MST/MSTS Flexible Couplings - Slit Type

Zero Backlash SUS Stainless steel

Structure

- Set Screw Type ➡ P.xxxx

MST Made of aluminum alloy

MSTS Made of all stainless steel

- Clamping Type ➡ P.xxxx

MST-C Made of aluminum alloy

MSTS-C Made of all stainless steel

Outside diameter ϕ40 - ϕ63

MSTS-C

Outside diameter ϕ12 - ϕ32

- Set Screws + Key Type ➡ P.xxxx

MST-K Made of aluminum alloy

MSTS-K Made of all stainless steel

- Part number specification

MST - 32K - 12-12

Product Code | Size | Bore Diameter

Please refer to dimensional table for part number specification.

- Applicable motors

	MST	MSTS
Servomotor	●	●
Stepping Motor	◎	◎
General-purpose Motor	●	●

◎: Excellent ●: 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. A slit is inserted into a cylindrical material.
- A plate spring formed by a slit 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 ϕ 8 - ϕ 63.

- Application

Transport device / XY stage / Parts feeder

- Material/Finish

RoHS

	MST / MST-C / MST-K	MSTS / MSTS-C / MSTS-K
Main Body	A2017 Anodized*1	SUS303
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7

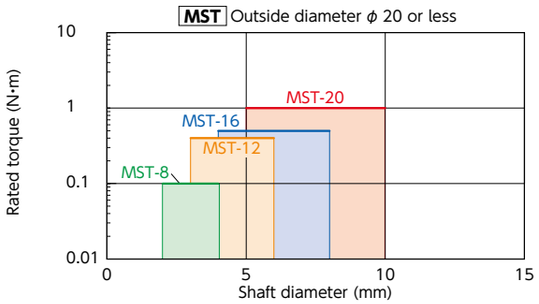
*1: Due to manufacturing process requirements, couplings may have bores and keyways with or without surface treatment. This does not affect the performance of the couplings.

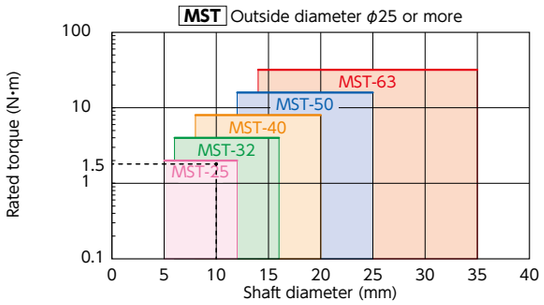
Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge	Please feel free to contact us	Please feel free to contact us

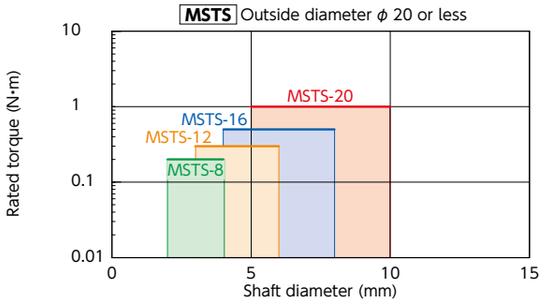
Selection

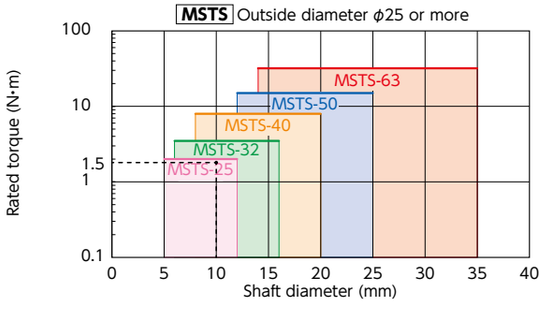
Selection Based on Shaft Diameter and Rated Torque

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









- Selection Example

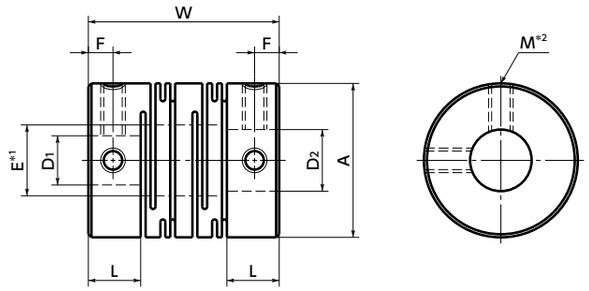
In case of selected parameters of shaft diameter of ϕ 10 and load torque of 1.5 N•m, the selected size for **MST** **MSTS** is **MST-25** **MSTS-25**

GOOD DESIGN

MST/MSTS Flexible Couplings - Slit Type - Set Screw Type

Zero Backlash SUS Stainless steel

MST Made of aluminum alloy
MSTS Made of all stainless steel



*1： E=D2(D2<6)
E=D2+0.5(D2≥6)
*2： In a case where the bore diameter is ϕ 4 or less, the set screw is used in only one place.

Dimensions

Unit : mm

Part Number 1	A	L	W	F	M	Screw Tightening Torque (N・m)
MST-8	8	3.5	14	1.7	M2	0.18
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	11.9	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	0.12
MSTS-12	12	5	18.5	2.5	M2.5	0.2
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	11.9	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 2							
MST-8	**MSTS-8**	2 - 2	2 - 3	3 - 3					
MST-12	**MSTS-12**	3 - 3	3 - 4	3 - 6*1	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*2	6 - 6 8 - 10	6 - 6.35 10 - 10	6 - 7	6 - 8	6 - 10
MST-25	**MSTS-25**	5 - 6 8 - 9.525*2	6 - 6 8 - 10	6 - 6.35 8 - 12	6 - 8 9.525 - 10	6 - 10 10 - 10	6.35 - 8 10 - 11*2	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*2	18 - 18
MST-50	**MSTS-50**	12 - 12	14 - 14	15 - 15	16 - 18				
MST-63	**MSTS-63**	14 - 14							

*1： Only MST-** is a standard product. For MSTS-**, use the additional modification service BT.
*2： Only MSTS-** is a standard product. For MST-**, use the additional modification service BT.

- All products are provided with hex socket set screws.
- Recommended tolerance for shaft diameters is h6 and h7.
- For the shaft insertion amount to the coupling, see Mounting/maintenance.

Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge	Please feel free to contact us	Please feel free to contact us

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.

