

MP-Series™ and TL-Series™ Electric Cylinders

Flexibility and Efficiency for Industrial Applications

Linear motion applications using fluid power systems are often noisy and inefficient with limited control functionality. But with the MP-Series and TL-Series Electric Cylinders, your applications can experience flexible servo control providing both accurate positioning as well as forces which can build very quickly. These quiet, clean and energy-efficient piston rod actuators provide an excellent upgrade for your current systems.

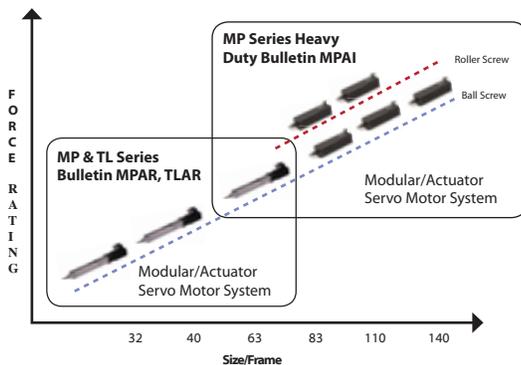


Precise and Dynamic

With the ability to synchronize and coordinate with multi-axis machine motions, the TL-Series and MP-Series cylinders provide a dynamic, precise response for a wide range of linear motion applications. When seamlessly integrated into the Rockwell Automation Integrated Architecture™, these electric cylinders use RSLogix™ 5000 software to extend and retract with precise positioning, velocity or force.

Allen-Bradley Electric Cylinders have:

Electric Cylinder Product Range



- Peak feed force of up to 14679 N (3300 lbs)
- Speeds up to 1 m/sec
- Linear stroke lengths to 800 mm
- Positioning repeatability of ± 0.02 mm
- High resolution absolute feedback
- 100% duty cycle rating

Ready-to-Install Solution

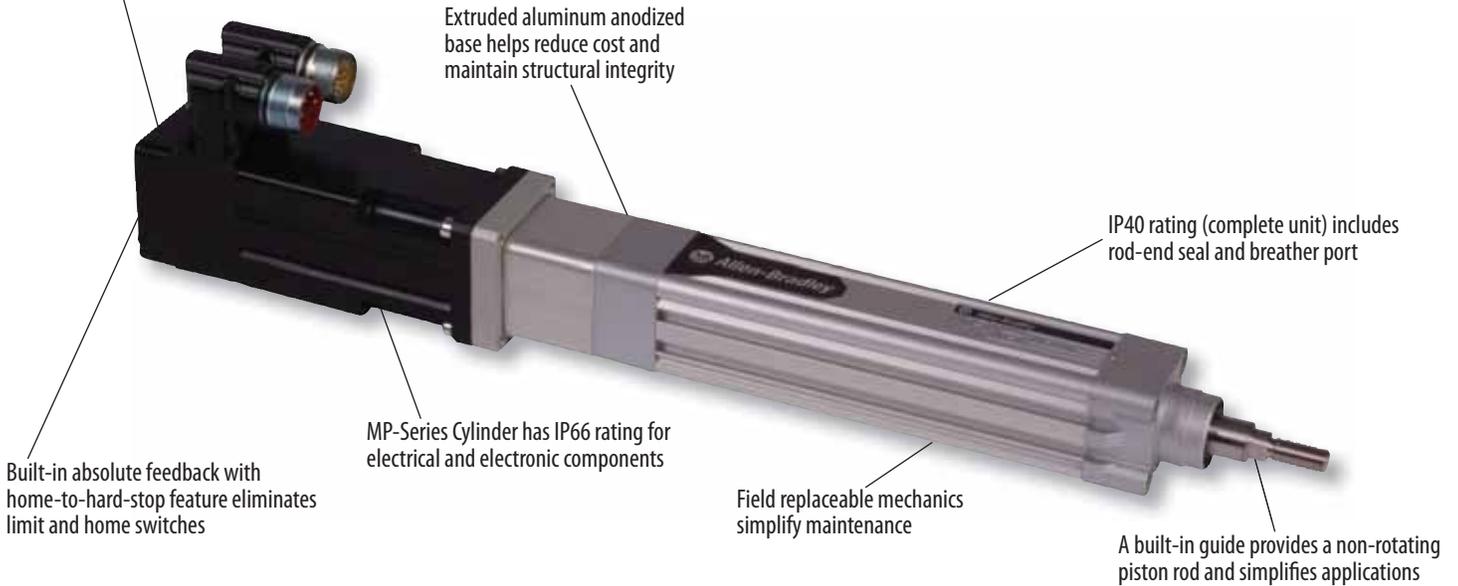
- These fully assembled and ready to mount cylinders contribute to reductions in mechanical design engineering, assembly, wiring and commissioning time
- Operates without externally mounted limit or home switches, retaining position in power loss for faster machine restart
- Integration is simplified with the use of the same power and feedback cables as Allen-Bradley® MP-Series Low Inertia and TL-Series Motors
- Food grade white paint option available
- No piping, valving, air or oil supply required
- Flexible control (unlike fluid power cylinders)
 - Thrust forces can be controlled
 - Motion profiles can be customized
 - Movements can have smooth startups and soft stops
- Full setup and programming support in Allen-Bradley controllers and software (RSLogix 5000 and Ultraware) makes set up and commissioning fast and easy
- Easy sizing and operating life estimates using Motion Analyzer software
- 3D solid model files are available to simplify mechanical and electrical design
- Available with or without 24V DC holding brakes
- Use MP-Series with either 230V AC or 480V AC Kinetix® 6x000 servo drives as well as Ultra™ 3000, Kinetix 300 and Kinetix 350 drives. Use TL-Series with 230VAC Kinetix 3 drives.
- Versions available with UL, c-UL and CE

