

Magnetically-Coupled Rotary Drives

In UHV systems, the major concern associated with bellows-sealed rotary drives is their potential to crack and develop leaks during routine operation.

The innovative, patented MagiDrive rotary drive uses the latest magnetic materials technology to couple outer and inner rotating surfaces through a stainless steel vacuum wall. There are no bellows or, for smaller diameter drives, even welds to leak at any time. Each MagiDrive is mounted by ConFlat-style flanges and, in standard form, is bakeable to 250°C.

Using the latest magnetic materials technology, a large number of high flux magnetic fields interlock inner and outer rotating assemblies through a solid stainless steel enclosure. The high density of interlocking fields ensures low magnetic hysteresis and therefore, exceptionally high torsional rigidity.

Larger versions of MagiDrive are available with torque tubes or hollow shafts, instead of the normal solid shaft and with flange mounts at both ends. This leads to the unique feature of "stacking" rotary drives. For

example, if (solid shaft) MD16 is mounted on (hollow shaft) MD35H, the combination has two, independent rotary motion drives. If this combination is then mounted on (hollow shaft) MD64H, there are three independent drives with no cross-talk between the driver magnets.

For special designs and applications contact us.



MagiDrive body	MD10	MD16	MD19	MD25	MD35	MD35H (hollow)	MD64	MD64H (hollow)	MD100
System mounting flange	25.4mm OD (1") CF	34mm OD (1.33") CF	34mm OD (1.33") CF	70mm OD (2.75") CF	70mm OD (2.75") CF	70mm OD (2.75") CF	114mm OD (4.5") CF	114mm OD (4.5") CF	152.4mm OD (6") CF
Rear flange	None	None	None	None	None	34mm OD (1.33") CF	None	Rotatable 70mm OD (2.75") CF	None
Construction	Machined from one-piece 316LN or EFRB								Fab.
Shaft style	Solid	Solid	Solid	Solid	Torque tube	Torque tube	Torque tube	Torque tube	Torque tube
Break-away torque	0.18Nm (0.13lbf)	0.45Nm (0.332lbf)	0.56Nm (0.41lbf)	2.4Nm (1.77lbf)	4.5Nm (3.32lbf)	4.5Nm (3.32lbf)	10Nm (7.38lbf)	10Nm (7.38lbf)	25Nm (18.45lbf)
Maximum no load spin speed (std bearings)	500rpm	1000rpm	1000rpm	500rpm	500rpm	500rpm	500rpm	500rpm	200rpm
Maximum shaft axial thrust	20N (4.5lbf)	66N (15lbf)	66N (15lbf)	100N (22lbf)	200N (44lbf)	200N (44lbf)	400N (88lbf)	400N (88lbf)	400N (88lbf)
Bakeout	250°C	250°C	250°C	250°C	250°C	250°C	250°C	250°C	250°C

* All drives available with stepper or DC motors, either inline or side mounted.

