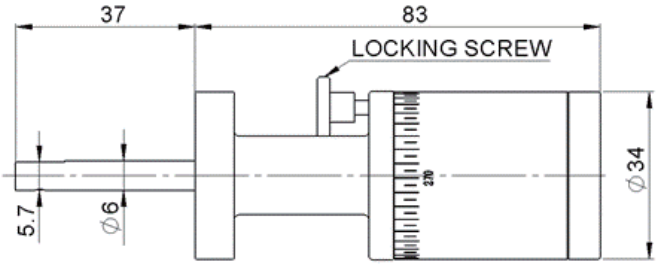
Section 1. Rotary Motion Feedthroughs

Magnetic Coupled Rotary Feedthrough

- Continous/90° Rotary Motion
- Manual/Pneumatic Actuator
- Magnetic Coupling
- Laser Etched Scale in 5° Increments
- Bakeable to 150°C
- Breakaway torque: 0.4 N·m
- Material: SS 316 / NdFeB Magnet
- 6mm Shaft with Tapping Hole
- Low Weight Design
  - Manual Actuator: ~0.4Kg
  - Pneumatic Actuator: ~0.5Kg
- NW16CF Mounting Flange
- UHV Rated to 10^{-11} mbar
- Life Time: 1,300,000 revolutions



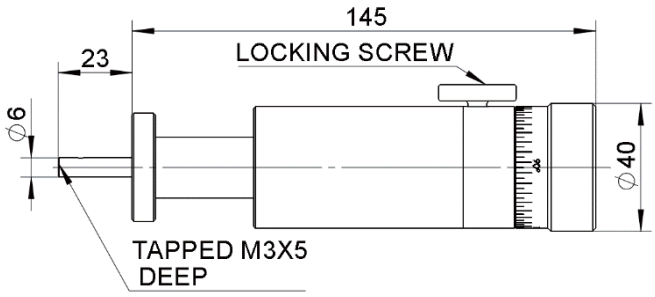
Dimensions of MRD16, details or 3D models on request

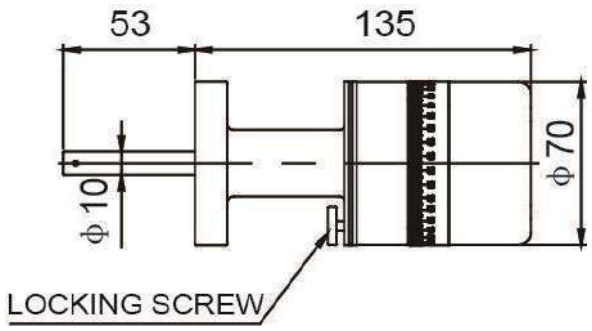
Flange OD		Actuation	Resolution	Rotary	Weight (kg)	Part Number
mm	inch					
34	1.33	Manual	1°	90°	0.4	MRD16S
		Pneumatic	1°		0.5	MRD16SP
		Manual	1°	Continous	0.4	MRD16C

Magnetically coupled rotary motion feedthroughs provide basic rotation and UHV compatibility without the use of bellows. This is a practical and economical solution for rotary motion in most vacuum applications. Rotary motion position is measured along a 360° laser etched scale graduated in 5° increments.
These Rotary feedthroughs are suitable for applications such as shutter and sample parking stage.

Bellow Coupled Rotary Feedthrough

- Continous Rotary Motion
- Manual/Step Motor Actuator
- Bellows Sealed
- Backlash <0.1° (with Step Motor)
- Resolution<0.2°(with Step Motor)
- Laser Etched Scale in 1° Increments
- Bakeable to 200°C
- Max Rotating Speed: 30 RPM
- Lifetime > 100,000 Cycles
- Standard ConFlat Mounting Flange
- UHV Rated to 10^{-11} mbar
- Life Time: 100,000 revolutions



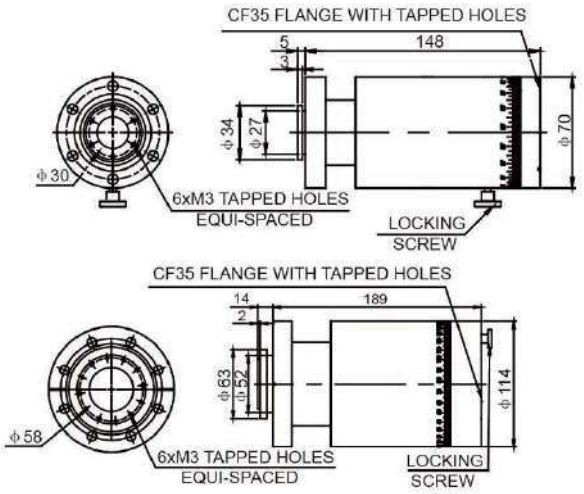


Dimensions of BRD16（Left）and BRD35（right）, details or 3D models on request

Flange OD		Actuation	Resolution	Weight (kg)	Part Number
mm	inch				
34	1.33	Manual	1°	0.5	BRD16
		Step Motor	0.2°	1.1	BRD16M
70	2.75	Manual	1°	1.3	BRD35
		Step Motor	0.2°	3.0	BRD35M

