

special screws
e-nedzi.com[®]

Build to Your Needs.

We can make
**a screw like
this one.**



NBK[®]

The Motion Control Components

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

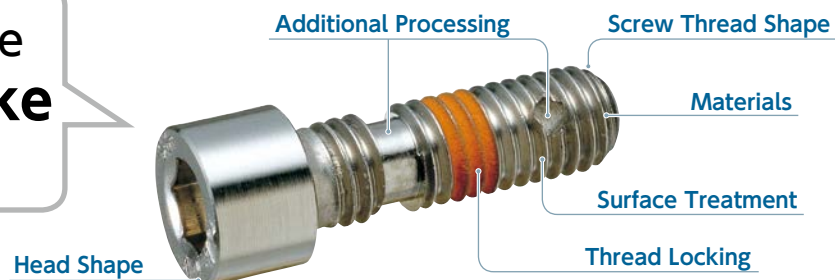
There are a lot of seizing here...

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



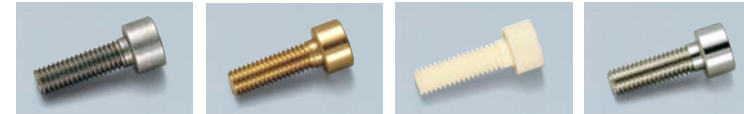
To prevent loosening

Surface Treatments



Materials

Special Materials



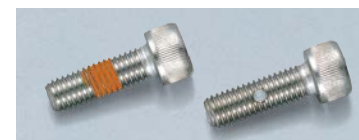
Pure Titanium Inconel, Hastelloy, Nickel, Super Invar, SUS316L, SUS310S, Aluminum, and more.

Plastic



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 Special Products

Feel free to contact us.

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

Select a product from categories

Vacuum Application Screws → P.554*

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.584*

Compact head screws. Suitable for reducing the size of applications.



High Performance S.S. Fasteners → P.612*

High performance stainless steel screws have excellent strength, heat resistance, and corrosion resistance compared to standard stainless steel screws.



Titanium Screws → P.624*

Screws made of titanium. They are lightweight, nonmagnetic, and chemically resistant.



Special Material Fasteners → P.636*

Screws made of special materials such as Inconel, Molybdenum and Hastelloy to provide excellent heat, chemical, corrosion resistance.



Chemical Resistance Screws → P.654*

Screws with special materials, surface treatments, and shapes for applications that require chemical resistance.



Screws with Special Surface Treatment → P.662*

Screws with surface treatment for seizing prevention and reflection resistance.



Miniature Screws → P.672*

Small-diameter screws lower than M2.6 size for precision instruments.



Captive Screws Full Thread Screws → P.680*

Screws for falling out prevention and screws with full thread.



Functional Screws → P.692*

Screws for fixing and locating clamping screws and ball plungers.



Inch Screws → P.699*

Screws for equipment and facilities that use inch-screw specifications.



Tamper Resistance Screws → P.704*

Screws which cannot be installed or removed easily with standard tools to prevent theft and tampering.



Hexalobular Socket Head Screws → P.712*

Screws with strength socket heads. For repeating installations and removals.



Plugs → P.716*

Screw plugs for oil hydraulic equipment and pneumatic devices are available.



Plastic Screws → P.722*

Various types of plastic screws made from materials such as VESPEL®, PEEK, and PTFE (Teflon).



Washers and vibration resistant treatment → P.767*

Washers with abundant outside diameter and thickness variations, and vibration resistant treatment parts are available.



* For the detailed information, please refer to [NBK Product Catalog 2015] .

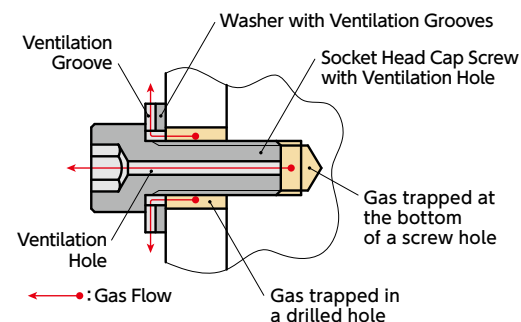
* For the detailed information, please refer to [NBK Product Catalog 2015] .



