss of a test piece in 6% ferric chloride solution over time. Comparing over the same time period, the mass loss due to corrosion of super black is much less than that of SUS304 and SUS316L, which confirms the good corrosion resistance of super black.

Part number specification

SNSS-M5-16-BK

Product Code	1	2	Product Code
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Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809

Part Number	M	L	D1	L1	B	Mass (g)
SNSS-M2-BK	M2	3 4 5 6	3.8	2	1.5	0.16 - 0.22
SNSS-M3-BK	M3	5 6 8 10 12 16 20	5.5	3	2.5	0.67 - 1.4
SNSS-M4-BK	M4	6 8 10 12 16 20 25	7	4	3	1.5 - 3.2
SNSS-M5-BK	M5	8 10 12 16 20 25 30	8.5	5	4	2.5 - 4.8
SNSS-M6-BK	M6	10 12 16 20 25 30 35	10	6	5	4.7 - 8.3
SNSS-M8-BK	M8	16 20 25 30 35 40	13	8	6	12 - 19
SNSS-M10-BK	M10	20 25 30 35 40	16	10	8	23 - 33

Part Number	Qty*1 per pack
SNSS-M2-BK	5
SNSS-M3-BK	5
SNSS-M4-BK	5
SNSS-M5-BK	5
SNSS-M6-BK	5
SNSS-M8-BK	5
SNSS-M10-BK	5

*1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available



- The stainless black surface treatment develops a passive membrane on the stainless steel surface up to 200 times of normal to produce a deep black finish.
- Excellent corrosion resistance. 8 times more resistant compared to SUS316L and 32 times to SUS304, respectively.
- The membrane contains no impurities and has extremely low outgas even in vacuum environments.
- Spectral reflectance is 1.5% or less. For optical instruments and other applications that require antireflection. ➔ P.672
- Deep black color decorates surfaces of equipment and devices.

Application

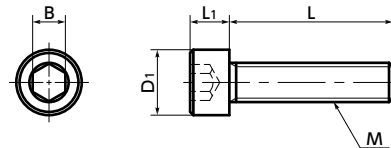
Antireflection. Optical instruments, FPD production equipment, semiconductor devices, vacuum applications, and general industrial machines

SNSS-RY

Hex Socket Head Cap Screws - Low Temperature Black Chrome



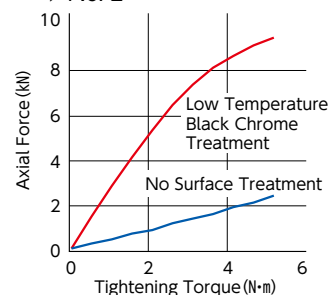
WEB Selection Tool CAD Download Seizing Prevention Chemical-proof Antireflection SUS Stainless steel



Tightening property (reference)

Part Number : SNSS-M5-25-RY

➔ P.672



- Excellent corrosion resistance, chemical resistance, and abrasion resistance.
- Due to low outgas, screws can be used under vacuum environments.
- The coating has excellent lubricating ability and is suitable for prevention of seizing.
- Spectral reflectance is 1.5% or less. These screws are intended for optical instruments and other applications that require antireflection. ➔ P.672

Application

Seizing prevention and reflection resistance, Optical instruments, FPD production equipment, and semiconductor devices

Material/Finish

RoHS2 Compliant

	SNSS-RY
Main Body	SUSXM7 (S.S. Grade : A2) Low Temperature Black Chrome Treatment*1
Strength Class	A2-70

*1 : The surface treatment for [SNSS-RY] has been changed to low temperature black chrome treatment.

Part number specification

SNSS-M5-16-RY

Product Code	1	2	Product Code
--------------	---	---	--------------

Part Number	M	L	D1	L1	B	Mass (g)
SNSS-M3-RY	M3	5 6 8 10 12 16 20	5.5	3	2.5	0.67 - 1.4
SNSS-M4-RY	M4	6 8 10 12 16 20 25	7	4	3	1.5 - 3.2
SNSS-M5-RY	M5	8 10 12 16 20 25 30	8.5	5	4	2.5 - 4.8
SNSS-M6-RY	M6	10 12 16 20 25 30 35	10	6	5	4.7 - 8.3
SNSS-M8-RY	M8	16 20 25 30 35 40	13	8	6	12 - 19
SNSS-M10-RY	M10	20 25 30 35 40	16	10	8	23 - 33

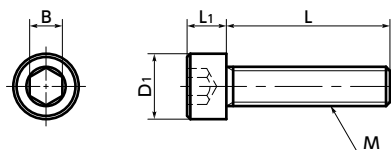
Part Number	Qty per pack
SNSS-M3-RY	1
SNSS-M4-RY	1
SNSS-M5-RY	1
SNSS-M6-RY	1
SNSS-M8-RY	1
SNSS-M10-RY	1

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available

SNSS-TF Hex Socket Head Cap Screws - Teflon Coating

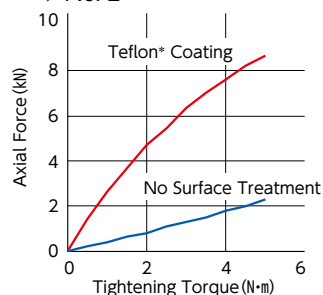
WEB Selection Tool WEB CAD Download Seizing Prevention Chemical-proof SUS Stainless steel

e-nedzi.com



- Tightening property (reference)
Part Number : SNSS-M5 - 25-TF

➔ P.672



- Excellent chemical resistance.
- The coating has excellent lubricating ability and is suitable for prevention of seizing.

- Application

Seizing prevention. FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

- Material/Finish

RoHS2 Compliant

	SNSS-TF
Main Body	SUSXM7 (S.S. Grade : A2) Teflon*1 Coating
Strength Class	A2-70

*1 : Teflon is a registered trademark of DuPont.

Part Number	M	1	L	2											D1	L1	B	Mass (g)
SNSS-M3-TF	M3	5	6	8	10	12	16	20							5.5	3	2.5	0.67 - 1.4
SNSS-M4-TF	M4		6	8	10	12	16	20	25						7	4	3	1.5 - 3.2
SNSS-M5-TF	M5			8	10	12	16	20	25						8.5	5	4	2.5 - 4.8
SNSS-M6-TF	M6				10	12	16	20	25	30					10	6	5	4.7 - 8.3
SNSS-M8-TF	M8						16	20	25	30	35				13	8	6	12 - 19
SNSS-M10-TF	M10							20	25	30	35	40			16	10	8	23 - 33

Unit : mm

Part Number	Qty per pack
SNSS-M3-TF	1
SNSS-M4-TF	1
SNSS-M5-TF	1
SNSS-M6-TF	1
SNSS-M8-TF	1
SNSS-M10-TF	1

- Part number specification

SNSS - M6 - 25 - TF

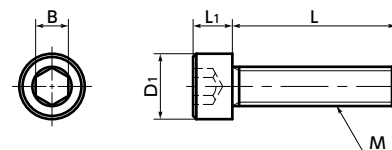
Product Code 1 2 Product Code

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available

SNSS-AUS Hex Socket Head Cap Screws - Gold Coating

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Seizing Prevention SUS Stainless steel

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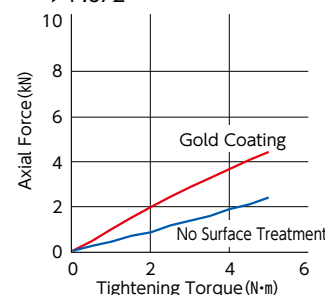
- Material/Finish

RoHS2 Compliant

	SNSS-AUS
Main Body	SUSXM7 (S.S. Grade : A2) Gold coating (gold purity : 99.99 wt%)
Strength Class	A2-70

- Tightening property (reference)
Part Number : SNSS-M5 - 25-AUS

➔ P.672



- Excellent corrosion resistance, oxidation resistance, electroconductivity, and thermal conductivity.
- The coating has excellent lubricating ability and is suitable for prevention of seizing.
- Unlike standard gold plating, there is no surface preparation, so the screws are suitable for applications in which impure elements are controlled, such as with FPD production equipment and semiconductor devices.
- Gold purity of coating : 99.99wt%
- Also, products with special specifications such as dimensions, shapes, materials, surface treatments, and cleanroom washing & special packaging are available. ➔ P.549



- Application

Seizing prevention and control of impure elements.
FPD production equipment, Semiconductor devices

Part Number	M	1	L	2											D1	L1	B	Mass (g)
SNSS-M3-AUS	M3	5	6	8	10	12	16	20							5.5	3	2.5	0.67 - 1.4
SNSS-M4-AUS	M4		6	8	10	12	16	20	25						7	4	3	1.5 - 3.2
SNSS-M5-AUS	M5			8	10	12	16	20	25						8.5	5	4	2.5 - 4.8
SNSS-M6-AUS	M6				10	12	16	20	25	30					10	6	5	4.7 - 8.3
SNSS-M8-AUS	M8						16	20	25	30	35				13	8	6	12 - 19
SNSS-M10-AUS	M10							20	25	30	35	40			16	10	8	23 - 33

Unit : mm

- Part number specification

SNSS - M5 - 16 - AUS

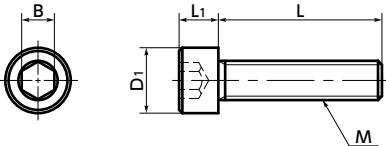
Product Code 1 2 Product Code

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 unit in 1 bag	Cleanroom washed and packed	Not Available	Not Available	Not Available

SNSL-PN

Hex Socket Head Cap Screws - SUS316L / Surface hardening treatment

WEB Selection Tool WEB CAD Download Seizing Prevention



⚠ Precautions for Use
May have lower corrosion resistance than general SUS316L.
We recommend performing a test under the same usage conditions as in actual usage in advance.



- Hardening the screw surface prevents screw seizing / sticking.
- Unlike platings or coatings, there is nothing adhering to the surface, eliminating concerns about contamination due to stripping during tightening.
- Suitable for preventing seizing and sticking in environments where lubricant cannot be used.

● Application

Seizing & Sticking Prevention
FPD production devices / semiconductor production devices / food machinery / general industry machinery

● Material/Finish

RoHS2 Compliant

	SNSL-PN
Main body	SUS316L Surface hardening treatment
Strength Class	A4-70

Part Number	M	1	L	2							D1	L1	B	Mass (g)
SNSL-M3-PN	M3	6	8	10	12						5.5	3	2.5	0.71 - 0.96
SNSL-M4-PN	M4		8	10	12	16	20				7	4	3	1.7 - 2.7
SNSL-M5-PN	M5		8	10	12	16	20				8.5	5	4	2.5 - 4
SNSL-M6-PN	M6			10	12	16	20	25	30		10	6	5	4.7 - 8.3
SNSL-M8-PN	M8					16	20	25	30	35	13	8	6	12 - 19

Part Number	Qty per pack
SNSL-M3-PN	1
SNSL-M4-PN	1
SNSL-M5-PN	1
SNSL-M6-PN	1
SNSL-M8-PN	1

● Part number specification

SNSL-M5-16-PN

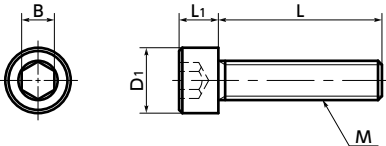
Product Code 1 2 Product Code

1 Individual Sales → P.809 1 unit in 1 bag
Cleanroom Wash & Packaging → P.807 Available / Add'l charge
Screw Length Adjustment → P.811 Available / Add'l charge
Vibration Resistant → P.810 Available / Add'l charge
Modification process for captive use → P.806 Please feel free to contact us

SNS-EL

Hex Socket Head Cap Screws - Electroless Nickel Plating

WEB Selection Tool WEB CAD Download High strength



- Our unique processing technology enables screws to meet strength class 12.9 after surface treatment.
- For applications that require both high strength (Strength Class 12.9) and corrosion resistance.

● Application

Equipment and device structures, FPD production equipment, semiconductor devices, and general industrial machines

● Material/Finish

RoHS2 Compliant

	SNS-EL
Main Body	SCM435 Electroless Nickel Plating
Strength Class	12.9

Part Number	M	1	L	2								D1	L1	B	Mass (g)
SNS-M3-EL	M3	5	6	8	10	12	16	20				5.5	3	2.5	0.67 - 1.4
SNS-M4-EL	M4	5	6	8	10	12	16	20	25			7	4	3	1.4 - 3.2
SNS-M5-EL	M5		6	8	10	12	16	20	25			8.5	5	4	2.2 - 4.8
SNS-M6-EL	M6			8	10	12	16	20	25	30		10	6	5	4.3 - 8.3
SNS-M8-EL	M8				10	12	16	20	25	30	35	13	8	6	10 - 19
SNS-M10-EL	M10							20	25	30	35	40	16	10	23 - 33

Part Number	Qty*1 per pack
SNS-M3-EL	20
SNS-M4-EL	20
SNS-M5-EL	20
SNS-M6-EL	10
SNS-M8-EL	10
SNS-M10-EL	10

*1 : Also sold separately from 1 piece up. → P.809

● Part number specification

SNS-M5-16-EL

Product Code 1 2 Product Code

Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809 Available / Add'l charge
Cleanroom Wash & Packaging → P.807 Available / Add'l charge
Screw Length Adjustment → P.811 Not Available
Vibration Resistant → P.810 Available / Add'l charge
Modification process for captive use → P.806 Please feel free to contact us

Miniature Screws

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• Miniature Screws

	Socket Head Cap Screws	Flat Head Machine Screws	Pan Head Machine Screws			Set Screws
Part Number	SNS / SNSS	SNZF / SNZFS	SNZS	SNZ	SSCZS	SNTS
Shape						
Page	P.682	P.683	P.684	P.685	P.699	P.686
Materials	SCM435 SUSXM7	SWCH16A SUSXM7	SUSXM7	SWCH16A	SUSXM7	SUS303 SUSXM7
Characteristics	For Precision Instruments Socket Head Cap Screws	For Precision Instruments Cross Recessed Flat Head Machine Screws	For Precision Instruments Pan Head Machine Screws	For Precision Instruments Pan Head Machine Screws	Pan Head Machine Screws for Precision Instruments	For Precision Instruments Set Screws
Size	M1 - M2.5	M1.4 - M2.6	S0.6 - M2.6	M1.4 - M2.6	M1.4 - M2.6	M1 - M2.6

	Hex Head Screws	Plastic screws			
Part Number	SHNS	SPE-MC	SPE-MF	SPA-MC	SPA-MF
Shape					
Page	P.687	P.747	P.748	P.763	P.764
Materials	SUS303 Equivalent to SUS304	PEEK	PEEK	RENY	RENY
Characteristics	For precision equipment Hexagon Nut	Heat Resistance Chemical Resistance For Precision Instruments	Chemical-proof Heat-resistant For precision equipment	High Strength For Precision Instruments	High strength For precision equipment
Size	M1 - M2.6	M1.2 - M1.6	M1.2 - M1.6	M1.2 - M1.6	M1.2 - M1.6

• Tools

	Hex Keys
Part Number	SKH
Shape	
Page	P.688
Materials	Alloyed Steel
Characteristics	For precision equipment Hexagon Wrench
Size	M1 - M2.6

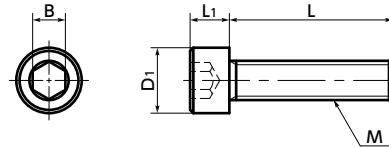
SNS / SNSS

Hex Socket Head Cap Screws for Precision Instruments

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WEB Selection Tool WEB CAD Download Miniature Size SUS Stainless steel



• Part number specification

SNSS-M2 - 3



Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809



- M1 - M2.5.
Miniature screws for precision instruments.

• Application

Reducing the size of equipment and devices
Compact precision instruments

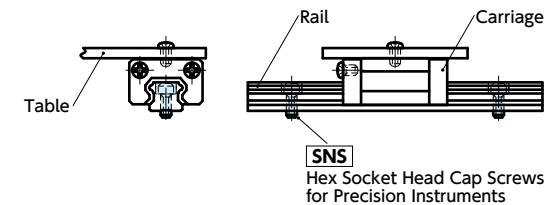
• Material/Finish

RoHS2 Compliant

	SNS	SNSS
Main Body	SCM435 Ferrosoferric Oxide Coating (Black)	SUSXM7 (Equivalent to SUS304)

• Usage example

For fixing miniature linear guideway rails and tables.



SNS Steel - Ferrosoferric Oxide Coating			SNSS Stainless steel			Common dimensions										Unit : mm
Part Number	1	Max. Torque (N · m)	Part Number	1	Max. Torque (N · m)	M	L					2	D1	L1	B	Mass (g)
			SNSS-M1		0.02	M1	2	3	4	5			2	1	0.9	0.025 - 0.039
			SNSS-M1.4		0.07	M1.4	2	3	4	5			2.6	1.4	1.3	0.062 - 0.085
SNS-M1.6		0.25	SNSS-M1.6		0.1	M1.6		3	4	5	6		3	1.6	1.5	0.09 - 0.12
SNS-M2		0.53	SNSS-M2		0.22	M2		3	4	5	6		3.8	2	1.5	0.16 - 0.22
SNS-M2.5		1.12	SNSS-M2.5		0.46	M2.5			4	5	6	8	4.5	2.5	2	0.35 - 0.47

SNS Steel - Ferrosoferric Oxide Coating

Part Number	Qty per pack*1
SNS-M1.6	10
SNS-M2	10
SNS-M2.5	10

*1 : Also sold separately from 1 piece up. ➔ P.809

SNSS Made of Stainless Steel

Part Number	Qty per pack*1
SNSS-M1	10
SNSS-M1.4	10
SNSS-M1.6	10
SNSS-M2	10
SNSS-M2.5	10

*1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

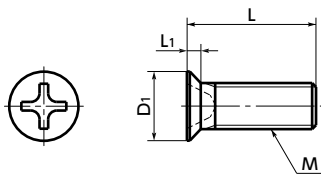
SNZF/SNZFS

Cross Recessed Flat Head Machine Screws for Precision Instruments

e-nedzi.com®



WEB Selection Tool WEB CAD Download Miniature Size SUS Stainless steel



● Part number specification

SNZFS-M1.7-3

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

SNZF-TBZ

- Miniature screws for precision instruments.(JCIS 10 - 70)
- M1.4 - M2.6.
- More compact head than standard flat head machine screws.

● Application

Reducing the size of equipment and devices
Compact precision instruments

● Material/Finish



	SNZF-TBZ	SNZFS
Main Body	SWCH16A Black Trivalent Chromate Treatment	SUSXM7 (Equivalent to SUS304)

Unit : mm

SNZF-TBZ Steel · Black Trivalent Chromate Treatment		SNZFS Stainless steel		Common dimensions									
Part Number	Mass (g)	Part Number	Mass (g)	M	L							D1	L1
SNZF-M1.4-TBZ	0.016 - 0.066	SNZFS-M1.4	0.016 - 0.066	M1.4	2	3	4	5	6	8		2	0.45
		SNZFS-M1.6	0.033 - 0.11	M1.6		3	4	5	6	8	10	2.3	0.5
SNZF-M1.7-TBZ	0.027 - 0.13	SNZFS-M1.7	0.04 - 0.13	M1.7	2	3	4	5	6	8	10	2.5	0.5
SNZF-M2-TBZ	0.038 - 0.18	SNZFS-M2	0.056 - 0.18	M2	2	3	4	5	6	8	10	3	0.6
SNZF-M2.6-TBZ	0.1 - 0.27	SNZFS-M2.6	0.1 - 0.27	M2.6		3	4	5	6	8		4	0.8

* 1 : SNZF-TBZ Steel · Black Trivalent Chromate Treatment only is a standard product.

SNZF-TBZ Made of Steel · Black Trivalent Chromate Treatment

Part Number	Qty per pack*1
SNZF-M1.4-TBZ	50
SNZF-M1.7-TBZ	50
SNZF-M2-TBZ	50
SNZF-M2.6-TBZ	50

* 1 : Also sold separately from 1 piece up. ➔ P.809

SNZFS Made of Stainless Steel

Part Number	Qty per pack*1
SNZFS-M1.4	50
SNZFS-M1.6	50
SNZFS-M1.7	50
SNZFS-M2	50
SNZFS-M2.6	50

* 1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SNZS

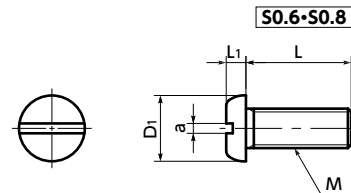
Pan Head Machine Screws for Precision Instruments

Additional Size

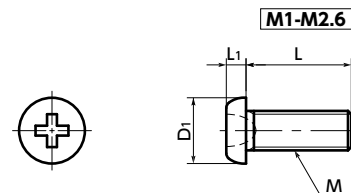
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WEB Selection Tool WEB CAD Download Miniature Size SUS Stainless steel



S0.6-S0.8



M1-M2.6



- Miniature screws for precision instruments in sizes from S0.6 to S0.8 and M1 to M2.6.
- Pan head machine screws of low profile. For applications with limited overhead space.

● Application

Reducing the size of equipment and devices
Compact precision instruments

● Material/Finish



	SNZS
Main Body	SUSXM7 (Equivalent to SUS304)

● Part number specification

SNZS-M2-3

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

Part Number		M	L											D1	L1	a	Max. Torque (N·m)	Mass (g)
SNZS-S0.6	M0.6	1	1.5	2										1.3	0.4	0.25	0.005	0.0031 - 0.0058
SNZS-S0.8	M0.8	1	1.5	2										1.6	0.5	0.25	0.01	0.0067 - 0.011
SNZS-M1	M1			2		3		4	5					1.8	0.45		0.02	0.013 - 0.025
SNZS-M1.4	M1.4			2		3		4	5	6	8	10		2	0.5		0.07	0.024 - 0.09
SNZS-M1.6	M1.6			2		3		4	5	6	8	10	12	2.3	0.5		0.1	0.014 - 0.13
SNZS-M1.7	M1.7			2		3		4	5	6	8	10	12	14	2.5	0.5		0.036 - 0.18
SNZS-M2	M2			2	2.5	3	3.5	4	5	6	8	10	12	14	3	0.6	0.22	0.055 - 0.26
SNZS-M2.5	M2.5					3		4	5	6	8			3.8	0.8		0.46	0.13 - 0.28
SNZS-M2.6	M2.6				2.5	3		4	5	6	8			4	0.8		0.53	0.13 - 0.3

Part Number	Qty per pack*1
SNZS-S0.6	10
SNZS-S0.8	10
SNZS-M1	50
SNZS-M1.4	50
SNZS-M1.6	50
SNZS-M1.7	50
SNZS-M2	50
SNZS-M2.5	50
SNZS-M2.6	50

* 1 : Also sold separately from 1 piece up. ➔ P.809

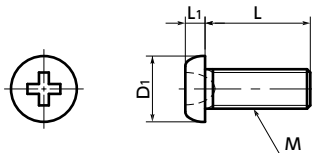
1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SNZ Pan Head Machine Screws for Precision Instruments

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WEB Selection Tool CAD Download Miniature Size



- Miniature screws for precision instruments in sizes from M1.4 to M2.6.
- Pan head machine screws of low profile. For applications with limited overhead space.

• Application

Reducing the size of equipment and devices
Compact precision instruments

• Material/Finish



SNZ	
Main Body	SWCH16A Black Trivalent Chromate Treatment

Part Number		M	L								D1	L1	Max. Torque (N·m)	Mass (g)
SNZ-M1.4-TBZ		M1.4	2		3		4	5	6	8	2	0.5	0.07	0.022 - 0.073
SNZ-M1.7-TBZ		M1.7	2		3		4	5	6	8	2.5	0.5	0.14	0.036 - 0.11
SNZ-M2-TBZ		M2	2	2.5	3	3.5	4	5	6	8	3	0.6	0.22	0.054 - 0.16
SNZ-M2.6-TBZ		M2.6			3		4	5	6	8	4	0.8	0.53	0.14 - 0.3

Part Number	Qty per pack*1
SNZ-M1.4-TBZ	50
SNZ-M1.7-TBZ	50
SNZ-M2-TBZ	50
SNZ-M2.6-TBZ	50

*1: Also sold separately from 1 piece up. ➔ P.809

• Part number specification

SNZ-M2-3-TBZ

Product Code 1 2 Black Trivalent Chromate Treatment

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

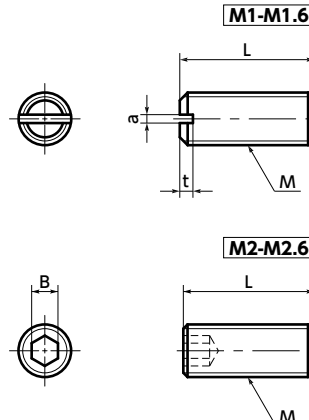
NBK

WEB ▶ <https://www.nbk1560.com>**SNTS** Set Screws for Precision Instruments

e-nedzi.com®



WEB Selection Tool CAD Download Miniature Size SUS Stainless steel



- Miniature screws for precision instruments in sizes from M1 to M2.6.
- Set screws with flat point.

• Application

Reducing the size of equipment and devices
Compact precision instruments

• Material/Finish



	M1-M1.6	M2-M2.6
Main Body	SUS303	SUSXM7 (Equivalent to SUS304)

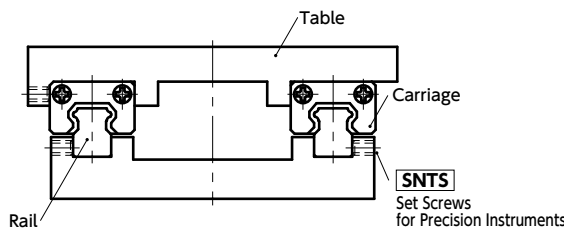
Part Number		M	L								a	t	B	Max. Torque (N·m)	Mass (g)
SNTS-M1-FP		M1	3	4	5	6					0.35	0.35		0.003	0.012 - 0.023
SNTS-M1.4-FP		M1.4	3	4	5	6					0.4	0.45		0.02	0.022 - 0.049
SNTS-M1.6-FP		M1.6	3	4	5	6					0.4	0.5		0.03	0.029 - 0.062
SNTS-M2-FP		M2	3	4	5	6							0.9	0.2	0.041 - 0.092
SNTS-M2.5-FP		M2.5		4	5	6							1.3	0.4	0.055 - 0.13
SNTS-M2.6-FP		M2.6		4	5								1.3	0.4	0.094 - 0.13

Part Number	Qty per pack*1
SNTS-M1-FP	10
SNTS-M1.4-FP	10
SNTS-M1.6-FP	10
SNTS-M2-FP	10
SNTS-M2.5-FP	10
SNTS-M2.6-FP	10

*1: Also sold separately from 1 piece up. ➔ P.809

• Usage example

To locate and fix miniature linear guideway rails and tables.



• Part number specification

SNTS-M2-3-FP

Product Code 1 2

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

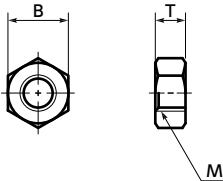
NBK

WEB ▶ <https://www.nbk1560.com>

SHNS Hexagon Nut (For Miniature Screws)

WEB Selection Tool WEB CAD Download Miniature Size SUS Stainless steel

e-nedzi.com



- Dedicated hexagon nut for miniature screws
- Available size includes M1 to M2.6.
- Conforms to DIN 934.

• Application

Reducing the size of equipment and devices
Compact precision instruments

• Material/Finish



	M1	M1.4-M2.6
Main body	SUS303	Equivalent to SUS304

Unit : mm

Part Number 	M	B	T	Mass (g)	Qty per pack*1
SHNS-M1	1	2.5	0.8	0.03	10
SHNS-M1.4	1.4	3	1.2	0.06	10
SHNS-M1.6	1.6	3.2	1.3	0.08	20
SHNS-M2	2	4	1.6	0.14	20
SHNS-M2.5	2.5	5	2	0.28	20
SHNS-M2.6	2.6	5	2	0.28	20

*1 : Also sold separately from 1 piece up. → P.809

• Part number specification

SHNS-M1.6

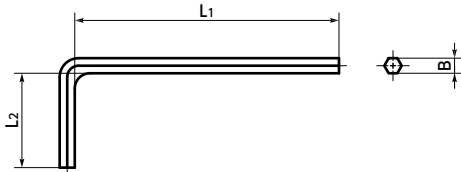


 Individual Sales → P.809	 Cleanroom Wash & Packaging → P.807	 Screw Length Adjustment → P.811	 Vibration Resistant → P.810	 Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SKH Hexagon Wrench (For Miniature Screws)

WEB Selection Tool WEB CAD Download Miniature Size

e-nedzi.com



- Dedicated hexagon wrenches for miniature screws
- Applicable Screw
Hex Socket Head Cap Screw **SNSS** **SNS** → P.682
Setscrew for Precision Instruments **SNTS** → P.686

• Application

Mounting and removing the miniature screw

• Material/Finish



	SKH
Main body	Alloy steel Ferrosoferric Oxide Film (Black)

Unit : mm

Part Number 	B Nominal of Key	L1	L2	Applicable Screw			Mass (g)	Qty per pack
				SNS SNSS → P.682	SNTS → P.686			
SKH-0.89	0.89	31	9		SNSS-M1	SNTS-M2-FP	0.21	1
SKH-1.27	1.27	42	13.5		SNSS-M1.4	SNTS-M2.5-FP • SNTS-M2.6-FP	0.6	1
SKH-1.5	1.5	45	14	SNS-M1.6 • SNS-M2	SNSS-M1.6 • SNSS-M2		0.9	1
SKH-2	2	50	16	SNS-M2.5	SNSS-M2.5		1.8	1
SKH-2.5	2.5	56	18				3.1	1
SKH-3	3	63	20				5.1	1

• Part number specification

SKH-1.5



 Individual Sales → P.809	 Cleanroom Wash & Packaging → P.807	 Screw Length Adjustment → P.811	 Vibration Resistant → P.810	 Modification process for captive use → P.806
1 pc. in 1 bag	Not Available	Not Available	Not Available	Not Available



Captive Screws • Captive Washers

	Socket Head Cap Captive Screws				Hex Head Captive Screws	Button Head Cap Captive Screws
Part Number	SSC	SSC (INCH)	SSCLS	SSCHS	SSC-SNHS	SSC-SRBS
Shape						
Page	P.691	P.692	P.697	P.698	P.693	P.694
Materials	SUSXM7	SUS304	SUSXM7	SUSXM7	SUSXM7	SUSXM7
Characteristics	Standard	Inch Screws	Low Profile Cap Screws	Special Low Profile Cap Screws	Hex Head Screws	Tamper-Resistance Screws
Size	M3 - M8	M3 - M8	M3 - M8	M3 - M8	M3 - M8	M3 - M8

	Cross Recessed Machine Captive Screws		Pan Head Machine Screws
Part Number	SSCPS	SSCMS	SSCZS
Shape			 NEW
Page	P.695	P.696	P.699
Materials	SUSXM7	SUSXM7	SUSXM7
Characteristics	Pan Head Machine Screws	Truss Head Screws	Pan Head Machine Screws for Precision Instruments
Size	M3 - M8	M3 - M8	M1.4 - M2.6

Full Thread Screws

	Socket Head Cap Screws	Socket Head Cap Screws with Special Low Profile	Plastic Screws
Part Number	SNSS-FT	SSHS-FT	SPE-FT
Shape			
Page	P.700	P.603	P.745
Materials	SUSXM7	SUS304	PEEK
Characteristics	Standard	Special Low Profile Cap Screws	Chemical Resistance Low Outgas
Size	M3 - M10	M3 - M10	M3 - M6

Use the NBK Captive Screw Series to comply with CE marking requirements*.

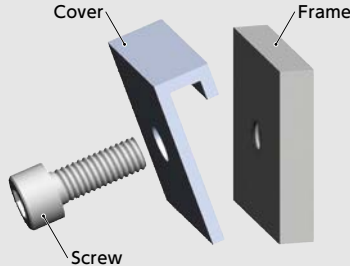
EU Machinery Directive Appendix I of the Machinery Directive (2006/42/EC) of the EC Directives requires that screws that secure protective and inspection covers on instruments and machines do not fall out from the cover when the cover is removed.

Excerpt from EU Machinery Directive Appendix I

- 1.4.2 Special requirements for guards
- 1.4.2.1 Fixed guards
- Fixed guards must be fixed by systems that can be opened or removed only with tools.
- Their fixing systems must remain attached to the guards or to the machinery when the guards are removed.
- Where possible, guards must be incapable of remaining in place without their fixings.
- 1.1.1 Definitions
- (f) 'Guard' means a part of the machinery used specifically to provide protection by means of a physical barrier;

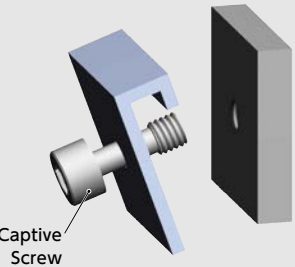
*CE marking proves that the machines, devices, and other products of manufacturers comply with EC directives. Products exported or distributed in EC member states must comply with EC directives. In order to distribute products in EU member states, products must have CE marking, which proves that they comply with EC directives.

Standard Screws



The screw falls from the cover when it is removed.

If captive screws are used



The screw does not fall out from the cover.

NBK offers a variety of products which comply with CE marking requirements.



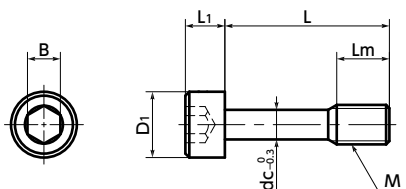
Captive Screw ➔ P.691 - 699

SSC Socket Head Cap Captive Screws

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WEB Selection Tool CAD Download SUS Stainless steel



● Material/Finish



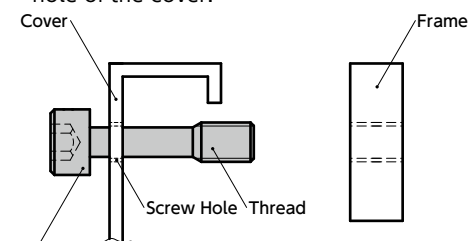
	SSC
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-70

⚠ Precautions for Use

- Screw hole inner diameter on the cover side shall be at least the dc dimension.
- The cover thickness should be 0.8 mm or above.

● Installation example

Process a screw hole in the cover, then pass **SSC** thread through it. Even when the screw is removed from the frame, **SSC** does not fall out from the cover because **SSC** thread catches on the screw hole of the cover.

**SSC** Socket Head Cap Captive Screw

- The shape of the screws prevent them from falling out and loss. For fixing protective and inspection covers that are frequently installed and removed.
- Socket head cap screw type.
- These items comply with CE marking requirements. → P.690
- Also, captive screws with special specifications for dimensions, shapes, materials, and surface treatments are available.



● Application

Securement of protective and inspection covers and compliance with CE marked products
Machine tools, food industry machines, and electrical and electronic equipment

Unit : mm																
Part Number	M	L									Lm	D1	L1	B	dc	Mass (g)
SSC-M3	M3	8	10	12	16					4	5.5	3	2.5	2.2	0.8 - 1.2	
SSC-M4	M4		10	12	16	20				5	7	4	3	3	1.8 - 2.7	
SSC-M5	M5			12	16	20	25			6	8.5	5	4	3.9	3 - 4.8	
SSC-M6	M6			12	16	20	25	30		8	10	6	5	4.5	5.1 - 8.3	
SSC-M8	M8				16	20	25	30	35 40	10	13	8	6	6.3	12 - 21	

Unit : mm

Part Number	Qty per pack
SSC-M3	1
SSC-M4	1
SSC-M5	1
SSC-M6	1
SSC-M8	1

● Part number specification

SSC-M6-12

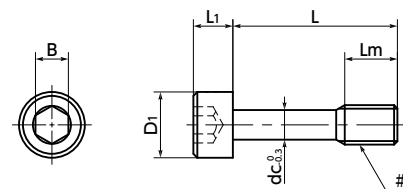
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	with Captive Processing

SSC (INCH) Socket Head Cap Captive Screws (Inch Screws)

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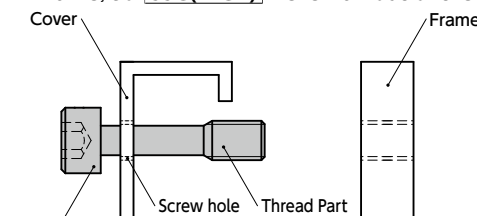


WEB Selection Tool CAD Download SUS Stainless steel

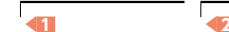


● Installation example

Machine a screw hole on the cover and let through the threaded part of **SSC(INCH)**. Threaded part of **SSC(INCH)** is still engaged with the screw hole on the cover even after the screw is removed from the frame, so **SSC(INCH)** never fall out of the cover.

**SSC(INCH)** Socket Head Cap Captive Screw (Inch Screws)

● Part number specification

SSC-#4-40-5/8

- It prevents fall-off and loss of the screw. For fixing of protection cover and cover for inspection that are frequently mounted and removed.
- Inch screw type.
- For CE marking. → P.690
- Use a dedicated wrench **SKH(INCH)** for mounting and removal. → P.712
- We also produce captive screws of special specifications, e.g. dimensions, shapes, materials and surface treatment. Please feel free to contact our customer service.



● Application

Fixing of protection cover and cover for inspection / CE marking
Machine tool / Food machinery / and Electronic device

● Material/Finish



	SSC (INCH)
Main body	Equivalent to SUS304
Strength Class	A2-50

⚠ Precautions for Use

- Screw hole inner diameter on the cover side shall be at least the dc dimension.
- The cover thickness should be 0.8 mm or above.

Unit : inch															
Part Number	# Nominal of Thread	L 								Lm(mm)	D1	L1	B	dc(mm)	Mass (g)
SSC-#4-40	No.4-40UNC	5/16	3/8	1/2	3/8					4	0.183	0.112	3/32	1.9	0.63 - 0.94
SSC-#6-32	No.6-32UNC		3/8	1/2	3/8	3/4				5	0.226	0.138	7/64	2.4	1.2 - 1.7
SSC-#8-32	No.8-32UNC		3/8	1/2	3/8	3/4				5	0.27	0.164	7/64	3	1.8 - 2.7
SSC-#10-32	No.10-32UNF		3/8	1/2	3/8	3/4	7/8			6	0.312	0.19	3/32	3.7	2.7 - 4.2
SSC-1/4-20	1/4-20UNC				3/8	3/4	7/8	1	1 1/4	9	0.375	0.25	3/16	4.6	6.2 - 9.3

Unit : inch

Part Number	Qty per pack
SSC-#4-40	1
SSC-#6-32	1
SSC-#8-32	1
SSC-#10-32	1
SSC-1/4-20	1

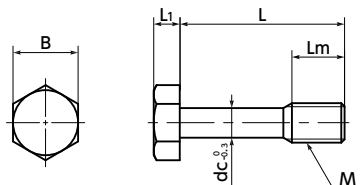
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	with Captive Processing

SSC-SNHS Hexagon Head Captive Screws

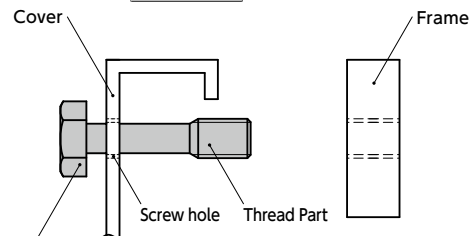
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- Installation example
Machine a screw hole on the cover and let through the threaded part of **SSC-SNHS**. Threaded part of **SSC-SNHS** is still engaged with the screw hole on the cover even after the screw is removed from the frame, so **SSC-SNHS** never fall out of the cover.

**SSC-SNHS** Hex Head Captive Screws

- Part number specification

SSC-SNHS-M6-12

1

2

- It prevents fall-off and loss of the screw. For fixing of protection cover and cover for inspection that are frequently mounted and removed.
- Hex head bolt type.
- For CE marking. → P.690
- We also produce captive screws of special specifications, e.g. dimensions, shapes, materials and surface treatment. Please feel free to contact our customer service.



- Application

Fixing of protection cover and cover for inspection / CE marking
Machine tool / Food machinery / and Electronic device

- Material/Finish



	SSC-SNHS
Main body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

- ⚠ Precautions for Use

- Screw hole inner diameter on the cover side shall be at least the dc dimension.
- The cover thickness should be 0.8 mm or above.

Part Number	1	M	L	2	Lm	B	L1	dc	Mass (g)
SSC-SNHS-M3	M3	8	10	12	16			2	0.8 - 1.1
SSC-SNHS-M4	M4		10	12	16	20		3	1.7 - 2.5
SSC-SNHS-M5	M5			12	16	20	25	3.9	3 - 4.7
SSC-SNHS-M6	M6			12	16	20	25	4.5	4.9 - 8.1
SSC-SNHS-M8	M8				16	20	25	6.3	11 - 20

Part Number	Qty per pack
SSC-SNHS-M3	1
SSC-SNHS-M4	1
SSC-SNHS-M5	1
SSC-SNHS-M6	1
SSC-SNHS-M8	1

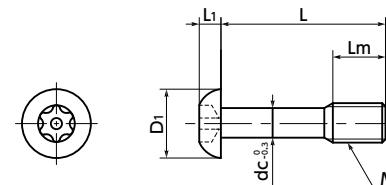
1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
1 unit in 1 bag Available / Add'l charge Not Available Not Available with Captive Processing

SSC-SRBS Captive Button Head Cap Bolts with Hexalobular Socket (with Pin)

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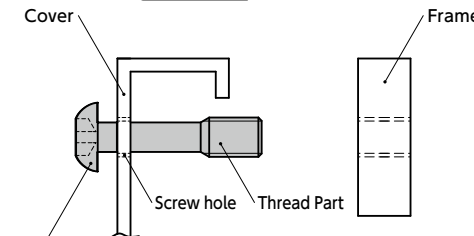


WEB Selection Tool CAD Download Tamper Resistance SUS Stainless steel



- ⚠ Precautions for Use

- Screw hole inner diameter on the cover side shall be at least the dc dimension.
- The cover thickness should be 0.8 mm or above.
- Installation example
Machine a screw hole on the cover and let through the threaded part of **SSC-SRBS**. Threaded part of **SSC-SRBS** is still engaged with the screw hole on the cover even after the screw is removed from the frame, so **SSC-SRBS** never fall out of the cover.

**SSC-SRBS** Captive Button Head Cap Bolt with Hexalobular Socket (with Pin)

- Part number specification

SSC-SRBS-M6-12

1

2

- It prevents fall-off and loss of the screw. For fixing of protection cover and cover for inspection that are frequently mounted and removed.
- Tamper-resistance screw type.
- For CE marking. → P.690
- Use a dedicated tool **SRX** → P.718 for mounting and removal.
- We also produce captive screws of special specifications, e.g. dimensions, shapes, materials and surface treatment. Please feel free to contact our customer service.



- Application

Fixing of protection cover and cover for inspection / CE marking
Machine tool / Food machinery / and Electronic device

- Material/Finish



	SSC-SRBS
Main body	SUS304
Strength Class	Equivalent to A2-50

Part Number	1	M	L	2	Lm	D1	L1	dc	Applicable wrench	Hexalobular Socket No.	Mass (g)
SSC-SRBS-M3	M3	8	10	12	16			2.2	SRX-10	10	0.57 - 0.93
SSC-SRBS-M4	M4		10	12	16	20		3	SRX-20	20	1.4 - 2.2
SSC-SRBS-M5	M5			12	16	20	25	3.9	SRX-25	25	2.3 - 4.1
SSC-SRBS-M6	M6			12	16	20	25	4.5	SRX-30	30	3.6 - 6.9
SSC-SRBS-M8	M8				16	20	25	6.3	SRX-40	40	9.1 - 18

Part Number	Qty per pack
SSC-SRBS-M3	1
SSC-SRBS-M4	1
SSC-SRBS-M5	1
SSC-SRBS-M6	1
SSC-SRBS-M8	1

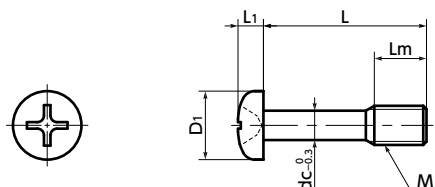
1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
1 unit in 1 bag Available / Add'l charge Not Available Not Available with Captive Processing

SSCPS Cross Recessed Pan Head Captive Machine Screws

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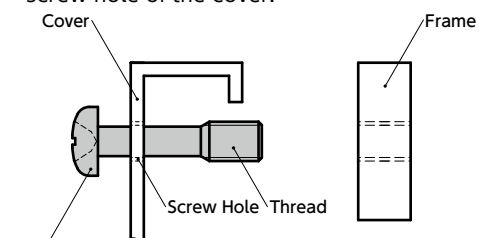


WEB Selection Tool CAD Download SUS Stainless steel



Installation example

Make a screw hole in the cover, then pass **SSCPS** thread through it. Even when the screw is removed from the frame, **SSCPS** does not fall out from the cover because **SSCPS** thread catches on the screw hole of the cover.



SSCPS Cross Recessed Pan Head Captive Machine Screw



- The shape of the screws prevent them from falling out and loss. They are intended to fix protective and inspection covers that are frequently installed and removed.
- Cross Recessed pan head machine screws.
- These items comply with CE marking requirements. → P.690

Application

Securement of protective and inspection covers and compliance with CE marked products.
Machine tools, food industry machines, and electrical and electronic equipment

Material/Finish



	SSCPS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

⚠ Precautions for Use

- The inner diameter of the screw hole of the cover must be equal or larger than dimension dc.
- The thickness of the cover must be 0.8 mm or more.

Unit : mm

Part Number	1	M	L	2	Lm	D1	L1	dc	Mass (g)
SSCPS-M3	M3	8	10	12	16				0.61 - 0.94
SSCPS-M4	M4		10	12	16	20			1.3 - 2.1
SSCPS-M5	M5			12	16	20	25		2.7 - 4.2
SSCPS-M6	M6			12	16	20	25	30	4.3 - 7.4
SSCPS-M8	M8				16	20	25	30	10 - 18

Part Number	Qty per pack
SSCPS-M3	1
SSCPS-M4	1
SSCPS-M5	1
SSCPS-M6	1
SSCPS-M8	1

Part number specification

SSCPS-M6-12

1

2

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	with Captive Processing

NBK

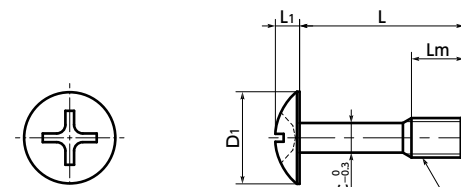
WEB ▶ <https://www.nbk1560.com>

SSCMS Cross Recessed Truss Head Captive Screws

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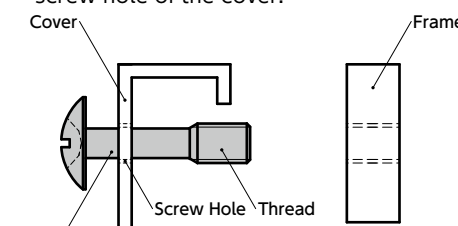


WEB Selection Tool CAD Download SUS Stainless steel



Installation example

Make a screw hole in the cover, then pass **SSCMS** thread through it. Even when the screw is removed from the frame, **SSCMS** does not fall out from the cover because **SSCMS** thread catches on the screw hole of the cover.



SSCMS Cross Recessed Truss Head Captive Screw



- The shape of the screws prevent them from falling out and loss. They are intended to fix protective and inspection covers that are frequently installed and removed.
- These screws have large heads that decorate attachment surfaces beautifully.
- These items comply with CE marking requirements. → P.690

Application

Securement of protective and inspection covers and compliance with CE marked products.
Machine tools, food industry machines, and electrical and electronic equipment

Material/Finish



	SSCMS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

⚠ Precautions for Use

- The inner diameter of the screw hole of the cover must be equal or larger than dimension dc.
- The thickness of the cover must be 0.8 mm or more.

Unit : mm

Part Number	1	M	L	2	Lm	D1	L1	dc	Mass (g)
SSCMS-M3	M3	8	10	12	16				0.61 - 0.94
SSCMS-M4	M4		10	12	16	20			1.4 - 2.2
SSCMS-M5	M5			12	16	20	25		3.1 - 4.7
SSCMS-M6	M6			12	16	20	25	30	4.4 - 7.5
SSCMS-M8	M8				16	20	25	30	10 - 18

Part Number	Qty per pack
SSCMS-M3	1
SSCMS-M4	1
SSCMS-M5	1
SSCMS-M6	1
SSCMS-M8	1

Part number specification

SSCMS-M6-12

1

2

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	with Captive Processing

NBK

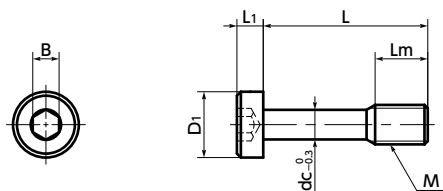
WEB ▶ <https://www.nbk1560.com>

SSCLS Socket Head Cap Captive Screws with Low Profile

e-nedzi.com®

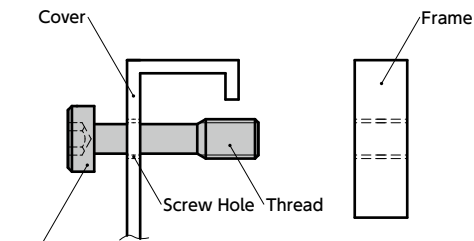


WEB Selection Tool CAD Download Protrusion SUS Stainless steel



⚠ Precautions for Use

- The inner diameter of the screw hole of the cover must be equal or larger than dimension dc.
- The thickness of the cover must be 0.8 mm or more.
- Installation example
Make a screw hole in the cover, then pass **SSCLS** thread through it. Even when the screw is removed from the frame, **SSCLS** does not fall out from the cover because **SSCLS** thread catches on the screw hole of the cover.



SSCLS Socket Head Cap Captive Screw with Low Profile



- The shape of the screws prevent them from falling out and loss. They are intended to fix protective and inspection covers that are frequently installed and removed.
- These screws are intended for the reduction of the size of machinery and device and applications with limited overhead space.
- These items comply with CE marking requirements. ➔ P.690

• Application

Securement of protective and inspection covers and compliance with CE marked products
Machine tools, food industry machines, and electrical and electronic equipment

• Material/Finish

RoHS2 Compliant

	SSCLS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

Unit : mm

Part Number	M	L	L1	B	dc	Mass (g)
SSCLS-M3	M3	8	10	2	2.2	0.62 - 0.98
SSCLS-M4	M4	10	12	2.5	3	1.4 - 2.3
SSCLS-M5	M5	12	16	3	3.9	2.3 - 4.1
SSCLS-M6	M6	12	16	4	4.5	3.8 - 7.1
SSCLS-M8	M8	16	20	5	6.3	9 - 18

Part Number	Qty per pack
SSCLS-M3	1
SSCLS-M4	1
SSCLS-M5	1
SSCLS-M6	1
SSCLS-M8	1

• Part number specification

SSCLS-M6-12



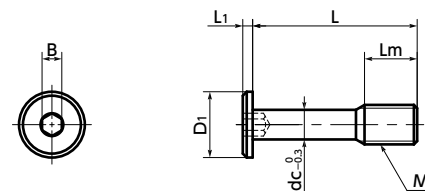
1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	with Captive Processing

SSCHS Socket Head Cap Captive Screws with Special Low Profile

e-nedzi.com®

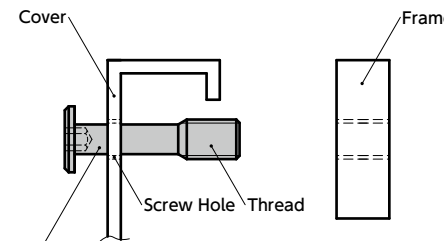


WEB Selection Tool CAD Download Protrusion SUS Stainless steel



⚠ Precautions for Use

- The inner diameter of the screw hole of the cover must be equal or larger than dimension dc.
- The thickness of the cover must be 0.8 mm or more.
- Installation example
Make a screw hole in the cover, then pass **SSCHS** thread through it. Even when the screw is removed from the frame, **SSCHS** does not fall out from the cover because **SSCHS** thread catches on the screw hole of the cover.



SSCHS Socket Head Cap Captive Screw with Special Low Profile



- The shape of the screws prevent them from falling out and loss. They are intended to fix protective and inspection covers that are frequently installed and removed.
- These screws are intended for the reduction of the size of machinery and device and applications with limited overhead space.
- These items comply with CE marking requirements. ➔ P.690

• Application

Securement of protective and inspection covers and compliance with CE marked products
Machine tools, food industry machines, and electrical and electronic equipment

• Material/Finish

RoHS2 Compliant

	SSCHS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-40

Unit : mm

Part Number	M	L	L1	B	dc	Mass (g)
SSCHS-M3	M3	8	10	2	2.2	0.53 - 0.69
SSCHS-M4	M4	10	12	2	3	1.2 - 1.6
SSCHS-M5	M5	12	16	3	3.9	1.5 - 2.5
SSCHS-M6	M6	12	16	3	4.5	2.3 - 5.5
SSCHS-M8	M8	16	20	4	6.3	5.4 - 10

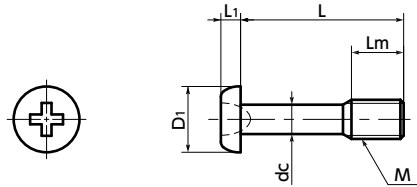
Part Number	Qty per pack
SSCHS-M3	1
SSCHS-M4	1
SSCHS-M5	1
SSCHS-M6	1
SSCHS-M8	1

• Part number specification

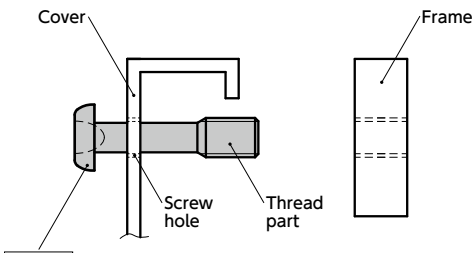
SSCHS-M6-12



1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	with Captive Processing



- Installation example
Make a screw hole in the cover, then pass **SSCZS** thread through it. Even when the screw is removed from the frame, **SSCZS** does not fall out from the cover because **SSCZS** thread catches on the screw hole of the cover.



SSCZS Pan head captive machine screws for precision instruments

⚠ Precautions for Use

- Screw hole inner diameter on the cover side shall be at least the dc dimension.
- The cover thickness should be 0.3 mm or above.

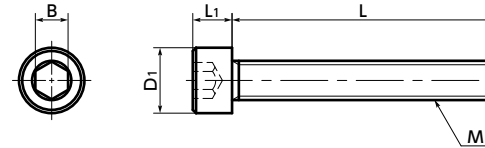
Part Number												Unit : mm	
Part Number		M	L				Lm	D1	L1	dc	Max. Torque(N・m)	Mass (g)	
SSCZS-M1.4		M1.4	4	5	6	8	2	2	0.5	1.0 ⁰ _{-0.1}	0.03	0.04 - 0.06	
SSCZS-M1.6		M1.6	4	5	6	8	2	2.3	0.5	1.1 ⁰ _{-0.1}	0.04	0.05 - 0.08	
SSCZS-M1.7		M1.7	4	5	6	8	2	2.5	0.5	1.2 ⁰ _{-0.1}	0.04	0.06 - 0.08	
SSCZS-M2		M2	4	5	6	8	2.5	3	0.6	1.4 ⁰ _{-0.15}	0.09	0.09 - 0.13	
SSCZS-M2.5		M2.5			6	8	10	3	0.8	1.8 ⁰ _{-0.15}	0.15	0.21 - 0.25	
SSCZS-M2.6		M2.6			6	8	10	3	0.8	1.8 ⁰ _{-0.15}	0.16	0.22 - 0.26	

Part Number	Qty per pack
SSCZS-M1.4	1
SSCZS-M1.6	1
SSCZS-M1.7	1
SSCZS-M2	1
SSCZS-M2.5	1
SSCZS-M2.6	1

● Part number specification

SSCZS-M1.4-4

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	with Captive Processing



- Full thread socket head cap screws.
- Application
Equipment and devices that require long screws

Material/Finish		RoHS2 Compliant
SNSS-FT		
Main Body	SUSXM7 (Equivalent to SUS304)	
Strength Class	A2-50	

Unit : mm																						
Part Number	M	L																D ₁	L ₁	B	Mass (g)	
	1	2																				
SNSS-M3-FT	M3	25	30	35	40	45	50											5.5	3	2.5	1.6 - 2.9	
SNSS-M4-FT	M4		30	35	40	45	50	55	60	65	70	75	80	85	90	100		7	4	3	3.7 - 11	
SNSS-M5-FT	M5		30	35	40	45	50	55	60	65	70	75	80	85	90	100		8.5	5	4	5.6 - 16	
SNSS-M6-FT	M6			35	40	45	50	55	60	65	70	75	80	85	90	100		10	6	5	9.9 - 24	
SNSS-M8-FT	M8				40	45	50	55	60	65	70	75	80	85	90	100		13	8	6	21 - 45	
SNSS-M10-FT	M10					45	50	55	60	65	70	75	80	85	90	100	110 120	16	10	8	36 - 84	

Part Number	Qty per pack
SNSS-M3-FT	1
SNSS-M4-FT	1
SNSS-M5-FT	1
SNSS-M6-FT	1
SNSS-M8-FT	1
SNSS-M10-FT	1

● Related Products

SSH5-FT Low Profile Screws (Hex Socket Head Cap Screws with Low Profile Full Thread)
→ P.603



SPE-FT Plastic Screw (PEEK / Hex Socket Head Cap Screws - Full Thread)
→ P.745



● Part number specification

SNSS-M3-25-FT

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available



• Clamping Cap Screws with Eccentric Head

Clamping Cap Screws with Eccentric Head				
Part Number	SLEC-A	SLEC-A-EL	SLEC-B	SLEC-B-EL
Shape				
Page	P.703	P.703	P.705	P.705
Materials	SCM435 Ferrosoferric Oxide Coating	SCM435 Electroless Nickel Plating	SCM435 Ferrosoferric Oxide Coating	SCM435 Electroless Nickel Plating
Characteristics	Standard Type • High-Strength Fixing	Standard Type • High-Strength Fixing	Guidance • High-Strength Fixing	Guidance • High-Strength Fixing
Size	M3 - M12	M3 - M12	M3 - M8	M3 - M8

• Fine Pitch Thread

Socket Head Cap Screws	
Part Number	SNSS
Shape	
Page	P.707
Materials	SUSXM7
Characteristics	Locating • Looseness Countermeasure
Size	M4 - M12

• Clamping Set Screws • Clamping Cap Screws (with Ventilation Hole)

	Clamping Set Screws		Clamping Cap Screws	
Part Number	SCSS-VR	SCSS-VF	SCBS-VR	SCBS-VF
Shape				
Page	P.587	P.587	P.588	P.588
Materials	Body : SUSXM7 Ball : SUS440C	Body : SUSXM7 Ball : SUS440C	Body : SUSXM7 Ball : SUS440C	Body : SUSXM7 Ball : SUS440C
Characteristics	Full Ball With Ventilation Hole	Flat Ball With Ventilation Hole	Full Ball With Ventilation Hole	Flat Ball With Ventilation Hole
Size	M5 - M10	M5 - M10	M5 - M10	M5 - M10

• Spring Plunger with Ball (with Ventilation Hole)

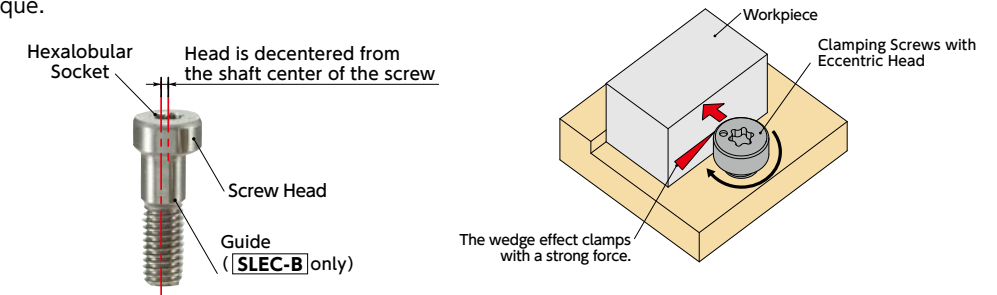
Spring Plunger with Ball	
Part Number	PVFS
Shape	
Page	P.589
Materials	Body : Stainless Steel(A2) Ball : SUS440C
Characteristics	With Ventilation Hole
Size	M5 - M10

Secure Workpiece Easily and Reliably
Clamping Screws with Eccentric Head

Characteristics

• The wedge effect achieves a large clamping force

When the screw is tightened, the workpiece is strongly clamped by the head, which is decentered from the shaft center of the screw. The wedge effect creates a large clamping force with low tightening torque.



• The screw has a hexalobular socket that can withstand high tightening torque.

• Two surface treatments are available as standard: ferrosoferric oxide coating or electroless nickel plating.