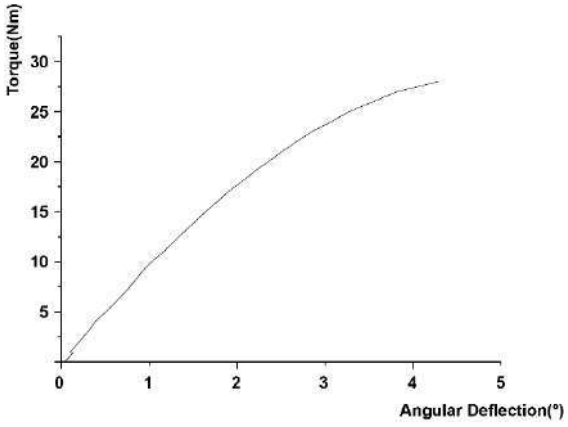
These rotary motion feedthroughs are low backlash instruments with a display resolution of 0.1°. Welded stainless steel bellows, a unique off-axis wobble design and the use of rotary shaft bearing support provide long life and smooth operation. Feedthroughs are available on CF flanges.
Motorization option is available, motor controls must be purchased separately.
These feedthroughs are designed for high-precision applications such as Sample Manipulation, the shaft length could be customized to fit the end user's request.

Hollow Shaft Magnetic Coupled Rotary Feedthrough



Dimensions of HSRD35（Up）and HSRD63（Down）, details or 3D models on request

- Continous Rotary Motion
- Manual/Step Motor Actuator
- Magnetic Coupling
- Laser Etched Scale in 1° Increments
- Bakeable to 150°C
- Max Rotating Speed: 36 RPM
- Heavy Duty Design
- Material: SS316 / NdFeB Magnet
- Standard ConFlat Mounting Flange
- Life Time: 300,000 revolutions
- Breakaway torque: 30 N·m



Flange OD		Actuation	Resolution	Weight (kg)	Part Number
mm	inch				
70	2.75	Manual	1°	2.6	HSRD35
		Step Motor	0.1°	3.2	HSRD35M
114	4.5	Manual	1°	6.9	HSRD63
		Step Motor	0.1°	8.2	HSRD63M

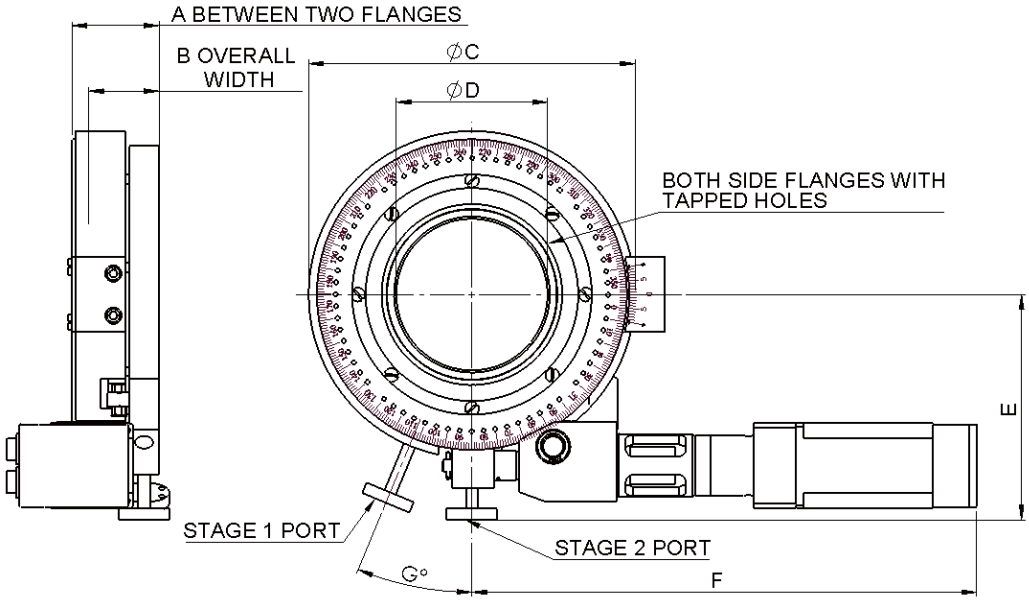
We are now offering this special Rotary Feedthroughs in a hollow configuration, having a rotating internal hollow shaft. Each drive terminates with a CF flange at the rear enabling services such as electric/fluid or an extra motion to be passed through the drive.

This rotary feedthrough is designed to be heavy duty and could support up to 10Kg load on the rotating shaft.

The rotary feedthrough is protected under Patent No. **ZL 2014 2 0843895.0**.

Differential Pumped Rotary Feedthrough

- Continous Rotary Motion
- Manual/Step Motor Actuator
- Precision Ball Bearings and Quality PTFE
- Etched Scale in 0.1° Increments
- Bakeable to 150°C
- High Load Carrying Capability
- Standard Conflat Mounting Flange
- Two Stage Differential Pumping for UHV Performance
- Both Side Standard Tapped ConFlat Flanges.
- C-ring Life Time: > 6,000 resolution/2years



Flange OD		Actuation	A	B	C	D	E	F	G	Resolution	Weight (kg)	Part Number
mm	inch											
114	4.5	Manual	54	50	146	35	104	355	45	0.1°	4.5	DRPF4
		Step Motor								0.005°	6.5	DPRF4M
152	6	Manual	58	47	218	101	127	337	23	0.1°	10	DPRF6
		Step Motor								0.005°	12	DPRF6M

This device allows UHV equipment to be rotated about the flange axis for concentric polar rotation (eucentric motion about the flange axis). Applications include sample imaging (XPS, AES or SIMS), structural or ion/neutral/atom scattering experiments.
This provides primary rotation for other components in mix and match applications. It could be used as modular part to build UHV multi-axis manipulation mechanism.