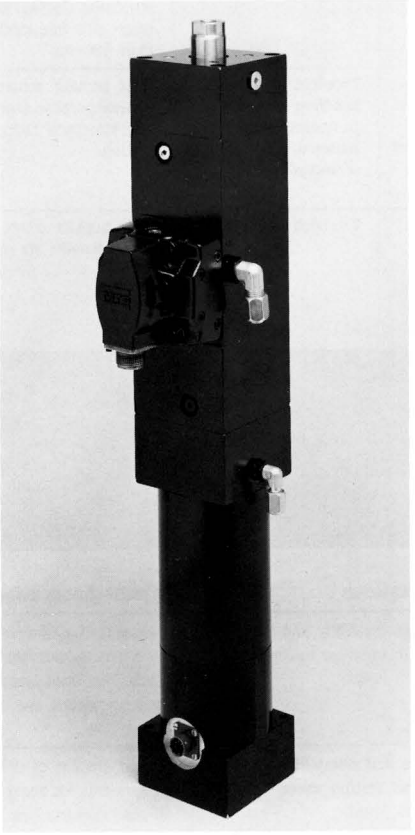
Series 242 Linear Actuators



Designed specifically for
☐ Low-friction, low-distortion, high cycle, fatigue testing.
☐ Vibration testing in which the actuator performs the function of a shaker.

This heavy-duty, force-generating actuator operates under precise servovalve control in MTS closed-loop test systems.

Features

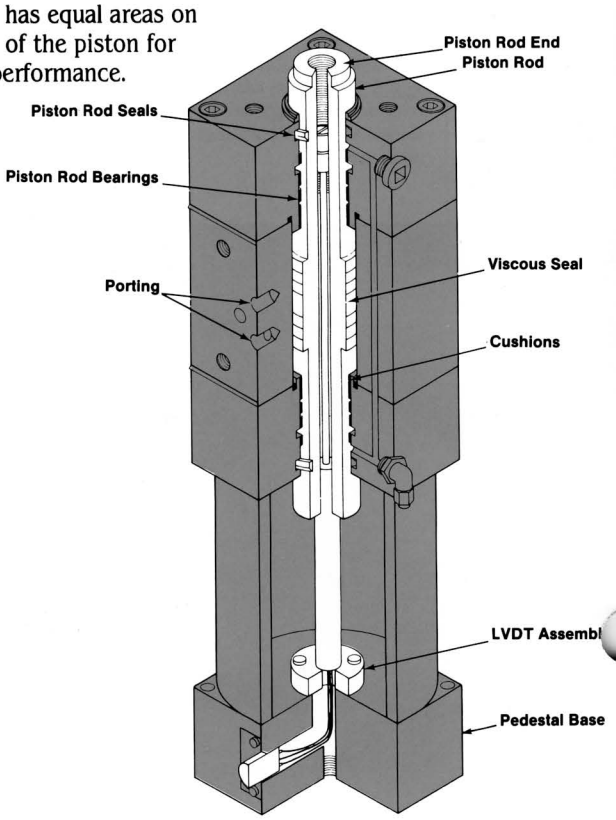
Piston Rod End - Has a center position internal thread for mounting fixtures, vibration tables, shaker heads, etc. U.S. customary threads are standard.

Porting - Allows high-pressure hydraulic fluid to be ported in the cylinder through the retraction or extension port. Hydraulic fluid flow is regulated by a servovalve. As hydraulic pressure is applied to one port, the other port opens to a return line. Differential pressure across the piston forces the piston rod to move.

Piston Rod - Double-ended piston rod has equal areas on both sides of the piston for balanced performance. Precision-ground to a fine finish to maximize seal and bearing life. Hollow rod permits convenient installation and accurate alignment of LVDT.

Viscous Seal - Viscous piston seal is provided by a close tolerance fit between the piston and cylinder. Grooves on the piston ensure adequate lubrication of the piston surface during short-stroke, side-loaded tests.

Rod Bearings - High-capacity nonmetallic piston rod bearings are bonded directly to the end caps. Higher side-load capacity and resistance to failure from galling during high-velocity operation. Close tolerance fit between piston rod and bearing surface provides effective high-pressure viscous seal. Small amount of hydraulic fluid flows across the bearing for lubrication and is then ported back to system hydraulic power supply reservoir through drain-back ports.



Piston End Caps - End caps on piston rod have low-pressure seals which prevent external contamination from entering the actuator and minimize the amount of external leakage.

LVDT Assembly - Internally-mounted LVDT provides a displacement indication of the actuator piston rod. Its core is secured to piston rod by a mount, which can be adjusted to establish an actuator piston rod zero reference position.

Pedestal Base - Allows actuator to be rigidly mounted to a reaction mass for vibration testing.