Select a product from application

Vacuum

- Screws with gas ventilation holes and washers with ventilation grooves are for the vacuum drawing of machines.



With Ventilation Hole - Ventilation Groove	Page*
Screws	→ P.556 - 573
Washers	→ P.574 - P.575
Clamping Set Screws	→ P.578
Clamping Cap Screws	→ P.579
Plungers with Ball	→ P.580
Hexagon Posts	→ P.576 - P.577

- Surface of the screw head is coarsened using blasting and it prevent deposits on the screw head from peeling and falling off.



Socket Head Cap Screws with Special Low Profile - Head Shot Blast	Page*
	→ P.581

- Cover caps made of aluminum alloy and ceramic prevent the corrosion of screws due to vacuum chamber processing gas and plasma.



Cover Caps Socket Head Cap Screws for Cover Caps	Page*
	→ P.582

Low Outgas

- Screws made of materials with low outgas and processed surface treatment. Outgas is very low even under vacuum environments.



Material - Surface Treatment	Page*
Chemical Polishing	→ P.556
Super Black	→ P.666
Low Temperature Black Chrome Treatment	→ P.667
Vespel®	→ P.728 - 731
PEEK	→ P.732 - 742

Clean

- Screws are cleanroom washed and cleanroom packed.



Particle Measurement Results

Test piece : SUS303 $\phi 19 \times 20$

Test method : Measurement by automatic liquid-borne particle counter

Number of Particles Floating in Ultrapure Water				Unit: Particle
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	

For details, refer to Cleanroom Wash & Packaging Service → P.792*

Chemical Resistance

- Screws made of materials with excellent chemical resistance and screws that protect screw heads from chemicals.



Hastelloy



PTFE (Teflon)

- The PTFE (Teflon) cover cap protects the screw head from chemicals.



Cover Caps Socket Head Cap Screws for Cover Caps	Page*
	→ P.658

- Teflon coating for excellent chemical resistance only on the screw head.



Hex Head Screws - Teflon Coating for Head	Page*
	→ P.660

Chemical Resistance of Metals

Materials	Chemical Resistance	Page*
Hastelloy	Strong	→ P.644
Titanium	Strong	→ P.624 - 634
Inconel	Strong	→ P.638
SUS316L (HiMo)	Strong	→ P.616
SUS310S	Strong	→ P.619

Chemical Resistance of Plastics

Materials	Chemical Resistance	Page*
PTFE (Teflon)	Strong	→ P.756
PVDF	Strong	→ P.758
H-PVC	Strong	→ P.762
PP	Strong	→ P.760
PEEK	Strong	→ P.732 - 742

• Chemical resistance changes under performance conditions. Make sure to carry out tests under the same condition of actual use in advance.

High Strength

- Screws made of high-strength titanium, stainless steel, plastic and processed surface treatment. For applications which require strength, in addition to their material and surface treatment properties.



Titanium Screws	Tensile Strength (N/mm ²)	Page*
Ti-6Al-4V (64 Titanium)	895 or higher	→ P.626
Ti-15-3-3-3 (β Titanium)	705 - 945	→ P.628 - P.630
High Performance S.S. Fasteners	Tensile Strength (N/mm ²)	Page*
SUS316L HiMo	800 - 1000	→ P.616
Screws with Special Surface Treatment	Tensile Strength (N/mm ²)	Page*
Electroless Nickel Plating	1200	→ P.671
Plastic Screws	Tensile Strength (N/mm ²)	Page*
RENY	285	→ P.749 - 755

Heat Resistance

- Screws with higher heat resistance than other metal and plastic screws. Choose your screws according to the usage environment.



Molybdenum

Materials	Tensile Strength (N/mm ²)				Page*
	200°C	500°C	800°C	1000°C	
SUS316L	560	500	250	—	➡ P.618
SUS310S	580	500	200	—	➡ P.619
Inconel 600	560	530	200	70	➡ P.638
Molybdenum	590	450	290	210	➡ P.640
Carbon Steel	450	230	40	—	—
SUS304	500	420	160	—	—

Materials	Continuous Duty Temperature (°C)	Page*
Ceramic	1500	➡ P.650 - 652
Vespe [®]	288 - 350	➡ P.728 - 731
PTFE (Teflon)	260	➡ P.756

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Select a product from application

Seizing Prevention

- Special surface treatments reduce the coefficient of friction of the thread peak surface and the necessary axial force can be obtained even at low tightening torques. This effect reduces frictional heat during tightening and is effective to prevent seizing.