Types of Clamping Screws with Eccentric Head

• Two types of clamping screws with eccentric head are available as standard.

Standard Type

For fixing linear guideway rails and workpieces and tools.



SLEC-A Clamping Screws with Eccentric Head

Guide Type

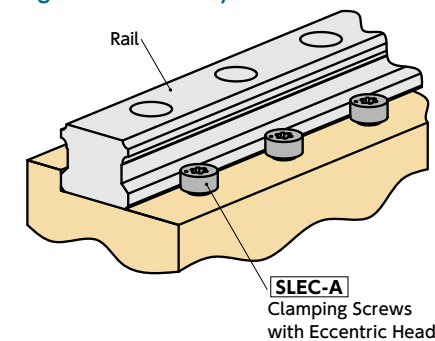
The precision-processed guide provides increased durability when clamping. For fixing heavier workpieces and jigs.



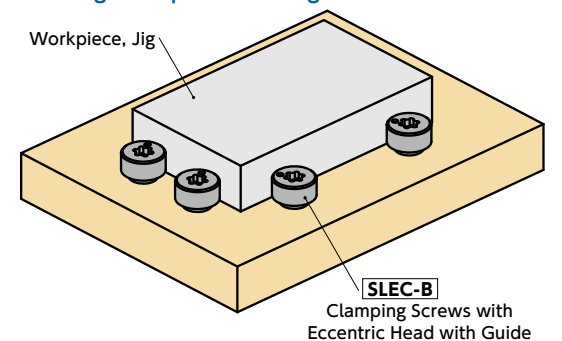
SLEC-B Clamping Screws with Eccentric Head with Guide

Usage Examples

• Fixing Linear Guideway Rails



• Fixing Workpieces and Jigs

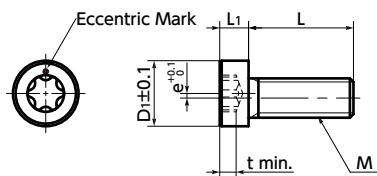




SLEC-A Clamping Screws with Eccentric Head

WEB Selection Tool

CAD Download



Material/Finish

RoHS2 Compliant

	SLEC-A	SLEC-A-EL
Main Body	SCM435 Ferroferric Oxide Coating	SCM435 Electroless Nickel Plating
Strength Class	10.9	10.9

*1: The hexalobular shape is prescribed by JIS B 1015 : 2008 (ISO 10664 : 2005) "Hexalobular internal driving feature for bolts and screws".

SLEC-A



SLEC-A-EL

- When the screw is tightened, the workpiece is strongly clamped by the head, which is decentered from the shaft center of the screw. The wedging effect creates a large clamping force with a low tightening torque.
- The screws has a hexalobular socket*1 that can withstand a high tightening torque. → P.723
- Install and remove by using **SKX** Special Key. → P.726
- For fixing linear guideway rails.
- SLEC-A-EL** is an electroless nickel (EN) plating type.
For applications that require corrosion resistance.
- Also, **SLEC-B** Clamping Screw with Eccentric Head, which has a guide section below the neck is available. → P.705
- Application

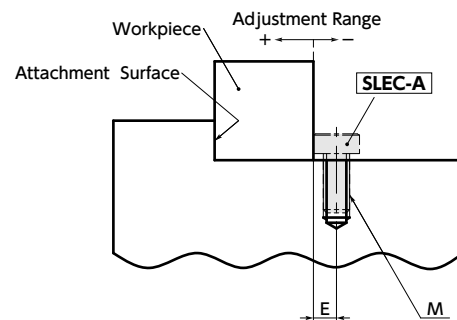
Fixing linear guideway rails, workpieces, and tools

Unit : mm										
SLEC-A Ferroferric oxide film	SLEC-A-EL Electroless nickel plating	Common dimensions								
Part Number	Part Number	M	L	D1	L1	e	Applicable wrench	Hexalobular Socket No.	t	Mass (g)
SLEC-M3-A	SLEC-M3-A-EL	M3	6	6.8	2.5	0.4	SKX-10	10	1	0.7
SLEC-M4-A	SLEC-M4-A-EL	M4	8	7	3	0.4	SKX-15	15	1.2	1.6
SLEC-M5-A	SLEC-M5-A-EL	M5	10	8.5	4	0.4	SKX-20	20	1.5	2.6
SLEC-M6-A	SLEC-M6-A-EL	M6	12	10	4	0.5	SKX-25	25	2	5.1
SLEC-M8-A	SLEC-M8-A-EL	M8	16	13	5	0.8	SKX-30	30	2.5	11
SLEC-M10-A	SLEC-M10-A-EL	M10	20	16	7	1	SKX-40	40	3	22
SLEC-M12-A	SLEC-M12-A-EL	M12	24	18	8	1	SKX-45	45	3.5	32

Installation Dimensions

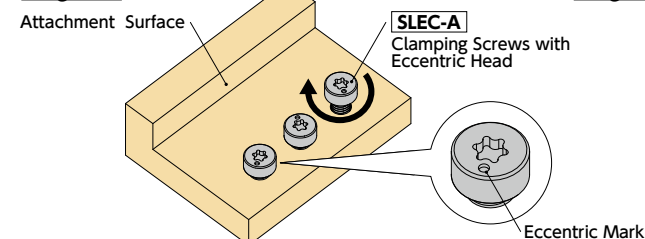
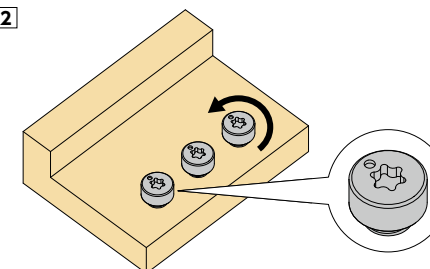
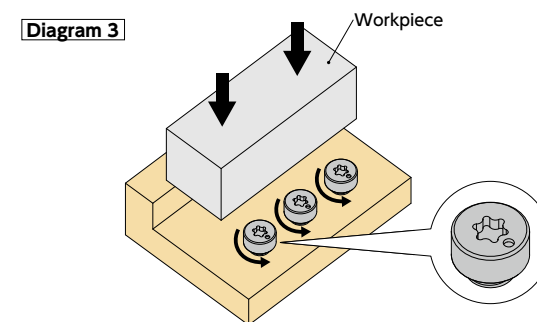
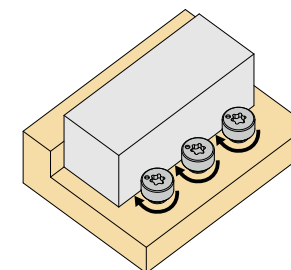
Unit : mm

Part Number	Part Number	E	M	Adjustment Range min. / max.
SLEC-M3-A	SLEC-M3-A-EL	3.1 ^{+0.3} ₀	M3	-0.1 / 0.7
SLEC-M4-A	SLEC-M4-A-EL	3.15 ^{+0.3} ₀	M4	-0.05 / 0.75
SLEC-M5-A	SLEC-M5-A-EL	3.9 ^{+0.3} ₀	M5	-0.05 / 0.75
SLEC-M6-A	SLEC-M6-A-EL	4.65 ^{+0.3} ₀	M6	-0.15 / 0.85
SLEC-M8-A	SLEC-M8-A-EL	6.05 ^{+0.5} ₀	M8	-0.35 / 1.25
SLEC-M10-A	SLEC-M10-A-EL	7.5 ^{+0.5} ₀	M10	-0.5 / 1.5
SLEC-M12-A	SLEC-M12-A-EL	8.5 ^{+0.5} ₀	M12	-0.5 / 1.5



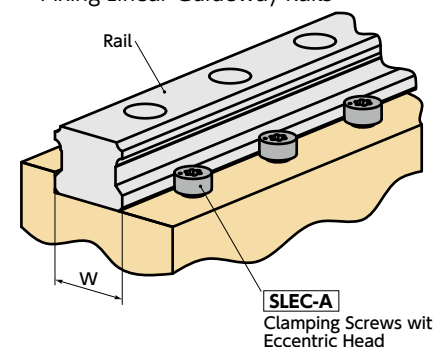
Installation Method

- Screw the clamping screws with eccentric head into the screw holes until the head bearing surface lightly touches the surface **Diagram 1**. At this time, the positions of the eccentric marks do not have to be aligned.
- Loosen the clamping screws with eccentric head so that the eccentric marks reach the position in **Diagram 2**.
- Loosen the clamping screws with eccentric head further so that the eccentric marks reach the position in **Diagram 3**.

Diagram 1**Diagram 2****Diagram 3****Diagram 4**

Usage example

Fixing Linear Guideway Rails



Recommended size of linear guideway rail

Unit : mm

Nominal of Rail	Rail Width W	with Clamping Screws with Eccentric Head	
#9	9	SLEC-M3-A	SLEC-M4-A
#12	12	SLEC-M3-A	SLEC-M4-A
#15	15	SLEC-M3-A	SLEC-M4-A
#20	20	SLEC-M4-A	SLEC-M5-A
#25	23	SLEC-M5-A	SLEC-M6-A
#30	28	SLEC-M6-A	SLEC-M8-A
#35	34	SLEC-M8-A	SLEC-M10-A
#45	45	SLEC-M10-A	SLEC-M12-A
#55	53	SLEC-M12-A	

Part number specification

SLEC-M6-A-EL

1

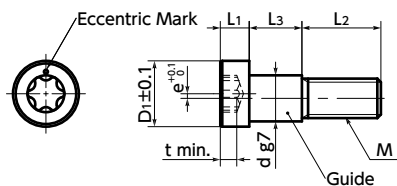
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available



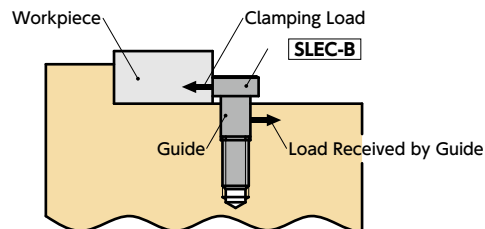
SLEC-B Clamping Screws with Eccentric Head

WEB Selection Tool

WEB CAD Download



- Since the precision-processed guide receives the clamping load, durability during clamping is increased.



- When the screw is tightened, the workpiece is strongly clamped by the head, which is decentered from the shaft center of the screw. The wedge effect creates a large clamping force with low tightening torque.
- The screw has a hexalobular socket*1 that can withstand high tightening torque. → P.723
- Install and remove by using **SKX** Special Key. → P.726
- SLEC-B-EL** is electroless nickel (EN) plating type. It is intended for applications that require corrosion resistance.

Application

Fixing workpieces and jigs and fine positional adjustment of heavy objects

Material/Finish

RoHS2 Compliant

	SLEC-B	SLEC-B-EL
Main Body	SCM435 Ferroferric Oxide Coating	SCM435 Electroless Nickel Plating
Strength Class	10.9	10.9

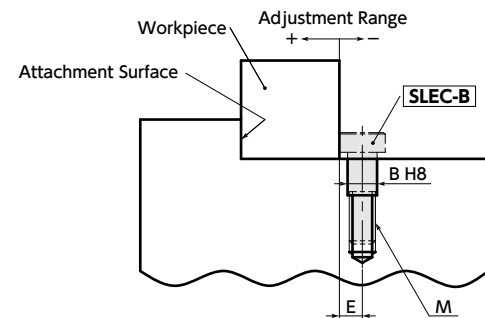
*1: The hexalobular shape is prescribed by JIS B 1015 : 2008 (ISO 10664 : 2005) "Hexalobular internal driving feature for bolts and screws".

Unit : mm													
SLEC-B Ferroferric oxide film	SLEC-B-EL Electroless nickel plating	Common dimensions											Qty per pack
Part Number 	Part Number 	M	D1	L1	L2	d	L3	e	Applicable wrench	Hexalobular Socket No.	t	Mass (g)	
SLEC-M3-B	SLEC-M3-B-EL	M3	6.8	2.5	6	3.35	4	0.4	SKX-10	10	1	0.82	1
SLEC-M4-B	SLEC-M4-B-EL	M4	7	3	7	4.5	5	0.4	SKX-15	15	1.2	1.9	1
SLEC-M5-B	SLEC-M5-B-EL	M5	8.5	4	10	5.5	6	0.4	SKX-20	20	1.5	3.3	1
SLEC-M6-B	SLEC-M6-B-EL	M6	10	4	12	6.5	8	0.5	SKX-25	25	2	6	1
SLEC-M8-B	SLEC-M8-B-EL	M8	13	5	16	8.5	9	0.8	SKX-30	30	2.5	14.3	1

Installation Dimensions

Unit : mm

Part Number	Part Number	E	M	B H8	Adjustment Range min. / max.
SLEC-M3-B	SLEC-M3-B-EL	3.1 ^{+0.3} ₀	M3	3.35	-0.1 / 0.7
SLEC-M4-B	SLEC-M4-B-EL	3.15 ^{+0.3} ₀	M4	4.5	-0.05 / 0.75
SLEC-M5-B	SLEC-M5-B-EL	3.9 ^{+0.3} ₀	M5	5.5	-0.05 / 0.75
SLEC-M6-B	SLEC-M6-B-EL	4.65 ^{+0.3} ₀	M6	6.5	-0.15 / 0.85
SLEC-M8-B	SLEC-M8-B-EL	6.05 ^{+0.5} ₀	M8	8.5	-0.35 / 1.25



Installation Method

- Screw the clamping screws with eccentric head into the screw holes until the head bearing surface lightly touches the surface **Diagram 1**. At this time, the positions of the eccentric marks do not have to be aligned.
- Loosen the clamping screws with eccentric head so that the eccentric marks reach the position in **Diagram 2**.
- Loosen the clamping screws with eccentric head further so that the eccentric marks reach the position in **Diagram 3**.

Diagram 1

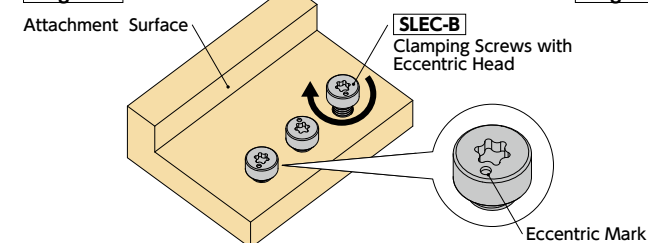


Diagram 2

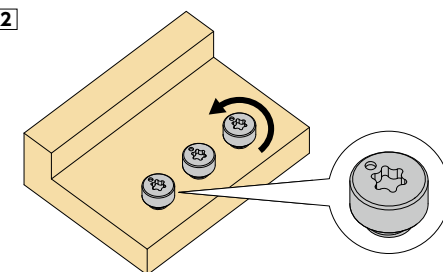


Diagram 3

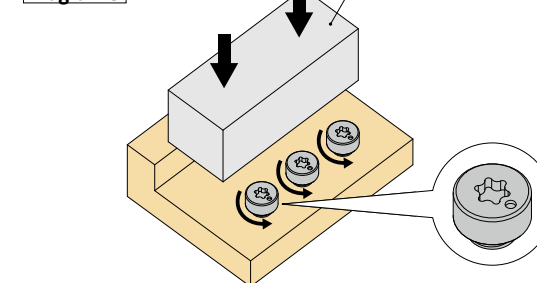
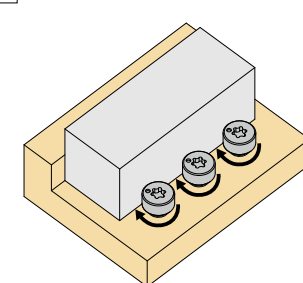
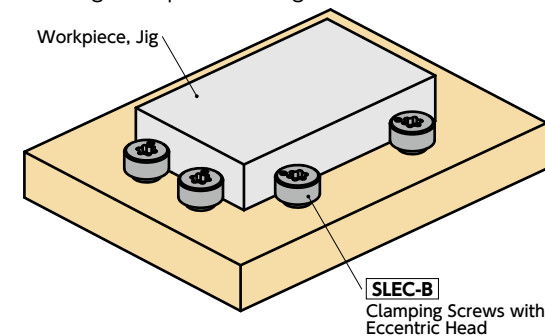


Diagram 4



Usage example

Fixing Workpiece and Jigs



Related Products

SLEC-A Clamping Screw with Eccentric Head, which does not have a guide section below the head is available.

→ P.703

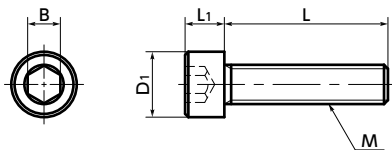


Part number specification

SLEC-M6-B-EL

1

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available



● Material/Finish

RoHS2 Compliant

	SNSS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50 (M4 - M6) A2-70 (M8 - M12)



- Socket head cap screws with fine pitch thread.
 - The effective diameter is larger and fatigue strength is better than coarse threads.
 - The thread pitch is small and the number of thread peaks is more than coarse threads. For securing thin plates and similar items for which coarse thread screws lack sufficient thread peaks.
 - Since the lead angle of the thread peak is smaller than that of coarse threads, there is little slippage of the thread peak surface, which prevents screws from loosening.
- Application
- Loosening prevention / Securement of thin plates, etc.

Unit : mm

Part Number	M	L	8	10	12	15	20	25						D1	L1	B	Mass (g)
SNSS-M4-P0.5	M4×0.5	8												7	4	3	1.7 - 3.2
SNSS-M5-P0.5	M5×0.5								30					8.5	5	4	2.7 - 5.6
SNSS-M6-P0.75	M6×0.75	8							30					10	6	5	4.3 - 8.3
SNSS-M8-P1	M8×1					12			30	35	40	45	50	13	8	6	11 - 25
SNSS-M10-P1	M10×1					15			30	35	40	45	50	16	10	8	21 - 39
SNSS-M12-P1	M12×1						20		30	35	40	45	50	18	12	10	32 - 55

Part Number	Qty per pack
SNSS-M4-P0.5	1
SNSS-M5-P0.5	1
SNSS-M6-P0.75	1
SNSS-M8-P1	1
SNSS-M10-P1	1
SNSS-M12-P1	1

- Part number specification

SNSS-M5-P0.5-20



1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

● Socket Head Cap Screws

	Socket Head Cap Screws	Button Head Cap Screws
Part Number	SNSS (INCH)	SNBS (INCH)
Shape		
Page	P.709	P.710
Materials	SUS304	SUS304
Characteristics	Inch Thread	Inch Thread Button Head Cap Screws
Size	No.4-40UNC - 3/8-16UNC	No.4-40UNC - 1/4-20UNC

● Tools

	Hex Wrench
Part Number	SKH (INCH)
Shape	
Page	P.712
Materials	Alloyed Steel
Characteristics	For Inch Screws
Size	1/16 - 5/16

● Socket Head Cap Screws (with Ventilation Hole)

	Socket Head Cap Captive Screw
Part Number	SVSS (INCH)
Shape	
Page	P.568
Materials	SUS304
Characteristics	With Ventilation Hole
Size	No.4-40UNC - 1/4-20UNC

● Hex Nut • Washers

	Hex Nuts • Washers
Part Number	SHNS / SWAS
Shape	
Page	P.711
Materials	SUS304
Characteristics	Inch Thread
Size	No.4-40UNC - 3/8-16UNC

● Captive Screws

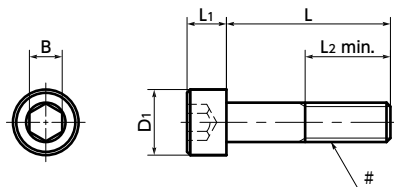
	Socket Head Cap Captive Screws
Part Number	SSC (INCH)
Shape	
Page	P.692
Materials	SUS304
Characteristics	Captive
Size	No.4-40UNC - 3/8-16UNC

SNSS(INCH) Hex Socket Head Cap Screws - Inch Thread

e-nedzi.com®



WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish

RoHS2 Compliant

	SNSS(INCH)
Main Body	Stainless Steel (Grade : A2)
Strength Class	A2-50

Part number specification

SNSS- # 4-40 - 1/4

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809



- Socket head cap screws with inch thread.
- ANSI B18.3 compliance.
- Install and remove by using **SKH(INCH)** Specialty Key. ➔ P.712

Application

Equipment and devices using inch screw specifications

Unit : inch																			
Part Number	# Nominal of hread	L												D1	L1	L2	B	Mass (g)	
SNSS- # 4-40	No.4-40UNC	3/16	1/4	5/16	3/8	1/2	5/8	3/4						0.183	0.112	0.75	3/32	0.51 - 1.1	
SNSS- # 5-40	No.5-40UNC		1/4	5/16	3/8	1/2	5/8	3/4						0.205	0.125	0.75	3/32	0.78 - 1.4	
SNSS- # 6-32	No.6-32UNC		1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	0.226	0.138	0.75	7/64	0.98 - 3.6
SNSS- # 8-32	No.8-32UNC		1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	0.27	0.164	0.88	9/64	1.6 - 5.4
SNSS- # 10-24	No.10-24UNC		1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	0.312	0.19	0.88	5/32	2.3 - 7.2
SNSS- # 10-32	No.10-32UNF	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	0.312	0.19	0.88	5/32	2.2 - 7.6
SNSS- # 12-24	No.12-24UNC				3/8	1/2	5/8	3/4		1	1 1/4	1 1/2			0.343	0.216	1	3/32	3.4 - 7.6
SNSS-1/4-20	1/4-20UNC		1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	0.375	0.25	1	3/16	4.3 -13
SNSS-1/4-28	1/4-28UNF				3/8	1/2	5/8	3/4		1	1 1/4				0.375	0.25	1	3/16	5.1 - 9.8
SNSS-5/16-18	5/16-18UNC				3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	0.469	0.312	1.12	1/4	8.8 - 22
SNSS-3/8-16	3/8-16UNC					1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	0.562	0.375	1.25	5/16	16 - 33

- All dimensions are in inches.

Part Number	Qty*1 per pack
SNSS- # 4-40	10
SNSS- # 5-40	10
SNSS- # 6-32	10
SNSS- # 8-32	10
SNSS- # 10-24	10
SNSS- # 10-32	10
SNSS- # 12-24	10
SNSS-1/4-20	10
SNSS-1/4-28	10
SNSS-5/16-18	10
SNSS-3/8-16	10

*1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

NBK

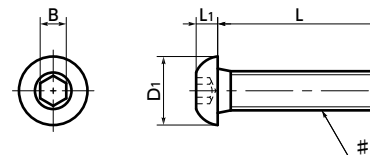
WEB ▶ <https://www.nbk1560.com>

SNBS(INCH) Socket Button Head Cap Screws - Inch Thread

e-nedzi.com®



WEB Selection Tool CAD Download SUS Stainless steel



Material/Finish

RoHS2 Compliant

	SNBS(INCH)
Main Body	Stainless Steel (Grade : A2)
Strength Class	A2-50

Part number specification

SNBS- # 4-40 - 1/4

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809



- Socket button head cap screws with inch thread.
- ANSI B18.3 compliance.
- Install and remove by using **SKH(INCH)** Specialty Key. ➔ P.712
- Also, products with special specifications such as dimensions, shapes, materials, surface treatments, cleanroom washing and special packaging are available. ➔ P.549



Application

Equipment and devices using inch screw specifications

														Unit : inch			
Part Number 	# Nominal of Thread	L 											D1	L1	B	Mass (g)	
SNBS- # 4-40	No.4-40UNC	3/16	1/4	5/16	3/8	1/2							0.213	0.059	1/16	0.35 - 0.65	
SNBS- # 5-40	No.5-40UNC		1/4		3/8	1/2							0.238	0.066	5/64	0.53 - 0.85	
SNBS- # 6-32	No.6-32UNC		1/4	5/16	3/8	1/2	5/8	3/4					0.262	0.073	5/64	0.67 - 1.4	
SNBS- # 8-32	No.8-32UNC		1/4		3/8	1/2	5/8	3/4					0.312	0.087	3/32	1.1 - 2.2	
SNBS- # 10-24	No.10-24UNC		1/4		3/8	1/2	5/8	3/4	7/8	1			0.361	0.101	1/8	1.5 - 3.6	
SNBS- # 10-32	No.10-32UNF		1/4		3/8	1/2	5/8	3/4	7/8	1			0.361	0.101	1/8	1.5 - 3.8	
SNBS-1/4-20	1/4-20UNC				3/8	1/2	5/8	3/4	7/8	1			0.437	0.132	5/32	3.3 - 6.4	

- All dimensions are in inches.

Part Number	Qty*1 per pack
SNBS- # 4-40	10
SNBS- # 5-40	10
SNBS- # 6-32	10
SNBS- # 8-32	10
SNBS- # 10-24	10
SNBS- # 10-32	10
SNBS-1/4-20	10

*1 : Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available

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710

SHNS(INCH) / SWAS(INCH)

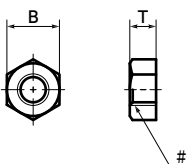
Hex Nuts / Washers - Inch Thread

e-nedzi.com®



WEB Selection Tool CAD Download SUS Stainless steel

SHNS(INCH)

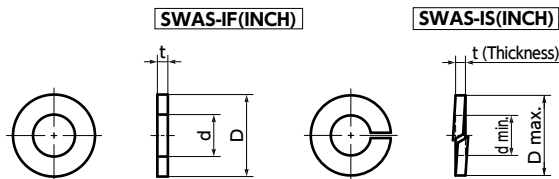


SHNS(INCH)



SWAS-IF(INCH)

SWAS-IS(INCH)



- Part number specification

SHNS- # 4-40



Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

SHNS(INCH) Hex Nuts

Part Number	#	Nominal of Thread	B	T	Mass (g)	Qty*1 per pack
SHNS-#4-40	No.4	40UNC	1/4	0.098	0.58	10
SHNS-#6-32	No.6	32UNC	5/16	0.114	1.1	10
SHNS-#8-32	No.8	32UNC	1 1/32	0.13	1.4	10
SHNS-#10-24	No.10	24UNC	3/8	0.13	1.7	10
SHNS-#10-32	No.10	32UNF	3/8	0.13	1.6	10
SHNS-1 / 4-20	1/4	20UNC	7/16	7/32	3.1	10
SHNS-5 / 16-18	5/16	18UNC	1/2	1 7/64	5.4	10
SHNS-3 / 8-16	3/8	16UNC	5/8	2 1/64	7.8	10

*1 : Also sold separately from 1 piece up. ➔ P.809

- All dimensions are in inches.

SWAS-IF(INCH) Washers

Part Number	Nominal	d	D	t	Mass (g)	Qty*1 per pack
SWAS-#4-IF	No.4	0.125	0.312	0.025	0.21	10
SWAS-#6-IF	No.6	0.156	0.375	0.036	0.43	10
SWAS-#8-IF	No.8	0.187	0.375	0.036	0.39	10
SWAS-#10-IF	No.10	0.218	0.437	0.036	0.53	10
SWAS-1 / 4-IF	1/4	0.281	0.625	0.051	1.6	10
SWAS-5 / 16-IF	5/16	0.343	0.687	0.051	1.8	10
SWAS-3 / 8-IF	3/8	0.406	0.812	0.051	2.6	10

*1 : Also sold separately from 1 piece up. ➔ P.809

- All dimensions are in inches.

SWAS-IS(INCH) Spring Washers

Part Number	Nominal	d	D	t	Mass (g)	Qty*1 per pack
SWAS-#4-IS	No.4	0.114	0.209	0.025	0.078	10
SWAS-#6-IS	No.6	0.141	0.25	0.031	0.13	10
SWAS-#8-IS	No.8	0.167	0.293	0.04	0.24	10
SWAS-#10-IS	No.10	0.193	0.334	0.047	0.36	10
SWAS-1 / 4-IS	1/4	0.252	0.487	0.062	1.1	10
SWAS-5 / 16-IS	5/16	0.314	0.583	0.078	1.9	10
SWAS-3 / 8-IS	3/8	0.377	0.68	0.094	3.1	10

*1 : Also sold separately from 1 piece up. ➔ P.809

- All dimensions are in inches.

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

NBK

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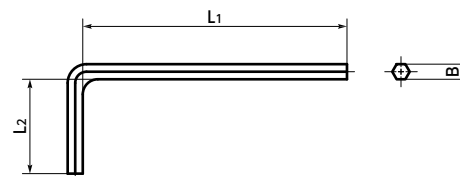
SKH(INCH)

Hex Keys for Inch Screws

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WEB Selection Tool CAD Download



- Hexagon Keys for Inch Screws only.

- Application

Installing and removing inch screws

- Material/Finish



	SKH(INCH)
Main Body	Alloyed Steel (Hardness 50 HRC or higher) Ferrosoferric Oxide Coating

Part Number	B Nominal of Key	L1	L2	Inch Screw Size		Mass (g)	Qty per pack
				SNSS(INCH) (➔ P.709)	SNBS(INCH) (➔ P.710)		
SKH-1 / 16	1/16	1.75	0.562		#4 - 40	1	1
SKH-5 / 64	5/64	1.875	0.609		#5 - 40 • #6 - 32	1.7	1
SKH-3 / 32	3/32	2	0.656	#4 - 40 • #5 - 40	#8 - 32	2.6	1
SKH-7 / 64	7/64	2.125	0.703	#6 - 32		3.7	1
SKH-1 / 8	1/8	2.25	0.75		#10 - 24 • #10 - 32	5.2	1
SKH-9 / 64	9/64	2.375	0.796	#8 - 32		6.9	1
SKH-5 / 32	5/32	2.5	0.844	#10 - 24 • #10 - 32 • #12 - 24	1/4 - 20	9	1
SKH-3 / 16	3/16	2.75	0.938	1/4 - 20 • 1/4 - 28		14	1
SKH-1 / 4	1/4	3.25	1.125	3/8 - 16		30	1
SKH-5 / 16	5/16	3.75	1.25			54	1

- All dimensions are in inches.

- Related Products

SNSS(INCH) Hex Socket Head
Cap Screws - Inch Thread

➔ P.709



Socket Button Head Cap Screws

- Inch Thread SNBS(INCH)

➔ P.710



- Part number specification

SKH-3/32



1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
1 pc. in 1 bag	Not Available	Not Available	Not Available	Not Available

NBK

WEB ▶ <https://www.nbk1560.com>

Tamper Resistance Screws

• Tamper Resistance Screws

	Tamper-resistant Special Low Head Bolt	Anti-theft Nut	Flat Head Screws with Pins	Button Head Cap Screws with Pins		One Side Pan Head Machine Screws
Part Number	SRSHS	SHNRS	SRFXS	SRBS	SRHS	SROS
Shape						
Page	P.714	P.715	P.717	P.718	P.719	P.720
Materials	SUSXM7	SUS304	SUS304	SUS304	SUS304	SUS304
Characteristics	Tamper-resistant bolt with special low head height	Anti-theft Nut	Hexalobular Socket With Pin	Hexalobular Socket With Pin	Hex Socket With Pin	Tightened with Philips Screwdriver
Size	M2 - M4	M8 - M12	M3 - M6	M3 - M8	M3 - M6	M3 - M5

	Two Hole Pan Head Machine Screws	Triwing Pan Head Machine Screws
Part Number	SRTS	SRWS
Shape		
Page	P.721	P.722
Materials	SUS304	SUS304
Characteristics	2 Holes	Triwing Socket
Size	M3 - M5	M3 - M5

• Tools

	Special Bits for Tamper Resistance Screws	Special Socket for Security Nut	Keys		Screwdrivers	Magnetic Screwdrivers
Part Number	SRSHB	SKW	SRX	SRH	SROT	SRD
Shape						
Page	P.714	P.715	P.717-718	P.719	P.720	P.721-722
Characteristics	Dedicated Bits for [SRSHS]	Dedicated Tools for [SHNRS]	Dedicated Wrench for [SRFXS] [SRBS]	Dedicated Wrench for [SRHS]	Dedicated Screwdriver for [SROS]	Dedicated Magnetic Screwdriver for [SRTS] [SRWS]

	Bits	
Part Number	SRTB	SRWB
Shape		
Page	P.721	P.722
Characteristics	Dedicated Bits for SRTS	Dedicated Bits for SRWS

SRSHS Tamper - resistant Special Low Head Bolt **NEW**

WEB Selection Tool

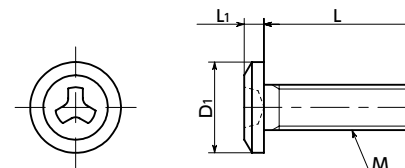
WEB CAD Download

Protrusion

Tamper Resistance

SUS Stainless steel

e-nedzi.com®



• Application

Dismantling equipment/device, tamper-resistance/anti-theft measures for outdoor facility/ security measures/safety measures

• Material/Finish

RoHS2 Compliant

	SRSHS
Main unit	SUSXM7

- Tamper-Resistance screws, all with head height of 1.5 mm or less.
- It cannot be mounted or removed by normal tools. As well, because the head height is low, it is difficult to remove by grasping the head directly, leading to excellent anti-theft properties.
- The protrusion after mounting is minimal, leaving the external appearance unblemished.
- Use a dedicated bit [SRSHB] for mounting and removing.

Part Number	M	L	D1	L1	Bit Part No.	Mass(g)
SRSHS-M2	M2	4 5 6 8	3	0.6	SRSHB-0	0.089 - 0.16
SRSHS-M2.5	M2.5	4 5 6 8	3.8	0.8	SRSHB-1	0.15 - 0.28
SRSHS-M3	M3	6 8 10 12	6	1.3	SRSHB-2	0.44 - 0.69
SRSHS-M4	M4	8 10 12 16	8	1.5	SRSHB-3	1.0 - 1.6

Unit : mm

Part Number	Qty per pack*1
SRSHS-M2	10
SRSHS-M2.5	10
SRSHS-M3	20
SRSHS-M4	20

*1 : Also sold separately from 1 piece up.
→ P.809

• Dedicated bit (Supports V6.3/U6.3 insert shapes)

Unit : mm

Part Number	Applicable bolt	b	Qty per pack	Mass (g)
SRSHB-0	SRSHS-M2	2	1	6.4
SRSHB-1	SRSHS-M2.5	2	1	6.4
SRSHB-2	SRSHS-M3	3	1	13.8
SRSHB-3	SRSHS-M4	4	1	14.7

• Part number specification

SRSHS-M3 - 10 Tamper-resistant Special Low Head Bolts

1

2

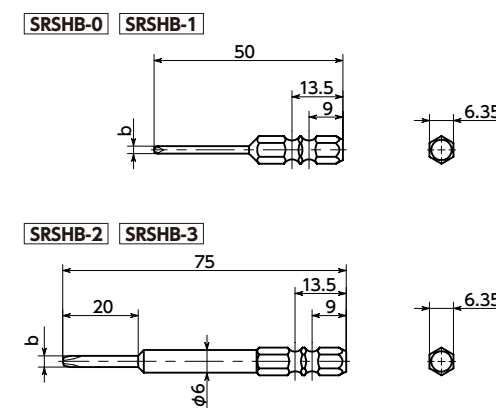
SRSHB-2 Dedicated Bits

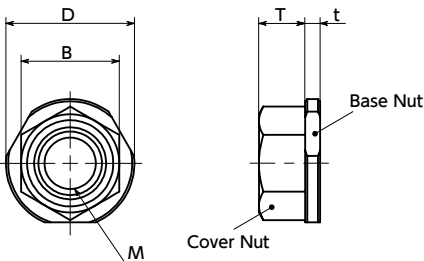
3

Place order by a bag.

Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge





- Anti-theft nut that can be mounted with commercially available tools.
- For removal, the dedicated tool **SKW** is required.
- Because there is no need to switch tools, the mounting process work-hours can be reduced.
- We can also produce customer-original anti-theft nuts with new base nut shapes.

• Application

Anti-theft measures for outdoor facility / Dismantling- and tamper-resistance for equipment/ devices / Security measures / Safety measures

• Material/Finish



	SHNRS
Main unit	SUS304



Precautions for Use

For removal, confirm that the dedicated removal tool **SKW** is entirely fitted with the base nut.

Part Number 1	M	B	D	T	t	Removal Tool Part No.	Mass (g)	Qty per pack
SHNRS-M8	M8	13	17	6.1	2	SKW-8	7	1
SHNRS-M10	M10	17	21.6	8.4	2.2	SKW-10	15.3	1
SHNRS-M12	M12	19	24	9	2.5	SKW-12	20	1

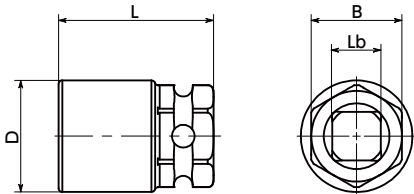
Unit : mm

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Not Available	Not Available	Not Available	Not Available

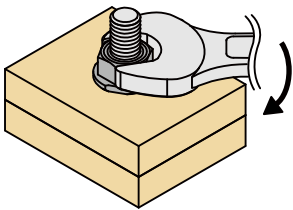
• Dedicated removal tools

Part Number 2	D	L	B	Lb	Mass (g)	Qty per pack
SKW-8	22	32	19	9.5	53	1
SKW-10	27	39	24	12.7	93	1
SKW-12	29.5	41	24	12.7	106	1

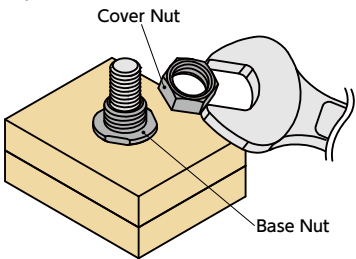
Unit : mm



- Includes O-ring and pin for impact wrench.
- Usage example
Mounting is possible with commercially available tools.



Of commercially available nuts, only cover nuts can be removed.
The remaining base nuts are shaped so as to be extremely difficult to remove with a wrench or pliers.



• Part number specification

SHNRS-M8 Anti-theft Nuts

1

SKW-8 Dedicated Removal Tools

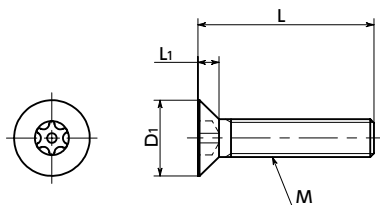
2

SRFXS Flat Head Bolt with Hexalobular Socket (with Pin) **NEW**

e-nedzi.com®



WEB Selection Tool CAD Download Tamper Resistance SUS Stainless steel



- Flat Head Bolt with a Pin at the center of Hexalobular Socket*1.
- It cannot be mounted or removed by normal tools.
- Use a dedicated wrench **SRX** for mounting and removing.

*1: The shape of hexalobular socket is defined in JIS B 1015: 2008 (ISO 10664: 2005) "Hexalobular Socket for Male Screw Parts."

● Application

Machinery / Tools / Equipment / Devices disassembly prevention · tampering prevention / Theft prevention for outdoor facilities / Security measures / Safety measures

● Material/Finish

RoHS2 Compliant

	SRFXS
Main body	SUS304
Strength Class	Equivalent to A2-50

● Part number specification

SRFXS-M5-16Product Code **1** **2**

Place order by a bag.

Also sold separately from 1 piece up. → P.809

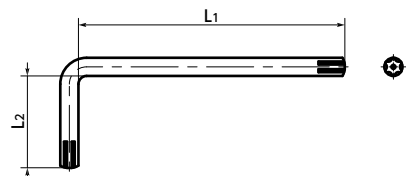
Unit : mm													
Part Number	M	1	2							D1	L1	Applicable wrench	Hexalobular Socket No.
SRFXS-M3	M3	6	8	10	12					6	1.75	SRX-10	10
SRFXS-M4	M4		8	10	12	16	20			8	2.3	SRX-20	20
SRFXS-M5	M5			10	12	16	20	25		10	2.8	SRX-25	25
SRFXS-M6	M6			10	12	16	20	25	30	12	3.4	SRX-30	30

Part Number	Qty per pack
SRFXS-M3	10
SRFXS-M4	10
SRFXS-M5	10
SRFXS-M6	10

● Dedicated wrench

Unit : mm

Part Number	L1	L2	Mass (g)	Qty per pack
SRX-10	60	20	3.7	1
SRX-20	67	23	8.2	1
SRX-25	70	25	11	1
SRX-30	81	28	20	1
SRX-40	88	31	32	1



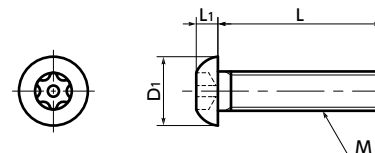
1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Not Available

SRBS Hexalobular Button Head Cap Screws with Pin

e-nedzi.com®



WEB Selection Tool CAD Download Tamper Resistance SUS Stainless steel



● Part number specification

SRBS-M5-16**1** **2**

Order in number of packs.

Also sold separately from 1 piece up. → P.809

- Button head cap screws with pin at the center of their hexalobular*1 socket.

- Screws cannot be installed or removed by using standard tools.
- Install and remove by using **SRX** Specialty Hexalobular Key.

*1: The hexalobular shape is prescribed by JIS B 1015: 2008 (ISO 10664: 2005) "Hexalobular internal driving feature for bolts and screws".

● Application

Machinery, tools, equipment, and devices disassembly prevention · tampering prevention, theft prevention for outdoor facilities, security measures, and safety measures

● Material/Finish

RoHS2 Compliant

	SRBS
Main Body	SUS304
Strength Class	Equivalent to A2-50

Unit : mm													
Part Number	M	2									D1	L1	Applicable wrench
SRBS-M3	M3	6	8	10	12	16	20	25			5.7	1.65	SRX-10
SRBS-M4	M4		8	10	12	16	20	25	30		7.6	2.2	SRX-20
SRBS-M5	M5			10	12	16	20	25	30	40	9.5	2.75	SRX-25
SRBS-M6	M6			10	12	16	20	25	30	40	10.5	3.3	SRX-30
SRBS-M8	M8			10	12	16	20	25	30	40	14	4.4	SRX-40

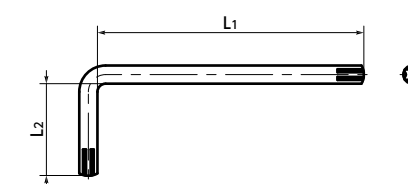
Part Number	Qty*1 per pack
SRBS-M3	20
SRBS-M4	20
SRBS-M5	20
SRBS-M6	10
SRBS-M8	10

*1: Also sold separately from 1 piece up. → P.809

● Dedicated wrench

Unit : mm

Part Number	L1	L2	Mass (g)	Qty per pack
SRX-10	60	20	3.7	1
SRX-20	67	23	8.2	1
SRX-25	70	25	11	1
SRX-30	81	28	20	1
SRX-40	88	31	32	1

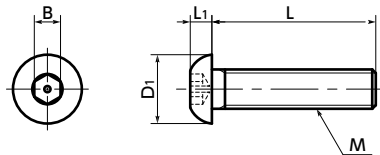


1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge

SRHS Socket Button Head Cap Screws with Pin

WEB Selection Tool WEB CAD Download Tamper Resistance SUS Stainless steel

e-nedzi.com®



- Part number specification

SRHS-M5-16

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

- Button head cap screws with pin at the center of their socket.
- They cannot be installed or removed by using standard tools.
- Install and remove by using **SRH** Specialty Key.

- Application

Machinery, tools, equipment, and devices disassembly prevention • tampering prevention, theft prevention for outdoor facilities, security measures, and safety measures

- Material/Finish



	SRHS
Main Body	SUS304
Strength Class	Equivalent to A2-50

Part Number	M	L							D1	L1	B	Applicable wrench	Mass (g)
SRHS-M3	M3	6	8	10	12	16			5.7	1.65	2	SRH-2	0.48 - 0.93
SRHS-M4	M4	6	8	10	12	16	20		7.6	2.2	2.5	SRH-2.5	1.1 - 2.2
SRHS-M5	M5			10	12	16	20		9.5	2.75	3	SRH-3	2 - 3.3
SRHS-M6	M6			10	12	16	20	25	10.5	3.3	4	SRH-4	3.3 - 6.1

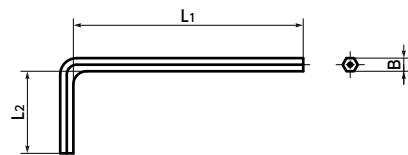
Part Number	Qty*1 per pack
SRHS-M3	20
SRHS-M4	20
SRHS-M5	20
SRHS-M6	10

*1 : Also sold separately from 1 piece up. ➔ P.809

- Dedicated wrench

Unit : mm

Part Number	B	L1	L2	Mass (g)	Qty per pack
SRH-2	2	50	16	1.8	1
SRH-2.5	2.5	56	18	3.1	1
SRH-3	3	63	20	5	1
SRH-4	4	70	25	10	1



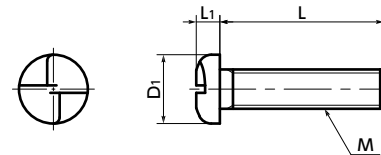
1 Individual Sales ➔ P.809 Cleanroom Wash & Packaging ➔ P.807 Screw Length Adjustment ➔ P.811 Vibration Resistant ➔ P.810 Modification process for captive use ➔ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge

NBK

WEB ▶ <https://www.nbk1560.com>**SROS** One Side Pan Head Machine Screws

WEB Selection Tool WEB CAD Download Tamper Resistance SUS Stainless steel

e-nedzi.com®



- Part number specification

SROS-M4-16

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

- The screws can be installed, but not removed, using commercially available slotted screwdrivers.
- Remove the screws by using **SROT** Specialty Removal Tool.

- Application

Machinery, tools, equipment, and devices disassembly prevention • tampering prevention, theft prevention for outdoor facilities, security measures, and safety measures

- Material/Finish



	SROS
Main Body	SUS304
Strength Class	Equivalent to A2-50

Part Number	M	L								D1	L1	Removal Tool Part No.	Mass (g)
SROS-M3	M3	5	6	8	10	12	16	20	25	5.5	2	SROT-410	0.49 - 0.94
SROS-M4	M4		6	8	10	12	16			7	2.6	SROT-410	1 - 2.5
SROS-M5	M5			8	10	12				9	3.3	SROT-510	2.2 - 2.7

Unit : mm

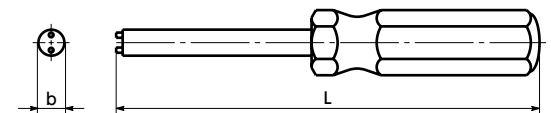
Part Number	Qty*1 per pack
SROS-M3	20
SROS-M4	20
SROS-M5	20

*1 : Also sold separately from 1 piece up. ➔ P.809

- Dedicated driver

Unit : mm

Part Number	L	b	Mass (g)	Qty per pack
SROT-410	180	8	94	1
SROT-510	185	10	127	1



1 Individual Sales ➔ P.809 Cleanroom Wash & Packaging ➔ P.807 Screw Length Adjustment ➔ P.811 Vibration Resistant ➔ P.810 Modification process for captive use ➔ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge

NBK

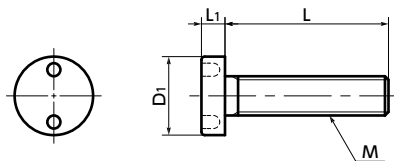
WEB ▶ <https://www.nbk1560.com>

SRTS Two Hole Pan Head Machine Screws

e-nedzi.com®



WEB Selection Tool CAD Download Tamper Resistance SUS Stainless steel



- Part number specification

SRTS-M5-16



Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809



- They cannot be installed or removed by using standard tools.
- Install and remove by **SRTB** Specialty Bits and **SRD** Specialty Magnetic Screwdriver together.
- The simple head design is suitable for decoration.

- Application

Machinery, tools, equipment, and devices disassembly prevention • tampering prevention, theft prevention for outdoor facilities, security measures, and safety measures

- Material/Finish



	SRTS
Main Body	SUS304
Strength Class	Equivalent to A2-50

Part Number	M	L	D1	L1	Bit Part No.	Screwdriver Part No.	Mass (g)
SRTS-M3	M3	6 8 10	6	1.8	SRTB-4	SRD-6.35	0.66 - 0.82
SRTS-M4	M4	10 12 16	8	2.4	SRTB-8	SRD-6.35	1.7 - 2.2
SRTS-M5	M5	12 16 20	10	3	SRTB-10	SRD-6.35	3.4 - 4.3

Part Number	Qty*1 per pack
SRTS-M3	20
SRTS-M4	20
SRTS-M5	20

*1: Also sold separately from 1 piece up. ➔ P.809

- SRTB** Dedicated bit

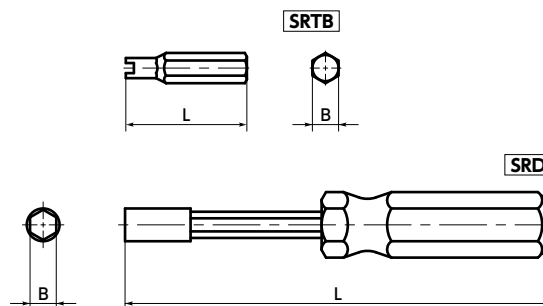
Unit : mm

Part Number	L	B	Mass (g)	Qty per pack
SRTB-4	25.4	6.35	5	1
SRTB-8	25.4	6.35	5	1
SRTB-10	25.4	6.35	5.2	1

- SRD** Dedicated magnet screwdriver

Unit : mm

Part Number	L	B	Mass (g)	Qty per pack
SRD-6.35	210	6.35	98	1



1 Individual Sales ➔ P.809 Cleanroom Wash & Packaging ➔ P.807 Screw Length Adjustment ➔ P.811 Vibration Resistant ➔ P.810 Modification process for captive use ➔ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge

NBK

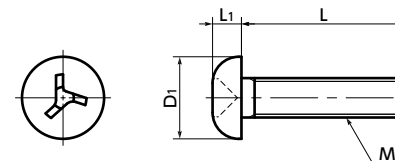
WEB ▶ <https://www.nbk1560.com>

SRWS Triwing Pan Head Machine Screws

e-nedzi.com®



WEB Selection Tool CAD Download Tamper Resistance SUS Stainless steel



- Part number specification

SRWS-M5-16



Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809



- They cannot be installed or removed by using standard tools.
- Install and remove by **SRWB** Specialty Bits and **SRD** Specialty Magnetic Screwdriver together.

- Application

Machinery, tools, equipment, and devices disassembly prevention • tampering prevention, theft prevention for outdoor facilities, security measures, and safety measures

- Material/Finish



	SRWS
Main Body	SUS304
Strength Class	Equivalent to A2-50

Part Number	M	L	D1	L1	Bit Part No.	Screwdriver Part No.	Mass (g)
SRWS-M3	M3	6 8 10	5.6	1.8	SRWB-2	SRD-6.35	0.54 - 0.7
SRWS-M4	M4	8 10 12	8.2	2.9	SRWB-4	SRD-6.35	1.5 - 1.9
SRWS-M5	M5	10 12 16	9.5	3.4	SRWB-5	SRD-6.35	2.8 - 3.5

Part Number	Qty*1 per pack
SRWS-M3	20
SRWS-M4	20
SRWS-M5	20

*1: Also sold separately from 1 piece up. ➔ P.809

- SRWB** Dedicated bit

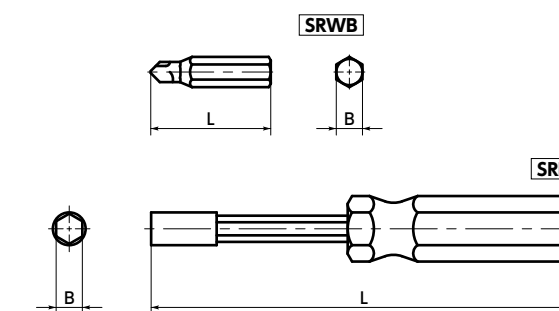
Unit : mm

Part Number	L	B	Mass (g)	Qty per pack
SRWB-2	25.4	6.35	4.2	1
SRWB-4	25.4	6.35	5.2	1
SRWB-5	25.4	6.35	5.6	1

- SRD** Dedicated magnet screwdriver

Unit : mm

Part Number	L	B	Mass (g)	Qty per pack
SRD-6.35	210	6.35	98	1



1 Individual Sales ➔ P.809 Cleanroom Wash & Packaging ➔ P.807 Screw Length Adjustment ➔ P.811 Vibration Resistant ➔ P.810 Modification process for captive use ➔ P.806
Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge Available / Add'l charge

NBK

WEB ▶ <https://www.nbk1560.com>

Hexalobular Socket Head Screws

• Pan Head Machine Screws

	Pan Head
Part Number	SNPXS
Shape	
Page	P.724
Materials	SUSXM7
Characteristics	High Tightening Torque
Size	M2 - M6

• Flat Head Machine Screws

	Flat Head
Part Number	SNFXS
Shape	
Page	P.725
Materials	SUSXM7
Characteristics	High Tightening Torque Space Optimization
Size	M2 - M6

• Tools

	Hexalobular Keys
Part Number	SKX
Shape	
Page	P.726
Materials	Alloyed Steel
Characteristics	For Hexalobular Socket Head Screws
Size	No.4 - No.45

• Low Profile Screws

	Special Low Profile	Extreme Low Profile	Low Profile
Part Number	SSTS	SET / SETS	SLT / SLTS
Shape			
Page	P.606	P.607	P.605
Materials	SUSXM7	SWCH SUSXM7	SAE1022 SUSXM7
Characteristics	High Tightening Torque Space Optimization	High Tightening Torque Space Optimization	High Tightening Torque Space Optimization
Size	M2 - M8	M2 - M6	M2 - M6

Properties of the Hexalobular Socket*

• Excellent Transmission Efficiency of Tightening Torque

Since the hexalobular socket transmits the force of the tool at 15 degrees, the tightening torque is transmitted more efficiently. **Diagram1**

Since a hexagonal socket transmits the force of the tool at 60 degrees, the force of the tightening torque is spread outward, which generates loss. **Diagram 2**

• Reducing the Risk of Breakage of Tools and Screw Heads

With hexalobular sockets, the surface of the tool makes contact. This means the stress is not concentrated, which reduces the risk of breakage of tools and screw heads.

With hexagonal sockets, the angled portion of the tool only makes contact, which increases the tightening torque.

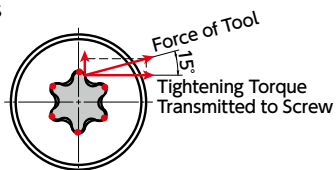


Diagram 1 Hexalobular Socket

This concentrates the stress on the angle portion of the tool and may break the tool or the hexagonal socket of the screw head.

• No Cam Out

With cross recessed screws, the tool such as a screwdriver may rise up unless it press down the screw when tightening. This phenomenon is called as cam out. If cam out occurs, the engagement of the cross recess and tool is reduced, which causes damage to tools and screw heads.

With hexalobular sockets, cam outs do not occur, which can make tightening safe and reliable.

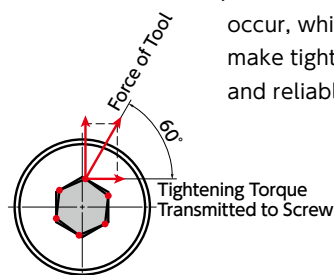


Diagram 2 Hexagonal Socket

*The hexalobular shape is prescribed by JIS B 1015: 2008 (ISO 10664:2005) "Hexalobular internal driving feature for bolts and screws".

SNPXS

Hexalobular Socket Pan Head Machine Screws

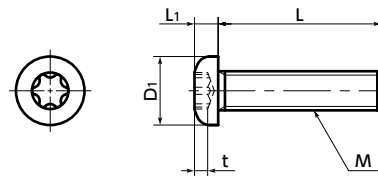
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WEB Selection Tool

WEB CAD Download

SUS Stainless steel



• Part number specification

SNPXS-M5 - 20

1 2

Order in number of packs.

Also sold separately from 1 piece up. → P.809



- The shape of hexalobular sockets*1 makes them more resistant to high tightening torques than cross recesses. → P.723
- Less likely to damage the head caused by tightening. Therefore, able to make tightening safe and reliable.
- Screws cannot be installed or removed by using standard tools such as a hex key or screwdriver. For prevention of disassembly, theft, and tampering of equipment and facilities.*2
- Install and remove by using **SKX** Specialty Hexalobular Key. → P.726
- *1: The hexalobular shape is prescribed by JIS B 1015 : 2008 (ISO 10664 : 2005) "Hexalobular internal driving feature for bolts and screws".
- *2: Tools for hexalobular sockets are commercially available. For tamper resistance, consider to select tamper resistance screws. → P.713

• Application

Prevention of damage to screw heads and reliable tightening

• Material/Finish

RoHS2 Compliant

	SNPXS
Material	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

Unit : mm

Part Number	M	L 										D1	L1	Applicable wrench	Hexalobular Socket No.	t	Mass (g)
SNPXS-M2	M2	4	5	6	8	10	12					4	1.6	SKX-6	6	0.77	0.14 - 0.29
SNPXS-M2.5	M2.5	4	5	6	8	10	12	16				5	2.1	SKX-8	8	1.04	0.27 - 0.65
SNPXS-M3	M3		5	6	8	10	12	16	20			5.6	2.4	SKX-10	10	1.27	0.49 - 1.1
SNPXS-M4	M4			6	8	10	12	16	20	25		8	3.1	SKX-20	20	1.66	1 - 2.5
SNPXS-M5	M5				8	10	12	16	20	25	30	9.5	3.7	SKX-25	25	1.91	2.2 - 4.8
SNPXS-M6	M6					10	12	16	20	25	30	12	4.6	SKX-30	30	2.42	3.9 - 7.4

Part Number	Qty*1 per pack
SNPXS-M2	20
SNPXS-M2.5	20
SNPXS-M3	20
SNPXS-M4	20
SNPXS-M5	20
SNPXS-M6	20

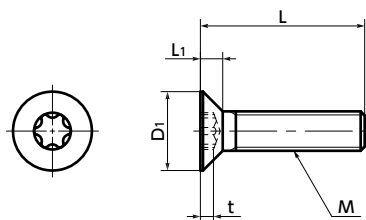
*1: Also sold separately from 1 piece up. → P.809

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge

SNFXS Hexalobular Socket Flat Head Machine Screws

WEB Selection Tool CAD Download SUS Stainless steel

e-nedzi.com®



● Part number specification

SNFXS-M5 - 20



Order in number of packs.
Also sold separately from 1 piece up. → P.809



- The shape of hexalobular sockets*1 makes them more resistant to high tightening torques than cross recesses. → P.723
 - This makes head damage caused by tightening less likely and can make tightening safe and reliable.
 - Screws cannot be installed or removed by using standard tools such as a hex key or screwdriver. For prevention of disassembly, theft, and tampering of equipment and facilities.*2
 - Install and remove by using **SKX** Specialty Hexalobular Key. → P.726
- *1 : The hexalobular shape is prescribed by JIS B 1015 : 2008 (ISO 10664 : 2005) "Hexalobular internal driving feature for bolts and screws".
- *2 : Tools for hexalobular sockets are commercially available. For tamper resistance, consider to select tamper resistance screws. → P.713

● Application

Prevention of damage to screw heads and reliable tightening

● Material/Finish



	SNFXS
Main Body	SUSXM7 (Equivalent to SUS304)
Strength Class	A2-50

Unit : mm																	
Part Number	M	L 										D1	L1	Applicable wrench	Hexalobular Socket No.	t	Mass (g)
SNFXS-M2	M2	4	5	6	8	10	12					3.8	1.2	SKX-6	6	0.64	0.14 - 0.29
SNFXS-M2.5	M2.5	4	5	6	8	10	12	16				4.7	1.5	SKX-8	8	0.79	0.27 - 0.65
SNFXS-M3	M3		5	6	8	10	12	16	20			5.5	1.65	SKX-10	10	0.83	0.49 - 1.1
SNFXS-M4	M4			6	8	10	12	16	20	25		8.4	2.7	SKX-20	20	1.53	1 - 2.5
SNFXS-M5	M5				8	10	12	16	20	25	30	9.3	2.7	SKX-25	25	1.51	2.2 - 4.8
SNFXS-M6	M6					10	12	16	20	25	30	11.3	3.3	SKX-30	30	1.78	3.9 - 7.4

Part Number	Qty*1 per pack
SNFXS-M2	20
SNFXS-M2.5	20
SNFXS-M3	20
SNFXS-M4	20
SNFXS-M5	20
SNFXS-M6	20

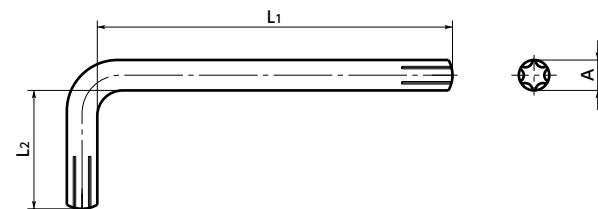
*1 : Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available

SKX Hexalobular Keys

WEB Selection Tool CAD Download

e-nedzi.com®



● Material/Finish



	SKX
Main Body	Alloyed Steel (Hardness 50 HRC or higher) Ferrosoferric Oxide Coating



- Special keys for hexalobular socket head screws allow you to tighten at higher torques more safely. → P.723

*The hexalobular shape is prescribed by JIS B 1015 : 2008 (ISO 10664 : 2005) "Hexalobular internal driving feature for bolts and screws".