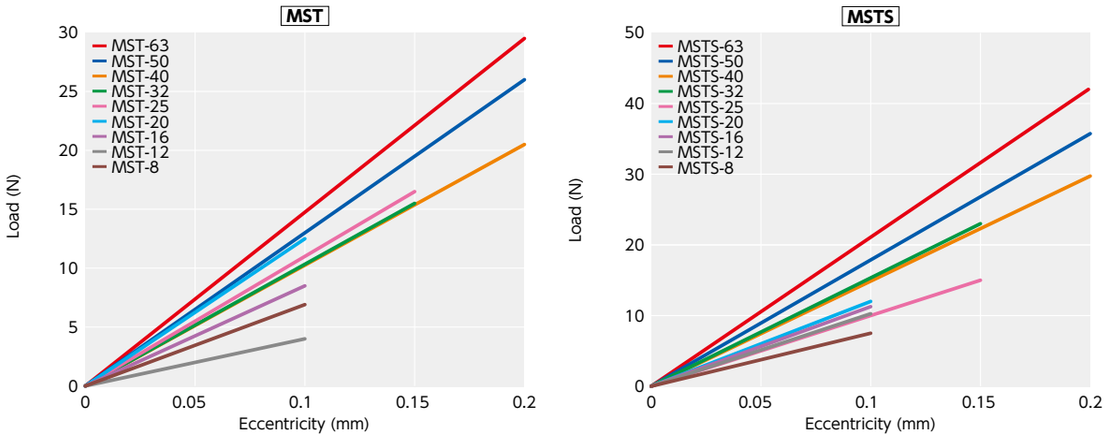
- Part number specification

MSTS-25 - 9.525-10
1 2

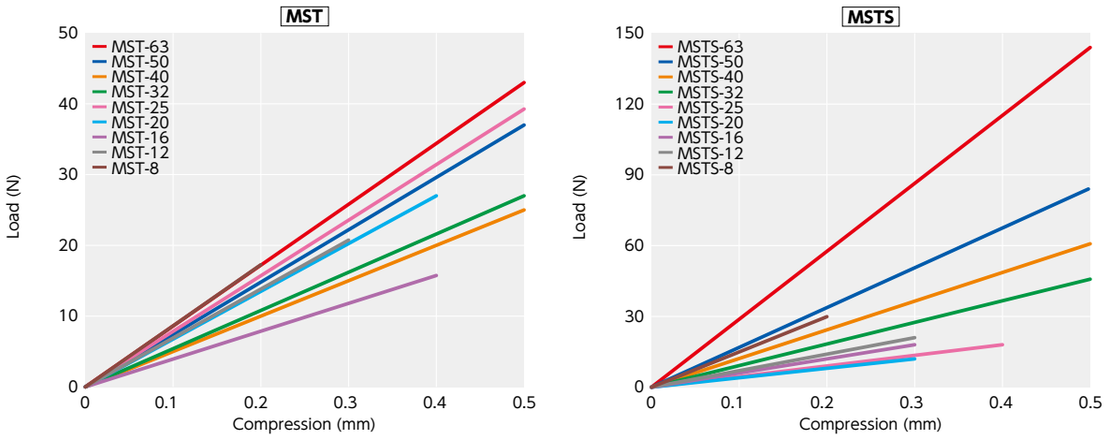
NBK https://www.nbk1560.com

Technical Information

● Eccentric Reaction Force

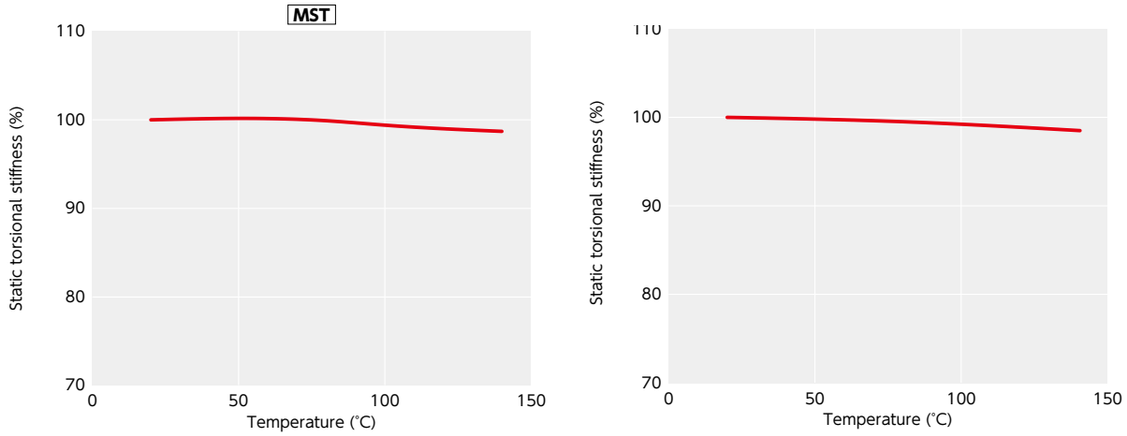


● Thrust Reaction Force



● Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20℃ is 100%.
The change of **MST** and **MSTS** 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.



● Slip Torque

For slip torque of set screw type, see each material under "Slip Torque of Coupling – Set Screw Type" for details.
MST ———Aluminum Alloy Coupling
MSTS ———Stainless Steel Coupling
As in the table below, the clamping types **MST-C** and **MSTS-C** have different slip torque according to the bore diameter. Take care during selection.

Unit : N・m

Part Number	Bore Diameter (mm)													
	4	4.5	5	6	6.35	7	8	9.525	10	11	12	14	15	16
MST-25C			3	3.6										
MST-32C							4.1	7.3						
MST-40C							7.1				14	17	20	24
MST-63C												59		63
MSTS-12C	0.4	0.5												
MSTS-16C		0.7	0.8											
MSTS-20C			1.2	1.7	1.7	1.7								
MSTS-25C			0.7	0.7	0.9		1.7	3.8						
MSTS-32C							1.2	2.1	2.7	2.9	5.9			
MSTS-40C							8.7				12	12	14	
MSTS-50C											22	28		
MSTS-63C												28		49

- These are test values based on the conditions of shaft dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **MST-C** **MSTS-C** dimension tables. They are not guaranteed values.
- Slip torque changes with usage conditions. Carry out tests under conditions similar to actual conditions in advance.

MST/MSTS Flexible Couplings - Slit Type

Zero Backlash SUS Stainless steel

Structure

- Set Screw Type ➡ P.xxxx

MST Made of aluminum alloy

MSTS Made of all stainless steel

- Clamping Type ➡ P.xxxx

MST-C Made of aluminum alloy

MSTS-C Made of all stainless steel

Outside diameter ϕ40 - ϕ63

MSTS-C

Outside diameter ϕ12 - ϕ32

- Set Screws + Key Type ➡ P.xxxx

MST-K Made of aluminum alloy

MSTS-K Made of all stainless steel

- Part number specification

MST - 32K - 12-12

Product Code | Size | Bore Diameter

Please refer to dimensional table for part number specification.

