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Find the *Newport SR50CC* at our website: ***Click HERE***

Folded Motor Low Profile Rotation Mounts



PR50 & SR50 SERIES

The SR50 and PR50 compact rotation stages are designed to rotate optical components up to 1 in. diameter, such as polarizers, wave plates, or wedges. The small size provided by the folded motor design allows use in confined spaces, such as laser cavities, disk texturing machines, or manufacturing areas for fiber optical components.

- Compact, low-profile rotation stage for 1 in. diameter optics
- Lightweight, folded motor design
- Proprietary ball bearings provide smooth motion with low wobble
- High speed or high resolution versions

SR50 Series Stages

The SR50 stages feature minimum incremental motion of 0.004°, which may be achieved with either DC Servo or open-loop stepper motors (half-step mode). The stages are equipped with a hardware origin allowing the stage to return to a reference home position to within 0.01°. SR50 stages can run in continuous rotation mode.

PR50 Series Stages

The PR50 stages are a cost-efficient alternative to the SR50 for applications that do not require the high-resolution and precision of the SR50, or for applications that could benefit from higher speeds up to 20°/s. The PR50 stages feature angular resolution of 0.01°, which may be achieved with either DC Servo or open-loop stepper motors in half-step mode. The stages are equipped with a hardware origin and allow for continuous rotation of 360°.





Vertical Mounting

The optional EQ45 bracket can be used for vertical mounting of a PR50 or SR50 stage.

CONEX Controller Versions

We offer versions of these stages integrated with a CONEC controller. The CONEX controller comes with a USB cable and a CONEX-PS-CB for daisy-chaining modules. Power supply to be ordered separately.

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Proprietary Ball Bearing Design

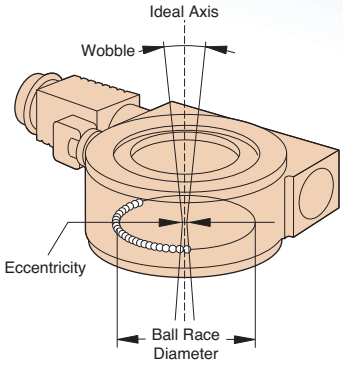
The lightweight, low profile design incorporates an aluminum body with pre-loaded ball bearings. This proprietary ball bearing design provides smooth rotation with minimal wobble. A precision ground worm gear produces consistent driving torque to the rotating carriage and eliminates variations in motor current.

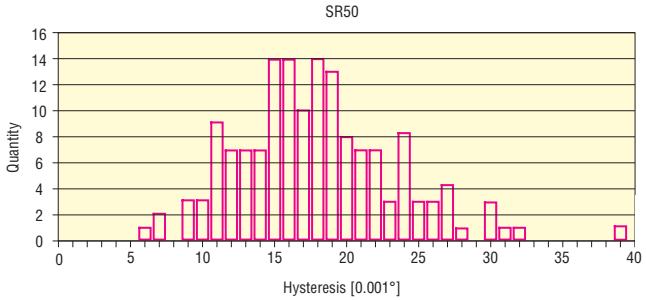
Central Aperture

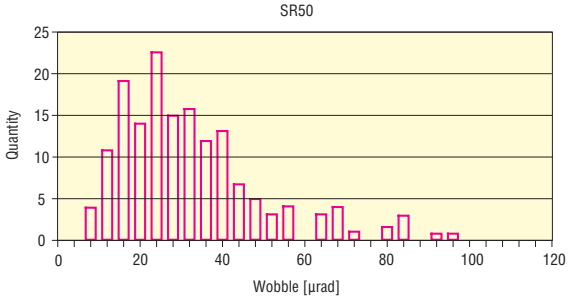
The central aperture is threaded 1.063-20 in. SR50 and PR50 stages are shipped with two, same diameter retaining rings to allow mounting of any ø25.4 mm diameter optics within the aperture. Four M3 holes allow for attachment of custom top plates.

