

MIC Series Miniature Couplings

FEATURES

- For use with Magtrol TM 301–309 and TMB 303–309 In-Line Torque Transducers, as well as HD, WB and PB Dynamometers
- Torsionally stiff
- Low inertia
- Low weight
- High rotational speed
- Isolate version available (On demand)
- Version with double clamping screws (On demand)

DESCRIPTION

MIC miniature couplings provide the ideal complement to Magtrol's TM/TMB 301–309 Torque Transducers, when they are to be mounted in a drive train. They can also be used with any Magtrol Hysteresis (HD), Eddy-Current (WB) or Powder Brake (PB) Dynamometer.

The couplings consist of one (MIC-6) or two (MIC-5) disc packs, two clamping hubs and a spacer. They are both torsionally stiff and flexible in order to compensate for axial and angular misalignment when connecting two shaft ends. The MIC-5 double-element coupling also provides compensation for radial misalignment.



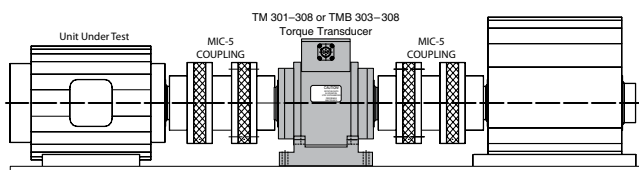
MIC-5 Miniature Coupling

On demand, MIC coupling series are available in isolated version, suitable for temperature up to 100°C (125°C survival temperature, short term)

APPLICATIONS

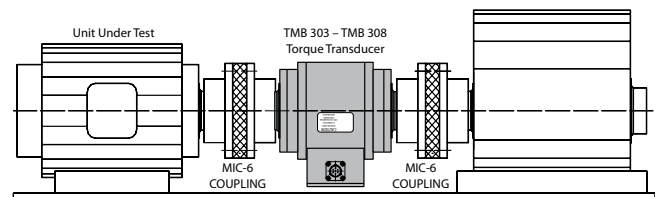
In a drive train installation, double-element miniature couplings are the ideal complement, although single-element couplings can be used for low speed applications in a suspended installation of the torque sensor. The higher the speed of the application, the more care is required in selecting the coupling and assembling (alignment and balancing) the drive train configuration. Your Magtrol sales representative can assist you in choosing the right coupling for your transducer.

SYSTEM CONFIGURATIONS



Supported Installation

Mandatory for high speed applications; uses MIC-5 double-element couplings.



Suspended Installation

For low speed applications only; uses MIC-6 single-element couplings to create a shorter drive train.

RATINGS

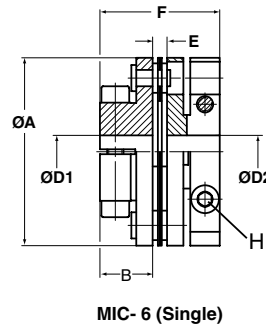
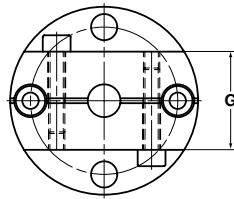
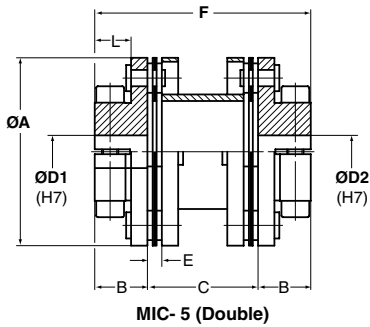
Double-Element: Single-Element:	MIC-5-0039 MIC-6-0039	MIC-5-0156 MIC-6-0156	MIC-5-0617 MIC-6-0617	MIC-5-2470 MIC-6-2470	MIC-5-3620 MIC-6-3620	
Mounting	MIC-5:	fixed mounted				
	MIC-6:	floating shaft				
Torque Transducers	TM 301, 302 TMB 301, 302	TM 301, 302, 303 TMB 303	TM 304, 305 TMB 304, 305	(1)TM 306, 307, 308 TMB 306, 307, 308	(1) TM 308, 309 TMB 308, 309	
Rated Torque	0.39 N·m	1.56 N·m	6.17 N·m	24.7 N·m	36.2 N·m	
Maximum Torque	0.54 N·m	2.19 N·m	8.64 N·m	34.6 N·m	50.7 N·m	
Maximum Speed*	50,000 rpm	50,000 rpm	45,000 rpm	35,000 rpm	30,000 rpm	
Misalignment, Axial	MIC-5:	0.8 mm	0.8 mm	0.8 mm	0.8 mm	
	MIC-6:					
Misalignment, Radial	MIC-5:	0.48 mm	0.49 mm	0.41 mm	0.36 mm	
	MIC-6:					
Misalignment, Angular	MIC-5:	2°	1.5°	1°	0.7°	
	MIC-6:					
Torsional Spring Rate	MIC-6:	0.389 × 10 ³ N·m/rad	2.598 × 10 ³ N·m/rad	3.976 × 10 ³ N·m/rad	10.35 × 10 ³ N·m/rad	16.17 × 10 ³ N·m/rad
Moment of Inertia**	MIC-5:	2.33 × 10 ⁻⁶ kg·m ²	14.01 × 10 ⁻⁶ kg·m ²	37.99 × 10 ⁻⁶ kg·m ²	104.28 × 10 ⁻⁶ kg·m ²	203.55 × 10 ⁻⁶ kg·m ²
	MIC-6:	1.83 × 10 ⁻⁶ kg·m ²	11.10 × 10 ⁻⁶ kg·m ²	28.56 × 10 ⁻⁶ kg·m ²	78.61 × 10 ⁻⁶ kg·m ²	159.4 × 10 ⁻⁶ kg·m ²
Balancing Quality*		2.5 Q	2.5 Q	2.5 Q	2.5 Q	2.5 Q