Screws with Special Surface Treatment	Axial Force(kN)	Page*
Low Temperature Black Chrome Treatment	9.2	→ P.667
Teflon Coating	8.7	→ P.668
Molybdenum Disulfide Coating	6.7	→ P.665
Fluorine Coating	5	→ P.664
Gold Coating	4.3	→ P.669
No Surface Treatment	2.3	—

- Values were obtained under the following conditions: stainless steel material, M5, and a tightening torque of 5 N · m.

Screw Drive Damage Prevention

- The shape of hexalobular drives is less damaged from tools than that of hexagonal and cross recess drives. Suitable for situations in which high tightening torque is used repeatedly.



Hexalobular Socket Head Cap Screws with Special Low Profile	Page*
Hexalobular Socket Head Cap Screws with Extreme Low Profile	→ P.597
Hexalobular Socket Head Cap Screws with Low Profile	→ P.598
Hexalobular Socket Pan Head Machine Screws	→ P.600
Hexalobular Socket Flat Head Machine Screws	→ P.713
Hexalobular Socket Flat Head Machine Screws	→ P.714

Non-Magnetic

- Nonmagnetic screws with low permeability. For FPD production equipment, semiconductor devices and electronic equipment that require nonmagnetic properties.



	Amplitude Permeability (μ)	Page*
Pure Titanium	1.0001	→ P.627 · P.629 · P.631 - 634
Ti-6Al-4V (64 Titanium)	1.0002	→ P.626
Ti-15-3-3-3 (β Titanium)	1.0002	→ P.628 · P.630
Phosphor Bronze	1.0001	→ P.648
SUS316 HiMo	1.007	→ P.616
SUS316L	1.006	→ P.618

Lightweight

- For applications that require reduced weight, including use in cars, aircraft, space equipment, medical equipment and robots.

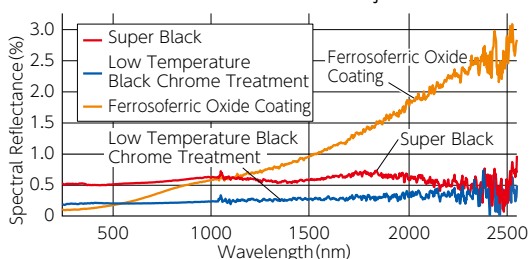


Metal Screws	Specific Gravity	Page*
Aluminum	2.64	→ P.649
Ti-6Al-4V (64 Titanium)	4.43	→ P.626
Pure Titanium	4.51	→ P.627 · P.629 · P.631 - 634
Ti-15-3-3-3 (β Titanium)	4.8	→ P.628 · P.630
Iron	7.8	—

Plastic Screws	Specific Gravity	Page*
PC	1.2	→ P.764
RENY	1.65	→ P.749 - 755

Reflection Resistance

- Low temperature black chrome treatment and super black result in extremely low spectral reflectance. For optical instruments that require reflection resistance.



Screws with Special Surface Treatment	Spectral Reflectance	Page*
Super Black	1.5% or less	→ P.666 · P.774
Low Temperature Black Chrome Treatment	1.5% or less	→ P.667

Electrical Insulation

- Screws with excellent electrical insulation properties. For electric and electronic equipment and other applications that require electrical insulation.



	Volume Resistivity (× 10 ¹⁴ Ω · m)	Page*
PTFE (Teflon)	>100	→ P.756
PEEK	4.9	→ P.732 - 742
PC	4	→ P.764
Ceramic	>0.01	→ P.650 - 652
Iron	10 × 10 ⁻⁸ Ω · m	—

Space optimization

- Compact head screws. Suitable for reducing the size of applications.



