Solid MagiDrive Series



MD16N/MD16A Series

CF16, 1.33" OD Flange

The MD16 is the 'work horse' of the MagiDrive series. This standard MD16N drive provides sufficient torque (0.45Nm) for the majority of miniature feedthrough requirements. The MD16A provides the highest torque on the market for a CF16 flange (1.8Nm) and is ideal for shutter applications.

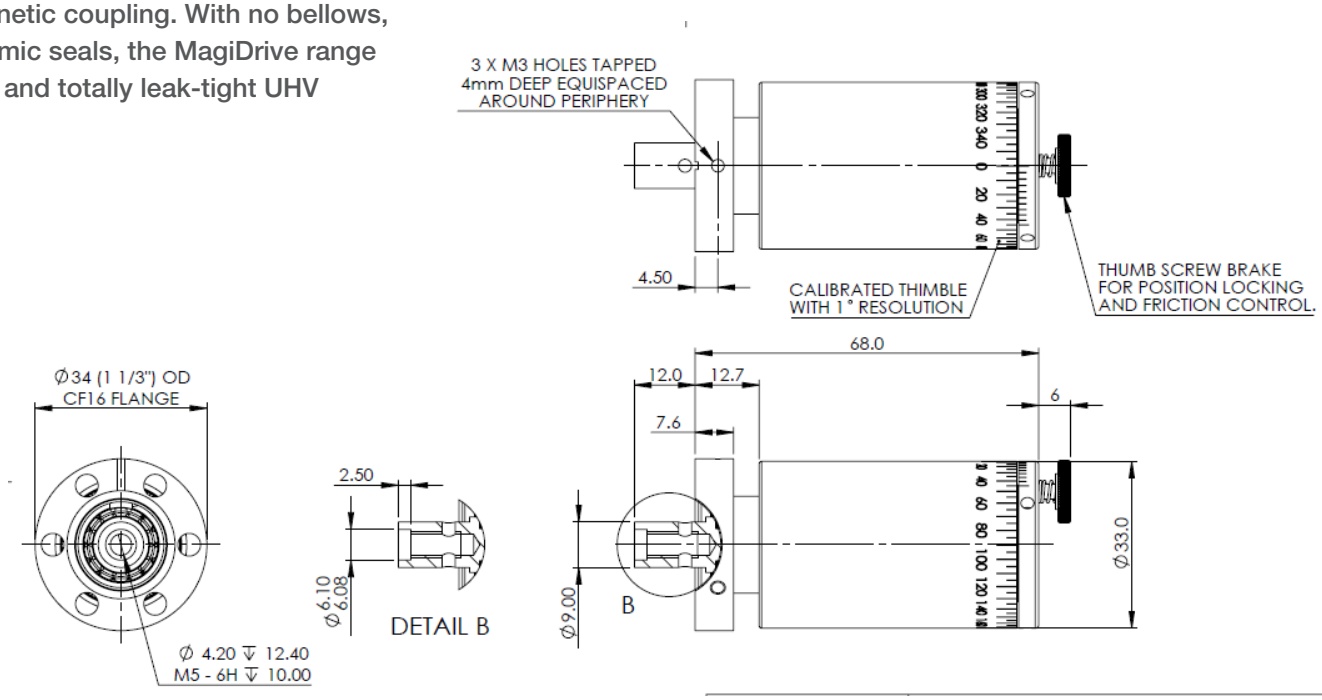
MD16N/MD16A KEY ADVANTAGES

- Magnetically-coupled fail-safe design
- High torque / size ratio
- No bellows or dynamic seals
- Bakeable to 250°C
- Zero backlash under low load
- True UHV performance

The production-proven MagiDrive range of rotary feedthroughs enable rotation to be transferred into a vacuum system using a stiff high flux magnetic coupling. With no bellows, fluids or dynamic seals, the MagiDrive range offers reliable and totally leak-tight UHV operation.

Example Dimensions (mm)

For comprehensive 2D drawings & 3D models please contact us.



