PROmech Series Miniature Linear Positioners

Catalog 8094/USA

Parker

ENGINEERING YOUR SUCCESS.

PROmech LP28 Miniature Linear Positioner

Features:

- **Miniature Profile**
- **Optimal length to travel ratio**
- **Travels from 5mm to 500mm**
- **Fully assembled package**
- **Multi-axis platform**
- **Motor included**

Designed for OEMs needing simple positioning solutions for instrument and light industrial applications, the PROmech family of positioners offers a complete positioning solution at a price OEMs can afford to design into their equipment.

The PROmech LP28 is a packaged linear positioner whose completeness reduces OEM component selection and system design time. Further, PROmech positioners minimize re-engineering requirements because the positioner's design is already fully tested. Together these benefits help engineering teams keep aggressive project time lines on schedule and reduce "time to market".

Once a design goes into production PROmech positioners help reduce both costs and assembly time. Building a linear motion axis from scratch requires the procurement, tracking, receiving, inventorying, kitting, assembly, and testing of about a dozen parts. Every time a component must be "touched" to help it navigate this process, it consumes part of a resource and adds a hidden cost of both time and money. Instead of a dozen parts, a PROmech positioner is a single piece, sourced from a domestic supplier with short leadtimes. PROmech positioners are easy to procure and once on the assembly floor, are quick to install.

Attributes:

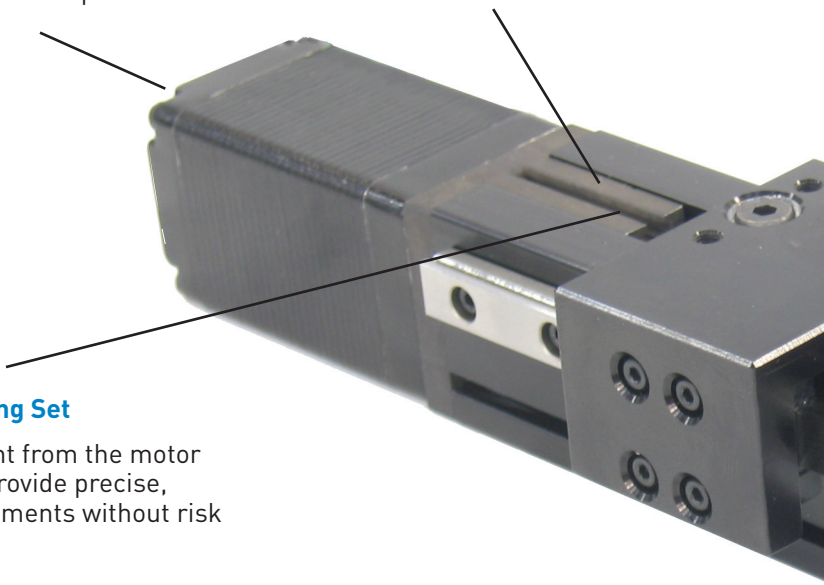
- **Miniature Cross Section (28mm x 28mm)**
- **High performance leadscrew drive train**
- **1mm, 3mm, 10mm, and 1" screw lead options**
- **Recirculating linear bearing**
- **Travels selectable by the mm from 5mm to 500mm**
- **NEMA11 or NEMA17 stepper motors included as standard**
- **Fully adjustable home and limit sensors**

Stepper Motor

is included as part of the positioner to simplify application and installation of a complete motion solution.

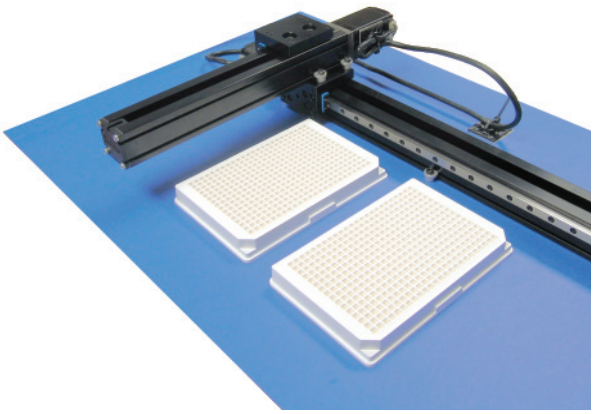
Motor Coupling

is integrated into the design to conserve space and provide long life.



Thrust Bearing Set

is independent from the motor bearings to provide precise, reliable movements without risk to the motor.



Extruded Aluminum Body

provides structural rigidity, aesthetic appeal, and functionality including T-slots for mounting and attachment of accessories.

Multi-axis Systems: Beyond the single axis positioner many applications require XY or XYZ configurations. PROmech positioners are designed for multi-axis mounting and include features and accessories to enable this. To further minimize your assembly time, Parker can provide PROmech Systems™ where we mount and align multiple axes together into a systems per your specification.

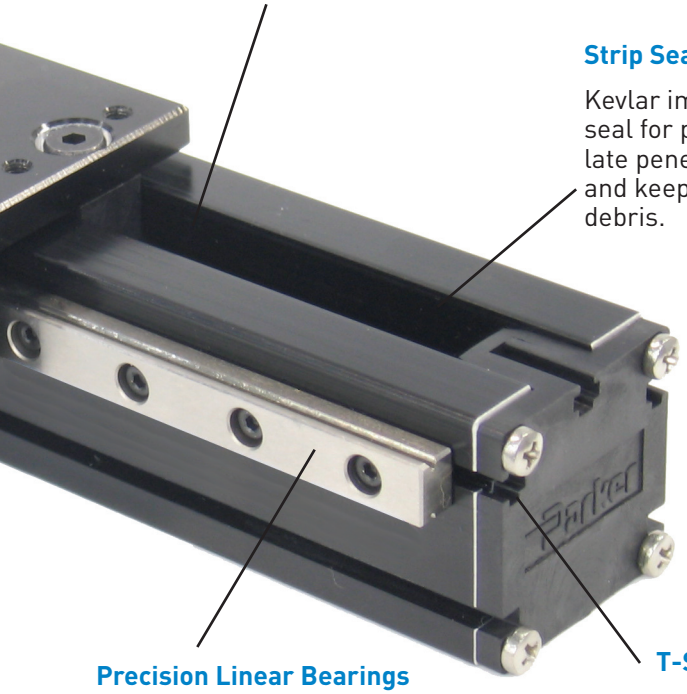
Whether you use 100 axes/year or 10,000 axes/year, Parker's PROmech Series Positioners offer the flexibility, reliability, and ease of use that will enable you to achieve your companies business objectives.

Leadscrew Drive Train

for long life and with multiple lead options to easily match the screw to an application's performance requirements.