LISTEN.
THINK.
SOLVE.™

A Simplified, Precise Solution Designed to Meet the Needs of Your Industrial Application

Optional built-in electrically released brake is ideal for holding vertical loads

MP-Series Electric Cylinder (Bulletin MPAR)



MP-Series Heavy Duty Electric Cylinder Accessory Attachments

- Spherical rod eye
- Clevis
- Anti-rotate unit

Mounting Options

- Front flange kit
- Front trunion
- Rear clevis kits
- Bottom base mounting kit

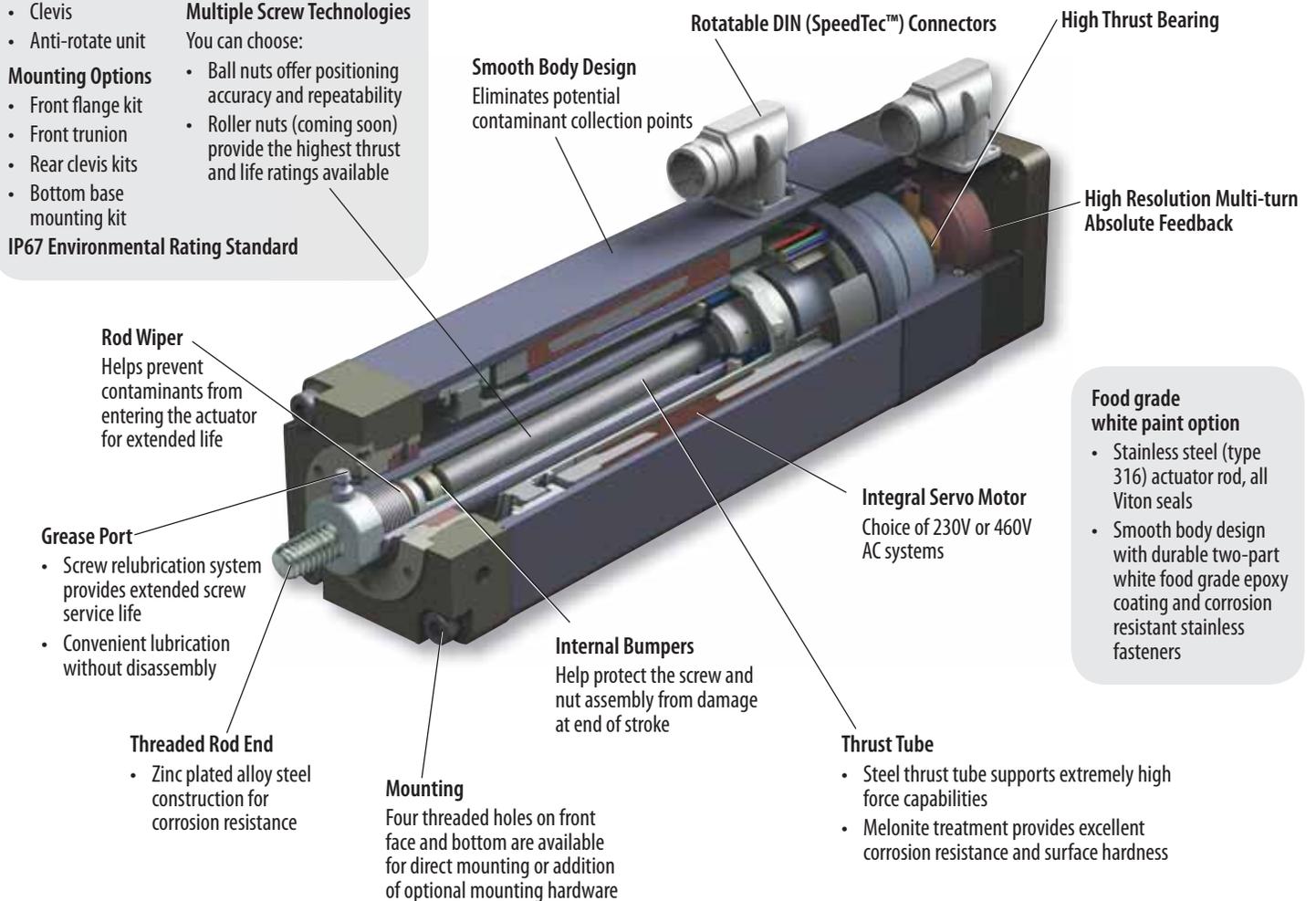
IP67 Environmental Rating Standard

Multiple Screw Technologies

You can choose:

- Ball nuts offer positioning accuracy and repeatability
- Roller nuts (coming soon) provide the highest thrust and life ratings available

MP-Series Heavy Duty Electric Cylinder (Bulletin MPAI)



Flexible, Sustainable and Cost-Effective at Each Phase of Development and Operation

Design Phase

- Eliminate mechanical design, selection and integration of multiple components from different suppliers
- Performance tested as a single integrated actuator
- Comprehensive support from established selection and support tools including Integrated Architecture Builder and Motion Analyzer

Assembly Phase

- Eliminate assembly of motor, coupler, adapter and ballscrew
- Eliminate installation, wiring and alignment of home and over-travel sensors

Commissioning Phase

- Complete integration using RSLogix 5000, Ultraware or Kinetix 300 software helps reduce time and related expense



Support Phase

- Integrated device reduces reliability problems caused by using separate components from different manufacturers
- Reduce operating expense with energy-efficient, clean and quiet alternative to fluid power actuators

Applications

Flexible Positioning and Controlled Force

- Push, pull, eject, pivot
- Divert, tilt, lower, insert
- Forming/stamping
- Tube bending
- Assembly presses
- Welding gun
- Molding
- Parts clamping
- Fastening/joining

Reach & Retract

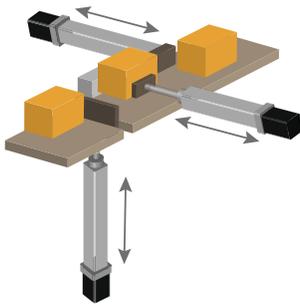
- Marking/labeling
- Measurement
- Inspection
- Parts loading/unloading
- Assembly
- Pick & place

