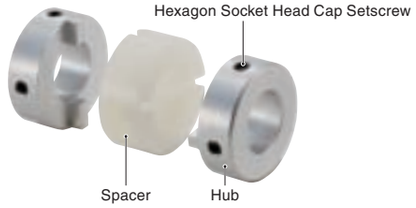
MOR NEW

Selection Tool CAD Download High Torque Vibration Absorption Large Allowable Misalignment Small Eccentric Reaction Force Electrical Insulation

Couplicon®

Structure

MOR Setscrew Type
Outside Diameter ϕ6 - ϕ68



MOR-C Clamping Type
Outside Diameter ϕ12 - ϕ68

MOR-K Key Type
Outside Diameter ϕ15 - ϕ68

MOR-CK Clamping + Key Type
Outside Diameter ϕ15 - ϕ68

Material / Finish

Environmental Adaptability

	MOR/MOR-C/MOR-K/MOR-CK
Hub	A2017 Alumite Treatment
Spacer	Polyacetal
Hexagon Socket Head Cap Setscrew	SCM435 Ferrosoferric Oxide Film (Black)
Hexagon Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

Characteristics

● Applicable Motors

	MOR/MOR-C/MOR-K/MOR-CK
Servomotor	–
Stepping Motor	●
General-Purpose Motor	◎

◎: Excellent ●: Very Good

● Property

	MOR/MOR-C/MOR-K/MOR-CK
Zero Backlash	–
High Torque	◎
Vibration Absorption	●
Allowable Misalignment	◎
Small Eccentric Reaction Force	◎
Electrical Insulation	◎
Allowable Operating Temperature	−20°C - 80°C

◎: Excellent ●: Very Good

- Oldham type flexible coupling.
- Slipping of hubs and a spacer allows large latetal 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

● For Ordering

MOR-20-6×12
Part Number D_1 D_2

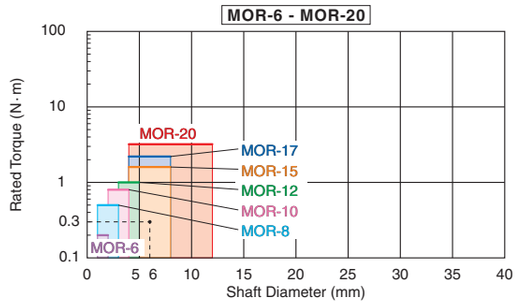
Select bore diameters of both sides from the standard bore diameter.
➡pages 32, 34, 36, 38

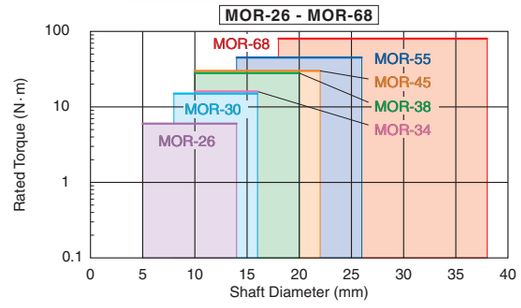
Selection

● **Selection based on performance** Selection Tool

Please use a selection tool on our website (www.nbk1560.com).

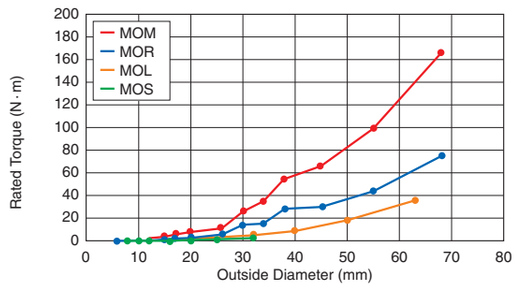
● **Selection based on shaft diameter and rated torque**





● Selection Example
When under the condition of shaft diameter: ϕ6 and load torque: 0.3N·m, the selection size of **MOR** is **MOR-15**.

● **Comparison of rated torque**



MOR's torque has become higher as compared with the conventional resin spacer's oldham type coupling **MOL** **MOS**.