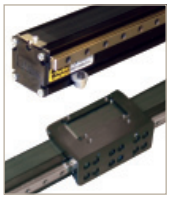
Home and Limit Sensors

mount to the external T-slot, and are fully adjustable over travel. (not shown)



Strip Seal Option

Kevlar impregnated Teflon strip seal for protection from particulate penetration offers long life and keeps the unit clean from debris.



The PROmech design begins with an extruded aluminum body that provides aesthetic appeal, functionality, and structural strength. Internally, the drive train is highly integrated and includes the drive screw, screw nut, independent preloaded thrust bearing set, shaft coupling, and motor. Externally, an optional linear bearing may be used to support heavier or cantilevered payloads. Toe clamp mounting makes installation a snap. And finally, home and limit sensors which are triggered by a magnet in the carriage assembly may be mounted using the T-slot and are fully adjustable over travel.

Precision Linear Bearings

provide smooth, straight transport of payloads over the life of the positioner.

T-Slots

for mounting accessories including home and limit sensors.

Performance Specifications

The PROmech LP28 is engineered for transport of small payload over distances as short as 5mm and as long as 500mm. The LP28 is commonly used in life sciences, medical, and semiconductor equipment although it is not limited to these markets. Typical applications include transport of 1 to 2 lb. payloads such as microplates, vials, and small syringe pumps. In inspection applications, the LP28 is excellent as a focus axis for adjusting the position of a camera, optics, or payload. The LP28's light weight also makes it suitable for mobile equipment as well.

Common Performance Characteristics

	1.0mm lead	3.0mm lead	10mm lead	1.0" lead
Bidirectional Repeatability – um	+/- 50	+/- 50	+/- 100	+/- 100
Duty Cycle	100%			
Max Accel - m/s² (ips²)	20 (787)			
Normal Load – Kgf (lbs)				
Single Bearing Carriage	5 (11)			
Double Bearing Carriage	10 (22)			
Moment Load – Nm (in-lbs)				
Roll – Single Bearing	0.5 (4.4)			
Roll – Double Bearing	1.0 (8.8)			
Pitch – Single Bearing	0.5 (4.4)			
Pitch – Double Bearing	2.0 (18)			
Yaw – Single Bearing	0.5 (4.4)			
Yaw – Double Bearing	2.0 (18			
Max Thrust – N (lbs) [1]	45 (10)			
Screw Efficiency - %	40%	65%	75%	80%
Break away Torque – Nm (oz-in)	0.02 (2.8)	0.02 (2.8)	0.03 (4.2)	0.06 (8.5)
Screw Diameter - mm	6.35			
Coefficient of Friction	0.02			

Note 1: See speed/thrust curves for combined motor-screw thrust capacity.

Travel Dependent Performance Characteristics

Travel - mm	Maximum Speed – mm/s				Total Mass – Kg (lbs)		
	1mm lead	3mm lead	10mm lead	1.0" lead	M11xx	M13xx	M71xx
5 mm	15	45	150	375	0.39 (0.85)	0.48 (1.05)	0.52 (1.14)
25 mm	15	45	150	375	0.42 (0.9)	0.51 (1.12)	0.55 (1.20)
50 mm	15	45	150	375	0.46 (1.00)	0.55 (1.20)	0.59 (1.29)
75 mm	15	45	150	375	0.49 (1.08)	0.58 (1.28)	0.62 (1.37)
100 mm	15	45	150	375	0.53 (1.17)	0.62 (1.36)	0.66 (1.45)
150 mm	15	45	150	375	0.61 (1.33)	0.70 (1.53)	0.74 (1.62)
200 mm	15	45	150	375	0.68 (1.50)	0.77 (1.69)	0.81 (1.78)
250 mm	15	45	150	375	0.76 (1.66)	0.85 (1.86)	0.89 (1.95)
300 mm	15	45	150	375	0.83 (1.83)	0.92 (2.02)	0.96 (2.11)
350 mm	15	45	150	375	0.91 (1.99)	1.00 (2.19)	1.04 (2.28)
400 mm	15	45	150	375	0.98 (2.16)	1.07 (2.35)	1.11 (2.44)
450 mm	15	45	150	375	1.06 (2.32)	1.15 (2.52)	1.19 (2.61)
500 mm	15	45	150	375	1.13 (2.49)	1.22 (2.68)	1.26 (2.77)

Performance Graph Notes:

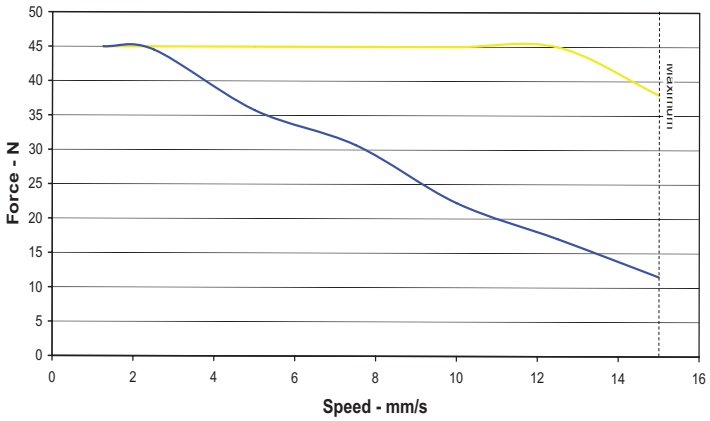
To simplify application, the different aspects of positioner performance including motor torque, motor speed, screw efficiency, friction, safety margin, etc. have been consolidated into these speed versus thrust graphs. To make a selection first use the X axis scale of the different graphs to identify a screw lead that will deliver the desired peak velocity. Next, using the specific screw lead graph, identify the motor with enough torque to deliver the needed thrust to lift or accelerate the payload.

NEMA11 stepper motor curves (M11xx and M13xx options) assume 24VDC bus voltage at 0.67 amps. NEMA17 stepper motor curves (M71xx options) assume 48VDC bus voltage at 1.14 amps for series wound operation and 2.28 amps for parallel wound operation. All graphs are limited to 45N (10 lbs) of thrust due to mechanical limitations. Care should be taken not to stall the axis into the end of travel, particularly with the 1mm lead screw (D01 options) as this motor-screw combination can generate significant amounts of thrust. All curves include a 10% safety margin.

