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Find the *Newport TRA25PPD* at our website: *Click HERE*

Compact Motorized Actuators



TRA SERIES

TRA actuators are Newport's lowest cost solution for general OEM and research applications. They incorporate an excellent space saving design that allows them to be used with a wide variety of manual stages, mirror mounts, and OEM applications.

- Low cost stepper & DC servo actuators
- Light and compact in-line design
- Vacuum compatible stepper motor versions
- Replaces manual micrometer drives with similar form-factor
- Integrated optical limit switches prevent component & motor damage
- Hard-coated steel actuator ball tip

Compact 15 mm Diameter In-Line Design

TRA6 and TRA12 models provide 6 mm or 12 mm of travel in a slim, 15 mm diameter housing. The TRA25 provides 25 mm travel in a slightly larger 18 mm housing. The slim design minimizes the space used when upgrading a manual stage or optical mount to a motorized solution.

Replaces Micrometer Drives on Manual Stages

TRA actuators offer a similar form-factor to micrometer drives, allowing them to be used to upgrade manual stages with ease. The TRA6 models provide 6 mm travel and are the recommended choice for motorizing 561 series linear stages, 481 and RS65 rotation stages. The TRA12 models provide 12 mm travel and are compatible with Ultima and Suprema mirror mounts, ULTRAlign, 460A series linear stages. The TRA6 and TRA12 are mechanically compatible with other Newport mechanical products, which may have limited performance. For more details, refer to the Stage-to-Actuator Selection Guide. The TRA25 provides 25 mm travel in a slightly larger package and is the recommended choice for motorizing longer travel devices.

Vacuum Compatible Stepper Motor Versions

TRA Series actuators also come in standard stepper motor models specifically designed for vacuum applications up to 10^{-6} hPa and are readily available from stock.



Vacuum Compatible Motorized Mirror Mounts

Vacuum compatible TRA Series actuators can be used to upgrade Newport's vacuum compatible mirror mounts to an automated vacuum compatible solution.

Hard Coated Actuator Tip

TRA actuators also feature a hard-coated steel ball tip that minimizes contact surface wear compared to other designs that use regular steel ball tips.

Integrated Optical Limit Switches

All TRA actuators include integrated optical limit switches. These highly reliable switches not only protect investments from over travel damage, they also provide a method for repeatable referencing/homing, for instance after shut-downs.

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DESIGN DETAILS

Base Material	Stainless steel body
Drive Mechanism	Rolled lead screw
Feedback	CC: Motor mounted rotary encoder, 64 cts/rev. PP: Open loop (no encoder)
Limit Switches	Optical switches, both ends
Origin	Uses minimum travel limit for homing, typically <4 µm or ±2 µm repeatability
Motor	CC: DC Servo PP: 2-Phase stepper motor, 20 steps/rev
Cable Length	3 m

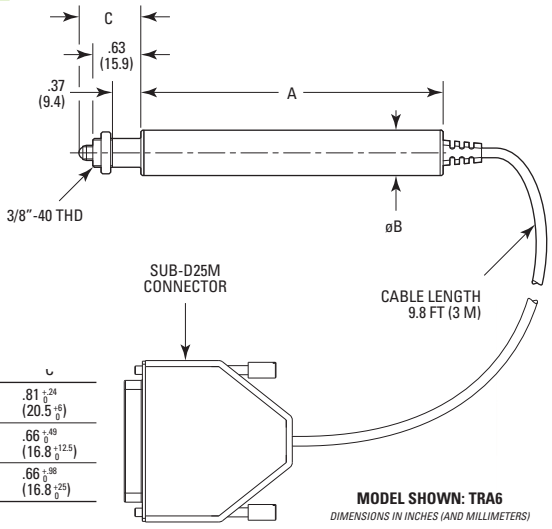
RECOMMENDED CONTROLLERS/DRIVERS

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

TRA Actuators with CONEX Controllers

A CONEX-TRACC is a CONEX-CC DC motor controller/driver coupled with a TRA-CC actuator. The unit is a miniature, low-cost option which offers precision motion in space-confined applications.

DIMENSIONS



	A	B	C
TRA6	3.94 (100)	.59 (15)	$.81^{+.24}_{0}$ (20.5^{+6}_{0})
TRA12	4.45 (113)	.59 (15)	$.66^{+.49}_{0}$ ($16.8^{+12.5}_{0}$)
TRA25	4.72 (120)	.71 (18)	$.66^{+.98}_{0}$ (16.8^{+25}_{0})

MODEL SHOWN: TRA6
DIMENSIONS IN INCHES (AND MILLIMETERS)

SPECIFICATIONS

	TRA-CC	TRA-PP
Travel Range (mm)	6, 12 or 25	
Minimum Incremental Motion (µm)	0.2	0.1
Uni-directional Repeatability, Typical (Guaranteed)[1] (µm)	TRA6 & TRA12: ±0.10 (±0.50) TRA25: ±0.15 (±0.50)	
Bi-directional Repeatability with Compensation, Typical (Guaranteed)[1][2] (µm)	±0.15 (±1.25)	
Accuracy, Typical (Guaranteed)[1] (µm)	TRA6: ±1.5 (±3.0) TRA12: ±2.2 (±4.0) TRA25: ±2.5 (±5.0)	
Maximum Speed (mm/s)	0.4[3]	TRA-PP: 0.4[3] TRA-PPV6: 0.2
Axial Load Capacity [-Cx, +Cx] (N)	-60, +0	TRA-PP: -60, +0 TRA-PPV6: -30, +0

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) *Backlash value is provided with each actuator.*
3) *For axial loads over 45 N, the max. speed must be reduced to 0.3 mm/s.*



ORDERING INFORMATION

Model	Description
TRA6CC	Motorized Actuator, 6 mm Travel, DC Servo Motor
CONEX-TRA6CC	TRA6CC Actuator, Integrated with CONEX-CC Controller
TRA6PPD	Motorized Actuator, 6 mm Travel, Stepper Motor
TRA6PPV6	Motorized Actuator, 6 mm Travel, Stepper Motor, Vacuum Compatible
TRA12CC	Motorized Actuator, 12 mm Travel, DC Servo Motor
CONEX-TRA12CC	TRA12CC Actuator, Integrated with CONEX-CC Controller
TRA12PPD	Motorized Actuator, 12 mm Travel, Stepper Motor
TRA12PPV6	Motorized Actuator, 12 mm Travel, Stepper Motor, Vacuum Compatible
TRA25CC	Motorized Actuator, 25 mm Travel, DC Servo Motor
CONEX-TRA25CC	TRA25CC Actuator, Integrated with CONEX-CC Controller
TRA25PPD	Motorized Actuator, 25 mm Travel, Stepper Motor
TRA25PPV6	Motorized Actuator, 25 mm Travel, Stepper Motor, Vacuum Compatible



ACCESSORIES

Model	Description
ADAPT-TRA	Actuator Adapter, TRA6 & TRA12, Opto-Mechanical Components
ADAPT-TRA25	Actuator Adapter, TRA25, Opto-Mechanical Components

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