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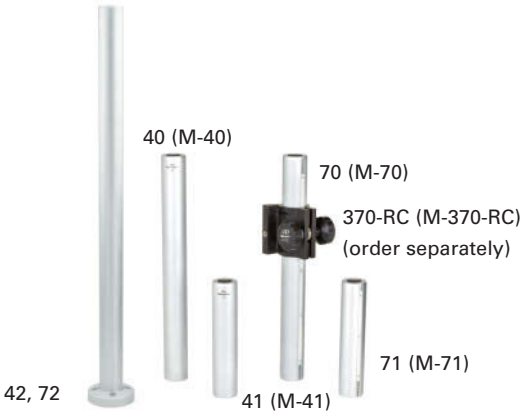
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Heavy Duty Rod Systems



- **Ideal for mounting heavy components**
- **Standard and vibration damped versions**
- **Available with gear rack to assist in vertical positioning**

The rods are made round to 0.0005 in. (12 µm) to mate repeatedly with the bore of every Newport rod-mounted component. A chromed finish is applied for a low-reflectivity surface that, unlike aluminum, is resistant to gouging, scratching and corrosion, allowing for many years of service.

Standard Rods

Models 40 and 70 rods have the sturdiness suitable for the majority of general laboratory applications. Both models are 14 in. (356 mm) tall. Model 70 has a nylon gear rack set into the rod for rack-and-pinion control over component elevation.

Models 41 and 71 short rods are 7 in. (178 mm) tall and have a smaller resonant vibration amplitude than the longer rods. Their low profile makes them ideal for compact experimental setups. Models 42 and 72 rods, which have integrated bases, are a full 24 in. (610 mm) tall for use in experimental setups requiring extra height such as laser beam routing for microscopy applications.

Damped Rods

Models 45 and 75 Damped Rods are the most sophisticated rods available for critical applications where acoustical and vibrational forces are a concern. These rods incorporate cylindrical masses constrained by damping layers, concentrated in the upper portion of the rod where they are most effective in dissipating vibrational energy. This construction is the result of extensive computer modeling, dynamic testing and structural analysis.

Newport's patented internal damping system provides unmatched vibrational immunity. Compared to the best alternative designs, Newport damped rods exhibit 60% higher resonant frequency, 100% faster vibration decay and 160% better peak compliance. These 14 in. (356 mm) long rods mount to tables and breadboards with four bolts through a special ring base. Model 75 has a nylon gear rack for rack-and-pinion control over component elevation.

Precision, Heavy-Duty Construction

Model VPB Adjustable Base is a stiff, low-profile adjustable platform designed for stable mounting of Newport rods and components anywhere on our optical tables and breadboards.

Model VPB has XY sliding adjustments for complete positioning freedom on any mounting surface with a standard pattern of 1/4-20 (or M6) mounting holes on 1 in. (25 mm) centers.



A custom Newport rod wrench is provided with each standard rod for easy attachment.

VPB (M-VPB)





340-RC (M-340-RC) 370-RC (M-370-RC)



34 (M-34) 300-P (M-300-P)



670-RCT and 670-RCB



45 75

Model 45 (left) and Model 75 shown with 370-RC Clamp (right)

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Damped Rod Performance

The time-domain responses shown in Figures 1 and 2 dramatically illustrate the difference between the Newport approach and alternative damping implementations when the rod is supporting a load.

Newport's Model 40 undamped steel rod has a single resonance peak at 240 Hz corresponding to the first bending mode of a cantilevered beam.

The alternative, lead-shot damped rod has a single resonance peak roughly 1/4 the amplitude of the undamped rod. This peak is lower in frequency (~105 Hz) because of the lower stiffness-to-mass ratio of this construction, which makes it more likely to couple to vibrations from nearby mechanical and electrical components.

Newport's Model 45 damped rod is so highly damped that the 240 Hz resonance is split into subpeaks at 170 and 210 Hz whose amplitudes are 40 times less than the undamped response peak and 5 times less than the alternative rod.

