

MST Couplicon 1

 For Stepping Motors

Configuration

MST Setscrew Type
Outside Dia. $\phi 8 \sim \phi 63$



MSTS Setscrew Type
Outside Dia. $\phi 8 \sim \phi 63$



MST-C Clamp Type
Outside Dia. $\phi 12 \sim \phi 63$



MSTS-C Clamp Type
Outside Dia. $\phi 12 \sim \phi 32$



* Configuration for **MST-C**
Aluminum alloy clamp coupling
has changed.

MSTS-C Clamp Type
Outside Dia. $\phi 40 \sim \phi 63$



MST-K Keyway Type
Outside Dia. $\phi 32 \sim \phi 63$



MSTS-K Keyway Type
Outside Dia. $\phi 32 \sim \phi 63$



Material	Attachment		
	Setscrew Type	Clamp Type	Keyway Type
Aluminum Alloy	MST - **	MST - ** C	MST - ** K
Stainless Steel	MSTS- **	MSTS- ** C	MSTS- ** K

Material & Finish

Code	MST	MSTS
Body	A2017, Anodized Aluminum Coating	SUS303
Setscrew	SCM435, Black Oxide Coating*	SUSXM7
Cap Screw	SCM435, Black Oxide Coating*	SUSXM7

* Stock screws can be replaced with stainless steel screws.
Please take advantage of our stainless steel screw option.
For more information please refer to page 16.

Features

Merits

Zero Backlash

- Design changes in the aluminum alloy's slit pattern have improved performance
- Recipient of the 1998 Ministry of Economy, Trade and Industry Good Design Award
- One-piece metallic spring coupling
- Absorption of parallel, angular misalignments and shaft end-play by spring action
- High torsional stiffness and response
- Identical clockwise and counter-clockwise rotational characteristics
- Available in aluminum alloy and stainless steel
- Available in a wide range of sizes
Outer diameter: $\phi 8 \sim \phi 63$
- Finished products featuring two different end bore diameters available in stock.
- We produce clean washed, single piece specialty couplings constructed of SUS304 steel for special environment use
Please inquire for price and delivery time

Application

Servomotor	—
Stepping Motor	◎
General-purpose Motor	—
Encoder	—

Features

Zero Backlash	◎
High Torsional Stiffness	●
High Torque	●
Absorption of Misalignment	●
Vibration Absorption	—
Electrical Insulation	—
Corrosion Resistant (All Stainless Steel)	◎

◎ : Excellent ● : Very Good

When Ordering

 Specify product code and both bore diameters.

MST-32K-12×12

Product Code

D₁

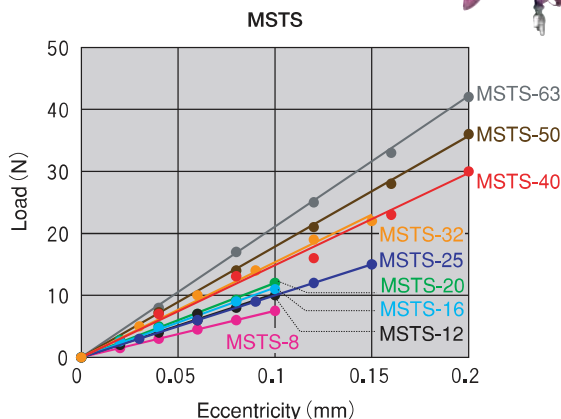
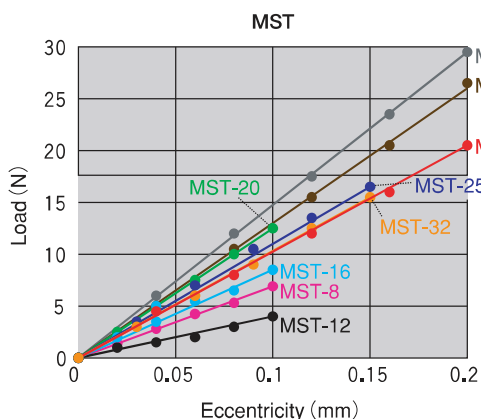
D₂



