

MotorDriver™ Linear Actuator System

Optics

Lenses

Mirrors &
Beamsplitters

Prisms &
Polarizers

Filters

Pinholes

Opto- mechanics

Breadboards
& Rails

Mounting
Hardware

Mirror &
Component
Mounts

Manual
Micro
Positioners

Motorized
Positioners

- **Remote control of micropositioners, optical mounts, and instruments**
- **Open loop**
- **Sub-micrometer minimum incremental movement**
- **10 mm, 13 mm, 25 mm, and 50 mm travels**
- **Spherical and flat tips**
- **Direct replacement of standard manual micrometers**



The MotorDriver system provides a simple and economical method of motorizing the Ealing range of Manual Micropositioners. These motorized actuators are similar in size and shape to the Starret and Mitutoyo micrometers found on many manual positioning stages, making conversion from manual to motorized operation easy. They have also found many OEM applications where a compact motorized actuator is required. The integral DC motor gearhead and precision leadscrew result in an actuator capable of submicrometer motion without sacrificing load capacity. All actuators include a spherical tip, with interchangeable flat tip also supplied with 13, 25, and 50 mm travel units. MotorDrivers are useful when remote operation is required due to limited access or when physical contact could

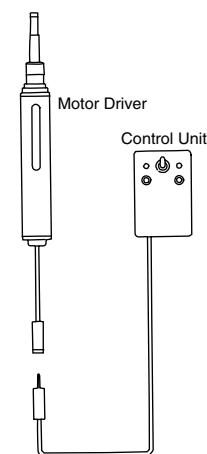
disturb a set-up. They provide open-loop electric actuation and have no positional feedback (for closed-loop operation with positional feedback refer to EncoderDrivers).

A complete MotorDriver System consists of the following items:

- **MotorDriver™ Actuator**
- **MotorDriver™ Hand Control Unit**

All of these items are described on the following pages. Individual units are supplied with the necessary cables and connectors to build the complete system. The MotorDriver Hand Control Unit is available with battery power. This allows 2-axis control with our MotorDriver™ actuators.

A Complete MotorDriver System is shown in the diagram below.



MotorDriver™ Linear Actuators

- Four travel ranges 10 mm, 13 mm, 25 mm, and 50 mm
- Open loop sub-micrometer motorized control
- Two speed operation

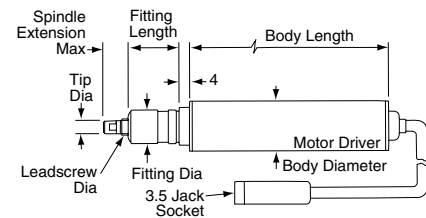


MotorDriver Actuators are available with travel ranges of 10 mm, 13 mm, 25 mm, and 50 mm (0.375 inch, 0.5 inch, 1 inch, and 2 inches) to suit the various micrometer-driven stages from the MicroMech™ MiniMech™ and MacroMech™ ranges. The 10 mm travel unit is miniaturized to have a body diameter of only 12.7 mm (0.5 inch). Longer travel units are still compact for motorized drivers at 19 mm (0.75 inch) diameter.

The 10 mm miniature Actuator is fitted with a spherical tip that is not interchangeable. All others feature interchangeable spherical or flat tips, both are supplied with the units.

Each MotorDriver Actuator requires its own Hand Control Unit, these are described on the following pages.

Dimensions and specifications for the MotorDriver Actuators range are given below.



MotorDriver™ Specifications	10 mm 37-0221	13 mm 37-0007	25 mm 37-0015	50 mm 37-0023
Leadscrew Pitch (mm):	0.5	0.5	0.5	0.5
Motor Speed (rpm-without load):	14,750	15,000	15,000	15,000
Gearhead ratio:	256:1	485:1	485:1	485:1
Max. Linear Speed ¹ (mm/min – without load):	28	15	15	15
Slowest Speed (mm/min):	0.05	0.03	0.03	0.03
Resolution (μm):	0.1	0.1	0.1	0.1
Max. continuous output torque (Nm x 10 ⁻³):		50	50	50
Max. intermittent output torque (Nm x 10 ⁻³):	77	100	100	100
Nominal motor voltage (VDC)	12	12	12	12
Max. output power (W):	0.35	0.5	0.5	0.5
Max. recommended axial load ² (kg/lb):	7(15)	10(22)	10(22)	10(22)
Backlash – typical (μm):	6	6	6	6
Weight (g):	50	80	100	120

¹ Rating for intermittent operation. ² Axial load rating is with point contact on leadscrew spindle tip.

MotorDriver™ Linear Actuators

Catalog Number	Driver Type	Travel (mm)	Spindle Extension	Fitting Length	Fitting Dia.	Body Dia.	Body Length	Tip Dia.	Leadscrew Dia.	Price US
37-0221	DC Motor	10	11	6.0	6.00	12.7	78		4	\$616.35
37-0007	DC Motor	13	19	9.5	9.52	19.05	78	5	6	\$616.35
37-0015	DC Motor	25	31.75	19.05	12.70	19.05	90	5	6	\$537.60
37-0023	DC Motor	50	56.75	19.05	12.70	19.05	117	5	6	\$537.60
37-9701	DC Motor	10	19	9.5	9.0	19.05	78	5	6	\$616.35
37-9669	DC Motor	25	31.75	19.05	9.52	19.05	90	5	6	\$588.00
37-9677	DC Motor	50	56.75	19.05	9.52	19.05	117	5	6	\$588.00

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