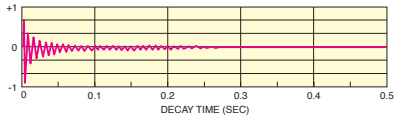


Fig. 1: Time response of a Newport Model 45 Damped Rod supporting a 2.5 lb (1.1 kg) load.

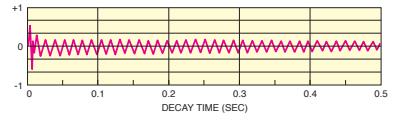


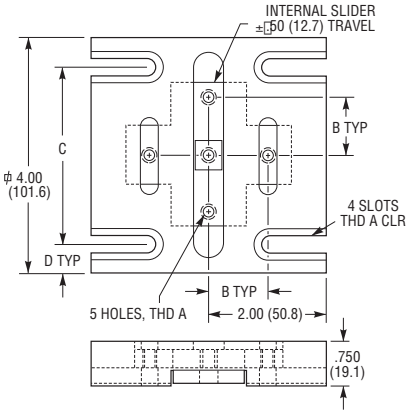
Fig. 2: Time response of an alternative, lead-shot damped rod with the same 2.5 lb (1.1 kg) load as Fig. 1.

Ordering Information

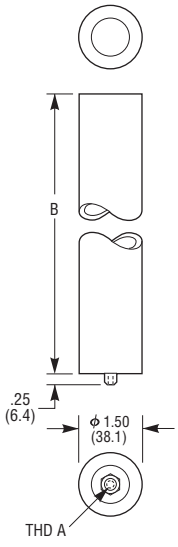
Model (Metric)	Description	Height [in. (mm)]
45	Damped Rod with Mounting Base	14.0 (355.6)
75	Damped Rod with Rack and Mounting Base	14.0 (355.6)
42	Standard Rod with Base	24.0 (610)
72	Standard Rod with Rack and Base	24.0 (610)
40 (M-40)	Standard Rod, 1/4-20 (M6) Thread	14.0 (355.6)
70 (M-70)	Standard Rod, 1/4-20 (M6) Thread	14.0 (355.6)
41 (M-41)	Standard Rod, 1/4-20 (M6) Thread	7.0 (177.8)
71 (M-71)	Standard Rod, 1/4-20 (M6) Thread	7.0 (177.8)
2998	Solid Rod, 1/4-20 Threaded Both Ends	14 (355.6)
14828-01 (16636-01)	Rod Wrench for Standard Rods	
VPB (M-VPB)	XY Platform, 1/4-20 (M6) Thread	