● Application

Installing and removing hexalobular socket head screws

Part Number	Hexalobular Socket No.	A	L1	L2	Mass (g)	Qty per pack
SKX-4	4	1.26	45	13	0.56	1
SKX-5	5	1.42	47	14	0.75	1
SKX-6	6	1.66	42	16	0.98	1
SKX-8	8	2.32	48	16	2.1	1
SKX-10	10	2.74	51	16	3.1	1
SKX-15	15	3.28	54	18	4.8	1
SKX-20	20	3.86	57	19	6.9	1
SKX-25	25	4.43	63	20	10	1
SKX-30	30	5.52	70	25	18	1
SKX-40	40	6.65	76	26	28	1
SKX-45	45	7.82	89	32	45	1

● For Use Hexalobular Socket Head Screws

Hexalobular Keys	Applicable Hexalobular Socket Head Screws								
	SSTS (⇒ P.606)	SET • SETS (⇒ P.607)		SLT • SLTS (⇒ P.605)		SLEC (⇒ P.703)		SNPXS (⇒ P.724)	SNFXS (⇒ P.725)
SKX-4			SETS-M2						
SKX-5	SSTS-M2		SETS-M2.6						
SKX-6	SSTS-M2.5	SET-M3	SETS-M3		SLTS-M2			SNPXS-M2	SNFXS-M2
SKX-8	SSTS-M3	SET-M4	SETS-M4		SLTS-M2.5			SNPXS-M2.5	SNFXS-M2.5
SKX-10	SSTS-M4	SET-M5	SETS-M5	SLT-M3-TZB	SLTS-M3	SLEC-M3-A	SLEC-M3-B	SNPXS-M3	SNFXS-M3
SKX-15	SSTS-M5					SLEC-M4-A	SLEC-M4-B		
SKX-20	SSTS-M6		SETS-M6	SLT-M4-TZB	SLTS-M4	SLEC-M5-A	SLEC-M5-B	SNPXS-M4	SNFXS-M4
SKX-25	SSTS-M8			SLT-M5-TZB	SLTS-M5	SLEC-M6-A	SLEC-M6-B	SNPXS-M5	SNFXS-M5
SKX-30				SLT-M6-TZB	SLTS-M6	SLEC-M8-A	SLEC-M8-B	SNPXS-M6	SNFXS-M6
SKX-40						SLEC-M10-A			
SKX-45						SLEC-M12-A			

● Part number specification

SKX-25



1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Not Available	Not Available	Not Available	Not Available

Plugs

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● Plugs

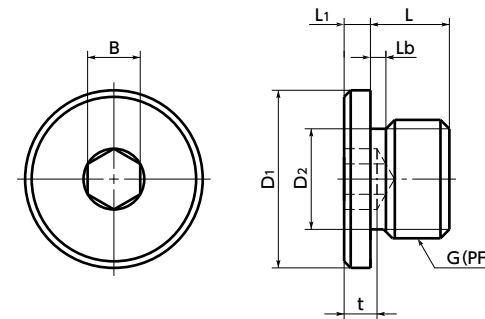
	Hex Socket Flange Head Screw Plugs		Parallel Screw Plugs	Hexagon Socket Pipe Plugs
Part Number	SFF / SFFS	SFM / SFMS	SFP	SFT / SFTS
Shape				
Page	P.728	P.729	P.731	P.732
Materials	SCM435 SUS304	SCM435 SUS304	S45C	S45C SUSXM7
Characteristics	Parallel Pipe Thread	Metric Fine Screw Thread Parallel Pipe Thread	Metric Fine Screw Thread	Sunk Head Plug With Hex Socket
Size	G1/8 - G1	M8 - M27, G1/8 - G1/2	M12 - M36	R1/16 - R1/2

SFF/SFFS Hex Socket Flange Head Screw Plugs - Steel

e-nedzi.com®



WEB Selection Tool CAD Download SUS Stainless steel



- Screw plugs for high-power hydraulic applications.
- **SFF** is made of steel and can be used in highpressure applications up to 49 MPa.

● Application

Hydraulic equipment, pneumatic machinery and equipment, and general industrial machines

● Material/Finish

RoHS2 Compliant

	SFF	SFFS
Main Body	SCM435 (Hardness 32 - 42 HRC) Ferrosoferric Oxide Coating (Black)	SUS304

● Part number specification

SFF-3



SFF Steel • Ferrosoferric Oxide Coating

Unit : mm

Part Number	G (PF) Nominal of Thread	L	D1	L1	D2	B	t	Lb	O-ring No.	Recommendation Torque (N・m)	Mass (g)	Qty per pack
SFF-1	G 1/8	10	16	4	8.2	5	3	2	P8	14.7	9	1
SFF-2	G 1/4	12	21	4	11.2	6	4	2.5	P11	29.4	17	1
SFF-3	G 3/8	12	24	4	14.2	8	5	2.5	P14	49	27	1
SFF-4	G 1/2	16	30	4	18.2	10	6	2.5	P18	78.5	54	1
SFF-6	G 3/4	16	40	5	23.7	12	7	3.5	P24	147	90	1
SFF-8	G1	21	45	5	29.2	17	10	3.5	P29	245	177	1

SFFS Stainless Steel

Unit : mm

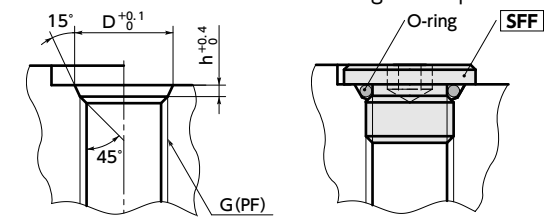
Part Number	G (PF) Nominal of Thread	L	D1	L1	D2	B	t	Lb	O-ring No.	Recommendation Torque (N・m)	Mass (g)	Qty per pack
SFFS-1	G 1/8	10	16	4	8.2	5	3	2	P8	7.4	9	1
SFFS-2	G 1/4	12	21	4	11.2	6	4	2.5	P11	14.7	17	1
SFFS-3	G 3/8	12	24	4	14.2	8	5	2.5	P14	24.5	27	1
SFFS-4	G 1/2	16	30	4	18.2	10	6	2.5	P18	39.3	54	1
SFFS-6	G 3/4	16	40	5	23.7	12	7	3.5	P24	73.5	90	1
SFFS-8	G1	21	45	5	29.2	17	10	3.5	P29	122.5	177	1

● Installation Dimensions

Unit : mm

G (PF)	D	h
G1/8	11.6	2
G1/4	15.6	2.5
G3/8	18.6	2.5
G1/2	22.6	2.5
G3/4	29.8	3.5
G1	35.8	3.5

● Usage example



1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available

NBK

WEB ▶ <https://www.nbk1560.com>

NBK

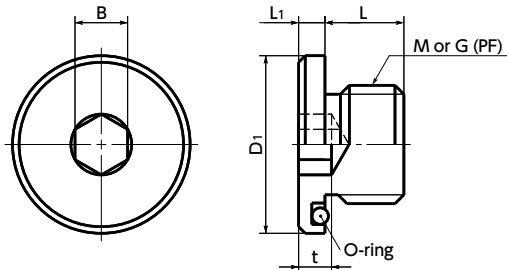
WEB ▶ <https://www.nbk1560.com>

728



SFM / SFMS Hexagon Socket Flange Head Screw Plugs

WEB Selection Tool WEB CAD Download SUS Stainless steel



- Because O-ring is provided, grooving is not required on the female screw side part material.
- Because this is a parallel thread, strain on the female screw side part material like tightened a taper thread does not occur. It is suitable for oil hydraulic equipment / pneumatic device that are often mounted and removed.
- For stainless steel **SFMS**, metric fine screw threads and parallel pipe threads are standardized.

Application

Oil hydraulic equipment / Pneumatic device / General industry machinery

Material/Finish



	SFM	SFMS
Main body	SCM435 (hardness: 32 - 42 HRC) Ferrosoferric Oxide Film (Black)	SUS304
O-ring	Nitrile rubber (Type 1 B of JIS B 2401)	Fluoro-rubber (Type 4 D of JIS B 2401)

SFM Main body : Made of steel / O-ring : Nitrile rubber

Unit : mm

Part Number	M	L	D1	L1	B	t	O-ring No.	Recommendation Torque (N·m)	Mass (g)	Qty per pack
SFM-M8	M8×1	7	16	4	5	3.5	P10	15.7	4	1
SFM-M10	M10×1	8	19.5	4	5	4	P12.5	19.6	7	1
SFM-M12	M12×1.5	12	21	4	6	5	P14	27.5	14	1
SFM-M14	M14×1.5	12	23	4	6	5	P16	39.2	19	1
SFM-M16	M16×1.5	12	25	4	8	6	P18	63.7	25	1
SFM-M18	M18×1.5	12	27	4	8	6	P20	78.5	32	1
SFM-M20	M20×1.5	14	32.5	5	10	6.5	P22.4	113	47	1
SFM-M22	M22×1.5	14	35	5	10	6.5	P25	137	57	1
SFM-M24	M24×1.5	14	38	5	12	7.5	P28	201	68	1
SFM-M27	M27×2	16	40	5	12	7.5	P30	245	94	1

SFMS Main body : Made of stainless steel / O-ring : Fluoro-rubber and metric fine screw threads

Unit : mm

Part Number	M	L	D1	L1	B	t	O-ring No.	Recommendation Torque (N·m)	Mass (g)	Qty per pack
SFMS-M8	M8×1	7	16	4	5	3.5	P10	10.9	4	1
SFMS-M10	M10×1	8	19.5	4	5	4	P12.5	13.7	7	1
SFMS-M12	M12×1.5	12	21	4	6	5	P14	19.2	14	1
SFMS-M14	M14×1.5	12	23	4	6	5	P16	27.4	19	1
SFMS-M16	M16×1.5	12	25	4	8	6	P18	44.5	25	1
SFMS-M18	M18×1.5	12	27	4	8	6	P20	54.9	32	1
SFMS-M20	M20×1.5	14	32.5	5	10	6.5	P22.4	78.9	47	1
SFMS-M22	M22×1.5	14	35	5	10	6.5	P25	96.1	57	1
SFMS-M24	M24×1.5	14	38	5	12	7.5	P28	141	68	1
SFMS-M27	M27×2	16	40	5	12	7.5	P30	172	94	1

SFMS Main body: Made of stainless steel / O-ring: Fluoro-rubber and parallel pipe threads

Unit : mm

Part Number	G (PF) Nominal of Thread	L	D1	L1	B	t	O-ring No.	Recommendation Torque (N·m)	Mass (g)	Qty per pack
SFMS-1	G ⅜	8	19.5	4	5	4	P12.5	13.3	10	1
SFMS-2	G ¼	12	23	4	6	5	P16	25.7	19	1
SFMS-3	G ⅝	12	27	4	8	6	P20	50.8	28	1
SFMS-4	G ½	14	35	5	10	6.5	P25	91.5	56	1

Part number specification

SFMS-M10



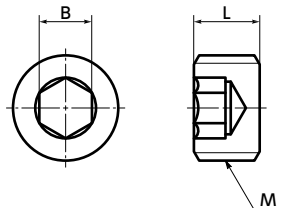
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Not Available	Not Available	Not Available	Not Available

SFP Hex Socket Head Parallel Screw Plugs

WEB Selection Tool

WEB CAD Download

e-nedzi.com®



- For applications such as compression spring holders and oil injection opening covers.

• Application

Spring holders and load adjusters, Hydraulic equipment, pneumatic machinery and equipment, and general industrial machines

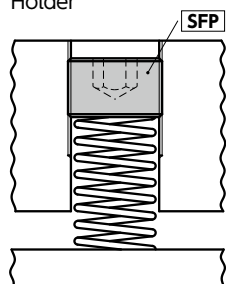
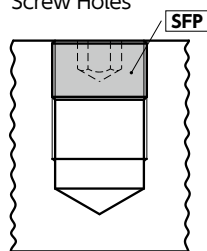
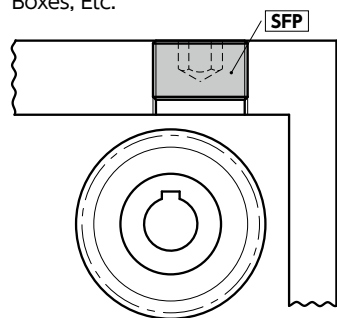
• Material/Finish

	SFP
Main Body	S45C (Hardness: 34 - 43 HRC) Ferrosoferric Oxide Film (Black)

Unit : mm

Part Number	M	L	B	Mass (g)	Qty per pack*1
SFP-M12	M12×1.5	10	6	5	10
SFP-M14	M14×1.5	10	6	8	10
SFP-M16	M16×1.5	10	8	10	10
SFP-M18	M18×1.5	10	10	12	5
SFP-M20	M20×1.5	12	10	20	5
SFP-M22	M22×1.5	12	12	23	5
SFP-M24	M24×1.5	12	14	27	5
SFP-M27	M27×1.5	12	14	37	5
SFP-M30	M30×1.5	12	17	44	5
SFP-M33	M33×1.5	12	17	55	5
SFP-M36	M36×1.5	18	17	107	1

*1 : Also sold separately from 1 piece up. ➔ P.809

• Usage example
Compression Spring Holder**Protection for Unused Screw Holes****Oil Injection Opening Cover in Gear Boxes, Etc.****• Part number specification****SFP-M16**

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Not Available	Not Available	Please feel free to contact us	Not Available

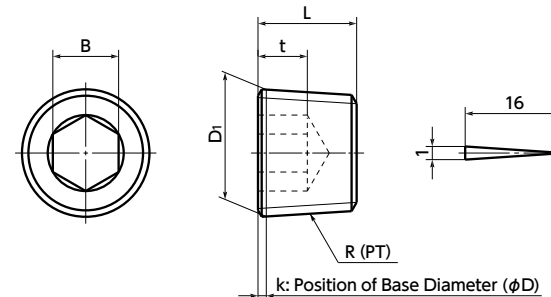
SFT/SFTS Hex Socket Pipe Plugs

WEB Selection Tool

WEB CAD Download

SUS Stainless steel

e-nedzi.com®



- **SFT-PS** and **SFTS-PS** are pre-coated types that do not require sealing tape or sealing agent.
- Excellent oil, gasoline, water, and heat resistance and strong sealing effect.

• Application

Hydraulic equipment, pneumatic machinery and equipment, and general industrial machines

• Material/Finish

	SFT	SFT-PS	SFTS	SFTS-PS
Main Body	S45C (Hardness: 32 - 42 HRC) Ferrosoferric Oxide Film (Black)	S45C (Hardness: 32 - 42 HRC) Ferrosoferric Oxide Film (Black)	SUSXM7 (Equivalent to SUS304)	SUSXM7 (Equivalent to SUS304)

SFT | SFT-PS Steel • Ferrosoferric Oxide Coating

Unit : mm

SFT No Seal	SFT-PS Pre-coat Seal	Common dimensions							Qty*1 per pack
Part Number	Part Number	R (PT) Nominal of Thread	D1	k	L	B	t	Mass (g)	
SFT-0.5	SFT-0.5-PS	R 1/16	7.723	0.45	6	4	3	2	10
SFT-1	SFT-1-PS	R 1/8	9.728	0.45	7	5	3.5	3	10
SFT-2	SFT-2-PS	R 1/4	13.157	0.7	8.9	6	4.5	6	10
SFT-3	SFT-3-PS	R 3/8	16.662	0.7	10	8	5	11	10
SFT-4	SFT-4-PS	R 1/2	20.955	0.9	12	10	6	21	5

*1 : Also sold separately from 1 piece up. ➔ P.809

SFTS | SFTS-PS Stainless Steel

Unit : mm

SFTS No Seal	SFTS-PS Pre-coat Seal	Common dimensions							Qty per pack
Part Number	Part Number	R (PT) Nominal of Thread	D1	k	L	B	t	Mass (g)	
SFTS-0.5	SFTS-0.5-PS	R 1/16	7.723	0.45	6	4	3	2	1
SFTS-1	SFTS-1-PS	R 1/8	9.728	0.45	7	5	3.5	3	1
SFTS-2	SFTS-2-PS	R 1/4	13.157	0.7	8.9	6	4.5	6	1
SFTS-3	SFTS-3-PS	R 3/8	16.662	0.7	10	8	5	11	1
SFTS-4	SFTS-4-PS	R 1/2	20.955	0.9	12	10	6	21	1

• Part number specification**SFT-3-PS**

Order in number of packs.
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available



• VESPEL (Non-thermoplastic Polyimide Resin)

	Socket Head Cap Screws	Hex Head Screws	Socket Head Cap Screws	Hex Head Screws
Part Number	SPD-C	SPD-H	SPDC-C	SPDC-H
Shape				
Page	P.739	P.740	P.741	P.742
Materials	VESPEL SP-1	VESPEL SP-1	VESPEL SCP-5000	VESPEL SCP-5000
Characteristics	Heat Resistance • Chemical Resistance • Low Outgas	Heat Resistance • Chemical Resistance • Low Outgas	Heat Resistance • Chemical Resistance • Low Outgas	Heat Resistance • Chemical Resistance • Low Outgas
Size	M3 - M8	M3 - M8	M3 - M8	M3 - M8

• Conductive PEEK

	Socket Head Cap Screws
Part Number	SPEC-C
Shape	
Page	P.743
Materials	Conductive PEEK
Characteristics	Conductivity • Chemical Resistance • Heat Resistance
Size	M4 - M6

• PEEK (Polyetheretherketone)

	Socket Head Cap Screws	Socket Head Cap Screws	Socket Hex Head Screws with Low Profile	Micro Screws		Cross Recessed Pan Head Machine Screws
Part Number	SPE-C	SPE-FT	SPE-LC	SPE-MC	SPE-MF	SPE-P
Shape						
Page	P.744	P.745	P.746	P.747	P.748	P.749
Materials	PEEK	PEEK	PEEK	PEEK	PEEK	PEEK
Characteristics	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance • Full Thread	Chemical Resistance • Small Space • Heat Resistance	Chemical Resistance • Heat Resistance For precision equipment	Chemical Resistance • Heat Resistance For precision equipment	Chemical Resistance • Heat Resistance
Size	M3 - M8	M3 - M6	M3 - M6	M1.2 - M1.6	M1.2 - M1.6	M1.7 - M8

	Cross Recessed Flat Head Machine Screws	Hex Socket Set Screws	Hex Head Screws	Hex Nuts • Washers	Screw Plugs
Part Number	SPE-F	SPE-T	SPE-H	SPE-N/SPE-W	SPE-R
Shape					
Page	P.750	P.751	P.752	P.753	P.754
Materials	PEEK	PEEK	PEEK	PEEK	PEEK
Characteristics	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance	Chemical Resistance • Heat Resistance
Size	M2 - M8	M3 - M8	M4 - M10	M2 - M10	R1/8 - R3/8

• PPS (Polyphenylene Sulfide)

	Socket Head Cap Screws	Socket Hex Head Screws with Low Profile	Cross Recessed Pan Head Machine Screws	Cross Recessed Flat Head Machine Screws	Hex Head Screws	Hex Nuts • Washers
Part Number	SPS-C	SPS-LC	SPS-P	SPS-F	SPS-H	SPS-N/SPS-W
Shape						
Page	P.755	P.756	P.757	P.758	P.759	P.760
Materials	PPS	PPS	PPS	PPS	PPS	PPS
Characteristics	Heat Resistance • Chemical Resistance	Small Space • Chemical Resistance • Heat Resistance	Heat Resistance • Chemical Resistance	Heat Resistance • Chemical Resistance	Heat Resistance • Chemical Resistance	Heat Resistance • Chemical Resistance
Size	M3 - M8	M3 - M6	M2 - M6	M3 - M6	M4 - M12	M2 - M12

• RENY (50% Glass Fiber Reinforced Polyamide MXD6)

	Socket Head Cap Screws	Socket Hex Head Screws with Low Profile	Micro Screws		Cross Recessed Pan Head Machine Screws	Cross Recessed Flat Head Machine Screws
Part Number	SPA-C	SPA-LC	SPA-MC	SPA-MF	SPA-P	SPA-F
Shape						
Page	P.761	P.762	P.763	P.764	P.765	P.766
Materials	RENY	RENY	RENY	RENY	RENY	RENY
Characteristics	High Strength	Small Space • High Strength	High Strength For precision equipment	High Strength For precision equipment	High Strength	High Strength
Size	M3 - M8	M3 - M6	M1.2 - M1.6	M1.2 - M1.6	M1.7 - M6	M2 - M8

	Hex Head Screws	Hex Nuts • Washers
Part Number	SPA-H	SPA-N/SPA-W
Shape		
Page	P.767	P.768
Materials	RENY	RENY
Characteristics	High Strength	High Strength
Size	M5 - M10	M2 - M16

• PTFE (Tetrafluoroethylene: Teflon)

	Hex Head Screws	Hex Nuts • Washers
Part Number	SPT-H	SPT-N/SPT-W
Shape		
Page	P.769	P.770
Materials	PTFE (Teflon)	PTFE (Teflon)
Characteristics	Chemical Resistance • Heat Resistance • Electrical Insulation	Chemical Resistance • Heat Resistance • Electrical Insulation
Size	M3 - M12	M3 - M12

• PVDF (Polyvinylidene Fluoride)

	Hex Head Screws	Socket Head Cap Screws
Part Number	SPV-H	SPV-C
Shape		
Page	P.771	P.772
Materials	PVDF	PVDF
Characteristics	Chemical Resistance	Chemical Resistance
Size	M5 - M8	M5 - M6

• PP (Polypropylene)

	Hex Head Screws	Hex Nuts • Washers
Part Number	SPP-H	SPP-N/SPP-W
Shape		
Page	P.773	P.774
Materials	PP	PP
Characteristics	Chemical Resistance	Chemical Resistance
Size	M4 - M10	M4 - M10

• H-PVC (Hard Polyvinyl Chloride)

	Hex Head Screws	Hex Nuts • Washers
Part Number	SPVC-H	SPVC-N/SPVC-W
Shape		
Page	P.775	P.776
Materials	H-PVC	H-PVC
Characteristics	Chemical Resistance	Chemical Resistance
Size	M4 - M6	M4 - M6

• PC (Polycarbonate)

	Cross Recessed Pan Head Machine Screws	Hex Nuts • Washers
Part Number	SPC-P	SPC-N/SPC-W
Shape		
Page	P.777	P.778
Materials	PC	PC
Characteristics	Shock Resistance • Weather Resistance	Shock Resistance • Weather Resistance
Size	M1.7 - M6	M2 - M6



Properties of Plastic Screws

The Abbreviations, Names, and Heat Resistance Temperature of Plastics

Abbreviation	Name	Heat Resistance Temperature
VESPEL*	SP-1	288°C
	SCP-5000	350°C
PEEK	Polyetheretherketone	180°C
PTFE	Tetrafluoroethylene	260°C
PPS	Polyphenylene Sulfide	200°C
H-PVC	Hard Polyvinyl Chloride	35°C
RENY*	RENY	105°C
PC	Polycarbonate	115°C
PP	Polypropylene	65°C
PVDF	Polyvinylidene Fluoride	150°C

•The heat resistance temperatures in the chart are for the plastic material. The max. operating temperature of the product changes with performance conditions such as tightening torque.

*VESPEL is a registered trademark of DuPont.

RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.

Selection Criteria for Plastic Screws

Strength	RENY>PPS>VESPEL (SCP-5000)>PEEK>VESPEL (SP-1)>PC>PVDF>PP>H-PVC>PTFE	From tensile strength data
Heat Resistance	VESPEL (SCP-5000)>VESPEL (SP-1)>PTFE>PPS>PEEK>PVDF>PC>RENY>PP>H-PVC	From heat resistance temperature
Chemical Resistance	PTFE>PVDF>H-PVC • PP>PEEK>PPS>PC>VESPEL (SCP-5000)>VESPEL (SP-1)>RENY	From chemical resistance data

Physical Properties

Properties	Test Method	Unit	VESPEL SP-1	VESPEL SCP-5000	PEEK	PTFE	PPS	RENY	PC	PP	PVDF
Tensile Strength	D638	N/mm ²	86	160	97	24	185	285	62	36	57
Tensile Elongation	D638	%	7.5	7	65	200 - 400	1.9	2.1	110	500	70 - 80
Flexural Strength	D790	N/mm ²	110	247	156	—	255	380	88.2	—	75
Flexural Modulus	D790	GPa	3.1	5.7	4.1	0.56	13.2	17.4	2.3	1.5	1.99
Izot Impact (with Notch)	D256	J/m	42.7	—	94	160	100	110	880	30	160 - 375
Rockwell Hardness	D785	R and M Scales	M90	M100	M99	—	M100	M111	R120	R100	R93 - 116
Deflection Temp. under Load (1.82 MPa)	D648	°C	360	350	152	—	260	234	135	120	80
Flame Class	UL94	—	V-0	V-0	V-0	V-0	V-0	HB	V-2	HB	V-0
Dielectric Constant (10 ⁶ Hz)	D150	—	3.6	3.3	3.3	<2.1	4.6	4.0	2.9	—	10
Dielectric Loss Tangent (10 ⁶ Hz)	D150	—	0.0034	0.001	0.003	<0.0002	0.002	0.009	0.009	—	0.015
Volume Resistivity (×10 ¹⁴)	D257	Ω·m	1 - 10	1	4.9	>100	1.0	1.3	4.0	1.0	0.1 - 1
Dielectric Breakdown Strength	D149	MV/m	22	—	17	19	12	32	16	31	300
Arc Resistance	D495	sec	—	—	23	>300	120	129	120	—	—
Specific Gravity	D792	—	1.43	1.43	1.30	2.14 - 2.2	1.66	1.65	1.20	0.91	1.79
Water Absorption (in 23 °C Water for 24 h)	D570	%	0.240	0.080	0.500	0.010	0.015	0.140	0.150	0.010	0.030
Glass Fiber Content	—	%	—	—	—	—	40	50	—	—	—

•Values in chart are for reference only. They are not guaranteed values.

Physical Properties (H-PVC)

Properties	Test Method (JIS)	Unit	H-PVC
Tensile Strength	JISK7162	Test Speed : 10mm/min	N/mm ² 38.8
Tensile Elongation	JISK7162	Test Speed : 10mm/min	% 188
Hardness	JISK7215	10 seconds later (2 mm thickness 3 sheets overlaid)	Hs 97
Specific Gravity	JISK7112	Method A	— 1.32

•Values in chart are for reference only. They are not guaranteed values.



Precautions for Plastic Screws

- While these plastics screws comply with JIS and ISO standards, there are some areas irrelevant to these screws as their manufacturing methods differ from that of metal screws.
- The values in the mechanical properties chart are reference values.
- Use a torque driver or torque wrench when tightening.
- Always carry out tests under performance conditions similar to actual conditions in advance.
- The color of machine screws, bolts, nuts, and washers may differ by lot.

Chemical Resistance

Chemical Name	VESPEL SP-1	VESPEL SCP-5000	PEEK	PTFE	PPS	H-PVC	RENY	PC	PP	PVDF
10% Hydrochloric Acid	O	O	O	O	O	O	×	O	O	O
10% Sulfuric Acid	O	O	O	O	O	O	×	O	O	O
50% Sulfuric Acid	×	△	×	O	×	O	×	△	—	O
10% Nitric Acid	△	△	O	O	O	O	×	O	O	O
50% Nitric Acid	×	×	×	O	×	△	×	△	—	O
10% Hydrofluoric Acid	△	△	—	O	△	△	×	O	O	O
50% Hydrofluoric Acid	×	×	×	O	×	△	×	△	△	△
Phosphoric Acid	—	—	O	O	△	O	×	O	O	O
Formic Acid	△	△	△	O	O	△	×	O	O	O
Phosphoric Acid	O	O	O	O	O	O	×	O	O	O
Citric Acid	O	O	O	O	O	O	△	O	O	O
Chromic Acid	—	—	O	O	△	O	×	O	O	O
Boric Acid	O	O	O	O	O	O	△	O	O	O
Methyl Alcohol	△	△	O	O	O	O	—	△	—	O
Glycol	O	O	O	O	O	—	—	O	—	—
Ammonia	×	△	O	O	O	O	O	×	O	O
10% Sodium Hydroxide	×	△	O	O	O	O	O	—	O	O
10% Potassium Hydroxide	×	△	O	O	△	O	O	×	O	O
Calcium Hydroxide	—	—	O	O	△	O	×	O	O	O
Water	O	O	O	O	O	O	△	O	O	O
Hydrogen Sulfide (Gas)	—	—	O	O	O	—	O	O	O	O
Sulfur Dioxide	—	—	O	O	△	—	O	O	O	—
Ammonium Nitrate	—	—	O	O	O	—	O	O	O	O
Sodium Nitrate	—	—	O	O	O	—	O	×	O	O
Calcium Carbonate	—	—	O	O	O	—	O	×	O	O
Calcium Chloride	—	—	O	O	O	O	O	O	O	O
Magnesium Chloride	—	—	O	O	O	O	O	O	O	O
Magnesium Sulfate	—	—	O	O	O	—	O	O	O	O
Zinc Sulfate	—	—	O	O	O	—	O	O	O	O
Hydrogen peroxide	△	△	O	O	△	O	△	O	O	O

OUsable

△Usable under certain conditions

×Non-usable

•A test piece was used to acquire the test data at room temperature (23°C). Chemical resistance changes with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.

Torsional Torque of Plastic Screws (N·m)

	VESPEL SP-1	VESPEL SCP-5000	PEEK	PTFE	PPS	H-PVC	RENY	PC	PP	PVDF
M1.7	—	—	0.02	—	—	—	0.03	0.02	—	—
M2	—	—	0.06	—	0.08	—	0.1	0.05	—	—
M2.6	—	—	0.16	—	—	—	0.24	—	—	—
M3	0.12	0.21	0.3	0.02	0.36	—	0.39	0.22	—	—
M4	0.27	0.47	0.64	0.03	0.71	0.18	0.79	0.54	0.23	—
M5	0.54	0.98	1.28	0.08	1.42	0.41	1.77	1.03	0.51	0.64
M6	0.95	1.65	2.26	0.14	2.11	0.65	2.94	1.37	0.8	0.88
M8	2.26	4.04	5.98	0.24	5.29	—	7.85	—	2.2	2.65
M10	—	—	—	0.69	11.8	—	12.75	—	3.4	—
M12	—	—	—	1.54	20.6	—	—	—	—	—

•Values in chart are for reference only. They are not guaranteed values. The recommended torque is 50% of the value in the chart. The value differs depending on the head shape of the screw. See the product page for details.



DuPont™ VESPEL Screws for Extreme Heat Resistance and Cleanliness

VESPEL is non-thermoplastic super-engineering plastic formed from powder of wholly aromatic polyimide resin developed by DuPont using advanced technology.

Among super-engineering plastics, it has top-level heat resistance. It is used in wide range of applications, starting with machine and electrical machine parts.

Characteristics

• Extreme Heat Resistance

Continuous Max. Operating Temperature:
288 °C (SP-1), 350 °C (SCP-5000)
VESPEL is formed from a polyimide that has excellent heat resistance. VESPEL can be used continually under high temperatures without reaching a softening point, such as its melting point or glass transition point.

• Low outgas

Outgas quantity is extremely low under high temperatures.
No bubbles blend in thanks to the powder compression molding method.

VESPEL Screw Types

• Standard grade SP-1 and high grade SCP-5000 screws are available as standard.

SP-1

This material has excellent heat resistance and electrical and thermal insulation properties. It is used widely in industrial fields. Due to its excellent plasma resistance and low outgas characteristics, it is widely used for peripheral parts for FPD production equipment and semiconductor devices.



[SPDC-C] VESPEL Socket Head Cap Screws
(Grade: SP-1) → P.739



[SPDC-H] High-grade VESPEL Hex Head Screws
(Grade: SP-1) → P.740



• Chemical Resistance

VESPEL is resistant to various chemicals.

• Plasma Resistance

• Radiation Hardness

• Abrasion Resistance

SCP-5000

This material has better strength characteristics, heat resistance, chemical resistance, and dimensional stability than SP-1. In addition to FPD production equipment and semiconductor devices, this material is also used in the fields of air and spacecraft.



[SPDC-C] High-grade VESPEL Socket Head Cap Screws
(Grade: SCP-5000) → P.741



[SPDC-H] High-grade VESPEL Hex Head Screws
(Grade: SCP-5000) → P.742

Properties of VESPEL by DuPont™

• Physical Properties

Properties	Test Method	Unit	VESPEL SP-1	VESPEL SCP-5000
Tensile Strength	D1708	N/mm ²	86	160
Tensile Elongation	D1708	%	7.5	7
Flexural Strength	D790	N/mm ²	110	247
Flexural Modulus	D790	GPa	3.1	5.7
Izot Impact (with Notch)	D256	J/m	42.7	—
Rockwell Hardness	D785	R and M Scales	M90	M100
Deflection Temp. under Load (1.82 MPa)	D648	°C	360	350
Flame Class	UL94	—	V-0	V-0
Dielectric Constant (10 ⁶ Hz)	D150	—	3.6	3.3
Dielectric Loss Tangent (10 ⁶ Hz)	D150	—	0.0034	0.001
Volume Resistivity (× 10 ¹⁴)	D257	Ω·m	1 - 10	1
Dielectric Breakdown Strength	D149	MV/m	22	—
Specific Gravity	D792	—	1.43	1.43
Water Absorption (in 23 °C Water for 24 h)	D570	%	0.24	0.08
Glass Fiber Content	—	%	—	—

• Values in chart are for reference only. They are not guaranteed values.

• Chemical Resistance

Chemical Name	VESPEL SP-1	VESPEL SCP-5000
10% Hydrochloric Acid	○	○
10% Sulfuric Acid	○	○
50% Sulfuric Acid	×	△
10% Nitric Acid	△	△
50% Nitric Acid	×	×
10% Hydrofluoric Acid	△	△
50% Hydrofluoric Acid	×	×
Formic Acid	△	△
Phosphoric Acid	○	○
Citric Acid	○	○
Boric Acid	○	○
Methyl Alcohol	△	△
Glycol	○	○
Ammonia	×	△
10% Sodium Hydroxide	×	△
10% Potassium Hydroxide	×	△
Water	○	○
Hydrogen Peroxide	△	△

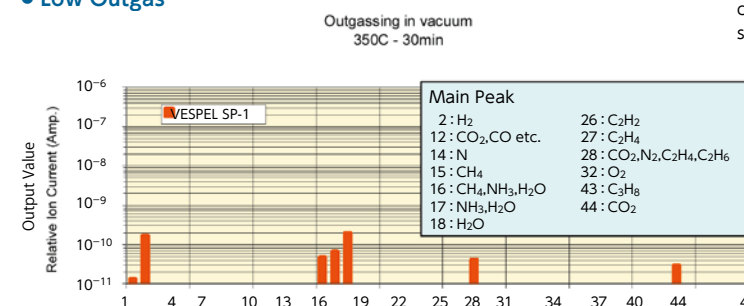
○ Usable

△ Usable under certain conditions

× Non-usable

• A test piece was used to acquire the test data at room temperature (23 °C). Chemical resistance changes with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.

• Low Outgas



Instrument : Quadrupole Mass Spectrometer (QMS)

Heating temperature : 350 °C

Heating time : 30 minutes

• Values in graph are for reference only. They are not guaranteed values.

Also, screws with special sizes including nominal and length are available.

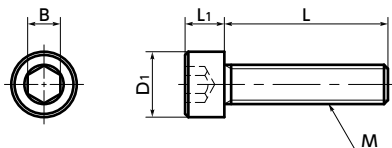


VESPEL is a registered trademark of DuPont.

SPD-C Plastic Screw - Socket Head Cap Screws - VESPEL (Grade : SP - 1)

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Heat-resistance Chemical-proof

e-nedzi.com



● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

● Material/Finish



	SPD-C
Main body	VESPEL SP-1 (Non-thermoplastic Polyimide Resin)
Heat Resistance Temperature*1	288°C

● VESPEL is a registered trademark of DuPont.

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- VESPEL SP-1 is a non-thermoplastic super-engineering plastic with excellent physical and chemical properties.
- Properties of VESPEL SP-1 ➡ P.738
- It does not reach a softening point, such as its melting point or glass transition point, even under high temperatures and can be used continually at 288°C.
- The screws have excellent chemical resistance, plasma resistance, radiation hardness, and abrasion resistance.
- Thanks to the powder compression molding method, no bubbles blend in and outgas quantity is extremely low. ➡ P.738
- Cleanroom wash and cleanroom packing are completed. ➡ P.807

Unit : mm

Part Number	M	1	L	2						D1	L1	B	Torsional*1 Torque (N·m)	Mass (g)
SPD-M3-C	M3	6	8	10	12	16				5.5	3	2.5	0.12	0.13 - 0.21
SPD-M4-C	M4	6	8	10	12	16	20	25		7	4	3	0.27	0.28 - 0.58
SPD-M5-C	M5		8	10	12	16	20	25	30	8.5	5	4	0.54	0.45 - 1
SPD-M6-C	M6			10	12	16	20	25	30	10	6	5	0.95	0.86 - 2
SPD-M8-C	M8			10	12	16	20	25	30	13	8	6	2.26	1.9 - 3.8

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack
SPD-M3-C	1
SPD-M4-C	1
SPD-M5-C	1
SPD-M6-C	1
SPD-M8-C	1

● Related Products

SPDC VESPEL SCP-5000 Hex socket head screw, which has a continuous duty temperature of 350 °C is available.
➡ P.741



● Part number specification

SPD - M5 - 20 - C

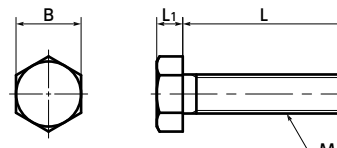
Product Code 1 2 Product Code

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

SPD-H Plastic Screw - Hex Head Screws - VESPEL (Grade : SP - 1)

WEB Selection Tool WEB CAD Download Cleanroom wash & packaging Heat-resistance Chemical-proof

e-nedzi.com



● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

● Material/Finish



	SPD-H
Main Body	VESPEL SP-1 (Non-thermoplastic Polyimide Resin)
Heat Resistance Temperature*1	288°C

● VESPEL is a registered trademark of DuPont.

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- VESPEL SP-1 is a non-thermoplastic super-engineering plastic with excellent physical and chemical properties.
- Properties of VESPEL SP-1 ➡ P.738
- It does not reach a softening point, such as its melting point or glass transition point, even under high temperatures and can be used continually at 288°C.
- The screws have excellent chemical resistance, plasma resistance, radiation hardness, and abrasion resistance.
- Thanks to the powder compression molding method, no bubbles blend in and outgas quantity is extremely low. ➡ P.738
- Cleanroom wash and cleanroom packing are completed. ➡ P.807

Unit : mm

Part Number	M	1	L	2						B	L1	Torsional*1 Torque (N·m)	Mass (g)
SPD-M3-H	M3	6	8	10	12	16				5.5	2	0.12	0.12 - 0.21
SPD-M4-H	M4	6	8	10	12	16	20	25		7	2.8	0.27	0.25 - 0.53
SPD-M5-H	M5		8	10	12	16	20	25	30	8	3.5	0.54	0.46 - 0.97
SPD-M6-H	M6			10	12	16	20	25	30	10	4	0.95	0.82 - 1.8
SPD-M8-H	M8			10	12	16	20	25	30	13	5.3	2.26	1.7 - 3.5

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack
SPD-M3-H	1
SPD-M4-H	1
SPD-M5-H	1
SPD-M6-H	1
SPD-M8-H	1

● Related Products

SPDC VESPEL SCP-5000 Hex head screw, which has a continuous duty temperature of 350 °C is available.
➡ P.742



● Part number specification

SPD - M5 - 20 - H

Product Code 1 2 Product Code

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

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SPDC-C Plastic Screw - Socket Head Cap Screws - VESPEL (Grade : SCP - 5000)

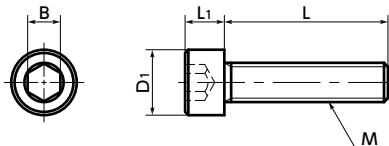
 Selection Tool

 CAD Download

 Cleanroom wash & packaging

 Heat-resistance

 Chemical-proof



● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

● Material/Finish

 RoHS2 Compliant

	SPDC-C
Main body	VESPEL SCP-5000 (Non-thermoplastic Polyimide Resin)
Heat Resistance Temperature*1	350°C

● VESPEL is a registered trademark of DuPont.

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- VESPEL SP-1 is a non-thermoplastic super-engineering plastic with excellent physical and chemical properties.
- Properties of VESPEL SP-1 ➡ P.738
- This material maintains high strength and flexibility even under high temperatures and does not soften up to 350°C. Due to its stable and long-term heat resistance, it has a continuous duty temperature of 350°C.
- The screws have excellent chemical resistance, plasma resistance, radiation hardness, and abrasion resistance.
- Thanks to the powder compression molding method, no bubbles blend in and outgas quantity is extremely low. ➡ P.738
- Cleanroom wash and cleanroom packing are completed. ➡ P.807

Unit : mm														
Part Number	M	1	L							D1	L1	B	Torsional*1 Torque (N・m)	Mass (g)
SPDC-M3-C	M3	6	8	10	12	16				5.5	3	2.5	0.21	0.13 - 0.21
SPDC-M4-C	M4	6	8	10	12	16	20	25		7	4	3	0.47	0.28 - 0.58
SPDC-M5-C	M5		8	10	12	16	20	25	30	8.5	5	4	0.98	0.45 - 1
SPDC-M6-C	M6			10	12	16	20	25	30	10	6	5	1.65	0.86 - 2
SPDC-M8-C	M8			10	12	16	20	25	30	13	8	6	4.04	1.9 - 3.8

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack
SPDC-M3-C	1
SPDC-M4-C	1
SPDC-M5-C	1
SPDC-M6-C	1
SPDC-M8-C	1

● Related Products

SPD-C VESPEL (Grade : SP-1)
Socket Head Cap Screw, which has a heat resistance temperature of 280 deg C is available.
➡ P.739



● Part number specification

SPDC - M5 - 20 - C
Product Code 1 2 Product Code

1 Individual Sales ➡ P.809	 Cleanroom Wash & Packaging ➡ P.807	 Screw Length Adjustment ➡ P.811	 Vibration Resistant ➡ P.810	 Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

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SPDC-H Plastic Screw - Hex Head Screws - VESPEL (Grade : SCP - 5000)

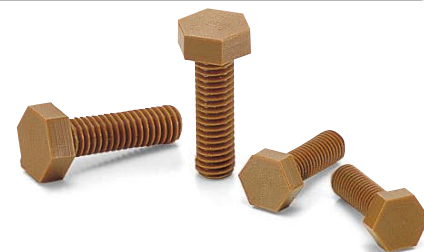
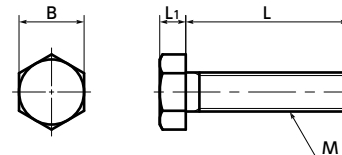
 Selection Tool

 CAD Download

 Cleanroom wash & packaging

 Heat-resistance

 Chemical-proof



● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

● Material/Finish

 RoHS2 Compliant

	SPDC-H
Main body	VESPEL SCP-5000 (Non-thermoplastic Polyimide Resin)
Heat Resistance Temperature*1	350°C

● VESPEL is a registered trademark of DuPont.

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- VESPEL SP-1 is a non-thermoplastic super-engineering plastic with excellent physical and chemical properties.
- Properties of VESPEL SP-1 ➡ P.738
- This material maintains high strength and flexibility even under high temperatures and does not soften up to 350°C. Due to its stable and long-term heat resistance, it has a continuous duty temperature of 350°C.
- The screws have excellent chemical resistance, plasma resistance, radiation hardness, and abrasion resistance.
- Thanks to the powder compression molding method, no bubbles blend in and outgas quantity is extremely low. ➡ P.738
- Cleanroom wash and cleanroom packing are completed. ➡ P.807

Unit : mm														
Part Number	M 	L 									B	L ₁	Torsional* ¹ Torque (N・m)	Mass (g)
SPDC-M3-H	M3	6	8	10	12	16					5.5	2	0.21	0.12 - 0.21
SPDC-M4-H	M4	6	8	10	12	16	20	25			7	2.8	0.47	0.25 - 0.53
SPDC-M5-H	M5		8	10	12	16	20	25	30		8	3.5	0.98	0.46 - 0.97
SPDC-M6-H	M6			10	12	16	20	25	30	40	10	4	1.65	0.82 - 1.8
SPDC-M8-H	M8			10	12	16	20	25	30	40	13	5.3	4.04	1.7 - 3.5

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack
SPDC-M3-H	1
SPDC-M4-H	1
SPDC-M5-H	1
SPDC-M6-H	1
SPDC-M8-H	1

● Related Products

SPD-H VESPEL (Grade : SP-1)
Socket Head Cap Screw, which has a heat resistance temperature of 280 deg C is available.
➡ P.740



● Part number specification

SPDC - M5 - 20 - H
Product Code 1 2 Product Code

1 Individual Sales ➡ P.809	 Cleanroom Wash & Packaging ➡ P.807	 Screw Length Adjustment ➡ P.811	 Vibration Resistant ➡ P.810	 Modification process for captive use ➡ P.806
1 unit in 1 bag	Cleanroom washed and packed	Available / Add'l charge	Not Available	Please feel free to contact us

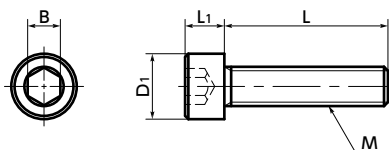
SPEC-C

Plastic Screw Conductive PEEK / Hex Socket Head Cap Screws **NEW**

e-nedzi.com®



WEB Selection Tool WEB CAD Download Electric conducting property Chemical-proof



● Material/Finish

RoHS2 Compliant

	SPEC-C
Main body	PEEK (Polyether ether ketone, carbon combined) (Black)
Heat resistance temperature*1	180°C

*1 : A value of plastic materials. The allowable operating temperature of the product varies depending on use conditions such as tightening torque.



- Conductive PEEK hex socket head cap screw.
- For applications of preventing electrostatic charge due to contact and friction.
- Mechanical property, chemical resistance, heat resistance, waterproof, friction resistance, shock resistance and fatigue resistance equivalent to those of PEEK material.
- Plastic screw properties and precautions for use → P.735

● Application

FPD production device / Semiconductor manufacturing device / Print board etching equipment / Metal surface treatment facility / Chemical plant / Transformer / Electric and electronic device



Precautions for Use

Because a cumulative pitch difference is created when PEEK screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.

Part Number	M	L	D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPEC-M4-C	M4	10 12 15	7	4	3	600	0.35	0.31 - 0.39
SPEC-M5-C	M5	10 12 15 20	8.5	5	4	1160	0.96	0.46 - 0.69
SPEC-M6-C	M6	15 20 25	10	6	5	1590	1.62	0.99 - 1.3

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack
SPEC-M4-C	1
SPEC-M5-C	1
SPEC-M6-C	1

● Part number specification

SPEC-M5-30-C

Product Code 1 2 Product Code

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

NBK

WEB ▶ <https://www.nbk1560.com>

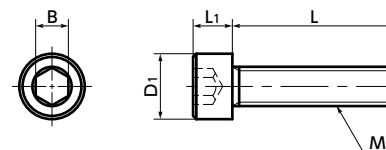
SPE-C

Plastic Screw - Hex Socket Head Cap Screws - PEEK

e-nedzi.com®



WEB Selection Tool WEB CAD Download Chemical-proof



● Material/Finish

RoHS2 Compliant

	SPE-C
Main body	PEEK/Light brown
Heat Resistance Temperature*1	180°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.



Precautions for Use

Because a cumulative pitch difference is created when PEEK screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.



- PEEK is a thermoplastic super - engineering plastic with excellent physical and chemical properties.
- These screws have excellent chemical resistance. They are mostly unaffected by chemicals excluding concentrate sulfuric acid, concentrate nitric acid, and concentrate hydrofluoric acid.
- These screws have excellent heat resistance, water resistance, and high heat resistance strength.
- These screws have excellent abrasion, shock, and fatigue resistance.
- They have high incombustibility that meets V - 0 of UL 94.
- The properties and precautions of plastic screws → P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Part Number	M	L	D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPE-M3-C	M3	6 8 10 12 15 20 25	5.5	3	2.5	430	0.3	0.12 - 0.27
SPE-M4-C	M4	6 8 10 12 15 20 25 30	7	4	3	765	0.64	0.25 - 0.61
SPE-M5-C	M5	6 8 10 12 15 20 25 30	8.5	5	4	1230	1.28	0.37 - 0.93
SPE-M6-C	M6	10 12 15 20 25 30 40	10	6	5	1670	2.26	0.78 - 1.8
SPE-M8-C	M8	15 20 25 30 40	13	8	6	3090	5.98	2 - 3.5

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPE-M3-C	20
SPE-M4-C	20
SPE-M5-C	10
SPE-M6-C	10
SPE-M8-C	5

*1 : Also sold separately from 1 piece up. → P.809

● Related Products

SPE-N Plastic Hexagon Nut (PEEK) is available.
→ P.753



● Part number specification

SPE-M5-20-C

Product Code 1 2 Product Code

Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

NBK

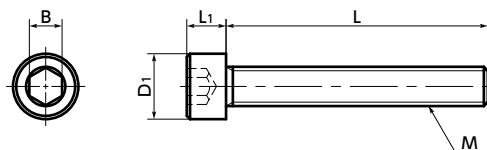
WEB ▶ <https://www.nbk1560.com>

SPE-FT Plastic Screw - Hex Socket Head Cap Screws - Full Thread - PEEK

e-nedzi.com®



WEB Selection Tool CAD Download Chemical-proof Full Thread



● Material/Finish

RoHS2 Compliant

	SPE
Main Body	PEEK/Light brown
Heat Resistance Temperature*1	180°C

*1: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

⚠ Precautions for Use

Because a cumulative pitch difference is created when PEEK screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.

- PEEK is a thermoplastic super-engineering plastic with excellent physical and chemical properties.
- These screws have excellent chemical resistance. They are mostly unaffected by chemicals excluding concentrate sulfuric acid, concentrate nitric acid, and concentrate hydrofluoric acid.
- These screws have excellent heat resistance, water resistance, and high heat resistance strength.
- These screws have excellent abrasion, shock, and fatigue resistance.
- They have high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws → P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Unit : mm

Part Number	M	1	2							D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPE-M3-C-FT	M3	30	40	50						5.5	3	2.5	430	0.3	0.31 - 0.48
SPE-M4-C-FT	M4		40	50	60	70	80	90	100	7	4	3	765	0.64	0.78 - 1.8
SPE-M5-C-FT	M5		40	50	60	70	80	90	100	8.5	5	4	1230	1.28	1.2 - 2.7
SPE-M6-C-FT	M6			50	60	70	80	90	100	10	6	5	1670	2.26	2.2 - 4

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack
SPE-M3-C-FT	1
SPE-M4-C-FT	1
SPE-M5-C-FT	1
SPE-M6-C-FT	1

● Related Products

SPE-N Plastic Hexagon Nut (PEEK) is available.
→ P.753



● Part number specification

SPE-M6-50-C-FT

Product Code 1 2 Product Code

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Not Available	Not Available

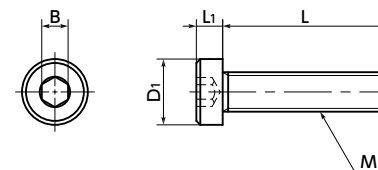
NBK

WEB ▶ <https://www.nbk1560.com>**SPE-LC** Plastic screw - Hex Socket Low Head Bolt - PEEK

e-nedzi.com®



WEB Selection Tool CAD Download Chemical-proof



● Application

FPD production device / Semiconductor manufacturing device / Print board etching equipment / Metal surface treatment facility / Chemical plant / Transformer / Electric and electronic device / Hydrothermal pump / Chemical pump

● Material/Finish

RoHS2 Compliant

	SPE-LC
Main body	PEEK / Light Brown
Heat resistance temperature*1	180°C

*1: A value of plastic materials. The allowable operating temperature of the product varies depending on use conditions such as tightening torque.

⚠ Precautions for Use

Because a cumulative pitch difference is created when PEEK screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.

- Hex socket head cap screw with low head.
- For space-saving of equipment/device and applications with a limited top space.
- PEEK is thermoplastic super engineering plastic superior in physical and chemical properties.
- Excellent chemical resistance. It resists almost all chemicals other than concentrated sulfuric acid, concentrated nitric acid and concentrated hydrofluoric acid.
- It is highly heat-resistant and water-proofed and high temperature strength is retained.
- Features outstanding friction, shock, and fatigue resistance.
- It is highly frame-resistant satisfying V-0 of the UL standard 94.
- Plastic screw properties and precautions for use → P.735

Unit : mm

Part Number	M	1	2								D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPE-M3-LC	M3	6	8	10	12	16	20				5.5	2	2	370	0.15	0.09 - 0.20
SPE-M4-LC	M4	6	8	10	12	16	20	25			7	2.8	2.5	730	0.54	0.19 - 0.46
SPE-M5-LC	M5	6	8	10	12	16	20	25	30		8.5	3.5	3	1170	1.11	0.26 - 0.81
SPE-M6-LC	M6			10	12	16	20	25	30	40	10	4	4	1666	1.72	0.58 - 1.6

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPE-M3-LC	10
SPE-M4-LC	10
SPE-M5-LC	10
SPE-M6-LC	5

*1: Also sold separately from 1 piece up. → P.809

● Related Products

PEEK hexagon nuts **SPE-N** are available.
→ P.753



● Part number specification

SPE-M5-30-LC

Product Code 1 2 Product Code

Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

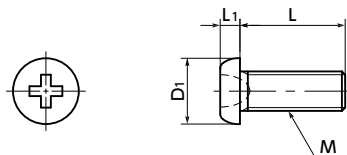
NBK

WEB ▶ <https://www.nbk1560.com>

SPE-MC Plastic screw - Fine Thread - PEEK Additional Size

WEB Selection Tool WEB CAD Download Chemical-proof Miniature Size

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● Material/Finish

RoHS2 Compliant

	SPE-MC
Main body	PEEK / Light Brown
Heat resistance temperature*1	180°C

*1 : A value of plastic materials. The allowable operating temperature of the product varies depending on use conditions such as tightening torque.

- Fine screws for precision devices.
- PEEK is thermoplastic super engineering plastic superior in physical and chemical properties.
- Excellent chemical resistance. It resists almost all chemicals other than concentrated sulfuric acid, concentrated nitric acid and concentrated hydrofluoric acid.
- It is highly heat-resistant and water-proofed and high temperature strength is retained.
- Features outstanding friction, shock, and fatigue resistance.
- It is highly frame-resistant satisfying V-0 of the UL standard 94.
- Plastic screw properties and precautions for use → P.735

● Application

FPD production device / Semiconductor manufacturing device / Print board etching equipment / Metal surface treatment facility / Chemical plant / Transformer / Electric and electronic device / Hydrothermal pump / Chemical pump

Unit : mm

Part Number	M	1	L	2			D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPE-M1.2-MC	M1.2	2	2.5	3	4		1.8	0.5	46.7	0.012	0.015 - 0.016
SPE-M1.4-MC	M1.4	2	2.5	3	4		2	0.5	46.9	0.014	0.016 - 0.017
SPE-M1.6-MC	M1.6		2.5	3	4	6	2.3	0.5	52	0.02	0.017 - 0.02

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPE-M1.2-MC	10
SPE-M1.4-MC	10
SPE-M1.6-MC	10

*1 : Also sold separately from 1 piece up. → P.809

● Part number specification

SPE-M1.6-4-MC

Product Code 1 Product Code 2

Order in number of packs.

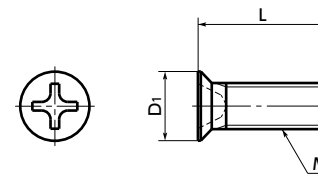
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPE-MF Plastic Screw (PEEK/Machine Screw for Precision Instruments) NEW

WEB Selection Tool WEB CAD Download Chemical-proof Miniature Size

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● Material/Finish

RoHS2 Compliant

	SPE-MF
Main unit	PEEK (Polyether ether ketone) (Light brown)
Heat resistance temperature*1	180°C

*1 : A value of plastic materials. The allowable operating temperature of the product varies depending on use conditions such as tightening torque.

- Fine screws for precision devices.
- PEEK is thermoplastic super engineering plastic superior in physical and chemical properties.
- Excellent chemical resistance. It resists almost all chemicals other than concentrated sulfuric acid, concentrated nitric acid and concentrated hydrofluoric acid.
- It is highly heat-resistant and water-proofed and high temperature strength is retained.
- Features outstanding friction, shock, and fatigue resistance.
- It is highly frame-resistant satisfying V-0 of the UL standard 94.
- Plastic screw properties and precautions for use → P.735

● Application

FPD production device / Semiconductor manufacturing device / Print board etching equipment / Metal surface treatment facility / Chemical plant / Transformer / Electric and electronic device / Hydrothermal pump / Chemical pump

Unit : mm

Part Number	M	1	L	2	D1	Tension Rupture Load*1 (N)	Torsional Torque*1 (N·m)	Mass(g)
SPE-M1.2-MF	M1.2	2.5	4		2.3	53.7	0.019	0.004 - 0.006
SPE-M1.4-MF	M1.4	2.5	4		2.5	73.9	0.03	0.005 - 0.006
SPE-M1.6-MF	M1.6	2.5	4		2.8	84.3	0.042	0.006 - 0.008

*1 : Values in chart are for reference only. They are not guaranteed values. The recommended torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPE-M1.2-MF	10
SPE-M1.4-MF	10
SPE-M1.6-MF	10

*1 : Also sold separately from 1 piece up.

→ P.809

● Part number specification

SPE-M1.6-4-MF

Product Code 1 Product Code 2

Place order by a bag.

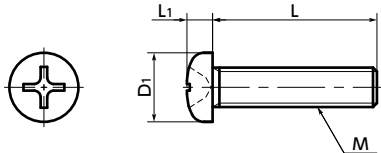
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPE-P Plastic Screws - Cross Recessed Pan Head Machine Screws - PEEK

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● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

● Material/Finish



	SPE-P
Main body	PEEK/Light brown
Heat Resistance Temperature*1	180°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- PEEK is a thermoplastic super-engineering plastic with excellent physical and chemical properties.
- These screws have excellent chemical resistance. They are mostly unaffected by chemicals excluding concentrate sulfuric acid, concentrate nitric acid, and concentrate hydrofluoric acid.
- These screws have excellent heat resistance, water resistance, and high heat resistance strength.
- These screws have excellent abrasion, shock, and fatigue resistance.
- They have high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws ➡ P.735

Part Number	M	L													D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPE-M1.7-P	M1.7	4													2.5	0.5	59	0.02	0.0088
SPE-M2-P	M2	4	5	6	8	10	12								3.5	1.3	160	0.06	0.023 - 0.048
SPE-M2.6-P	M2.6			6	8	10	12								4.5	1.7	312	0.16	0.055 - 0.087
SPE-M3-P	M3		5	6	8	10	12	15	16	20	25				5.5	2	430	0.3	0.082 - 0.22
SPE-M4-P	M4			6	8	10	12	15	16	20	25	30			7	2.6	765	0.64	0.17 - 0.48
SPE-M5-P	M5			6	8	10	12	15	16	20	25	30			9	3.3	1230	1.28	0.33 - 0.8
SPE-M6-P	M6					10	12	15		20	25	30			10.5	3.9	1670	2.26	0.65 - 1.2
SPE-M8-P	M8							15		20	25				14	5.2	3090	5.98	1.6 - 2.2

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPE-M1.7-P	20
SPE-M2-P	20
SPE-M2.6-P	20
SPE-M3-P	20
SPE-M4-P	20
SPE-M5-P	10
SPE-M6-P	10
SPE-M8-P	5

*1 : Also sold separately from 1 piece up. ➡ P.809

● Related Products

[SPE-N] Plastic Hexagon Nut (PEEK) is available. ➡ P.753



Precautions for Use

Because a cumulative pitch difference is created when PEEK screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.

● Part number specification

SPE - M5 - 20 - P

Product Code 1 2 Product Code

Order in number of packs.

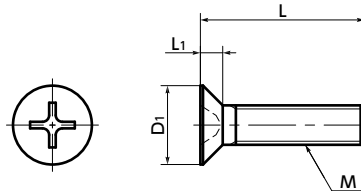
Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Not Available

SPE-F Plastic Screw - Cross Recessed Flat Head Machine Screws - PEEK

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● Material/Finish



	SPE-F
Main body	PEEK/Light brown
Heat Resistance Temperature*1	180°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.



Precautions for Use

Because a cumulative pitch difference is created when PEEK screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.