- Applicable motors

	MST	MSTS
Servomotor	●	●
Stepping Motor	◎	◎
General-purpose Motor	●	●

◎: Excellent ●: 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. A slit is inserted into a cylindrical material.
- A plate spring formed by a slit 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 ϕ 8 - ϕ 63.

- Application

Transport device / XY stage / Parts feeder

- Material/Finish

RoHS

	MST / MST-C / MST-K	MSTS / MSTS-C / MSTS-K
Main Body	A2017 Anodized*1	SUS303
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7

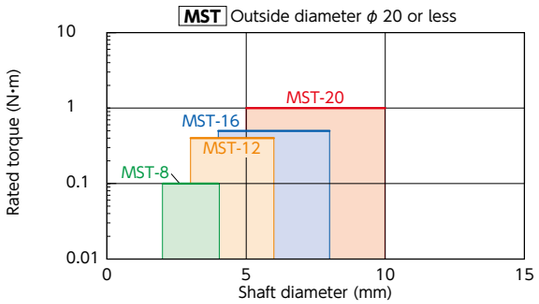
*1: Due to manufacturing process requirements, couplings may have bores and keyways with or without surface treatment. This does not affect the performance of the couplings.

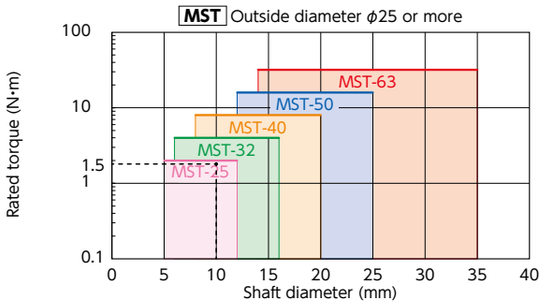
Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge	Please feel free to contact us	Please feel free to contact us

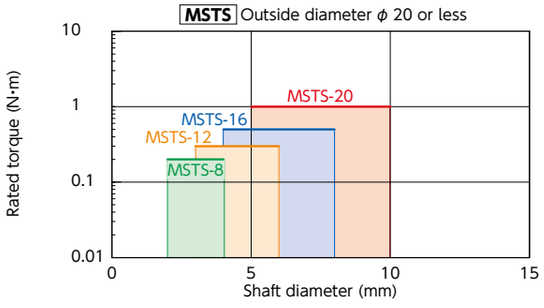
Selection

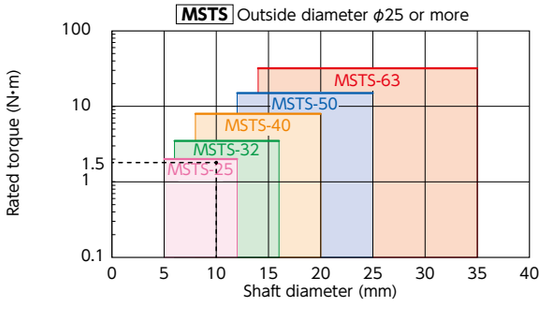
Selection Based on Shaft Diameter and Rated Torque

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









- Selection Example

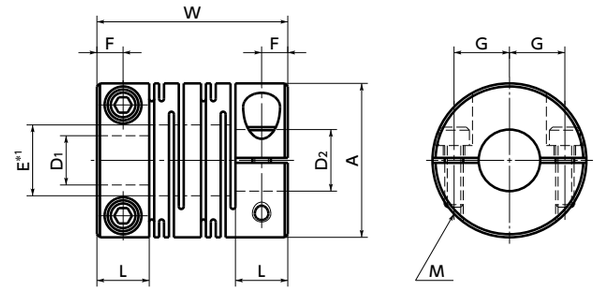
In case of selected parameters of shaft diameter of ϕ 10 and load torque of 1.5 N•m, the selected size for **MST** **MSTS** is **MST-25** **MSTS-25**

GOOD DESIGN

MST-C/MSTS-C Flexible Couplings - Slit Type - Clamping Type

Zero Backlash SUS Stainless steel

MST-C Made of aluminum alloy
MSTS-C Made of all stainless steel
Outside diameter ϕ40 - ϕ63



*1： E=D2(D2<6)
E=D2+0.5(D2≥6)

Dimensions

Unit : mm

Part Number 1	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	11.9	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	11.9	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

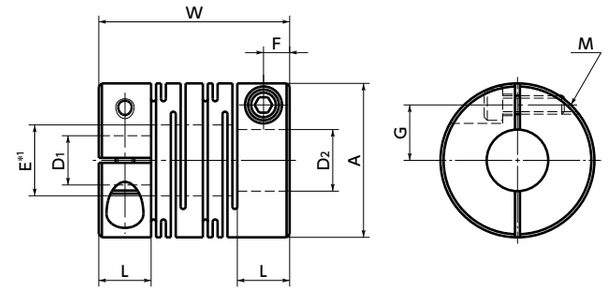
Part Number		Standard Bore Diameter D1-D2 2							
MST-12C	**MSTS-12C**	4 - 4	4 - 5	4.5 - 5	5 - 5				
MST-16C	**MSTS-16C**	4.5 - 5	4.5 - 6	5 - 5	5 - 6	6 - 6			
MST-20C	**MSTS-20C**	5 - 6 6.35 - 6.35*1	5 - 6.35 6.35 - 8	5 - 7 8 - 8	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8
MST-25C	**MSTS-25C**	5 - 6 8 - 9.525	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					

*1： Only **MST-**C** is a standard product. For **MSTS-**C**, use the additional modification service **BT**.

- All products are provided with hex socket head cap screw.
- Recommended tolerance for shaft diameters is h6 and h7.
- **MST-C** has variable slit shapes depending on the size. See the Slit Details.
- For the shaft insertion amount to the coupling, see Mounting/maintenance.

Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge	Please feel free to contact us	Please feel free to contact us

MSTS-C Made of all stainless steel
Outside diameter ϕ12 - ϕ32



*1： E=D2(D2<6)
E=D2+0.5(D2≥6)

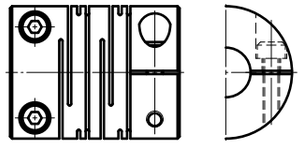
Performance

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

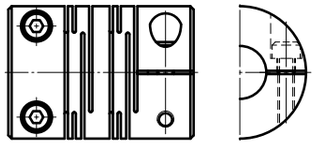
*1： Correction of rated torque due to load fluctuation is not required.
The shaft's slip torque may be smaller than the coupling's rated torque depending on the shaft bore. ➡ P.xxxx
*2： These are values with max. bore diameter.