U.S. Patent 4,050,665

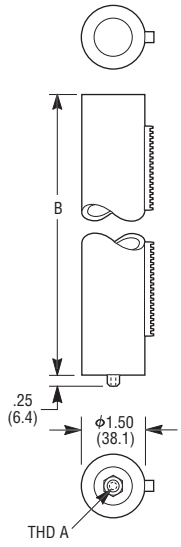
Model VPB



Model 40, 41

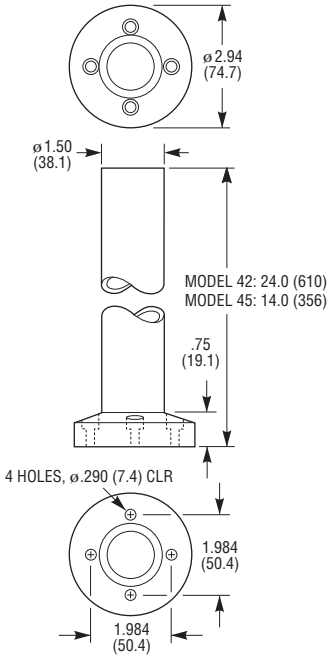


Model 70, 71



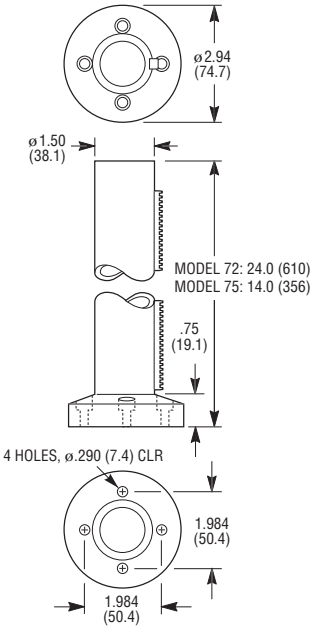
Model (Metric)	Thread A	Dimensions [in. (mm)] B
40 (M-40)	1/4-20 (M6)	14.00 (355.6)
41 (M-41)	1/4-20 (M6)	7.00 (177.8)
70 (M-70)	1/4-20 (M6)	14.00 (355.6)
71 (M-71)	1/4-20 (M6)	7.00 (177.8)

Models 42 and 45



CAD *See our website for CAD files*

Models 72 and 75



Model (Metric)	Thread A	Dimensions [in. (mm)] B	C	D
VPB (M-VPB)	1/4-20 (M6)	1.000 (25.0)	3.000 (75.0)	0.50 (13.3)

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Quick-Disconnect Rod Clamps



340-RC (M-340-RC)



370-RC (M-370-RC)

- **Large mounting surface**
- **Smooth, "chatter-free" height adjustment**
- **Quick disconnect mechanism**
- **Stable, wobble-free lock down**
- **Components attach in a variety of angular orientations**

Rod clamps are a versatile foundation for mounting and positioning a variety of Newport components including translation and rotation stages, platforms, post holders, angle brackets and mirror mounts.

Both the 340-RC and 370-RC rod clamps incorporate a quick-disconnect peg mechanism allowing components to be attached in a variety of angular orientations. The peg mechanism also allows components to be detached and re-attached quickly and easily.

The Model 340-RC may be manually positioned to any height or any angular orientation around the rod axis by tightening the knurled knob. This clamp is compatible with Models 40, 42 and 45 rods.

The Model 370-RC incorporates independent clamping and a rack-and-pinion positioning mechanism for more precise vertical adjustment. This approach limits the rotation of the clamp to ±0.5°. For 360° of rotation, use the Model 30 Rotary Adaptor. The 370-RC clamp is compatible with Models 70, 71, 72 and 75 rods.

Both clamps feature an array of clearance and 1/4-20 (M6) tapped holes for flexibility in attaching and orienting a variety of accessories.



340-RC clamp (left) shown with Model 45 rod. 370-RC clamp (right) shown with Model 75 damped rod



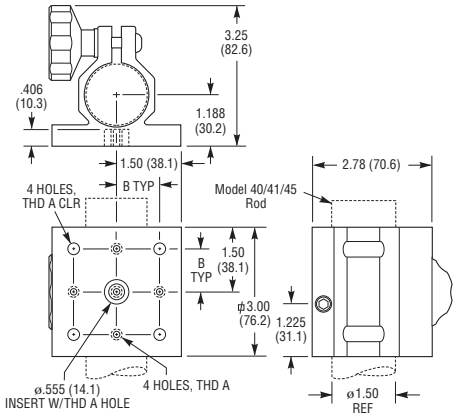
For laser applications where the laser must also be stable, use a ULM Series laser mount and RC Series rod clamp.

CAD *See our website for CAD files*

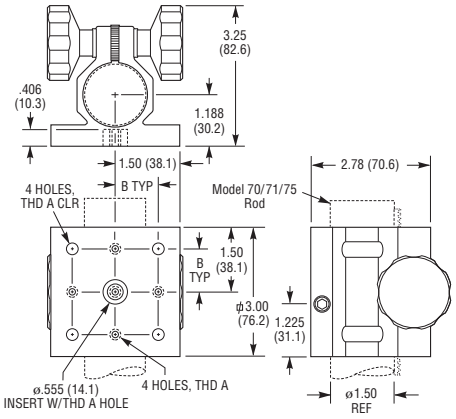
Ordering Information

Model (Metric)	Description	For Rod Models
340-RC (M-340-RC)	Standard Rod Clamp	40, 41, 42, 45
370-RC (M-370-RC)	Rack-and-Pinion Rod Clamp	70, 71, 72, 75

