Precision Motorized Actuators

LTA Series

LTA actuators are designed to directly replace manual micrometers in existing manual stages and other optomechanical components to enable automated motion solutions.

High Speed 50 mm Travel

The LTA-HS features a DC servo motor with optimized output torque for high speed applications. It also offers the longest travel range of all Newport actuators at 50 mm.

120 N High Load Version

The LTA-HL features a DC servo motor with optimized output torque for higher load capacity. It is recommended for heavy load applications which require up to 120 N of axial load capacity.

Manual Adjustment Knob with Scale Position Indication

LTA Series motorized actuators feature a manual adjustment knob which permits quick positioning of the actuator when the motor is off. There is also a scale to indicate coarse actuator position in both millimeters and inches.

Non-rotating Actuator Tip

LTA actuators feature a non-rotating tip that prevents wear and eliminates periodic motion variations when the actuator is moving.

Vacuum Compatible Versions

The LTA series actuators also come in two standard stepper motor models specifically designed for vacuum applications up to 10-6 hPa and are readily available from stock.

LTA Actuators with CONEX Controllers

The CONEX controller is a very compact and inexpensive driver for low power DC servo and Stepper motor driven devices like our LTA actuators. For out-of-the box control, the CONEX controller is preconfigured and delivered with the actuator.

Features and Benefits

- Robust design for industrial applications
- High load capacity & high speed DC Servo versions
- Vacuum versions with stepper motor & encoder Non-rotating tip improves motion smoothness
- Exceptional minimum incremental motion
- Manual positioning knob and scale position indicator

Motorize Your Existing Manual Stage

The LTA Series actuator is compatible with most standard Newport manual stages. The -HS version can be used with longer travel manual stages like the 426. For compatible manual positioners from Newport, please check our LTA Compatibility Matrix.

Motorize an Optical Mount

LTA actuators can replace micrometer drives on most Newport optical mounts creating automated solutions for beam control and management. They are shown with our SL51 mirror mount.

Design Details

	LTA-HL & LTA-HS	LTAHLPPV6 & LTAHSPPV6
Base Material	Stainless steel body with polycarbonate cover	Stainless steel body
Drive Mechanism	Non-rotating lead screw	
Drive Screw Pitch (mm)	1.0	
Reduction Gear	HL Version 1:66 HS Version 1:14	– –
Feedback	Motor mounted rotary encoder, 2048 cts/rev.	
Limit Switches	Optical switches, both ends, max. travel limit is adjustable	
Origin	Uses minimum travel limit for homing, typically <4 µm repeatability	
Motor	DC-servo	Stepper
Cable Length	3 m	1.5 m (SUB-D25 connector not vacuum compatible)
Vacuum Compatibility	10-6 hPa (0,7x 10-7 Torr)	
MTBF	10,000 h (25% load, 30% duty cycle)	

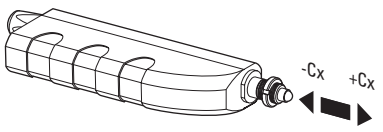
Specifications

	LTA-HS	LTA-HL	LTAHSPPV6	LTAHLPPV6
Travel (mm)	50	25	50	25
Minimum Incremental Motion (µm)	0.1	0.05	0.08	0.08
Uni-directional Repeatability, Typical (Guaranteed) (µm)	±0.10 (±0.25)	±0.10 (±0.25)	±0.10 (±0.25)	±0.10 (±0.30)
Bi-directional Repeatability Typical (Guaranteed) [1] [2] (µm)	+-0.13 (+-0.75)	±0.30 (± 1.0)	±0.30 (± 1.0)	±0.30 (± 1.0)
Accuracy [1] (µm)	±2.2 (±5.0)	±1.2 (±3.0)	±2.2 (±5.0)	±1.2 (±3.0)
Maximum Speed (mm/s)	5	1	0.5 [4]	0.25 [4]
Push Force	50 N	120 N	40 N	100 N
Pull Force	40 N	100 N	40 N	100 N

1) For the definition of Typical and Guaranteed specifications see “Motion Basics Terminology & Standards” Tutorial at www.newport.com
2) After backlash compensation.
3) Avoid side loads during motion.
4) With SMC100PP: 0.1 mm/s for LTAHLPPV6, 0.2 mm/s for LTAHSPPV6.
5) MIM in closed loop: 0.15 mm for LTAHLPPV6, 0.3 mm for LTAHSPPV6.

