

## PM500-360 Series

# Ultra-Precision Rotation Stages

### Key Features

- *Manufactured to the highest quality standards, the PM500-360 delivers unmatched performance with 20,000 hours MTBF reliability*
- *Precision mounted, proprietary circular glass scale encoder warrants 0.006° absolute accuracy with 0.0006° bi-directional repeatability*
- *High quality, large diameter angular contact bearings ensure highly accurate rotation with less than 20  $\mu$ rad wobble*
- *Smooth running, high-torque DC servo motor with very low friction worm gear enables high rotational speeds up to 200°/s*



**The PM500-360 is our highest performing rotary stage**, combining high speed with ultra-precise positioning. These rotary stages are designed and assembled using methods which ensure highest precision and quality. A large diameter angular contact bearing is referenced against precision-ground surfaces to minimize axial and radial runout and wobble. All mechanisms are fully preloaded to eliminate backlash and minimize non-repeatability of trajectory. And like all PM500 Series stages, the PM500-360 incorporates direct-output metrology to deliver outstanding dynamic performance.

**A circular glass scale** attached to the rotating table eliminates all of the drivetrain errors not measurable when the encoder is attached to the motor. The encoder is mounted on a precision-ground reference surface to ensure alignment with the stage's rotation axis and uses a proprietary non-contacting head for zero hysteresis and wear. A built-in fiducial for absolute origin reference is repeatable to  $\pm 0.0003^\circ$ .

**For optimum positioning performance and seamless compatibility**, these stages must be used with our PM500-C6 Precision Motion Controller/Driver for PM500 Series.

MANUAL LINEAR  
TRANSLATION STAGESMANUAL ROTATION  
STAGES

MANUAL ACTUATORS

MOTORIZED LINEAR  
TRANSLATION STAGESMOTORIZED ROTATION  
STAGES

MOTORIZED ACTUATORS

CONTROLLERS &  
AMPLIFIERS

TECHNICAL REFERENCE

## Design Details

Base Material	Stress-relieved 7075 Aluminum
Bearings	Large diameter ball bearings
Drive Mechanism	Precision ground, very low friction worm gear with self compensating preload
Worm Gear Ratio	1:48
Feedback	Proprietary glass scale encoder
Limit Switches	Optical, on encoder's fiducial track
Origin	Optical, on encoder's fiducial track
Motor	Cool running DC servo motor with Tachometer
Cable	4.8 m long cable included
Driver Module	Driver module with on-board processing power for PM500-C6 included
MTBF@ 30% rated load (h)	20,000

## Controllers/Accessories

(see page 1048)



PM500-C6 axis Controller  
PM500-K6 Keypad

## Specifications

Travel Range	360° continuous
Resolution	0.0003°
Minimum Incremental Motion	0.0003°
Bi-directional Repeatability, Typical	0.0006°
Absolute Accuracy	0.006°
Maximum Speed	200°/s
Normal Load Capacity (N)	250
Wobble (μrad)	20

## Configuration Information

PM500 systems are ordered pre-configured with the **PM500-C6 Series controller**. Please see page 1048 for ordering information.

Model	Description
PM500-360A.1	Aperture Platform Stage

## Dimensions