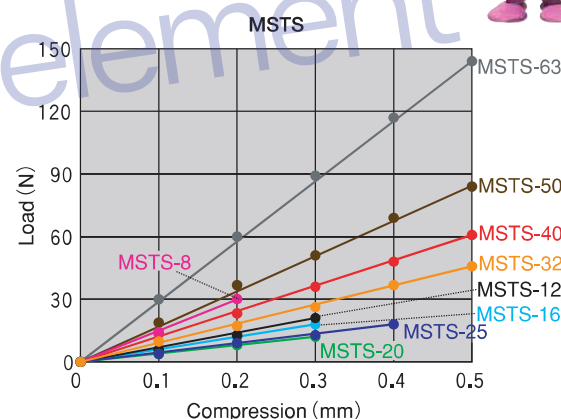
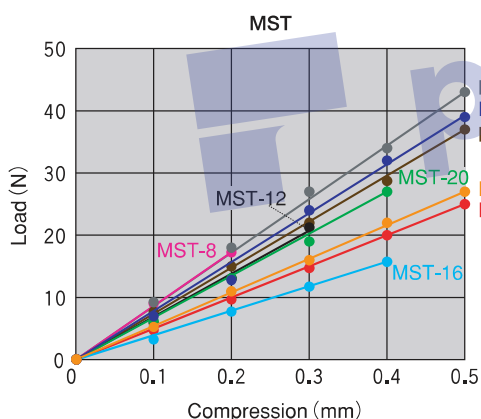
Technical Data



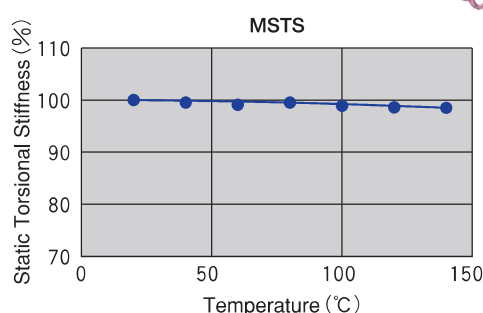
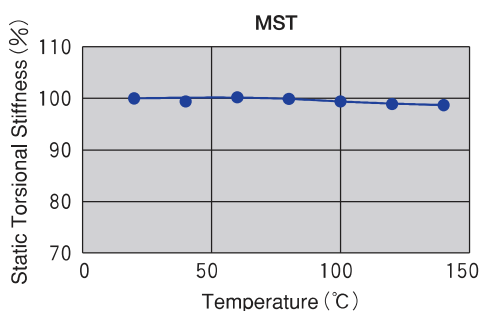
Eccentric Reaction Force



Thrust Reaction Force



Changes in Static Torsional Stiffness Caused by Temperature



100% values represent product performance at 20°C.

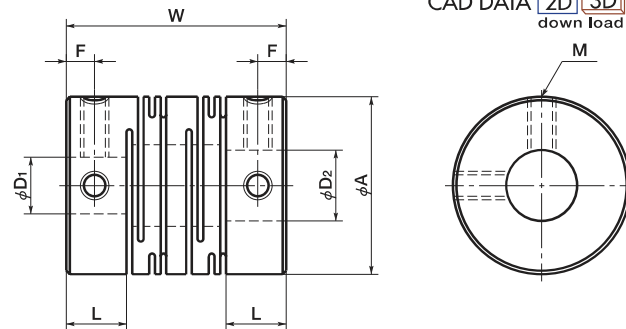
Because **MST** and **MSTS** experience very little change in static torsional stiffness caused by temperature, the effect on response is minimal.

However, please take into consideration that operating at high temperatures may lead to misalignment due to shaft distortion or elongation from thermal expansion.

● The technical data contained in this catalog is for convenient reference, but they are not guaranteed values. More detailed technical data can be downloaded from our homepage.