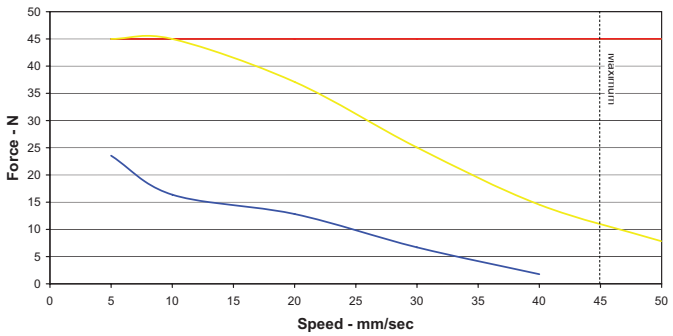
The "Maximum Recommended Speed" is based on a maximum motor speed of 15 rps. Generally, the motors can rotate faster than 15 rps; however, at about 20 rps, they pass through a resonance which adversely and unpredictably affects useable motor torque. For applications requiring higher speeds, Parker recommends using a faster lead or a servo motor. Applications using a stepper motor above this recommended limit must be fully tested and qualified by the user.

Linear Speed versus Force Graphs

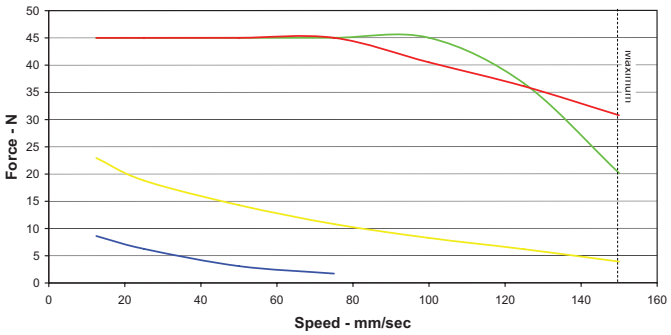
1mm Lead Screw (D01 Option)



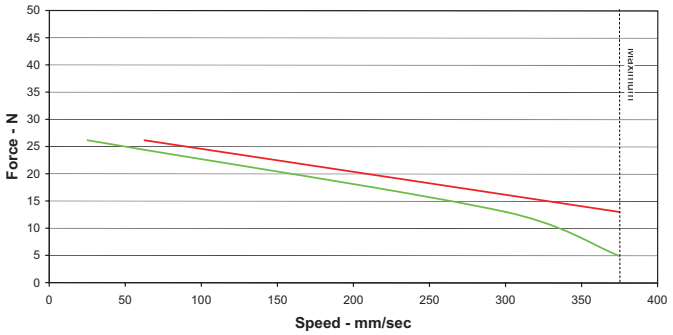
3mm Lead Screw (D03 Option)



10mm Lead Screw (D10 Option)



1.0" Lead Screw (D26 Option)



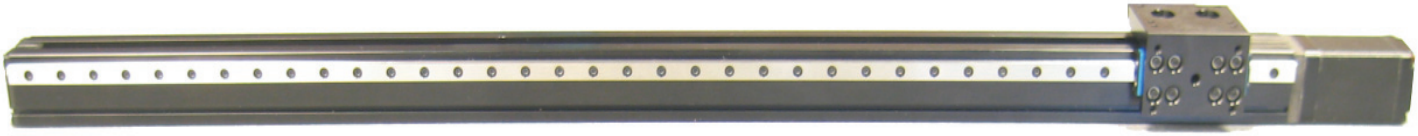
NEMA11 Triple Stack (M13xx Option)

NEMA11 Single Stack (M11xx Option)

NEMA17 Single Stack - Series Wound (M71xx Option)

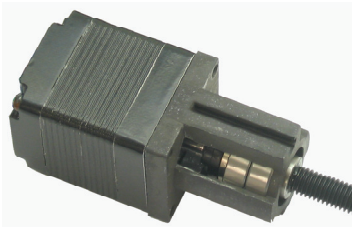
NEMA17 Single Stack - Parallel Wound (M71xx Option)

Features and Options



Travel by the mm: Because the LP28 is miniature and must often fit into miniature spaces, the travel of the LP28 is selectable by the millimeter from 5mm to 500mm. This offers the greatest flexibility and enables designs to have the required travel with the minimum overall length.

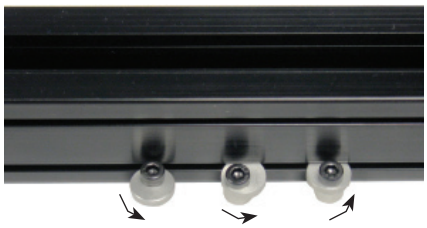
Independent Thrust Bearings



Because high reliability and long life is a critical requirement of OEM designs, the LP28 includes a pair of independent thrust bearings, dedicated to managing the positioner's axial loads. Some competitive miniaturized drive trains use the radial bearings in the step motor to contain the motor rotor, manage thermal expansion as the motor heats, and bear the axial loads generated by the application. In some cases this is an acceptable practice, but may prove to be a reliability risk down the road. The LP28's bearing design allows thrust bearings to be thrust bearings and motor bearings to be motor bearings resulting in a highly reliable and long life positioner.

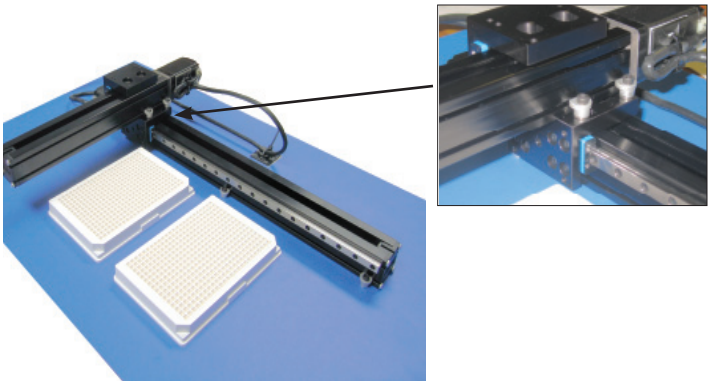
Optional Strip Seal: Rugged polyester impregnated UHMW seal for anti-stretch and anti-wear characteristics providing protection for the lead screw and internal bearings. The seal provides protection to an IP30 range and is matched to the black actuator body for optically sensitive environments. The strip seal is ordered under the bearing options and will slightly increase the overall length due to an extended length carriage.

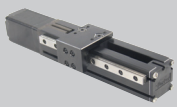
Toe Clamp Mounting:



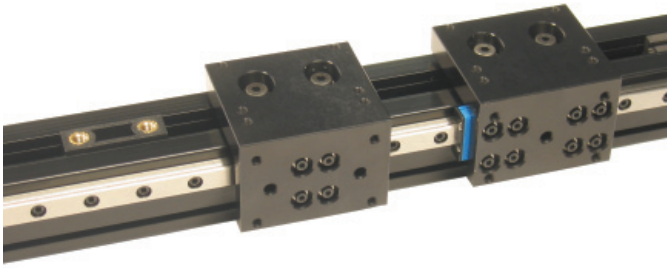
Installation of the LP28 is very simple with toe clamps that may be placed anywhere along the base extrusion offering flexibility in the base mounting pattern. The cam style toe clamps can be "loosely" installed without the positioner. This allows fingers to quickly and efficiently place the toe clamps and start the screws without interference. Once started, the positioner can be placed and the toe clamps rotated into the lower slot and tightened. Toe clamps are available as an accessory and may be purchased in a 4 pack (part #002-2530-01) which is ideal for shorter travel units. For OEMs, Toe clamps may be purchased in bulk (part #002-2531-01).