** Pneumatic actuators available for sizes up to MD35.



MD10



MD16



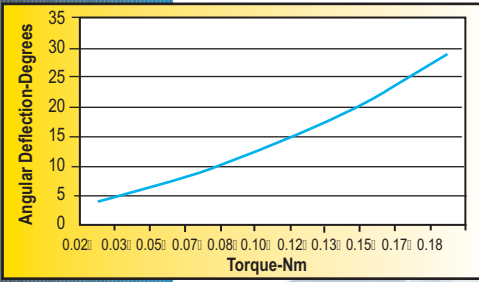
MD35



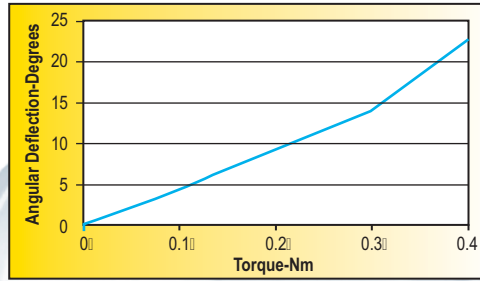
MD64

MagiDrive Reference Sheet

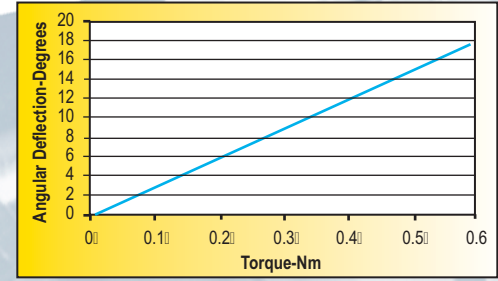
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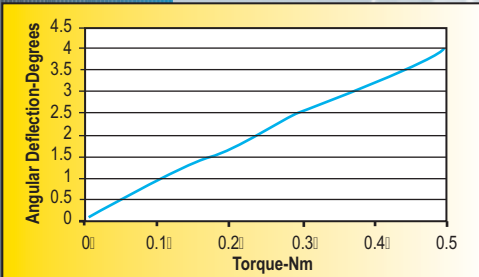
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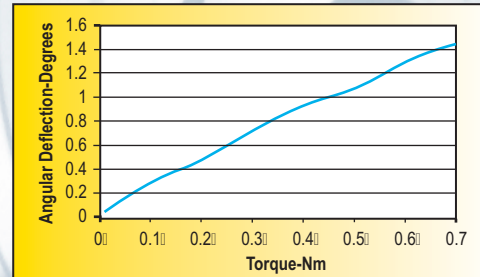
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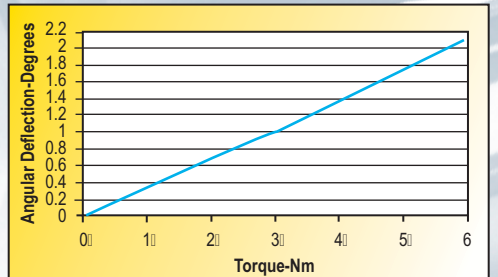
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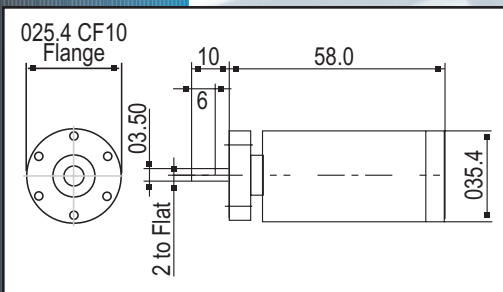
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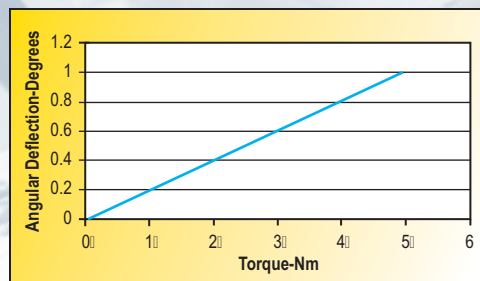
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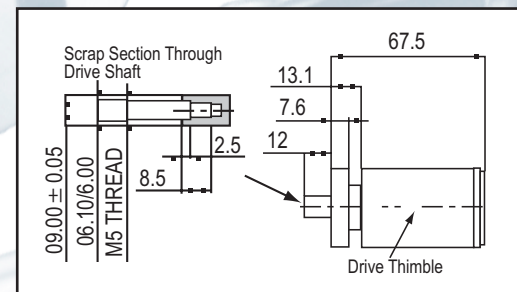
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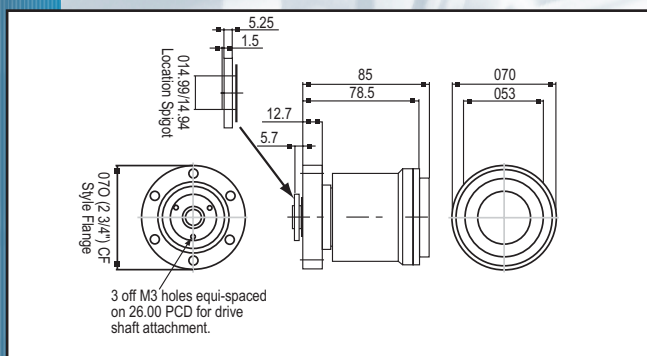
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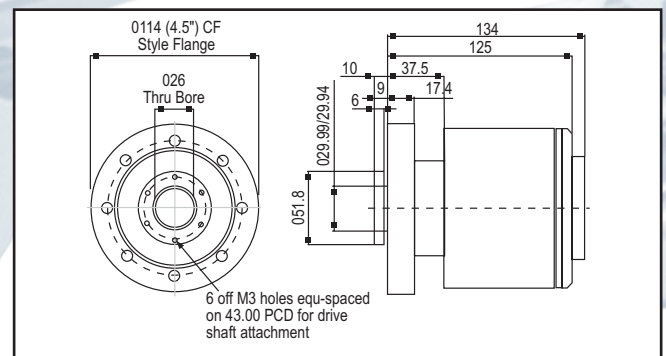
MD16



MD35



MD64



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