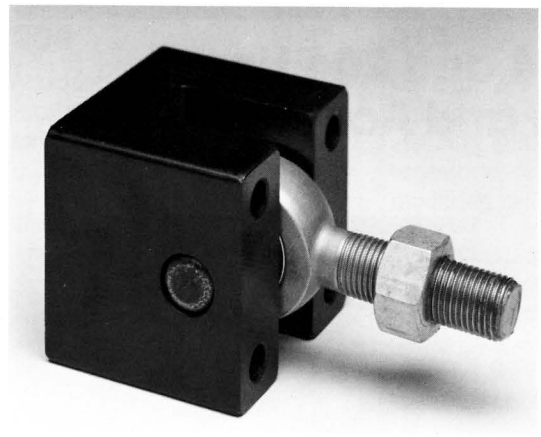
Series 242 Accessories

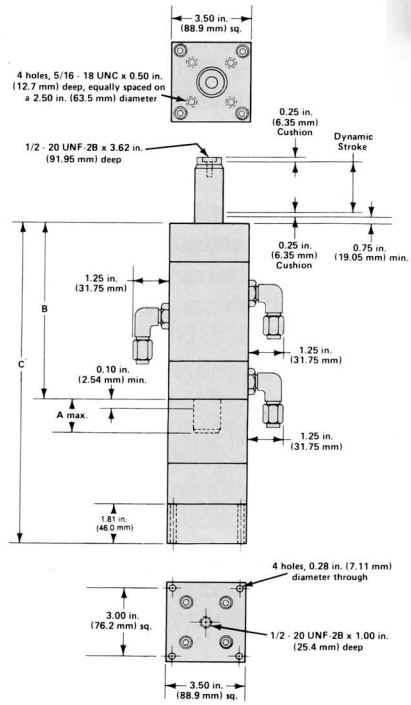
Series 242 Accessories are designed to facilitate actuator mounting to a reaction frame and to the specimen under test. They include a unique swivel end product used for both the head and base.

Swivel Base/Swivel Head

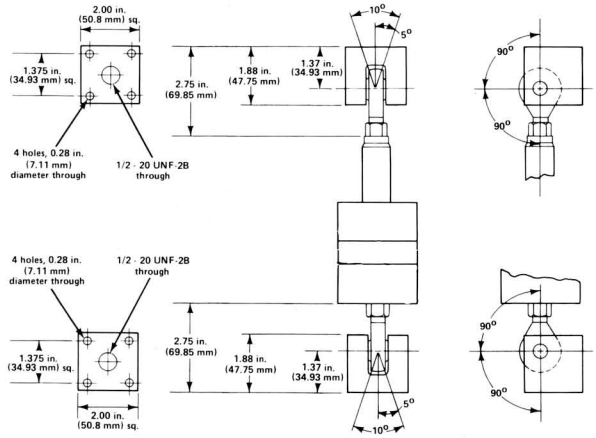
These accessories are semi-spherical swivels that allow the 242 actuator to be mounted to a reaction mass, structural base, or bedplate for systems designed for structural fatigue testing.

For structural testing applications, a 242 actuator equipped with both a swivel head and base provides optimum freedom in fixturing design.





242 Actuator Dimensional Drawing



Swivel Base/Head Dimensional Drawing

242 Series Actuator Specifications

Model Number Series	Force Rating[1]	Piston Area	Rod Diameter	Available Stroke Lengths	A	B	C
242.01	1.0 kip (4.5 kN)	0.42 inches² (270.9 mm²)	1.12 inches (28.4 mm)	1.00 inches (25.4 mm)	1.6 inches 40.64 mm	8.50 inches 215.9 mm	12.68 inches 322.07 mm
				2.00 inches (50.8 mm)	2.60 inches 66.04 mm	8.50 inches 215.9 mm	13.68 inches 347.47 mm
				4.00 inches (101.6 mm)	4.60 inches 116.84 mm	11.00 inches 279.4 mm	18.18 inches 461.77 mm
				6.00 inches (152.4 mm)	6.60 inches 167.64 mm	13.00 inches 330.2 mm	22.18 inches 563.37 mm
242.02	2.2 kip (10.0 kN)	0.92 inches² (593.5 mm²)	1.12 inches (28.4 mm)	1.00 inches (25.4 mm)	1.6 inches 40.64 mm	8.50 inches 215.9 mm	12.68 inches 322.07 mm
				2.00 inches (50.8 mm)	2.60 inches 66.40 mm	8.50 inches 215.9 mm	13.68 inches 347.47 mm
				4.00 inches (101.6 mm)	4.60 inches 116.84 mm	11.00 inches 279.4 mm	18.18 inches 461.77 mm
				6.00 inches (152.4 mm)	6.60 inches 167.64 mm	13.00 inches 330.2 mm	22.18 inches 563.37 mm

[1] Nominal force achieved with 2500 psi (17.2 MPa) hydraulic pressure.