*The specified maximum speed may require specific balancing. By default, Magtrol delivers couplings without balancing.

**The given values refer to the maximum possible D2 bore. All ratings listed are Manufacturer's Specifications.

(1) To avoid slipping on TM308 (20 Nm on Ø10 mm), it is recommended to use special couplings with double clamping screws on each side (please contact factory)

DIMENSIONS



*Special version with double clamping screws
See note (1)*

Model	units	ØA	B ⁽¹⁾	C	ØD1 (H7) ØD2 (H7) min – max	E	F ⁽¹⁾	G	H	Fastening Torque H ⁽²⁾	L ⁽¹⁾	Weight
MIC-5-0039	mm	25.4	9	16	3 – 10	2.2	34	13	M2.5	0.76 N·m	6.6	0.028 kg
	in	1	0.35	0.63	0.12 – 0.39	0.09	1.34	0.52			0.26	0.062 lb
MIC-6-0039	mm	25.4	9	N/A	3 – 10	2.2	20.2	13	M2.5	0.76 N·m	6.6	0.022 kg
	in	1	0.35		0.12 – 0.39	0.09	0.79	0.52			0.26	0.048 lb
MIC-5-0156	mm	35.8	13.2	21.6	4 – 14	2.7	48.0	19	M4	3.05 N·m	10.0	0.077 kg
	in	1.409	0.520	0.850	0.16 – 0.55	0.106	1.890	0.75			0.394	0.170 lb
MIC-6-0156	mm	35.8	13.2	N/A	4 – 14	2.7	29.1	19	M4	3.05 N·m	10.0	0.062 kg
	in	1.409	0.520		0.16 – 0.55	0.106	1.146	0.75			0.394	0.137 lb
MIC-5-0617	mm	44.5	13.4	27.2	6 – 18	3.6	54.0	24	M4	3.05 N·m	9.4	0.133 kg
	in	1.752	0.528	1.071	0.24 – 0.71	0.142	2.126	0.94			0.370	0.293 lb
MIC-6-0617	mm	44.5	13.4	N/A	6 – 18	3.6	30.4	24	M4	3.05 N·m	9.4	0.100 kg
	in	1.752	0.528		0.24 – 0.71	0.142	1.197	0.94			0.37	0.220 lb
MIC-5-2470	mm	57.4	16.1	33.8	8 – 24	4.4	66.0	30	M5	6.05 N·m	11.1	0.260 kg
	in	2.260	0.634	1.331	0.31 – 0.94	0.173	2.598	1.18			0.437	0.573 lb
MIC-6-2470	mm	57.4	16.1	N/A	8 – 24	4.4	36.6	30	M5	6.05 N·m	11.1	0.195 kg
	in	2.260	0.634		0.31 – 0.94	0.173	1.441	1.18			0.437	0.430 lb
MIC-5-3620	mm	64	18	35	7.5 – 28	5	71	34	M6	10.5 N·m	13	0.355 kg
	in	2.519	0.708	1.378	0.29 – 1.10	0.196	2.795	1.338			0.512	0.782 lb
MIC-6-3620	mm	64	18	N/A	7.5 – 28	4.4	41	34	M6	10.5 N·m	13	0.278 kg
	in	2.519	0.708		0.29 – 1.10	0.173	1.614	1.338			0.512	0.613 lb

(1) Model ...-2470 and ...-3620, containing 4 clamping screws, are 10 mm longer at dimensions B and L and 20 mm longer at dimension F.

(2) By small range torque sensors (TM / TMB 301, 302, 303), screw tighten of coupling should be done with caution, in order not to damage measuring section of sensor.

ORDERING INFORMATION

When ordering a coupling, please indicate the shaft diameter of the machines to which the transducer will be coupled. In the part number, H7 indicates the manufacturing tolerance of the coupling.

Example:

Shaft diameter of machine No.1 = 14 mm
Coupling model: MIC-5-0156
Part number: MIC-5-0156-10H7/14H7

Due to the continual development of our products, we reserve the right to modify specifications without forewarning.



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