Multi-axis mounting: The LP28 is designed to mount in XY and cartesian arrangements with only toe clamps. Short travel Z axes can be attached using only toe clamps with longer travels requiring a standard Z-Bracket. Contact Daedal for more information.





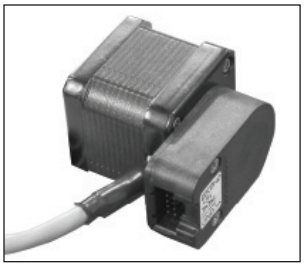
Screw Lead Flexibility: The PROmech Series offers 4 standard screw lead options: 1mm lead, 3mm lead, 10mm lead, and 1.0" lead. Whether you application is slow and precise, long and fast, or somewhere in between, the options will allow you to performance match the drive train to your application.

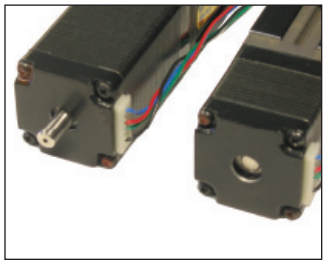


Linear Bearing Options: The PROmech Series offers 2 standard bearing options: a single linear rail with a single bearing truck or with two bearing trucks. These options provide flexibility to performance match the linear bearing system to your application.

Motor Options: The PROmech Series includes a number of standard motors. For most applications the NEMA11 motors options will easily fulfill requirements. These are available in multiple stack lengths. The motors may include a rear shaft for encoder mounting or for manually positioning the stage. You may also choose between 18" flying motor leads or a 10' long cable. Further, the faster lead screw options will require the higher torque capacities of the standard NEMA17 stepper. If you have special motor requirements such as a servo or DC motor, contact Daedal as these can be accommodated as well.

Encoder Options: Rotary encoders on the back of the motor are available. Contact Daedal for more information.

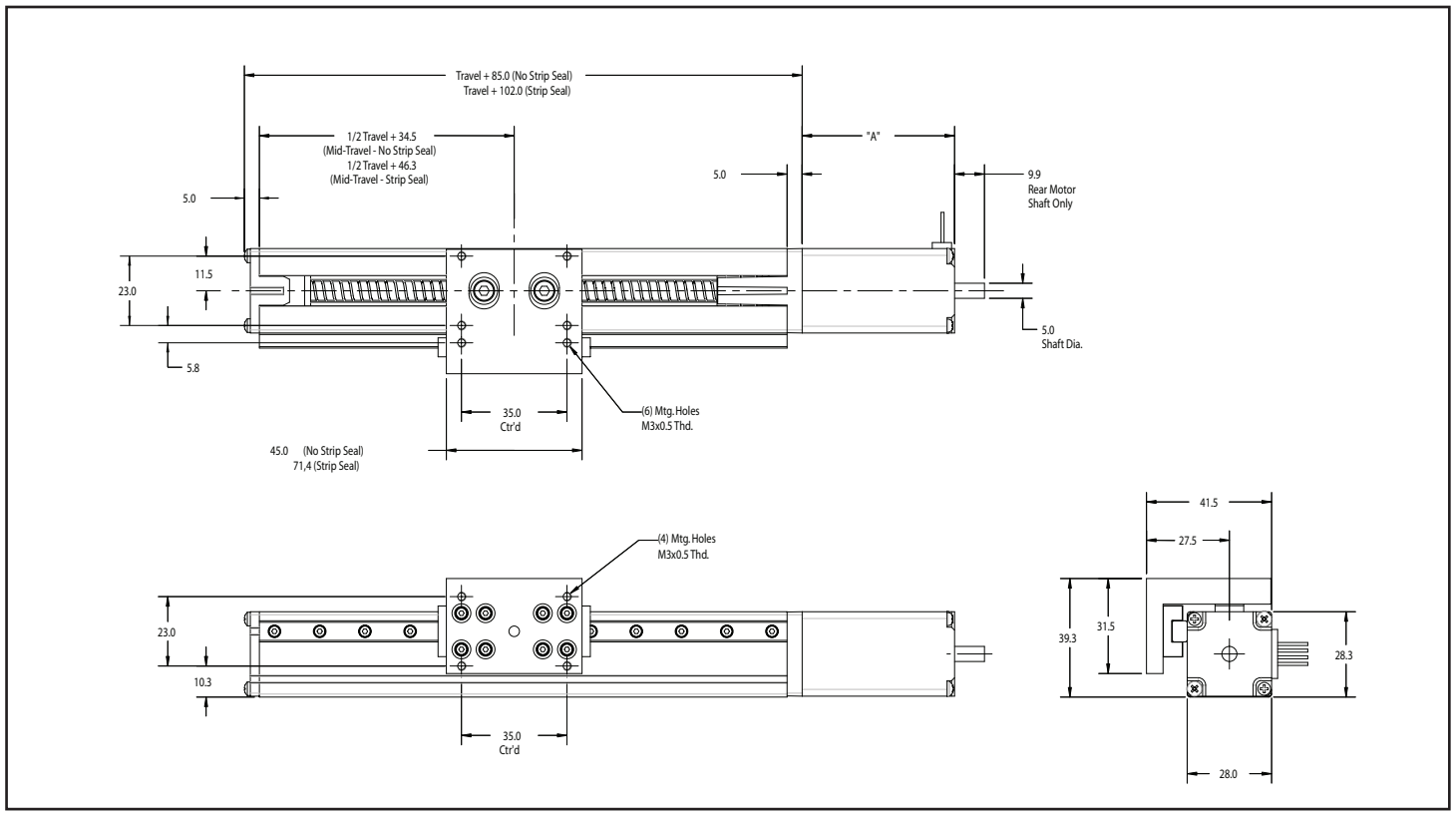


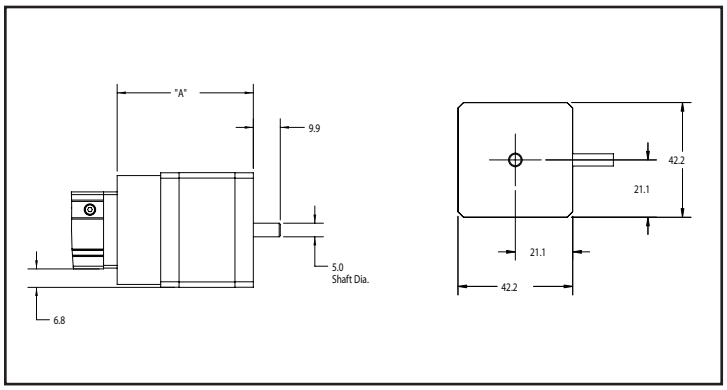


Home and Limit Sensor Options: Home and Limit Sensors are available as a standard option. These attach to the side of the actuator using the T-slot and are activated by a magnet imbedded inside the carriage assembly. Four sensor types are available with all the N.O., N.C., NPN, and PNP variations. The sensors include 3.0 meters of cable. Home sensor options include 1 sensor and mounting hardware. Limit sensor options include 2 sensors and mounting hardware.