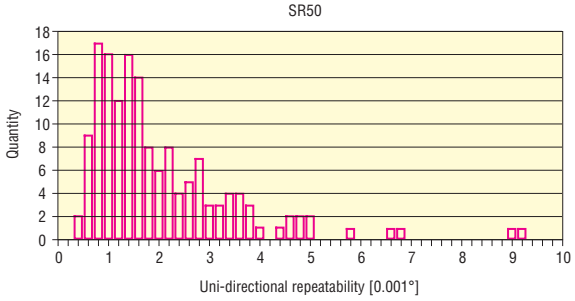
Folded Motor Design

The motor is folded inside the stage body to give an extremely small footprint for a stage at this level of precision.









DESIGN DETAILS

	SR50 Series	PR50 Series
Base Material	Aluminum	
Bearings	Ball bearings	
Drive Mechanism	Ground worm gear	
Worm Gear Ratio	1:70	1:63
Reduction Gear	107.143:1	11.8642:1
Feedback	CC: Motor mounted rotary encoder, 48 pts/rev PP: Open-loop, no encoder	
Origin	Optical	
Cable	3 m	

SPECIFICATIONS

	SR50 Series	PR50 Series
Base Material	Aluminum	
Travel Range (°)	360 continuous	
Minimum Incremental Motion (°)	0.004	0.02
Uni-directional Repeatability, Typical (°)	CC: ±0.0025 PP: ±0.0035	±0.005
Bi-directional Repeatability, Typical [1] (°)	CC: ±0.0015 PP: ±0.0016	±0.030
Accuracy, Typical [1] (°)	CC: ±0.0015 PP: ±0.0020	±0.005
Maximum Speed [2] (°/s)	4	20
Wobble [1] (mrad)	100 or ± 50	100 or ± 50
MTBF (h)	10,000	
Weight (kg)	0.3	0.4

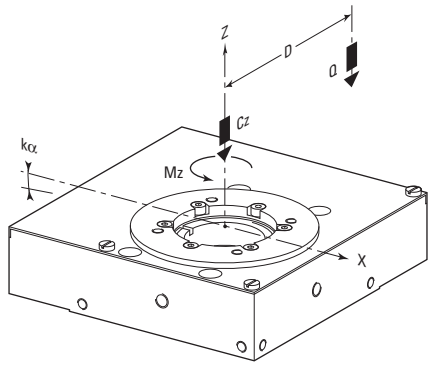
[1] Shown are peak to peak, guaranteed specifications or ±half the value as sometimes shown. For the definition of typical specifications which are about 2X better than the guaranteed values, visit www.newport.com for the Motion Control Metrology Primer.

[2] Max. speed with SMC100PP: 8 °/s for PR50PP and 1.6 °/s for SR50PP.

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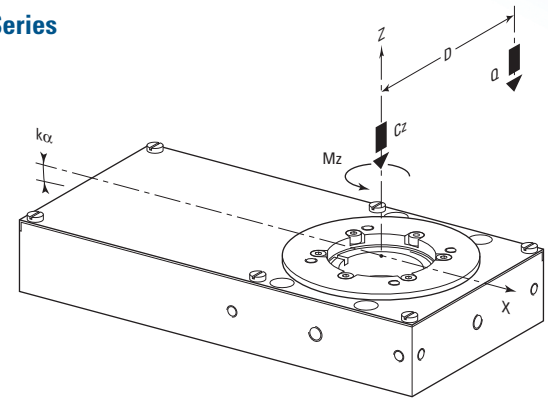
LOAD CHARACTERISTICS AND STIFFNESS

SR50 Series



		SR50CC	SR50PP
Cz,	Normal centered load capacity	30 N	
Kα,	Transversal compliance	160 µrad/Nm	
Mz,	Nominal torque	±0.4 Nm	±0.5 Nm
Q,	Off-center load (N)	Q ≤Cz ÷ (1 + D/25)	
	Where D = Cantilever distance (mm)		