Coordinated Control

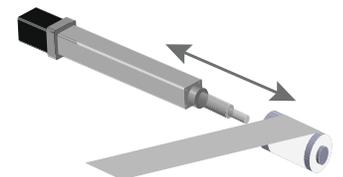
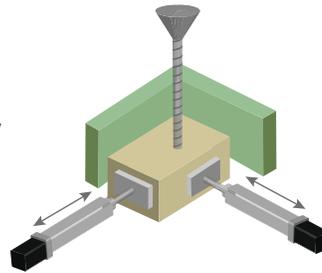
- Web tension control
- Web edge guiding
- Motion simulation
- Glue dispensing
- Mechanical CAM upgrade
- Servo valve control
- Flying die cut-to-length

Single or Multi-Axis Positioning

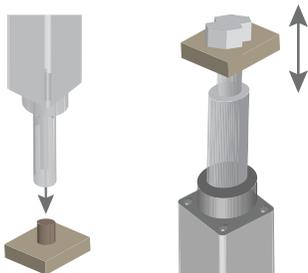
- Set works positioning
- Vertical stackers
- Blade positioning
- Hatch/door closures
- Lane diverters
- Volumetric filling
- On the fly set-up axes



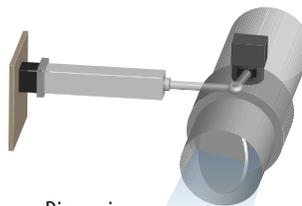
- Flexible positioning
- Parts, tools, gates, guards, guides, tables, cameras, probes, applicators, etc.



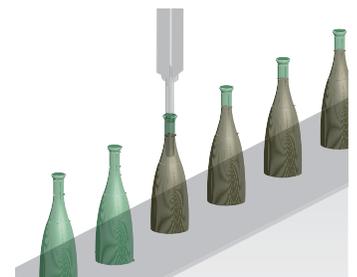
- Edge guides: paper, print, textile
- Roll positioning



- Component assembly/pressing/parts clamping
- Flexible force or speed: press, insert, lift



- Dispensing
- Valve timing
- Metering
- Damper



- Nozzle insertion, liquid dispensing

MP-Series Electric Cylinders



TL-Series Electric Cylinders⁽²⁾



Frame ISO 1552	Maximum Feed Force N (lbs)	Continuous Feed Force N (lbs)	Maximum Speed m/sec (in/sec)	Screw Lead mm/rev	Maximum Acceleration mm/sec ² (in/sec ²)	Stroke Lengths		Catalog Number ^{(1) (2)}
						mm	inches	
Size 32	300 (67)	240 (54)	.15 (5.9)	3	6 (236)	100, 200, 300, 400	4, 8, 12, 16	MPAR-B1xxxB-x2a
	350 (79)	280 (63)	.5 (19.7)	10				MPAR-B1xxxE-x2a
Size 40	525 (118)	420 (94)	.25 (9.8)	5		100, 200, 300, 400, 600	4, 8, 12, 16, 24	MPAR-B2xxxC-x2a
	800 (180)	640 (143) ⁽²⁾	.64 (25.2)	12.7				MPAR-B2xxxF-x2a
Size 63	2500 (562)	2000 (450) ⁽²⁾	.5 (19.7)	10		100, 200, 300, 400, 600, 800	4, 8, 12, 16, 24, 32	MPAR-B3xxxE-x2a
	1625 (365)	1300 (292) ⁽²⁾	1 (39.4)	20				MPAR-B3xxxH-x2a

MP-Series, catalog MPAR, Available with motor mounted in-line or parallel – as pictured above.

- (1) Catalog number incomplete: (a) Specify the desired stroke length in mm by replacing xxx in the catalog number with a length listed in the mm column on the left.
 (b) Actuators listed are rated for an amplifier/system voltage of 380 to 480V AC. To specify MP-Series Actuators for use on 230V AC systems, change “-B” in the part# above to “-A.” Example: A 230V system catalog number begins with MPAR-A...
 (c) To specify an actuator with a 24V DC holding brake, substitute 4 for 2 in “2A.”
 (2) For TL-Series, change MPAR to TLAR in the catalog number above. Continuous feed force reduced approximately 25%.