UHV Design
UHV MOTION AND HEATING

UHV Design
UHV MOTION AND HEATING

MD16N Technical Data

SPECIFICATION	VALUE
System mounting flange size	FC16 (1 1/3") with clear holes
Rear Flange option	N/A
Drive clear bore	N/A
Magnetic breakaway torque	0.45Nm
Magnetic coupling stiffness	0.033 Nm/degree
Bakeout temperature	250°C with motor/pneumatic cylinder removed
Shaft options	Stub shaft with tapped hole, 30mm long with flat and modular extension
Shaft radial runout at shaft attachment	0.01mm
Maximum radial load	400N
Maximum axial load	20N
Magnet Field 50mm from drive	Axial <40 mGauss and radial <20 mGauss
Calibrated thimble option - resolution	1 degree
Pulley option - type and PCD	HTD profile 36 teeth 3mm pitch and 34.38 PCD
Pneumatic option - cylinder sweep	adjustable 30° to 170°
Pneumatic option - cylinder bore	15 mm
Pneumatic option - cylinder fitting	4mm tube push fit
Pneumatic option - cylinder switch	5-24V 2 wire reed switch
Pneumatic option - max rotation speed	0.2 seconds per 90° (dependant on load)
Stepper motor option	17 frame 4 wires 1.8A / phase
Standard stepper option - motor wiring	M12 5 pin connector
Upgrade stepper motor option - switches	Omron slotted opto 24V PNP type. Wired to WD-S-007
Stepper motor maximum speed option 1, gear ratio, output torque and resolution per 1/2 step	1000 rpm, 1:1 ratio, 0.3Nm and 0.9°
Stepper motor maximum speed option 2, gear ratio, output torque and resolution per 1/2 step	375 rpm, 4:1 ratio, 0.45Nm and 0.225°
Stepper motor maximum speed option 3, gear ratio, output torque and resolution per 1/2 step	107 rpm, 14:1 ratio, 0.45Nm and 0.06°
Stepper motor maximum speed option 4, gear ratio, output torque and resolution per 1/2 step	75 rpm, 20:1 ratio, 0.45Nm and 0.045°
DC motor option	24V dc brushed geared motor
DC motor option - motor wiring	2 pin generic plug to diagram WD-010
DC motor speed option 1, gear ratio and output torque	230 rpm, 18:1 ratio and 0.21Nm
DC motor speed option 2, gear ratio and output torque	135 rpm, 30:1 ratio and 0.35Nm
DC motor speed option 3, gear ratio and output torque	70 rpm, 60:1 ratio and 0.45Nm
DC motor speed option 4, gear ratio and output torque	42 rpm, 100:1 ratio and 0.45Nm

UHV Design
UHV MOTION AND HEATING

MD16A Technical Data

SPECIFICATION	VALUE
System mounting flange size	FC16 (1 1/3") with clear holes
Rear Flange option	N/A
Drive clear bore	N/A
Magnetic breakaway torque	1.8 Nm
Magnetic coupling stiffness	0.165 Nm/degree
Bakeout temperature	250°C with motor/pneumatic cylinder removed
Shaft options	Stub shaft with tapped hole, 30mm long with flat and modular extension
Shaft radial runout at shaft attachment	0.01mm
Maximum radial load	400N
Maximum axial load	20N
Magnet Field 50mm from drive	Axial <40 mGauss and radial <20 mGauss
Calibrated thimble option - resolution	1°
Pulley option - type and PCD	HTD profile 36 teeth 3mm pitch and 34.38 PCD
Pneumatic option - cylinder sweep	adjustable 30° to 170°
Pneumatic option - cylinder bore	15 mm
Pneumatic option - cylinder fitting	4mm tube push fit
Pneumatic option - cylinder switch	5-24V 2 wire reed switch
Pneumatic option - max rotation speed	0.2 seconds per 90 degrees (dependant on load)
Stepper motor option	17 frame 4 wires 1.8A / phase
Standard stepper option - motor wiring	M12 5 pin connector
Upgrade stepper motor option - switches	Omron slotted opto 24V PNP type. Wired to WD-S-007
Stepper motor maximum speed option 1, gear ratio, output torque and resolution per 1/2 step	1000 rpm, 1:1 ratio, 0.3Nm and 0.9°
Stepper motor maximum speed option 2, gear ratio, output torque and resolution per 1/2 step	375 rpm, 4:1 ratio, 1.1Nm and 0.225°
Stepper motor maximum speed option 3, gear ratio, output torque and resolution per 1/2 step	107 rpm, 14:1 ratio, 1.8Nm and 0.06°
Stepper motor maximum speed option 4, gear ratio, output torque and resolution per 1/2 step	75 rpm, 20:1 ratio, 1.8Nm and 0.045°
DC motor option	24V dc brushed geared motor
DC motor option - motor wiring	2 pin generic plug to diagram WD-010
DC motor speed option 1, gear ratio and output torque	230 rpm, 18:1 ratio and 0.21Nm
DC motor speed option 2, gear ratio and output torque	135 rpm, 30:1 ratio and 0.35Nm
DC motor speed option 3, gear ratio and output torque	70 rpm, 60:1 ratio and 0.6Nm
DC motor speed option 4, gear ratio and output torque	42 rpm, 100:1 ratio and 0.6Nm

For more information:

UHV Design Ltd
Judges House, Lewes Road,
Laughton, East Sussex, BN8 6BN, UK
T: +44(0)1323 811188
E:sales@uhvdesign.com
www.uhvdesign.com

To find your nearest UHV Design representative please visit www.uhvdesign.com and click 'Contact'.