Slit Details

MST-C



Outside diameter ϕ12 - ϕ32



Outside diameter ϕ40 - ϕ63

Precautions for Use

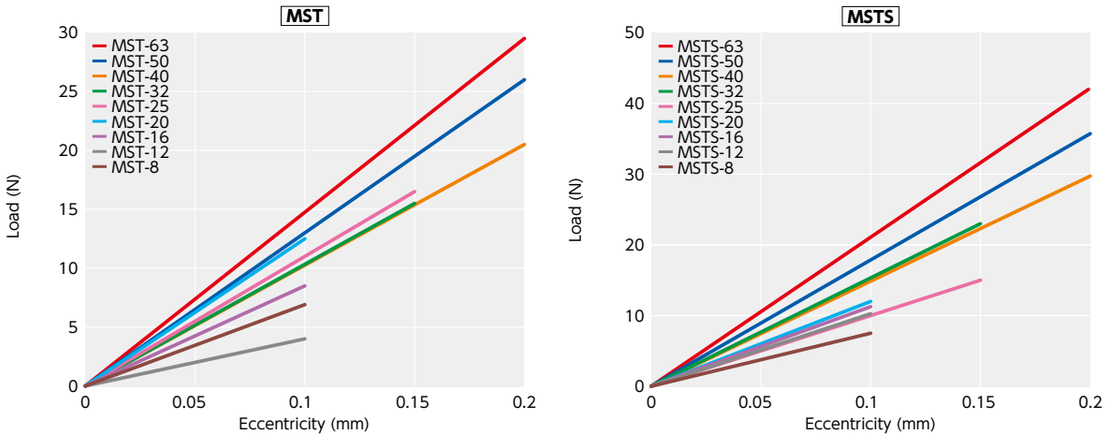
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.xxxx
- There are sizes where the hex socket head bolt exceeds the outer diameter of the coupling and the rotating diameter is larger than the outer diameter. Please be careful of the interference of coupling. ➡ P.xxxx

Part number specification

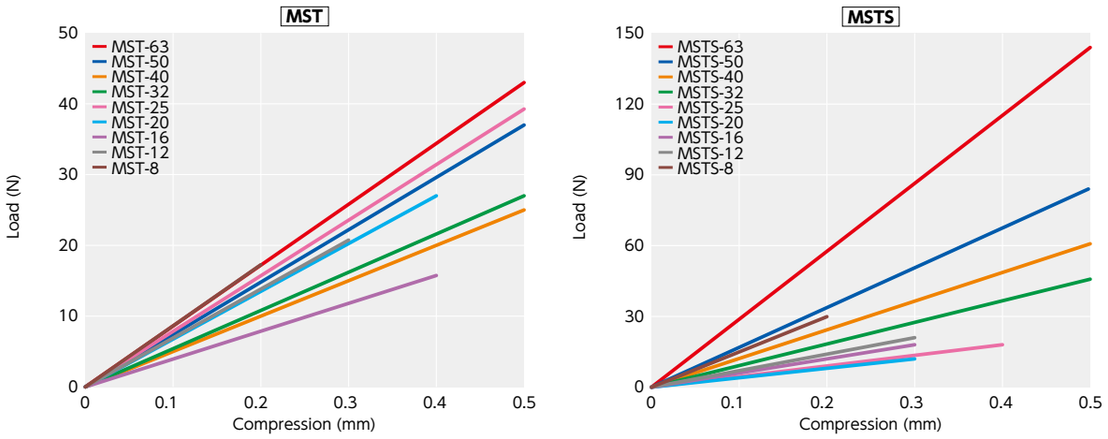
MST-40C - 12-14
1 2

Technical Information

● Eccentric Reaction Force

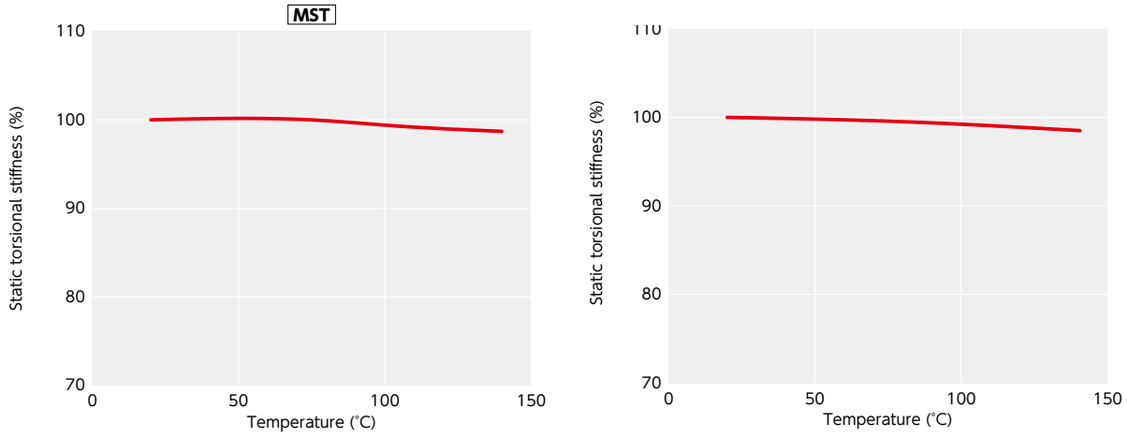


● Thrust Reaction Force



● Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20℃ is 100%.
The change of **MST** and **MSTS** 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.



● Slip Torque

For slip torque of set screw type, see each material under "Slip Torque of Coupling – Set Screw Type" for details.
MST ———Aluminum Alloy Coupling
MSTS ———Stainless Steel Coupling
As in the table below, the clamping types **MST-C** and **MSTS-C** have different slip torque according to the bore diameter. Take care during selection.