Low Profile Screws	Page*
Socket Head Cap Screws with Ventilation Hole with Low Profile	→ P.565
Socket Head Cap Screws with Low Profile	→ P.586 - 589
Socket Head Cap Screws with Special Low Profile	→ P.590 - 595
Hexalobular Socket Head Cap Screws with Low Profile	→ P.597 - 600
Socket Head Cap Captive Screws with Special Low Profile	→ P.684

Small Head Screw	Page*
Socket Head Cap Screws with Small Head	→ P.604
Socket Head Cap Screws with Low & Small Head	→ P.606
Socket Head Cap Screws with Special Low & Small Head	→ P.608
Cross Recessed Flat Head Machine Screws with Small Head	→ P.610

Simplified Work

- Screws with built-in washers. Since it is not necessary to attach a washer, assembly work becomes simpler.



	Page*
Socket Head Cap Screws with Captive Washer and Ventilation Hole	→ P.558
Socket Head Cap Screws with Magnetic Captive Washer	→ P.622
Socket Button Head Cap Screws with Flange	→ P.602

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Select a product from application

Loss Prevention

- Built-in washers prevent washer loss. Since the magnetic type has a built-in magnetic washer, it can be detected magnetically.



Socket Head Cap Screws with Captive Washer and Ventilation Hole



Socket Head Cap Screws with Magnetic Captive Washer

	Page*
Socket Head Cap Screws with Captive Washer and Ventilation Hole	➔ P.558
Socket Head Cap Screws with Magnetic Captive Washer	➔ P.622

- Screws and washers to prevent screws from falling out. Comply with CE-marking.



Socket Head Cap Captive Screws

	Page*
Socket Head Cap Captive Screws	➔ P.682
Cross Recessed Pan Head Machine Captive Screws	➔ P.688
Cross Recessed Truss Head Captive Screws	➔ P.689
Socket Head Cap Captive Screws with Low Profile	➔ P.684
Socket Head Cap Captive Screws with Special Low Profile	➔ P.685

In addition to the products listed above, we also offer a captive processing service in which we alter the screw shape to the captive form ➔ P.791*

Vibration Resistant

- Screw parts effectively prevent loosening caused by vibrations and sunk surfaces.



Ribbed Lock Washers



Hex Lock Nuts



Socket Button Head Cap Screws with Flange



High Intensity Flat Washers

	Page*
Socket Button Head Cap Screws with Flange	➔ P.602
Hex Lock Nuts - Titanium	➔ P.633
Locking and Sealing Rings	➔ P.776
Ribbed Lock Washers	➔ P.777
Sealing Washers	➔ P.778
High Intensity Flat Washers	➔ P.780
Hex Lock Nuts	➔ P.782

In addition to the above products, thread locking treatment service is available. ➔ P.795*

Decoration

- Screws' unique colors and shapes decorate the attachment surfaces.



Bezel Washers



Two Hole Pan Head Machine Screws



Gold Coating



Hexalobular Socket Head Cap Screws/Extra Low Head

	Page*
Socket Head Cap Screws with Special Low Profile	➔ P.590 - 595
Hexalobular Socket Head Cap Screws with Extreme Low Profile	➔ P.598
Super Black	➔ P.666 - P.774
Gold Coating	➔ P.669
Two Hole Pan Head Machine Screws	➔ P.710
Bezel Washers	➔ P.781
Plastic Screws - Cross Recessed Pan Head Machine Screws - PC	➔ P.764

Fixing • Locating

- Clamping screws, ball plungers, and other screw products for fixing and locating.
- To clamp rails for linear guideways or other easily scratched workpieces.



Clamping Cap Screws with Eccentric Head



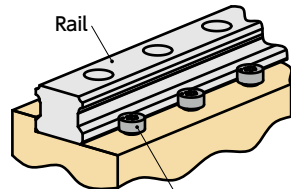
Clamping Set Screws



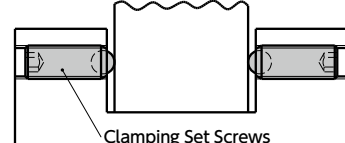
Clamping Cap Screws



Plungers with Ball



Clamping Cap Screws with Eccentric Head



Clamping Set Screws

	Page*
Clamping Set Screws	➔ P.578
Clamping Cap Screws	➔ P.579
Plungers with Ball	➔ P.580
Clamping Cap Screws with Eccentric Head	➔ P.694 - 697
Fine Pitch Thread	➔ P.698

* For the detailed information, please refer to [NBK Product Catalog 2015] .