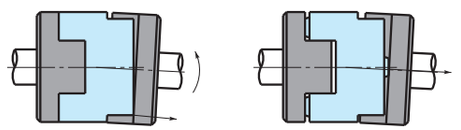
MOL

MOS

Oldham type couplings with a metal spacer **MOM** are available.➡ p.40

MOM

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



(Without projection)

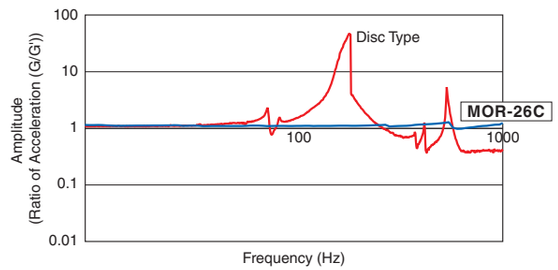
MOR
(With projection)

In the oldham type coupling whose spacer has no projection, the spacer and hubs interfere with each other near outside diameter, so that the allowable angular is small (1° - 1.5°) and that the bending moment arises on the shaft. NBK's oldham type coupling easily allows the angular since the projection serves as support. Bending moment does not arise. Therefore, the allowable angular is large (3°) and the burden on the shaft is reduced.

MOR

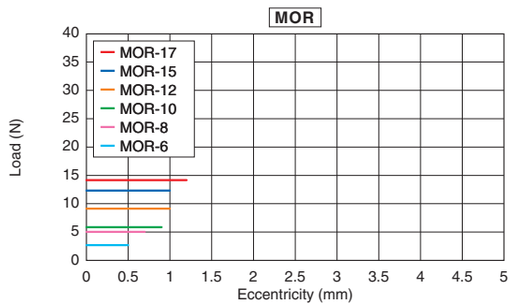
Technical Information

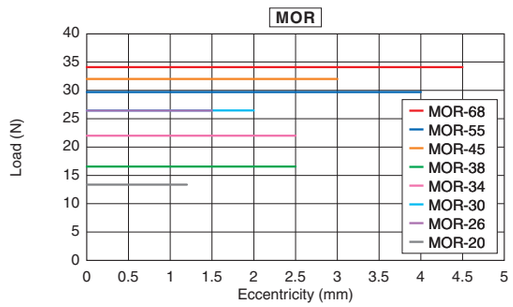
● Amplitude under natural frequency



MOR is excellent in vibration absorption since the amplitude under natural frequency is small.

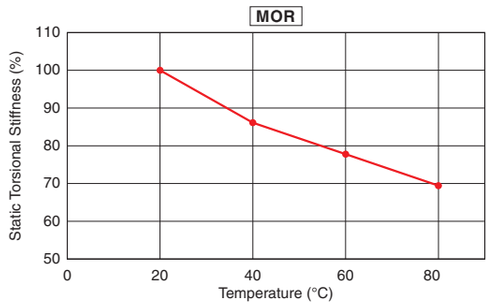
● Eccentric Reaction Force





These are initial slipping load 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 rigidity 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 of the spacer (Polyacetal)

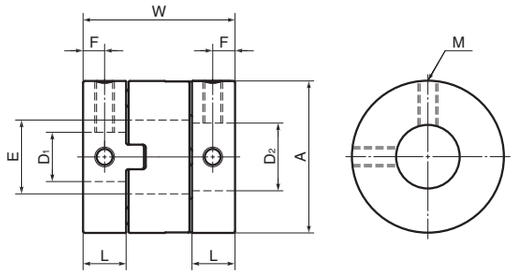
	Test Method	Unit	Polyacetal
Density	ISO 1183	g/cm^3	1.36
Water Absorption (23°C, dipped for 24hr)	ISO 62	%	0.7
Tensile Strength	ISO 527-1, 2	N/mm^2	52
Bending Strength	ISO 178	N/mm^2	72
Charpy Impact Strength (With Notch)	ISO 179/1eA	kJ/m^2	5.9
Deflection Temperature Under Load (1.8MPa)	ISO 75-1, 2	°C	85
Insulation Breakdown Strength (3mmt)	IEC 60243-1	kV/mm	20
Volume Resistivity	IEC60093	Ω · cm	1×10^{14}
Combustibility	UL94	–	HB

● Chemical resistance of the spacer (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	Minor effect

• The data described in this catalog are just for your reference and are not guaranteed values.