- PEEK is a thermoplastic super-engineering plastic with excellent physical and chemical properties.
- These screws have excellent chemical resistance. They are mostly unaffected by chemicals excluding concentrate sulfuric acid, concentrate nitric acid, and concentrate hydrofluoric acid.
- These screws have excellent heat resistance, water resistance, and high heat resistance strength.
- These screws have excellent abrasion, shock, and fatigue resistance.
- They have high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws ➡ P.735
- Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Part Number	M	L													D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPE-M2-F	M2		6	8											4	1.2	160	0.06	0.03 - 0.035
SPE-M2.6-F	M2.6	4	6												5.2	1.5	312	0.16	0.045 - 0.055
SPE-M3-F	M3		6	8	10	12	15	16	20	25					6	1.75	430	0.3	0.088 - 0.22
SPE-M4-F	M4		6	8	10	12	15	16	20	25					8	2.3	765	0.64	0.17 - 0.42
SPE-M5-F	M5			8	10	12	15		20	25	30				10	2.8	1230	1.28	0.37 - 0.8
SPE-M6-F	M6				10		15		20		30				12	3.4	1670	2.26	0.65 - 1.2
SPE-M8-F	M8								20	25	30				16	4.4	3090	5.98	1.9 - 2.4

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPE-M2-F	20
SPE-M2.6-F	20
SPE-M3-F	20
SPE-M4-F	20
SPE-M5-F	10
SPE-M6-F	10
SPE-M8-F	5

*1 : Also sold separately from 1 piece up. ➡ P.809

● Related Products

[SPE-N] Plastic Hexagon Nut (PEEK) is available. ➡ P.753



● Part number specification

SPE - M5 - 20 - F

Product Code 1 2 Product Code

Order in number of packs.

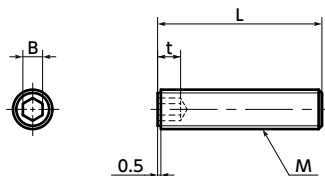
Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Not Available

SPE-T Plastic Screw - Hex Socket Set Screws - PEEK

WEB Selection Tool WEB CAD Download Chemical-proof

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● Material/Finish



	SPE-T
Main body	PEEK/Light brown
Heat Resistance Temperature*1	180°C

*1: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

⚠ Precautions for Use

Because a cumulative pitch difference is created when PEEK screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.

- PEEK is a thermoplastic super-engineering plastic with excellent physical and chemical properties.
- These screws have excellent chemical resistance. They are mostly unaffected by chemicals excluding concentrate sulfuric acid, concentrate nitric acid, and concentrate hydrofluoric acid.
- These screws have excellent heat resistance, water resistance, and high heat resistance strength.
- These screws have excellent abrasion, shock, and fatigue resistance.
- They have high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws → P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Unit : mm														
Part Number	M	L								B	t	Torsional*1 (N·m)	Mass (g)	
SPE-M3-T	M3	4	5	6	8	10	12	15		1.5	2	0.3	0.023 - 0.1	
SPE-M4-T	M4		5	6	8	10	12	15	20	2	2.5	0.64	0.05 - 0.25	
SPE-M5-T	M5		5	6	8	10	12	15	20	2.5	3	1.28	0.05 - 0.37	
SPE-M6-T	M6			6	8	10	12	15	20	25	3	2.26	0.13 - 0.68	
SPE-M8-T	M8					10	12	15	20	25	30	5.98	0.42 - 1.5	

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPE-M3-T	10
SPE-M4-T	10
SPE-M5-T	10
SPE-M6-T	5
SPE-M8-T	5

*1: Also sold separately from 1 piece up. → P.809

● Related Products

SPE-N Plastic Hexagon Nut (PEEK) is available.
→ P.753



● Part number specification

SPE - M5 - 20 - T

Product Code **1** Product Code **2**

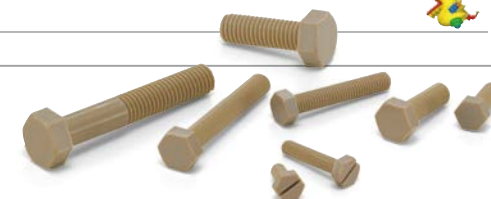
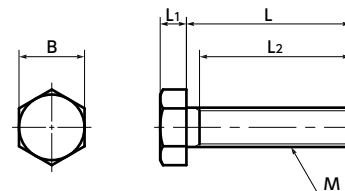
Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Not Available

SPE-H Plastic Screw - Hex Head Screws - PEEK

WEB Selection Tool WEB CAD Download Chemical-proof

e-nedzi.com®



● Material/Finish



	SPE-H
Main body	PEEK/Light brown
Heat Resistance Temperature*1	180°C

*1: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

⚠ Precautions for Use

Because a cumulative pitch difference is created when PEEK screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.

- PEEK is a thermoplastic super-engineering plastic with excellent physical and chemical properties.
- These screws have excellent chemical resistance. They are mostly unaffected by chemicals excluding concentrate sulfuric acid, concentrate nitric acid, and concentrate hydrofluoric acid.
- These screws have excellent heat resistance, water resistance, and high heat resistance strength.
- These screws have excellent abrasion, shock, and fatigue resistance.
- They have high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws → P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Unit : mm																
Part Number	M	L								B	L1	L2*1	Tension*2 Rupture Load (N)	Torsional*2 Torque (N·m)	Mass (g)	
SPE-M4-H	M4	8	10		15	20	25			7	2.8	Full Thread	765	0.64	0.26 - 0.48	
SPE-M5-H	M5		10		15	20	25	30		8	3.5	Full Thread	1230	1.28	0.46 - 0.88	
SPE-M6-H	M6		10	12	15	20	25	30	35	40	10	4	Full Thread	1670	2.26	
SPE-M8-H	M8		10		15	20	25	30		40	13	5.5	Full Thread	3090	5.98	
SPE-M8-H	M8									50	13	5.5	27	3090	5.98	
SPE-M10-H	M10					20	25	30			17	7	Full Thread	4900	10.8	

*1: If the "L" value is other than the value in parentheses, the screw is full thread.

*2: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

● The M4 has a slot in its head.

Part Number	Qty per pack*1
SPE-M4-H	10
SPE-M5-H	10
SPE-M6-H	10
SPE-M8-H	5
SPE-M10-H	1

*1: Also sold separately from 1 piece up. → P.809

● Related Products

SPE-N Plastic Hexagon Nut (PEEK) is available.
→ P.753



● Part number specification

SPE - M5 - 20 - H

Product Code **1** Product Code **2**

Order in number of packs.
Also sold separately from 1 piece up. → P.809

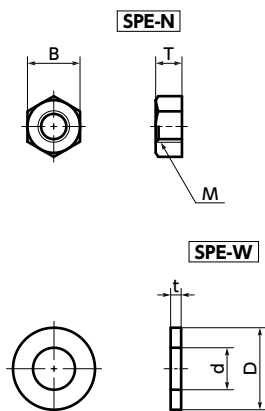
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

SPE-N/SPE-W Plastic Screw - Hex Nuts / Washers - PEEK

e-nedzi.com®



WEB Selection Tool WEB CAD Download Chemical-proof



● Material/Finish

RoHS2 Compliant

	SPE-N / SPE-W
Main body	PEEK/Light Brown
Heat Resistance Temperature*1	180°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

● Part number specification

SPE-M5-N

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809

SPE-N Hex Nuts

Unit : mm

Part Number	M	B	T	Mass (g)	Qty per pack*1
SPE-M2-N	M2	4	1.6	0.02	20
SPE-M2.6-N	M2.6	5	2	0.038	20
SPE-M3-N	M3	5.5	2.4	0.057	20
SPE-M4-N	M4	7	3.2	0.13	20
SPE-M5-N	M5	8	4	0.2	20
SPE-M6-N	M6	10	5	0.4	10
SPE-M8-N	M8	13	6.5	0.91	5
SPE-M10-N	M10	17	8	1.9	5

*1 : Also sold separately from 1 piece up. ➔ P.809

SPE-W Washers

Unit : mm

Part Number	d	D	t	Nominal	Mass (g)	Qty per pack*1
SPE-2-W	2.1	4	0.5	2	0.0059	20
SPE-2.6-W	2.7	6	0.5	2.6	0.015	20
SPE-3-W	3.2	7	0.5	3	0.02	20
SPE-4-W	4.3	9	0.8	4	0.051	20
SPE-5-W	5.3	10	1	5	0.073	20
SPE-6-W	6.4	12.5	1.6	6	0.19	10
SPE-8-W	8.4	17	1.6	8	0.36	5
SPE-10-W	10.5	21	2	10	0.68	5

*1 : Also sold separately from 1 piece up. ➔ P.809

Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

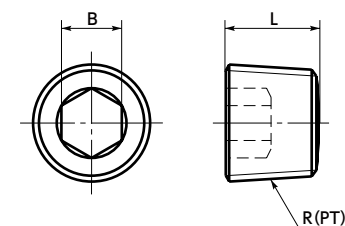
NBK

 ▶ <https://www.nbk1560.com>**SPE-R** Plastic Screw - Socket Head Cap Screw Plugs - PEEK

e-nedzi.com®



WEB Selection Tool WEB CAD Download Chemical-proof



- PEEK is a thermoplastic super-engineering plastic with excellent physical and chemical properties.
- These screws have excellent chemical resistance. They are mostly unaffected by chemicals excluding concentrate sulfuric acid, concentrate nitric acid, and concentrate hydrofluoric acid.
- These screws have excellent heat resistance, water resistance, and high heat resistance strength.
- These screws have excellent abrasion, shock, and fatigue resistance.
- They have high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws ➔ P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

● Material/Finish

RoHS2 Compliant

	SPE-R
Main body	PEEK/Light Brown
Heat Resistance Temperature*1	180°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

Part Number	R (PT) Nominal of Thread	L	B	Mass (g)	Qty per pack*1
SPE-1-R	R 1/8	8	5	0.45	5
SPE-2-R	R 1/4	11	6	1.1	5
SPE-3-R	R 3/8	12	8	2.1	5

*1 : Also sold separately from 1 piece up. ➔ P.809

● Part number specification

SPE-2-R

Order in number of packs.

Also sold separately from 1 piece up. ➔ P.809

Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

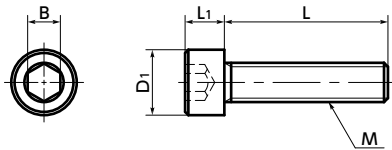
NBK

 ▶ <https://www.nbk1560.com>

SPS-C Plastic Screw - Hex Socket Head Cap Screws - PPS

WEB Selection Tool WEB CAD Download Heat-resistance Chemical-proof

e-nedzi.com



Material/Finish

RoHS2 Compliant

	SPS-C
Main body	PPS (Polyphenylene Sulfide) /Bright Light Brown Glass Fiber 40%
Heat Resistance Temperature*1	200°C

*1: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- PPS has excellent heat resistance and chemical resistance and continuous duty temperature of 200°C. Under 200°C, no oils, fats, or organic solvents dissolve PPS.
- It has high strength, high rigidity, and high heat resistance strength.
- It has high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws → P.735

Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Unit : mm

Part Number	M	L								D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPS-M3-C	M3	6	8	10	12	15	20			5.5	3	2.5	570	0.36	0.15 - 0.29
SPS-M4-C	M4	6	8	10	12	15	20			7	4	3	980	0.71	0.32 - 0.56
SPS-M5-C	M5		8	10	12	15	20	25	30	8.5	5	4	1570	1.42	0.52 - 1.2
SPS-M6-C	M6			10	12	15	20	25	30	40	10	6	2250	2.11	1 - 2.3
SPS-M8-C	M8			10	12	15	20	25	30	40	13	8	3720	5.29	2.2 - 4.4

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPS-M3-C	20
SPS-M4-C	20
SPS-M5-C	10
SPS-M6-C	10
SPS-M8-C	5

*1: Also sold separately from 1 piece up. → P.809

Part number specification

SPS-M5-20-C

Product Code 1 2 Product Code

Order in number of packs.

Also sold separately from 1 piece up. → P.809

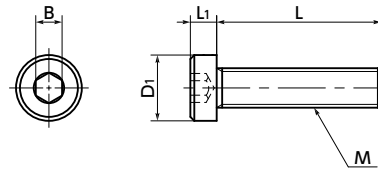
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

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SPS-LC Plastic screw - Hex Socket Low Head Bolt - PPS

WEB Selection Tool WEB CAD Download Heat-resistance Chemical-proof



Material/Finish

RoHS2 Compliant

	SPS-LC
Main body	PPS (Poly Phenylene Sulfide) (Bright Light Brown) (Glass fiber 40%)
Heat resistance temperature*1	200°C

*1: A value of plastic materials. The allowable operating temperature of the product varies depending on use conditions such as tightening torque.

- Hex socket head cap screw with low head.
- For space-saving of equipment/device and applications with a limited top space.
- PPS is excellent in heat resistance and chemical resistance and continuously used at 200°C. No fat or organic solvent cannot dissolve PPS at 200°C or below.
- High strength, high rigidity and high temperature strength is retained.
- It is highly frame-resistant satisfying V-0 of the UL standard 94.
- Plastic screw properties and precautions for use → P.735

Application

FPD production device / Semiconductor manufacturing device / Print board etching equipment / Metal surface treatment facility / Chemical plant / Transformer / Electric and electronic device / Hydrothermal pump / Chemical pump

Unit : mm

Part Number	M	L								D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPS-M3-LC	M3	6	8	10	12	16	20			5.5	2	2	492	0.25	0.11 - 0.25
SPS-M4-LC	M4	6	8	10	12	16	20	25		7	2.8	2.5	789	0.46	0.24 - 0.59
SPS-M5-LC	M5		8	10	12	16	20	25	30	8.5	3.5	3	1190	1.04	0.38 - 1.0
SPS-M6-LC	M6			10	12	16	20	25	30	40	10	4	1811	1.70	0.74 - 2.1

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPS-M3-LC	10
SPS-M4-LC	10
SPS-M5-LC	10
SPS-M6-LC	5

*1: Also sold separately from 1 piece up. → P.809

Part number specification

SPS-M5-30-LC

Product Code 1 2 Product Code

Order in number of packs.

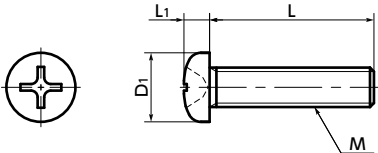
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

SPS-P Plastic Screw - Cross Recessed Pan Head Machine Screws - PPS

WEB Selection Tool WEB CAD Download Heat-resistance Chemical-proof

e-nedzi.com



● Material/Finish RoHS2 Compliant

	SPS-P
Main body	PPS (Polyphenylene Sulfide) /Bright Light Brown Glass Fiber 40%
Heat Resistance Temperature*1	200°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- PPS has excellent heat resistance and chemical resistance and continuous duty temperature of 200°C. Under 200°C, no oils, fats, or organic solvents dissolve PPS.
- It has high strength, high rigidity, and high heat resistance strength.
- It has high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws → P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Unit : mm

Part Number	M	L	D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPS-M2-P	M2	4 5 6 8 10 12	3.5	1.3	236	0.08	0.03 - 0.062
SPS-M3-P	M3	5 6 8 10 12 15 20 25 30	5.5	2	570	0.36	0.1 - 0.32
SPS-M4-P	M4	6 8 10 12 15 20 25 30	7	2.6	980	0.71	0.22 - 0.61
SPS-M5-P	M5	8 10 12 15 20 25 30	9	3.3	1570	1.42	0.47 - 1
SPS-M6-P	M6	10 12 15 20	10.5	3.9	2250	2.11	0.83 - 1.2

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPS-M2-P	20
SPS-M3-P	20
SPS-M4-P	20
SPS-M5-P	10
SPS-M6-P	10

*1 : Also sold separately from 1 piece up. → P.809

● Part number specification

SPS - M5 - 20 - P

Product Code 1 2 Product Code

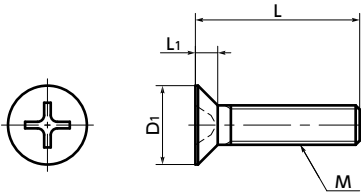
Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Not Available

SPS-F Plastic Screw PPS / Phillips Cross Recessed Flat Head Machine Screws

WEB Selection Tool WEB CAD Download Heat-resistance Chemical-proof

e-nedzi.com



● Material/Finish RoHS2 Compliant

	SPS-F
Main body	PPS (Polyphenylene Sulfide) /Bright Light Brown Glass Fiber 40%
Heat Resistance Temperature*1	200°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- PPS has excellent heat resistance and chemical resistance and continuous duty temperature of 200°C. Under 200°C, no oils, fats, or organic solvents dissolve PPS.
- It has high strength, high rigidity, and high heat resistance strength.
- It has high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws → P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Unit : mm

Part Number	M	L	D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPS-M3-F	M3	6 8 10 12 15	6	1.75	570	0.36	0.11 - 0.19
SPS-M4-F	M4	8 10 12 15 20	8	2.3	980	0.71	0.25 - 0.37
SPS-M5-F	M5	10 12 15 20	10	2.8	1570	1.42	0.52 - 0.77
SPS-M6-F	M6	10 12 15 20	12	3.4	2250	2.11	0.83 - 1.2

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPS-M3-F	20
SPS-M4-F	20
SPS-M5-F	10
SPS-M6-F	10

*1 : Also sold separately from 1 piece up. → P.809

● Part number specification

SPS - M5 - 20 - F

Product Code 1 2 Product Code

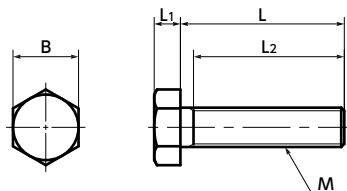
Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Not Available

SPS-H Plastic Screw - Hex Head Screws - PPS

WEB Selection Tool CAD Download Heat-resistance Chemical-proof

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● Material/Finish

RoHS2 Compliant

	SPS-H
Main body	PPS (Polyphenylene Sulfide) / Bright Light Brown Glass Fiber 40%
Heat Resistance Temperature*1	200°C

*1: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.



- PPS has excellent heat resistance and chemical resistance and continuous duty temperature of 200°C. Under 200°C, no oils, fats, or organic solvents dissolve PPS.
- It has high strength, high rigidity, and high heat resistance strength.
- It has high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws
➔ P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

Unit : mm

Part Number	M	L	B	L1	L2*1	Tension*2 Rupture Load (N)	Torsional*2 Torque (N·m)	Mass (g)
SPS-M4-H	M4	8 10 12 15 20 25 30 40 50	7	2.8	Full Thread	980	0.71	0.33 - 0.62
SPS-M5-H	M5	8 10 12 15 20 25 30 40 50	8	3.5	Full Thread	1570	1.42	0.54 - 1.1
SPS-M6-H	M6	10 12 15 20 25 30 40 50	10	4	Full Thread	2250	2.11	0.96 - 2.1
SPS-M8-H	M8	15 20 25 30 40 50	13	5.5	27(L=50)	3720	5.29	2.4 - 4.8
SPS-M10-H	M10	20 25 30 40 50	17	7	27(L=50)	5890	11.8	5.1 - 8.3
SPS-M12-H	M12	20 25 30 40 50	19	8	Full Thread	7850	20.6	7.3 - 8

*1: If the "L" value is other than the value in parentheses, the screw is full thread.

*2: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPS-M4-H	10
SPS-M5-H	10
SPS-M6-H	10
SPS-M8-H	5
SPS-M10-H	1
SPS-M12-H	1

*1: Also sold separately from 1 piece up. ➔ P.809

● Part number specification

SPS-M5-20-H

Product Code 1 2 Product Code

Order in number of packs.

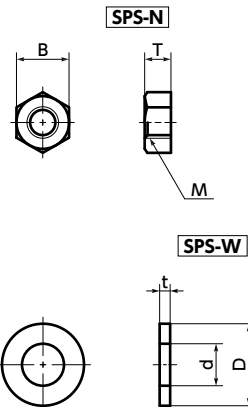
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

SPS-N/SPS-W Plastic Screw - Hex Nuts / Washers - PPS

WEB Selection Tool CAD Download Heat-resistance Chemical-proof

e-nedzi.com®

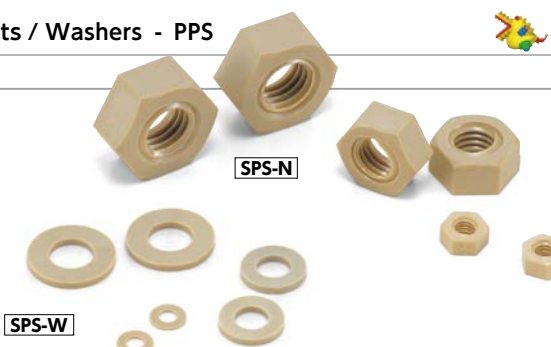


● Material/Finish

RoHS2 Compliant

	SPS-N / SPS-W
Main body	PPS (Polyphenylene Sulfide) / Bright Light Brown Glass Fiber 40%
Heat Resistance Temperature*1	200°C

*1: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.



- PPS has excellent heat resistance and chemical resistance and continuous duty temperature of 200°C. Under 200°C, no oils, fats, or organic solvents dissolve PPS.
- It has high strength, high rigidity, and high heat resistance strength.
- It has high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws
➔ P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, transformers, electrical and electronic equipment, hot water pumps, and chemical pumps

SPS-N Hex Nuts

Unit : mm

Part Number	M	B	T	Mass (g)	Qty per pack*1
SPS-M2-N	M2	4	1.6	0.026	20
SPS-M2.6-N	M2.6	5	2	0.05	20
SPS-M3-N	M3	5.5	2.4	0.07	20
SPS-M4-N	M4	7	3.2	0.17	20
SPS-M5-N	M5	8	4	0.25	20
SPS-M6-N	M6	10	5	0.52	10
SPS-M8-N	M8	13	6.5	1.2	10
SPS-M10-N	M10	17	8	2.4	5
SPS-M12-N	M12	19	10	3.5	5

*1: Also sold separately from 1 piece up. ➔ P.809

SPS-W Washers

Unit : mm

Part Number	d	D	t	Nominal	Mass (g)	Qty per pack*1
SPS-3-W	3.2	7	0.5	3	0.025	20
SPS-4-W	4.3	9	0.8	4	0.065	20
SPS-5-W	5.3	10	1	5	0.094	20
SPS-6-W	6.4	12.5	1.6	6	0.24	10
SPS-8-W	8.4	17	1.6	8	0.46	10
SPS-10-W	10.5	21	2	10	0.86	5
SPS-12-W	13	24	2.5	12	1.3	5

*1: Also sold separately from 1 piece up. ➔ P.809

● Part number specification

SPS-M5-N

Product Code 1

Order in number of packs.

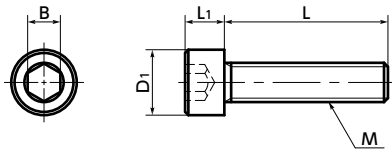
Also sold separately from 1 piece up. ➔ P.809

1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPA-C Plastic Screw - Hex Socket Head Cap Screws - RENY

WEB Selection Tool WEB CAD Download High strength

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Material/Finish

RoHS2 Compliant

	SPA-C
Main body	RENY*1 (50% Glass Fiber Reinforced Polyamide MXD6) /Black
Heat Resistance Temperature*2	105°C

- *1: RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.
- *2: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- RENY is a thermoplastic super-engineering plastic with excellent tensile and flexural strength.
- Screws have excellent fatigue resistance, cleanliness, and thermal insulation.
- It has a hardness level near that of metal but its mass is 1/5th that of iron.
- The properties and precautions of plastic screws → P.735

Application

Electrical and electronic equipment, insulation and dew condensation prevention for refrigerators and freezers, aquatic applications, electrochemical plating, lightweight applications in automobiles, aircrafts, and spacecrafts

Unit : mm

Part Number	M 	L 									D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)	
SPA-M3-C	M3	6	8	10	12	15	20				5.5	3	2.5	635	0.39	0.15 - 0.29	
SPA-M4-C	M4	6	8	10	12	15	20				7	4	3	1470	0.79	0.32 - 0.56	
SPA-M5-C	M5			10	12	15	20	25	30	35	8.5	5	4	2450	1.77	0.57 - 1.3	
SPA-M6-C	M6					15	20	25	30	35	40	10	6	5	3140	2.94	1.2 - 2.3
SPA-M8-C	M8					15	20	25	30	35	40	13	8	6	5100	7.85	2.5 - 4.4

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPA-M3-C	20
SPA-M4-C	20
SPA-M5-C	20
SPA-M6-C	10
SPA-M8-C	10

*1: Also sold separately from 1 piece up. → P.809

Part number specification

SPA - M5 - 30 - C

Product Code 1 2 Product Code

Order in number of packs.

Also sold separately from 1 piece up. → P.809

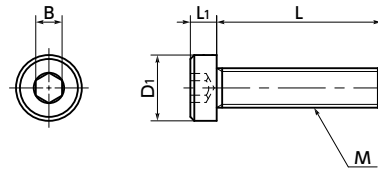
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

e-nedzi.com



SPA-LC Plastic screw - Hex Socket Low Head Bolt - RENY

WEB Selection Tool WEB CAD Download High strength



Material/Finish

RoHS2 Compliant

	SPA-LC
Main body	RENY*1 (Glass Fiber 50% Reinforced Polyamide MXD6) (Black)
Heat resistance temperature*2	105°C

- *1: RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.
- *2: A value of plastic materials. The allowable operating temperature of the product varies depending on use conditions such as tightening torque.

- Hex socket head cap screw with low head.
- For space-saving of equipment/device and applications with a limited top space.
- RENY is thermoplastic engineering plastics with excellent tensile strength and bending strength.
- It is highly fatigue-resistant and has excellent creeping and heat insulation properties.
- While it is nearly as strong as metal, its weight is approximately 1/5 of iron.
- Plastic screw properties and precautions for use → P.735

Application

Heat insulation and dew condensation prevention of electric and electronic devices / refrigerating and freezing facilities / Weight saving of offshore instruments, plating facility and automobile, aircraft and space equipment, etc.

Unit : mm

Part Number	M	1	L	2							D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPA-M3-LC	M3	6	8	10	12	16	20				5.5	2	2	740	0.31	0.11 - 0.25
SPA-M4-LC	M4	6	8	10	12	16	20				7	2.8	2.5	1325	0.62	0.24 - 0.48
SPA-M5-LC	M5			10	12	16	20	25	30		8.5	3.5	3	2050	1.20	0.43 - 1.0
SPA-M6-LC	M6					16	20	25	30	40	10	4	4	2798	2.15	0.96 - 2.1

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPA-M3-LC	20
SPA-M4-LC	20
SPA-M5-LC	20
SPA-M6-LC	20

*1: Also sold separately from 1 piece up. → P.809

Part number specification

SPA - M5 - 30 - LC

Product Code 1 2 Product Code

Order in number of packs.

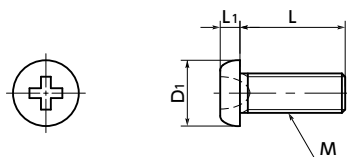
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPA-MC Plastic screw - Fine Thread - RENY Additional Size

WEB Selection Tool WEB CAD Download High strength Miniature Size

e-nedzi.com



Material/Finish

RoHS2 Compliant

	SPA-MC
Main body	RENY*1 (Glass Fiber 50% Reinforced Polyamide MXD6) (Ivory)
Heat resistance temperature*2	105°C

- *1: RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.
- *2: A value of plastic materials. The allowable operating temperature of the product varies depending on use conditions such as tightening torque.

- Fine screws for precision devices.
- RENY is thermoplastic engineering plastics with excellent tensile strength and bending strength.
- It is highly fatigue-resistant and has excellent creeping and heat insulation properties.
- While it is nearly as strong as metal, its weight is approximately 1/5 of iron.
- Plastic screw properties and precautions for use → P.735

Application

Heat insulation and dew condensation prevention of electric and electronic devices / refrigerating and freezing facilities / Weight saving of offshore instruments, plating facility and automobile, aircraft and space equipment, etc.

Unit : mm

Part Number	M	L	D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPA-M1.2-MC	M1.2	2 2.5 3 4	1.8	0.5	80.9	0.018	0.015 - 0.018
SPA-M1.4-MC	M1.4	2 2.5 3 4	2	0.5	61.4	0.018	0.016 - 0.019
SPA-M1.6-MC	M1.6	2.5 3 4 6	2.3	0.5	54.1	0.023	0.019 - 0.026

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPA-M1.2-MC	10
SPA-M1.4-MC	10
SPA-M1.6-MC	10

*1: Also sold separately from 1 piece up. → P.809

Part number specification

SPA - M1.6 - 4 - MC

Product Code 1 Product Code 2

Order in number of packs.

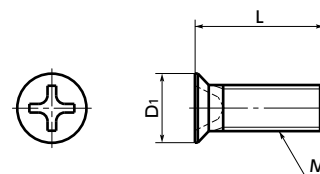
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPA-MF Plastic Screw (RENY/Machine Screw for Precision Instruments) NEW

WEB Selection Tool WEB CAD Download High strength Miniature Size

e-nedzi.com



- Fine screws for precision devices.
- RENY is thermoplastic engineering plastics with excellent tensile strength and bending strength.
- It is highly fatigue-resistant and has excellent creeping and heat insulation properties.
- While it is nearly as strong as metal, its mass is about 1/5 of iron.
- Plastic screw properties and precautions for use → P.735

Application

Heat insulation and dew condensation prevention of electric and electronic devices / refrigerating and freezing facilities / Weight saving of offshore instruments, plating facility and automobile, aircraft and space equipment, etc.

Material/Finish

RoHS2 Compliant

	SPA-MF
Main unit	RENY*1 (Glass Fiber 50% Reinforced Polyamide MXD6) (Ivory)
Heat resistance temperature*2	105°C

- *1: RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.
- *2: A value of plastic materials. The allowable operating temperature of the product varies depending on use conditions such as tightening torque.

Unit : mm

Part Number	M	L	D1	Tension Rupture Load*1 (N)	Torsional Torque*1 (N·m)	Mass(g)
SPA-M1.2-MF	M1.2	2.5 4	2.3	98.5	0.022	0.005 - 0.007
SPA-M1.4-MF	M1.4	2.5 4	2.5	127.7	0.039	0.006 - 0.008
SPA-M1.6-MF	M1.6	2.5 4	2.8	127.7	0.056	0.008 - 0.011

*1: Values in chart are for reference only. They are not guaranteed values. The recommended torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPA-M1.2-MF	10
SPA-M1.4-MF	10
SPA-M1.6-MF	10

*1: Also sold separately from 1 piece up. → P.809

Part number specification

SPA - M1.6 - 4 - MF

Product Code 1 Product Code 2

Place order by a bag.

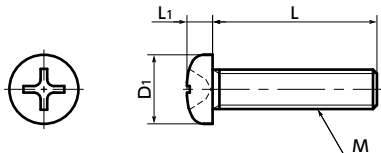
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPA-P Plastic Screw - Cross Recessed Pan Head Machine Screws - RENY

WEB Selection Tool WEB CAD Download High strength

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● Application

Electrical and electronic equipment, insulation and dew condensation prevention for refrigerators and freezers, aquatic applications, electrochemical plating, lightweight applications in automobiles, aircrafts, and spacecrafts

● Material/Finish



	SPA-P
Main body	RENY*1 (50% Glass Fiber Reinforced Polyamide MXD6) /Ivory
Heat Resistance Temperature*2	105°C

*1: RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.

*2: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- RENY is a thermoplastic super-engineering plastic with excellent tensile and flexural strength.
- Screws have excellent fatigue resistance, cleanliness, and thermal insulation.
- It has a hardness level near that of metal but its mass is 1/5th that of iron.
- The properties and precautions of plastic screws ➡ P.735

Unit : mm																
Part Number	M 	L 									D1	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N・m)	Mass (g)	
SPA-M1.7-P	M1.7		4								2.5	0.5	80	0.03	0.011	
SPA-M2-P	M2	3	4	5	6	8	10	12			3.5	1.3	303	0.1	0.028 - 0.061	
SPA-M2.6-P	M2.6				6	8	10	12			4.5	1.7	588	0.24	0.07 - 0.11	
SPA-M3-P	M3		4	5	6	8	10	12	15		5.5	2	635	0.39	0.093 - 0.19	
SPA-M4-P	M4			5	6	8	10	12	15		7	2.6	1470	0.79	0.2 - 0.36	
SPA-M5-P	M5					8	10	12	15	20	9	3.3	2450	1.77	0.47 - 0.76	
SPA-M6-P	M6						10	12	15	20	25	10.5	3.9	3140	2.94	0.83 - 1.4

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPA-M1.7-P	50
SPA-M2-P	50
SPA-M2.6-P	50
SPA-M3-P	50
SPA-M4-P	50
SPA-M5-P	20
SPA-M6-P	20

*1: Also sold separately from 1 piece up. ➡ P.809

● Part number specification

SPA - M5 - 20 - P

Product Code 1 2 Product Code

Order in number of packs.

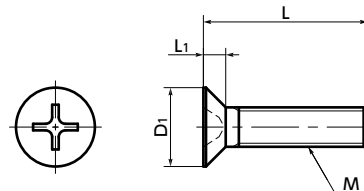
Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPA-F Plastic Screw RENY / Phillips Cross Recessed Flat Head Machine Screws

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● Material/Finish



	SPA-F
Main body	RENY*1 (50% Glass Fiber Reinforced Polyamide MXD6) /Ivory
Heat Resistance Temperature*2	105°C

*1: RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.

*2: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- RENY is a thermoplastic super-engineering plastic with excellent tensile and flexural strength.
- Screws have excellent fatigue resistance, cleanliness, and thermal insulation.
- It has a hardness level near that of metal but its mass is 1/5th that of iron.
- The properties and precautions of plastic screws ➡ P.735

● Application

Electrical and electronic equipment, insulation and dew condensation prevention for refrigerators and freezers, aquatic applications, electrochemical plating, lightweight applications in automobiles, aircrafts, and spacecrafts

Unit : mm															
Part Number	M 1	L 2									D ₁	L ₁	Tension*1 Rupture Load (N)	Torsional*1 Torque (N・m)	Mass (g)
SPA-M2-F	M2		6	8	10						4	1.2	303	0.1	0.038 - 0.053
SPA-M3-F	M3	5	6	8	10	12	15				6	1.75	635	0.39	0.1 -0.19
SPA-M4-F	M4		6	8	10	12	15	20			8	2.3	1470	0.79	0.22 -0.45
SPA-M5-F	M5				10	12	15	20			10	2.8	2450	1.77	0.52 -0.76
SPA-M6-F	M6				10	12	15	20			12	3.4	3140	2.94	0.83 -1.2
SPA-M8-F	M8						15	20	25	30	16	4.4	5100	7.85	2.1 -3.1

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPA-M2-F	50
SPA-M3-F	50
SPA-M4-F	50
SPA-M5-F	20
SPA-M6-F	20
SPA-M8-F	10

*1: Also sold separately from 1 piece up. ➡ P.809

● Part number specification

SPA - M5 - 20 - F

Product Code 1 2 Product Code

Order in number of packs.

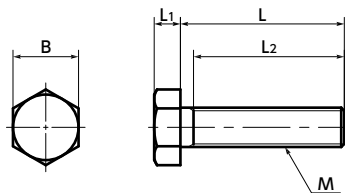
Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPA-H Plastic Screw - Hex Head Screws - RENY

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● Material/Finish

RoHS2 Compliant

	SPA-H
Main body	RENY*1 (50% Glass Fiber Reinforced Polyamide MXD6) /Ivory
Heat Resistance Temperature*2	105°C

*1 : RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.

*2 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- RENY is a thermoplastic super-engineering plastic with excellent tensile and flexural strength.
- Screws have excellent fatigue resistance, cleanliness, and thermal insulation.
- It has a hardness level near that of metal but its mass is 1/5th that of iron.
- The properties and precautions of plastic screws ➡ P.735

● Application

Electrical and electronic equipment, insulation and dew condensation prevention for refrigerators and freezers, aquatic applications, electrochemical plating, lightweight applications in automobiles, aircrafts, and spacecrafts

															Unit : mm	
Part Number	M	L									B	L ₁	L ₂ *1	Tension*2 Rupture Load (N)	Torsional*2 Torque (N·m)	Mass (g)
SPA-M5-H	M5			15	20	25	30				8	3.5	Full Thread	2450	1.77	0.72 - 1.1
SPA-M6-H	M6	10	12	15	20	25	30	35	40		10	4	Full Thread	3140	2.94	0.95 - 2.1
SPA-M8-H	M8			15	20	25	30	35	40	50	13	5.5	27(L=50)	5100	7.85	2.3 - 4.8
SPA-M10-H	M10					25	30	35	40	50	17	7	27(L=50)	6900	12.75	5.6 - 8.3

*1 : If the "L" value is other than the value in parentheses, the screw is full thread.

*2 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPA-M5-H	20
SPA-M6-H	10
SPA-M8-H	10
SPA-M10-H	5

*1 : Also sold separately from 1 piece up. ➡ P.809

● Part number specification

SPA - M5 - 30 - H

Product Code 1 2 Product Code

Order in number of packs.

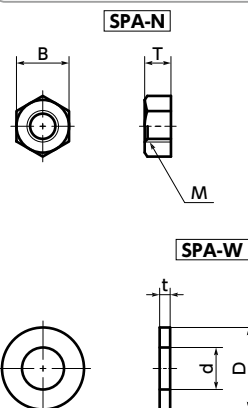
Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPA-N/SPA-W Plastic Screw - Hex Nuts / Washers - RENY

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● Material/Finish

RoHS2 Compliant

	SPA-N / SPA-W
Main body	RENY*1 (50% Glass Fiber Reinforced Polyamide MXD6) /Ivory
Heat Resistance Temperature*2	105°C

*1 : RENY is a registered trademark of Mitsubishi Engineering-Plastics Corporation.

*2 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

SPA-N Hex Nuts

Unit : mm					
Part Number	M	B	T	Mass (g)	Qty per pack*1
SPA-M2-N	M2	4	1.6	0.027	50
SPA-M2.6-N	M2.6	5	2	0.05	50
SPA-M3-N	M3	5.5	2.4	0.072	50
SPA-M4-N	M4	7	3.2	0.17	50
SPA-M5-N	M5	8	4	0.25	20
SPA-M6-N	M6	10	5	0.51	20
SPA-M8-N	M8	13	6.5	1.1	20
SPA-M10-N	M10	17	8	2.4	10
SPA-M12-N	M12	19	10	3.5	10
SPA-M16-N	M16	24	18	8.9	5

*1 : Also sold separately from 1 piece up. ➡ P.809

SPA-W Washers

Unit : mm						
Part Number	d	D	t	Nominal	Mass (g)	Qty per pack*1
SPA-3-W	3.2	7	0.5	3	0.025	50
SPA-4-W	4.3	9	0.8	4	0.065	50
SPA-5-W	5.3	10	1	5	0.093	50
SPA-6-W	6.4	12.5	1.6	6	0.24	20
SPA-8-W	8.4	17	1.6	8	0.45	20
SPA-10-W	10.5	21	2	10	0.86	20
SPA-12-W	13	24	2.5	12	1.3	20
SPA-16-W	17	30	3	16	2.4	10

*1 : Also sold separately from 1 piece up. ➡ P.809

- RENY is a thermoplastic super-engineering plastic with excellent tensile and flexural strength.
- Screws have excellent fatigue resistance, cleanliness, and thermal insulation.
- It has a hardness level near that of metal but its mass is 1/5th that of iron.
- The properties and precautions of plastic screws ➡ P.735

● Application

Electrical and electronic equipment, insulation and dew condensation prevention for refrigerators and freezers, aquatic applications, electrochemical plating, lightweight applications in automobiles, aircrafts, and spacecrafts

● Part number specification

SPA-M5-N

1

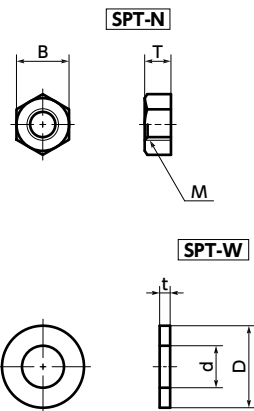
Order in number of packs.

Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SPT-N / SPT-W Plastic Screw - Hex Nuts / Washers - PTFE : Teflon

WEB Selection Tool WEB CAD Download Heat-resistance Chemical-proof



Material/Finish RoHS2 Compliant

	SPT-N / SPT-W
Main body	PTFE (Tetrafluoroethylene : Teflon*1) /White
Heat Resistance Temperature*2	260°C

*1 : Teflon is a registered trademark of DuPont.
*2 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.



- PTFE (Teflon) is a plastic with excellent heat resistance, electrical properties, chemical resistance, and abrasion resistance. Most chemicals cannot penetrate it.
- It has high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws ➡ P.735

Application
FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

SPT-N Hex Nuts Unit : mm					
Part Number	M	B	T	Mass (g)	Qty per pack
SPT-M3-N	M3	5.5	2.4	0.09	1
SPT-M4-N	M4	7	3.2	0.21	1
SPT-M5-N	M5	8	4	0.37	1
SPT-M6-N	M6	10	5	0.67	1
SPT-M8-N	M8	13	6.5	1.5	1
SPT-M10-N	M10	17	9	2.8	1
SPT-M12-N	M12	19	10	4.2	1

SPT-W Washers						Unit : mm
Part Number 	d	D	t	Nominal	Mass (g)	Qty per pack
SPT-3-W	3.2	7	0.5	3	0.032	1
SPT-4-W	4.3	9	0.8	4	0.082	1
SPT-5-W	5.3	10	1	5	0.12	1
SPT-6-W	6.4	12.5	1.6	6	0.3	1
SPT-8-W	8.4	17	1.6	8	0.57	1
SPT-10-W	10.5	21	2	10	1.1	1
SPT-12-W	13	24	2.5	12	1.7	1

Part number specification

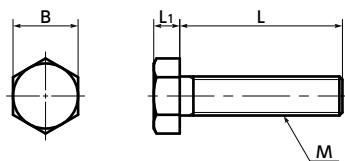
SPT-M8-N

1

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available

SPT-H Plastic Screw - Hex Head Screws - PTFE : Teflon

WEB Selection Tool WEB CAD Download Heat-resistance Chemical-proof



Material/Finish RoHS2 Compliant

	SPT-H
Main body	PTFE (Tetrafluoroethylene : Teflon*1) /White
Heat Resistance Temperature*2	260°C

*1 : Teflon is a registered trademark of DuPont.
*2 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- PTFE (Teflon) is a plastic with excellent heat resistance, electrical properties, chemical resistance, and abrasion resistance. Most chemicals cannot penetrate it.
- It has high incombustibility that meets V-0 of UL 94.
- The properties and precautions of plastic screws ➡ P.735

Application
FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

Unit : mm															
Part Number	M 	L 										B	L ₁	Tension* ¹ Rupture Load (N)	Mass (g)
SPT-M3-H	M3	6	8	10	12	16	20					5.5	2	45	0.18 - 0.35
SPT-M4-H	M4		8	10	12	16	20	25				7	2.8	79	0.41 - 0.77
SPT-M5-H	M5			10	12	16	20	25	30			8	3.5	128	0.74 - 1.4
SPT-M6-H	M6			10	12	16	20	25	30	40		10	4	181	1.2 - 2.6
SPT-M8-H	M8					16	20	25	30	40	50	13	5.5	329	3 - 6
SPT-M10-H	M10						20	25	30	40		17	7	522	6.3 - 9
SPT-M12-H	M12							25	30	40	50 60	19	8	759	10 - 17

*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SPT-M3-H	1
SPT-M4-H	1
SPT-M5-H	1
SPT-M6-H	1
SPT-M8-H	1
SPT-M10-H	1
SPT-M12-H	1

Part number specification

SPT-M8-40-H

Product Code

1

2

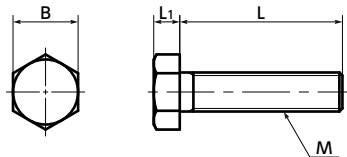
Product Code

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Not Available	Not Available

SPV-H Plastic Screw PVDF / Hex Head Screws

WEB Selection Tool CAD Download Chemical-proof

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Material/Finish

RoHS2 Compliant

	SPV-H
Main body	PVDF (Polyvinylidene Fluoride) (Milky White)
Heat resistance temperature*1	150°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- PVDF has excellent corrosion resistance against strong acids and organic solvents as well as halogen compounds such as hydrogen sulfide and bromine.
- It can be used in atmospheres in which metal and PVC (polyvinyl chloride) cannot be used.
- Max. Operating Temperature*1 (min./max.): 40/150 deg C
- Its tensile strength equals or exceeds PVC, and its impact strength is 3 times that of PVC.
- These screws comply with food hygiene laws. It is proven to be nontoxic and odorless.
- It is self-extinguishing and has excellent incombustibility.
- The properties and precautions of plastic screws → P.735

Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, and food industry machines

Unit : mm										
Part Number	M 	L 				B	L ₁	Tension* ¹ Rupture Load (N)	Torsional* ¹ Torque (N·m)	Mass (g)
SPV-M5-H	M5	10	15	20	25	8	3.5	640	0.64	0.64 - 1.1
SPV-M6-H	M6	10	15	20		10	4	940	0.88	1 - 1.4
SPV-M8-H	M8		15	20	25	13	5.5	1810	2.65	2.5 - 3.3

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPV-M5-H	20
SPV-M6-H	10
SPV-M8-H	10

*1 : Also sold separately from 1 piece up. → P.809

Part number specification

SPV - M5 - 15 - H

Product Code 1 2 Product Code

Order in number of packs.

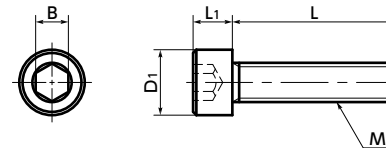
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

SPV-C Plastic Screw - Hex Socket Head Cap Screws - PVDF

WEB Selection Tool CAD Download Chemical-proof

e-nedzi.com



Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, chemical plants, and food industry machines

Material/Finish

RoHS2 Compliant

	SPV-C
Main body	PVDF (Polyvinylidene Fluoride) (Milky White)
Heat resistance temperature*1	150°C

*1 : This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- PVDF has excellent chemical resistance against strong acids and organic solvents as well as halogen compounds such as hydrogen sulfide and bromine.
- It can be used in atmospheres in which metal and PVC (polyvinyl chloride) cannot be used.
- Max. Operating Temperature*1 (min./max.): -40/150 deg C
- Its tensile strength equals or exceeds that of PVC, and its impact strength is 3 times that of PVC.
- These screws comply with food hygiene laws. It is proven to be nontoxic and odorless.
- It is self-extinguishing and has excellent incombustibility.
- The properties and precautions of plastic screws → P.735

Unit : mm												
Part Number	M 	L 					D1	L1	B	Tension*1 Rupture Load (N)	Torsional*1 Torque (N・m)	Mass (g)
SPV-M5-C	M5	10	15	20	25	30	8.5	5	4	640	0.64	0.62 - 1.3
SPV-M6-C	M6	10	15	20	25		10	6	5	940	0.88	1.1 - 1.7

*1 : Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPV-M5-C	20
SPV-M6-C	10

*1 : Also sold separately from 1 piece up. → P.809

Part number specification

SPV - M5 - 15 - C

Product Code 1 2 Product Code

Order in number of packs.

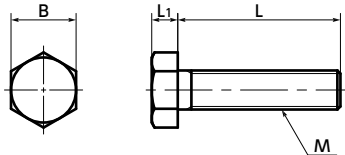
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

SPP-H Plastic Screw - Hex Head Screws - PP

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e-nedzi.com®



Material/Finish

RoHS2 Compliant

	SPP-H
Main body	PP (Polypropylene) / Milky White
Heat Resistance Temperature*1	65°C

*1: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

⚠ Precautions for Use

Because a cumulative pitch difference is created when PP screws are manufactured, use these screws with nuts. If a nut is not used, use a 20 mm or less fit with female thread.

- PP plastic has excellent resistance to chemicals such as strong acids and organic solvents.
- It is used as a replacement for vinyl chloride type plastic screws.
- The properties and precautions of plastic screws → P.735

Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

Unit : mm

Part Number	M	L	B	L1	Tension*1 Rupture Load (N)	Torsional*1 Torque (N·m)	Mass (g)
SPP-M4-H	M4	10 12 15 20 25	7	2.8	270	0.23	0.2 - 0.34
SPP-M5-H	M5	10 12 15 20 25 30	8	3.5	440	0.51	0.32 - 0.62
SPP-M6-H	M6	10 12 15 20 25 30	10	4	620	0.8	0.52 - 0.94
SPP-M8-H	M8	10 12 15 20 25 30 40	13	5.5	1100	2.2	1.1 - 2.2
SPP-M10-H	M10	20 25 30 40	17	7	1800	3.4	2.8 - 4

*1: Values in chart are for reference only. They are not guaranteed values. The recommendation torque is 50% of the torsional torque.

Part Number	Qty per pack*1
SPP-M4-H	20
SPP-M5-H	20
SPP-M6-H	10
SPP-M8-H	10
SPP-M10-H	10

*1: Also sold separately from 1 piece up. → P.809

Related Products

SPP-N Plastic Hexagon Nut (PP) is available.
→ P.774



Part number specification

SPP-M4-25-H

Product Code **1** Product Code **2**

Order in number of packs.

Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

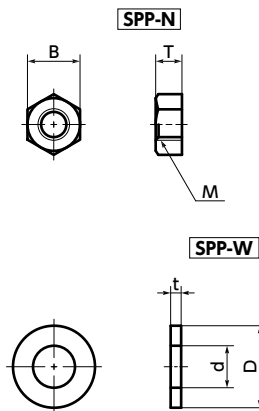
NBK

WEB ▶ <https://www.nbk1560.com>

SPP-N/SPP-W Plastic Screw - Hex Nuts / Washers - PP

WEB Selection Tool CAD Download Chemical-proof

e-nedzi.com®



Material/Finish

RoHS2 Compliant

	SPP-N / SPP-W
Main body	PP (Polypropylene) / Milky White
Heat Resistance Temperature*1	65°C

*1: This is the value for the plastic material. The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- PP plastic has excellent resistance to chemicals such as strong acids and organic solvents.
- It is used as a replacement for vinyl chloride type plastic screws.
- The properties and precautions of plastic screws → P.735

Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

SPP-N Hex Nuts

Unit : mm

Part Number	M	B	T	Mass (g)	Qty per pack*1
SPP-M4-N	M4	7	3.2	0.092	20
SPP-M5-N	M5	8	4	0.14	20
SPP-M6-N	M6	10	5	0.28	10
SPP-M8-N	M8	13	6.5	0.63	10
SPP-M10-N	M10	17	8	1.3	10

*1: Also sold separately from 1 piece up. → P.809

SPP-W Washers

Unit : mm

Part Number	d	D	t	Nominal	Mass (g)	Qty per pack*1
SPP-4-W	4.3	9	0.8	4	0.036	20
SPP-5-W	5.3	10	1	5	0.051	20
SPP-6-W	6.4	12.5	1.6	6	0.13	10
SPP-8-W	8.4	17	1.6	8	0.25	10
SPP-10-W	10.5	21	2	10	0.47	10

*1: Also sold separately from 1 piece up. → P.809

Part number specification

SPP-M4-N

1

Order in number of packs.

Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

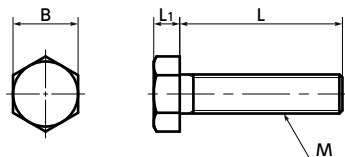
NBK

WEB ▶ <https://www.nbk1560.com>

SPVC-H Plastic Screw - Hex Head Screws - H - PVC

WEB Selection Tool WEB CAD Download Chemical-proof

e-nedzi.com®



● Material/Finish

	SPVC-H
Main body	H-PVC(Hard Polyvinyl Chloride)*1
Heat Resistance Temperature*2	35°C

*1 : Does not comply with the RoHS Directive. These products contain lead.

*2 : This is the value for the plastic material.The maximum operating temperature of the product changes with performance conditions such as tightening torque.

- These products have excellent chemical resistance against strong acids and organic solvents as well as halogen compounds such as hydrogen sulfide and bromine.

- They can be used in atmospheres in which metal and PVC (polyvinyl chloride) cannot be used.

- Max. Operating Temperature*2 (min./max.): -10/35 deg C

- Two colors, ivory and gray, are available. 

IV ————— Ivory

GR ————— Gray

- The properties and precautions of plastic screws → P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

Unit : mm														
Part Number	M 	L 									B	L1	Tension*1 Rupture Load (N)	Mass (g)
SPVC-M4-H	M4	10	12	16	20	25	30	35			7	2.8	200	0.3 - 0.65
SPVC-M5-H	M5	10	12	16	20	25	30	35	40		8	3.5	400	0.48 - 1.1
SPVC-M6-H	M6	10	12	16	20	25	30	35	40	50	10	4	670	0.78 - 2

*1 : Values in chart are for reference only. They are not guaranteed values.

Part Number	Qty per pack
SPVC-M4-H	1
SPVC-M5-H	1
SPVC-M6-H	1

● Part number specification

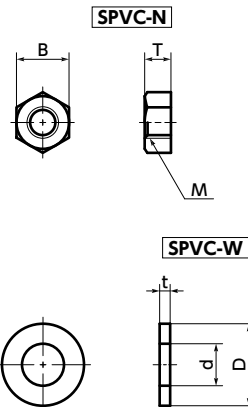
SPVC-M5-30-H-IVProduct Code   Product Code 

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 unit in 1 bag	Available / Add'l charge	Available / Add'l charge	Not Available	Please feel free to contact us

SPVC-N/SPVC-W Plastic Screw - Cross Recessed Pan Head Machine Screws - PPS

WEB Selection Tool WEB CAD Download Chemical-proof

e-nedzi.com®



- These products have excellent chemical resistance against strong acids and organic solvents as well as halogen compounds such as hydrogen sulfide and bromine.

- They can be used in atmospheres in which metal and PVC (polyvinyl chloride) cannot be used.

- Max. Operating Temperature*2 (min./max.): -10/35 deg C

- Two colors, ivory and gray, are available. 

IV ————— Ivory

GR ————— Gray

- The properties and precautions of plastic screws → P.735

● Application

FPD production equipment, semiconductor devices, printed circuit board etching devices, metallic surface treatment equipment and facilities, and chemical plants

● Material/Finish

	SPVC-N / SPVC-W
Main body	H-PVC(Hard Polyvinyl Chloride)*1
Heat Resistance Temperature*2	35°C

*1 : Does not comply with the RoHS Directive. These products contain lead.

*2 : This is the value for the plastic material.The maximum operating temperature of the product changes with performance conditions such as tightening torque.

Unit : mm						
Part Number 	M	B	T	Mass (g)	Qty per pack	
SPVC-M4-N	M4	7	3.2	0.14	1	
SPVC-M5-N	M5	8	4.7	0.24	1	
SPVC-M6-N	M6	10	5.2	0.44	1	

Unit : mm						
Part Number	d	D	t	Nominal	Mass (g)	Qty per pack
SPVC-4-W	4.3	9	0.8	4	0.053	1
SPVC-5-W	5.3	10	1	5	0.077	1
SPVC-6-W	6.4	12.5	1.6	6	0.2	1

● Part number specification

SPVC-M5-N-IV 

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available

Selection Navigator



CAD Data Download

<https://www.nbk1560.com/>



• Washers

	Eccentric Lock Washer™	Adjustment Washer				Locking and Sealing Rings
Part Number	SWAS-EW	SWA-AW	SWA-AWEL	SWAS-AW	SWAS-AWBK	SWH / SWC
Shape						
Page	P.781	P.783	P.785	P.787	P.789	P.790
Materials	SUS304	S45C Ferrosoferric Oxide Film	S45C Electroless nickel plating	SUS304	SUS304 Stainless Steel Black	Polyamide (White)
Characteristics	Vibration resistant treatment with commercial hexagon nut	A variety of outside diameters and thickness to choose from	A variety of outside diameters and thickness to choose from	A variety of outside diameters and thickness to choose from	Antireflection Corrosion-resistant	For Hex Head Screws For Socket Head Cap Screws
Size	Nominal diameter 6 to 12	Nominal diameter 2 to 16	Nominal diameter 2 to 16	Nominal diameter 2 to 16	Nominal diameter 3 to 16	Nominal diameter 3 to 12

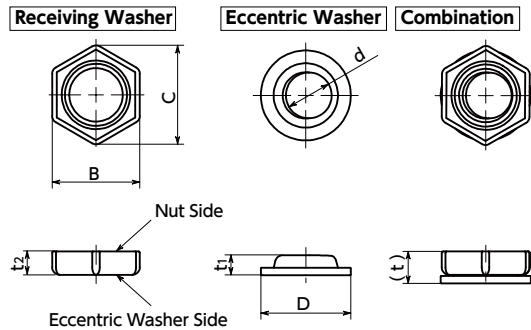
	Ribbed Lock Washers	Sealing Washers	Spherical Washers	High Intensity Flat Washers	Bezel Washers
Part Number	SWR	SWS	SQW / SQWS	SWF	SWBS
Shape					
Page	P.791	P.793	P.794	P.795	P.796
Materials	Equivalent to S70CM SUS304	SUS304	S45C SUS304	SCM435	SUS303
Characteristics	Vibration Resistant	Air and Liquid Leak Prevention	Support Surface Tilt to 2°	Vibration Resistant High strength	For Flat Screws
Size	Nominal diameter 2 to 20	Nominal diameter 3 to 16	Nominal diameter 3 to 12	Nominal diameter 6 to 16	Nominal diameter 4 to 8

• Hex Lock Nuts • Cover Caps

	Hex Lock Nuts	Cover Caps	
Part Number	SWUS	SCC	SCH
Shape			
Page	P.797	P.798	P.799
Materials	SUS304	Polypropylene	Polyethylene
Characteristics	Vibration Resistant	For Socket Head Cap Screws	For Hex Head
Size	M6 - M12	For M5 - M20	For M5 - M16

SWAS-EW Eccentric Lock Washer™ NEW

WEB Selection Tool CAD Download SUS Stainless steel Vibration resistant treatment



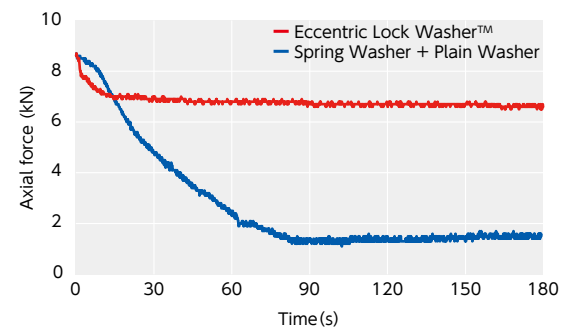
⚠ Precautions for Use

- Dedicated for hexagon nuts. Do not use on head side of hexagon head bolts.
- After tightening, use bolts with length sufficient to ensure screw thread pitches of 3 or more extending beyond the hexagon nuts.
- Do not use with other washers such as plain washers.
- When using half-thread bolts, confirm that the eccentric washer is in the screw thread part.
- Bolt damage may ensue due to product properties.
- Part number specification

SWAS-10-EW



- Vibration resistant treatment effect can be achieved simply by using commercially available hexagon nuts.
- Hexagon nuts can be tightened by hand until tightening force applies, for simple mounting.
- Use the receiving washer and eccentric washer as a set.
- Passes NAS-type vibration tests (NAS3350).
- Vibration resistant treatment effect has also been confirmed with the Junker test.