MST Setscrew Type

Dimensions

**MST** Setscrew Type

unit: mm

Product Code	A	L	W	F	M	Wrench 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

Product Code	Stock Bore Diameters							
	D1×D2 (Tolerance H8)							
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	4 × 5	4 × 6	4.5 × 5	5 × 5	5 × 6	5 × 8	6 × 6
MST -20 MSTS-20	5 × 5	5 × 6	5 × 8	6 × 6	6 × 6.35	6 × 7	6 × 8	6 × 10
MST -25 MSTS-25	5 × 6	6 × 6	6 × 6.35	6 × 8	6 × 10	6.35 × 8	6.35 × 10	8 × 8
MST -32 MSTS-32	6 × 8	6.35 × 8	8 × 8	8 × 10	8 × 12	9.525 × 12		
MST -40 MSTS-40	8 × 9.525	10 × 10	12 × 12	14 × 14	15 × 15	16 × 16	16 × 18 *	18 × 18
MST -50 MSTS-50	12 × 12	14 × 14	15 × 15	16 × 18				
MST -63 MSTS-63	14 × 14							

● All products come with setscrews.

● Hubs with shaft bore diameters of $\phi 4$ or less have one setscrew.

● Recommended tolerance on shaft diameters is h6 and h7.

● Bore and keyway modifications are available on request.

Please take advantage of our bore modification services.

For more information please refer to pages 17~19.

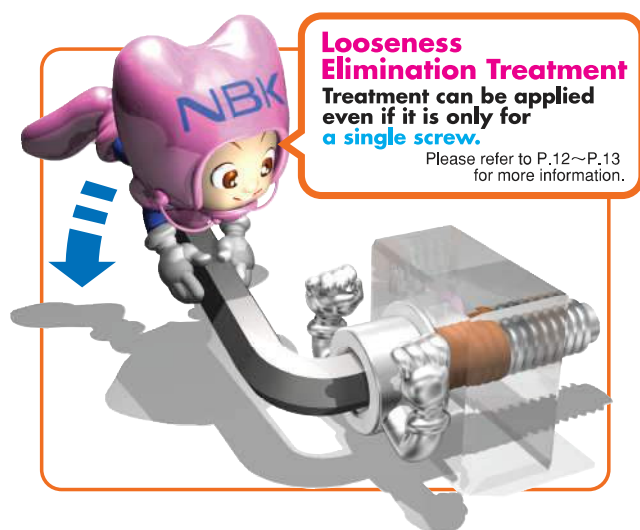
* [MSTS] stainless steel is a standard product.