Model 340-RC



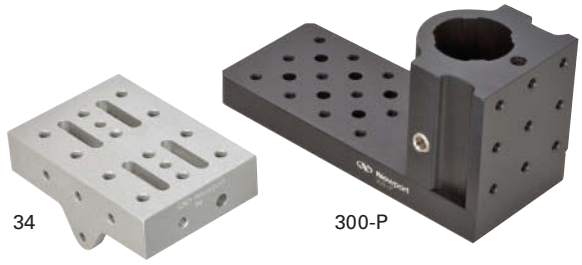
Model 370-RC



	Thread	Dimensions [in. (mm)]
Model (Metric)	A	B
340-RC (M-340-RC)	1/4-20 (M6)	1.00 (25.0)
370-RC (M-370-RC)	1/4-20 (M6)	1.00 (25.0)

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Rod Platforms



- **Fixed or rotatable versions**
- **Multiple mounting surfaces**
- **English and metric versions available**

Model 34 Rotatable Platforms are designed for mounting components at arbitrary angles. One end of the platform has a circular slot, centered on a clearance hole, to provide 360° positioning in continuous 90° steps when attached with two bolts. This allows you to position the mounting surface at any angle before locking it into place. The platforms may also be joined end-to-end for added length, or side-to-end to achieve compound mounting angles.

The 300-P Rod Platform has three machined mounting surfaces: one parallel to the post axis and two perpendicular to it. The platform clamp is double-bored, forming two line contacts along the bore to assure wobble-free clamping when the locking screw is tightened.

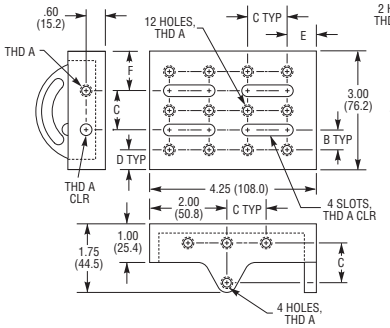
The **Model 32A Fine Positioner** provides fine height adjustment via a cap screw that engages a tapped hole in either end of the 300-P (M-300-P) Rod Platform. The cap screw runs in ball bearings and provides a height adjustment range of 0.7 in. (18 mm).

Ordering Information

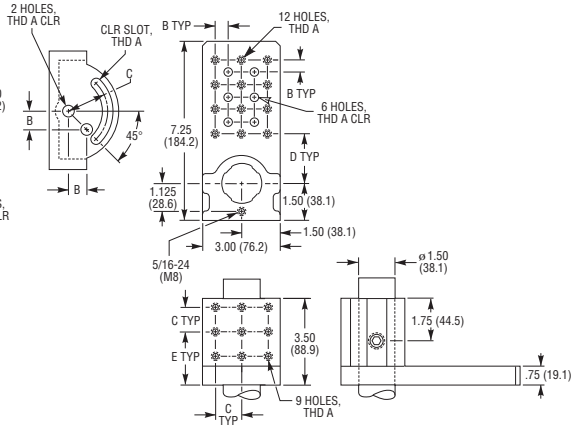
Model (Metric)	Description
34 (M-34)	Rotatable Platform
300-P (M-300-P)	3-Sided Rod Platform*
32A (M-32A)	Fine Height Positioner*

*Order rod separately

Model 34



Model 300-P



Model (Metric)	Thread A	Dimensions [in. (mm)] B	C	D	E	F
34 (M-34)	1/4-20 (M6)	0.500 (12.5)	1.00 (25.0)	0.50 (13.1)	0.75 (19.7)	1.00 (25.6)
300-P (M-300-P)	1/4-20 (M6)	0.500 (12.5)	1.00 (25.0)	2.00 (1.97)	2.13 (2.13)	



Model 34 shown mounted to a Model 340-RC Clamp and Model 45 Rod



Fine height adjustment can be made on the 300-P Rod Platforms by using 32A Fine Positioner.

CAD *See our website for CAD files*

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