• Test conditions

Bolt size: M10 - 40
Distance between washer surfaces: 24mm
Amplitude: $\pm 0.43\text{mm}$
Vibration: 3.3Hz
Test time: 180 sec

• Application

Vibration resistant treatment

• Material/Finish



	SWAS-EW
Receiving Washer	SUS304
Eccentric Washer	SUS304

Unit : mm

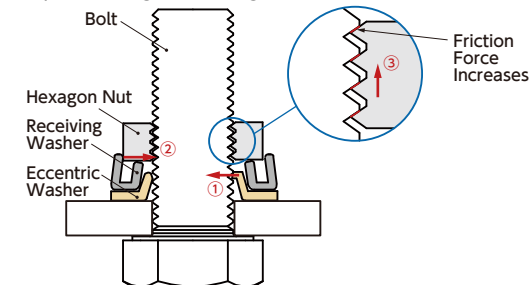
Part Number	Nominal	D	d	B	C	t ₁	t ₂	t	Reference tightening torque (N·m)	Mass (g)	Qty per pack
SWAS-6-EW	6	12	6.05	11.6	13.3	2.65	2.9	3.9	10	1.5	100
SWAS-8-EW	8	17	8.1	15	17.3	3.3	3.9	5.1	28	3.5	100
SWAS-10-EW	10	21	10.2	19.8	22.8	4.05	4.8	6.2	55	7.2	100
SWAS-12-EW	12	24	12.2	22	25.4	4.5	6	7.5	90	11	100

• The minimum order quantity is 1 set. → P.809

Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

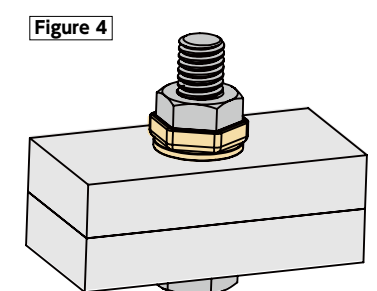
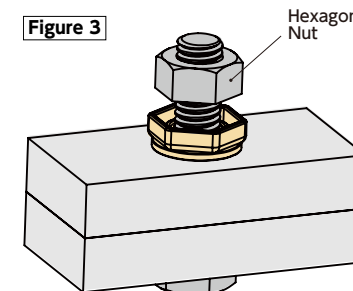
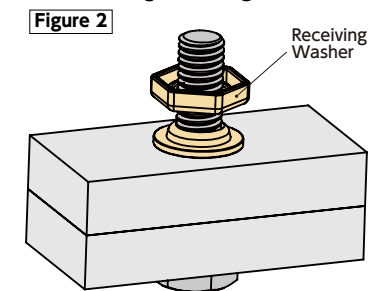
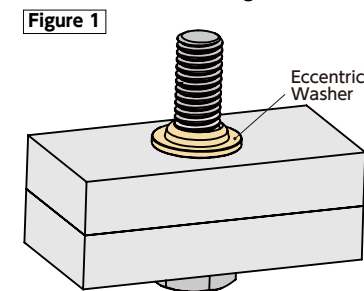
• Structure

- ① Tightening hexagon nuts causes eccentric washers to bite into bolts.
- ② Receiving washers press hexagon nuts into bolts.
- ③ Receiving washers then press hexagon nuts upward, increasing friction between hexagon nuts and bolts and preventing loosening.



• Installation Method

- ① Mount eccentric washers with convex side upward. **Figure 1**
- ② Mount receiving washers with concave side upward. **Figure 2**
- ③ Screw in hexagon nuts until they lightly contact receiving washers. **Figure 3**
- ④ Check that receiving washers and hexagon nuts are mated, and tighten. **Figure 4**

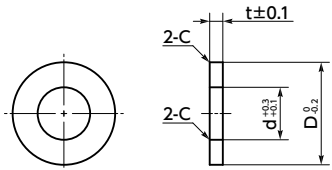




SWA-AW Adjust Washer - Steel - Ferrosoferric Oxide Film

WEB Selection Tool

WEB CAD Download



*D=16 or less : C0.2 or less
D=20 or more : C0.5 or less

SWA-AW



SWA-AWEL

- There is a variety of outside diameters and thickness relative to normal plain washers.
- For securing seating surface on the long hole position and engagement of materials with low marginal seating surface pressure such as aluminum and resin.
- For adjustment of cumulative error in assembly.
- Application
Height adjustment / Seating surface fall prevention

• Material/Finish	SWA-AW
Main body	S45C Ferrosoferric Oxide Film (Black)



Part Number	d 1	D 2	t 3					Mass (g)	Qty*1 per pack
			1	1.5	2	3	5		
SWA-2-8-AW	2	8	●		●			0.38 - 0.75	10
SWA-3-8-AW	3	8	●		●			0.35 - 0.69	10
SWA-4-8-AW	4	8	●	●	●			0.3 - 0.6	10
SWA-4-10-AW	4	10	●		●	●		0.53 - 1.6	10
SWA-4-12-AW	4	12	●		●	●		0.8 - 2.4	10
SWA-4-15-AW	4	15			●	●		2.6 - 3.9	10
SWA-5-8-AW	5	8	●	●	●			0.25 - 0.49	10
SWA-5-10-AW	5	10	●		●	●		0.47 - 1.4	10
SWA-5-12-AW	5	12	●		●	●		0.74 - 2.2	10
SWA-5-15-AW	5	15			●	●		2.5 - 3.7	10
SWA-5-16-AW	5	16			●	●		2.9 - 4.3	10
SWA-5-20-AW	5	20	●		●			2.3 - 4.7	10
SWA-6-10-AW	6	10	●		●	●		0.4 - 1.2	10
SWA-6-12-AW	6	12	●		●	●		0.68 - 2	10
SWA-6-15-AW	6	15			●	●		2.4 - 3.5	10
SWA-6-16-AW	6	16			●	●	●	2.7 - 6.8	10
SWA-6-20-AW	6	20	●		●	●	●	2.3 - 11	10
SWA-6-25-AW	6	25			●	●	●	7.3 - 18	10

*1 : Also sold separately from 1 piece up. ➔ P.809

Part Number	d 1	D 2	t 3					Mass (g)	Qty*1 per pack
			1	1.5	2	3	5		
SWA-8-12-AW	8	12			●	●	●	1 - 2.5	10
SWA-8-16-AW	8	16			●	●	●	2.4 - 6	10
SWA-8-20-AW	8	20			●	●	●	4.2 - 10	10
SWA-8-25-AW	8	25			●	●	●	7 - 17	10
SWA-8-30-AW	8	30			●	●	●	10 - 26	10
SWA-10-12-AW	10	12			●	●	●	0.55 - 1.4	10
SWA-10-16-AW	10	16				●	●	2.9 - 4.8	10
SWA-10-20-AW	10	20			●	●	●	3.7 - 9.3	10
SWA-10-25-AW	10	25				●	●	9.8 - 16	10
SWA-10-30-AW	10	30				●	●	15 - 25	10
SWA-12-16-AW	12	16				●	●	2.1 - 3.5	10
SWA-12-20-AW	12	20			●	●	●	3.2 - 8	10
SWA-12-25-AW	12	25				●	●	9 - 15	10
SWA-12-30-AW	12	30				●	●	14 - 23	10
SWA-16-20-AW	16	20			●	●	●	1.8 - 4.5	10
SWA-16-25-AW	16	25				●	●	6.9 - 11	10
SWA-16-30-AW	16	30				●	●	12 - 20	10

*1 : Also sold separately from 1 piece up. ➔ P.809

• Part number specification

SWA-2-8-1-AW

Product Code 1 2 3 Product Code

Select the t dimension from the dimension list.

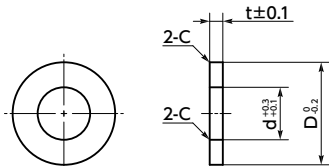
1 Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available



SWA-AWEL Adjust Washer - Steel - Electroless Nickel Plating

WEB Selection Tool

WEB CAD Download



*D=16 or less : C0.2 or less
D=20 or more : C0.5 or less

SWA-AW



SWA-AWEL

- There is a variety of outside diameters and thickness relative to normal plain washers.
- For securing seating surface on the long hole position and engagement of materials with low marginal seating surface pressure such as aluminum and resin.
- For adjustment of cumulative error in assembly.
- Application
Height adjustment / Seating surface fall prevention

• Material/Finish	RoHS2 Compliant SWA-AWEL
Main body	S45C Electroless Nickel Plating

Part Number	d 1	D 2	t 3					Mass (g)	Qty*1 per pack
			1	1.5	2	3	5		
SWA-2-8-AWEL	2	8	●		●			0.38 - 0.75	10
SWA-3-8-AWEL	3	8	●		●			0.35 - 0.69	10
SWA-4-8-AWEL	4	8	●	●	●			0.3 - 0.6	10
SWA-4-10-AWEL	4	10	●		●	●		0.53 - 1.6	10
SWA-4-12-AWEL	4	12	●		●	●		0.8 - 2.4	10
SWA-4-15-AWEL	4	15			●	●		2.6 - 3.9	10
SWA-5-8-AWEL	5	8	●	●	●			0.25 - 0.49	10
SWA-5-10-AWEL	5	10	●		●	●		0.47 - 1.4	10
SWA-5-12-AWEL	5	12	●		●	●		0.74 - 2.2	10
SWA-5-15-AWEL	5	15			●	●		2.5 - 3.7	10
SWA-5-16-AWEL	5	16			●	●		2.9 - 4.3	10
SWA-5-20-AWEL	5	20	●		●			2.3 - 4.7	10
SWA-6-10-AWEL	6	10	●		●	●		0.4 - 1.2	10
SWA-6-12-AWEL	6	12	●		●	●		0.68 - 2	10
SWA-6-15-AWEL	6	15			●	●		2.4 - 3.5	10
SWA-6-16-AWEL	6	16			●	●	●	2.7 - 6.8	10
SWA-6-20-AWEL	6	20	●		●	●	●	2.3 - 11	10
SWA-6-25-AWEL	6	25			●	●	●	7.3 - 18	10

*1 : Also sold separately from 1 piece up. ➡ P.809

Part Number	d 1	D 2	t 3					Mass (g)	Qty*1 per pack
			1	1.5	2	3	5		
SWA-8-12-AWEL	8	12			●	●	●	1 - 2.5	10
SWA-8-16-AWEL	8	16			●	●	●	2.4 - 6	10
SWA-8-20-AWEL	8	20			●	●	●	4.2 - 10	10
SWA-8-25-AWEL	8	25			●	●	●	7 - 17	10
SWA-8-30-AWEL	8	30			●	●	●	10 - 26	10
SWA-10-12-AWEL	10	12			●	●	●	0.55 - 1.4	10
SWA-10-16-AWEL	10	16				●	●	2.9 - 4.8	10
SWA-10-20-AWEL	10	20			●	●	●	3.7 - 9.3	10
SWA-10-25-AWEL	10	25				●	●	9.8 - 16	10
SWA-10-30-AWEL	10	30				●	●	15 - 25	10
SWA-12-16-AWEL	12	16				●	●	2.1 - 3.5	10
SWA-12-20-AWEL	12	20			●	●	●	3.2 - 8	10
SWA-12-25-AWEL	12	25				●	●	9 - 15	10
SWA-12-30-AWEL	12	30				●	●	14 - 23	10
SWA-16-20-AWEL	16	20			●	●	●	1.8 - 4.5	10
SWA-16-25-AWEL	16	25				●	●	6.9 - 11	10
SWA-16-30-AWEL	16	30				●	●	12 - 20	10

*1 : Also sold separately from 1 piece up. ➡ P.809

- Part number specification

SWA-2-8-1-AWEL

Product Code

1

2

3

Product Code

Select the t dimension from the dimension list.

Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available



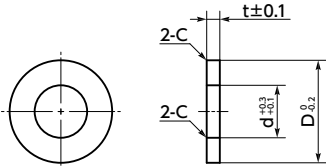
SWAS-AW Adjust Washer - Stainless Steel

WEB Selection Tool WEB CAD Download SUS Stainless steel

SWAS-AWBK



SWAS-AW



*D=16 or less : C0.2 or less
D=20 or more : C0.5 or less

- There is a variety of outside diameters and thickness relative to normal plain washers.
- For securing seating surface on the long hole position and engagement of materials with low marginal seating surface pressure such as aluminum and resin.
- For adjustment of cumulative error in assembly.

• Application

Height adjustment / Seating surface fall prevention

• Material/Finish



	SWAS-AW
Main body	SUS304

Unit : mm

Part Number	d 	D 	t 					Mass (g)	Qty per pack*1
			1	1.5	2	3	5		
SWAS-2-8-AW	2	8	●		●			0.38 - 0.75	10
SWAS-3-8-AW	3	8	●		●			0.35 - 0.69	10
SWAS-4-8-AW	4	8	●	●	●			0.3 - 0.6	10
SWAS-4-10-AW	4	10	●		●	●		0.53 - 1.6	10
SWAS-4-12-AW	4	12	●		●	●		0.8 - 2.4	10
SWAS-4-15-AW	4	15			●	●		2.6 - 3.9	10
SWAS-5-8-AW	5	8	●	●	●			0.25 - 0.49	10
SWAS-5-10-AW	5	10	●		●	●		0.47 - 1.4	10
SWAS-5-12-AW	5	12	●		●	●		0.74 - 2.2	10
SWAS-5-15-AW	5	15			●	●		2.5 - 3.7	10
SWAS-5-16-AW	5	16			●	●		2.9 - 4.3	10
SWAS-5-20-AW	5	20	●		●			2.3 - 4.7	10
SWAS-6-10-AW	6	10	●		●	●		0.4 - 1.2	10
SWAS-6-12-AW	6	12	●		●	●		0.68 - 2	10
SWAS-6-15-AW	6	15			●	●		2.4 - 3.5	10
SWAS-6-16-AW	6	16			●	●	●	2.7 - 6.8	10
SWAS-6-20-AW	6	20	●		●	●	●	2.3 - 11	10
SWAS-6-25-AW	6	25			●	●	●	7.3 - 18	10

*1 : Also sold separately from 1 piece up. ➔ P.809

Part Number	d 	D 	t 					Mass (g)	Qty per pack*1
			1	1.5	2	3	5		
SWAS-8-12-AW	8	12			●	●	●	1 - 2.5	10
SWAS-8-16-AW	8	16			●	●	●	2.4 - 6	10
SWAS-8-20-AW	8	20			●	●	●	4.2 - 10	10
SWAS-8-25-AW	8	25			●	●	●	7 - 17	10
SWAS-8-30-AW	8	30			●	●	●	10 - 26	10
SWAS-10-12-AW	10	12			●	●	●	0.55 - 1.4	10
SWAS-10-16-AW	10	16				●	●	2.9 - 4.8	10
SWAS-10-20-AW	10	20			●	●	●	3.7 - 9.3	10
SWAS-10-25-AW	10	25				●	●	9.8 - 16	10
SWAS-10-30-AW	10	30				●	●	15 - 25	10
SWAS-12-16-AW	12	16				●	●	2.1 - 3.5	10
SWAS-12-20-AW	12	20			●	●	●	3.2 - 8	10
SWAS-12-25-AW	12	25				●	●	9 - 15	10
SWAS-12-30-AW	12	30				●	●	14 - 23	10
SWAS-16-20-AW	16	20			●	●	●	1.8 - 4.5	10
SWAS-16-25-AW	16	25				●	●	6.9 - 11	10
SWAS-16-30-AW	16	30				●	●	12 - 20	10

*1 : Also sold separately from 1 piece up. ➔ P.809

• Part number specification

SWAS-2-8-1-AW

Product Code    Product Code

Select the t dimension from the dimension list.

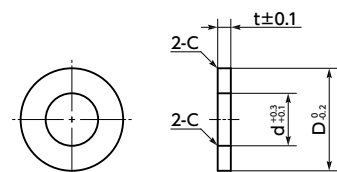
Individual Sales ➔ P.809	Cleanroom Wash & Packaging ➔ P.807	Screw Length Adjustment ➔ P.811	Vibration Resistant ➔ P.810	Modification process for captive use ➔ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SWAS-AWBK Adjust Washer - Stainless Steel Black

e-nedzi.com®



WEB Selection Tool CAD Download Antireflection SUS Stainless steel

SWAS-AWBK**SWAS-AW***D=16 or less : C0.2 or less
D=20 or more : C0.5 or less

● Part number specification

SWAS-5-10-3-AWBKProduct Code 1 2 3 Product Code
Select the t dimension from the dimension list.

- There is a variety of outside diameters and thickness relative to normal plain washers.
- For securing seating surface on the long hole position and engagement of materials with low marginal seating surface pressure such as aluminum and resin.
- For adjustment of cumulative error in assembly.

● Application

Height adjustment / Seating surface fall prevention

● Material/Finish



	SWAS-AWBK
Main body	SUS304 Stainless Steel Black

Unit : mm

Part Number	d 1	D 2	t 3					Mass (g)	Qty per pack
			1	1.5	2	3	5		
SWAS-3-8-AWBK	3	8	●		●			0.35 - 0.69	1
SWAS-4-8-AWBK	4	8	●	●	●			0.3 - 0.6	1
SWAS-4-10-AWBK	4	10	●		●	●		0.53 - 1.6	1
SWAS-4-12-AWBK	4	12	●		●	●		0.8 - 2.4	1
SWAS-5-8-AWBK	5	8	●	●	●			0.25 - 0.49	1
SWAS-5-10-AWBK	5	10	●		●	●		0.47 - 1.4	1
SWAS-5-12-AWBK	5	12	●		●	●		0.74 - 2.2	1
SWAS-5-16-AWBK	5	16			●	●		2.9 - 4.3	1
SWAS-5-20-AWBK	5	20	●		●			2.3 - 4.7	1
SWAS-6-10-AWBK	6	10	●		●	●		0.4 - 1.2	1
SWAS-6-12-AWBK	6	12	●		●	●		0.68 - 2	1
SWAS-6-16-AWBK	6	16			●	●	●	2.7 - 6.8	1
SWAS-6-20-AWBK	6	20	●		●	●	●	2.3 - 11	1
SWAS-6-25-AWBK	6	25			●	●	●	7.3 - 18	1
SWAS-8-12-AWBK	8	12			●	●	●	1 - 2.5	1
SWAS-8-16-AWBK	8	16			●	●	●	2.4 - 6	1
SWAS-8-20-AWBK	8	20			●	●	●	4.2 - 10	1
SWAS-8-25-AWBK	8	25			●	●	●	7 - 17	1
SWAS-10-12-AWBK	10	12			●	●	●	0.55 - 1.4	1
SWAS-10-16-AWBK	10	16				●	●	2.9 - 4.8	1
SWAS-10-20-AWBK	10	20			●	●	●	3.7 - 9.3	1
SWAS-10-25-AWBK	10	25				●	●	9.8 - 16	1
SWAS-12-16-AWBK	12	16				●	●	2.1 - 3.5	1
SWAS-12-20-AWBK	12	20			●	●	●	3.2 - 8	1
SWAS-12-25-AWBK	12	25				●	●	9 - 15	1
SWAS-16-25-AWBK	16	25				●	●	6.9 - 11	1

1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
1 pc. in 1 bag Available / Add'l charge Not Available Not Available Not Available

NBK

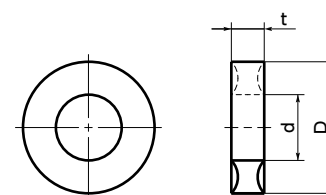
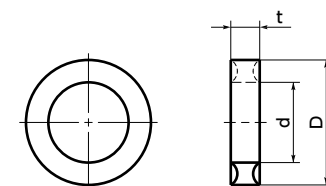
https://www.nbk1560.com

SWH/SWC Locking and Sealing Rings

e-nedzi.com®



WEB Selection Tool CAD Download

SWH**SWC****SWH****SWC**

- For sealing of the bolt tightening section.
- SWH** — For hex head screws and hex nuts
- SWC** — For socket head cap screws
- Max. Operating Temperature : -60 to 80 deg C
- Also, **SWT** Toothed Washer for locking and sealing rings is available.



● Application

Thread Locking and Thread Sealing

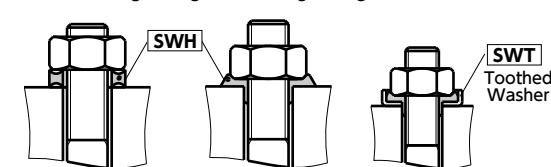
● Material/Finish



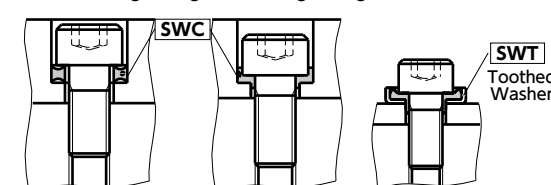
	SWH	SWC
Main Body	Polyamide (White)	Polyamide (White)

● Installation Method

- Before Tightening
- After Tightening

Use with **SWT**.

- Before Tightening
- After Tightening

Use with **SWT**.

● Part number specification

SWC-10

1

Order in number of packs.
Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809 Cleanroom Wash & Packaging → P.807 Screw Length Adjustment → P.811 Vibration Resistant → P.810 Modification process for captive use → P.806
Available / Add'l charge Not Available Not Available Not Available Not Available

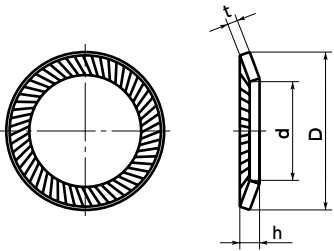
NBK

https://www.nbk1560.com



SWR / SWRS Ribbed Lock Washers Additional Size

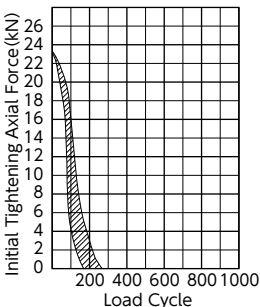
WEB Selection Tool WEB CAD Download SUS Stainless steel Vibration resistant treatment



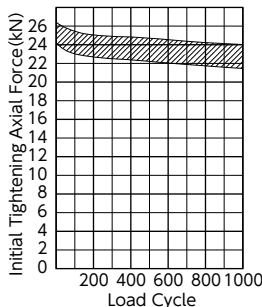
● Vibration test comparison

Test Hexagon Screws : DIN933 - 8.8-M10 - 35, Vibration : 15Hz, Amplitude : 0.5mm

■ Spring Washer (DIN127)



■ Ribbed Lock Washer (SWR)



- Ribs on both sides of the washer hook onto the bolt bearing surface and intended attachment section to prevent looseness due to vibration.
- Washers for loosing prevention. For connecting locations that cannot use other means such as adhesives.
- More effective for loosing prevention than standard spring washers.

● Application

Vibration Resistant

● Material/Finish

RoHS2 Compliant

	SWR	SWRS
Main Body	SCM435(Hardness: 425 - 495 HV) Ferrosoferric Oxide Film (Black)	SUS304



Precautions for Use

Ribs may not hook into some connecting locations, depending on their material. Confirm in advance that the ribs will hook.

SWR Made of Steel · Ferrosoferric Oxide Film

Unit : mm

Part Number	Nominal	d	D	t	h	Mass (g)	Qty per pack*1
SWR-2	2	2.2 ^{+0.3} ₀	4 ⁻⁰ _{-0.3}	0.35	0.6	0.02	10
SWR-2.5	2.5	2.7 ^{+0.3} ₀	4.8 ⁻⁰ _{-0.3}	0.45	0.9	0.04	10
SWR-3	3	3.2 ^{+0.3} ₀	5.5 ⁻⁰ _{-0.3}	0.45	0.9	0.05	20
SWR-4	4	4.3 ^{+0.3} ₀	7 ⁻⁰ _{-0.36}	0.5	1	0.08	20
SWR-5	5	5.3 ^{+0.3} ₀	9 ⁻⁰ _{-0.36}	0.6	1.1	0.14	20
SWR-6	6	6.4 ^{+0.36} ₀	10 ⁻⁰ _{-0.36}	0.7	1.2	0.23	20
SWR-8	8	8.4 ^{+0.36} ₀	13 ⁻⁰ _{-0.43}	0.8	1.4	0.43	10
SWR-10	10	10.5 ^{+0.43} ₀	16 ⁻⁰ _{-0.43}	1	1.6	0.82	10
SWR-12	12	13 ^{+0.43} ₀	18 ⁻⁰ _{-0.43}	1.1	1.7	0.89	10
SWR-16	16	17 ^{+0.43} ₀	24 ⁻⁰ _{-0.52}	1.3	2.1	2	10
SWR-20	20	21 ^{+0.52} ₀	30 ⁻⁰ _{-0.62}	1.5	2.4	3.4	5

*1 : Also sold separately from 1 piece up. ➡ P.809

SWRS Made of Stainless Steel

Unit : mm

Part Number	Nominal	d	D	t	h	Mass (g)	Qty per pack*1
SWRS-1.6	1.6	1.7 ^{+0.3} ₀	3.2 ⁻⁰ _{-0.3}	0.5	0.75	0.02	10
SWRS-2	2	2.2 ^{+0.3} ₀	4 ⁻⁰ _{-0.3}	0.5	0.75	0.03	20
SWRS-2.5	2.5	2.7 ^{+0.3} ₀	4.8 ⁻⁰ _{-0.3}	0.5	0.95	0.04	20
SWRS-3	3	3.2 ^{+0.3} ₀	5.5 ⁻⁰ _{-0.3}	0.5	0.95	0.05	20
SWRS-4	4	4.3 ^{+0.3} ₀	7 ⁻⁰ _{-0.36}	0.7	1.2	0.08	20
SWRS-5	5	5.3 ^{+0.3} ₀	9 ⁻⁰ _{-0.36}	0.7	1.2	0.14	10
SWRS-6	6	6.4 ^{+0.36} ₀	10 ⁻⁰ _{-0.36}	0.7	1.2	0.23	10
SWRS-8	8	8.4 ^{+0.36} ₀	13 ⁻⁰ _{-0.43}	1	1.6	0.43	10
SWRS-10	10	10.5 ^{+0.43} ₀	16 ⁻⁰ _{-0.43}	1	1.6	0.82	5
SWRS-12	12	13 ^{+0.43} ₀	18 ⁻⁰ _{-0.43}	1.25	1.85	0.89	5
SWRS-16	16	17 ^{+0.43} ₀	24 ⁻⁰ _{-0.52}	1.5	2.3	2	5
SWRS-20	20	21 ^{+0.52} ₀	30 ⁻⁰ _{-0.62}	1.8	2.8	3.4	5

*1 : Also sold separately from 1 piece up. ➡ P.809

● Part number specification

SWR-10



Order in number of packs.

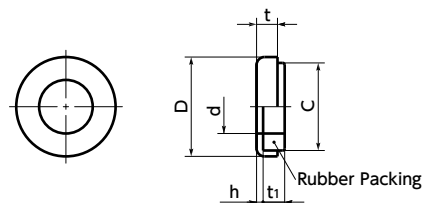
Also sold separately from 1 piece up. ➡ P.809

1 Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available

SWS Seal washer *New Variation Added*

WEB Selection Tool WEB CAD Download SUS Stainless steel

e-nedzi.com®



● Material/Finish



	SWS	SWS-F	SWS-E	SWS-S
Main Body	SUS304	SUS304	SUS304	SUS304
Rubber Packing	NBR	Fluoro-rubber	EPDM	Silicone rubber



- Seal washer incorporating rubber packing in a stainless steel washer.
- Prevents air/liquid leakage from the seating surface of the screw head. Test results for JIS C 0920 protection degree IPX7 are available on the NBK website.
- During screw tightening, the rubber bonds with the screw thread to make the seal rather than slipping out of place.
- Four types of material are used in the rubber packing. They can be selected by the end symbol of the part number.

End Symbol	Rubber Packing Material	Characteristics	Allowable Operating Temperature
No	NBR	Standard	120°C
F	Fluoro-rubber	Chemical-proof/heat-resistance/ozone resistance	200°C
E	EPDM	Weather resistance/water resistance/ozone resistance	120°C
S	Silicone rubber	Heat-resistance/cold-resistance/electrical insulation	180°C

● Application

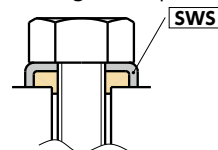
Seal ring
Oil hydraulic equipment / Pneumatic device

SWS Rubber packing: NBR **SWS-F** Rubber packing: Fluoro-rubber
SWS-E Rubber packing: EPDM **SWS-S** Rubber packing: Silicone rubber

Part Number	Part Number	Part Number	Part Number	Nominal	d	D	h	t	t ₁	C	Mass (g)	Qty per pack
SWS-3	SWS-3-F	SWS-3-E	SWS-3-S	3	3.2	7	0.5	2.2	2.2	6.3	0.2	10
SWS-4	SWS-4-F	SWS-4-E	SWS-4-S	4	4.2	8	0.5	2.1	2.3	7.2	0.2	10
SWS-5	SWS-5-F	SWS-5-E	SWS-5-S	5	5.2	9.5	0.8	2.7	2.8	8.2	0.6	10
SWS-6	SWS-6-F	SWS-6-E	SWS-6-S	6	6.2	11.5	1	3	3	9.8	1	10
SWS-8	SWS-8-F	SWS-8-E	SWS-8-S	8	8.2	15.2	1	3.2	3.3	13.4	1.8	5
SWS-10	SWS-10-F	SWS-10-E	SWS-10-S	10	10.2	18	1.5	4	3.8	15.1	3.2	5
SWS-12	SWS-12-F	SWS-12-E	SWS-12-S	12	14.2	24	1.5	4.8	4.6	21.1	6.6	5
SWS-16	SWS-16-F	SWS-16-E	SWS-16-S	16	18.8	30	2	5.3	4.8	26.2	11	5

● Also sold separately from 1 piece up. → P.809

● Usage example



● Part number specification

SWS-10-F

Place order by a bag.
Also sold separately from 1 piece up. → P.809

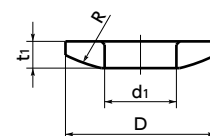
1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

NBK

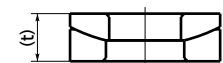
WEB ▶ <https://www.nbk1560.com>**SQW/SQWS Spherical Washers** *Additional Size*

WEB Selection Tool WEB CAD Download SUS Stainless steel

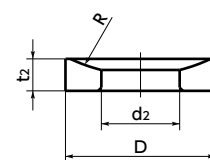
e-nedzi.com®



Convex Side



Concave and Convex Set



Concave Side



- Use a concave and convex set.
- Washers can absorb a tilt of the bolt and bearing surface to a maximum of 2°.

● Application

Absorption of misalignment of bolt and bearing surface

SQW Made of Steel · Ferrosoferric Oxide Film

Unit : mm

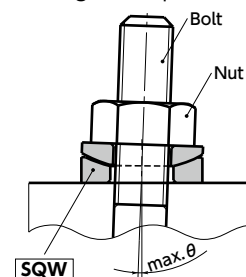
Part Number	Nominal	D	d ₁	d ₂	t ₁	t ₂	t	R	θ (°)	Mass (g)	Qty per pack
SQW-3	3	7.3	3.5	3.8	1.3	1.6	2.3	8	2	0.2	1
SQW-4	4	9.4	4.5	4.9	1.7	2	3	10.2	2	0.3	1
SQW-5	5	11.5	5.5	6	2.1	2.5	3.7	12.5	2	0.5	1
SQW-6	6	13	6.6	7.2	2.3	2.8	4.2	15	2	3	1
SQW-8	8	17	9	9.6	3.1	3.7	5.6	20	2	7	1
SQW-10	10	22	10.5	12	4	3.5	6	25	2	13	1
SQW-12	12	26	13.5	15	5	4	7.5	30	2	22	1

SQWS Made of Stainless Steel

Unit : mm

Part Number	Nominal	D	d ₁	d ₂	t ₁	t ₂	t	R	θ (°)	Mass (g)	Qty per pack
SQWS-3	3	7.3	3.5	3.8	1.3	1.6	2.3	8	2	0.2	1
SQWS-4	4	9.4	4.5	4.9	1.7	2	3	10.2	2	0.3	1
SQWS-5	5	11.5	5.5	6	2.1	2.5	3.7	12.5	2	0.5	1
SQWS-6	6	13	6.6	7.2	2.3	2.8	4.2	15	2	3	1
SQWS-8	8	17	9	9.6	3.1	3.7	5.6	20	2	7	1
SQWS-10	10	23	11	12	4.1	4.9	7	25	2	17	1
SQWS-12	12	25	14	15	4.5	5.6	8.4	30	2	21	1
SQWS-16	16	32	17	19.9	6	5	8.8	35	3	38	1
SQWS-20	20	40	21	25	7.5	7	11.4	40	3	76	1
SQWS-24	24	48	25	30	9	8	13.4	50	3	130	1

● Usage example



● Material/Finish



	SQW	SQWS
Main Body	S45C (Hardness: 25 - 30 HRC) Ferrosoferric Oxide Film (Black)	SUS304

● Part number specification

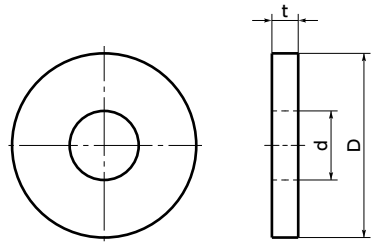
SQWS-10

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available

NBK

WEB ▶ <https://www.nbk1560.com>

794



- Flat washers for high intensity screws.
- The surface area is twice or more of that of standard washers. Washers eliminate bolt looseness by preventing the sinking of the bearing surface.
- For the connection of materials with low limits for bearing surface pressure such as aluminum and plastic.

● Application
Prevention of bearing surface sinking and loosening

● Material/Finish 

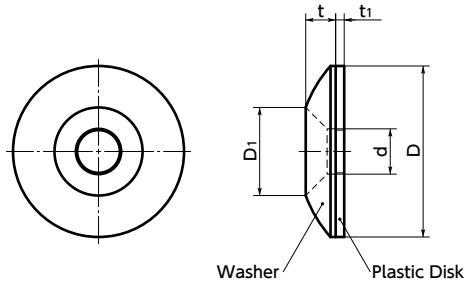
	SWF
Main Body	SCM435 (Hardness 350 - 430 HV) Ferrosoferric Oxide Coating (Black)

Unit : mm

Part Number 	Nominal	d	D	t	Mass (g)	Qty per pack
SWF-6	6	6.4 ^{+0.3} ₀	17 ⁰ _{-0.43}	3	5	1
SWF-8	8	8.4 ^{+0.3} ₀	23 ⁰ _{-0.52}	4	11	1
SWF-10	10	10.5 ^{+0.3} ₀	28 ⁰ _{-0.52}	4	17	1
SWF-12	12	13 ^{+0.4} ₀	35 ⁰ _{-0.52}	5	33	1
SWF-16	16	17 ^{+0.4} ₀	45 ⁰ _{-0.62}	6	64	1

● Part number specification
SWF-8


 Individual Sales → P.809	 Cleanroom Wash & Packaging → P.807	 Screw Length Adjustment → P.811	 Vibration Resistant → P.810	 Modification process for captive use → P.806
1 pc. in 1 bag	Not Available	Not Available	Not Available	Not Available



- Washers are for flat screws. They decorate attachment surfaces beautifully.
- Their smooth slanted shape prevents catching of screw heads.
- The plastic disk prevents damage to the attachment surface.

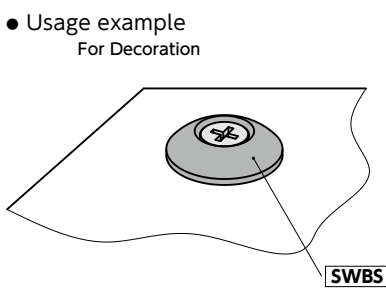
● Application
Decoration, prevention of catching the screw head, prevention of damage to the intended fastening material

● Material/Finish 

	SWBS
Main Body	SUS303
Plastic Disk	Nylon 6 (White)

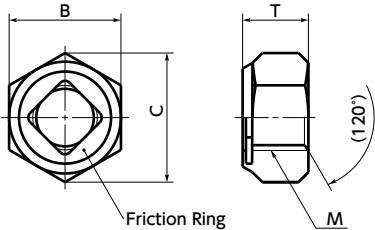
Unit : mm

Part Number 	Nominal	D	d	D1	t	t1	Mass (g)	Qty per pack
SWBS-4	4	18	4.3	8.5	3	0.8	3.6	1
SWBS-5	5	20	5.3	10.3	3.5	1	5	1
SWBS-6	6	22	6.4	12.3	4	1	7.2	1
SWBS-8	8	26	8.4	16.4	5	1	11	1



● Part number specification
SWBS-6


 Individual Sales → P.809	 Cleanroom Wash & Packaging → P.807	 Screw Length Adjustment → P.811	 Vibration Resistant → P.810	 Modification process for captive use → P.806
1 pc. in 1 bag	Available / Add'l charge	Not Available	Not Available	Not Available



- Nuts equipped with a high-performance mechanism of loosening prevention. For loosening caused by vibration.
- Friction ring with very good restoration elasticity and heat resistance tighten the thread peak of the male thread from four sides. Effective for loosening prevention. The male thread is not damaged.
- Glass fiber reinforced polyamide is used for the friction ring. Rings with heat resistance effectively prevent loosening under conditions up to 110 deg C. In addition, they are not affected by gasoline, alcohol, and oil.
- The friction ring retains most of its effects even after repeated use.

● Application

Loosening Prevention

● Material/Finish

RoHS2 Compliant

	SWUS
Main Body	SUS304
Friction Ring	Glass Fiber Reinforced Polyamide

Part Number	M	B	C (Approx.)	T	Mass (g)	Qty*1 per pack
SWUS-M6	M6	10	11.5	6	2	50
SWUS-M8	M8	13	15	8	4.6	20
SWUS-M10	M10	17	19.6	10	11	10
SWUS-M12	M12	19	21.9	12	16	10

*1 : Also sold separately from 1 piece up. ➡ P.809

● Related Products

SWUT Hexagon Lock Nut made of titanium is available. ➡ P.642



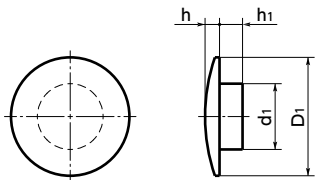
● Part number specification

SWUS-M8

1

Order in number of packs.
Also sold separately from 1 piece up. ➡ P.809

Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Available / Add'l charge	Not Available	Not Available	Not Available



- Caps protect the hex socket of socket head cap screws from being clogged with foreign matter.

● Application

Protection of screw heads and dust countermeasure

● Material/Finish

RoHS2 Compliant

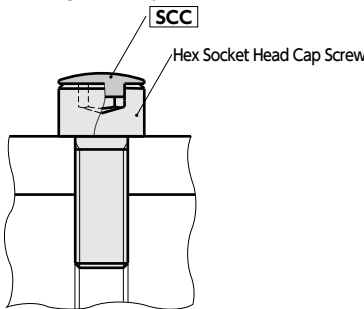
	SCC
Main Body	Polyethylene (Gray)

Part Number	Nominal of*2 Hex Socket Head Cap Screws	d1	D1	h	h1	Mass (g)	Qty*1 per pack
SCC-4	M5	4.2	9	1.3	2.5	0.1	20
SCC-5	M6	5.2	10	1.4	3.1	0.1	20
SCC-6	M8	6.2	13	1.5	4	0.3	20
SCC-8	M10	8.2	16	1.6	5	0.4	20
SCC-10	M12	10.3	18	1.8	6.4	0.6	10
SCC-14	M16	14.4	24	2.2	7	0.9	10
SCC-17	M20	17.4	30	2.5	9	1.2	10

*1 : Also sold separately from 1 piece up. ➡ P.809

*2 : For use with socket head cap screws listed in JIS B 1176 : 2006 (ISO 4762 : 1997) "Hexagon Socket Head Cap Screws".

● Usage example



● Part number specification

SCC-10

1

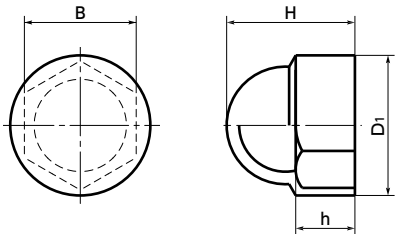
Order in number of packs.
Also sold separately from 1 piece up. ➡ P.809

Individual Sales ➡ P.809	Cleanroom Wash & Packaging ➡ P.807	Screw Length Adjustment ➡ P.811	Vibration Resistant ➡ P.810	Modification process for captive use ➡ P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

SCH Cover Caps for Hex Head Screw

WEB Selection Tool WEB CAD Download

e-nedzi.com®



- Cover caps cover heads of hex head screws and hex nuts to increase the safety of machines and instruments.

● Application

Protection of screw heads and dust countermeasure

● Material/Finish

RoHS2 Compliant

	SCH
Main Body	Polyethylene (Black)

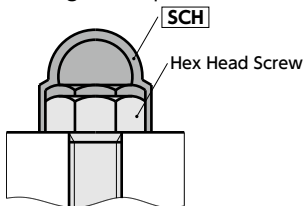
Part Number	Nominal of*2 Hex Socket Head Cap Screws	B	H	h	D1	Mass (g)	Qty*1 per pack
SCH-5	M5	8	9.5	5	10.9	0.3	20
SCH-6	M6	10	13	6	12.9	0.6	20
SCH-8	M8	13	15	9	16.8	1	20
SCH-10	M10	17	19.5	9	21.3	1.9	10
SCH-12	M12	19	21.5	11	23.6	2.4	10
SCH-16	M16	24	27	14	29.8	3.2	10

Unit : mm

*1 : Also sold separately from 1 piece up. → P.809

*2 : Confirm the width across flat dimensions of the hex head screws and hex nuts. [SCH-10] and [SCH-12] use the old JIS dimensions.

● Usage example



● Part number specification

SCH-10



Order in number of packs.

Also sold separately from 1 piece up. → P.809

1 Individual Sales → P.809	Cleanroom Wash & Packaging → P.807	Screw Length Adjustment → P.811	Vibration Resistant → P.810	Modification process for captive use → P.806
Available / Add'l charge	Not Available	Not Available	Not Available	Not Available

Safety Precautions - Special Screws

In order to use our products safely, please read these safety precautions and the precautions and handling methods on each product page before use. After reading the precautions and methods, store this catalog so that it can be reviewed when necessary.

⚠ Warning

If handled incorrectly, personal injury or physical damage may occur.

- Make sure to switch off the power of machines before attaching and removing products. Hands and fingers may touch the machine and cause injury if it is operated suddenly.
- Our products are manufactured for use with general purpose instruments and machines. When using these products with instruments and machines that require safety, use a prototype to confirm usability.
- To prevent danger, check for looseness of screws and perform other maintenance on a regular basis.
- Do not disassemble or modify products.

⚠ Precautions

If handled incorrectly, death or serious injury may occur.

- Do not use products in environments that may negatively affect them.
- Take care when handling products. If products are dropped, they may become damaged or deformed. In addition, take care when performing work to avoid back pain when moving objects or dropping items on feet.
- The mechanical properties, physical properties, chemical resistance, heat resistance temperature, and other data listed on the product pages in this catalog are reference values. These values may change due to performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.
- To prevent a negative impact on the environment, have a professional disposal company dispose of these products.
- Take care to avoid burns when handling products. Heat transferred from the surrounding machines may cause products to reach high temperatures immediately after operation stops.

List of Services

Coupling: Additional Modification of Shaft Hole and Keyway

→ P.803

We will perform additional modification of the shaft hole to the couplings. We will perform additional modification of the new JIS keyway.



Coupling: Changes to stainless steel screws

→ P.805

Change the hex socket set screw accompanied with the set screw type coupling or hex socket head cap screw accompanied with the clamping type coupling to those made of stainless steel material.



Captive Processing Service

→ P.806

Screws will be treated with relief cut and given a captive function. For screws for fixing the protection cover and cover for inspection that are frequently mounted and removed.



Cleanroom Wash / Cleanroom Packaging Service

→ P.807

With this service, products are cleanroom washed and cleanroom packed. Intended for products in FPD production equipment, semiconductor devices, medical instruments, and food industry machines, as well as products used in a clean room.



Individual Sales Service

→ P.809

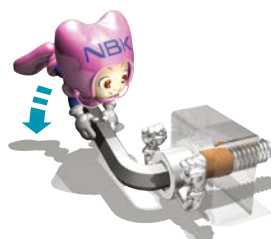
e-nedzi.com® products have each fixed Qty per pack. We also accept odd lot order less or more than fixed Qty.



Vibration Resistant Treatment Service

→ P.810

We will perform vibration-resistant treatment on the screws. Take advantage of this service as vibration-resistance measures and for components that require sealing. This will eliminate the trouble of applying adhesive agent or attaching seal tapes.



Screw Length Adjustment Service

→ P.811

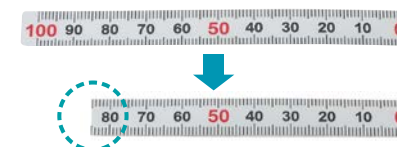
Screws can be cut to your desired length in units of 1 mm.



Scale Plate / Scale Sticker Cutting Service

→ P.812

Scale plates and scale stickers will be cut in 1 mm to your desired length.



Screw combination service

→ P.813

After bonding the lever and knob female screw products with screws with anaerobic adhesive agent, fix them with pins.



Handle Shaft Hole Processing Service

→ P.815

Handle shaft hole will be processed. This will eliminate the trouble of processing a shaft hole on your side. There are five processing types to choose from according to your usage.



Laser engraving service

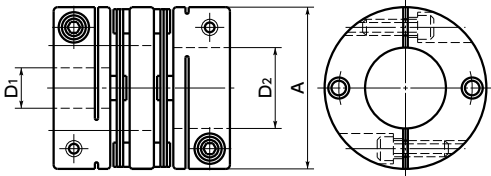
→ P.821

Various marks and letters are laser-engraved on NBK products. This is a service to make the NBK products even easier to use in terms of functionality by engraving marks such as OPEN, CLOSE, and arrows.



Couplings Bore Additional Modification Service BT

- Coupling bores can be additionally modified.
- Bore **D1** , **D2** : specify standard bore diameter for each product from *1 minimum diameter or more to maximum bore diameter *1 or less.
*1 : For standard and maximum bore diameters, see each product page.
For bore diameters outside the applicable range, please contact our customer service.
- Both single- and double-side bores can be modified.
- Combination with the keyway additional modification service is also possible. ➔ P.804



Target Products

- Coupling category (➔ P.17 - 252) products are targeted.
- Target products are displayed with compatibility and fees at the bottom of the product page.

Type	Target Products					
High-Gain Rubber	XGT2	XGL2	XGS2	XGT	XGL	XGS
Disk	XHW	XHS	XBW	XBS	MDW	MDS
	MHW	MHS	XBWS	XBSS		
Slit	MSX	MST	MWS	MSTS	MWSS	MSXP
Jaw	MJC	MJS				
Cross Joint	XUT					
Oldham	MOR	MOL	MOS	MOP	MOM	MOHS
Bellows	MFB	MFBS				
Serration	MSF					
Rigid	MRG	MLR	MRGS	MLRS		

- Compatible with **MJB** **MBB** **MWBS** **XSTS** **XWSS** **XRP** .
Please contact our customer service.
- Rigid Type **MRG-W** **MRGS-W** **MLR-V** **MLRS-V** is not targeted.

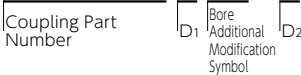
Price • Delivery

- Please feel free to contact us.

Part Number Specification

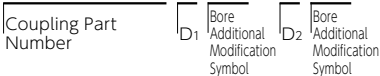
Additional modification of single-side bores

XGT2-25C-7-BT - 8



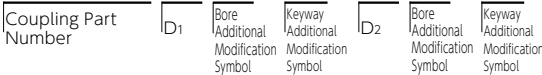
Additional modification of double-side bores

XGT2-25C-7-BT - 9-BT



Combination with keyway additional modification

MOL-50C-17-BT - KT - 19-BT - KT



Specify bore diameter D1 and D2 and add bore diameter additional modification symbol **BT** thereafter.

Couplings Keyway Additional Modification Service KT KA

- Coupling keyways can be additionally modified.
- Metric or inch keyways can be selected with the modification symbol. **KT** —Metric Keyway Modification (JIS Standard)
KA —Inch Keyway Modification (AGMA Standard)
- Keyways are modified in positions determined by our references.
- Both single-side and double-side keyways are compatible.
*As high-gain rubber and rigid types have the same bore diameter on both sides, double-side keyways will be modified.
- Combination with the bore additional modification service is also possible. ➔ P.803

Target Products

- Coupling category (➔ P.17 - 252) products are targeted.
- Target products are displayed with compatibility and fees at the bottom of the product page.

Type	Target Products					
High-Gain Rubber	XGT2	XGL2	XGS2	XGT	XGL	XGS
Disk	XHW	XHS	XBW	XBS	MDW	MDS
	MHW	MHS	XBWS	XBSS		
Jaw	MJC	MJS				
Cross Joint	XUT					
Oldham	MOR	MOL	MOS	MOP	MOHS	MOM
Bellows	MFB	MFBS				
Serration	MSF					
Rigid	MRG	MLR	MRGS	MLRS		

- Also compatible with **MBB** **MWBS** **XRP** and slit type (➔ P.97 - 124 • P.227 - 235). Please contact our customer service.
- Rigid Type **MRG-W** **MRGS-W** **MLR-V** **MLRS-V** is not targeted.

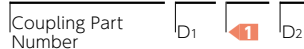
Price • Delivery

- Please feel free to contact us.

Part Number Specification

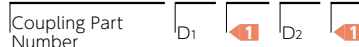
Single-Side Metric Keyway Additional Modification

XHW-25C-10-KT-12



Double-Side Metric Keyway Additional Modification

XHW-44C-10-KT-15-KT

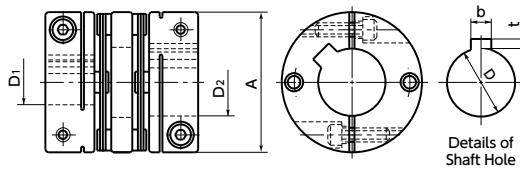


Combination of Bore Additional Modification Service and Inch Keyway Modification

MOL-50C-5/8-BT - KA-3/4-BT - KA



Add keyway modification symbol **KT** after the bore with keyway to be added.
When combining with bore additional modification service, add the keyway modification symbol after the bore additional modification symbol **BT**.

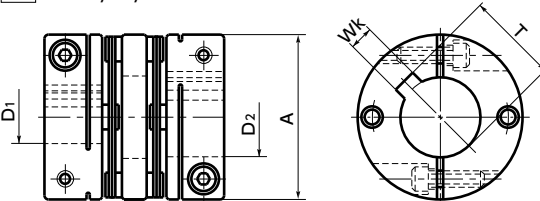


Unit : mm

Standard Bore Diameter D1,D2		Keyway b		t		Key
Over	or Less	Standard Dimension	Allowance (JS9)	Standard Dimension	Allowance	Nominal Dimension b×h
8	10	3	±0.0125	1.4	+0.1 0	3×3
10	12	4	±0.0150	1.8	+0.1 0	4×4
12	17	5	±0.0150	2.3	+0.1 0	5×5
17	22	6	±0.0150	2.8	+0.1 0	6×6
22	30	8	±0.0180	3.3	+0.2 0	8×7

• Excerpt from JIS B 1301

KA Inch Keyway Modification



Unit : inch

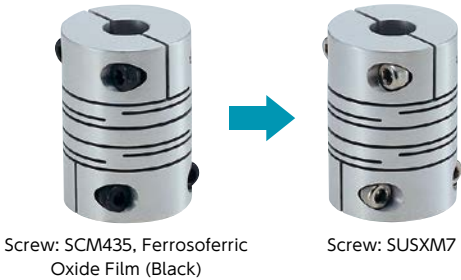
Standard Inch Bore Diameter D1,D2	Keyway			
	Wk		T	
	Standard Dimension	Allowance	Standard Dimension	Allowance
1/2	1/8	+0.002 0	0.560	+0.01 0
9/16	1/8	+0.002 0	0.623	+0.01 0
5/8	3/16	+0.002 0	0.709	+0.01 0
11/16	3/16	+0.002 0	0.773	+0.01 0
3/4	3/16	+0.002 0	0.837	+0.01 0
13/16	3/16	+0.002 0	0.900	+0.01 0
7/8	3/16	+0.002 0	0.964	+0.01 0
15/16	1/4	+0.002 0	1.051	+0.01 0
1	1/4	+0.002 0	1.114	+0.01 0
1 1/8	1/4	+0.002 0	1.241	+0.01 0
1 1/4	1/4	+0.002 0	1.367	+0.01 0
1 3/8	5/16	+0.002 0	1.518	+0.01 0
1 1/2	3/8	+0.002 0	1.669	+0.01 0
1 5/8	3/8	+0.002 0	1.796	+0.01 0
1 3/4	3/8	+0.002 0	1.922	+0.01 0

• Excerpt from AGMA Standards

Changes to stainless steel screws

Service description

- Change the hex socket set screw accompanied with the set screw type couplicon or hex socket head cap screw accompanied with the clamping type couplicon to those made of stainless steel material.



Price • Delivery

- Please feel free to contact us.

Target product

- Products in coupling category (➔ P.17 - 252) are the target.
- List of target products

Type	Product symbol							
High-gain type rubber	XGT2	XGL2	XGS2	XGT	XGL	XGS	MHW	MHS
Disc	XHW*	XHS*	XBW*	XBS*	MDW	MDS		
Slit	MSX	MST	MWS					
Jaw	MJC	MJS						
Cross joint	XUT							
Oldham	MOR	MOM	MOL	MOS				
Bellows	MFB	MKM						
Rigid	XRP	MRG	MLR					
Serration	MSF							

*1: For disk types [XHW] [XHS] [XBW] [XBS], rated torque decreases if screws are altered to stainless steel.

Please contact our customer service for the price and delivery time of [XHW] [XHW-L] [XHS] [XBW] [XBS].

Take care when changing to stainless steel screws in disk types.

For disk types [XHW] [XHS] [XBW] [XBS] (➔ P.65 - 88), rated torque decreases to the values in the table below if screws are altered to stainless steel.

Part Number	Rated Torque	
XHW-15C	XHS-15C	0.42
XHW-19C	XHS-19C	0.85
XHW-25C	XHS-25C	1.8
XHW-27C	XHS-27C	2.0
XHW-34C	XHS-34C	3.6
XHW-39C	XHS-39C	7.2
XHW-44C	XHS-44C	8.4
XHW-56C	XHS-56C	24
XHW-64C	XHS-64C	28
XHW-79C	XHS-79C	60
XHW-98C	XHS-98C	120

Part number specification

Please note.

Service part numbers for disk types [XHW] [XHS] [XBW] [XBS] differ from those of other series.

- For disk types [XHW] [XHS] [XBW] [XHS] Add [-SS] to the end of the coupling part number. Further, add [A] in front of the coupling bore part number.

XHW-25C A -8-10 -SS	
Coupling Part Number	Service Part Number
XBW-34C3 A -6-12 -SS	
Coupling Part Number	Service Part Number

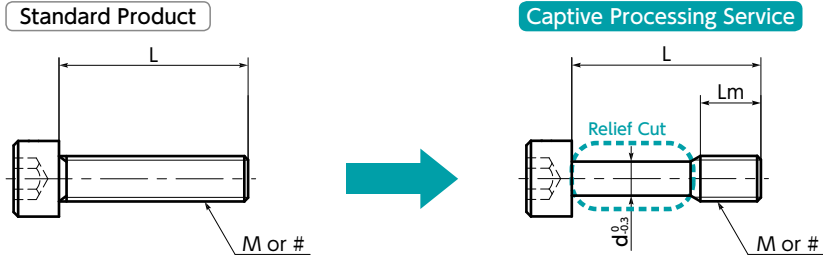
- For series other than above Add [-SS] to the end of the coupling part number.

MSX-19C-5-7 -SS	
Coupling Part Number	Service Part Number

Captive Processing Service

Service description

- Screws will be treated with relief cut and given a captive function.



Target product

- e-nedzi.com products (➔ P.547 - 799) are the target.
- Available / Add'l charge is displayed at the end of each product page for the target product.

550 620	570 630	640 690	790 870	860 970	1,040	1,140	1,220	1
Screw Length Adjustment ➔ P.550								
Vibration Resistant ➔ P.550								
Modification process for captive use ➔ P.550								
Available / Add'l charge								
info@nbk1560.com								
http://www.nbk1560.com								

- Screws with captive processing are standardized.
- ➔ P.689 - 699

L dimension for this service to be applied, and finished dimension

Nominal Diameter of Thread (M or #)	L dimension for this service to be applied		d	Lm
	min.	max.		
M3	8	16	2.2	4
M4	10	20	3	5
M5	12	25	3.9	6
M6	12	30	4.5	8
M8	16	40	6.3	10
M10	20	50	8	12
M12	20	50	9.7	14

Nominal Diameter of Thread (M or #)	L dimension for this service to be applied (inch)		d	Lm
	min.	max.		
#4 - 40	5/16	5/8	1.9	4
#5 - 40	5/16	5/8	2.2	4
#6 - 32	3/8	3/4	2.4	5
#8 - 32	3/8	3/4	3	5
#10 - 24	3/8	1	3.4	6
#10 - 32	3/8	1	3.7	6
1/4 - 20	5/8	1 - 1/4	4.6	9
1/4 - 28	5/8	1 - 1/4	5	9
5/16 - 18	5/8	1 - 1/2	6	10
3/8 - 16	3/4	2	7.4	12

Service description

- Cleanroom Wash and Cleanroom Packing of Product. We will do the cleaning and packing in a cleanroom. It is designed for the parts embedded in the FPD production device, semiconductor manufacturing device, medical equipment and food machinery, as well as the parts used in a cleanroom environment.



Cleanroom Wash

- Cleaning will be performed in a cleanroom of the cleanliness class 10000.
- Cleanliness is maintained by checking the airborne particles and microbes every five minutes.
- You can select 2 cleaning methods for the product.

- USC** — Ultrasonic cleaning
- IPA** — IPA cleaning



Cleanroom wash (in a cleanroom)
Cleanliness
In a cleanroom: Class 10000

Cleanroom Packing

- Cleanroom-washed products are double-packaged with vacuum on the clean bench in a cleanroom.
- The cleanliness in the cleanroom is class 500 and the clean bench used for packaging is class 10.



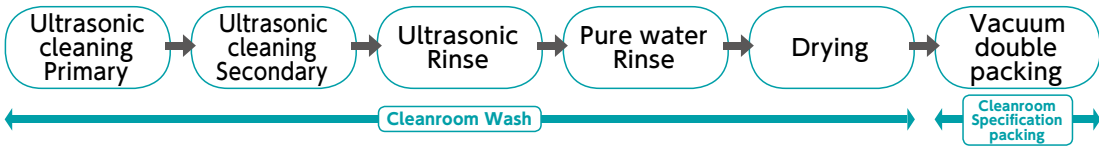
Vacuum double packaging



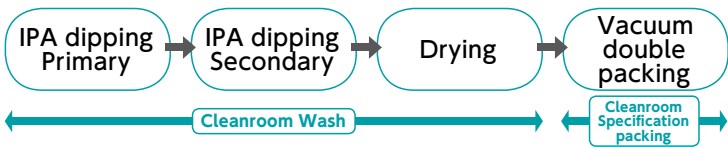
Cleanroom packing (in a cleanroom)
Cleanliness
In a cleanroom: Class 500
Clean bench: Class 10

Cleanroom wash & packing process

- USC** Ultrasonic cleaning (suitable for rust-resistant materials like stainless steel)

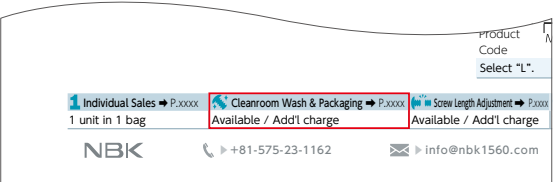


- IPA** IPA cleaning (suitable for rust-prone materials like steel)



Target product

- Available / Add'l charge** is displayed at the end of each product page for the target product.

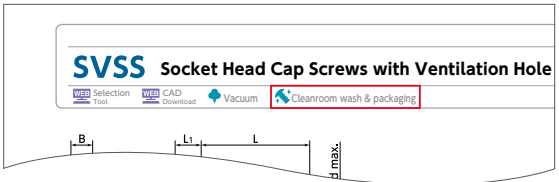


- The supported size for a single cleanroom wash and cleanroom packing is up to 250 mm (L)×300 mm (W)×100 mm (H).
- We can handle products other than those listed in this catalog or other cleaning and packaging method of your choice. Please feel free to contact our customer service.

Price • Delivery

- Please feel free to contact us.

- Cleanroom wash and cleanroom packing are complete for the product with **Cleanroom Wash & Packaging** or **Cleanroom** icon on top of the product page. The cleaning method is **USC** ultrasonic cleaning.



Part number specification

SGPS-M6-20-PL-USC

Product part number
Cleaning method
Select the product part number and cleaning method.

Checking the effect of cleanroom washing

Measuring the particles

After washing the test samples of **USC** ultrasonic cleaning completed and **IPA** IPA cleaning completed, as well as untreated test sample, with ultrapure water, we measured the number of particles floating in the ultrapure water. The higher the cleaning power, the fewer the floating particles will be.

Test sample: SUS303 φ19×20
Test method: Automatic liquid particle counter measurement

Number of particles floating in the ultrapure water
Unit: pc

Particle size	USC Ultrasonic cleaning	IPA IPA cleaning	Untreated
≥0.3μm	220,000	7,000,000	210,000,000
≥0.5μm	51,000	1,900,000	37,000,000
≥0.7μm	15,000	640,000	9,700,000
≥1.0μm	3,100	160,000	1,400,000
≥2.0μm	280	29,000	240,000

- The values in the table are actual test values and are not guaranteed values.

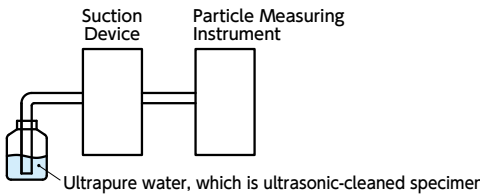
Measuring the residual oil content

We measured the residual oil content on the product surface after cleanroom washing.