Consult us if you have any questions.

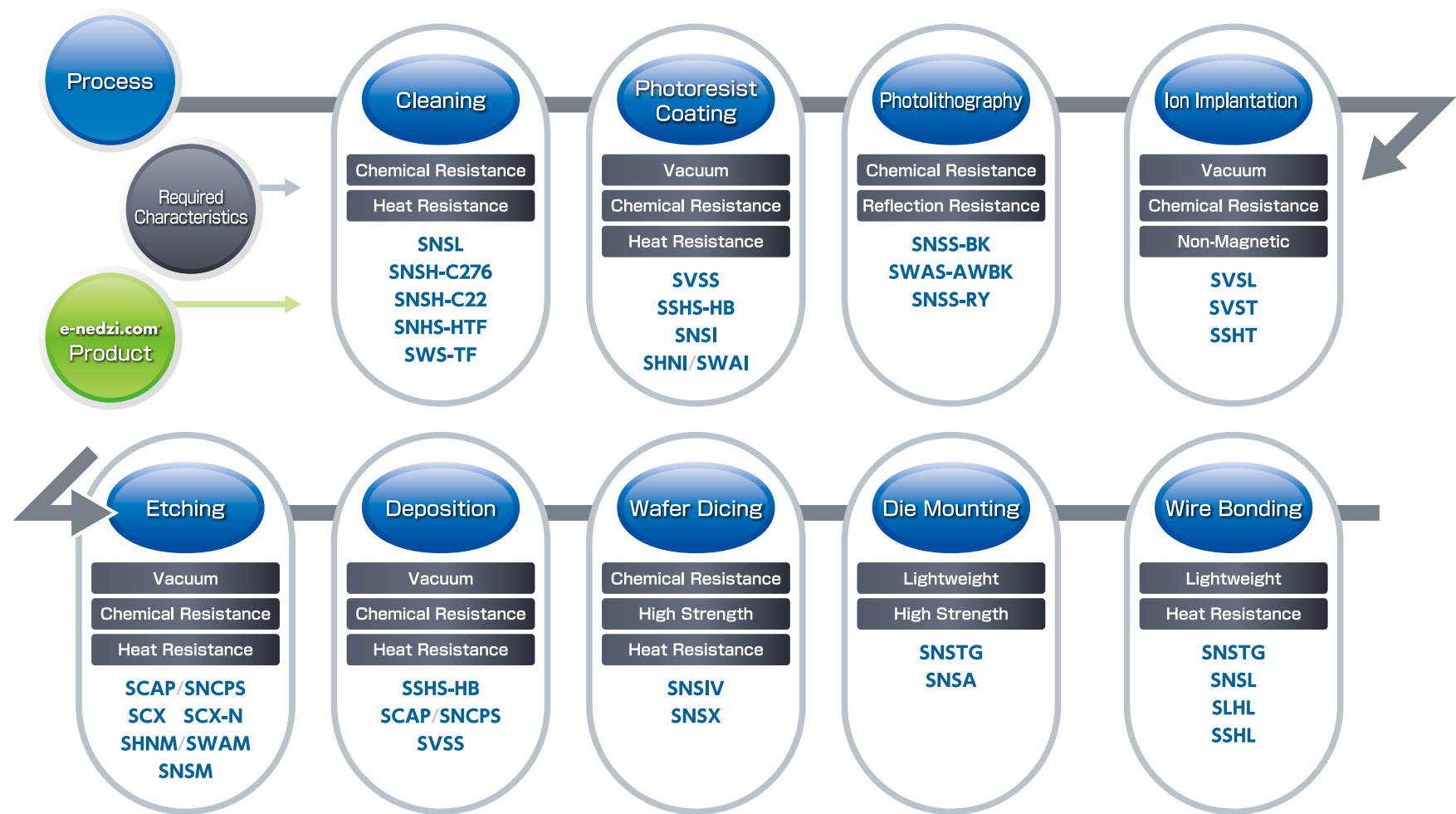
60 percent of orders are for special screws not in this catalog. Feel free to contact us referring this catalog for your order.