PR50 Series



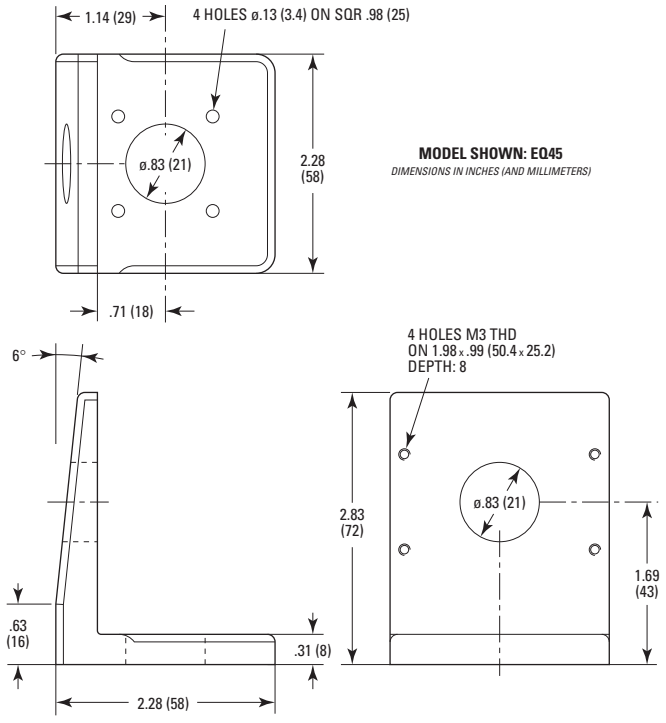
Cz,	Normal centered load capacity	10 N
Kα,	Transversal compliance	100 µrad/Nm
Mz,	Nominal torque	±0.1 Nm
Q,	Off-center load (N)	Q ≤Cz ÷ (1 + D/22)
	Where D = Cantilever distance (mm)	

RECOMMENDED CONTROLLERS/DRIVERS

Model	Description
XPS-D	1- to 8-axis universal high-performance motion controller/driver
XPS-DRV11	Universal digital driver card for stepper, DC, brushless and direct motors
XPS-RL	1- to 4-axis universal high-performance motion controller/driver
XPS-DRV01	PWM drive module for DC brush and stepper motors, 3 A/48 V max.
ESP301	1- to 3-axis motion controller/driver
SMC100CC	Single-axis DC motor controller/driver
SMC100PP	Single-axis stepper motor controller/driver