Unit : N・m

Part Number	Bore Diameter (mm)													
	4	4.5	5	6	6.35	7	8	9.525	10	11	12	14	15	16
MST-25C			3	3.6										
MST-32C							4.1	7.3						
MST-40C							7.1				14	17	20	24
MST-63C												59		63
MSTS-12C	0.4	0.5												
MSTS-16C		0.7	0.8											
MSTS-20C			1.2	1.7	1.7	1.7								
MSTS-25C			0.7	0.7	0.9		1.7	3.8						
MSTS-32C							1.2	2.1	2.7	2.9	5.9			
MSTS-40C							8.7				12	12	14	
MSTS-50C											22	28		
MSTS-63C												28		49

- These are test values based on the conditions of shaft dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **MST-C** **MSTS-C** dimension tables. They are not guaranteed values.
- Slip torque changes with usage conditions. Carry out tests under conditions similar to actual conditions in advance.

MST/MSTS Flexible Couplings - Slit Type

Zero Backlash SUS Stainless steel

Structure

- Set Screw Type ➡ P.xxxx

MST Made of aluminum alloy

MSTS Made of all stainless steel

- Clamping Type ➡ P.xxxx

MST-C Made of aluminum alloy

MSTS-C Made of all stainless steel

Outside diameter ϕ40 - ϕ63

MSTS-C

Outside diameter ϕ12 - ϕ32

- Set Screws + Key Type ➡ P.xxxx

MST-K Made of aluminum alloy

MSTS-K Made of all stainless steel

- Part number specification

MST - 32K - 12-12

Product Code | Size | Bore Diameter

Please refer to dimensional table for part number specification.

- Applicable motors

	MST	MSTS
Servomotor	●	●
Stepping Motor	◎	◎
General-purpose Motor	●	●

◎: Excellent ●: 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. A slit is inserted into a cylindrical material.
- A plate spring formed by a slit 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 ϕ 8 - ϕ 63.

- Application

Transport device / XY stage / Parts feeder

- Material/Finish

RoHS

	MST / MST-C / MST-K	MSTS / MSTS-C / MSTS-K
Main Body	A2017 Anodized*1	SUS303
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)	SUSXM7

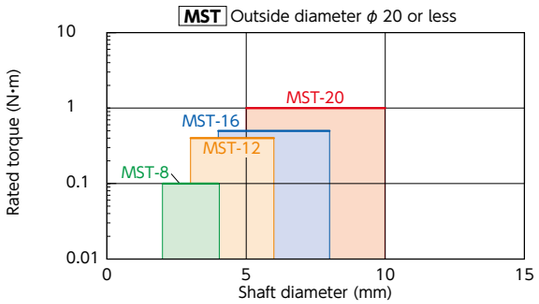
*1: Due to manufacturing process requirements, couplings may have bores and keyways with or without surface treatment. This does not affect the performance of the couplings.

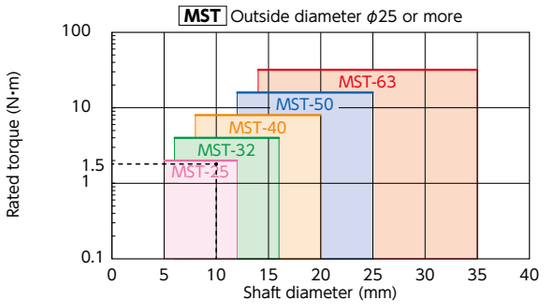
Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge	Please feel free to contact us	Please feel free to contact us

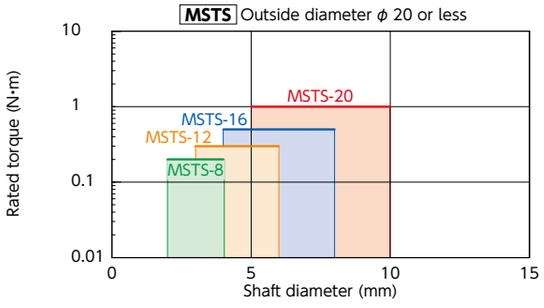
Selection

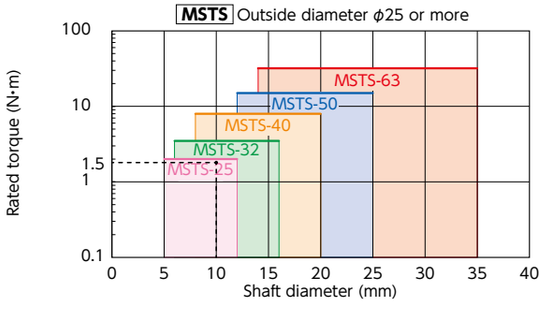
Selection Based on Shaft Diameter and Rated Torque

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









- Selection Example

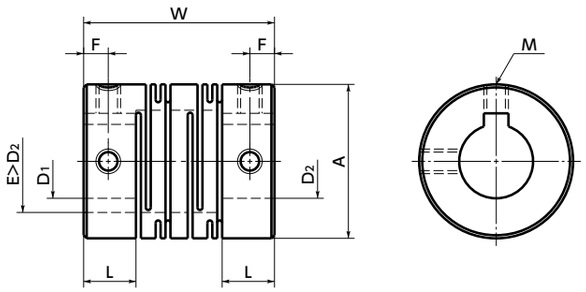
In case of selected parameters of shaft diameter of ϕ 10 and load torque of 1.5 N•m, the selected size for **MST** **MSTS** is **MST-25** **MSTS-25**

GOOD DESIGN

MST-K/MSTS-K Flexible Couplings - Slit Type - Set Screw + Key Type

Zero Backlash SUS Stainless steel

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



Dimensions

Unit : mm

Part Number 1	A	L	W	F	M	Screw Tightening Torque (N・m)
MST-32K	32	11.9	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	11.9	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 2		
MST-32K	12 - 12	14 - 14	
MST-40K	14 - 14	16 - 16	18 - 18
MST-50K	16 - 16	18 - 18	20 - 20
MST-63K	20 - 20	25 - 25	30 - 30
MSTS-32K	12 - 12	14 - 14	
MSTS-40K	14 - 14	16 - 16	18 - 18
MSTS-50K	16 - 16	18 - 18	20 - 20
MSTS-63K	20 - 20	25 - 25	

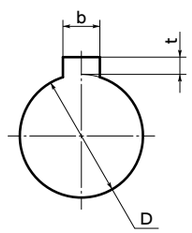
- All products are provided with hex socket set screws.
- Recommended tolerance for shaft diameters is h6 and h7.
- For the shaft insertion amount to the coupling, see Mounting/maintenance.

Performance

Part Number	Max. Bore Diameter (mm)	Rated Torque *1 (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.