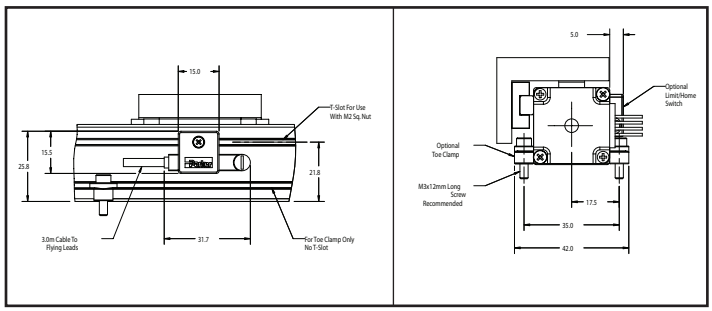
Order Code	Spare Part Number	Switch Type	Logic	Cable Type
H2 or L2	003-3743-07	N.C.	Sinking	3.0 meter to flying leads
H3 or L3	003-3743-05	N.O.	Sinking	3.0 meter to flying leads
H4 or L4	003-3743-08	N.C.	Sourcing	3.0 meter to flying leads
H5 or L5	003-3743-06	N.O.	Sourcing	3.0 meter to flying leads

Input Power	10-30VDC
Voltage Drop	<= 2.5V
Cont. Current	100mA
Electrical Protection	Short Circuit, Reverse Polarity, and Power Up Pulse Suppression
Enclosure	IP67 Rated Polyamide Housing with PVC Cable Jacket
Wire Colors	Brown – Power (+) Black – Signal Blue – Ground (-)
Cable Length	3.0 meter to flying leads





NEMA17 Motor Option (M71xx Option)



Limit Switch Accessories

Toe Clamp Accessories

	"A" mm	Amps/ phase	Torque Nm (oz-in)	Resistance ohm/ph	Inductance mH	Rotor Inertia oz-in2	Weight Kg (lbs)	Wire Colors
M11xx	31.5	0.67 Peak/0.5 Amps RMS	0.06 (9.2)	5.6	3.4	0.05	0.11 (0.24)	A+ Red A- Black B+ White B- Green
M12xx	44.5	0.67 Peak/0.5 Amps RMS	0.10 (13.7)	7.1	4.8	0.07	0.14 (0.31)	
M13xx	50.6	0.67 Peak/0.5 Amps RMS	0.14 (16.6)	8.6	6.7	0.10	0.20 (0.4	
M71xx (series)	50.0	1.14 Peak/0.8 Amps RMS	0.40 (56)	11.09	14.29	0.18	0.18 (0.40)	Refer to manual
M71xx (parallel)		2.28		2.77	3.57			

PROmech LP28 - How to Order:

Order Example:

LP28 | T0050 | D01 | G31 | M1111 | H3 | L2

Model

LP28

Travel

Travel in mm..... Txxxx

Drive

Idler only	D00
1 mm lead screw[1]	D01
3 mm lead screw	D03
10 mm lead screw	D10
1" lead screw[2]	D26

Guide System

Linear Rail with

1 Bearing Truck, no seal	G21
1 Bearing Truck, with strip seal	G22
2 Bearing Trucks, no seal	G31
2 Bearing Truck, with strip seal	G32

Limit Sensors (quantity 2)[3]

L1	No Sensor
L2	N.C., Current Sinking, 3.0m Cable to flying leads
L3	N.O., Current Sinking, 3.0m Cable to flying leads
L4	N.C., Current Sourcing, 3.0m Cable to flying leads
L5	N.O., Current Sourcing, 3.0m Cable to flying leads

Home Sensor[3]

H1	No Sensor
H2	N.C., Current Sinking, 3.0m Cable to flying leads
H3	N.O., Current Sinking, 3.0m Cable to flying leads
H4	N.C., Current Sourcing, 3.0m Cable to flying leads
H5	N.O., Current Sourcing, 3.0m Cable to flying leads

Motor

M1111	Stepper, NEMA11,[2] 1 Stack, 18" Leads
M1112	Stepper, NEMA11,[2] 1 Stack, 10' Cable
M1321	Stepper, NEMA11,[2] 3 Stack, Rear Shaft, 18" Leads
M1322	Stepper, NEMA11,[2] 3 Stack, Rear Shaft, 10' Cable
M7122	Stepper, NEMA17,[3] 1 Stack, Rear Shaft, 10' Cable

(1) D01 not available with M7xxx
(2) D26 not available with M1xxx
(3) Tables with travel 75mm or less may have limited sensor capabilities and may be limited to 0, 1 or 2 sensors

PROmech LD28 Miniature Linear Positioner

Features:

- **Miniature Profile**
- **Independent Thrust Bearing Set**
- **High Thrust per Package Size**
- **Stepper or Servo Motor**
- **Stroke from 5mm to 300mm**
- **Backlash Compensation**

Designed for OEMs needing simple positioning solutions for instrument and light industrial applications, the PROmech family of positioners offers a complete positioning solution at a price OEMs can afford to design into their equipment.