Residual oil content after cleanroom washing

Particle size	USC Ultrasonic cleaning	IPA IPA cleaning
Residual oil content	0.3 mg/ft ²	1.5 mg/ft ²

- The values in the table are the actual test values. The result varies depending on the product size or shape.
- NBK measures the residual oil content on a periodic bases to make sure that the residual oil content after completing the **USC** ultrasonic cleaning is not more than 1 mg/ft².



Individual Sales Service

Service description

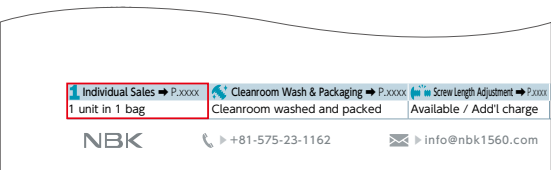
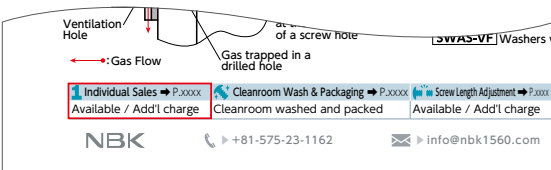
- The pcs/bag of e-nedzi.com (special thread) products (➡ P.547 - 799) is fixed. At customers' request, an order of pieces less than a pcs/bag or an odd-lot will be accepted.



Target product

- e-nedzi.com (special thread) products (➡ P.547 - 799) are the target.
- Available / Add'l charge is displayed at the end of each product page for the target product.

- Products with 1 unit in 1 bag at the end of the product page are sold in the unit of 1 piece. Selling separately is not needed.



Price • Delivery

- Please feel free to contact us.

Part number specification

SVSS-M5-8-VA 6 pcs

Product part number Sold separately Order quantity

Please specify the order quantity by adding **[-VA]** to the end of the product part number.
Without **[-VA]**, shipment will be made by bags. Please note this point.

⚠ Please note this point.
If you request to sold separately, make sure to add **[-VA]** to the end of the part number even when your order is pcs/bag or more. Without **[-VA]**, shipment will be made by bags.

Example: Sold separately order of 18 pieces for **SVSS-M5-8** (pcs/bag: 10 pieces)

Correct order method
SVSS-M5-8-VA 18 pcs ➡ **Shipment of 18 pcs**

Product part number Sold separately Order quantity

Incorrect order method
SVSS-M5-8 18 pcs ➡ **Shipment of 180 pcs**

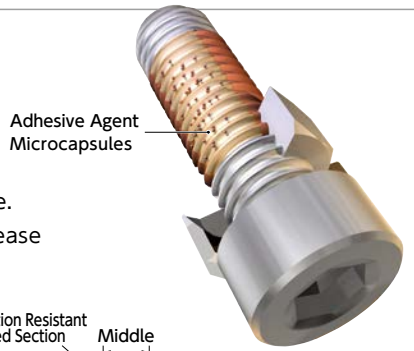
Product part number Order quantity

Without **[-VA]** at the end of the part number, shipment will be 18 bags (totaling 180 pcs) even when you need 18 pieces.

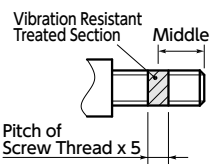
Vibration Resistant Treatment Service

Service description

- Screws are coated with microcapsules containing an adhesive.
- When a screw is tightened, the microcapsules break and release the adhesive, which locks and seals the screw.



- The adhesive section is generally in the center of the screw threads and five times the thread pitch in size.
*The coated area may differ depending on the product shape and size.



- 3 types of thread locking are available. Choose the best type for your usage.

Vibration Resistant

- Applications
FA Equipment, Machine Tools, Home Electronics, Communication Equipment, OA Equipment, and Automobiles and Other Transportation Equipment

Sealing

- Applications
Hydraulic Equipment, Pneumatic Machinery and Equipment



- Epoxy resin microcapsules
- Color: Orange
- Time to reach practical strength: 20 to 30 hours
- Adhesive strength: 2.2 N·m (M5 test result)



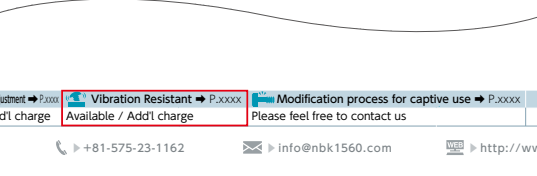
- Epoxy resin microcapsules
- Color: Blue
- Time to reach practical strength: 1 to 2 hours
- Adhesive strength: 0.5 N·m (M5 test result)



- Composed of fluorosilicone resin
- Color: White
- Superior sealing effect
- Chemical resistance • Heat resistance

Target product

- Available / Add'l charge message is indicated at the bottom of the product page.



- Applicable screw threads: M2 - M12
- Also, this service is available for products not listed in this catalog with your specified vibration resistant treatment.

Price • Delivery

- Please feel free to contact us.

Part number specification

SSH-M4-12-SG-161

Part Number Types of Thread locking Treatment

Specify the part number of the product for vibration resistant treatment and the type of the treatment.

Screw Length Adjustment Service

Service description

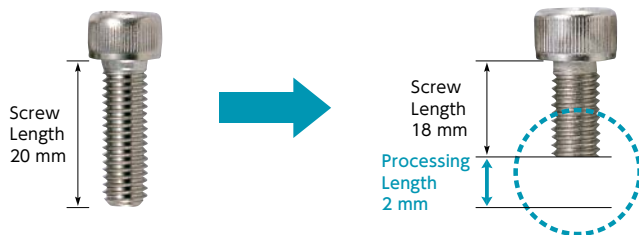
- Screws can be cut to your desired length in units of 1 mm.
- Example: When a **SVSS-M6-20** screw is cut by 2 mm.

Standard Product

SVSS-M6-20 Screw Length 20 mm.

Screw Length Adjustment

SVSS-M6-20-CT2 Cutting the 20 mm screw length by 2 mm to 18 mm.



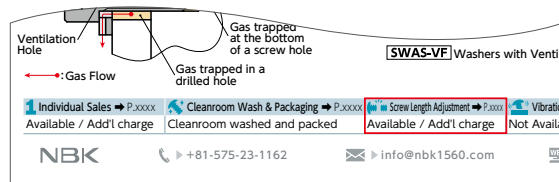
We can adjust screw lengths in units of 1 mm.



- Specify the processing length in units of 1 mm. **1**
- After processing a screw that had surface treatment, the screw tip is coated with lacquer.
- The minimum screw length is the thread diameter plus 2 mm.
Example: For M8, the minimum screw length is 10 mm.
- The screw tip is a flat tip.

Target product

- At the bottom of the product page, **Available / Add'l charge** message is indicated.



- Applicable Screw Threads: M2 - M12

Price • Delivery

- Please feel free to contact us.

Part number specification

SSH-M5-12-CT1

Part Number Processing Symbol **1** Processing Length

Specify the part number of the product to apply screw length adjustment, as well as the processing length (in units of 1 mm).

Scale Plate / Scale Sticker Cutting Service

Service description

- Scale plates and scale stickers (→ P.421 - 430) will be cut in 1 mm to your desired length.
- This service makes it easier to use scale plates and scale stickers according to spaces or purposes of equipment or devices.



Target product

FSP Scale plates (Horizontal types) → P.421

FSP-V Scale plates (Vertical types) → P.425

FSS **FST** Scale Stickers (Horizontal types) → P.429

FSS-V **FST-V** Scale stickers (Vertical types) → P.430

Price • Delivery

- Please feel free to contact us.

Part number specification

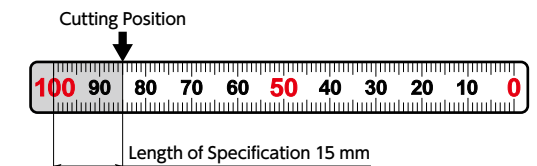
FSP-100-L-CT-L 10-R 10

Product part number

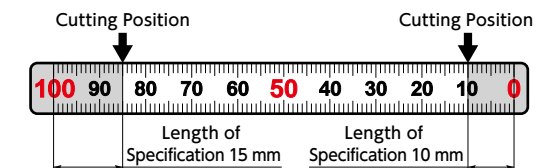
Please specify end face to be cut and cutting position (unit: 1 mm) by adding **-CT** to the end of the product part number.

Order placement flow

- ① Select processing symbol **CT**. **1**
 - ② Select end face to be cut. **2**
 - Horizontal types **FSP** **FSS** **FST**
Left side cutting: **L**
Right side cutting: **R**
 - Vertical types **FSP-V** **FSS-V** **FST-V**
Upper part cutting: **T**
Lower part cutting: **B**
 - ③ Please specify the cutting position from scale on the end face to be cut in the unit of 1 mm. **3**
- Example: One-side cutting
FSP-100-L (scale length: 100 mm) is cut at a position of 15 mm from left end scale, part number will be **FSP-100-L-CT-L15**.



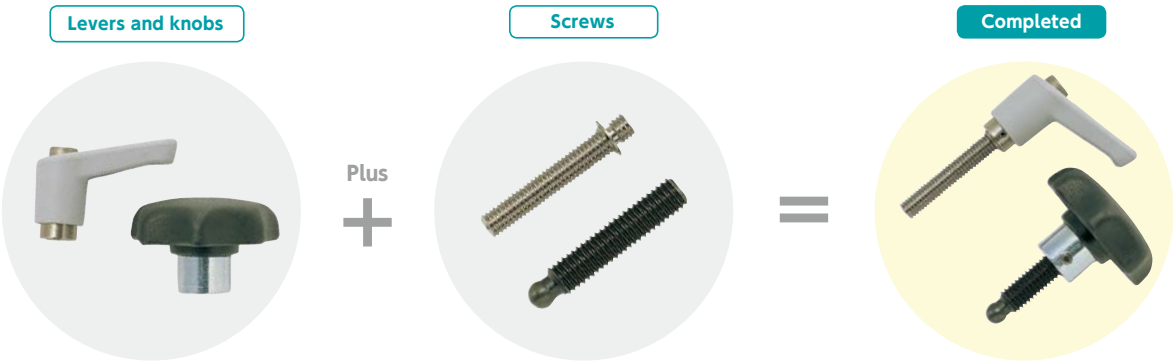
- Example: Two-side cutting
FSP-100-L (scale length: 100 mm) is cut at a position of 15 mm from left end scale and 10 mm from right end scale, part number will be **FSP-100-L-CT-L15-R10**.



- To leave scale on the cut face, neither R processing nor C-face processing on the cut face will be performed.
- Tolerance of the cutting position is ± 0.5 mm.
- As for two-side cutting, specify the cutting position from left side in the case of horizontal types, and from upside in the case of vertical types.

Service description

- After bonding the lever and knob female screw products with screws with anaerobic adhesive agent, fix them with pins.



- Thread length after combination varies depending on screws. Refer to the following table.

Screw Part Number	SCS SCSS (→ P.515 - 524)	SADS-LC (→ P.533)
	SAD-FT SADS-FT (→ P.536)	SADS-RF (→ P.534)
Thread Length		

Target product

- Products of the lever (→ P.267 - 291), knob (→ P.293 - 328) and screw (→ P.513 - 545) categories are the target. Available / Add'l charge is displayed at the end of each product page for the target product.
- Products with screw diameter of M5 or above are the target.
- Knobs with 4 mm or above s are the target.
- Make the lever and knob thread diameters and screw thread diameter consistent.

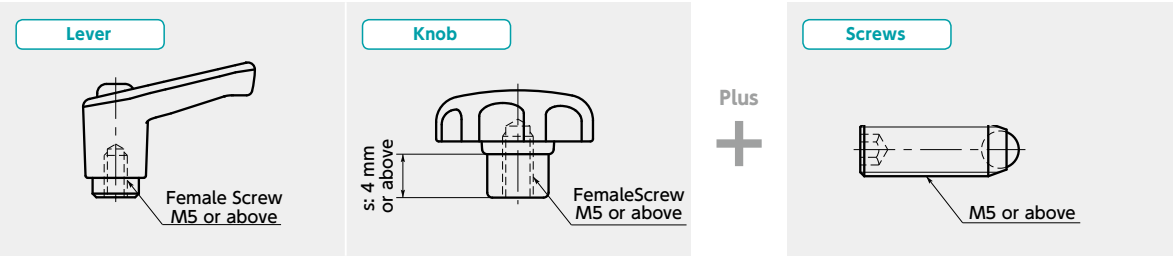
SCS-M16-35-R	400			
SCS-M16-50-R	400	73000	SCS-M16-50-R	43800

 Cleanroom Wash & Packaging ➡ P.xxxx	 Screw Combination ➡ P.xxxx	 Screw Length A ➡ P.xxxx
Please feel free to contact us	Available / Add'l charge	Not Available

NBK

 ▶ +81-575-23-1162

 ▶ info@nbk1560.com



- If you cannot achieve desired thread length or you want any combination of non-target products, please contact our Customer Service.

Price • Delivery

- Please feel free to contact us.

Part number specification

		*Screw diameter		*Screw diameter			
NKA	-	KTF-40-M8	+	SGT-M8-50			Screw combination service
Screw combination service		Knob product part number		Screw product part number			
		*Screw diameter		*Screw diameter			
NKA	-	LEF-5-BK	+	SAD-M5-50-RF-CT	8		Screw combination service + Screw cutting service
Screw combination service		Lever product part number		Screw product part number	Screw cutting service processing symbol	Processing length	

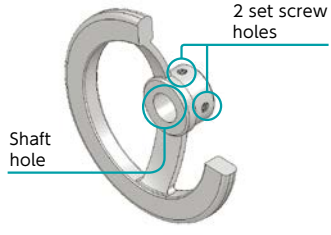
Please specify the lever and knob part number and screw part number after the service symbol [NKA]. If the screw is [SAD] [SADS] (→ P.533 - 536), it may be combined with the screw cutting service (→ P.811). *Make the lever and knob thread diameters and screw thread diameter consistent.

Service description

- Handle shaft hole will be processed.
- There are five processing types. Please select a desirable service according to your application.
- For details on dimensions, please refer to the processing type page. ➔ P.816 - 819

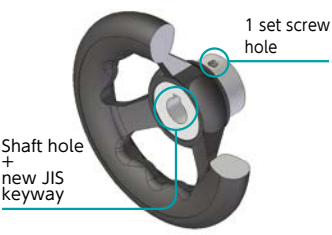
AHC ➔ P.816

Shaft hole (dimensional allowance H8) + 2 set screw holes



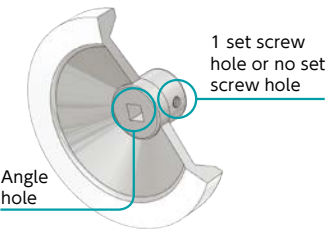
AKC ➔ P.817

Shaft hole (dimensional allowance H8) + new JIS keyway + 1 set screw hole



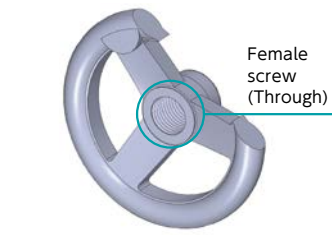
ASC ➔ P.818

Angle hole (dimensional allowance H11) + 1



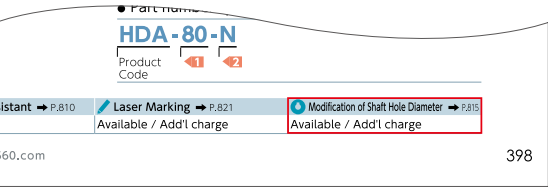
ATC ➔ P.819

Female screw (Through)



Target product

- Products in handwheel category (➔ P.393 - 405) are the target.
- Available / Add'l charge is displayed at the end of each product page for the target product.



- Target products vary depending on processing types. Please refer to the detailed page for each processing type. ➔ P.816 - 819

Price • Delivery

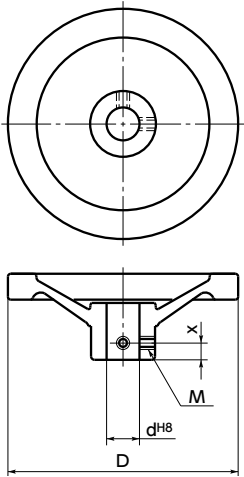
- Please feel free to contact us.

AHC Shaft hole (dimensional allowance H8) + 2 set screw holes

- Shaft hole (H8) and 2 set screw holes will be processed.

AHC Target product

Hub Material	Product Code			
Cast iron	PH (➔ P.397)	HSN (➔ P.402)	D (➔ P.403)	F (➔ P.404)
Aluminum	HDA (➔ P.398)	AV (➔ P.400)	AH (➔ P.401)	
Stainless Steel	PHS (➔ P.397)	HSM (➔ P.399)		



Dimension

- As for bore diameter d, its minimum and maximum bore diameters are set based on nominal handwheel sizes. Please specify d within the range. d can be specified in the unit of 1 mm.
- A set screw will be provided by adding **-P** to the end of the part number. **➔**

Nominal size D	Bore diameter dH8	
	min.	max.
80	10	15
100	10	17
125	12	20
140	14	22
150	14	22
160	14	24
200	16	25
250	20	30
300	20	35
315	20	35

- Set screw: Screw diameter and position of a set screw hole will be determined by bore diameter.

d		M	x*
min.	max.		
10	15	M5	7.5
16	22	M6	9
23	30	M8	12
31	35	M10	15

*Dimensions may vary depending on handwheel types.

Price • Delivery

- Please feel free to contact us.

Part number specification

PH-140-AHC-15-P

Handwheel
product
part number

Processing
type

➔ ➔

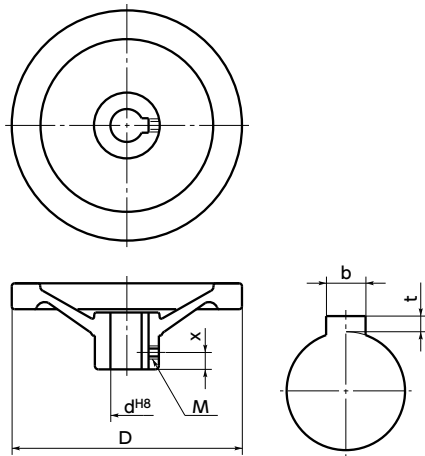
Please specify handwheel product part number, processing type and bore diameter.

AKC Shaft hole (dimensional allowance H8) + new JIS key + 1 set screw hole

- Shaft hole (H8) / new JIS keyway, and 1 set screw hole will be processed.
- Shaft hole diameter can be specified from standard bore diameters.

AKC Target product

Hub Material	Product Code			
Cast iron	PH (⇒ P.397)	HSN (⇒ P.402)	D (⇒ P.403)	F (⇒ P.404)
Aluminum	HDA (⇒ P.398)	AV (⇒ P.400)	AH (⇒ P.401)	
Stainless Steel	PHS (⇒ P.397)	HSM (⇒ P.399)		



Dimensions

- Standard bore diameter d is set based on nominal handwheel sizes.
- A set screw will be provided by adding **-P** to the end of the part number.

Unit: mm

Nominal size D	Standard Bore Diameter d ^{H8}
80	10・11・12
100	10・11・12・14
125	12・14・15・16・17
140	14・15・16・17・18
150	14・15・16・17・18・19
160	14・15・16・17・18・19・20
200	16・17・18・19・20・21
250	20・21・22・24・25
300	20・21・22・24・25・28・30
315	20・21・22・24・25・28・30

- Keyway will be processed based on JIS B 1301.
- Screw diameter and position of a set screw hole will be determined by standard bore diameter.

Unit: mm

Standard Bore Diameter d ^{H8}	Keyway				Key	Set screw	
	b		t		Nominal Dimension b×h	M	x*
	Basic Dimension	Allowance (JS9)	Basic Dimension	Allowance			
10・11・12	4	±0.015	1.8		4×4	M5	7.5
14・15	5	±0.015	2.3	+0.1	5×5	M5	7.5
16・17	5	±0.015	2.3	0	5×5	M6	9
18・19・20・21・22	6	±0.015	2.8		6×6	M6	9
24・25・28・30	8	±0.018	3.3	+0.2 0	8×7	M8	12

*Dimensions may vary depending on handwheel types.

Price・Delivery

- Please feel free to contact us.

Part number specification

D-200-AKC 20-P

Handwheel product part number Processing type

Please specify handwheel product part number, processing type and bore diameter.

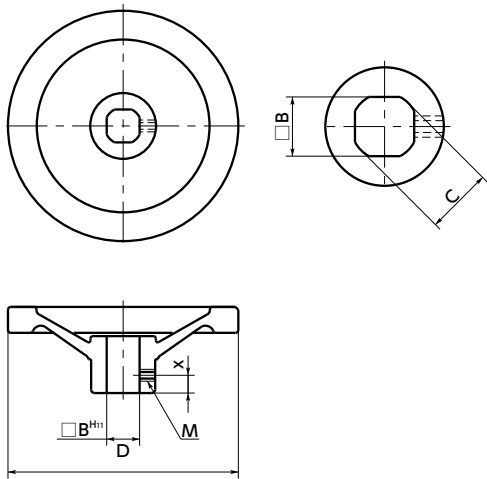
ASC Angle hole (dimensional allowance H11) + 1 set screw hole

- Angle hole (H11) and 1 set screw hole will be processed.
- Angle holes can be selected from standard angle diameters.
- With / without a set screw hole and/or set screw can be selected.

ASC without set screw hole
ASC-M with a set screw hole
ASC-M-P with a set screw hole and set screw

ASC Target product

Hub Material	Product Code			
Cast iron	PH (⇒ P.397)	HSN (⇒ P.402)	D (⇒ P.403)	F (⇒ P.404)
Aluminum	HDA (⇒ P.398)	AV (⇒ P.400)	AH (⇒ P.401)	
Stainless Steel	PHS (⇒ P.397)	HSM (⇒ P.399)		



Dimension

- Standard angle hole diameter B is set based on nominal handwheel sizes.

Unit: mm

Nominal size D	Standard angle hole diameter B ^{H11}
80	6・8・10・11・12
100	6・8・10・11・12
125	12・13・14
140	12・13・14
150	12・13・14
160	14・15・17
200	17・19
250	19・22
300	19・22
315	19・22

- Corners of an angle hole are arcuately chamfered.
- Diameter and position of a set screw hole will be determined by standard angle hole diameter.

Unit: mm

Standard angle hole diameter B ^{H11}	C	M	x*
6	8.25	M4	6
8	11.05	M4	6
10	13.70	M4	6
11	15.45	M5	7.5
12	15.85	M5	7.5
13	17.90	M5	7.5
14	19.20	M5	7.5
15	20.70	M5	7.5
17	23.10	M6	9
19	26.10	M6	9
22	29.60	M6	9

*Dimensions may vary depending on handwheel types.

Price・Delivery

- Please feel free to contact us.

Part number specification

F-200-ASC 17 - M-P

Handwheel product part number Processing type

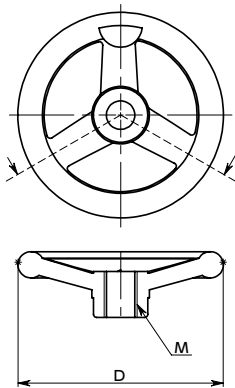
Please specify handwheel product part number, processing type, angle hole diameter, set screw hole, and with / without a set screw.

ATC Female screw (Through)

- Female screws (Through) will be processed.
- Screw diameters can be selected from standard screw diameters.

ATC Target product

Hub Material	Product Code			
Cast iron	PH (⇒ P.397)	HSN (⇒ P.402)	D (⇒ P.403)	F (⇒ P.404)
Aluminum	HDA (⇒ P.398)	AV (⇒ P.400)	AH (⇒ P.401)	
Stainless Steel	PHS (⇒ P.397)	HSM (⇒ P.399)		



Dimension

- Standard screw diameter is set based on nominal handwheel sizes.

Nominal size D	Standard screw diameter M (coarse) 1					
	M10	M12	M14	M16	M20	M24
80	M10	M12	M14			
100	M10	M12	M14	M16		
125	M10	M12	M14	M16		
140		M12	M14	M16	M20	
150		M12	M14	M16	M20	
160		M12	M14	M16	M20	
200				M16	M20	M24
250				M16	M20	M24
300				M16	M20	M24
315				M16	M20	M24

Unit: mm

Price • Delivery

- Please feel free to contact us.

Part number specification

D-160-ATC M16

Handwheel
product
part number



Please specify handwheel product part number, processing type and screw diameter.



<https://www.nbk1560.com/>

Service description

- Various marks and letters are laser-engraved on NBK products.
- OPEN, CLOSE and arrows, etc... A service to make NBK products even more usable in terms of functions.
- They can be engraved on materials such as stainless steel, aluminum and plastic.
- Color development varies depending on materials. For details, please feel free to contact our customer service.

Function and instruction

Clarification of operation methods

Company name, logo and QR code

Advertisement and improvement of device and equipment image

Alphabet

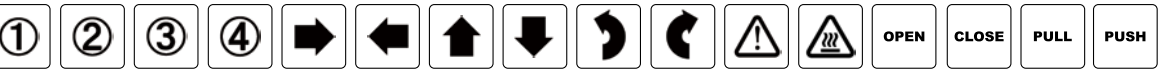
Operation sequences and initial indications

Arrow

Instruction on rotating direction of handwheel, etc.

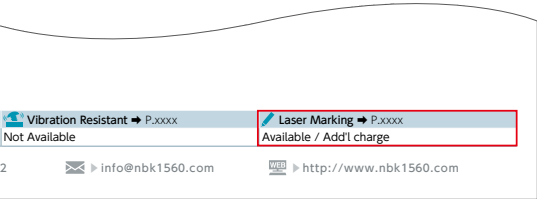
- Various standard designs are available. For standard designs not listed in the following table, please refer to NBK website or contact our customer service.

- Standard designs



Target product

- Available / Add'l charge is displayed at the end of each product page for the target product.



Price • Delivery

- Please feel free to contact us.

Order placement flow

If you use FAX

- ① We will send a fax of the dedicated form to you. Please fill in the form, check the following contents and send it back to our Customer Service.
 - Part number of NBK product to engrave.
 - Type, size, position and location of the standard design you want to engrave.



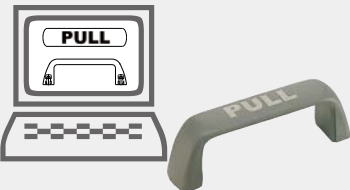
- The dedicated form may also be downloaded from the NBK website.

- ② The dedicated part number of the laser engraving service product with a serial number is provided to you by FAX. Please indicate the dedicated part number to place an order.



If you use Internet

- ① Please inform our Customer Service of the NBK product part number to engrave and the engraving data file by e-mail.
 - Acceptable file formats: JPG, BMP, DXF and HPGL



- Standard designs for engraving and NBK product CAD data can be downloaded from the NBK website. Please use them for creation of data files.

- ② The dedicated part number of the laser engraving service product with a serial number is provided to you by e-mail. Please indicate the dedicated part number to place an order.



Part number specification

LUDMS-52-6-20-BK-LKN-A001

Product part number Laser engraving service Serial number

Please indicate the dedicated part number for the laser engraving service.



● General Tolerances JIS B 0405:1991/JIS B 0419:1991	P.824
● International System of Units	P.825
● Unit Symbols and Volume Fomula	P.827
● Second Moment of Area, Section Modulus, and Turning Radius of Cross Section	P.828
● GD ²	P.829
● Geometrical Tolerancing JIS B 0021:1998	P.831
● System of Limits and Fits JIS B 0401:1998	P.833
● Deviations of Holes to be Used in Commonly Used Fits JIS B 0401:1998	P.835
● Deviations of Shafts to be Used in Commonly Used Fits JIS B 0401:1998	P.837
● Key and Their Corresponding Keyways JIS B 1301:1996	P.839
● Conversion Table of Hardness (SAE J 417) revised in 1983	P.841
● ISO General Purpose Metric Screw Threads JIS B 0205 - 2:2001/JIS B 0205:1997 (old standard)/JIS B 0207:1982(old standard)	P.842
● Parallel Pipe Threads JIS B 0202:1999	P.845
● Taper Pipe Threads JIS B 0203:1999	P.846
● Unified Coarse Screw Threads/Unified Fine Screw Threads JIS B 0206:1973/JIS B 0208:1973	P.847
● Hexagon Socket Set Screws JIS B 1177:2007	P.848
● Hexagon Socket Head Cap Screws JIS B 1176:2006	P.849
● Spring Lock Washers JIS B 1251:2001	P.851
● Plain Washers JIS B 1256:2008	P.852
● Hexalobular Internal Driving Feature for Bolts and Screws JIS B 1015:2008	P.857
● Diameter of Clearance Holes and Counterbores for Bolts and Screws JIS B 1001:1985	P.858
● Hexagon Nuts JIS B 1181:2009	P.859
● Dimensions of Holes for Hexagon Socket Cap Screws	P.860
● Mechanical Properties of Fasteners Made of Carbon Steel and Alloy Steel JIS B 1051:2000	P.861

Excerpt from JIS B 0405:1991 / JIS B 0419:1991

Allowance for the length dimension excluding the chamfering portion

Tolerance class		Class of basic dimension(mm)								Unit: mm
Symbol	Explanation	0.5 or more* 3 or less	More than 3 and 6 or less	More than 6 and 30 or less	More than 30 and 120 or less	More than 120 and 400 or less	More than 400 and 1000 or less	More than 1000 and 2000 or less	More than 2000 and 4000 or less	
		Allowance								
f	Fine	±0.05	±0.05	±0.1	±0.15	±0.2	±0.3	±0.5	—	
m	Middle class	±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2	
c	Coarse	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	±4	
v	Very coarse	—	±0.5	±1	±1.5	±2.5	±4	±6	±8	

* For the basic dimension less than 0.5mm, the allowance is indicated individually just after the basic dimension.

Allowance for the length dimension of chamfering portion (dimension of corner's roundness and chamfering at corner)

Tolerance class		Class of basic dimension(mm)			Unit: mm
Symbol	Explanation	0.5 or more* 3 or less	More than 3 and 6 or less	More than 6	
		Allowance			
f	Fine	±0.2	±0.5	±1	
m	Middle class				
c	Coarse				
v	Very coarse	±0.4	±1	±2	

* For the basic dimension less than 0.5 mm, the allowance is indicated individually just after the basic dimension.

Allowance for angular dimension

Tolerance class		Class of length(mm) of shorter side of the object angle				
Symbol	Explanation	10 or less	More than 10 and 50 or less	More than 50 and 120 or less	More than 120 and 400 or less	More than 400
		Allowance				
f	Fine	±1°	±30′	±20′	±10′	±5′
m	Middle class					
c	Coarse	±1°30′	±1°	±30′	±15′	±10′
v	Very coarse	±3°	±2°	±1°	±30′	±20′

General tolerance for squareness

Tolerance class	Class of nominal length of shorter side				Unit: mm
	100 or less	More than 100 and 300 or less	More than 300 and 1000 or less	More than 1000 and 3000 or less	
	Squareness tolerance				
H	0.2	0.3	0.4	0.5	
K	0.4	0.6	0.8	1	
L	0.6	1	1.5	2	

General tolerance for radial run-out

Tolerance class	Radial run-out tolerance	Unit: mm
H	0.1	
K	0.2	
L	0.5	

General tolerance for straightness and flatness

Tolerance class	Class of nominal length						Unit: mm
	10 or less	More than 10 and 30 or less	More than 30 and 100 or less	More than 100 and 300 or less	More than 300 and 1000 or less	More than 1000 and 3000 or less	
	Straightness tolerance and flatness tolerance						
H	0.02	0.05	0.1	0.2	0.3	0.4	
K	0.05	0.1	0.2	0.4	0.6	0.8	
L	0.1	0.2	0.4	0.8	1.2	1.6	

International system of unit (SI) and its usage. Excerpt from JIS Z 8203:2000

1. Scope of application This standard defines the international system of unit (SI), recommends use of some specifically-selected units for general use from among units in the table for integral power of ten units, further specifies other units that may be used with the SI and provides the definition of SI basic unit.
 2. Reference standards Standards listed below constitute the provisions of this standard by being referenced herein. The latest version of the reference standards applies.
IEC 27-1: 1971, Letter symbols to be used in electrical technology - Part 1: General
 3. SI unit The name international system of unit (SI) and its internationally-used abbreviation "SI" were officially adopted in the 11th CGPM (Conference General des Poids et Mesures) in 1960. This unit system consists of the following units to constitute a consistent unit system.
 - Basic units
 - Derived units
- 3.1 Basic units There are 7 basic international units as indicated in Table 1.

● Table 1 SI basic units

Basic amount	SI basic units	
	Name	Symbol
Length	m	m
Mass	kg	kg
Time	Second	s
Current	Ampere	A
Thermodynamic temperature	Kelvin	K
Substance quantity	Mol	mol
Brightness	Candela	cd

● Table 3 SI derived units with specific names appreciated to protect human health

Derived amount	SI derived units		
	Specific name	Symbol	Indications by SI basic units and SI derived units
Radioactivity (of radionuclide)	Becquerel	Bq	1 Bq=1 s ⁻¹
Absorbed dose mass energy allocation, kerma, absorbed dose rate	Gray	Gy	1 Gy=1 J/kg
Dose equivalent	Sievert	Sv	1 Sv=1 J/kg

● Table 2 SI derived units with specific names

Derived amount	SI derived units		
	Specific name	Symbol	Indications by SI basic units and SI derived units
Plane angle	Radian	rad	1 rad=1 m/m=1
Solid angle	Steradian	sr	1 sr=1 m ² /m ² =1
Frequency	Herz	Hz	1 Hz=1 s ⁻¹
Force	Newton	N	1 N=1 kg·m/s ²
Pressure and stress	Pascal	Pa	1 Pa=1 N/m ²
Energy, work and heat quantity	Joule	J	1 J=1 N·m
Power and flux	Watt	W	1 W=1 J/s
Charge and electric quantity	Coulomb	C	1 C=1 A·s
Electric potential, electric potential difference, voltage and electromotive force	Bolt	V	1 V=1 W/A
Capacitance	Farad	F	1 F=1 C/V
Electric resistance	Ohm	Ω	1 Ω=1 V/A
Conductance	Siemens	S	1 S=1 Ω ⁻¹
Magnetic flux	Weber	Wb	1 Wb=1 V·s
Magnetic flux density	Tesla	T	1 T=1 Wb/m ²
Inductance	Henry	H	1 H=1 Wb/A
Celsius temperature	Celsius degree*	°C	t °C=t+273.15 K
Beam	Lumen	lm	1 lm=1 cd·sr
Illuminance	Lux	lx	1 lx=1 lm/m ²

* Celsius degree is a specific name that replaces the Kelvin unit to indicate the Celsius temperature value.

● Table 4 SI prefix

Multiples applied to unit	Prefix	
	Name	Symbol
10 ²⁴	Yotta	Y
10 ²¹	Zetta	Z
10 ¹⁸	Exa	E
10 ¹⁵	Peta	P
10 ¹²	Tera	T
10 ⁹	Giga	G
10 ⁶	Mega	M
10 ³	Kilo	k
10 ²	Hecto	h
10	Deca	da
10 ⁻¹	Deci	d
10 ⁻²	Centi	c
10 ⁻³	Milli	m
10 ⁻⁶	Micro	μ
10 ⁻⁹	Nano	n
10 ⁻¹²	Pico	p
10 ⁻¹⁵	Femto	f
10 ⁻¹⁸	Atto	a
10 ⁻²¹	Zepto	z
10 ⁻²⁴	Yocto	y

4. Integral power of ten units for SI units

Names and symbols of integral power of ten units for SI units are indicated with prefixes indicated in Table 4. Prefix symbols are to be jointed with main symbols to which they are directly connected. Therefore, this coupling forms the integral power of ten units and this new symbol may have positive/negative power index. Further, this may constitute derived units formed by coupling with other unit symbols. The prefixes may not be combined. For example, nanometer should be represented as nm, not mμm.

Table of conversion rate to primary SI units

	N	dyn	kgf
Force	1	1×10 ⁵	1.019 72×10 ⁻¹
	1×10 ⁻⁵	1	1.019 72×10 ⁻⁶
	9.806 65	9.806 65×10 ⁵	1

	Pa·s	cP	P
Viscosity	1	1×10 ³	1×10
	1×10 ⁻³	1	1×10 ⁻²
	1×10 ⁻¹	1×10 ²	1

● 1 P = 1 dyn·s/cm² = 1 g/cm·s, 1 Pa·s = 1 N·s/m², 1 cP = 1 mPa·s

	Pa or N/m ²	MPa or N/mm ²	kgf/mm ²	kgf/cm ²
Stress	1	1×10 ⁻⁶	1.019 72×10 ⁻⁷	1.019 72×10 ⁻⁵
	1×10 ⁶	1	1.019 72×10 ⁻¹	1.019 72×10
	9.806 65×10 ⁶	9.806 65	1	1×10 ²
	9.806 65×10 ⁴	9.806 65×10 ⁻²	1×10 ⁻²	1

	m ² /s	cSt	St
Kinetic viscosity	1	1×10 ⁶	1×10 ⁴
	1×10 ⁻⁶	1	1×10 ⁻²
	1×10 ⁻⁴	1×10 ²	1

● 1 St = 1 cm²/s, 1 cSt = 1 mm²/s

● 1 Pa = 1 N/m², 1 MPa = 1 N/mm²

	Pa	kPa	MPa	bar	kgf/cm ²	atm	mmH ₂ O	mmHg or Torr
Pressure	1	1×10 ⁻³	1×10 ⁻⁶	1×10 ⁻⁵	1.019 72×10 ⁻⁵	9.869 23×10 ⁻⁶	1.019 72×10 ⁻¹	7.500 62×10 ⁻³
	1×10 ³	1	1×10 ⁻³	1×10 ⁻²	1.019 72×10 ⁻²	9.869 23×10 ⁻³	1.019 72×10 ²	7.500 62
	1×10 ⁶	1×10 ³	1	1×10	1.019 72×10	9.869 23	1.019 72×10 ⁵	7.500 62×10 ³
	1×10 ⁵	1×10 ²	1×10 ⁻¹	1	1.019 72	9.869 23×10 ⁻¹	1.019 72×10 ⁴	7.500 62×10 ²
	9.806 65×10 ⁴	9.806 65×10	9.806 65×10 ⁻²	9.806 65×10 ⁻¹	1	9.678 41×10 ⁻¹	1×10 ⁴	7.355 59×10 ²
	1.013 25×10 ⁵	1.013 25×10 ²	1.013 25×10 ⁻¹	1.013 25	1.033 23	1	1.033 23×10 ⁴	7.600 00×10 ²
	9.806 65	9.806 65×10 ⁻³	9.806 65×10 ⁻⁶	9.806 65×10 ⁻⁵	1×10 ⁻⁴	9.678 41×10 ⁻⁵	1	7.355 59×10 ⁻²
	1.333 22×10 ²	1.333 22×10 ⁻¹	1.333 22×10 ⁻⁴	1.333 22×10 ⁻³	1.359 51×10 ⁻³	1.315 79×10 ⁻³	1.359 51×10	1

● 1 Pa = 1 N/m²

	J	kW·h	kgf·m	kcal
Work, energy and heat quantity	1	2.777 78×10 ⁻⁷	1.019 72×10 ⁻¹	2.388 89×10 ⁻⁴
	3.600 ×10 ⁶	1	3.670 98×10 ⁵	8.600 0×10 ²
	9.806 65	2.724 07×10 ⁻⁶	1	2.342 70×10 ⁻³
	4.186 05×10 ³	1.162 79×10 ⁻³	4.268 58×10 ²	1

● 1 J = 1 W·s, 1 J = 1 N·m

	W	kgf·m/s	PS	kcal/h
Power (advantage and power) heat current	1	1.019 72×10 ⁻¹	1.359 62×10 ⁻³	8.600 0×10 ⁻¹
	9.806 65	1	1.333 33×10 ⁻²	8.433 71
	7.355 ×10 ²	7.5 ×10	1	6.325 29×10 ²
	1.162 79	1.185 72×10 ⁻¹	1.580 95×10 ⁻³	1

● 1 W = 1 J/s, PS: French horse-power

	W/(m·K)	kcal/(h·m·°C)
Heat thermal conductivity	1	8.600 0×10 ⁻¹
	1.162 79	1

	W(m ² ·K)	kcal/(h·m ² ·°C)
Thermal conductivity factor	1	8.600 0×10 ⁻¹
	1.162 79	1

	J/(kg·K)	kcal/(kg·°C)
Specific heat	1	2.388 89×10 ⁻⁴
	4.186 05×10 ³	1

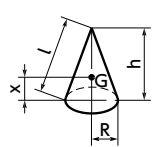
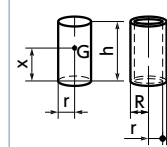
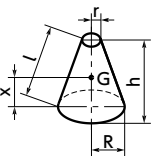
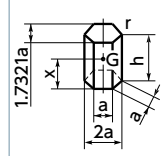
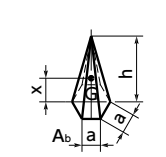
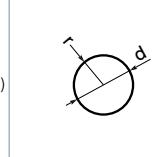
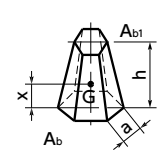
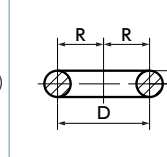
Unit Symbols and Volume Fomula

• Greek characters

Name	Oblique		Italic		Normal use
	Upper case	Lower case	Upper case	Lower case	
Alpha	A	α	A	α	Angle and coefficient
Beta	B	β	B	β	Angle and coefficient
Gamma	Γ	γ	Γ	γ	Angle, specific weight and (upper case) gamma coefficient
Delta	Δ	δ	Δ	δ	Minimal change, density and displacement
Epsilon	E	ε	E	ε	Minimal numbers and strain coefficient
Zeta	Z	ζ	Z	ζ	Variable
Eta	H	η	H	η	Variable
Theta	Θ	θ	Θ	θ	Angle, temperature and time
Iota	I	ι	I	ι	
Kappa	K	κ	K	κ	Radius of rotation
Lambda	Λ	λ	Λ	λ	Wave length and specific value
Mu	M	μ	M	μ	Friction coefficient and 10 ⁻⁶ (micro)
Nu	N	ν	N	ν	Vibration frequency
Xi	Ξ	ξ	Ξ	ξ	Variable
Omicron	O	ο	O	ο	
Pi	Π	π	Π	π	Circle ratio (3.14159.....), angle and (upper case) product symbol
Rho	P	ρ	P	ρ	Radius and density
Sigma	Σ	σ	Σ	σ	Stress, standard deviation and (upper case) number sum
Tau	T	τ	T	τ	Time constant, time and torque
Upsilon	Υ	υ	Υ	υ	
Phi	Φ	φ	Φ	φ	Angle and function
Chi	Χ	χ	Χ	χ	
Psi	Ψ	ψ	Ψ	ψ	Angle and function
Omega	Ω	ω	Ω	ω	Angular rate = 2πf and (upper case) ohm unit symbol

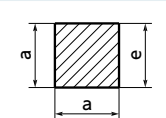
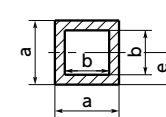
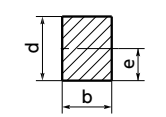
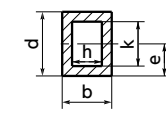
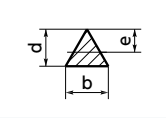
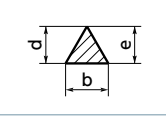
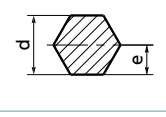
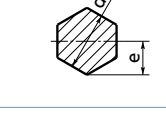
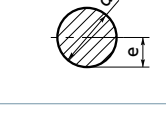
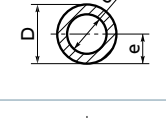
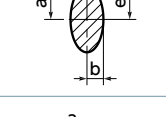
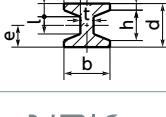
Lower case except for those specially indicated as "upper case."

Cubic volume and various values

Dimension	Volume and various values	Dimension	Volume and various values
	$V = \frac{\pi R^2 h}{3}$ $A_s = \pi R l$ $l = \sqrt{R^2 + h^2}$ $x = \frac{h}{4}$		$V = \pi R^2 h = A_s h$ $S = 2\pi r (r+h)$ $A_s = 2\pi r h$ $x = \frac{h}{2}$
	$V = \frac{\pi h}{3} (R^2 + Rr + r^2) = \frac{h}{4} [\pi a^2 - \frac{1}{3} \pi b^2]$ $l = 8r = 4d$ $A_s = \pi l a, a = R+r$ $b = R-r, l = \sqrt{b^2 + h^2}$ $x = \frac{h}{4} \frac{R^2 + 2Rr + 3r^2}{R^2 + Rr + r^2}$		$V = 2.598a^2 h$ $S = 5.1962a^2$ $A_s = 6ah$ $x = \frac{h}{2}$ $d = \sqrt{h^2 + 4a^2}$
	$V = \frac{A_b h}{3}$ $A_b = \frac{3\sqrt{3}}{2} a^2 = 2.598a^2$ (six-sided pyramid) $x = \frac{h}{4}$		$V = \frac{4\pi R^3}{3} = 4.188790205R^3$ $= \frac{\pi D^3}{6} = 0.523598776D^3$ $S = 4\pi R^2 = \pi D^2$ $r = \sqrt[3]{\frac{3V}{4\pi}} = 0.620351 \sqrt[3]{V}$
	$V = \frac{h}{3} (A_b + A_{b1} + \sqrt{A_b A_{b1}})$ $A_b = \frac{3\sqrt{3}}{2} a^2 = 2.598a^2$ (six-sided pyramid) $x = \frac{h}{4} \frac{A_b + 2\sqrt{A_b A_{b1}} + 3A_{b1}}{A_b + \sqrt{A_b A_{b1}} + A_{b1}}$		$V = 2\pi^2 R^2 r^2 = 19.739Rr^2$ $= \frac{1}{4} \pi^2 D d^2 = 2.4674Dd^2$ $S = 4\pi^2 Rr^2 = 39.478Rr$ $= \pi^2 Dd = 9.8696Dd$

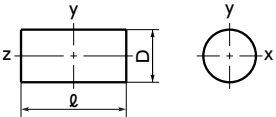
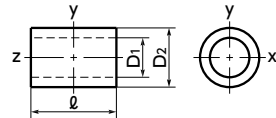
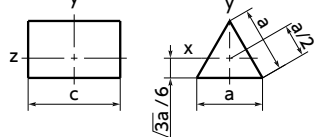
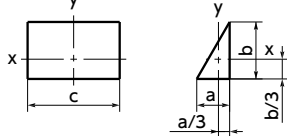
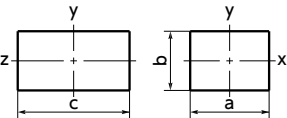
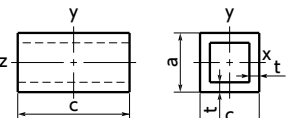
V = Volume
S = Surface area
As = Area of side
Ab = Area of base
x = Distance from bottom area to gravity center

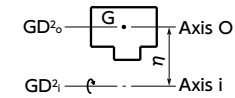
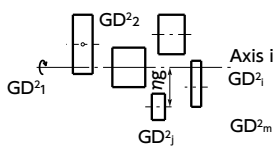
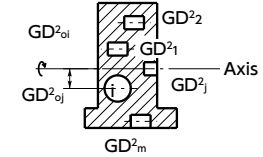
Second Moment of Area, Section Modulus, and Turning Radius of Cross Section

Shape of cross section	Cross section area A	Distance from neutral axis to farthest portion e	Second moment of area I	Section modulus $Z = \frac{I}{e}$	Rotation radius $p = \frac{\sqrt{I}}{A}$
	a^2	a	$\frac{a^4}{3}$	$\frac{a^3}{3}$	$\frac{a}{\sqrt{3}} = 0.577a$
	$a^2 - b^2$	$\frac{1}{2}a$	$\frac{a^4 - b^4}{12}$	$\frac{a^4 - b^4}{6a}$	$\sqrt{\frac{a^2 + b^2}{12}} = 0.289\sqrt{a^2 + b^2}$
	bd	$\frac{1}{2}d$	$\frac{bd^3}{12}$	$\frac{bd^2}{6}$	$\frac{d}{\sqrt{12}} = 0.289d$
	bd - hk	$\frac{1}{2}d$	$\frac{bd^3 - hk^3}{12}$	$\frac{bd^3 - hk^3}{6d}$	$\sqrt{\frac{bd^3 - hk^3}{12(bd - hk)}} = 0.289\sqrt{\frac{bd^3 - hk^3}{bd - hk}}$
	$\frac{1}{2}bd$	$\frac{2}{3}d$	$\frac{bd^3}{36}$	$\frac{bd^2}{24}$	$\frac{d}{\sqrt{18}} = 0.236d$
	$\frac{1}{2}bd$	d	$\frac{bd^3}{12}$	$\frac{bd^2}{12}$	$\frac{a}{\sqrt{6}} = 0.408d$
	$\frac{3d^2 \tan 30^\circ}{2} = 0.866d^2$	$\frac{d}{2}$	$\frac{A}{12} \left[\frac{d^2 (1 + 2\cos^2 30^\circ)}{4\cos^2 30^\circ} \right] = 0.6d^4$	$\frac{A}{6} \left[\frac{d^2 (1 + 2\cos^2 30^\circ)}{4\cos^2 30^\circ} \right] = 0.104d^3$	$\sqrt{\frac{d^2 (1 + 2\cos^2 30^\circ)}{48\cos^2 30^\circ}} = 0.264d$
	$\frac{3d^2 \tan 30^\circ}{2} = 0.866d^2$	$\frac{d}{2\cos 30^\circ} = 0.577d$	$\frac{A}{12} \left[\frac{d^2 (1 + 2\cos^2 30^\circ)}{4\cos^2 30^\circ} \right] = 0.6d^4$	$\frac{A}{6} \left[\frac{d^2 (1 + 2\cos^2 30^\circ)}{4\cos^2 30^\circ} \right] = 0.104d^3$	$\sqrt{\frac{d^2 (1 + 2\cos^2 30^\circ)}{48\cos^2 30^\circ}} = 0.264d$
	$\frac{\pi D^2}{4} = 0.7854D^2$	$\frac{D}{2}$	$\frac{\pi D^4}{64} = 0.049D^4$	$\frac{\pi D^3}{32} = 0.098D^3$	$\frac{D}{4}$
	$\frac{\pi (D^2 - d^2)}{4} = 0.7854(D^2 - d^2)$	$\frac{D}{2}$	$\frac{\pi (D^4 - d^4)}{64} = 0.049(D^4 - d^4)$	$\frac{\pi (D^4 - d^4)}{32D} = 0.098 \frac{D^4 - d^4}{D}$	$\frac{\sqrt{D^4 - d^4}}{4}$
	$\pi ab = 3.1416ab$	a	$\frac{\pi a^3 b}{4} = 0.7854a^3 b$	$\frac{\pi a^2 b}{4} = 0.7854a^2 b$	$\frac{a}{2}$
	dt + 2a(s + n)	$\frac{d}{2}$	where g = inclination of flange	$\frac{1}{6d} \left[bd^3 - \frac{1}{4g} (h^4 - l^4) \right]$	$\sqrt{\frac{1}{12} \left[bd^3 - \frac{1}{4g} (h^4 - l^4) \right] \frac{1}{dt + 2a(s + n)}}$

Formula regarding GD²

(The symbol r in the table is specific weight.)

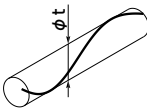
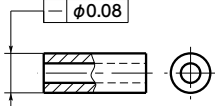
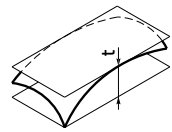
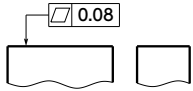
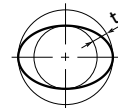
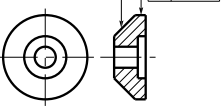
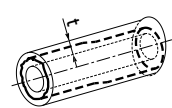
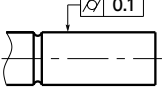
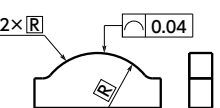
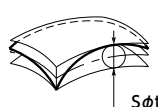
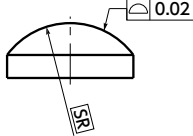
Shape of object	W (weight) GD ²
	$W = \frac{\pi}{4} r D^2 l$ $GD^2_x = GD^2_y = W \left(\frac{D^2}{4} + \frac{l^2}{3} \right)$ $GD^2_z = \frac{1}{2} W D^2$
	$W = \frac{\pi}{4} r (D_2^2 - D_1^2) l$ $GD^2_x = GD^2_y = W \left\{ \frac{(D_2^2 + D_1^2)}{4} + \frac{l^2}{3} \right\}$ $GD^2_z = \frac{1}{2} W (D_2^2 + D_1^2)$
	$W = \frac{\sqrt{3}}{4} r a^2 c$ $GD^2_x = GD^2_y = \frac{1}{3} W \left(\frac{a^2}{2} + c^2 \right)$ $GD^2_z = \frac{1}{3} W a^2$
	$W = \frac{1}{2} r a b c$ $GD^2_x = \frac{2}{3} W \left(\frac{b^2}{3} + \frac{c^2}{2} \right)$ $GD^2_y = \frac{2}{3} W \left(\frac{a^2}{3} + \frac{c^2}{2} \right)$ $GD^2_z = \frac{1}{9} W (a^2 + b^2)$
	$W = r a b c$ $GD^2_x = \frac{1}{3} W (b^2 + c^2)$ $GD^2_y = \frac{1}{3} W (c^2 + a^2)$ $GD^2_z = \frac{1}{3} W (a^2 + b^2)$
	$W = 4 r t c (a - t)$ $GD^2_x = GD^2_y = \frac{2}{3} W \left\{ (a - t)^2 + t^2 + \frac{c^2}{2} \right\}$ $GD^2_z = \frac{3}{4} W \{ (a - t)^2 + t^2 \}$

Shape of object	W (weight) GD ²
Theorem of parallel axis for object in GD ² 	$GD^2_i = GD^2_o + 4W\eta^2$ $GD^2_o: GD^2[kgf \cdot m^2] \text{ about axis O that passes the gravity center of an object}$ $GD^2_i: GD^2[kgf \cdot m^2] \text{ about axis i that is parallel to axis O and distant by } \eta$ $W: \text{Weight of object[kgf]}$ $\eta: \text{Distance between axis O and axis i [m]}$
Theorem of addition for object in GD ² 	$GD^2_i = GD^2_1 + GD^2_2 + \dots + GD^2_j + \dots + GD^2_m$ $\sum_{j=1}^m GD^2_j$ $GD^2_j: GD^2[kgf \cdot m^2] \text{ about the axis i of arbitrary object j}$ $m: \text{Number of objects}$ Note) When the central axis does not match axis i, obtain GD² about axis i of each object and add it in such methods as the theorem of parallel axis.
Theorem of subtraction for object in GD ² 	$GD^2_i = GD^2_{oi} - (GD^2_1 + GD^2_2 + \dots + GD^2_j + \dots + GD^2_m)$ $GD^2_{oi} - \sum_{j=1}^m GD^2_j$ $GD^2_{oi}: GD^2[kgf \cdot m^2] \text{ about axis i when no space room is assumed}$ $GD^2_j: GD^2[kgf \cdot m^2] \text{ about axis i of virtual objects when an arbitrary subspace is packed with these objects with identical specific weight}$
Basic relationship of GD ² , torque, shaft rotational speed and time	$T = \frac{GD^2}{375} \cdot \frac{(n - n_0)}{t}$ $n = \frac{375}{GD^2} T t + n_0, t = \frac{GD^2}{375} \cdot \frac{(n - n_0)}{t}$ $n: \text{Shaft rotational speed[rpm]}$ $n_0: \text{Initial shaft rotational speed [rpm]}$ $t: \text{Time [sec]}$ $T: \text{Torque[kgf} \cdot \text{m]} (\text{Acceleration+}, \text{deceleration-})$
Motion energy of rotating body	$E = \frac{GD^2 n^2}{7150}$ $E = 1.4 \times 10^{-4} GD^2 n^2$ $n: \text{Shaft rotational speed [rpm]}$

Geometrical Tolerancing

Excerpt from JIS B 0021:1998 Tolerancing of form, orientation, location and run-out

Types of tolerancing		Symbol	Definition
Form tolerance	Straightness tolerance	—	Tolerance for deviation of straight object from the geometric straightness
	Flatness tolerance	▭	Tolerance for deviation of flat object from the geometric flatness
	Roundness tolerance	○	Tolerance for deviation of round object from the geometric roundness
	Cylindricity tolerance	⌀	Tolerance for deviation of cylindrical object from the geometric cylindricity
	Profile tolerance for line	⌒	Tolerance of deviation of a line profile from the geometrical profile defined by the theoretically accurate dimensions
	Profile tolerance for plane	⌒	Tolerance of deviation of a plane profile from the geometrical profile defined by the theoretically accurate dimensions.
Orientation tolerance	Parallelism tolerance	//	Tolerance for deviation of straight line object or plane object that are assumed to be parallel to the geometrical straight line or geometrical plane that are parallel to datum straight line or datum plane.
	Squareness tolerance	⊥	Tolerance for deviation of straight line object or plane object that are assumed to be right angle to the geometrical straight line or geometrical plane that are right angle to datum straight line or datum plane.
	Angularity tolerance	∠	Tolerance for deviation of straight line object or plane object that are assumed to have an accurate angle to the geometrical straight line or geometrical plane that have the accurate angle to datum straight line or datum plane.
Position tolerance	Positional tolerance	⊕	Tolerance for the deviation of a point, straight line object or plane object from the accurate position defined in relation to datum or other geometric feature.
	Coaxiality tolerance or concentricity tolerance	◎	Coaxiality tolerance is tolerance of the deviation for the axis line that is assumed to be on the same straight line with datum axis line, from the datum axis line. On the other hand, concentricity tolerance is tolerance for the position deviation from the center of datum circle to the center of other circular geometric feature.
	Symmetry tolerance	≡	Tolerance for the deviation of actual body that is assumed to be symmetrical to each other against the datum axis straight line or datum central plane, from the symmetrical position.
Run-out tolerance	Radial run-out tolerance	↗	When a rotating body whose axis is datum axis straight line rotates around the datum axis straight line, the tolerance represents the permissible displacement of its surface from the specified position or at an arbitrary position along the specified direction.
	Total run-out tolerance	↗	When a rotating body whose axis is datum axis straight line rotates around the datum axis straight line, the tolerance represents the permissible displacement of its surface along the specified direction.

Property symbol	Definition of tolerance zone		Example and explanation of instruction method	
Straightness tolerance				
—		When adding the symbol ϕ before the tolerance value, the geometric tolerance zone is restricted by the cylinder whose diameter is t.		The actual (reproduced) shaft line of cylinder to which tolerance is applied must be within a cylindrical tolerance zone of 0.08 in diameter.
Flatness tolerance				
▭		The tolerance zone is restricted by parallel two planes apart by distance t.		The actual (reproduced) surface must be within the parallel two planes apart by distance 0.08.
Roundness tolerance				
○		In the symmetric cross section, the tolerance zone is restricted by two circles with the common axis.		In an arbitrary cross section of a cylinder or a circular cone, the actual (or reproduced) line along the radius direction must be between the two circles on the common plane with the common axis that are 0.03 apart in radius distance.
Cylindricity tolerance				
⌀		The tolerance zone is restricted by two cylinders with the common axis apart by distance t.		The actual (reproduced) cylindrical surface must be within the two cylinders with the common axis apart by radius distance 0.1.
Profile tolerance of a line: Profile tolerance of a line that is not related to datum (ISO 1660)				
⌒		Tolerance zone is restricted by two envelope curves of each circle with diameter t, and the centers of these circles are positioned on a line that has the theoretically accurate geometrical configuration.		In each cross sections that are parallel to project plane along the specified direction, the actual (or reproduced) profile line must be between the two envelope lines of circles which have the diameter 0.04 and whose centers are positioned on an idealistic geometrical line.
Profile tolerance of a plane: Profile tolerance of a plane that is not related to datum (ISO 1660)				
⌒		Tolerance zone is restricted by two envelope curves of each sphere with diameter t, and the centers of these spheres are positioned on a line that has the theoretically accurate geometrical configuration.		The actual (or reproduced) surface must be between the enveloping surfaces of each spheres whose diameter is 0.02 and whose centers are positioned on a theoretically accurate geometrical surface.