ACCESSORIES

Model	Description
EQ45	Right-Angle Bracket, PR50 and SR50

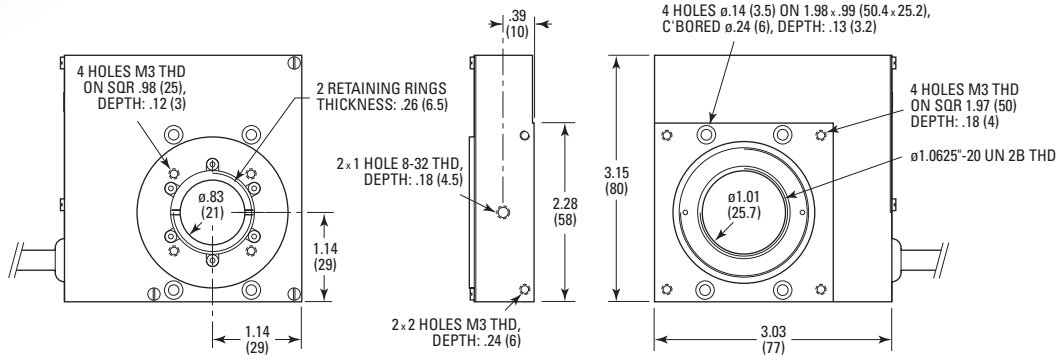


ORDERING INFORMATION

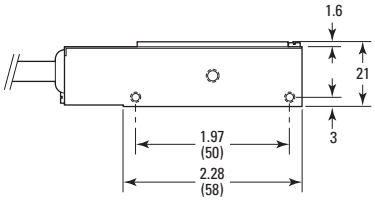
Model	Description
PR50CC	Compact Rotation Stage, 360°, DC Servo Motor, PR Series
PR50PP	Compact Rotation Stage, 360°, Micro Step Drive Stepper, PR Series
SR50CC	Compact Rotation Stage, 360°, DC Servo Motor, SR Series
SR50PP	Compact Rotation Stage, 360°, Micro Step Drive Stepper, SR Series

DIMENSIONS

SR50 Series



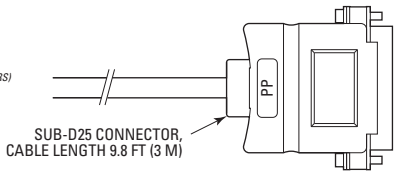
NOTE: SHOWN WITH RETAINING RINGS.



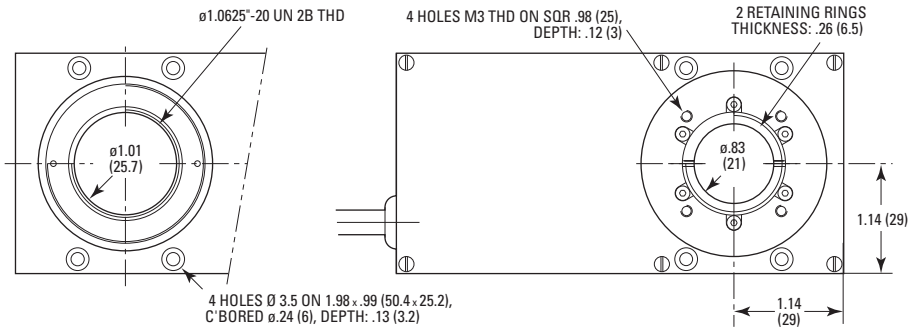
MODEL SHOWN: SR50

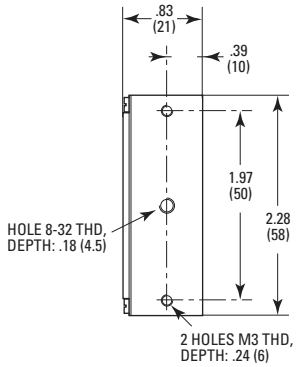
DIMENSIONS IN INCHES (AND MILLIMETERS)

NOTE: SHOWN WITHOUT RETAINING RINGS.



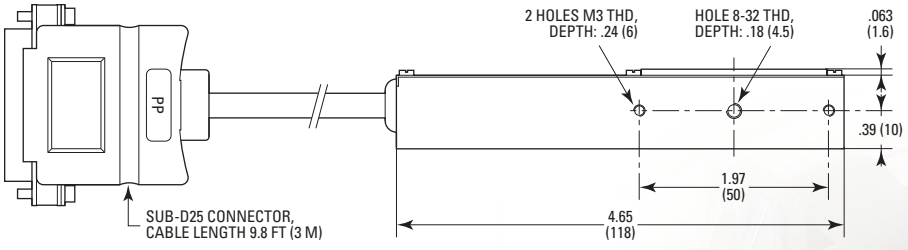
PR50 Series





NOTE: BOTTOM VIEW SHOWN WITHOUT RETAINING RINGS.

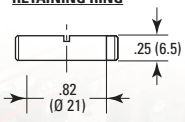
NOTE: TOP VIEW SHOWN WITH RETAINING RINGS.



MODEL SHOWN: PR50

DIMENSIONS IN INCHES (AND MILLIMETERS)

RETAINING RING



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