- Details of Shaft Hole



Unit : mm

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

- Excerpt from JIS B 1301

- Part number specification

MST-32K - 12-12
1 2

Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Please feel free to contact us	Please feel free to contact us	Please feel free to contact us

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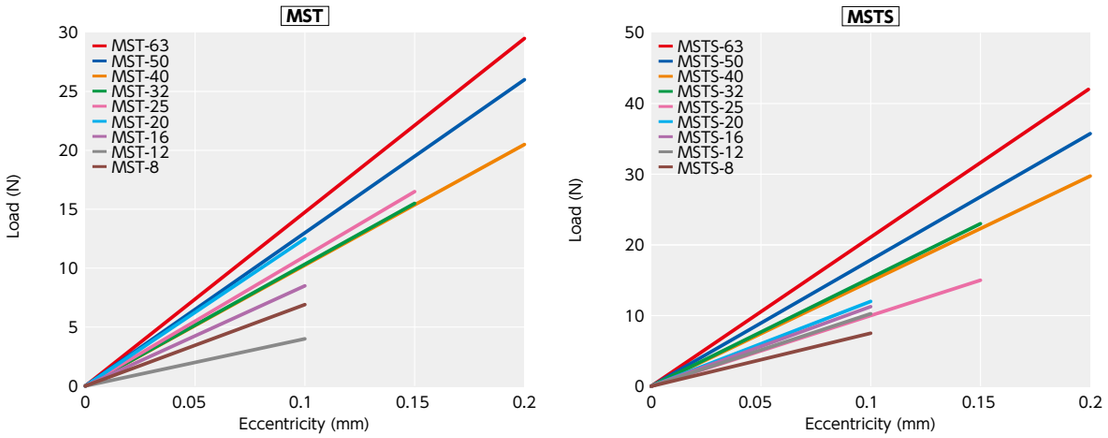
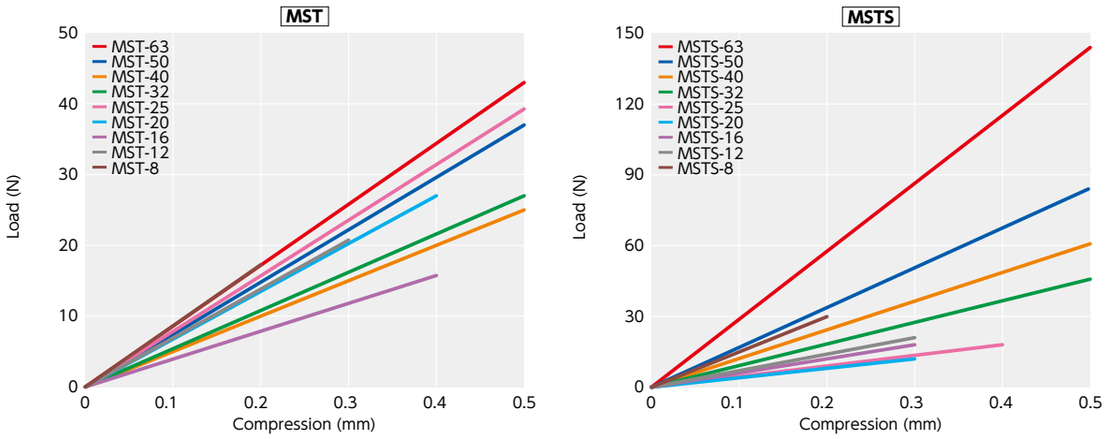
Technical Information

● Eccentric Reaction Force

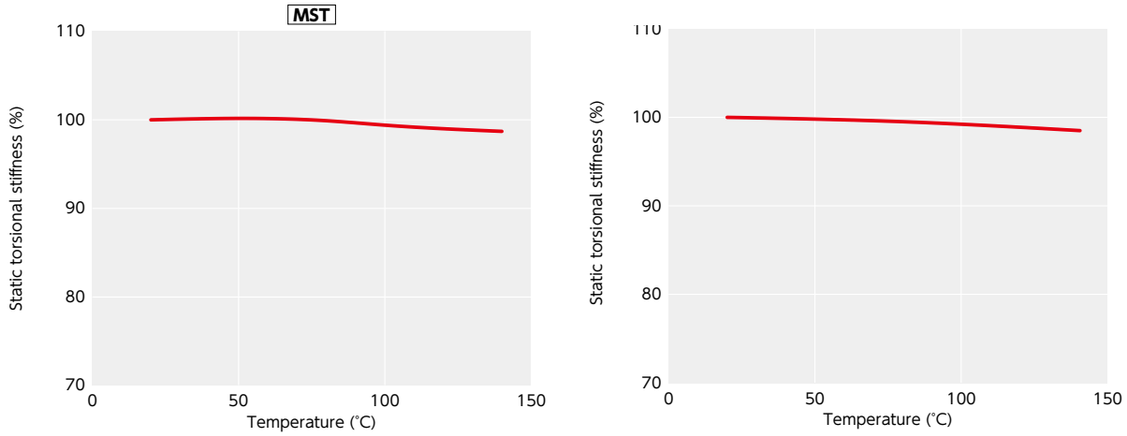


● Thrust Reaction Force



● Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20℃ is 100%.
The change of **MST** and **MSTS** 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.



● Slip Torque

For slip torque of set screw type, see each material under "Slip Torque of Coupling – Set Screw Type" for details.
MST ———Aluminum Alloy Coupling
MSTS ———Stainless Steel Coupling
As in the table below, the clamping types **MST-C** and **MSTS-C** have different slip torque according to the bore diameter. Take care during selection.

Unit : N・m

Part Number	Bore Diameter (mm)													
	4	4.5	5	6	6.35	7	8	9.525	10	11	12	14	15	16
MST-25C			3	3.6										
MST-32C							4.1	7.3						
MST-40C							7.1				14	17	20	24
MST-63C												59		63
MSTS-12C	0.4	0.5												
MSTS-16C		0.7	0.8											
MSTS-20C			1.2	1.7	1.7	1.7								
MSTS-25C			0.7	0.7	0.9		1.7	3.8						
MSTS-32C							1.2	2.1	2.7	2.9	5.9			
MSTS-40C							8.7				12	12	14	
MSTS-50C											22	28		
MSTS-63C												28		49

- These are test values based on the conditions of shaft dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **MST-C** **MSTS-C** dimension tables. They are not guaranteed values.
- Slip torque changes with usage conditions. Carry out tests under conditions similar to actual conditions in advance.

MSX Flexible Couplings - Slit Type

Zero Backlash　High Rigidity

Structure

● Set Screw Type

MSX ➡ P.xxxx

● Clamping Type

MSX-C ➡ P.xxxx

● Applicable motors

	MSX
Servomotor	◎
Stepping Motor	◎
General-purpose Motor	●

◎: Excellent ●: Available

● 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

RoHS

	MSX / MSX-C
Main Body	A7075 Anodized*1
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

*1： Due to manufacturing process requirements, couplings may have bores with or without surface treatment. This does not affect the performance of the couplings.