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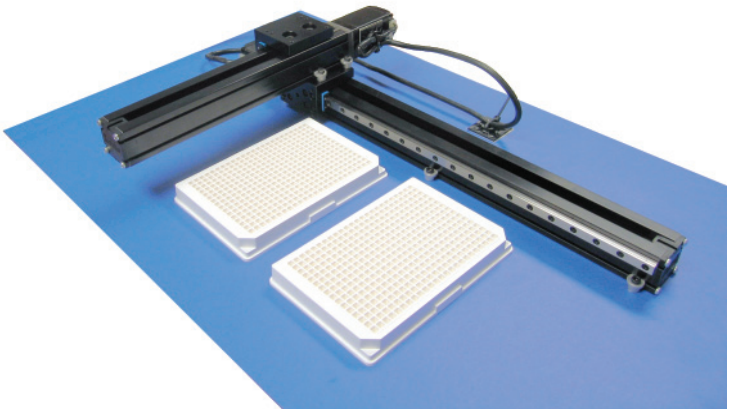
Attributes:

- **Miniature Cross Section (28mm x 28mm)**
- **High performance leadscrew drive train**
- **1mm, 3mm, 10mm, and 1" screw lead options**
- **Anti-backlash nut design**
- **Travels selectable by the mm from 5mm to 300mm**
- **NEMA11 or NEMA17 stepper motors included as standard**
- **Independent, preloaded thrust bearing set for long life**

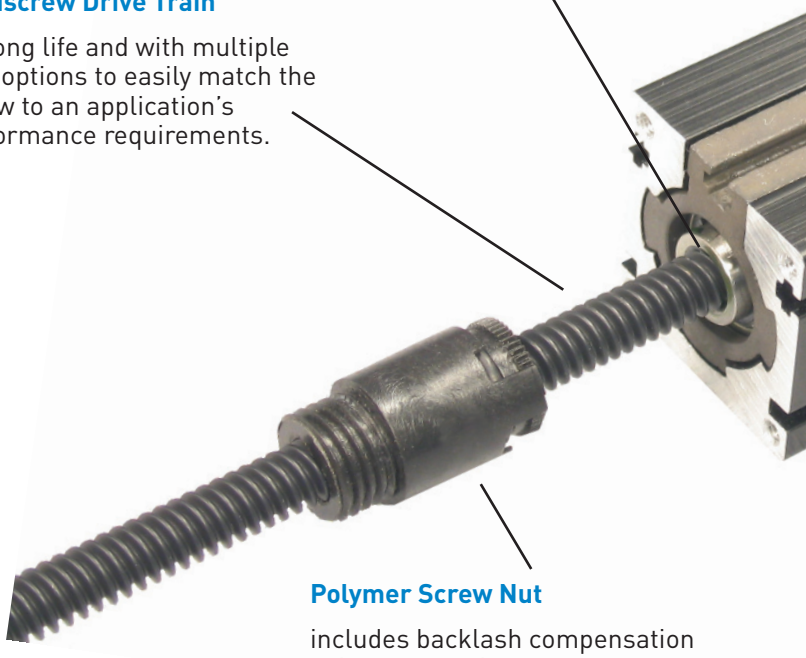


Thrust Bearing Set

is independent from the motor bearings to provide precise, reliable movements without risk to the motor.

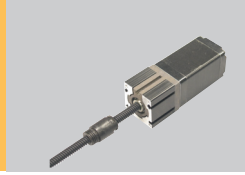
Leadscrew Drive Train

for long life and with multiple lead options to easily match the screw to an application's performance requirements.



Polymer Screw Nut

includes backlash compensation adjustment to improve bidirectional repeatability while maintaining long life.

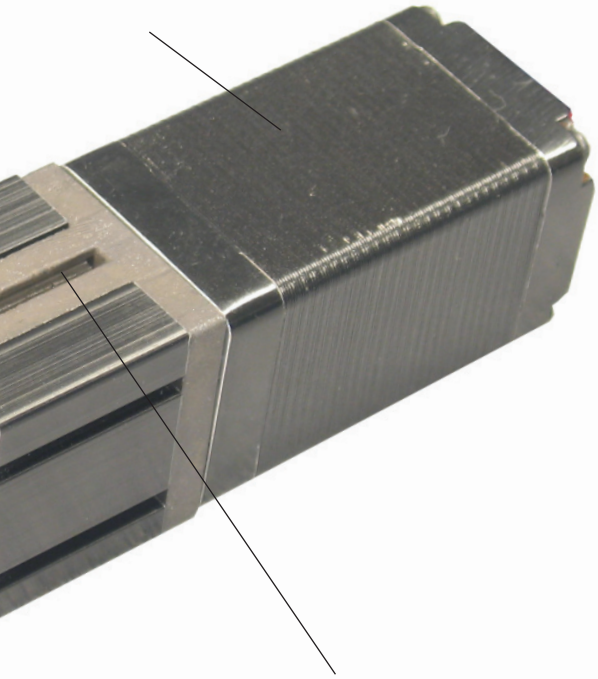


Customizable: Beyond the standard configurations, PROmech LD28 Actuators can be customized to address the unique requirements of a particular high volume application. These modifications may further reduce the installed cost and could include special motors (stepper, servo, or DC); special screws (finer leads, ballscrews, special nuts, etc.); environmental preparation (vacuum, high temp., etc.) just to mention a few.

Whether you use 100 axes/year or 10,000 axes/year, Parker's PROmech Series Positioners offer the flexibility, reliability, and ease of use that will enable you to achieve your company's business objectives.

Stepper Motor

is included as part of the positioner to simplify application and installation of a complete motion solution.



Motor Coupling

is integrated into the design to conserve space and provide long life.

	1mm lead	3mm lead	10mm lead	1.0" lead
Bidirectional Repeatability-um	+/-50	+/-50	+/-100	+/-100
Duty Cycle	100%			
Max Accel - m/s (in/sec)	20 (787)			
Max Axial Load – N (lbs) [1]	45 (10)			
Screw Efficiency - %	40%	65%	75%	80%
Break away Torque – Nm (oz-in)	0.02 (2.8)	0.02 (2.8)	0.03 (4.2)	0.06 (8.5)
Screw Diameter - mm	6.35			

Note: See LP28 speed/thrust curves for combined motor-screw thrust capacity.

Travel - mm	Maximum Speed – mm/s			
	1mm lead	3mm lead	10mm lead	1.0" lead
5 mm	15	45	150	375
25 mm	15	45	150	375
50 mm	15	45	150	375
75 mm	15	45	150	375
100 mm	15	45	150	375
150 mm	15	45	150	375
200 mm	15	45	150	375
250 mm	15	45	150	375
300 mm	15	45	150	375

The PROmech LD28 is engineered for thrusting small payload over distances as short as 5mm and as long as 300mm. The LD28 is commonly used in life sciences, medical, and semiconductor equipment although it is not limited to these markets. Typical applications include syringe pumps and positioning stages. The LD28's light weight also makes it suitable for mobile equipment as well.

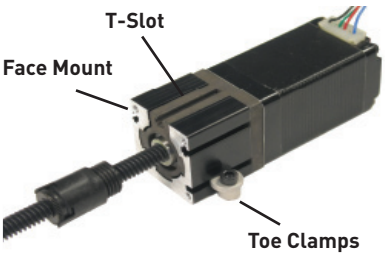
Screw Lead Flexibility: The PROmech Series offers 4 standard screw lead options: 1mm lead, 3mm lead, 10mm lead, and 1.0" lead. Whether your application is slow and precise, long and fast, or somewhere in between, these options will allow you to performance match the drive train to your application.