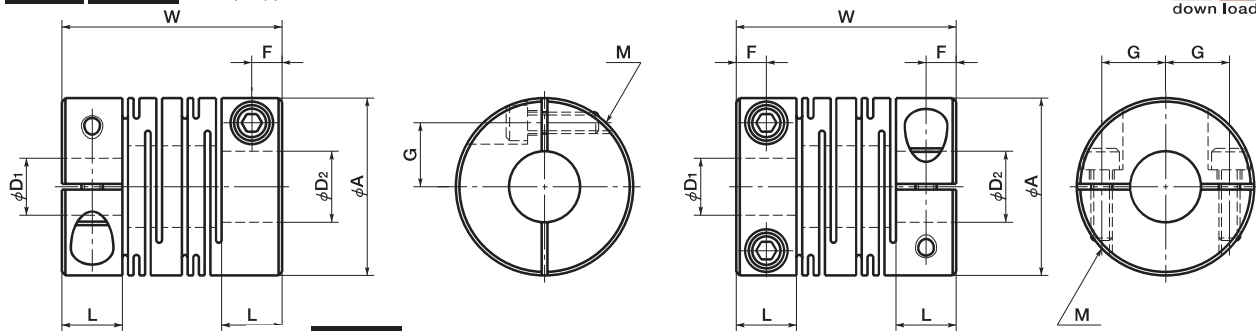
Specifications

MST Setscrew Type

Product Code	Max. Bore (mm)	Rated* Torque (N·m)	Max.* Torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment** of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Errors of Eccentricity (mm)	Errors of Angularity (°)	Errors of Shaft End-Play (mm)	Mass** (g)
MST - 8	4	0.1	0.2	78000	1.2×10^{-8}	25	0.10	2	±0.2	1.4
MST -12	6	0.4	0.8	52000	8.3×10^{-8}	45	0.10	2	±0.3	3.7
MST -16	8	0.5	1	39000	3.3×10^{-7}	80	0.10	2	±0.4	8.1
MST -20	10	1	2	31000	9.0×10^{-7}	170	0.10	2	±0.4	14
MST -25	12	2	4	25000	2.6×10^{-6}	380	0.15	2	±0.5	27
MST -32	16	4	8	19000	9.6×10^{-6}	500	0.15	2	±0.5	60
MST -40	20	8	16	15000	3.2×10^{-5}	700	0.20	2	±0.5	130
MST -50	25	16	32	12000	1.0×10^{-4}	1800	0.20	2	±0.5	260
MST -63	35	32	64	10000	3.2×10^{-4}	3100	0.20	2	±0.5	490
MSTS- 8	4	0.2	0.4	78000	3.1×10^{-8}	50	0.10	2	±0.2	3
MSTS-12	6	0.3	0.6	52000	2.1×10^{-7}	64	0.10	2	±0.3	9.3
MSTS-16	8	0.5	1	39000	8.4×10^{-7}	85	0.10	2	±0.3	21
MSTS-20	10	1	2	31000	2.4×10^{-6}	250	0.10	2	±0.3	38
MSTS-25	12	2	4	25000	6.8×10^{-6}	330	0.15	2	±0.4	71
MSTS-32	16	3.5	7	19000	2.6×10^{-5}	850	0.15	2	±0.5	160
MSTS-40	20	8	16	15000	8.7×10^{-5}	1000	0.20	2	±0.5	350
MSTS-50	25	15	30	12000	2.7×10^{-4}	1400	0.20	2	±0.5	700
MSTS-63	35	35	70	10000	8.4×10^{-4}	1800	0.20	2	±0.5	1300

* Adjustment of rated and maximum torque specifications for load fluctuations is not required. For more detailed information, please refer to For Better Drive on page 34.
 ** Based on the maximum shaft bores.



MST-C **MSTS-C** Clamp TypeCAD DATA [2D](#) [3D](#)
down load**Dimensions****MSTS-C** Outside Dia. $\phi 12 \sim \phi 32$ **MST-C** Outside Dia. $\phi 12 \sim \phi 63$ **MSTS-C** Outside Dia. $\phi 40 \sim \phi 63$ **MST-C** **MSTS-C** Clamp Type

unit:mm

Product Code	A	L	W	F	G	M	Wrench 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

Product Code	Stock Bore Diameters							
	D1XD2							
MST -12C	4 × 4	4 × 5	4.5 × 5	5 × 5				
MSTS-12C								
MST -16C	4.5 × 5	4.5 × 6	5 × 5	5 × 6	6 × 6			
MSTS-16C								
MST -20C	5 × 6	5 × 6.35	5 × 7	5 × 8	6 × 6	6 × 6.35	6 × 7	6 × 8
MSTS-20C	6.35 × 8	8 × 8						
MST -25C	5 × 6	6 × 6	6 × 6.35	6 × 8	6 × 10	6.35 × 8	6.35 × 10	8 × 8
MSTS-25C	8 × 9.525	8 × 10	9.525 × 10	10 × 10				
MST -32C	8 × 8	8 × 9.525	8 × 10	8 × 12	9.525 × 10	9.525 × 12	10 × 10	10 × 11
MSTS-32C	10 × 12	10 × 14	12 × 12	12 × 14				
MST -40C	8 × 8	8 × 10	10 × 10	12 × 12	12 × 14	14 × 14	14 × 16	15 × 16
MSTS-40C	16 × 16							
MST -50C	12 × 14	14 × 14	15 × 15	16 × 16	18 × 18			
MSTS-50C								
MST -63C	14 × 14	16 × 16	18 × 18					
MSTS-63C								

- All products come with cap screws.
- Recommended tolerance on shaft diameters is h6 and h7.
- Bore and keyway modifications are available on request. Please take advantage of our bore modification services. For more information please refer to pages 17~19.