● Part number specification

MSX - 19C - 5 - 6

Product Code　Size　Bore Diameter

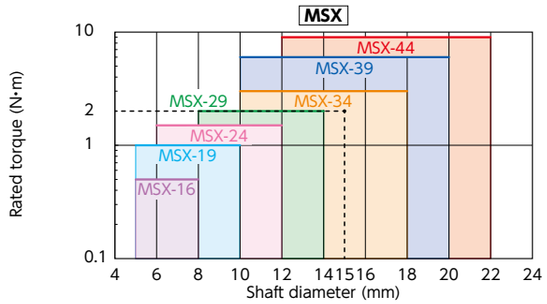
Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge	Please combine with Stainless Steel Screw Alteration Service	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 ϕ15 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

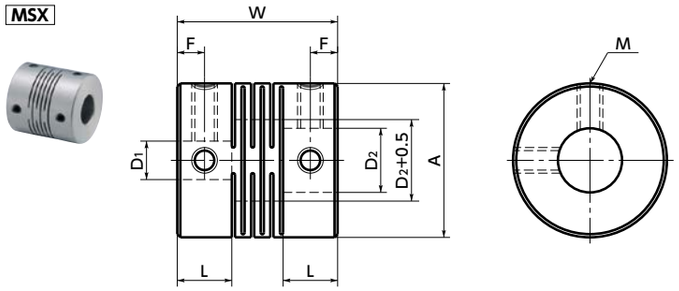
Rated Output (W)	Servomotor Specifications*1			Selection Size	
	Diameter of Motor Shaft (mm)	Rated Torque (N・m)	Instantaneous Max. Torque (N・m)	MSX Set Screw Type	MSX-C Clamping Type
10	5 - 6	0.032	0.096	MSX-16	MSX-16C
20	5 - 6	0.064	0.19	MSX-16	MSX-16C
30	5 - 7	0.096	0.29	MSX-19	MSX-19C
50	6 - 8	0.16	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.

MSX Flexible Couplings - Slit Type - Set Screw Type

Zero Backlash　High Rigidity

MSX



Dimensions

Unit : mm

Part Number 1	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 screws.
- Recommended tolerance for shaft diameters is h6 and h7.
- For the shaft insertion amount to the coupling, see Mounting/maintenance.

Performance

Part Number	Max. Bore Diameter (mm)	Rated Torque *1 (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

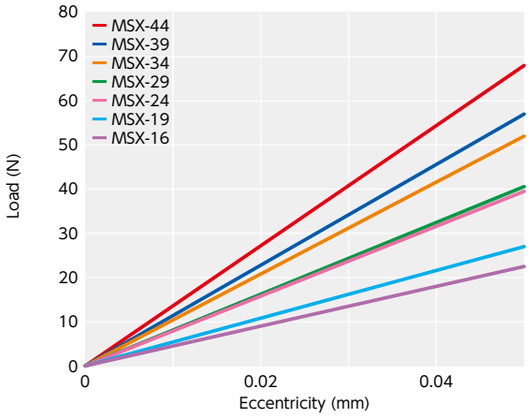
MSX-19 - 5-6
1　2

Additional Keyway at Shaft Hole ➡ P.xxxx　Cleanroom Wash & Packaging ➡ P.xxxx　Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge　Please combine with Stainless Steel Screw Alteration Service　Available / Add'l charge

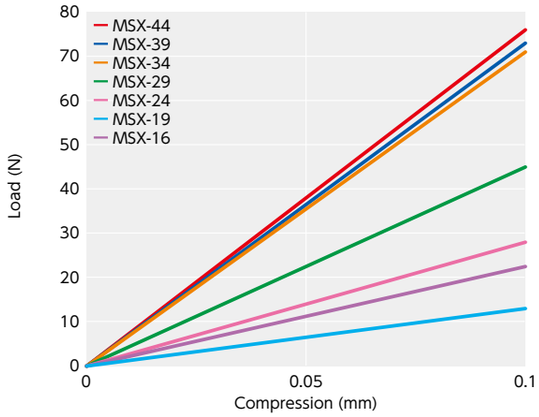
NBK　https://www.nbk1560.com

Technical Information

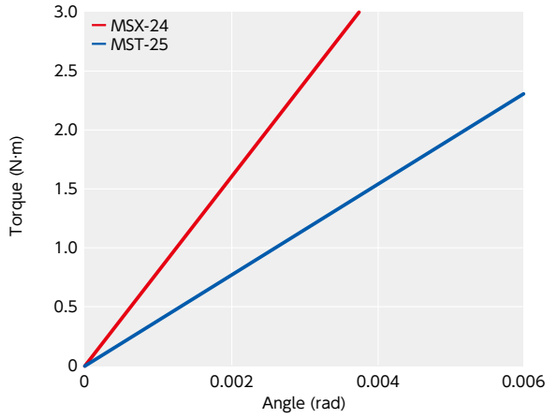
● Eccentric Reaction Force



● Thrust Reaction Force



● Comparison of static torsional stiffness (slit-type)

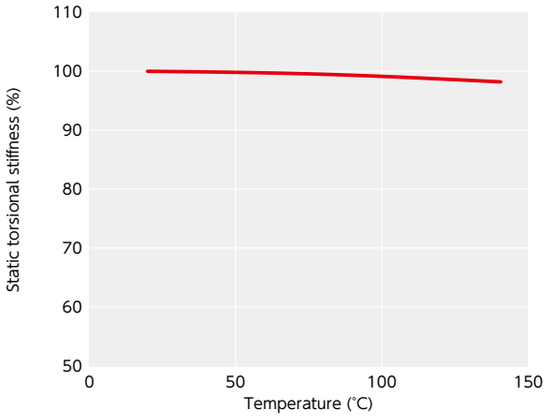


MSX have high static torsional stiffness and responsiveness. Optimal for high-speed and precision positioning for servomotors, etc.

● Slip Torque

For set screw type **MSX**, see Aluminum Alloy Coupling under "Slip Torque of Coupling - Set Screw Type" for details.

● 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 **MSX** 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.