MOR Setscrew Type



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	1.25	M2	0.3
MOR-8	8	2.5	9.6	3.1	1.25	M2	0.3
MOR-10	10	2.85	10.2	4.1	1.5	M2	0.3
MOR-12	12	3.85	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	5.75	21.4	12.2	2.9	M4	1.7
MOR-26	26	7.3	25.6	14.2	3.65	M4	1.7
MOR-30	30	10	32.5	16.2	5	M4	1.7
MOR-34	34	11.1	34	16.2	5.55	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	9.35	M8	15
MOR-68	68	24	77	38.5	12	M10	30

Part Number	Standard Bore Diameter D_1 / D_2 (Dimensional Allowance H8)																					
	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 hexagon socket head cap setscrew.
- In a case where the bore diameter is ϕ4 or less, the setscrew is used only in one place.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with combination of setscrew type and clamping type or other type is available upon request.
- Additional modification for bore and keyway can be performed.

Performance

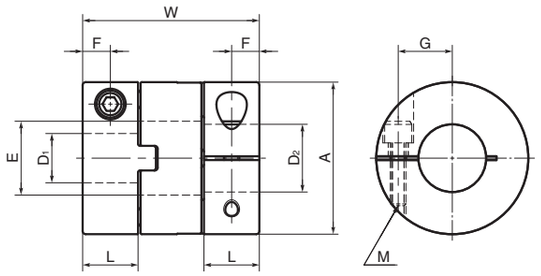
Part Number	Max. Bore Diameter (mm)	Rated Torque * (N·m)	Max. Torque * (N·m)	Max. Rotational Frequency (min^{-1})	Moment of Inertia ** ($kg·m^2$)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Weight ** (g)
MOR-6	2	0.2	0.4	100000	$2.2×10^{-9}$	5	0.5	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	1.0	3	3
MOR-15	8	1.6	3.2	42000	$1.4×10^{-7}$	80	1.0	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	2.0	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	3.0	3	110
MOR-55	26	45	90	11000	$1.0×10^{-4}$	4100	4.0	3	230
MOR-68	38	80	160	9000	$3.7×10^{-4}$	6400	4.5	3	430

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

** These are values with maximum bore diameter.

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 - 80°C	0.55

MOR-C Clamping Type



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	3.65	6	M2.5	1
MOR-20C	20	8.75	27.4	12.2	4.38	7.5	M2.5	1
MOR-26C	26	9.7	30.4	14.2	4.85	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	5.55	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	9.35	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 hexagon socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with combination of clamping type and setscrew type or other type is available upon request.
- Additional modification for bore and keyway can be performed.

Performance

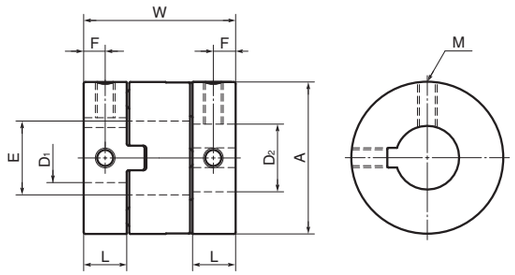
Part Number	Max. Bore Diameter (mm)	Rated Torque * (N·m)	Max. Torque * (N·m)	Max. Rotational Frequency (min^{-1})	Moment of Inertia ** ($kg·m^2$)	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Weight ** (g)
MOR-12C	5	1	2	52000	$6.6×10^{-8}$	60	1.0	3	3
MOR-15C	6	1.6	3.2	42000	$1.7×10^{-7}$	80	1.0	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	2.0	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	3.0	3	110
MOR-55C	25	45	90	11000	$1.0×10^{-4}$	4100	4.0	3	230
MOR-68C	35	80	160	9000	$3.3×10^{-4}$	6400	4.5	3	440