Specifications

MST-C | MSTS-C Clamp Type

Product Code	Max. Bore (mm)	Rated* Torque (N·m)	Max.* Torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment** of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Errors of Eccentricity (mm)	Errors of Angularity (°)	Errors of Shaft End-Play (mm)	Mass** (g)
MST -12C	5	0.4	0.8	52000	7.8×10^{-8}	45	0.10	2	±0.3	3.6
MST -16C	6	0.5	1	39000	3.4×10^{-7}	80	0.10	2	±0.4	9.2
MST -20C	8	1	2	31000	9.1×10^{-7}	170	0.10	2	±0.4	16
MST -25C	10	2	4	25000	2.6×10^{-6}	380	0.15	2	±0.5	28
MST -32C	14	4	8	19000	9.7×10^{-6}	500	0.15	2	±0.5	64
MST -40C	18	8	16	15000	3.3×10^{-5}	700	0.20	2	±0.5	140
MST -50C	22	16	32	12000	1.0×10^{-4}	1800	0.20	2	±0.5	270
MST -63C	30	32	64	10000	3.2×10^{-4}	3100	0.20	2	±0.5	530
MSTS-12C	5	0.3	0.6	52000	2.2×10^{-7}	64	0.10	2	±0.2	10
MSTS-16C	6	0.5	1	39000	9.0×10^{-7}	85	0.10	2	±0.3	25
MSTS-20C	8	1	2	31000	2.5×10^{-6}	250	0.10	2	±0.3	43
MSTS-25C	10	2	4	25000	7.1×10^{-6}	330	0.15	2	±0.4	78
MSTS-32C	14	3.5	7	19000	2.7×10^{-5}	850	0.15	2	±0.5	170
MSTS-40C	18	8	16	15000	9.0×10^{-5}	1000	0.20	2	±0.5	370
MSTS-50C	22	15	30	12000	2.8×10^{-4}	1400	0.20	2	±0.5	750
MSTS-63C	30	35	70	10000	8.8×10^{-4}	1800	0.20	2	±0.5	1400

* Adjustment of rated and maximum torque specifications for load fluctuations is not required. For more detailed information, please refer to For Better Drive on page 34.
 ** Based on the maximum shaft bores.

Slip Torque

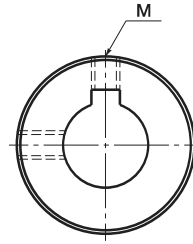
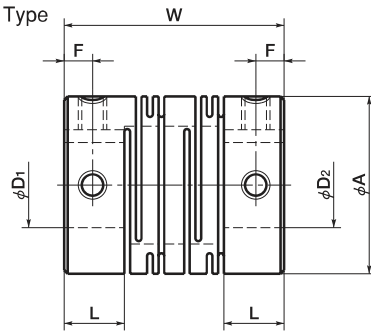
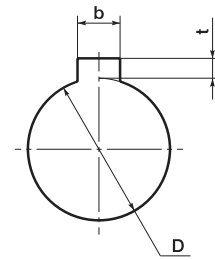
Please be aware that for the bore sizes shown in the table below, the slip torque is smaller than MST-C and MSTS-C's maximum torque.



unit: N·m

Product Code	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	—	—	—	14.3	17.8	20.3	24.4
MST -63C	—	—	—	—	—	—	—	—	—	—	—	59.8	—	63.5
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	—	—	—	12.3	12.3	14	—
MSTS-50C	—	—	—	—	—	—	—	—	—	—	22.2	28.5	—	—
MSTS-63C	—	—	—	—	—	—	—	—	—	—	—	28.8	—	49.5

* Testing performed with a permissible dimensional deviation of h7, hardness of 34~40 HRC and wrench torque shown on page 68.