* For the detailed information, please refer to [NBK Product Catalog 2015] .

NBK "Special Screws" for Semiconductor Equipment

e-nedzi.com®



Part number	Feature	Material
SNSL	High Performance S.S.	SUS316L
SNSH-C276	Special Material	Hastelloy C-276 equiv.
SNSH-C22	Special Material	Hastelloy C-22 equiv.
SNHS-HTF	Teflon Coating (Head Only)	SUSXM7
SWS-TF	Teflon Coating	SUS304
SVSS	with Ventilation Hole	SUSXM7
SSHS-HB	Special Low Profile and Head Shot Blast	SUSXM7
SNSI	Special Material	Inconel 600 equiv.
SHNI / SWAI	Special Material	Inconel 600 equiv.
SNSS-BK	Special Surface Treatment Super Black	SUSXM7
SWAS-AWBK	Stainless Steel Black	SUS304
SNSS-RY	Special Surface Treatment Low Temperature Black Chrome	SUSXM7
SVSL	with Ventilation Hole	SUS316L
SVST	with Ventilation Hole	Titanium (TB340C)
SSHT	Special Low Profile	Titanium (TB435)
SCAP-SNCPS	Chemical Resistance	PTFE / SUSXM7
SCX / SCX-N	Chemical Resistance	Ceramic
SHNM / SWAM	Special Material	Pure Molybdenum
SNSM	Special Material	Pure Molybdenum
SSHS-HB	Special Low Profile and Head Shot Blast	SUSXM7
SCAP / SNCPS	Chemical Resistance	PTFE / SUSXM7
SVSS	with Ventilation Hole	SUSXM7
SNSIV	Special Material	Super Invar
SNSX	High Performance S.S.	SUS316L HiMo
SNSTG	High Intensity Titanium	Ti-6AL-4V (64 Titanium)
SNSA	Special Material	Aluminum (A5056)
SNSTG	High Intensity Titanium	Ti-6AL-4V (64 Titanium)
SNSL	High Performance S.S.	SUS316L
SLHL	Low Profile	SUS316L
SSHL	Special Low Profile	SUS316L



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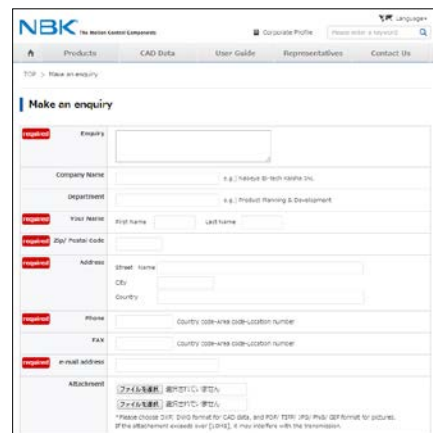


Product Information



You can view the same product information listed in this catalog. You can also search products easily.

Contact Us



Please feel free to contact us for anything including customization, delivery dates, and technical questions. When you contact us for customization, please let us know the usage, size, materials, etc. We can also help you with drawing data or graphic data.

Selection Navigator

Substantial selection tool.

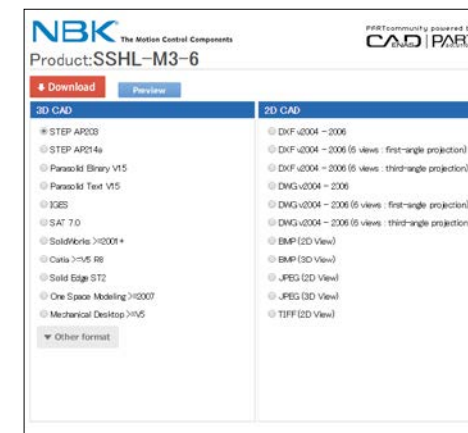
Selection Navigator will help you find the products you are looking for.

- Example of Selection Tool Coupling

Machine Elements

Special Thread

CAD Data Download



You can download CAD data in various formats. No user registration or login is required.

3D Preview





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