System of Limits and Fits

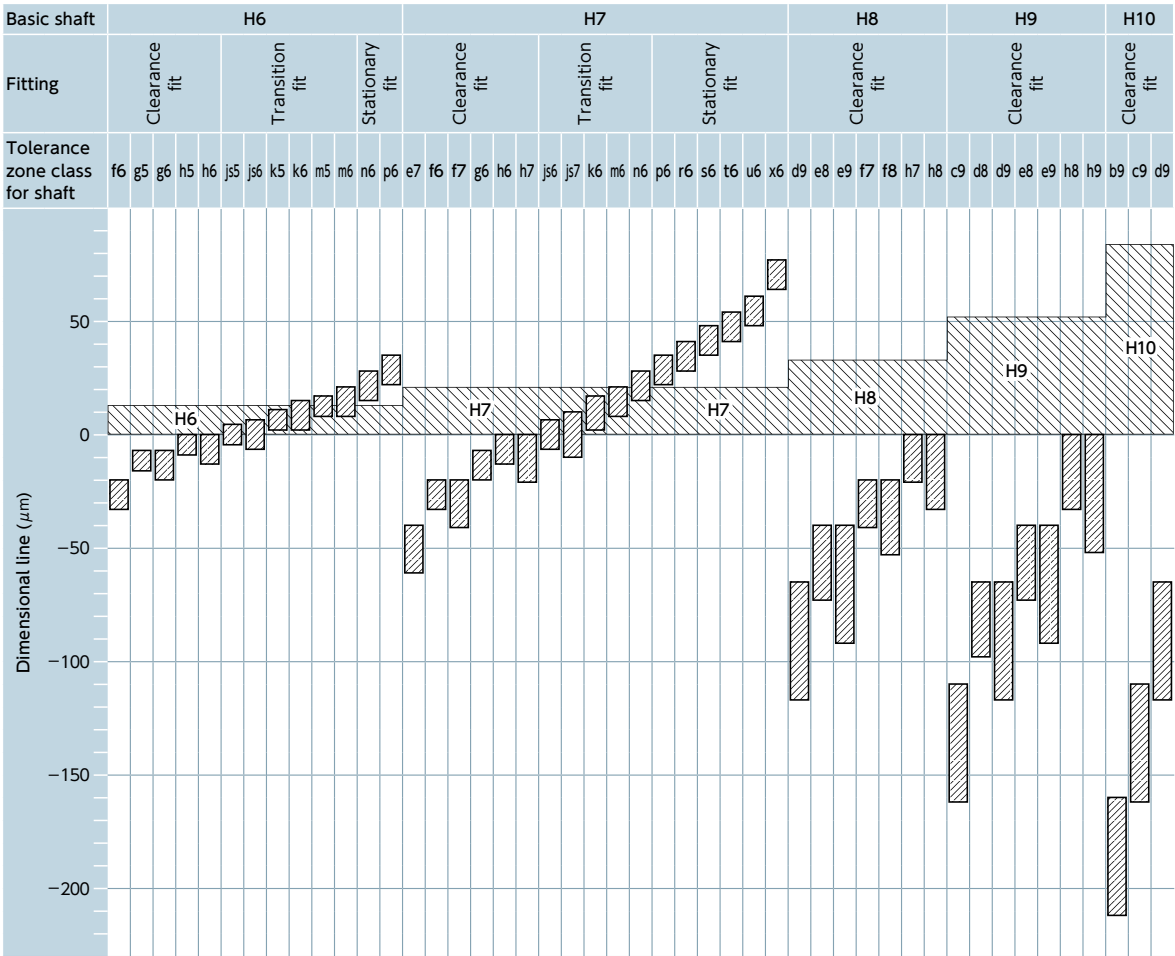
Excerpt from JIS B 0401: 1998

Table of frequently used hole-basis system of fits

Datum hole	Tolerance zone class for shaft																	
	Clearance fit						Transition fit			Stationary fit								
H6					g5	h5	js5	k5	m5									
					f6	g6	h6	js6	k6	m6	n6*	p6*						
H7					f6	g6	h6	js6	k6	m6	n6	p6*	r6*	s6	t6	u6	x6	
				e7	f7		h7	js7										
					f7		h7											
H8				e8	f8		h8											
			d9	e9														
			d8	e8			h8											
H9		c9	d9	e9			h9											
H10	b9	c9	d9															

* These fits can create exceptions depending on the class of dimensions.

Correlation of tolerance zone classes in frequently used hole-basis system of fits



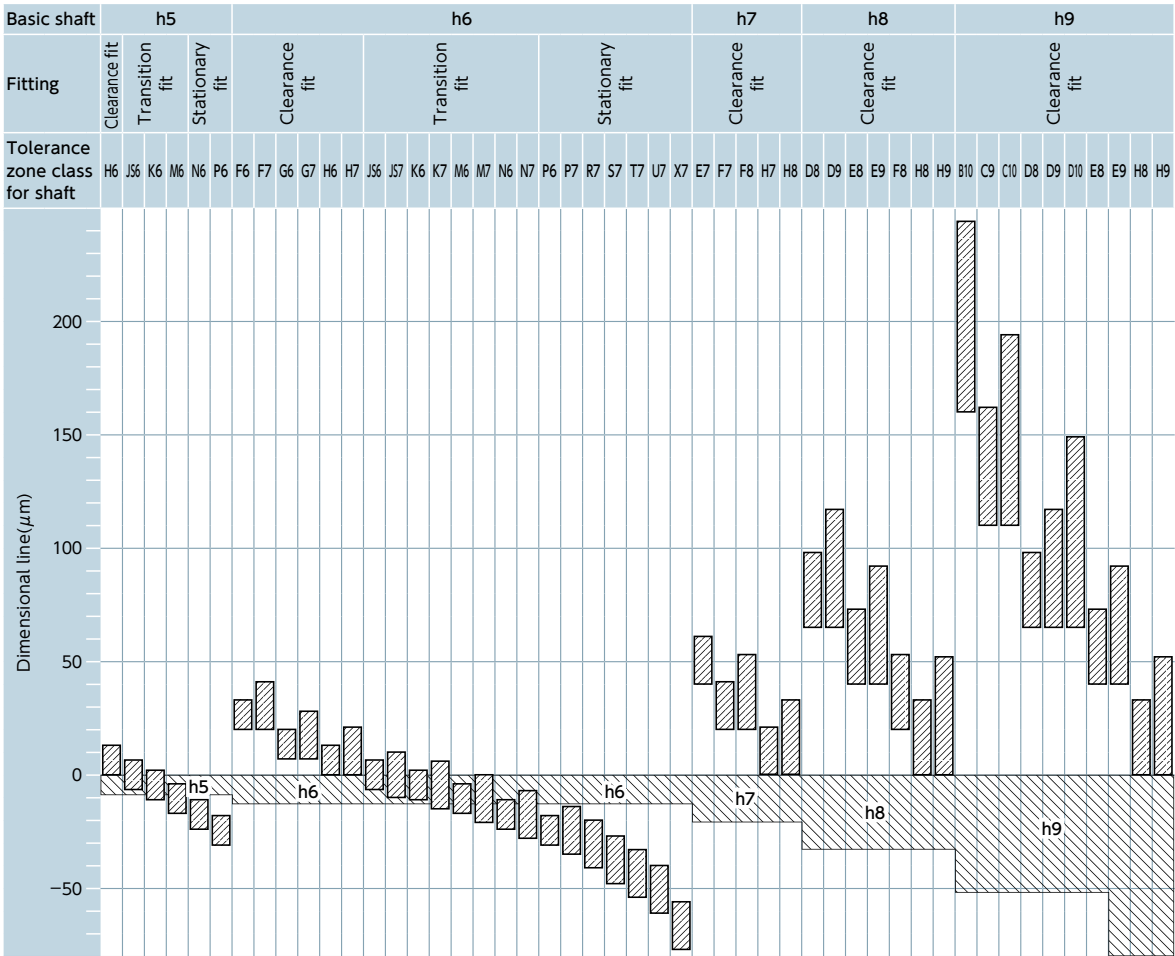
• The figure above shows the case of basic dimension 30mm.

Table of frequently used shaft-basis system of fits

Basic shaft	Tolerance zone class of hole																	
	Clearance fit						Transition fit			Stationary fit								
h5							H6	JS6	K6	M6	N6*	P6						
h6						F6	G6	H6	JS6	K6	M6	N6	P6*					
						F7	G7	H7	JS7	K7	M7	N7	P7*	R7	S7	T7	U7	X7
h7					E7	F7		H7										
						F8		H8										
h8				D8	E8	F8		H8										
				D9	E9			H9										
				D8	E8			H8										
h9				D9	E9			H9										
	B10	C10	D10															

* These fits can create exceptions depending on the class of dimensions.

Correlation of tolerance zone classes in frequently used shaft-basis system of fits



• The figure above shows the case of basic dimension 30mm.

Deviations of Holes to be Used in Commonly Used Fits

Excerpt from JIS B 0401:1998

Class of basic dimension (mm)		Tolerance zone class of hole																		
More than	Not more than	B10	C9	C10	D8	D9	D10	E7	E8	E9	F6	F7	F8	G6	G7	H6	H7	H8	H9	H10
—	3	+180 +140	+85 +60	+100 +60	+34 +20	+45 +20	+60 +20	+24 +14	+28 +14	+39 +14	+12 +6	+16 +6	+20 +6	+8 +2	+12 +2	+6 0	+10 0	+14 0	+25 0	+40 0
3	6	+188 +140	+100 +70	+118 +70	+48 +30	+60 +30	+78 +30	+32 +20	+38 +20	+50 +20	+18 +10	+22 +10	+28 +10	+12 +4	+16 +4	+8 0	+12 0	+18 0	+30 0	+48 0
6	10	+208 +150	+116 +80	+138 +80	+62 +40	+76 +40	+98 +40	+40 +25	+47 +25	+61 +25	+22 +13	+28 +13	+35 +13	+14 +5	+20 +5	+9 0	+15 0	+22 0	+36 0	+58 0
10	14	+220 +150	+138 +95	+165 +95	+77 +50	+93 +50	+120 +50	+50 +32	+59 +32	+75 +32	+27 +16	+34 +16	+43 +16	+17 +6	+24 +6	+11 0	+18 0	+27 0	+43 0	+70 0
14	18																			
18	24	+244 +160	+162 +110	+194 +110	+98 +65	+117 +65	+149 +65	+61 +40	+73 +40	+92 +40	+33 +20	+41 +20	+53 +20	+20 +7	+28 +7	+13 0	+21 0	+33 0	+52 0	+84 0
24	30																			
30	40	+270 +170	+182 +120	+220 +120	+119 +80	+142 +80	+180 +80	+75 +50	+89 +50	+112 +50	+41 +25	+50 +25	+64 +25	+25 +9	+34 +9	+16 0	+25 0	+39 0	+62 0	+100 0
40	50	+280 +180	+192 +130	+230 +130																
50	65	+310 +190	+214 +140	+260 +140	+146 +100	+174 +100	+220 +100	+90 +60	+106 +60	+134 +60	+49 +30	+60 +30	+76 +30	+29 +10	+40 +10	+19 0	+30 0	+46 0	+74 0	+120 0
65	80	+320 +200	+224 +150	+270 +150																
80	100	+360 +220	+257 +170	+310 +170	+174 +120	+207 +120	+260 +120	+107 +72	+126 +72	+159 +72	+58 +36	+71 +36	+90 +36	+34 +12	+47 +12	+22 0	+35 0	+54 0	+87 0	+140 0
100	120	+380 +240	+267 +180	+320 +180																
120	140	+420 +260	+300 +200	+360 +200																
140	160	+440 +280	+310 +210	+370 +210	+208 +145	+245 +145	+305 +145	+125 +85	+148 +85	+185 +85	+68 +43	+83 +43	+106 +43	+39 +14	+54 +14	+25 0	+40 0	+63 0	+100 0	+160 0
160	180	+470 +310	+330 +230	+390 +230																
180	200	+525 +340	+355 +240	+425 +240																
200	225	+565 +380	+375 +260	+445 +260	+242 +170	+285 +170	+355 +170	+146 +100	+172 +100	+215 +100	+79 +50	+96 +50	+122 +50	+44 +15	+61 +15	+29 0	+46 0	+72 0	+115 0	+185 0
225	250	+605 +420	+395 +280	+465 +280																
250	280	+690 +480	+430 +300	+510 +300	+271 +190	+320 +190	+400 +190	+162 +110	+191 +110	+240 +110	+88 +56	+108 +56	+137 +56	+49 +17	+69 +17	+32 0	+52 0	+81 0	+130 0	+210 0
280	315	+750 +540	+460 +330	+540 +330																
315	355	+830 +600	+500 +360	+590 +360	+299 +210	+350 +210	+440 +210	+182 +125	+214 +125	+265 +125	+98 +62	+119 +62	+151 +62	+54 +18	+75 +18	+36 0	+57 0	+89 0	+140 0	+230 0
355	400	+910 +680	+540 +400	+630 +400																
400	450	+1010 +760	+595 +440	+690 +440	+327 +230	+385 +230	+480 +230	+198 +135	+232 +135	+290 +135	+108 +68	+131 +68	+165 +68	+60 +20	+83 +20	+40 0	+63 0	+97 0	+155 0	+250 0
450	500	+1090 +840	+635 +480	+730 +480																

Remark: In each step of above table, upper figure shows the dimensional allowance of high, and lower figure shows the dimensional allowance of low.

Class of basic dimension (mm)		Tolerance zone class of hole															Unit: μm
More than	Not more than	JS6	JS7	K6	K7	M6	M7	N6	N7	P6	P7	R7	S7	T7	U7	X7	
—	3	±3	±5	0 −6	0 −10	−2 −8	−2 −12	−4 −10	−4 −14	−6 −12	−6 −16	−10 −20	−14 −24	—	−18 −28	−20 −30	
3	6	±4	±6	+2 −6	+3 −9	−1 −9	0 −12	−5 −13	−4 −16	−9 −17	−8 −20	−11 −23	−15 −27	—	−19 −31	−24 −36	
6	10	±4.5	±7	+2 −7	+5 −10	−3 −12	0 −15	−7 −16	−4 −19	−12 −21	−9 −24	−13 −28	−17 −32	—	−22 −37	−28 −43	
10	14	±5.5	±9	+2 −9	+6 −12	−4 −15	0 −18	−9 −20	−5 −23	−15 −26	−11 −29	−16 −34	−21 −39	—	−26 −44	−33 −51	
14	18															−38 −56	
18	24	±6.5	±10	+2 −11	+6 −15	−4 −17	0 −21	−11 −24	−7 −28	−18 −31	−14 −35	−20 −41	−27 −48	—	−33 −54	−46 −67	
24	30															−56 −77	
30	40	±8	±12	+3 −13	+7 −18	−4 −20	0 −25	−12 −28	−8 −33	−21 −37	−17 −42	−25 −50	−34 −59	−39 −64	−51 −76	—	
40	50														−45 −70		−61 −86
50	65	±9.5	±15	+4 −15	+9 −21	−5 −24	0 −30	−14 −33	−9 −39	−26 −45	−21 −51	−30 −60	−42 −72	−55 −85	−76 −106	—	
65	80													−32 −62	−48 −78		−64 −94
80	100	±11	±17	+4 −18	+10 −25	−6 −28	0 −35	−16 −38	−10 −45	−30 −52	−24 −59	−38 −73	−58 −93	−78 −113	−111 −146	—	
100	120													−41 −76	−66 −101		−91 −126
120	140	±12.5	±20	+4 −21	+12 −28	−8 −33	0 −40	−20 −45	−12 −52	−36 −61	−28 −68	−48 −88	−77 −117	−107 −147	—	—	
140	160													−50 −90			−85 −125
160	180											−53 −93	−93 −133	−131 −171			
180	200	±14.5	±23	+5 −24	+13 −33	−8 −37	0 −46	−22 −51	−14 −60	−41 −70	−33 −79	−60 −106	−105 −151	—	—	—	
200	225																−63 −109
225	250											−67 −113	−123 −169				
250	280	±16	±26	+5 −27	+16 −36	−9 −41	0 −52	−25 −57	−14 −66	−47 −79	−36 −88	−74 −126	—	—	—	—	
280	315																
315	355	±18	±28	+7 −29	+17 −40	−10 −46	0 −57	−26 −62	−16 −73	−51 −87	−41 −98	−87 −144	—	—	—	—	
355	400																
400	450	±20	±31	+8 −32	+18 −45	−10 −50	0 −63	−27 −67	−17 −80	−55 −95	−45 −108	−103 −166	—	—	—	—	
450	500																

Deviations of Shafts to be Used in Commonly Used Fits

Excerpt from JIS B 0401:1998

Class of basic dimension (mm)		Tolerance zone class for shaft																
More than	Not more than	b9	c9	d8	d9	e7	e8	e9	f6	f7	f8	g5	g6	h5	h6	h7	h8	h9
—	3	−140 −165	−60 −85	−20 −34	−20 −45	−14 −24	−14 −28	−14 −39	−6 −12	−6 −16	−6 −20	−2 −6	−2 −8	0 −4	0 −6	0 −10	0 −14	0 −25
3	6	−140 −170	−70 −100	−30 −48	−30 −60	−20 −32	−20 −38	−20 −50	−10 −18	−10 −22	−10 −28	−4 −9	−4 −12	0 −5	0 −8	0 −12	0 −18	0 −30
6	10	−150 −186	−80 −116	−40 −62	−40 −76	−25 −40	−25 −47	−25 −61	−13 −22	−13 −28	−13 −35	−5 −11	−5 −14	0 −6	0 −9	0 −15	0 −22	0 −36
10	14	−150 −193	−95 −138	−50 −77	−50 −93	−32 −50	−32 −59	−32 −75	−16 −27	−16 −34	−16 −43	−6 −14	−6 −17	0 −8	0 −11	0 −18	0 −27	0 −43
14	18																	
18	24	−160 −212	−110 −162	−65 −98	−65 −117	−40 −61	−40 −73	−40 −92	−20 −33	−20 −41	−20 −53	−7 −16	−7 −20	0 −9	0 −13	0 −21	0 −33	0 −52
24	30																	
30	40	−170 −232	−120 −182	−80 −119	−80 −142	−50 −75	−50 −89	−50 −112	−25 −41	−25 −50	−25 −64	−9 −20	−9 −25	0 −11	0 −16	0 −25	0 −39	0 −62
40	50	−180 −242	−130 −192															
50	65	−190 −264	−140 −214	−100 −146	−100 −174	−60 −90	−60 −106	−60 −134	−30 −49	−30 −60	−30 −76	−10 −23	−10 −29	0 −13	0 −19	0 −30	0 −46	0 −74
65	80	−200 −274	−150 −224															
80	100	−220 −307	−170 −257	−120 −174	−120 −207	−72 −107	−72 −126	−72 −159	−36 −58	−36 −71	−36 −90	−12 −27	−12 −34	0 −15	0 −22	0 −35	0 −54	0 −87
100	120	−240 −327	−180 −267															
120	140	−260 −360	−200 −300															
140	160	−280 −380	−210 −310	−145 −208	−145 −245	−85 −125	−85 −148	−85 −185	−43 −68	−43 −83	−43 −106	−14 −32	−14 −39	0 −18	0 −25	0 −40	0 −63	0 −100
160	180	−310 −410	−230 −330															
180	200	−340 −455	−240 −355															
200	225	−380 −495	−260 −375	−170 −242	−170 −285	−100 −146	−100 −172	−100 −215	−50 −79	−50 −96	−50 −122	−15 −35	−15 −44	0 −20	0 −29	0 −46	0 −72	0 −115
225	250	−420 −535	−280 −395															
250	280	−480 −610	−300 −430	−190 −271	−190 −320	−110 −162	−110 −191	−110 −240	−56 −88	−56 −108	−56 −137	−17 −40	−17 −49	0 −23	0 −32	0 −52	0 −81	0 −130
280	315	−540 −670	−330 −460															
315	355	−600 −740	−360 −500	−210 −299	−210 −350	−125 −182	−125 −214	−125 −265	−62 −98	−62 −119	−62 −151	−18 −43	−18 −54	0 −25	0 −36	0 −57	0 −89	0 −140
355	400	−680 −820	−400 −540															
400	450	−760 −915	−440 −595	−230 −327	−230 −385	−135 −198	−135 −232	−135 −290	−68 −108	−68 −131	−68 −165	−20 −47	−20 −60	0 −27	0 −40	0 −63	0 −97	0 −155
450	500	−840 −995	−480 −635															

Remark: In each step of above table, upper figure shows the dimensional allowance of high, and lower figure shows the dimensional allowance of low.

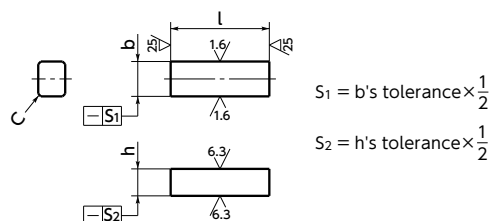
Class of basic dimension (mm)		Tolerance zone class for shaft																
More than	Not more than	js5	js6	js7	k5	k6	m5	m6	n6	p6	r6	s6	t6	u6	x6	Unit: μm		
—	3	±2	±3	±5	+4 0	+6 0	+6 +2	+8 +2	+10 +4	+12 +6	+16 +10	+20 +14	—	+24 +18	+26 +20			
3	6	±2.5	±4	±6	+6 +1	+9 +1	+9 +4	+12 +4	+16 +8	+20 +12	+23 +15	+27 +19	—	+31 +23	+36 +28			
6	10	±3	±4.5	±7	+7 +1	+10 +1	+12 +6	+15 +6	+19 +10	+24 +15	+28 +19	+32 +23	—	+37 +28	+43 +34			
10	14	±4	±5.5	±9	+9 +1	+12 +1	+15 +7	+18 +7	+23 +12	+29 +18	+34 +23	+39 +28	—	+44 +33	+51 +40			
14	18														+56 +45			
18	24	±4.5	±6.5	±10	+11 +2	+15 +2	+17 +8	+21 +8	+28 +15	+35 +22	+41 +28	+48 +35	—	+54 +41	+67 +54			
24	30												+54 +41	+61 +48	+77 +64			
30	40	±5.5	±8	±12	+13 +2	+18 +2	+20 +9	+25 +9	+33 +17	+42 +26	+50 +34	+59 +43	+64 +48	+76 +60	—			
40	50												+70 +54	+86 +70	—			
50	65	±6.5	±9.5	±15	+15 +2	+21 +2	+24 +11	+30 +11	+39 +20	+51 +32	+60 +41	+72 +53	+85 +66	+106 +87	—			
65	80										+62 +43	+78 +59	+94 +75	+121 +102	—			
80	100	±7.5	±11	±17	+18 +3	+25 +3	+28 +13	+35 +13	+45 +23	+59 +37	+73 +51	+93 +71	+113 +91	+146 +124	—			
100	120										+76 +54	+101 +79	+126 +104	+166 +144	—			
120	140	±9	±12.5	±20	+21 +3	+28 +3	+33 +15	+40 +15	+52 +27	+68 +43	+88 +63	+117 +92	+147 +122	—	—			
140	160										+90 +65	+125 +100	+159 +134					
160	180	±10	±14.5	±23	+24 +4	+33 +4	+37 +17	+46 +17	+60 +31	+79 +50	+93 +68	+133 +108	+171 +146	—	—			
180	200										+106 +77	+151 +122	—	—	—			
200	225	±11.5	±16	±26	+27 +4	+36 +4	+43 +20	+52 +20	+66 +34	+88 +56	+109 +80	+159 +130						
225	250										+113 +84	+169 +140	—	—	—			
250	280	±12.5	±18	±28	+29 +4	+40 +4	+46 +21	+57 +21	+73 +37	+98 +62	+126 +94	+159 +130	—	—	—			
280	315										+130 +98	+159 +130						
315	355	±13.5	±20	±31	+32 +5	+45 +5	+50 +23	+63 +23	+80 +40	+108 +68	+144 +108	+159 +130	—	—	—			
355	400										+150 +114	+169 +140						
400	450	±13.5	±20	±31	+32 +5	+45 +5	+50 +23	+63 +23	+80 +40	+108 +68	+166 +126	+172 +132	—	—	—			
450	500										+172 +132	+187 +147						

Key and Their Corresponding Keyways

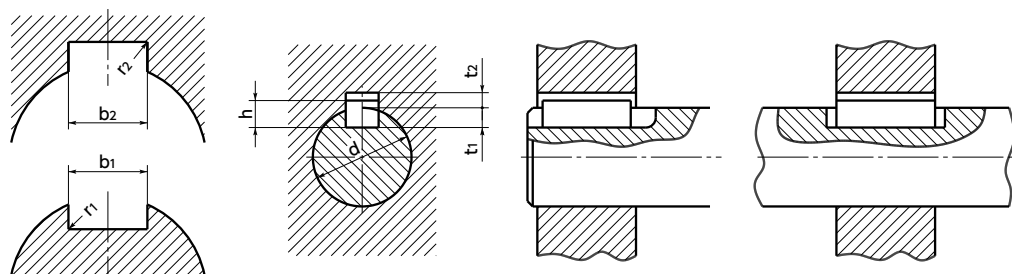
Excerpt from JIS B 1301:1996

Shape and dimensions of parallel key and keyway

Key body



Cross section of keyway

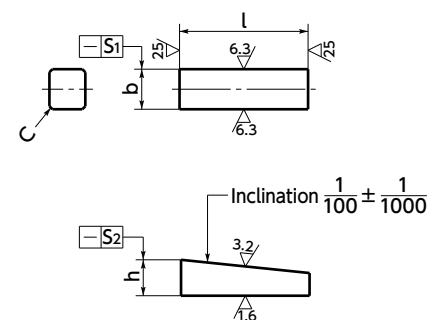


Nominal dimension of key b×h	Key dimension					Keyway dimension											Unit: mm								
	b		h			C	l	Basic dimension of b ¹ and b ²	Sliding type		Normal type		Fastening type	r ₁ and r ₂	Basic dimension of t ₁	Basic dimension of t ₂	Allowance of t ₁ and t ₂	Compliant shaft diameter d							
	Basic Dimension	Allowance (h9)	Basic Dimension	Allowance	b ₁				b ₂	b ₁	b ₂	b ₁ and b ₂													
													Allowance (H9)						Allowance (D10)	Allowance (N9)	Allowance (Js9)	Allowance (P9)			
2×2	2	0	2	0	0.16-0.25	6 - 20	2	+0.025	+0.060	-0.004	-0.006	0.08 - 0.16	1.2	1.0	+0.1	0	6 - 8								
3×3	3	-0.025	3	-0.025		6 - 36	3	0	+0.020	-0.029	±0.0125						-0.031	1.8	1.4	8 - 10					
4×4	4	0	4	0		8 - 45	4	+0.030	+0.078	0	±0.0150						-0.012	2.5	1.8	10 - 12					
5×5	5		-0.030			5	-0.030	10 - 56	5	0	+0.030						-0.030	±0.0150	-0.042	3.0	2.3	12 - 17			
6×6	6	0	6	0	0.25-0.40	14 - 70	6	+0.036	+0.098	0	±0.0180	-0.015	-0.051	0.16 - 0.25	4.0	3.3	+0.2	17 - 22							
(7×7)	7		7			-0.036	16 - 80											7	0	±0.0180	-0.051	4.0	3.3	20 - 25	
8×7	8		7			0	18 - 90											8	+0.040	-0.036	±0.0180	-0.051	4.0	3.3	22 - 30
10×8	10		8				22 - 110											10	+0.043	+0.120	0	±0.0215	-0.018	-0.061	0.25 - 0.40
12×8	12	8	28 - 140	12	5.0		3.3	38 - 44																	
14×9	14	9	36 - 160	14	5.5		3.8	44 - 50																	
(15×10)	15	10	40 - 180	15	5.0	5.3	50 - 55																		
16×10	16	0	10	0	0.40-0.60	45 - 180	16	0	+0.149	0	±0.0260	-0.022	-0.074	0.25 - 0.40	6.0	4.3	+0.2	50 - 58							
18×11	18		11			50 - 200	18											7.0	4.4	58 - 65					
20×12	20		12			56 - 220	20											7.5	4.9	65 - 75					
22×14	22		14			63 - 250	22											9.0	5.4	75 - 85					
(24×16)	24	0	16	0	0.60-0.80	70 - 280	24	+0.052	+0.149	0	±0.0260	-0.022	-0.074	0.40 - 0.60	8.0	8.4	+0.2	80 - 90							
25×14	25		14			70 - 280	25											9.0	5.4	85 - 95					
28×16	28		16			80 - 320	28											10.0	6.4	95 - 110					
32×18	32		18			90 - 360	32											0	+0.062	+0.180	0	±0.0310	-0.026	-0.088	11.0

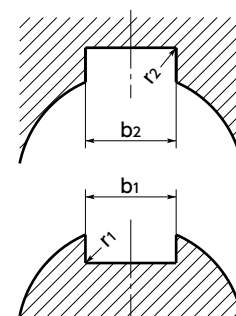
Unit: mm

Shape and dimensions of taper key, headed taper key and keyway

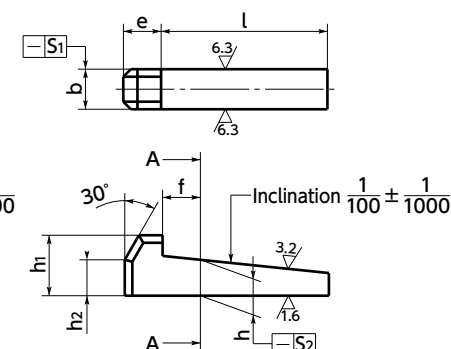
Key body Headless taper key (symbol T)



Cross section of keyway



Headless taper key (symbol TG) 25/ (1.6/3.2/6.3)



h2 = h, f = h, e ≐ b
S1 = b's tolerance × 1/2
S2 = h's tolerance × 1/2

AA cross section

Nominal dimension of key b×h	Key dimension										Keyway dimension						Unit: mm	
	b		h		h ₁	C	l	b ₁ and b ₂		r ₁ and r ₂	Basic dimension of t ₁	Basic dimension of t ₂	Allowance of t ₁ and t ₂	Compliant shaft diameter d				
	Basic Dimension	Allowance	Basic Dimension	Allowance				Basic dimension	Allowance (D10)									
2×2	2	0	2	0	h ₉	0.16 - 0.25	6 - 30	2	+0.060	0.08 - 0.16	1.2	0.5	+0.05	6 - 8				
3×3	3	-0.025	3	-0.025			6 - 36	3	+0.020		1.8	0.9	0	8 - 10				
4×4	4	0	4	0	h ₉	0.25 - 0.40	8 - 45	4	+0.078	0.16 - 0.25	2.5	1.2	+0.1	10 - 12				
5×5	5		-0.030	5			-0.030	10 - 56	5		+0.030	3.0		1.7	12 - 17			
6×6	6	-0.030	6	-0.030			14 - 70	6	+0.098		3.5	2.2		17 - 22				
(7×7)	7	0	7.2	-0.036			10	16 - 80	7		+0.040	4.0		3.0	20 - 25			
8×7	8	-0.036	7	0	h ₁₁	0.40 - 0.60	18 - 90	8	+0.120	0.25 - 0.40	4.0	2.4	+0.2	22 - 30				
10×8	10	-0.036	8	-0.090			12	22 - 110			10	5.0		2.4	30 - 38			
12×8	12	-0.036	8	-0.090			12	28 - 140			12	5.0		2.4	38 - 44			
14×9	14	-0.036	9	-0.090			14	36 - 160			14	5.5		2.9	44 - 50			
(15×10)	15	0	10.2	0	h ₁₀	15	40 - 180	15	+0.050	0.40 - 0.60	5.0	5.0	+0.1	50 - 55				
16×10	16	-0.043	10	-0.090			16	45 - 180	16		6.0	3.4	50 - 58					
18×11	18	-0.043	11	0	h ₁₁	18	50 - 200	18	7.0		3.4	+0.2	58 - 65					
20×12	20	-0.043	12	-0.110			20	56 - 220	20		7.5	3.9	65 - 75					
22×14	22	-0.043	14	-0.110	22	63 - 250	22	+0.149	+0.065	0.40 - 0.60	9.0	4.4	+0.1	75 - 85				
(24×16)	24	0	16.2	0	h ₁₀	24	70 - 280				24	8.0		8.0	80 - 90			
25×14	25	-0.052	14	-0.070			22				70 - 280	25		9.0	4.4	85 - 95		
28×16	28	-0.052	16	0	h ₁₁	25	80 - 320				28	10.0		5.4	+0.2	95 - 110		
32×18	32	0	18	-0.110			28	90 - 360	32	+0.180	11.0	6.4	110 - 130					

Unit: mm

Conversion Table of Hardness

(SAE J 417) revised in 1983

Approximate conversion value for steel Rockwell C hardness*1

(HRC) Rockwell C scale hardness	(HV) Vickers hardness	Brinell hardness (HB) 10mm ball load 3000kgf		Rockwell hardness*3			Rockwell superficial hardness; diamond conical indenter			(HS) Shore hardness	Tensile strength*2 (approximate value) MPa	(HRC)*3 Rockwell C scale hardness
		Standard ball	Tungsten carbide ball	(HRA) A scale load 60kgf diamond conical indenter	(HRB) B scale load 100kgf diameter 1.6mm (1/16in) ball	(HRD) D scale load 100kgf diamond conical indenter	15-N scale load 15kgf	30-N scale load 30kgf	45-N scale load 45kgf			
68	940	—	—	85.6	—	76.9	93.2	84.4	75.4	97	—	68
67	900	—	—	85.0	—	76.1	92.9	83.6	74.2	95	—	67
66	865	—	—	84.5	—	75.4	92.5	82.8	73.3	92	—	66
65	832	—	(739)	83.9	—	74.5	92.2	81.9	72.0	91	—	65
64	800	—	(722)	83.4	—	73.8	91.8	81.1	71.0	88	—	64
63	772	—	(705)	82.8	—	73.0	91.4	80.1	69.9	87	—	63
62	746	—	(688)	82.3	—	72.2	91.1	79.3	68.8	85	—	62
61	720	—	(670)	81.8	—	71.5	90.7	78.4	67.7	83	—	61
60	697	—	(654)	81.2	—	70.7	90.2	77.5	66.6	81	—	60
59	674	—	(634)	80.7	—	69.9	89.8	76.6	65.5	80	—	59
58	653	—	615	80.1	—	69.2	89.3	75.7	64.3	78	—	58
57	633	—	595	79.6	—	68.5	88.9	74.8	63.2	76	—	57
56	613	—	577	79.0	—	67.7	88.3	73.9	62.0	75	—	56
55	595	—	560	78.5	—	66.9	87.9	73.0	60.9	74	2075	55
54	577	—	543	78.0	—	66.1	87.4	72.0	59.8	72	2015	54
53	560	—	525	77.4	—	65.4	86.9	71.2	58.6	71	1950	53
52	544	(500)	512	76.8	—	64.6	86.4	70.2	57.4	69	1880	52
51	528	(487)	496	76.3	—	63.8	85.9	69.4	56.1	68	1820	51
50	513	(475)	481	75.9	—	63.1	85.5	68.5	55.0	67	1760	50
49	498	(464)	469	75.2	—	62.1	85.0	67.6	53.8	66	1695	49
48	484	451	455	74.7	—	61.4	84.5	66.7	52.5	64	1635	48
47	471	442	443	74.1	—	60.8	83.9	65.8	51.4	63	1580	47
46	458	432	432	73.6	—	60.0	83.5	64.8	50.3	62	1530	46
45	446	421	421	73.1	—	59.2	83.0	64.0	49.0	60	1480	45
44	434	409	409	72.5	—	58.5	82.5	63.1	47.8	58	1435	44
43	423	400	400	72.0	—	57.7	82.0	62.2	46.7	57	1385	43
42	412	390	390	71.5	—	56.9	81.5	61.3	45.5	56	1340	42
41	402	381	381	70.9	—	56.2	80.9	60.4	44.3	55	1295	41
40	392	371	371	70.4	—	55.4	80.4	59.5	43.1	54	1250	40
39	382	362	362	69.9	—	54.6	79.9	58.6	41.9	52	1215	39
38	372	353	353	69.4	—	53.8	79.4	57.7	40.8	51	1180	38
37	363	344	344	68.9	—	53.1	78.8	56.8	39.6	50	1160	37
36	354	336	336	68.4	(109.0)	52.3	78.3	55.9	38.4	49	1115	36
35	345	327	327	67.9	(108.5)	51.5	77.7	55.0	37.2	48	1080	35
34	336	319	319	67.4	(108.0)	50.8	77.2	54.2	36.1	47	1055	34
33	327	311	311	66.8	(107.5)	50.0	76.6	53.3	34.9	46	1025	33
32	318	301	301	66.3	(107.0)	49.2	76.1	52.1	33.7	44	1000	32
31	310	294	294	65.8	(106.0)	48.4	75.6	51.3	32.5	43	980	31
30	302	286	286	65.3	(105.5)	47.7	75.0	50.4	31.3	42	950	30
29	294	279	279	64.7	(104.5)	47.0	74.5	49.5	30.1	41	930	29
28	286	271	271	64.3	(104.0)	46.1	73.9	48.6	28.9	41	910	28
27	279	264	264	63.8	(103.0)	45.2	73.3	47.7	27.8	40	880	27
26	272	258	258	63.3	(102.5)	44.6	72.8	46.8	26.7	38	860	26
25	266	253	253	62.8	(101.5)	43.8	72.2	45.9	25.5	38	840	25
24	260	247	247	62.4	(101.0)	43.1	71.6	45.0	24.3	37	825	24
23	254	243	243	62.0	100.0	42.1	71.0	44.0	23.1	36	805	23
22	248	237	237	61.5	99.0	41.6	70.5	43.2	22.0	35	785	22
21	243	231	231	61.0	98.5	40.9	69.9	42.3	20.7	35	770	21
20	238	226	226	60.5	97.8	40.1	69.4	41.5	19.6	34	760	20
(18)	230	219	219	—	96.7	—	—	—	—	33	730	(18)
(16)	222	212	212	—	95.5	—	—	—	—	32	705	(16)
(14)	213	203	203	—	93.9	—	—	—	—	31	675	(14)
(12)	204	194	194	—	92.3	—	—	—	—	29	650	(12)
(10)	196	187	187	—	90.7	—	—	—	—	28	620	(10)
(8)	188	179	179	—	89.5	—	—	—	—	27	600	(8)
(6)	180	171	171	—	87.1	—	—	—	—	26	580	(6)
(4)	173	165	165	—	85.5	—	—	—	—	25	550	(4)
(2)	166	158	158	—	83.5	—	—	—	—	24	530	(2)
(0)	160	152	152	—	81.7	—	—	—	—	24	515	(0)

*1 Bold numbers are according to ASTM E 140 Table 1 (arranged jointly by SAE, ASM and ASTM).

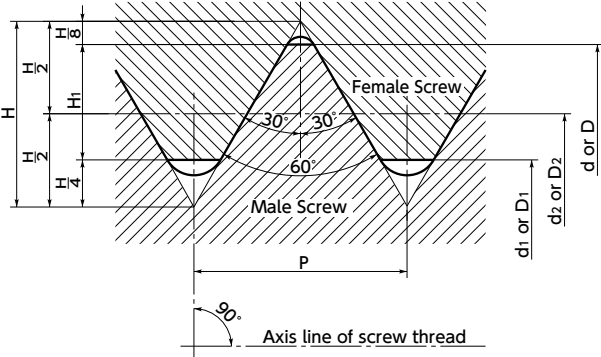
*2 1MPa = 1N/mm²

*3 The value in parentheses in the table are for ranges rarely used and indicated for reference.

ISO General Purpose Metric Screw Threads

Excerpt from JIS B 0205-2•4:2001 / JIS B 0205:1997 (old standards) / JIS B 0207:1982 (old standards)

Basic profile, formula and basic dimensions of metric threads



$H = 0.866025P$
 $H_1 = 0.541266P$

$d_2 = d - 0.649519P$
 $d_1 = d - 1.082532P$

Unit: mm

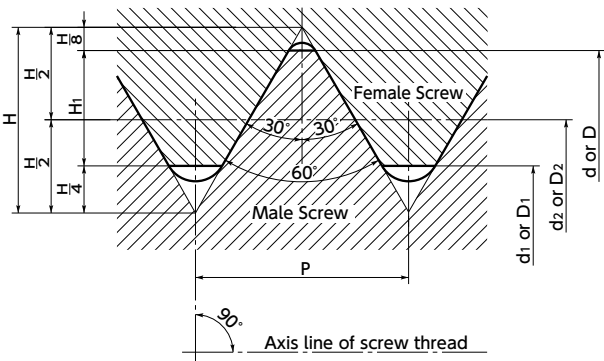
Nominal diameter* = Male screw outside diameter d, female screw root diameter D			Pitch P	Height of engagement H ₁	Effective diameters D ₂ / d ₂	Female screw inside diameter D ₁ Male screw root diameter d ₁
Field 1 Choice 1	Field 2 Choice 2	Field 3 Choice 3				
1	—	—	0.25 0.2	0.135 0.108	0.838 0.870	0.729 0.783
—	1.1	—	0.25 0.2	0.135 0.108	0.938 0.970	0.829 0.883
1.2	—	—	0.25 0.2	0.135 0.108	1.038 1.070	0.929 0.983
—	1.4	—	0.3 0.2	0.162 0.108	1.205 1.270	1.075 1.183
1.6	—	—	0.35 0.2	0.189 0.108	1.373 1.470	1.221 1.383
—	1.8	—	0.35 0.2	0.189 0.108	1.573 1.670	1.421 1.583
2	—	—	0.4 0.25	0.217 0.135	1.740 1.838	1.567 1.729
—	2.2	—	0.45 0.25	0.244 0.135	1.908 2.038	1.713 1.929
2.5	—	—	0.45 0.35	0.244 0.189	2.208 2.273	2.013 2.121
3	—	—	0.5 0.35	0.271 0.189	2.675 2.773	2.459 2.621
—	3.5	—	0.6 0.35	0.325 0.189	3.110 3.273	2.850 3.121
4	—	—	0.7 0.5	0.379 0.271	3.545 3.675	3.242 3.459
—	4.5	—	0.75 0.5	0.406 0.271	4.013 4.175	3.688 3.959
5	—	—	0.8 0.5	0.433 0.271	4.480 4.675	4.134 4.459
—	—	5.5	0.5	0.271	5.175	4.959
6	—	—	1 0.75	0.541 0.406	5.350 5.513	4.917 5.188
—	7	—	1 0.75	0.541 0.406	6.350 6.513	5.917 6.188
8	—	—	1.25 1	0.677 0.541	7.188 7.350	6.647 6.917
—	—	9	0.75 1	0.406 0.541	8.513 8.350	8.188 7.917
10	—	—	1.5 1.25	0.812 0.677	9.026 9.188	8.376 8.647
—	—	11	1 0.75	0.541 0.406	9.350 10.026	8.917 9.376
—	—	—	1.5 1	0.812 0.541	10.026 10.350	9.376 9.917
—	—	—	0.75	0.406	10.513	10.188

* Prioritize Field 1 and, if needed, choose Field 2 and Field 3 in that order.

ISO General Purpose Metric Screw Threads

Excerpt from JIS B 0205-2•4:2001 / JIS B 0205:1997 (old standards) / JIS B 0207:1982 (old standards)

Basic profile, formula and basic dimensions of metric threads



$H = 0.866025P$
 $H_1 = 0.541266P$
 $d_2 = d - 0.649519P$
 $d_1 = d - 1.082532P$

Unit: mm

Nominal diameter* = Male screw outside diameter d, female screw root diameter D			Pitch P	Height of engagement H ₁	Effective diameters D ₂ / d ₂	Female screw inside diameter D ₁ Male screw root diameter d ₁
Field 1 Choice 1	Field 2 Choice 2	Field 3 Choice 3				
12	—	—	1.75	0.947	10.863	10.106
			1.5	0.812	11.026	10.376
			1.25	0.677	11.188	10.647
—	14	—	1	0.541	11.350	10.917
			2	1.083	12.701	11.835
			1.5	0.812	13.026	12.376
—	—	15	1.25	0.677	13.188	12.647
			1	0.541	13.350	12.917
			1.5	0.812	14.026	13.376
16	—	—	1	0.541	14.350	13.917
			2	1.083	14.701	13.835
			1.5	0.812	15.026	14.376
—	—	17	1	0.541	15.350	14.917
			1.5	0.812	16.026	15.376
			2.5	1.353	16.376	15.294
—	18	—	1	0.835	16.701	15.835
			1.5	0.812	17.026	16.376
			2	1.083	17.350	16.917
20	—	—	1	0.541	17.350	16.917
			2.5	1.353	18.376	17.294
			2	1.083	18.701	17.835
—	22	—	1.5	0.812	19.026	18.376
			1	0.541	19.350	18.917
			2.5	1.353	20.376	19.294
24	—	—	2	1.083	20.701	19.835
			1.5	0.812	21.026	20.376
			1	0.541	21.350	20.917
—	—	25	3	1.624	22.051	20.752
			2	1.083	22.701	21.835
			1.5	0.812	23.026	22.376
—	27	—	1	0.541	23.350	22.917
			2	1.083	23.701	22.835
			1.5	0.812	24.026	23.376
—	—	28	1	0.541	24.350	23.917
			1.5	0.812	25.026	24.376
			3	1.624	25.051	23.752
30	—	—	2	1.083	25.701	24.835
			1.5	0.812	26.026	25.376
			1	0.541	26.350	25.917
—	29	—	2	1.083	26.701	25.835
			1.5	0.812	27.026	26.376
			1	0.541	27.350	26.917
—	30	—	3.5	1.894	27.727	26.211
			3	1.624	28.051	26.752
			2	1.083	28.701	27.835
—	—	31	1.5	0.812	29.026	28.376
			1	0.541	29.350	28.917

* Prioritize Field 1 and, if needed, choose Field 2 and Field 3 in that order.

Unit: mm

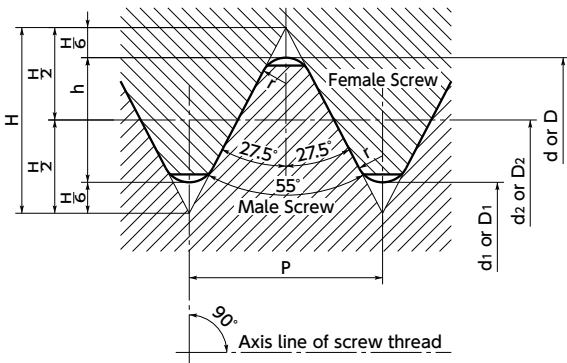
Nominal diameter* = Male screw outside diameter d, female screw root diameter D			Pitch P	Height of engagement H ₁	Effective diameters D ₂ / d ₂	Female screw inside diameter D ₁ Male screw root diameter d ₁
Field 1 Choice 1	Field 2 Choice 2	Field 3 Choice 3				
—	—	32	2	1.083	30.701	29.835
			1.5	0.812	31.026	30.376
			3.5	1.894	30.727	29.211
—	33	—	3	1.624	31.051	29.752
			2	1.083	31.701	30.835
			1.5	0.812	32.026	31.376
—	—	35	1.5	0.812	34.026	33.376
			4	2.165	33.402	31.670
			3	1.624	34.051	32.752
36	—	—	2	1.083	34.701	33.835
			1.5	0.812	35.026	34.376
			1.5	0.812	37.026	36.376
—	—	38	4	2.165	36.402	34.670
			3	1.624	37.051	35.752
			2	1.083	37.701	36.835
—	39	—	1.5	0.812	38.026	37.376
			3	1.624	38.051	36.752
			2	1.083	38.701	37.835
—	—	40	1.5	0.812	39.026	38.376
			4.5	2.436	39.077	37.129
			4	2.165	39.402	37.670
42	—	—	3	1.624	40.051	38.752
			2	1.083	40.701	39.835
			1.5	0.812	41.026	40.376
—	45	—	4.5	2.436	42.077	40.129
			4	2.165	42.402	40.670
			3	1.624	43.051	41.752
—	—	46	2	1.083	43.701	42.835
			1.5	0.812	44.026	43.376
			5	2.706	44.752	42.587
48	—	—	4	2.165	45.402	43.670
			3	1.624	46.051	44.752
			2	1.083	46.701	45.835
—	—	47	1.5	0.812	47.026	46.376
			3	1.624	48.051	46.752
			2	1.083	48.701	47.835
—	27	—	1.5	0.812	49.026	48.376
			5	2.706	48.752	46.587
			4	2.165	49.402	47.670
—	52	—	3	1.624	50.051	48.752
			2	1.083	50.701	49.835
			1.5	0.812	51.026	50.376
—	—	53	4	2.165	52.402	50.670
			3	1.624	53.051	51.752
			2	1.083	53.701	52.835
—	—	54	1.5	0.812	54.026	53.376

* Prioritize Field 1 and, if needed, choose Field 2 and Field 3 in that order.

Parallel Pipe Threads

Excerpts from JIS B 0202:1999

Basic profile formula and basic dimensions of parallel pipe threads



$$P = \frac{25.4}{n}$$
$$H = 0.960491 P$$
$$h = 0.640327 P$$
$$r = 0.137329 P$$
$$d_2 = d - h$$
$$d_1 = d - 2h$$
$$D_2 = d_2$$
$$D_1 = d_1$$

Nominal Diameter of Thread	Number of screw threads (per 25.4mm) n	Pitch P (Reference)	Height of screw thread h	Top of thread and root radius r	Male Screw		
					Outside diameter d	Effective diameter d ₂	Root diameter d ₁
					Female Screw		
					Root diameter D	Effective diameter D ₂	Inside diameter D ₁
G 1/16	28	0.9071	0.581	0.12	7.723	7.142	6.561
G 1/8	28	0.9071	0.581	0.12	9.728	9.147	8.566
G 1/4	19	1.3368	0.856	0.18	13.157	12.301	11.445
G 3/8	19	1.3368	0.856	0.18	16.662	15.806	14.950
G 1/2	14	1.8143	1.162	0.25	20.955	19.793	18.631
G 5/8	14	1.8143	1.162	0.25	22.911	21.749	20.587
G 3/4	14	1.8143	1.162	0.25	26.441	25.279	24.117
G 7/8	14	1.8143	1.162	0.25	30.201	29.039	27.877
G 1	11	2.3091	1.479	0.32	33.249	31.770	30.291
G 1 1/8	11	2.3091	1.479	0.32	37.897	36.418	34.939
G 1 1/4	11	2.3091	1.479	0.32	41.910	40.431	38.952
G 1 1/2	11	2.3091	1.479	0.32	47.803	46.324	44.845
G 1 3/4	11	2.3091	1.479	0.32	53.746	52.267	50.788
G 2	11	2.3091	1.479	0.32	59.614	58.135	56.656
G 2 1/4	11	2.3091	1.479	0.32	65.710	64.231	62.752
G 2 1/2	11	2.3091	1.479	0.32	75.184	73.705	72.226
G 2 3/4	11	2.3091	1.479	0.32	81.534	80.055	78.576
G 3	11	2.3091	1.479	0.32	87.884	86.405	84.926
G 3 1/2	11	2.3091	1.479	0.32	100.330	98.851	97.372
G 4	11	2.3091	1.479	0.32	113.030	111.551	110.072
G 4 1/2	11	2.3091	1.479	0.32	125.730	124.251	122.772
G 5	11	2.3091	1.479	0.32	138.430	136.951	135.472
G 5 1/2	11	2.3091	1.479	0.32	151.130	149.651	148.172
G 6	11	2.3091	1.479	0.32	163.830	162.351	160.872

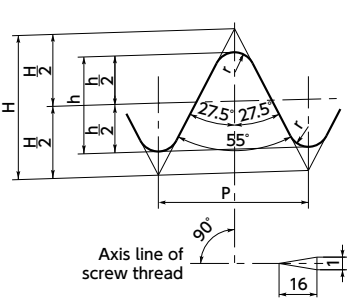
Unit: mm

Taper Pipe Threads

Excerpts from JIS B 0203:1999

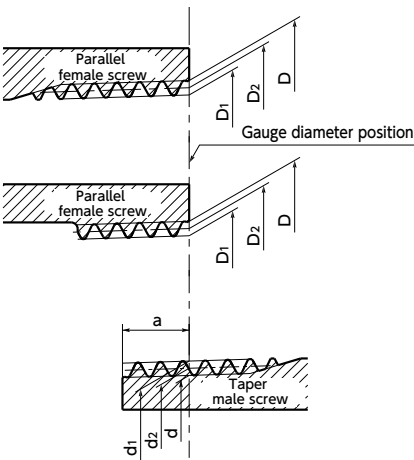
Basic profile formula and basic dimensions of taper pipe threads

Basic profile applicable to taper male screws and taper female screws



Thick solid line shows basic profile.
$$P = \frac{25.4}{n}$$
$$H = 0.960\ 237\ P$$
$$h = 0.640\ 327\ P$$
$$r = 0.137\ 278\ P$$

Fitting of taper male screw with taper female screw or parallel female screw



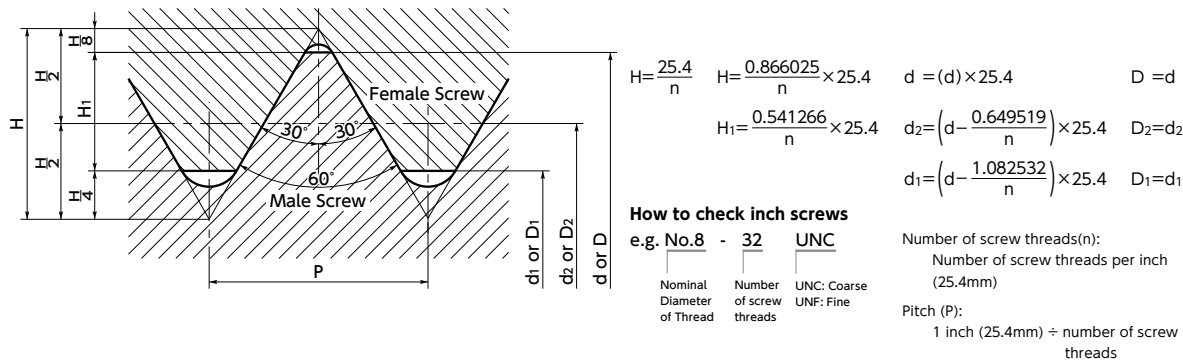
* 1 Nominal Diameter of Thread	Screw Thread				Gauge diameter			Gauge diameter position		
	Number of screw threads (per 25.4 mm) n	Pitch P (Reference)	Height of screw thread h	Radius r or r'	Male Screw			Male Screw		
					Outside diameter d	Effective diameter d ₂	Root diameter d ₁	From pipe end		
					Female Screw			Reference length a	Tolerance in axial line direction b	Tolerance in axial line direction c
					Root diameter D	Effective diameter D ₂	Inside diameter D ₁			
R 1/16	28	0.9071	0.581	0.12	7.723	7.142	6.561	3.97	±0.91	±1.13
R 1/8	28	0.9071	0.581	0.12	9.728	9.147	8.566	3.97	±0.91	±1.13
R 1/4	19	1.3368	0.856	0.18	13.157	12.301	11.445	6.01	±1.34	±1.67
R 3/8	19	1.3368	0.856	0.18	16.662	15.806	14.950	6.35	±1.34	±1.67
R 1/2	14	1.8143	1.162	0.25	20.955	19.793	18.631	8.16	±1.81	±2.27
R 3/4	14	1.8143	1.162	0.25	26.441	25.279	24.117	9.53	±1.81	±2.27
R 1	11	2.3091	1.479	0.32	33.249	31.770	30.291	10.39	±2.31	±2.89
R 1 1/4	11	2.3091	1.479	0.32	41.910	40.431	38.952	12.70	±2.31	±2.89
R 1 1/2	11	2.3091	1.479	0.32	47.803	46.324	44.845	12.70	±2.31	±2.89

* 1 This nominal diameter is for taper male screws. For taper female screws and parallel females screws, the symbol R shall be changed to Rc or Rp.

Unified Coarse Screw Threads / Unified Fine Screw Threads

Excerpts from JIS B 0206:1973 / JIS B 0208:1973

Basic profile, formula and basic dimensions of unified coarse threads / fine threads



Unified coarse threads

Unit: mm

Nominal diameter of thread*		Female Screw		
		Root diameter D	Effective diameter D ₂	Inside diameter D ₁
		Male Screw		
		Outside diameter d	Effective diameter d ₂	Root diameter d ₁
1	2			
No. 2-56 UNC	No. 1-64 UNC	1.854	1.598	1.425
	No. 3-48 UNC	2.184	1.890	1.694
		2.515	2.172	1.941
No. 4-40 UNC		2.845	2.433	2.156
No. 5-40 UNC		3.175	2.764	2.487
No. 6-32 UNC		3.505	2.990	2.647
No. 8-32 UNC		4.166	3.650	3.307
No. 10-24 UNC		4.826	4.138	3.680
	No. 12-24 UNC	5.486	4.798	4.341
1/4-20 UNC		6.350	5.524	4.976
5/16-18 UNC		7.938	7.021	6.411
3/8-16 UNC		9.525	8.494	7.805
7/16-14 UNC		11.112	9.934	9.149
1/2-13 UNC		12.700	11.430	10.584

* Prioritize Field 1, and choose Field 2 as needed.

Unified fine threads

Unit: mm

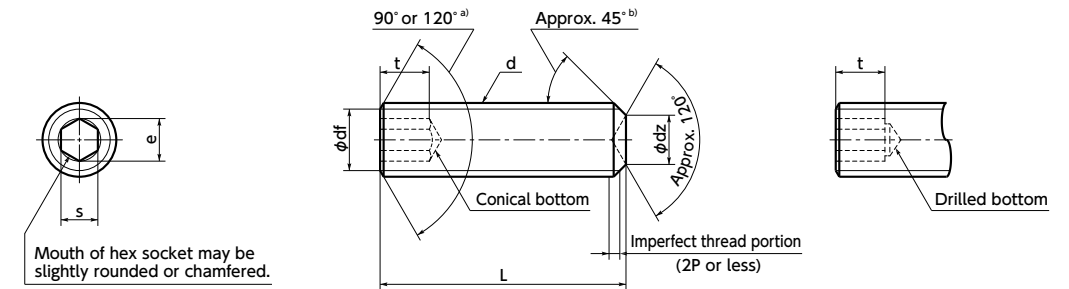
No.		Female Screw		
		Root diameter D	Effective diameter D ₂	Inside diameter D ₁
		Male Screw		
		Outside diameter d	Effective diameter d ₂	Root diameter d ₁
No. 0-80 UNF	No. 1-72 UNF	1.524	1.318	1.181
No. 2-64 UNF		1.854	1.626	1.473
		2.184	1.928	1.755
No. 4-48 UNF	No. 3-56 UNF	2.515	2.220	2.024
No. 5-44 UNF		2.845	2.502	2.271
		3.175	2.799	2.550
No. 6-40 UNF		3.505	3.094	2.817
No. 8-36 UNF		4.166	3.708	3.401
No. 10-32 UNF		4.826	4.310	3.967
1/4-28 UNF	No. 12-28 UNF	5.486	4.897	4.503
5/16-24 UNF		6.350	5.761	5.367
		7.938	7.249	6.792
3/8-24 UNF		9.525	8.837	8.379
7/16-20 UNF		11.112	10.287	9.738
1/2-20 UNF		12.700	11.874	11.326

* Prioritize Field 1, and choose Field 2 as needed.

Hexagon Socket Set Screws

Excerpts from JIS B 1177:2007

Hexagon socket set screws - cup point shape and dimensions



Unit: mm															
Nominal diameter of thread (d)			M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
p ^{c)}			0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3
dz	Max.		0.8	1	1.2	1.4	2	2.5	3	5	6	8	10	14	16
	Min.		0.55	0.75	0.95	1.15	1.75	2.25	2.75	4.7	5.7	7.64	9.64	13.57	15.57
df			Root diameter of almost male screw												
e ^{d),e)}		Min.	0.809	1.011	1.454	1.733	2.303	2.873	3.443	4.583	5.723	6.863	9.149	11.42	13.71
s	Nominal Diameter		0.7	0.9	1.3	1.5	2	2.5	3	4	5	6	8	10	12
	Max.		0.724	0.913	1.300	1.58	2.08	2.58	3.08	4.095	5.14	6.14	8.175	10.17	12.21
	Min.		0.71	0.887	1.275	1.52	2.02	2.52	3.02	4.02	5.02	6.02	8.025	10.02	12.03
t	Min.	f)	0.7	0.8	1.2	1.2	1.5	2	2	3	4	4.8	6.4	8	10
		g)	1.5	1.7	2	2	2.5	3	3.5	5	6	8	10	12	15
L															
Nominal length			Min.	Max.	(Reference) Rough mass per 1000 pieces / unit kg (Density: 7.85kg/dm³)										
2	1.8	2.2	0.019	0.029											
2.5	2.3	2.7	0.025	0.037	0.063										
3	2.8	3.2	0.029	0.044	0.075	0.1									
4	3.76	4.24	0.037	0.059	0.1	0.14	0.23								
5	4.76	5.24	0.046	0.074	0.125	0.18	0.305	0.42							
6	5.76	6.24	0.054	0.089	0.15	0.22	0.38	0.54	0.74						
8	7.71	8.29	0.07	0.119	0.199	0.3	0.53	0.78	1.09	1.88					
10	9.71	10.2		0.148	0.249	0.38	0.68	1.02	1.44	2.51	3.72				
12	11.6	12.3			0.299	0.46	0.83	1.26	1.79	3.14	4.73	6.7			
16	15.6	16.3				0.62	1.13	1.74	2.49	4.4	6.73	9.5	15.7		
20	19.5	20.4					1.4	2.22	3.19	5.66	8.72	12.3	20.9	31.1	
25	24.5	25.4						2.82	4.07	7.24	11.2	15.8	27.4	41.4	55.2
30	29.5	30.4							4.94	8.81	13.7	19.3	33.9	51.7	70.3
35	34.5	35.5								10.4	16.2	22.7	40.4	62	85.3
40	39.5	40.5								12	18.7	26.2	46.9	72.3	100
45	44.5	45.5									21.2	29.7	53.3	82.6	115
50	49.5	50.5									23.6	33.2	59.8	92.6	130
55	54.4	55.6										36.6	66.3	103	145
60	59.4	60.6										40.1	72.8	114	160

Note Recommended nominal length shall be the length in the thick line frame.

a) Nominal length L shown in the stepwise shaded fields of the above table shall be chamfered at 120°.

b) Approx. 45° angle shall be applied to the slope below the root diameter of male screws.

c) P shows pitch of threads.

d) e_{min}=1.14s_{min}

e) See JIS B 1016 for gauge inspection of e and s.