MST-K MSTS-K Keyway TypeCAD DATA [2D](#) [3D](#)
down load

Dimensions

MST-K MSTS-K Keyway Type

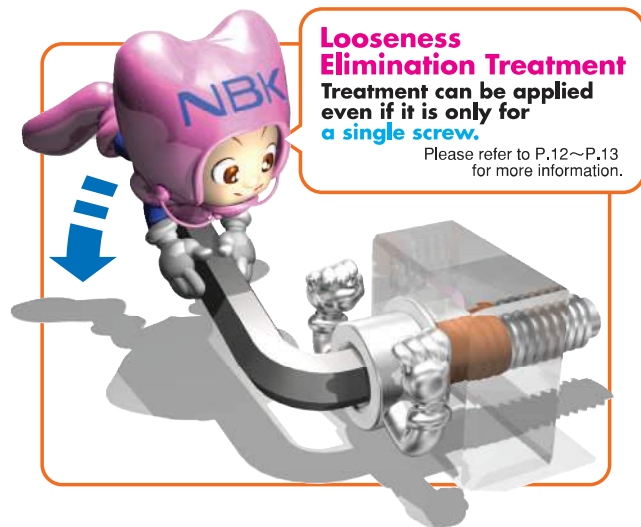
unit:mm

Product Code		A	L	W	F	M	Wrench Torque (N·m)	Stock Bore Diameters		
								D1×D2 (Tolerance H8)		
MST -32K		32	12	41	6	M4	1.7	12×12	14×14	
MST -40K		40	17	56	8.5	M5	4	14×14	16×16	18×18
MST -50K		50	21	71	10.5	M6	7	16×16	18×18	20×20
MST -63K		63	26	90	13	M8	15	20×20	25×25	30×30
MSTS-32K		32	12	41	6	M4	1.7	12×12	14×14	
MSTS-40K		40	17	56	8.5	M5	4	14×14	16×16	18×18
MSTS-50K		50	21	71	10.5	M6	7	16×16	18×18	20×20
MSTS-63K		63	26	90	13	M8	15	20×20	25×25	

- All products come with set screws.
- Recommended tolerance on shaft diameters is h6 and h7.
- Bore and keyway modifications are available on request. Please take advantage of our bore modification services. For more information please refer to pages 17~19.

unit:mm

Stock Bore Diameters D	Keyways				Keys
	b		t		b×h
	Basic Size	Tolerance (JS9)	Basic Size	Tolerance	
12	4	±0.0150	1.8	+0.1 0	4×4
14•16	5		2.3		5×5
18•20	6		2.8		6×6
25•30	8	±0.0180	3.3	+0.2 0	8×7



Specifications

MST-K MSTS-K Keyway Type

Product Code	Max. Bore (mm)	Rated* Torque (N·m)	Max.* Torque (N·m)	Max. Rotational Frequency (min ⁻¹)	Moment** of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Errors of Eccentricity (mm)	Errors of Angularity (°)	Errors of Shaft End-Play (mm)	Mass** (g)
MST -32K	14	4	8	19000	9.6×10^{-6}	500	0.15	2	±0.5	59
MST -40K	18	8	16	15000	3.2×10^{-5}	700	0.20	2	±0.5	130
MST -50K	20	16	32	12000	1.0×10^{-4}	1800	0.20	2	±0.5	270
MST -63K	30	32	64	10000	3.2×10^{-4}	3100	0.20	2	±0.5	490
MSTS-32K	14	3.5	7	19000	2.6×10^{-5}	850	0.15	2	±0.5	160
MSTS-40K	18	8	16	15000	8.6×10^{-5}	1000	0.20	2	±0.5	340
MSTS-50K	20	15	30	12000	2.8×10^{-4}	1400	0.20	2	±0.5	730
MSTS-63K	30	35	70	10000	8.5×10^{-4}	1800	0.20	2	±0.5	1300

* Adjustment of rated and maximum torque specifications for load fluctuations is not required. For more detailed information, please refer to For Better Drive on page 34.
 * * Based on the maximum shaft bores.