MP-Series Heavy Duty Electric Cylinders



Frame Size (Sq. Flange) mm (in)	Maximum Feed Force N (lbs)	Continuous* Feed Force @25C ambient temp N (lbs)	Maximum Speed mm/sec (in/sec)	Ball Screw Pitch mm/rev	Stroke Lengths mm	Dynamic Load Rating (1 mill rev.s) N (lbs)	Ball Screw
							Catalog Number ^{(1) (2) (3)}
64 (2.5)	1446 (325)	890 (200)	305 (12)	5	76	4502 (1012)	MPAI-B2076CV12A
		1446 (325)	305 (12)		150, 300		MPAI-B2xxxCV32A
83 (3.3)	5140 (1155)	1624 (365)	305 (12)	5	76	7602 (1709)	MPAI-B3076CM32A
	2570 (578)	814 (183)	610 (24)	10		5400 (1214)	MPAI-B3xxxEM32A
	4448 (1000)	4003 (900)	279 (11.5)	5		7602 (1709)	MPAI-B3xxxCM32A
	4003 (900)	2002 (450)	559 (22)	10		5400 (1214)	MPAI-B3xxxEM32A
110 (4.3)	8896 (2000)	7784 (1750)	279 (11.5)	5	150, 300, 450	15100 (3395)	MPAI-B4xxxCM32A
	7784 (1750)	3892 (875)	559 (22)	10		15000 (3372)	MPAI-B4xxxEM32A
144 (5.6)	13345 (3000)	13122 (2950)	200 (7.9)	5		28865 (6714)	MPAI-B5xxxCM32A
	13122 (2950)	6561 (1475)	400 (15.7)	10		35255 (7476)	MPAI-B5xxxEM32A

Frame Size (Sq. Flange) mm (in)	Maximum Feed Force N (lbs)	Continuous* Feed Force @25C amateur winding temp N (lbs)	Maximum Speed mm/sec (in/sec)	Roller Screw Pitch mm/rev	Stroke Lengths mm	Dynamic Load Rating (1 mill rev.s) N (lbs)	Roller Screw
							Catalog Number ^{(1) (2)}
83 (3.3)	7562 (1700)	3781 (850)	279 (11.5)	5	76, 150, 300, 450	27198 (6564)	MPAI-B3xxxRM32A
	3781 (850)	1891 (425)	559 (22)	10		26013 (5848)	MPAI-B3xxxSM32A
110 (4.3)	14679 (3300)	7340 (1650)	279 (11.5)	5	150, 300, 450	36831 (8280)	MPAI-B4xxxRM32A
	7340 (1650)	3670 (825)	559 (22)	10		34193 (7687)	MPAI-B4xxxSM32A

* Characteristics w/mounting to 11" x 11" x 0.5" aluminum mounting surface.

- (1) Catalog number incomplete: (a) Specify the desired stroke length in mm by replacing xxx in the catalog number with a length listed in the mm column on the left.
 (b) Actuators listed are rated for an amplifier/system voltage of 380 to 480V AC. To specify MP Series Actuators for use on 230V AC systems, change “-B” in the part# above w/ “-A.” Example: A 230V system catalog number begins with MPAI-A...
 (2) Specifying an actuator w/ optional features
 (a) optional 24V DC holding brakes, substitute 4 for 2 in “M32A” at the end of the part#.
 (b) Std. actuator mounting: direct face or base (front flange, foot mount, and rear clevis w/ accessories)
 To specify front trunnion mounted actuators, substitute B for A in “M32A” at the end of the part#.
 (3) Available with optional food grade white epoxy paint.

Refer to Motion Control Selection Guide, pub GMC-td002 for complete specifications.

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