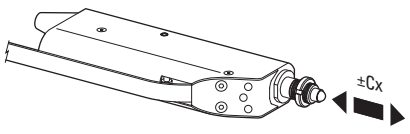
Load Characteristics and Stiffness

LTA-HS & LTA-HL



		LTA-HS	LTA-HL
-Cx,	Push Force	50 N	120 N
+Cx,	Pull Force	40 N	100 N

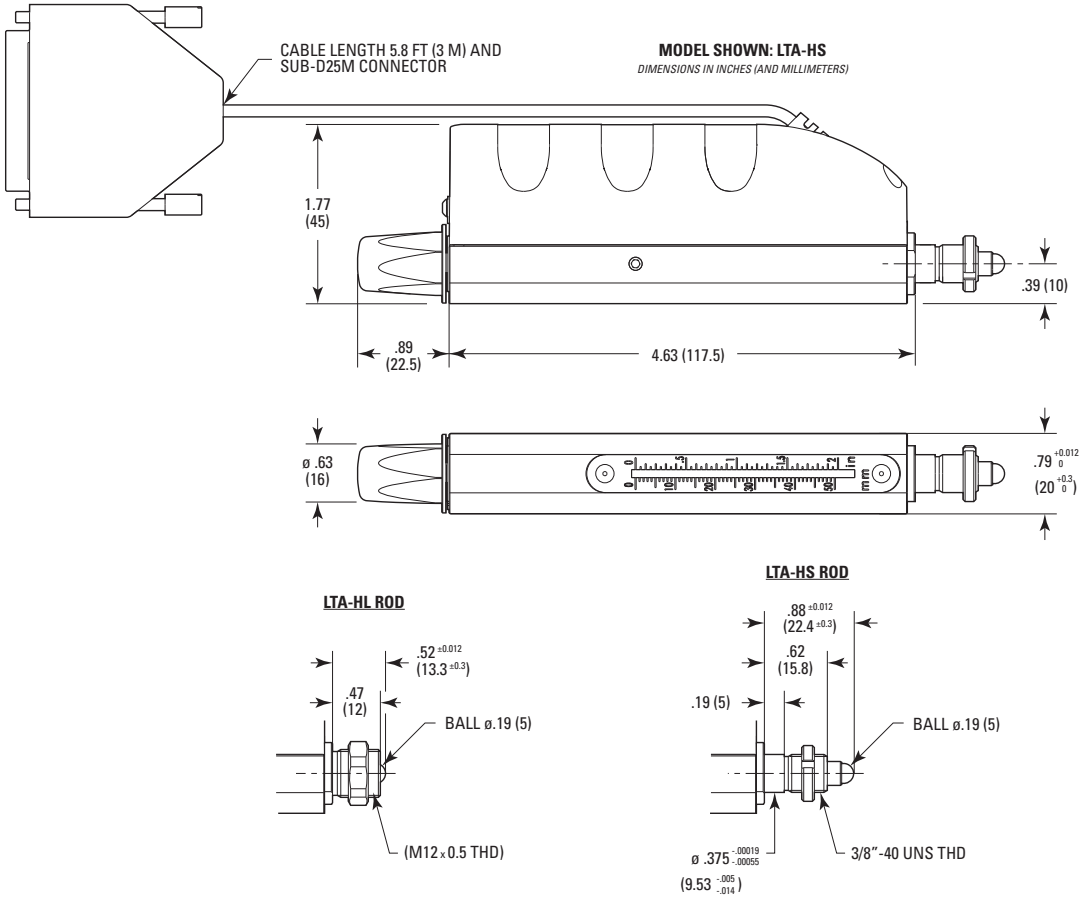
LTAHSPPV6 & LTAHLPPV6



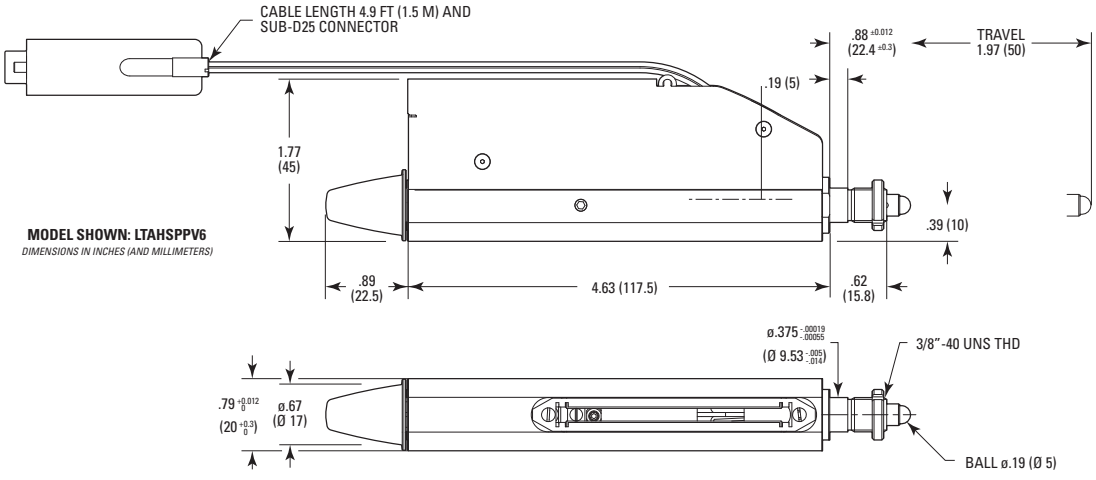
		LTAHSPPV6	LTAHLPPV6
+Cx, -Cx,	Push/Pull Force	40 N	100 N

