

M-036

**Manual & Piezoelectric Precision
Tangent-Arm Rotation Stages**

**Ordering
Information**

M-036.00

Rotation Stage, Ø 100 mm,
Micrometer Drive

M-036.P0

Rotation Stage, Ø 100 mm,
Micrometer + PZT Drive

M-036.PS

Rotation Stage, Ø 100 mm,
Micrometer + Closed-Loop PZT Drive

M-036.U0 Upgrade Kit with
Open-Loop PZT Drive

M-036.US Upgrade Kit with
Closed-Loop PZT Drive

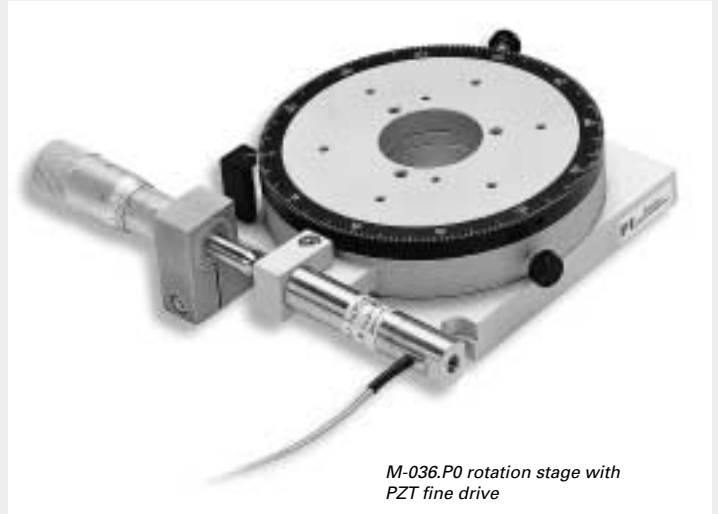
M-036.UD Upgrade Kit with
DC-Motor Drive (Factory Installed)

**Custom Designs
for Volume Buyers**

- **360° Coarse Range,
> 20° Fine Range**
- **Precision Micrometer
Drive**
- **Piezo Option for High-
Resolution, Dynamic
Scanning and Tracking**
- **30 mm Ø Clear Aperture**

M-036 series precision rotation stages feature high resolution, excellent repeatability and minimum wobble. The stages are equipped with double-row ball bearings for minimum backlash and high load capacity. Both the rotation platform and the scale ring (graduated in 2-degree increments) can be independently coarse positioned over 360 degrees and then locked with screws.

The basic version, the M-036.00, is equipped with a micrometer drive and a zero-backlash magnetic coupling. The micrometer provides a positioning range of ±10.5 degrees (see page 7-49 for information on how to convert linear input into rotation).



*M-036.P0 rotation stage with
PZT fine drive*

High-Resolution Piezo Option

The M-036.PS and M-036.P0 versions feature an additional piezoelectric fine adjustment over a range of ±350 µrad. They also allow dynamic operation such as scanning or tracking. The .PS version is equipped with a closed-loop PZT drive (model P-841.30), while the .P0 version has an open-loop PZT actuator (model P-840.30). Both drives provide a linear range of 45 µm and sub-nanometer linear resolution (see the "PZT Actuators" section for further details and recommended controllers).

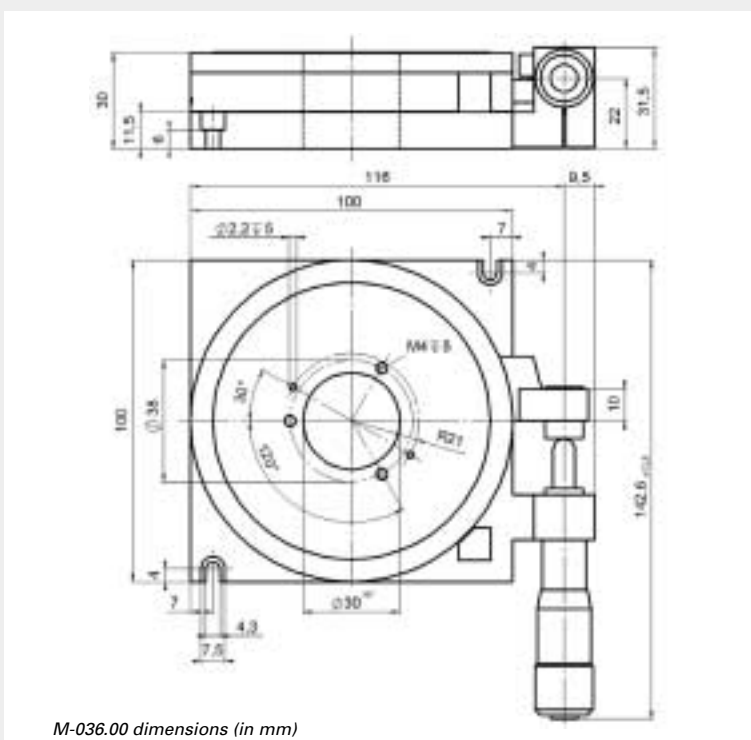
Upgrades

M-036 stages without PZT drives or DC-motor drives can be upgraded at a later date (see page 7-54 for motorized M-036 versions).

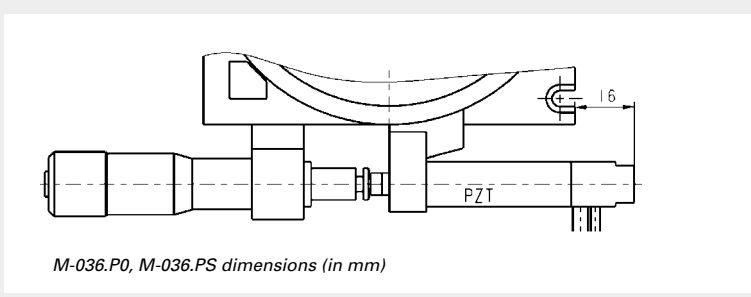
Notes

See "Accessories," page 7-82 ff. for adapters, brackets, etc.

<http://www.pi.ws>
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M-036.00 dimensions (in mm)



M-036.P0, M-036.PS dimensions (in mm)

Technical Data

Models	M-036.00	M-036.P0	M-036.PS	Units	Notes see p. 7-96
Rotation range, coarse	360	360	360	deg	
Rotation range (micrometer drive)	±10.5	±10.5	±10.5	deg	
Rotation range (PZT drive)	-	±350	±350	μrad	
Min. incremental motion (micrometer drive)	15	15	15	μrad	A4
Rotation / linear input	15	15	15	μrad / μm	A5
Tangent arm length	66	66	66	mm	A5
Min. incremental motion (PZT drive)	-	1	1	μrad	A4
Repeatability (PZT drive)	-	-	2	μrad	
Wobble	< 75	< 75	< 75	μrad	
Maximum axial force	±400	±400	±400	N	
Maximum torque (θ _x , θ _y)	±6	±6	±6	Nm	
Maximum torque CW*	4.5	4.5	4.5	Nm	
Maximum torque CCW*	0.075	0.075	0.075	Nm	
Drive	M-624	M-624	M-624		
PZT drive	-	P-840.30	P-841.30		D1
Weight	0.85	0.95	0.97	kg	
Body material	Al, St	Al, St	Al, St		L
Recommended PZT controller (codes explained p. 6-46)	-	A, C, G	D, H		

* CW: clockwise; CCW: counter-clockwise