Travel by the mm: Further because the LD28 is miniature and must often fit into miniature spaces, the travel of the LD28 is selectable by the millimeter from 5mm to 300mm. This offers the greatest flexibility and enables designs to have the required travel with the minimum overall length.

Motor Options: The PROmech Series includes a number of standard motors. For most applications the NEMA11 motors options will easily fulfill requirements.

Independent Thrust Bearings: Because high reliability and long life is a critical requirement of OEM designs, the LP28 includes a pair of independent thrust bearings, dedicated to managing the positioner's axial loads. Some competitive miniaturized drive trains use the radial bearings in the step motor to contain the motor rotor, manage thermal expansion as the motor heats, and bear the axial loads generated by the application. In some cases this is an acceptable practice, but may prove to be a reliability risk down the road. The LP28's bearing design allows thrust bearings to be thrust bearings and motor bearings to be motor bearings resulting in a highly reliable and long life positioner.

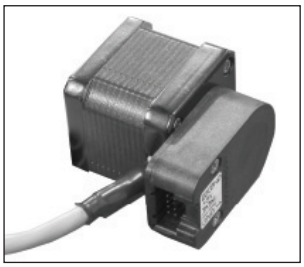
Toe Clamp or Tapped Face Mounting: Installation of the LD28 is very simple with the option to use toe clamps or T-Slots for mounting on surfaces that are parallel with the axis or a tapped face mount for surfaces that are perpendicular to the axis. The cam style toe clamps can be "loosely" installed without the positioner allowing fingers to quickly and efficiently place the toe clamps and start the screws without interference. Once started, the actuator can be placed and the toe clamps rotated into the lower slot and tightened. Toe clamps are available as an accessory and may be purchased in a 4 pack (part #002-2530-01) or in bulk (part #002-2531-01). The T-Slot enables a bolt to come through a surface into a T-nut and for the face mount, the LD28 includes four M2.5 tapped holes in a 23.1mm square pattern.

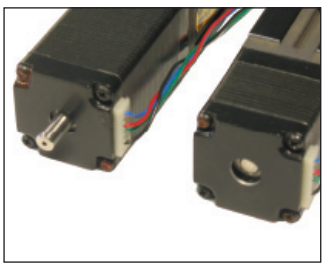


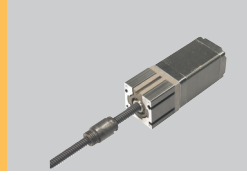
Motor Options: The PROmech Series includes a number of standard motors. For most applications the NEMA11 motors options will easily fulfill requirements. These are available in multiple stack lengths. The motors may include a rear shaft for encoder mounting or for manually positioning the stage. You may also choose between 18" flying motor leads or a 10' long cable. Further, the faster lead screw options will require the higher torque capacities of the standard NEMA17 stepper. If you have special motor requirements such as a servo or DC motor, contact Daedal as these can be accommodated as well.

Encoder Options: Rotary encoders on the back of the motor are available. Contact Daedal for more information.

002-2535-01 Strip Seal Replacement Kit - Includes 600 mm strip seal to cut to length, screws and 2 square M2 nuts for mounting.







PROmech LD28 - How to Order:

Order Example:

LD28 T0050 D01 M1111

Model

LD28

Travel

Travel in mm..... Txxxx

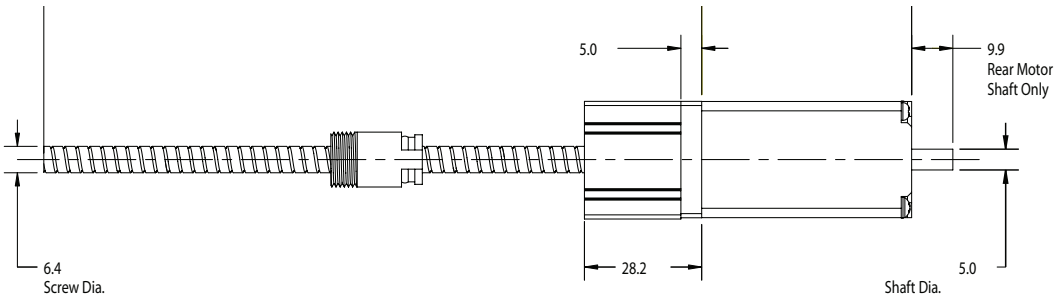
Drive

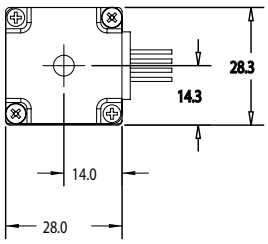
1 mm lead screw[1]..... D01
3 mm lead screw..... D03
10 mm lead screw..... D10
1" lead screw[2]..... D26

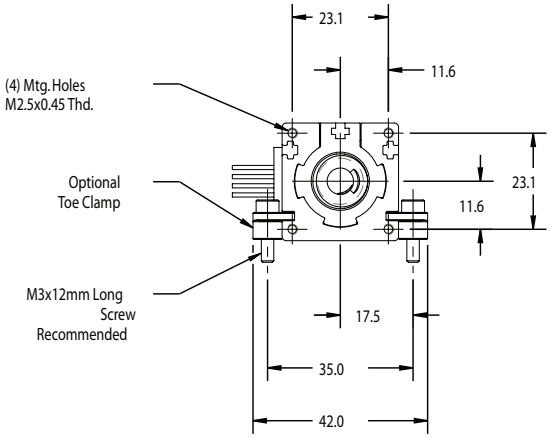
Motor

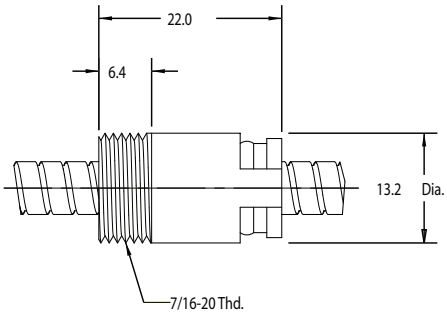
M1111 Stepper, NEMA11, 1 Stack, 18" Leads
M1112 Stepper, NEMA11, 1 Stack, 10' Cable
M1321 Stepper, NEMA11, 3 Stack, Rear Shaft, 18" Leads
M1322 Stepper, NEMA11, 3 Stack, Rear Shaft, 10' Cable
M7122 Stepper, NEMA17, 1 Stack, Rear Shaft, 10' Cable

(1) D01 not available with M7xxx
(2) D26 not available with M1xxx









	"A"
M11xx	31.5
M12xx	44.5
M13xx	50.6
M71xx	50.0

Note: See the LP28 drawings for complete motor data.