Dimensional Drawing

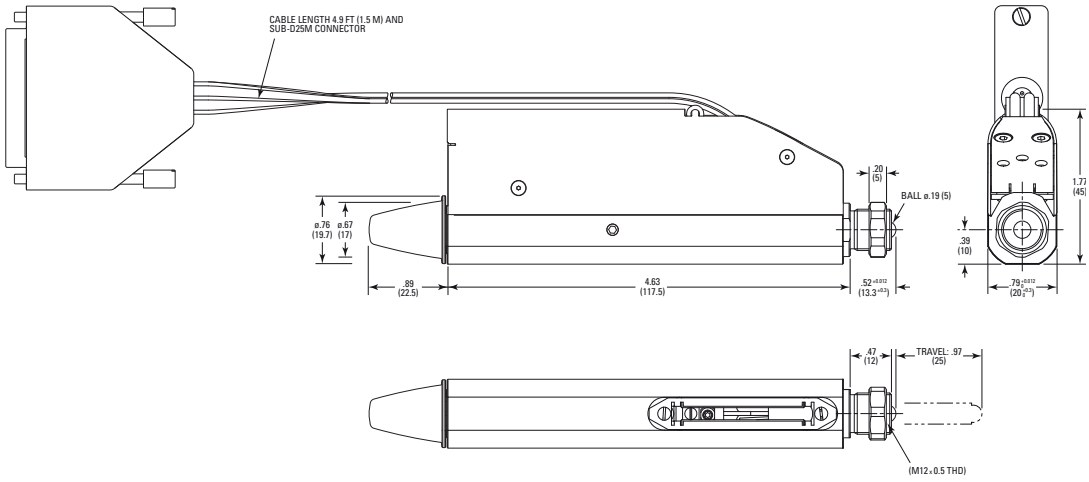
LTA-HS & LTA-HL



LTAHSPPV6



LTAHLPPV6

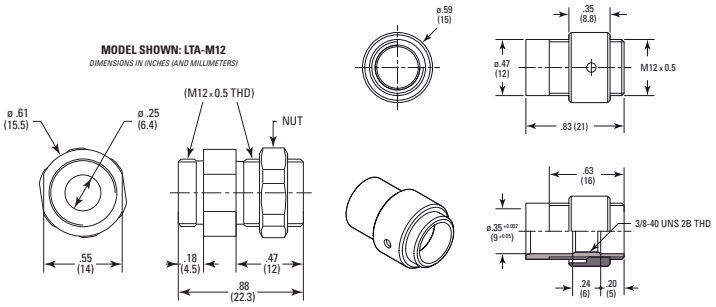


Recommended Controllers/Drivers

Model	Description
XPS-Dx	1- to 8-axis universal high-performance motion controller/driver
XPS-DRV11	Universal digital driver card for stepper, DC and direct motors
XPS-RLDx	1- to 4-axis universal high-performance motion controller/driver
ESP302-xN	1- to 3-axis motion controller/driver
SMC100CC	Single-axis DC motor controller/driver
SMC100PP	Single-axis stepper motor controller/driver

Accessories

Model	Description
LTA-M12	Mounting Adapter, M12-0.5, LTA-HS to UMR8, MVN80 and SL products
ADAPT-BM17-375V6	Mounting Adapter, LTAHSPPV6 to -V6 optical mounts



Order Information

MODEL	DESCRIPTION
LTA-HL	High Load Motorized Actuator, 25 mm travel, LTA, M12 thread
LTAHLPPV6	High Load Motorized Actuator, Vacuum Compatible, 25 mm travel, LTA
CONEX-LTA-HL	LTA-HL Actuator, Integrated with CONEX-CC Controller
LTA-HS	High Speed LTA Motorized Actuator, 50 mm travel, LTA, 3/8-40 thread
LTAHSPPV6	High Speed Motorized Actuator, Vacuum Compatible, 50 mm travel, LTA
CONEX-LTA-HS	LTA-HS Actuator, Integrated with CONEX-CC Controller

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