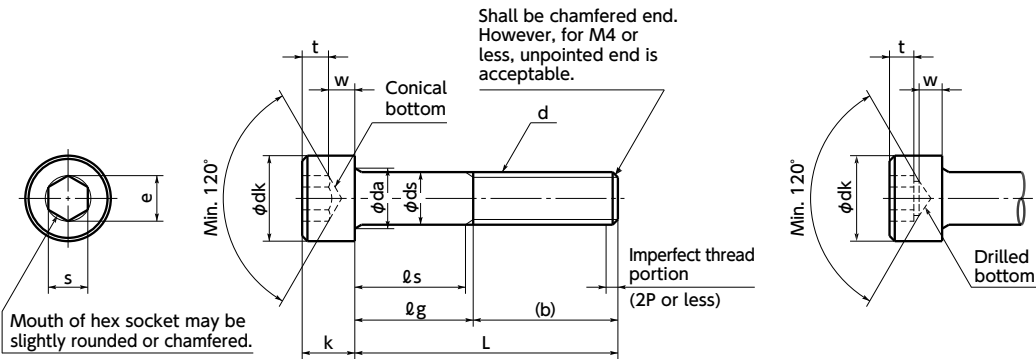
f) Shall be applied to threads with shaded nominal length.

g) Shall be applied to threads with non-shaded nominal length.

Hexagon Socket Head Cap Screws

Excerpts from JIS B 1176:2006

Shape and dimensions of hex socket head cap screws



Unit: mm

Nominal diameter of thread (d)	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
Thread pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3
b*1 (Reference)	16	17	18	20	22	24	28	32	36	44	52	60
dk	Max.*2	3.8	4.5	5.5	7	8.5	10	13	16	18	24	30
	Min.	3.62	4.32	5.32	6.78	8.28	9.78	12.73	15.73	17.73	23.67	29.67
da	Max.	2.6	3.1	3.6	4.7	5.7	6.8	9.2	11.2	13.7	17.7	22.4
ds	Max.	2	2.5	3	4	5	6	8	10	12	16	20
	Min.	1.86	2.36	2.86	3.82	4.82	5.82	7.78	9.78	11.73	15.73	19.67
e	Min.*4*5	1.733	2.303	2.873	3.443	4.583	5.723	6.863	9.149	11.429	15.996	19.437
	Max.	2	2.5	3	4	5	6	8	10	12	16	20
k	Min.	1.86	2.36	2.86	3.82	4.82	5.70	7.64	9.64	11.57	15.57	19.48
r	Min.	0.1	0.1	0.1	0.2	0.2	0.25	0.4	0.4	0.6	0.8	0.8
s*5	Nominal Diameter	1.5	2	2.5	3	4	5	6	8	10	14	19
	Max.	1.58	2.08	2.58	3.08	4.095	5.14	6.14	8.175	10.175	14.212	19.275
	Min.	1.52	2.02	2.52	3.02	4.02	5.02	6.02	8.025	10.025	14.032	19.065
t	Min.	1	1.1	1.3	2	2.5	3	4	5	6	8	10
v	Max.	0.2	0.25	0.3	0.4	0.5	0.6	0.8	1	1.2	1.6	2
dw	Min.	3.48	4.18	5.07	6.53	8.03	9.38	12.33	15.33	17.23	23.17	28.87
w	Min.	0.55	0.85	1.15	1.4	1.9	2.3	3.3	4	4.8	6.8	8.6

- *1 Shall be applied to non-shaded nominal diameters between thick stepwise lines.
- *2 Shall be applied to unknurled head
- *3 Shall be applied to knurled head
- *4 $e_{min} = 1.14 s_{min}$
- *5 See JIS B 1016 for gauge inspection of hex socket dimensions s and e.

Unit: mm

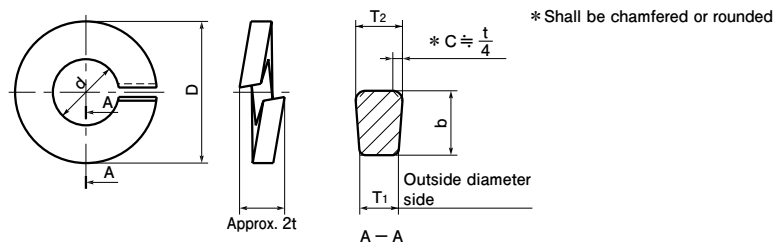
Nominal diameter of thread (d)	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
L*	ϕs and ϕg											
Nominal Diameter Length	min	max	ϕs min	ϕg min	ϕs max	ϕg max	ϕs min	ϕg min	ϕs max	ϕg max	ϕs min	ϕg min
3	2.8	3.2										
4	3.76	4.24										
5	4.76	5.24										
6	5.76	6.24										
8	7.71	8.29										
10	9.71	10.29										
12	11.65	12.35										
16	15.65	16.35										
20	19.58	20.42	2	4								
25	24.58	25.42		5.75	8	4.5	7					
30	29.58	30.42			9.5	12	6.5	10	4	8		
35	34.5	35.5					11.5	15	9	13	6	11
40	39.5	40.5					16.5	20	14	18	11	16
45	44.5	45.5							19	23	16	21
50	49.5	50.5							24	28	21	26
55	54.4	55.6									26	31
60	59.4	60.6									31	36
65	64.4	65.6										
70	69.4	70.6										
80	79.4	80.6										
90	89.3	90.7										
100	99.3	100.7										
110	109.3	110.7										
120	119.3	120.7										
130	129.2	130.8										
140	139.2	140.8										
150	149.2	150.8										
160	159.2	160.8										
180	179.2	180.8										
200	199.075	200.925										

- * Range of nominal length generally distributed is between thick stepwise lines. Shaded nominal length shall be full thread, and length of imperfect thread under head shall be 3P or less.
- Non-shaded values show ϕg and ϕs values based on the next formula: $\phi g_{max} = \phi_{nom} - b$, $\phi s_{min} = \phi g_{max} - 5P$

Spring Lock Washers

Excerpts from JIS B 1251:2001

Shape and dimensions of spring lock washers for general purpose (No.2) and for heavy load (No.3)



Unit: mm

Type	Dimensions of spring lock washers for general purpose (No.2)					Dimensions of spring lock washers for heavy load (No.3)				
Nominal Diameter	Inside diameter d		Section size (Min.)		Outside diameter D (Max.)	Inside diameter d		Section size		Outside diameter D (Max.)
	Basic Dimension	Allowance	Breadth b	Thickness t ⁽¹⁾		Basic Dimension	Allowance	Breadth b	Thickness t ⁽¹⁾	
2	2.1	+0.25 0	0.9	0.5	4.4	—	—	—	—	—
2.5	2.6	+0.3 0	1	0.6	5.2					
3	3.1		1.1	0.7	5.9					
(3.5)	3.6		1.2	0.8	6.6					
4	4.1	+0.4 0	1.4	1	7.6					
(4.5)	4.6		1.5	1.2	8.3					
5	5.1		1.7	1.3	9.2					
6	6.1	+0.4 0	2.7	1.5	12.2	6.1	+0.4 0	2.7	1.9	12.2
(7)	7.1		2.8	1.6	13.4	7.1		2.8	2.0	13.4
8	8.2	+0.5 0	3.2	2	15.4	8.2	+0.5 0	3.3	2.5	15.6
10	10.2	+0.6 0	3.7	2.5	18.4	10.2	+0.6 0	3.9	3.0	18.8
12	12.2		4.2	3	21.5	12.2	+0.6 0	4.4	3.6	21.9
(14)	14.2		4.7	3.5	24.5	14.2	+0.6 0	4.8	4.2	24.7
16	16.2	+0.8 0	5.2	4	28	16.2	+0.8 0	5.3	4.8	28.2
(18)	18.2		5.7	4.6	31	18.2		5.9	5.4	31.4
20	20.2		6.1	5.1	33.8	20.2		6.4	6.0	34.4
(22)	22.5	+1.0 0	6.8	5.6	37.7	22.5	+1.0 0	7.1	6.8	38.3
24	24.5		7.1	5.9	40.3	24.5		7.6	7.2	41.3
(27)	27.5	+1.2 0	7.9	6.8	45.3	27.5	+1.2 0	8.6	8.3	46.7
30	30.5	+1.4 0	8.7	7.5	49.9	—	—	—	—	—
(33)	33.5		9.5	8.2	54.7					
36	36.5		10.2	9	59.1					
(39)	39.5		10.7	9.5	63.1					

(1) $t = \frac{T_1 + T_2}{2}$ in which case $T_2 - T_1$ must be 0.064b or lower. However, b shall be min. value specified in this table.

Remark: Use of parenthesized nominal diameter of thread should be discouraged.

• Types of washers

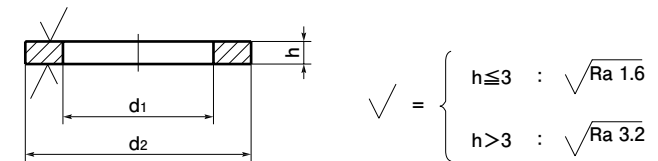
Type	Symbol	Applicable thread parts
General purpose	No.2	General purpose bolts, small screws and nuts
For heavy load	No.3	General purpose bolts and nuts

Plain Washers

Excerpt from JIS B 1256:2008

Small size - Shape and dimensions of part grade A

Small size - Shape of part grade A

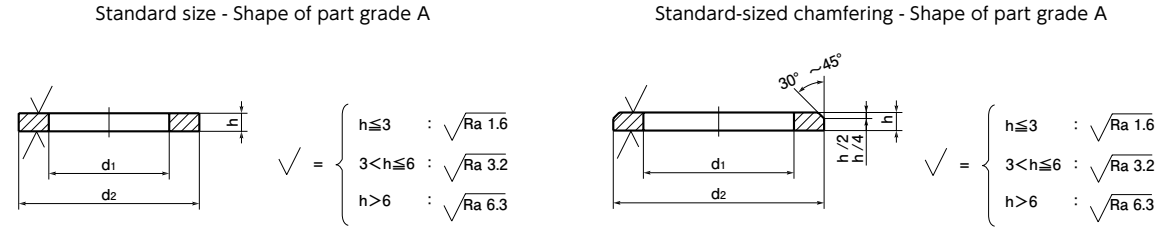


Unit: mm

Nominal diameter of plain washer* (Nominal diameter of thread d)	Inside diameter d1		Outside diameter d2		Thickness h		
	Basic dimension (Min.)	Max.	Basic dimension (Max.)	Min.	Basic Dimension	Max.	Min.
1.6	1.70	1.84	3.5	3.2	0.3	0.35	0.25
2	2.20	2.34	4.5	4.2	0.3	0.35	0.25
2.5	2.70	2.84	5.0	4.7	0.5	0.55	0.45
3	3.20	3.38	6.0	5.7	0.5	0.55	0.45
(3.5)	3.70	3.88	7.00	6.64	0.5	0.55	0.45
4	4.30	4.48	8.00	7.64	0.5	0.55	0.45
5	5.30	5.48	9.00	8.64	1	1.1	0.9
6	6.40	6.62	11.00	10.57	1.6	1.8	1.4
8	8.40	8.62	15.00	14.57	1.6	1.8	1.4
10	10.50	10.77	18.00	17.57	1.6	1.8	1.4
12	13.00	13.27	20.00	19.48	2	2.2	1.8
(14)	15.00	15.27	24.00	23.48	2.5	2.7	2.3
16	17.00	17.27	28.00	27.48	2.5	2.7	2.3
(18)	19.00	19.33	30.00	29.48	3	3.3	2.7
20	21.00	21.33	34.00	33.38	3	3.3	2.7
(22)	23.00	23.33	37.00	36.38	3	3.3	2.7
24	25.00	25.33	39.00	38.38	4	4.3	3.7
(27)	28.00	28.33	44.00	43.38	4	4.3	3.7
30	31.00	31.39	50.00	49.38	4	4.3	3.7
(33)	34.00	34.62	56.00	54.8	5	5.6	4.4
36	37.00	37.62	60.00	58.8	5	5.6	4.4

* Parenthesized nominal diameter of thread represents Choice 2.

Standard size - Part grade A and standard-sized chamfering*2 - Shape and dimensions of part grade A



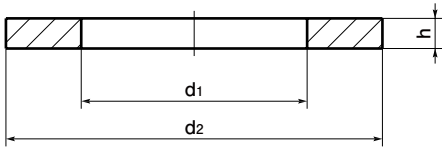
Nominal diameter of plain washer*1 (Nominal diameter of thread d)	Inside diameter d1		Outside diameter d2		Thickness h		
	Basic dimension (Min.)	Max.	Basic dimension (Max.)	Min.	Basic Dimension	Max.	Min.
1.6	1.70	1.84	4.0	3.7	0.3	0.35	0.25
2	2.20	2.34	5.0	4.7	0.3	0.35	0.25
2.5	2.70	2.84	6.0	5.7	0.5	0.55	0.45
3	3.20	3.38	7.00	6.64	0.5	0.55	0.45
(3.5)	3.70	3.88	8.00	7.64	0.5	0.55	0.45
4	4.30	4.48	9.00	8.64	0.8	0.9	0.7
5	5.30	5.48	10.00	9.64	1	1.1	0.9
6	6.40	6.62	12.00	11.57	1.6	1.8	1.4
8	8.40	8.62	16.00	15.57	1.6	1.8	1.4
10	10.50	10.77	20.00	19.48	2	2.2	1.8
12	13.00	13.27	24.00	23.48	2.5	2.7	2.3
(14)	15.00	15.27	28.00	27.48	2.5	2.7	2.3
16	17.00	17.27	30.00	29.48	3	3.3	2.7
(18)	19.00	19.33	34.00	33.38	3	3.3	2.7
20	21.00	21.33	37.00	36.38	3	3.3	2.7
(22)	23.00	23.33	39.00	38.38	3	3.3	2.7
24	25.00	25.33	44.00	43.38	4	4.3	3.7
(27)	28.00	28.33	50.00	49.38	4	4.3	3.7
30	31.00	31.39	56.00	55.26	4	4.3	3.7
(33)	34.00	34.62	60.0	58.8	5	5.6	4.4
36	37.00	37.62	66.0	64.8	5	5.6	4.4

*1 Parenthesized nominal diameter of thread represents Choice 2.

*2 Standard-sized chamfering - Shall be specified for nominal diameter of thread 5 or above among applicable part grade A threads.

Standard size - Shape and dimensions of part grade C

Standard size - Shape of part grade C



Nominal diameter of plain washer* (Nominal diameter of thread d)	Inside diameter d1		Outside diameter d2		Thickness h		
	Basic dimension (Min.)	Max.	Basic dimension (Max.)	Min.	Basic Dimension	Max.	Min.
1.6	1.80	2.05	4.00	3.25	0.3	0.4	0.2
2	2.40	2.65	5.00	4.25	0.3	0.4	0.2
2.5	2.90	3.15	6.00	5.25	0.5	0.6	0.4
3	3.4	3.7	7.0	6.1	0.5	0.6	0.4
(3.5)	3.9	4.2	8.0	7.1	0.5	0.6	0.4
4	4.5	4.8	9.0	8.1	0.8	1	0.6
5	5.5	5.8	10.0	9.1	1	1.2	0.8
6	6.60	6.96	12.0	10.9	1.6	1.9	1.3
8	9.00	9.36	16.0	14.9	1.6	1.9	1.3
10	11.00	11.43	20.0	18.7	2	2.3	1.7
12	13.50	13.93	24.0	22.7	2.5	2.8	2.2
(14)	15.50	15.93	28.0	26.7	2.5	2.8	2.2
16	17.50	17.93	30.0	28.7	3	3.6	2.4
(18)	20.00	20.52	34.0	32.4	3	3.6	2.4
20	22.00	22.52	37.0	35.4	3	3.6	2.4
(22)	24.00	24.52	39.0	37.4	3	3.6	2.4
24	26.00	26.52	44.0	42.4	4	4.6	3.4
(27)	30.00	30.52	50.0	48.4	4	4.6	3.4
30	33.00	33.62	56.0	54.1	4	4.6	3.4
(33)	36	37	60.0	58.1	5	6	4
36	39	40	66.0	64.1	5	6	4

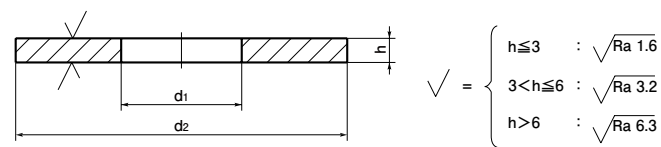
* Parenthesized nominal diameter of thread represents Choice 2.

Plain Washers

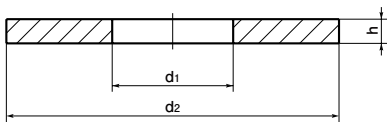
Plain washer Excerpt from JIS B 1256:2008

Large size - Shape and dimensions of part grade A or C

Large size - Shape of part grade A



Large size - Shape of part grade C



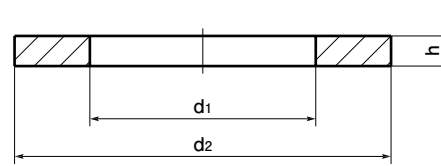
Unit: mm

Nominal diameter of plain washer* (Nominal diameter of thread d)	Inside diameter d ₁				Outside diameter d ₂				Thickness h			
	Basic dimension (Min.)		Max.		Basic dimension (Max.)		Min.		Basic Dimension		Max.	
	Part grade		Part grade		Part grade		Part grade		Part grade		Part grade	
	A	C	A	C	A and C	A	C	A and C	A	C	A	C
3	3.20	3.4	3.38	3.7	9.00	8.64	8.1	0.8	0.9	1.0	0.7	0.6
(3.5)	3.70	3.9	3.88	4.2	11.00	10.57	9.9	0.8	0.9	1.0	0.7	0.6
4	4.30	4.5	4.48	4.8	12.00	11.57	10.9	1	1.1	1.2	0.9	0.8
5	5.30	5.5	5.48	5.8	15.00	14.57	13.9	1	1.1	1.2	0.9	0.8
6	6.40	6.60	6.62	6.96	18.00	17.57	16.9	1.6	1.8	1.9	1.4	1.3
8	8.40	9.00	8.62	9.36	24.00	23.48	22.7	2	2.2	2.3	1.8	1.7
10	10.50	11.00	10.77	11.43	30.00	29.48	28.7	2.5	2.7	2.8	2.3	2.2
12	13.00	13.50	13.27	13.93	37.00	36.38	35.4	3	3.3	3.6	2.7	2.4
(14)	15.00	15.50	15.27	15.93	44.00	43.38	42.4	3	3.3	3.6	2.7	2.4
16	17.00	17.50	17.27	17.93	50.00	49.38	48.4	3	3.3	3.6	2.7	2.4
(18)	19.00	20.00	19.33	20.52	56.00	55.26	54.1	4	4.3	4.6	3.7	3.4
20	21.00	22.00	21.33	22.52	60.00	59.26	58.1	4	4.3	4.6	3.7	3.4
(22)	23.00	24.00	23.52	24.84	66.0	64.8	64.1	5	5.6	6	4.4	4
24	25.00	26.00	25.52	26.84	72.0	70.8	70.1	5	5.6	6	4.4	4
(27)	30.00	30.00	30.52	30.84	85.0	83.6	82.8	6	6.6	7	5.4	5
30	33.00	33.00	33.62	34	92.0	90.6	89.8	6	6.6	7	5.4	5
(33)	36.00	36.00	36.62	37	105.0	103.6	102.8	6	6.6	7	5.4	5
36	39.00	39.00	39.62	40	110.0	108.6	107.8	8	9	9.2	7	6.8

* Parenthesized nominal diameter of thread represents Choice 2.

Super-large size - Shape and dimensions of part grade C

Super-large size - Shape of part grade C



Unit: mm

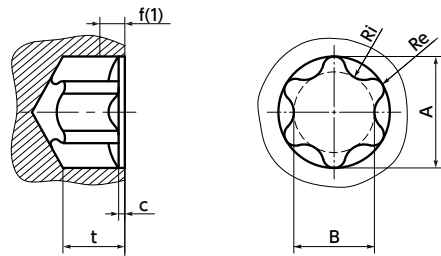
Nominal diameter of plain washer* (Nominal diameter of thread d)	Inside diameter d ₁		Outside diameter d ₂		Thickness h		
	Basic dimension (Min.)		Basic dimension (Max.)		Basic Dimension		
	Max.		Min.		Max.		
	Part grade		Part grade		Part grade		
5	5.5	5.8	18.0	16.9	2	2.3	1.7
6	6.60	6.96	22.0	20.7	2	2.3	1.7
8	9.00	9.36	28.0	26.7	3	3.6	2.4
10	11.00	11.43	34.0	32.4	3	3.6	2.4
12	13.50	13.93	44.0	42.4	4	4.6	3.4
(14)	15.50	15.93	50.0	48.4	4	4.6	3.4
16	17.5	18.2	56.0	54.1	5	6	4
(18)	20.00	20.84	60.0	58.1	5	6	4
20	22.00	22.84	72.0	70.1	6	7	5
(22)	24.00	24.84	80.0	78.1	6	7	5
24	26.00	26.84	85.0	82.8	6	7	5
(27)	30.00	30.84	98.0	95.8	6	7	5
30	33	34	105.0	102.8	6	7	5
(33)	36	37	115.0	112.8	8	9.2	6.8
36	39	40	125.0	122.5	8	9.2	6.8

* Parenthesized nominal diameter of thread represents Choice 2.

Hexalobular Internal Driving Feature for Bolts and Screws

Excerpt from JIS B 1015:2008

Shape and dimensions of hexalobular socket for bolt and screw



Note (1) The allowable depth f of broad mouth part is according to the table.

Hexalobular socket No.			6	8	10	15	20	25	30	40	45	50
Nominal dimension (2)	A		1.75	2.4	2.8	3.35	3.95	4.5	5.6	6.75	7.93	8.95
	B		1.27	1.75	2.05	2.4	2.85	3.25	4.05	4.85	5.64	6.45
Allowable depth f of the mouth broad part			0.35	0.48	0.56	0.67	0.79	0.90	1.12	1.18	1.39	1.56
Allowable limit dimensions of go-side gauge	A	Max/Min	1.709 1.695	2.349 2.335	2.776 2.761	3.309 3.295	3.893 3.879	4.465 4.451	5.557 5.543	6.687 6.673	7.856 7.841	8.872 8.857
			1.224 1.210	1.686 1.672	1.993 1.979	2.367 2.353	2.778 2.764	3.185 3.170	3.972 3.958	4.780 4.766	5.570 5.555	6.380 6.366
	Ri	Max/Min	0.396 0.371	0.523 0.498	0.609 0.585	0.728 0.704	0.871 0.846	0.932 0.907	1.206 1.182	1.440 1.415	1.808 1.784	1.828 1.804
			0.134 0.130	0.193 0.188	0.231 0.227	0.269 0.265	0.307 0.303	0.378 0.371	0.454 0.448	0.548 0.544	0.576 0.572	0.777 0.773
	Re	Max/Min	0.134 0.130	0.193 0.188	0.231 0.227	0.269 0.265	0.307 0.303	0.378 0.371	0.454 0.448	0.548 0.544	0.576 0.572	0.777 0.773
	A	Max/Min	1.785 1.778	2.425 2.419	2.852 2.845	3.385 3.379	3.970 3.963	4.566 4.560	5.659 5.652	6.814 6.807	7.983 7.976	8.999 8.992
	B	Max.	1.181	1.664	1.956	1.956	2.616	2.868	3.886	4.661	4.661	6.413
	Ri	Max. Min.	0.241 0.231	0.370 0.360	0.441 0.431	0.408 0.398	0.614 0.602	0.647 0.637	0.949 0.939	1.125 1.112	1.123 1.110	1.640 1.628
Allowable limit dimensions of not-go side gauge	Re	Max. Min.	0.180 0.173	0.238 0.231	0.276 0.269	0.315 0.307	0.353 0.345	0.436 0.429	0.513 0.505	0.619 0.612	0.648 0.640	0.848 0.840
	Max.	Max.	1.445	1.925	2.285	2.765	3.285	3.725	4.665	5.605	6.665	7.385
			1.440	1.920	2.280	2.760	3.280	3.720	4.660	5.600	6.660	7.380

Unit: mm

Note (2) The curve of hexalobular socket contour is determined by the gauge specified in the above table.

Remarks: 1. The bore depth c shall be 0.13 mm or smaller for hole No. 15 or smaller and 0.25 mm or smaller for hole over No. 15.

2. Sink depth t depends on respective product standard.

3. It is at the discretion of manufacturer as long as the hole bottom shape satisfies the allowable limit of sink depth t.

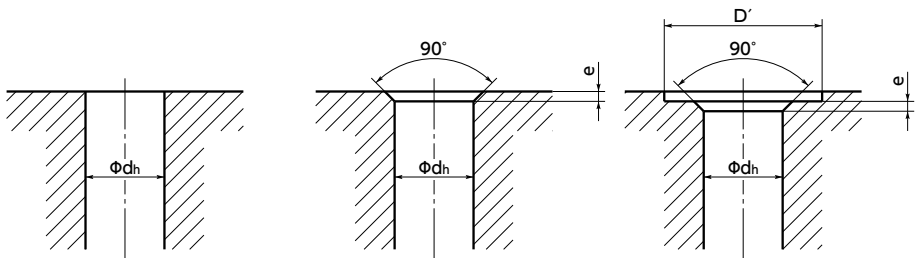
4. Hexalobular socket must be able to accept the go-side gauge down to the sink depth t specified by the applicable product standard without effort.

5. The not-go side gauge must be beyond the allowable depth f of the broad mouth part specified in the table.

Diameter of Clearance Holes and Counterbores for Bolts and Screws

Excerpt from JIS B 1001:1985

Dimensions of bolt hole diameter and bore diameter



Nominal diameter of thread	Bolt hole diameter dh				Chamfering e	Bore diameter D'
	Grade 1	Grade 2	Grade 3	Grade 4*		
2	2.2	2.4	2.6	—	0.3	7
3	3.2	3.4	3.6	—	0.3	9
4	4.3	4.5	4.8	(5.5)	0.4	11
5	5.3	5.5	5.8	(6.5)	0.4	13
6	6.4	6.6	7	(7.8)	0.4	15
8	8.4	9	10	(10)	0.6	20
10	10.5	11	12	(13)	0.6	24
12	13	13.5	14.5	(15)	1.1	28
14	15	15.5	16.5	(17)	1.1	32
16	17	17.5	18.5	(20)	1.1	35
18	19	20	21	(22)	1.1	39
20	21	22	24	(25)	1.2	43
22	23	24	26	(27)	1.2	46
24	25	26	28	(29)	1.2	50

Unit: mm

* Grade 4 primarily applies to cast holes.

Remarks: 1. Among the nominal diameter and bolt hole diameter of screws specified in this table, dimensions in parentheses are those not specified in ISO 273.

2. Perform hole chamfering as necessary and the chamfer angle shall be 90 degrees in principle.

3. If diameter larger or smaller than the bore diameter in this table is required for nominal diameter of a certain screw, it is recommended to select values from bore diameter row in this table as long as possible.

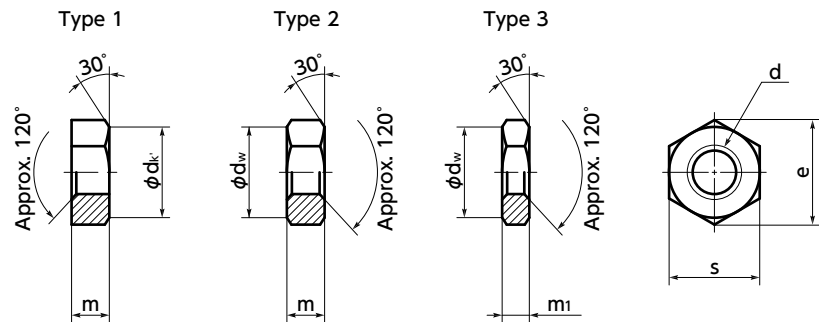
4. The bore face should be perpendicular to the center line of the hole and generally bore depth should be adjusted so that the block scale can be removed.

Hexagon Nuts

Hexagon nut not depending on ISO 4032-4036 and ISO 8673-8675. Excerpt from JIS B 1181:2009

Hexagon nut shape and dimension

Degree of finishing: Medium (Degree of finishing for below M6: High)



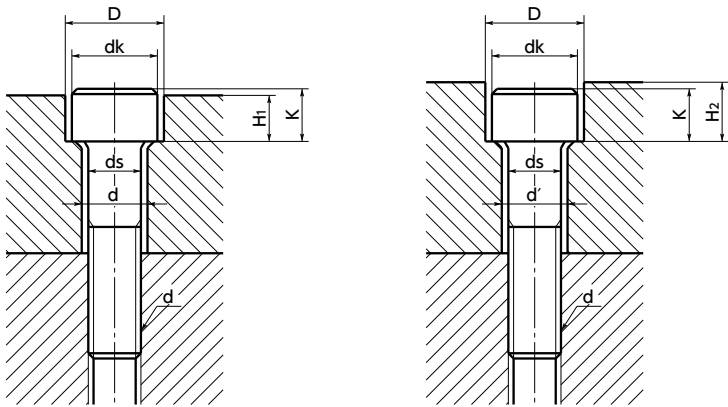
Unit: mm

Nominal diameter of thread (d)		m		m1		s		e	φdw • φdk'
Coarse	Fine	Basic Dimension	Allowance	Basic Dimension	Allowance	Basic Dimension	Allowance	About	About
M2	—	1.6	0 -0.25	1.2	0 -0.25	4	0 -0.2	4.6	3.8
M2.5	—	2		1.6		5		5.8	4.7
M3	—	2.4		1.8		5.5		6.4	5.3
(M3.5)	—	2.8	0 -0.30	2	0 -0.3	6	0 -0.6	6.9	5.8
M4	—	3.2		2.4		7		8.1	6.8
M5	—	4		3.2		8		9.2	7.8
M6	—	5	0 -0.48	3.6	0 -0.48	10	0 -0.7	11.5	9.8
(M7)	—	5.5		4.2		11		12.7	10.8
M8	M8×1	6.5		5		13		15	12.5
M10	M10×1.25	8	0 -0.58	6	0 -0.58	17	0 -0.8	19.6	16.5
M12	M12×1.25	10		7		19		21.9	18
(M14)	(M14×1.5)	11		8		22		25.4	21
M16	M16×1.5	13	0 -0.70	10	0 -0.70	24	0 -1.0	27.7	23
(M18)	(M18×1.5)	15		11		27		31.2	26
M20	M20×1.5	16		12		30		34.6	29
(M22)	(M22×1.5)	18	0 -0.84	13	0 -0.84	32	0 -1.2	37	31
M24	M24×2	19		14		36		41.6	34
(M27)	(M27×2)	22		16		41		47.3	39
M30	M30×2	24	0 -1.0	18	0 -1.0	46	0 -1.4	53.1	44
(M33)	(M33×2)	26		20		50		57.7	48
M36	M36×3	29		21		55		63.5	53
(M39)	(M39×3)	31	0 -1.0	23	0 -1.0	60	0 -1.2	69.3	57
M42		34		25		65		75	62
(M45)		36		27		70		80.8	67
M48		38	0 -1.0	29	0 -1.0	75	0 -1.4	86.5	72
(M52)		42		31		80		92.4	77
M56		45		34		85		98.1	82
(M60)		48	0 -1.2	36	0 -1.2	90	0 -1.4	104	87
M64		51		38		95		110	92

Remark: Avoid using those with any nominal diameter of screw in parentheses as long as possible.

Dimensions of Holes for Hexagon Socket Cap Screws

Bore and bolt hole diameters for hex socket head cap screw



Unit: mm

Nominal diameter of thread (d)	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M24
ds	3	4	5	6	8	10	12	14	16	20	24
d'	3.4	4.5	5.5	6.6	9	11	14	16	18	22	26
dk	5.5	7	8.5	10	13	16	18	21	24	30	36
D	6.5	8	9.5	11	14	17.5	20	23	26	32	39
K	3	4	5	6	8	10	12	14	16	20	24
H1	2.7	3.6	4.6	5.5	7.4	9.2	11	12.8	14.5	18.5	22.5
H2	3.3	4.4	5.4	6.5	8.6	10.8	13	15.2	17.5	21.5	25.5

Mechanical Properties of Fasteners Made of Carbon Steel and Alloy Steel

Excerpt from JIS B 1051:2000

Mechanical property for the tensile strength ranking

Mechanical property		Tensile strength ranking										
		3.6	4.6	4.8	5.6	5.8	6.8	8.8 ⁽¹⁾		9.8 ⁽²⁾	10.9	12.9
								d≤16	d>16 ⁽³⁾			
Nominal tensile strength Rm and nom	N/mm ²	300	400		500		600	800	800	900	1,000	1,200
Minimum tensile strength Rm and min ⁽⁴⁾	N/mm ²	330	400	420	500	520	600	800	830	900	1,040	1,220
Vickers hardness HV F≥98N	Min.	95	120	130	155	160	190	250	255	290	320	385
	Max.	220 ⁽⁵⁾					250	320	335	360	380	435
Brinell hardness HB F = 30D ² /0.102	Min.	90	114	124	147	152	181	238	242	276	304	366
	Max.	209 ⁽⁵⁾					238	304	318	342	361	414
Rockwell hardness	Min.	HRB	52	67	71	79	82	89	—	—	—	—
		HRC	—	—	—	—	—	22	23	28	32	39
	Max.	HRB	95.0 ⁽⁵⁾					99.5	—	—	—	—
		HRC	—					—	32	34	37	44
Surface hardness HV0.3	Max.	—						⁽⁶⁾				
Lower yield point ReL ⁽⁷⁾ N/mm ²	Nominal Diameter	180	240	320	300	400	480	—	—	—	—	—
	Min.	190	240	340	300	420	480	—	—	—	—	—
0.2% durability Rp0.2 ⁽⁸⁾ N/mm ²	Nominal Diameter	—					—	640	640	720	900	1,080
	Min.	—					—	640	660	720	940	1,100
Guarantee load stress Sp	Sp/ReL or Sp/Rp0.2	0.94	0.94	0.91	0.93	0.9	0.92	0.91	0.91	0.9	0.88	0.88
	N/mm ²	180	225	310	280	380	440	580	600	650	830	970
Rupture elongation %	Min.	25	22	—	20	—	—	12	12	10	9	8

Notes: (1) If a bolt of tensile strength ranking 8.8 and d ≤ 16mm is tightened exceeding its guarantee load, the nut thread may be sheared.
(2) Tensile strength ranking 9.8 only applies to those with nominal diameter of thread smaller than 16mm.
(3) Steel structure bolt of tensile strength ranking 8.8 is categorized into nominal diameter of thread 12mm.
(4) The minimum tensile strength only applies to those with nominal length of 2.5 d or above. The minimum hardness applies to those of nominal length below 2.5 d or those that cannot go through the tensile test (e.g. those with special head shape).
(5) Hardness of thread tip surface of bolts, screws and implant bolts shall be 250HV, 238HB or 99.5HRB or below.
(6) The surface hardness of products of tensile strength ranking 8.8 - 12.9 must have no difference from the internal hardness by over 30 points with the Vickers hardness HV0.3.
However, the surface hardness of products of tensile strength ranking 10.9 must not exceed 390HV.
(7) For those that cannot go through the lower yield point ReL measurement, durability Rp0.2 of 0.2% applies. ReL values for the tensile strength ranking 4.8, 5.8 and 6.8 are only for calculation, not for testing.
(8) The yield stress ratio and minimum 0.2% durability Rp0.2 according to the tensile strength ranking indication manners apply to testing with shaved test samples, so obtained values may vary due to differences in manufacturing methods or nominal screw diameter.

Lower yield point or ratio of durability and tensile strength

Value after decimal point of tensile strength symbol	.6	.8	.9
$\frac{\text{Nominal lower yield point ReL}}{\text{Nominal tensile strength Rm and nom}} \times 100\%$ or $\frac{\text{Nominal lower yield point Rp0.2}}{\text{Nominal tensile strength Rm and nom}} \times 100\%$	60	80	90

Lower yield point or durability at temperature above normal temperature

Tensile strength ranking	Temperature				
	20℃	100℃	200℃	250℃	300℃
	Lower yield point ReL or 0.2% durability Rp0.2 N/mm ²				
5.6	300	270	230	215	195
8.8	640	590	540	510	480
10.9	940	875	790	745	705
12.9	1100	1020	925	875	825

The mechanical property of bolts, screws and implant bolts varies as the temperature increases. The left table indicates rough values of lower yield point 0.2% durability at high temperature.
These data may not be used as test requirements.
If high temperature continues, relaxation that must be focused may occur. As a representative case, when 300℃ ambient temperature is retained for 100 hours, the initial tightening force is thought to decrease by 25% to lower the yield points.

Mechanical property of hex socket head cap screw and maximum tightening torque (Tensile strength ranking 10.9 and 12.9 for coarse screws)

Nominal Diameter of Thread	Effective sectional area (mm ²)	Minimum tensile load (N)		0.2% durability load (N)		Maximum allowed axial force (N)		Maximum tightening torque (N•m)			
								K=0.25		K=0.4	
		10.9	12.9	10.9	12.9	10.9	12.9	10.9	12.9	10.9	12.9
M1.6	1.27	1,320	1,550	1,140	1,370	790	950	0.32	0.38	0.5	0.6
M2	2.07	2,150	2,530	1,860	2,230	1,300	1,560	0.65	0.78	1.0	1.2
M2.5	3.39	3,530	4,140	3,050	3,660	2,130	2,560	1.33	1.6	2.1	2.6
M3	5.03	5,230	6,140	4,520	5,430	3,160	3,800	2.37	2.85	3.8	4.6
M4	8.78	9,130	10,700	7,900	9,480	5,530	6,630	5.53	6.63	8.8	10.6
M5	14.2	14,800	17,300	12,700	15,300	8,930	10,700	11.2	13.3	17.9	21.4
M6	20.1	20,900	24,500	18,000	21,700	12,600	15,200	18.9	22.8	30.2	36.5
M8	36.6	38,100	44,600	32,900	39,500	23,000	27,600	46.0	55.2	73.6	88.2
M10	58	60,300	70,800	52,100	62,600	36,500	43,800	91.3	109	146	175
M12	84.3	87,700	103,000	75,800	91,000	53,000	63,700	159	191	254	305
M14	115	120,000	140,000	103,000	124,000	72,700	87,200	254	305	407	488
M16	157	163,000	192,000	141,000	169,000	98,700	118,000	394	472	631	755
M18	192	200,000	234,000	173,000	207,000	121,000	145,000	544	652	871	1,040
M20	245	255,000	299,000	220,000	264,000	154,000	185,000	770	925	1,230	1,480
M22	303	315,000	370,000	273,000	327,000	191,000	229,000	1,050	1,250	1,680	2,010
M24	353	367,000	431,000	317,000	380,000	222,000	266,000	1,330	1,590	2,130	2,550
M27	459	477,000	560,000	413,000	496,000	289,000	347,000	1,950	2,340	3,120	3,740
M30	561	583,000	684,000	504,000	605,000	353,000	423,000	2,640	3,170	4,230	5,070

Remarks: 1. The minimum tensile load in the above table is according to JIS B 1051:2000.
2. 0.2% durability load = 0.2% durability × Effective sectional area
3. Maximum allowed axial force = 0.7 × 0.2% durability load
4. Maximum tightening torque = Torque coefficient [K] × Maximum allowed axial force × Nominal diameter
5. Torque coefficient: In case of lubricant K=0.25; in case of non-lubricant (plated product, etc.) K=0.4

Minimum tensile strength for 12.9 is 1220N/mm², and 0.2% durability is 1080N/mm²
Minimum tensile strength for 10.9 is 1040N/mm², and 0.2% durability is 900N/mm²
The torque coefficient varies depending on use conditions. Please use as a reference value.

Mechanical property of hex socket head cap screw and maximum tightening torque (A2-50 and A2-70 for coarse screws)

Nominal Diameter of Thread	Effective sectional area (mm ²)	Minimum tensile load (N)		0.2% durability load (N)		Maximum allowed axial force (N)		Maximum tightening torque (N•m)					
								K=0.1		K=0.3		K=0.5	
		A2-50	A2-70	A2-50	A2-70	A2-50	A2-70	A2-50	A2-70	A2-50	A2-70	A2-50	A2-70
M2	2.07	1,030	1,450	430	930	300	650	0.06	0.13	0.18	0.39	0.3	0.7
M2.5	3.39	1,690	2,370	710	1,520	490	1,060	0.12	0.27	0.37	0.80	0.6	1.3
M3	5.03	2,510	3,520	1,050	2,260	730	1,580	0.22	0.47	0.66	1.42	1.1	2.4
M4	8.78	4,380	6,140	1,840	3,940	1,280	2,750	0.51	1.1	1.54	3.30	2.6	5.5
M5	14.2	7,090	9,920	2,970	6,380	2,070	4,460	1.04	2.23	3.11	6.69	5.2	11.2
M6	20.1	10,000	14,000	4,220	9,050	2,950	6,330	1.77	3.8	5.31	11.3	8.9	19
M8	36.6	18,300	25,600	7,680	16,400	5,370	11,500	4.3	9.2	12.8	27.6	21.5	46
M10	58	28,900	40,500	12,100	26,000	8,510	18,200	8.5	18.2	25.5	54.6	42.6	91
M12	84.3	42,100	58,900	17,600	37,900	12,300	26,500	14.7	31.8	44.2	95.4	74	159
M14	115	57,700	80,800	24,200	51,900	16,900	36,300	23.6	50.8	70.9	152	118	254
M16	157	78,300	109,000	32,900	70,500	23,000	49,300	36.8	79	110	236	184	394
M20	245	122,000	171,000	51,400	110,000	35,900	77,100	72	154	215	462	359	771

Remarks: 1. 0.2% durability load = 0.2% durability × Effective sectional area
2. Maximum allowed axial force = 0.7 × 0.2% durability load
3. Maximum tightening torque = Torque coefficient [K] × Maximum allowed axial force × Nominal diameter
4. Torque coefficient: With surface treatment: K=0.1, Without surface treatment: K=0.3, and Clean wash product: K=0.5

Minimum tensile strength of A2 - 70 is 700N/mm² and 0.2% durability is 450N/mm²
Minimum tensile strength of A2 - 50 is 500N/mm² and 0.2% durability is 210N/mm²
The torque coefficient varies depending on use conditions. Please use as a reference value.

Thank you for using the NBK catalog.

We regret that some of the products listed in the "NBK Product Catalog 2015" have been discontinued due to the revision of the catalog.

Furthermore, some of the product codes have been changed.



● The following products listed in the "NBK Product Catalog 2015" have been discontinued.

Discontinued product (listed in the "NBK Product Catalog 2015")			Substitute product (listed in this catalog)		
Listed * Page	Product code	Product name	Listed Page	Product code	Product name
316	KNMS-KF	Knurled Knob	315	KNMS	Knurled Knob
316	KNFS-KF	Knurled Knob	315	KNFS	Knurled Knob
318	KUMS-KF	Knurled Knob	317	KUMS	Knurled Knob
318	KUFS-KF	Knurled Knob	317	KUFS	Knurled Knob
332	UNFS-KF	U - shaped Pull	331	UNFS	U - shaped Pull
401	HSM-KF	Stainless Steel Handwheel (Antibacterial)	399	HSM	Stainless Steel Handwheel
419	GSS-KF	Stainless Steel Fixing Grip (Antibacterial)	416	GSS	Stainless Steel Fixing Grip
528	SAD-LC	Screw Adaptor - Left-handed Threaded Type	533	SADS-LC	Screw Adaptor - Left-handed Threaded Type
529	SAD-RF	Screw Adaptor - Fine Threaded Type	534	SADS-RF	Screw Adaptor - Fine Threaded Type
530	SAD-SD	Screw Adaptor - Thread Size Conversion Type	535	SADS-SD	Screw Adaptor - Thread Size Conversion Type

* Listed page in the "NBK Product Catalog 2015".

● — Substitute product listed in this catalog.

● The following product codes listed in the "NBK Product Catalog 2015" have been changed.

Original (listed in the "NBK Product Catalog 2015")			New (listed in this catalog)		
Listed * Page	Product code	Product name	Listed Page	Product code	Product name
661	SWS-TF	Seal Washers - Teflon Coating	670	SWS-HTF	Seal Washers - Teflon Coating

* Listed page in the "NBK Product Catalog 2015".

● — Product listed in this catalog.

Product Name	Product Code	Page	Product Name	Product Code	Page
A			Clamp Lever - Miniature Type, Male Screw - with Push Button	LECMS-C	281
Adjust Bolt	SAT	544	Clamping Bolt - Ceramic Ball	SCBS-CE	527
Adjust Washer - Stainless Steel	SWAS-AW	787	Clamping Bolt - Flat Ball	SCB-F	529
Adjust Washer - Stainless Steel Black	SWAS-AWBK	789	Clamping Bolt - Flat Ball	SCBS-F	529
Adjust Washer - Steel - Electroless Nickel Plating	SWA-AWEL	785	Clamping Bolt - Flat Ball - with Reversal Prevention Mechanism	SCB-FB	531
Adjust Washer - Steel - Ferrosoferric Oxide Film	SWA-AW	783	Clamping Bolt - Flat Ball - with Reversal Prevention Mechanism	SCBS-FB	531
Aluminum Disk Handwheel	HDA	398	Clamping Bolt - Full Ball	SCB-R	525
Aluminum Flat Handwheel	AH	401	Clamping Bolt - Full Ball	SCBS-R	525
Aluminum Knurled Handwheel	HAK	395	Clamping Bolt - Knurled Ball - with Reversal Prevention Mechanism	SCB-GB	532
Aluminum Offset Handwheel	AV	400	Clamping Bolt - Knurled Ball - with Reversal Prevention Mechanism	SCBS-GB	532
Aluminum Revolving Grip	GIRA-EL	407	Clamping Bolts - Flat Ball (Inch Thread)	SCB-F(INCH)	530
Aluminum Super Special Low Head Bolt with Hexalobular Socket	SETA	609	Clamping Bolts - Flat Ball (Inch Thread)	SCBS-F(INCH)	530
Anti - theft Nut	SHNRS	715	Clamping Bolts - Full Ball (Inch Thread)	SCB-R(INCH)	526
B			Clamping Bolts - Full Ball (Inch Thread)	SCBS-R(INCH)	526
Ball Button	BB	494	Clamping Cap Screws with Ventilation Hole	SCBS	588
Ball Roller Units - Press Fit Type	BRAHS	467	Clamping Screw - Flat Ball	SCS-F	521
Ball Roller Units - Press Fit Type	BRAPS	468	Clamping Screw - Flat Ball	SCSS-F	521
Ball Roller with Spring Plunger Function - Flange Type	BRPMS	472	Clamping Screw - Flat Ball - with Reversal Protection Mechanism	SCS-FB	523
Ball Rollers - Cap Screw Type	BRUCS	465	Clamping Screw - Flat Ball - with Reversal Protection Mechanism	SCSS-FB	523
Ball Rollers - Hex Head Screw Type	BRUHS	461	Clamping Screw - Full Ball	SCS-R	515
Ball Rollers - Hex Head Screw Type	BRUHN	461	Clamping Screw - Full Ball	SCSS-R	515
Ball Rollers - Hex Head Screw Type	BRUHP	461	Clamping Screw - Indented Ball - with Reversal Protection Mechanism	SCS-GB	524
Ball Rollers - Insert Type	BRUIN	464	Clamping Screw - Indented Ball - with Reversal Protection Mechanism	SCSS-GB	524
Ball Rollers - Insert Type	BRUIP	464	Clamping Screw - Special Material Full Ball	SCS-N	517
Ball Rollers - Press Fit Type	BRUPS	463	Clamping Screw - Special Material Full Ball	SCS-BR	517
Ball Rollers - Press Fit Type	BRUPN	463	Clamping Screw - Special Material Full Ball	SCSS-CE	517
Ball Rollers - Round Type	BRURS	466	Clamping Screw (Fine Screw Thread) - Flat Ball	SCS-F-F	520
Ball Rollers - Set Screw Type	BRUSS	459	Clamping Screw (Fine Screw Thread) - Full Ball	SCS-F-R	519
Ball Rollers - Set Screw Type	BRUSN	459	Clamping Screws - Flat Ball (Inch Thread)	SCS-F(INCH)	522
Ball Rollers - Set Screw Type	BRUSP	459	Clamping Screws - Flat Ball (Inch Thread)	SCSS-F(INCH)	522
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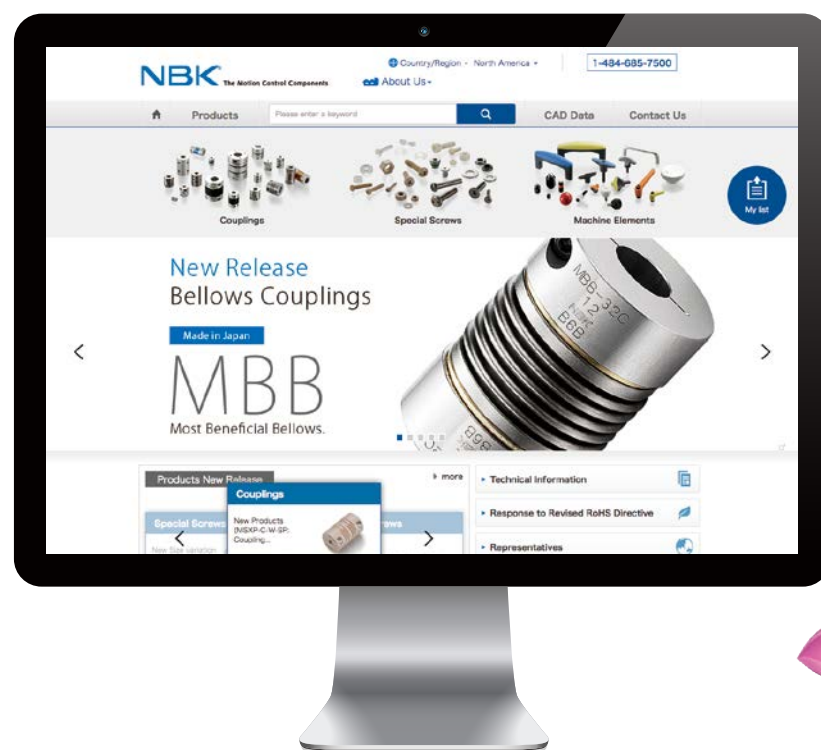
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Selection Navigator

Select Shape

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Flat

T-shaped

Select Screw Type

Special Screws

Selection Navigator

Select Size

M2 M2.5 M2.6

M3 M4 M5

M6 M8 M10

M12

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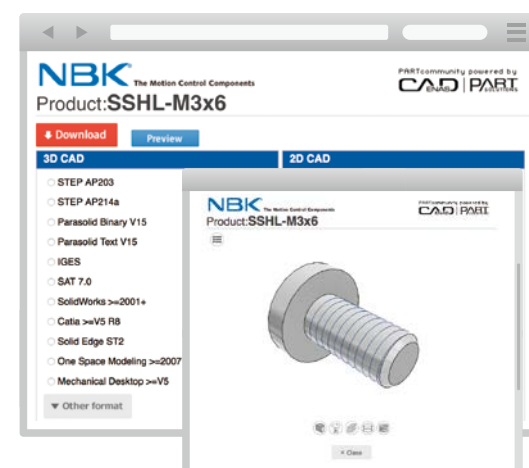
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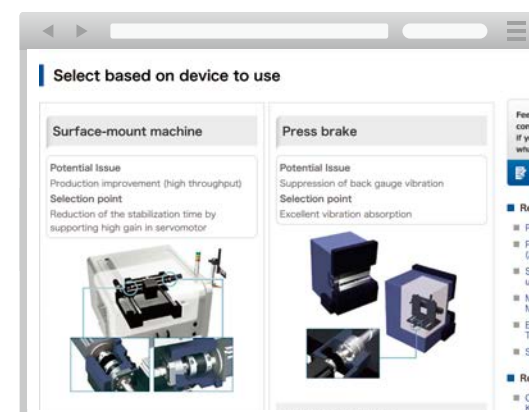


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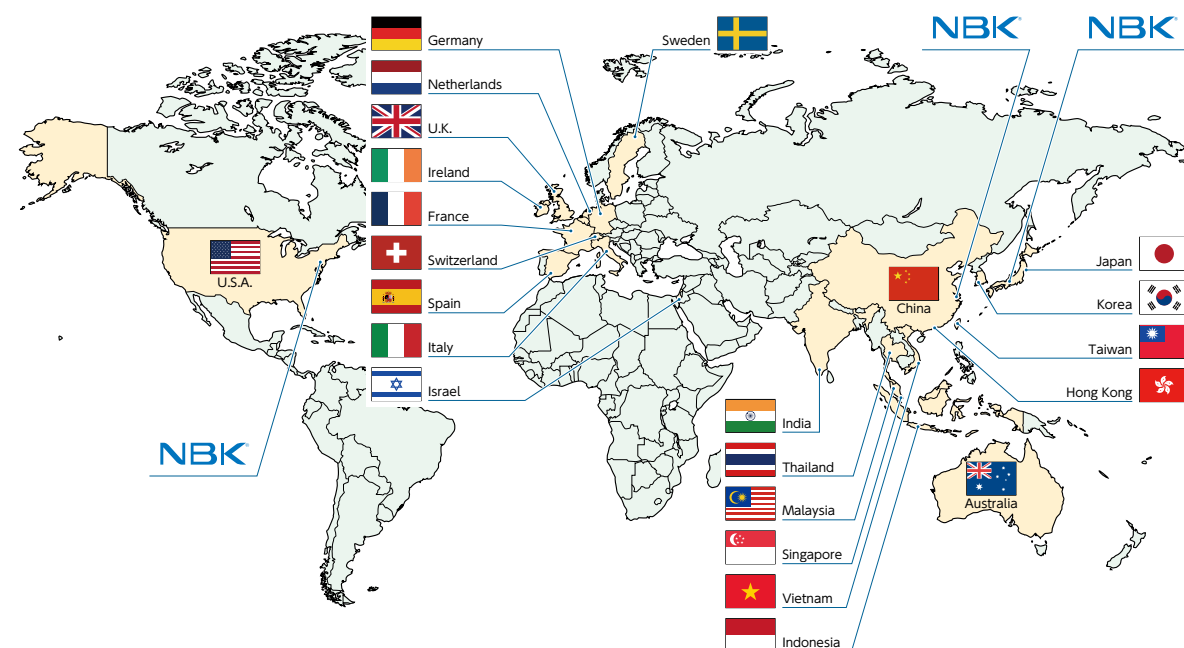
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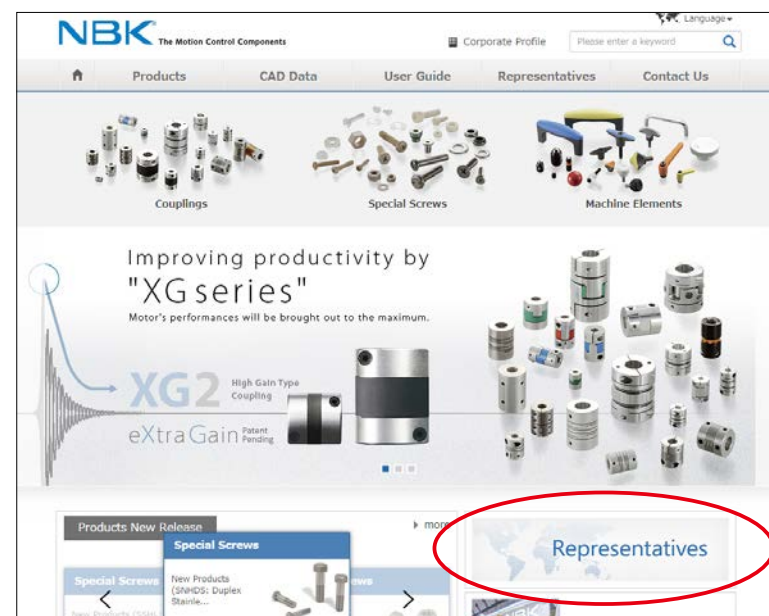
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NBK Performance and Application Guidelines are supplied as general guides only, as conditions vary with each application and installation method. Strength data given is for failure of the product or where sufficient deformation occurs to make the product inoperable. No safety factor has been applied.

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NBK® Limited Warranty

(a) Seller warrants to Buyer that for a period of one (1) year from the date of shipment of the Goods ("Warranty Period"), such Goods will conform to Seller's published specifications in effect as of the date of manufacture under the corresponding purchase order and/or invoice, and will be free from material defects in material and workmanship.

(b) EXCEPT FOR THE WARRANTY SET FORTH IN SECTION (a), SELLER MAKES NO WARRANTY WHATSOEVER WITH RESPECT TO THE GOODS, INCLUDING ANY WARRANTY OF MERCHANTABILITY; WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; OR WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE.

(c) Seller shall not be liable for a breach of the warranty set forth in Section (a) unless Buyer gives written notice of the defect, reasonably described, to Seller within seven (7) calendar days of the time when Buyer discovers or ought to have discovered the defect; Seller is given a reasonable opportunity after receiving the notice to examine such Goods, and Buyer (if requested to do so by Seller) returns

such Goods to Seller's designated place of business at Seller's cost for the examination to take place there; and Seller reasonably verifies Buyer's claim that the Goods are defective.

(d) Seller shall not be liable for a breach of the warranty set forth in Section (a) if Buyer makes any further use of such Goods after giving such notice; the defect arises because Buyer failed to follow Seller's oral or written instructions as to the storage, installation, commissioning, use or maintenance of the Goods; or Buyer alters or repairs such Goods without the prior written consent of Seller.

(e) Subject to Section (c) and Section (d) above, with respect to any such Goods during the Warranty Period, Seller shall, in its sole discretion, either repair or replace such Goods (or the defective part); or credit or refund the price of such Goods at the pro-rata contract rate; provided that, if Seller so requests, Buyer shall, at Seller's expense, return such Goods to Seller's designated place of business.

(f) THE REMEDIES SET FORTH IN SECTION (e) SHALL BE THE BUYER'S SOLE AND EXCLUSIVE REMEDY AND SELLER'S ENTIRE LIABILITY FOR ANY BREACH OF THE LIMITED WARRANTY SET FORTH IN SECTION (a).

Company Outline

Company Name ● Nabeya Bi-tech Kaisha

Address ● 1, Toko-Taichi, Seki-City, Gifu, Japan 501 - 3939

Phone: +81 - 575 - 23 - 1121 (Reception) Fax: +81 - 575 - 23 - 1129

Founding ● 1560

Incorporation ● 1940

Representative ● President and Representative Director Mitsuo Kaneda

Capital ● 585 million yen (NBK Group, 5 companies)

Employees ● 372 (NBK Group, 5 companies)

Offices ● Seki Garden Factory, Mino Foundry, Tokyo Sales Office, Osaka Sales Office, Chubu Sales Office

Operations ● Development, manufacturing, and sales of machine element parts for transmission, control, positioning, and handling

Related Companies ● NBK America LLC, Nabeya Bi-tech (Suzhou) Co., Ltd, NBK Trading Limited, NBK Marketing Limited., PT. Himalaya Nabeya Indonesia.,

Banking ● The Juroku Bank, Ltd., Mitsubishi Tokyo UFJ , Ltd. Gifu branch, Mitsui Sumitomo Banking Corp. Gifu branch, The Ogaki Kyoritsu Bank, Ltd. Gifu branch

URL ● <https://www.nbk1560.com/>

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Bi-tech Plant



Nabeya Bi-tech (Suzhou) Co., Ltd.

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