NBK https://www.nbk1560.com

MSX Flexible Couplings - Slit Type

Zero Backlash　High Rigidity

Structure

● Set Screw Type

MSX ➡ P.xxxx

● Clamping Type

MSX-C ➡ P.xxxx

● Applicable motors

	MSX
Servomotor	◎
Stepping Motor	◎
General-purpose Motor	●

◎: Excellent ●: Available

● 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

RoHS

	MSX / MSX-C
Main Body	A7075 Anodized*1
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

*1： Due to manufacturing process requirements, couplings may have bores with or without surface treatment. This does not affect the performance of the couplings.

● Part number specification

MSX - 19C - 5 - 6

Product Code　Size　Bore Diameter

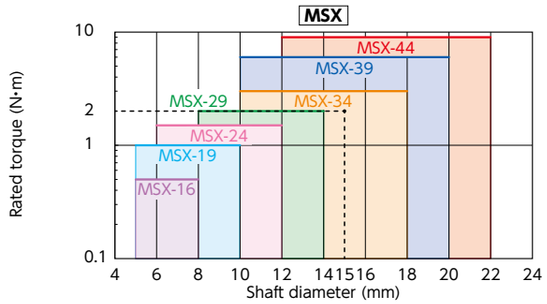
Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge	Please combine with Stainless Steel Screw Alteration Service	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 ϕ15 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

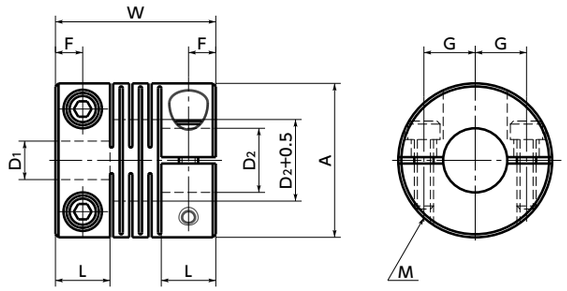
Rated Output (W)	Servomotor Specifications*1			Selection Size	
	Diameter of Motor Shaft (mm)	Rated Torque (N・m)	Instantaneous Max. Torque (N・m)	MSX Set Screw Type	MSX-C Clamping Type
10	5 - 6	0.032	0.096	MSX-16	MSX-16C
20	5 - 6	0.064	0.19	MSX-16	MSX-16C
30	5 - 7	0.096	0.29	MSX-19	MSX-19C
50	6 - 8	0.16	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.

MSX-C Flexible Couplings - Slit Type - Clamping Type

Zero Backlash　High Rigidity

MSX-C Made of aluminum alloy



Dimensions

Unit : mm

Part Number 1	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 tolerance for shaft diameters is h6 and h7.
- For the shaft insertion amount to the coupling, see Mounting/maintenance.

⚠ Precautions for Use

- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.xxxx
- There are sizes where the hex socket head bolt exceeds the outer diameter of the coupling and the rotating diameter is larger than the outer diameter. Please be careful of the interference of coupling. ➡ P.xxxx

Additional Keyway at Shaft Hole ➡ P.xxxx	Cleanroom Wash & Packaging ➡ P.xxxx	Change to Stainless Steel Screw ➡ P.xxxx
Bore additional modification only/ Add'l charge	Please combine with Stainless Steel Screw Alteration Service	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)
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.

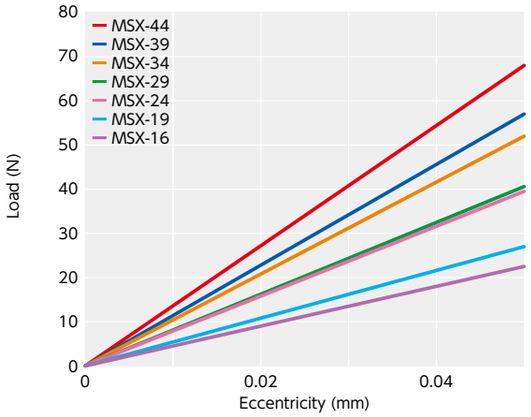
*2 : These are values with max. bore diameter.

- Part number specification

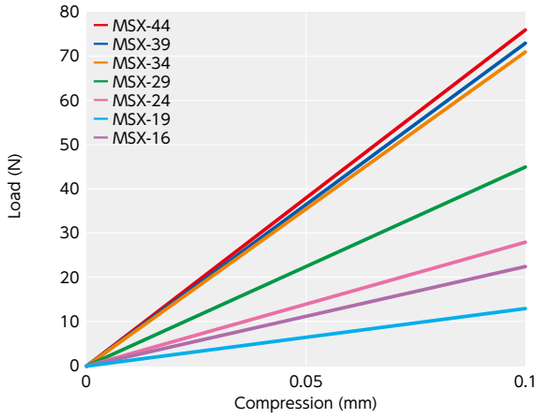
MSX-39C - 14-15
1　2

Technical Information

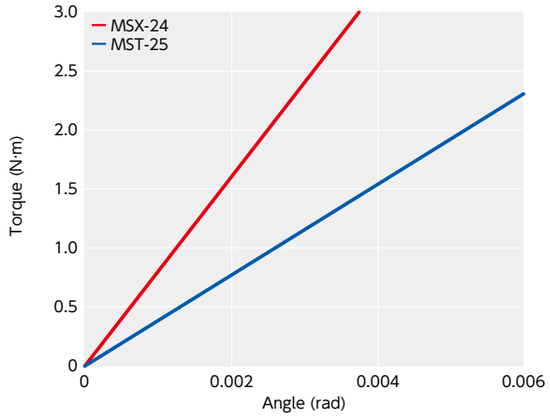
● Eccentric Reaction Force



● Thrust Reaction Force



● Comparison of static torsional stiffness (slit-type)

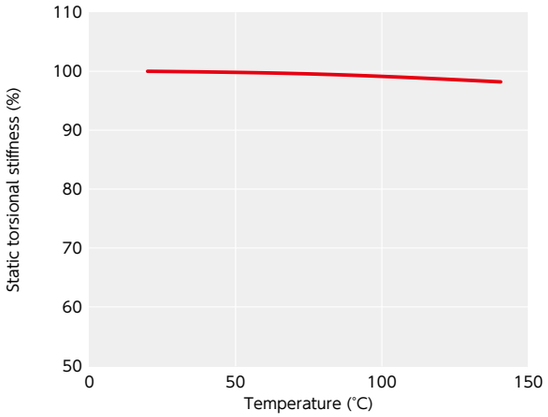


MSX have high static torsional stiffness and responsiveness. Optimal for high-speed and precision positioning for servomotors, etc.

● Slip Torque

For set screw type **MSX**, see Aluminum Alloy Coupling under "Slip Torque of Coupling - Set Screw Type" for details.

● 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 **MSX** 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.

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