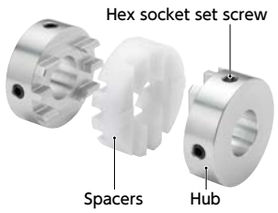
MOT Flexible Couplings - Oldham Type

High torque | Electrical Insulation | High Allowable Misalignment | Small Eccentric Reaction Force

Structure

● Set Screw Type

MOT



● Clamping Type

MOT-C

● Applicable Motors

	MOT
Servomotor	●
Stepping Motor	●
General-purpose Motor	◎

◎: Excellent ●: Available

● Property

	MOT
High Torque	◎
Allowable Misalignment	◎
Small Eccentric Reaction Force	◎
Allowable Operating Temperature	−20℃ to 80℃

◎: Excellent

- Oldham-type flexible couplings compliant with the Japan Machine Accessory Association organizational standards (TES 1403).
- Slippage of hubs and a spacer allows large lateral and angular misalignment to be accepted.
- The eccentric reaction generated by misalignment is small and the burden on the shaft is reduced.
- The simple structure allows the unit to be easily assembled.

● Application

Transport conveyors / Mixers / Pumps

● Material/Finish

RoHS

	MOT / MOT-C
Hub	A2017 Anodized*1
Spacers	Polyacetal
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film (Black)

*1 : With regard to bore surface treatment, process needs may result in a mixture of parts with and without surface treatment. This will not lead to any issues in terms of coupling performance.

● Part Number Specification

MOT-63C-20-25

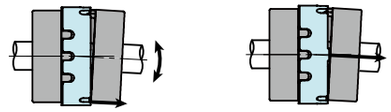
Product Symbol | Size | Bore Diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole	Cleanroom Wash & Packaging	Change to Stainless Steel Screw
Available / Add'l charge	Not Available	Available / Add'l charge

● Spacer's Projection Structure

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



(Without projection)

MOT

(With projection)

For Oldham-type couplings with no spacer projection, the spacer and hubs interfere with each other near the outside diameter, so that the max. angular misalignment is small and bending moment arises on the shaft.
NBK's Oldham-type couplings allow angular misalignment to be easily accepted, as the projection serves as support. Bending moment does not arise. Therefore, the max. angular misalignment is large and the burden on the shaft is reduced.

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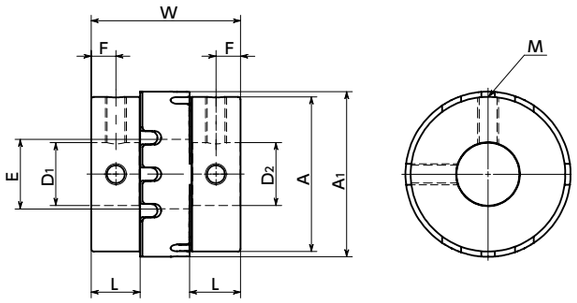
MOT Flexible Couplings - Oldham Type - Set Screw Type

High torque | Electrical Insulation | High Allowable Misalignment | Small Eccentric Reaction Force

MOT



Dimensions

Unit : mm

Part Number 1	A	A1	L	W	E	F	M	Screw Tightening Torque (N・m)
MOT-55	51	55	13.8	46	21	6.9	M6	7
MOT-63	59	63	18.7	57	26.5	9.4	M8	15
MOT-75	73.5	75	24	77	35	12	M10	30

Part Number	Standard Bore Diameter D1・D2 (Dimensional Allowance H8) 2													
	10	12	14	15	16	18	20	22	25	28	30	35	38	40
MOT-55	●	●	●	●	●	●	●	●	●	●				
MOT-63			●	●	●	●	●	●	●	●	●	●		
MOT-75						●	●	●	●	●	●	●	●	●

- All products are provided with hex socket set screws.
- Recommended tolerance for shaft diameters is h6 and h7.
- A set of hubs with set screw type for one side and clamping type for the other side and others are available upon request.
- For the shaft insertion amount to the coupling, see Mounting/maintenance.

Additional Keyway at Shaft Hole	Cleanroom Wash & Packaging	Change to Stainless Steel Screw
Available / Add'l charge	Not Available	Available / Add'l charge

Performance

Part Number	Max. Bore Diameter (mm)	Keyway Additional Modification Max. Bore Diameter (mm)	Rated Torque*1 (N・m)	Max. Torque*1 (N・m)	Max. Rotational Frequency (min^{-1})	Moment of Inertia*2 ($kg・m^2$)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Mass*2 (g)
MOT-55	28	28	30	60	2000	6.9×10^{-5}	3100	3	3	160
MOT-63	35	35	45	90	2000	1.5×10^{-4}	4900	4	3	260
MOT-75	44	38	80	160	2000	4.7×10^{-4}	9800	4.5	3	520

*1 : Correction of rated torque and max. torque due to load fluctuation is not required.
If ambient temperature exceeds 30℃, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of MOT is −20℃ to 80℃.
The shaft's slip torque may be smaller than the coupling's rated torque depending on the shaft bore.

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

- Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
−20℃ to 30℃	1.00
30℃ to 40℃	0.80
40℃ to 60℃	0.70
60℃ to 80℃	0.55

- Part Number Specification

MOT-63 - 20-25 1 Set
1 2

MOT-63 - SPCR Single Spacer

Product Symbol	Outside Diameter (A1 Dimension)		Single Spacer

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Technical Information

● Change in Static Torsional Stiffness Due to Temperature

This is a value under the condition where the static torsional stiffness at 20℃ is 100%.
Changes in the static torsion spring constant within the operating temperature are shown in the graph.
Before using the unit, be aware of the deterioration of responsiveness.

● Spacer's Physical Property (Polyacetal)

	Test Method (ASTM)	Unit	Polyacetal
Dielectric Strength (3mm)	D149	kV/mm	19.0
Surface Resistance Value	D257	Ω	10^{16}
Combustibility (UL)	–	-	HB (0.75mm)

- Indicates the spacer (polyacetal) material properties and does not guarantee product performance.
- The combustibility is a value based on similar estimates from evaluation test results with reference to material information and UL standards.
- As properties change with usage conditions, carry out tests under performance conditions similar to actual conditions in advance.

● Spacer's Chemical Resistance (Polyacetal)

	Effect
Gasoline	△
Lubricant Oil	△
Benzine	×
Ethyl Alcohol	○
Acetone	△
Benzene	△
Toluene	△
Xylene	○

○: Almost no effect △: Available depending on conditions ×: Not available

- The data above does not indicate stress cracking resistance properties. Take sufficient precautions during usage under external stress.
- This is test data with a specimen used at room temperature (23℃). Chemical resistance changes with performance conditions. Always carry out tests under performance conditions similar to actual conditions in advance.

● Slip Torque

For set screw type **MOT**, see aluminum alloy couplings in “Couplings - Set Screw Type Slip Torque”.
As in the table below, the clamping type **MOT-C** has different slip torque according to the bore diameter.
Take care during selection.

Unit : N・m

Part Number	Bore Diameter												
	12	14	15	16	18	20	22	25	28	30	35	38	40
MOT-55C	14	16	18	19	22	25	27	32					
MOT-63C				37	42	47	52	60	67	72			
MOT-75C						87	96	109	122	131	154	168	177

- These are test values based on the conditions of shaft dimensional allowance: g6, hardness: 58 HRC or higher, and screw tightening torque of the values described in **MOT-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.

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