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

** These are values with maximum bore diameter.

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 - 80°C	0.55

MOR-K Key Type



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	5.75	21.4	12.2	2.9	M4	1.7
MOR-26K	26	7.3	25.6	14.2	3.65	M4	1.7
MOR-30K	30	10	32.5	16.2	5	M4	1.7
MOR-34K	34	11.1	34	16.2	5.55	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	9.35	M8	15
MOR-68K	68	24	77	38.5	12	M10	30

Part Number	Standard Bore Diameter D_1 / D_2 (Dimensional Allowance H8)														
	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 hexagon socket head cap setscrew.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with combination of key type and clamping type or other type is available upon request.
- Additional modification for bore and keyway can be performed.

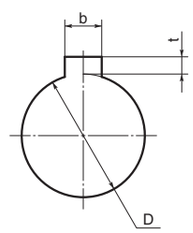
Performance

Part Number	Max. Bore Diameter (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)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Weight ** (g)
MOR-15K	8	1.6	3.2	42000	$1.4×10^{-7}$	80	1.0	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	2.0	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	3.0	3	110
MOR-55K	26	45	90	11000	$1.0×10^{-4}$	4100	4.0	3	230
MOR-68K	38	80	160	9000	$3.3×10^{-4}$	6400	4.5	3	430

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

** These are values with maximum bore diameter.

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 - 80°C	0.55

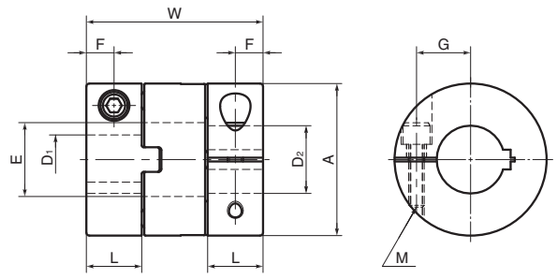


Details of Bore

Unit: mm

Standard Bore Diameter D	Keyway				Key
	b		t		Nominal Dimension b × h
	Basic Dimension	Allowance (JS9)	Basic 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

MOR-CK Clamping + Key Type



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	3.65	6	M2.5	1
MOR-20CK	20	8.75	27.4	12.2	4.38	7.5	M2.5	1
MOR-26CK	26	9.7	30.4	14.2	4.85	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	5.55	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	9.35	20	M6	8
MOR-68CK	68	24	77	38.5	12	26	M8	16

Part Number	Standard Bore Diameter D_1 / D_2													
	6	8	10	12	14	15	16	18	20	22	25	28	30	35
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 hexagon socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- A set of hubs with combination of clamping + key type and clamping type or other type is available upon request.
- Additional modification for bore and keyway can be performed.

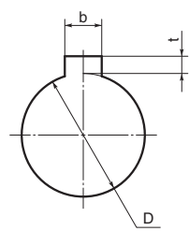
Performance

Part Number	Max. Bore Diameter (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)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Weight ** (g)
MOR-15CK	6	1.6	3.2	42000	$1.8×10^{-7}$	80	1.0	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	2.0	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	3.0	3	110
MOR-55CK	25	45	90	11000	$1.0×10^{-4}$	4100	4.0	3	230
MOR-68CK	35	80	160	9000	$3.3×10^{-4}$	6400	4.5	3	440

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

** These are values with maximum bore diameter.

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 - 80°C	0.55



Details of Bore

Unit: mm

Standard Bore Diameter D	Keyway				Key
	b		t		Nominal Dimension b × h
	Basic Dimension	Allowance (JS9)	Basic 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