PROmech Stepper Drive Accessories

Features:

- **Full Digital Microstepping Drive**
- **24 to 80VDC Input Voltage Range**
- **Optional CANopen/RS485 Interface**
- **Stepper or Servo Motor Control**
- **PROmech LP28 and LD28 Compatible**
- **Resolutions to 51,200 steps/rev**

Small, Intelligent and Powerful Digital Stepper Drive/Controller

The ViX family is a compact, high performance family of programmable stepper and servo drives. You are able to mix steppers and servos in an applications while taking advantage of the same DC power supply, connections, wizard front end software and compact size. Of particular interest to PROmech users is ViX250IM which is power matched to the PROmech stepper motors and provides ample programmability and connectivity to solve a broad array of applications. The control capabilities include advance features such as stall detection, position maintenance, registration, and following.

ViX Stepper Drive/Controller General Features

- Wizard-based configuration
- Up to 80 VDC bus voltage
- Compact size: 4.9 x 1.65 x 3.35 inches
- CE (EMC & LVD), UL compliant

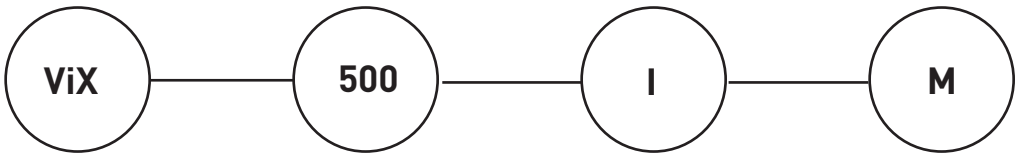
ViX Stepper Drive/Controller Programming Features

- Storage of up to 16 sequences
- Registration, following, position maintenance, stall detection and conditionals
- Standard RS232C ASCII interface
- Single command multi-axis daisy chain configuration
- Optional RS485/CANbus interface

ViX Stepper Drive/Controller Performance Features

- Integer selectable resolutions from 200 to 51,200 steps/rev
- 5 digital inputs, 3 digital outputs, 1 analog input
- Differential encoder input
- Anti-resonance circuitry suppresses mid-range instability
- Recommended motor inductance range of 0.5 mH to 20 mH

ViX Stepper Drive/Controller Part Numbering System

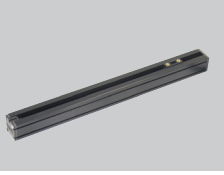


ViX Digital Drive Series
Example: VIX500IM

Current Motor Power Level
250 – current: 4.0 A pk (2.8 Arms)
Motor supply: 24-80 VDC
500 – current: 8.0 A pk (5.6 Arms)
Motor supply: 48-80 VDC

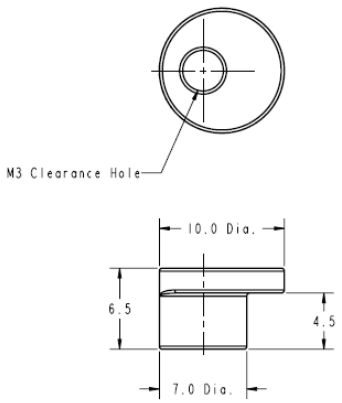
Control Type
I – Drive/controller
C – Drive/controller with CANopen/RS485

Drive Type
M - Stepper

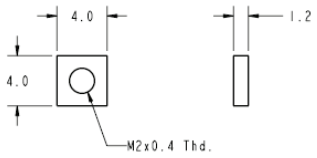


Accessories & Spare parts

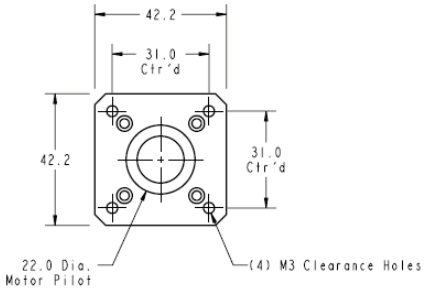
Part Number	Description
002-2530-01	Toe Clamp Kit - Includes (4) Toe Clamps and (4) M3x12 SHCS
002-2531-01	Bulk Toe Clamps - Includes (100) Toe Clamps Only
002-2532-01	Sensor Mounting Kit - Includes Mounting Clip, M2 Square Nut, and M2x5 Pan Head Screw
002-2533-01	T-Nut Kit - Includes (10) M2 Square Nuts
002-2534-01	NEMA 17 Motor Adapter Kit - Includes Adapter, (4) M2.5x20 SHCS, and (4) M3x16 SHCS
003-3550-01	Motor, NEMA 11 Triple Stack, Rear Shaft, 18' Leads - For M1321 Option
003-3550-08	Motor, NEMA 11 Single Stack, 18' Leads - For M111 Option
003-3550-09	Motor, NEMA 11 Triple Stack, Rear Shaft, 10' Cable - For M1322 Option
003-3550-12	Motor, NEMA 11 Single Stack, 10' Cable - For M1112 Option
003-3551-01	M2.5x60 Pan Head Screw, Mounts NEMA 11 Triple Stack Motor
003-3551-02	M2.5x40 Pan Head Screw, Mounts NEMA 11 Single Stack Motor
003-3558-03	Coupling Hub, 5mm Bore
003-3560-01	Coupling Torque Disk
003-3743-07	Sensor, N.C. Current Sinking, 3m Cable to Flying Leads - For H2 or L2 Option
003-3743-05	Sensor, N.O. Current Sinking, 3m Cable to Flying Leads - For H3 or L3 Option
003-3743-08	Sensor, N.C. Current Sourcing, 3m Cable to Flying Leads - For H4 or L4 Option
003-3743-06	Sensor, N.O. Current Sourcing, 3m Cable to Flying Leads - For H5 or L5 Option
003-3908-01	M2 Square Nut
101-1564-01	Toe Clamp
101-1567-01	NEMA 17 Motor Adapter
C*LV171-02-10	Motor, NEMA 17 Single Stack, Rear Shaft, 10' Cable - For M7122 Option
101-1564-01	Toe Clamp 101-1567-01 NEMA17 Motor Adapter
002-2535-01	Strip Seal kit including 600 mm strip seal, and all necessary mounting hardware



101-1564-01 Toe Clamp



003-3908-01 M2 Square Nut



101-1567-01 NEMA17 Motor Adapter

Parker Hannifin Corporation
Electromechanical Automation Division
1140 Sandy Hill Road
Irwin PA, 15642
parkermotion.com