Allen-Bradley

Kinetix Linear Motion Specifications

MP-Series, TL-Series, LDAT-Series, LDC-Series, LDL-Series

This document provides catalog numbers and product specifications, including performance, environmental, certifications, and dimension drawings for Allen-Bradley® linear motors and actuators.

Use this publication in conjunction with the Kinetix® Motion Control Selection Guide, publication GMC-SG001, to help make decisions on the motion control product families best suited for your system requirements.

Servo Drive Compatibility

Servo Drive Family	Integrated Linear Thrusters	Integrated Linear Stages		Electric Cylinders			Linear Motors	
	LDAT-Series	Bulletin MPAS	Bulletin MPMA	Bulletin MPAR	Bulletin TLAR	Bulletin MPAI	LDC-Series	LDL-Series
Kinetix 5700 and Kinetix 5500	X	X (ballscrew)	X (ballscrew)	X	–	X	–	–
Kinetix 6200/6500	X	X	X	X	–	X	X	–
Kinetix 6000	X	X	X	X	–	X	X	X
Kinetix 300	X	X	X	X	X	X	X	X
Kinetix 350	–	X (ballscrew)	X (ballscrew)				–	–
Kinetix 3	X	X (direct drive)	–	–	X	–	X	X
Kinetix 2000	X	X	X	X	X	X	X	X
Ultra™ 3000	X	X	X	X	–	X	X	X

LISTEN. THINK. SOLVE.®

LDAT-Series Integrated Linear Thrusters

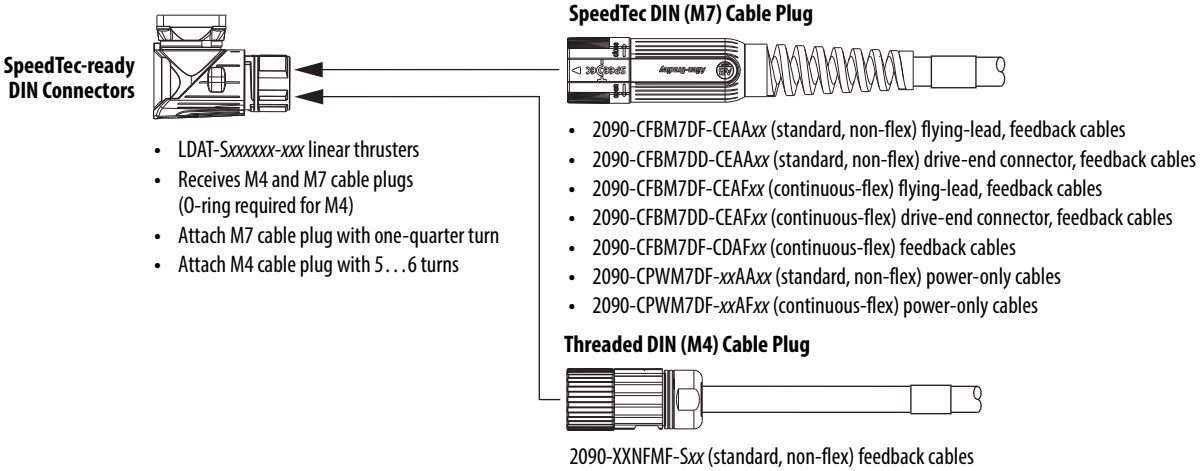
LDAT-Series integrated linear thrusters provide machine builders with high-speed, load-bearing linear motion out-of-the-box. The LDAT-Series linear thruster is a reliable, high-speed linear actuator with an integrated linear guide that is capable of pushing, pulling, or carrying a load. The linear thruster combines high velocity, high levels of acceleration, and peak thrust forces up to 5469 N (1229 lb) to help maximize performance. Ideal applications are those that currently use a custom-designed belt actuator or linkage device that converts rotary motion into linear, including cartoners, stackers, case packers, case and tray formers, in-out feeds, diverters, ejectors, drop gates, and horizontal conveyors.

LDAT-Series Linear Thruster Features

- Increased reliability due to direct-drive technology with single linear guide, single wear item, caged-ball linear bearings, and elimination of wear items associated with rotary to linear motion conversion
- Integrated linear bearing provides the ability to carry a load without having to mount and align external bearings
- Multiple mounting surfaces and methods for ease of mounting into your machine
- Couples directly to the item that needs to be moved
- Available with strip cover option for added bearing protection in harsh environments
- High velocities, up to 5 m/s (16 ft/s), and acceleration, 49 m/s^2 (160 ft/s^2) standard
- Peak forces ranging from 168...5469 N (38...1229 lb)
- Stroke lengths from 100...900 mm (3.9...35.4 in.)
- Motion Analyzer software, version 6.00 or later, for quick and easy sizing

Motor Connector/Cable Compatibility

LDAT-Series linear thrusters are equipped with SpeedTec DIN connectors. However, the incremental encoder option (*-x*B*x*) requires threaded DIN (M4) feedback cables in non-flex applications. This is due to the number of conductors required for incremental encoder connections.



Catalog Numbers - LDAT-Series Integrated Linear Thrusters

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your actuator. For questions regarding product availability, contact your Allen-Bradley distributor.

LDAT - S *xx x xxx* - *x x x x x*

Lubrication
Blank = Standard

Bearing Seal
Blank = Standard

Bearing Protection
Blank = No cover
S = Strip cover

Encoder Type
B = Incremental, magnetic scale, 5 µm resolution
D = Absolute, magnetic scale, Hiperface (1)

Winding
D = High speed
E = Low speed

Travel

010 = 100 mm (3.94 in.)	060 = 600 mm (23.62 in.)
020 = 200 mm (7.87 in.)	070 = 700 mm (27.56 in.)
030 = 300 mm (11.81 in.)	080 = 800 mm (31.50 in.)
040 = 400 mm (15.75 in.)	090 = 900 mm (35.43 in.)
050 = 500 mm (19.68 in.)	

Motor Coil Length
1 = 100 mm (3.94 in.)
2 = 200 mm (7.87 in.)
3 = 300 mm (11.81 in.)
4 = 400 mm (15.75 in.)
6 = 600 mm (23.62 in.)

Frame Size
03 = 30
05 = 50
07 = 70
10 = 100
15 = 150

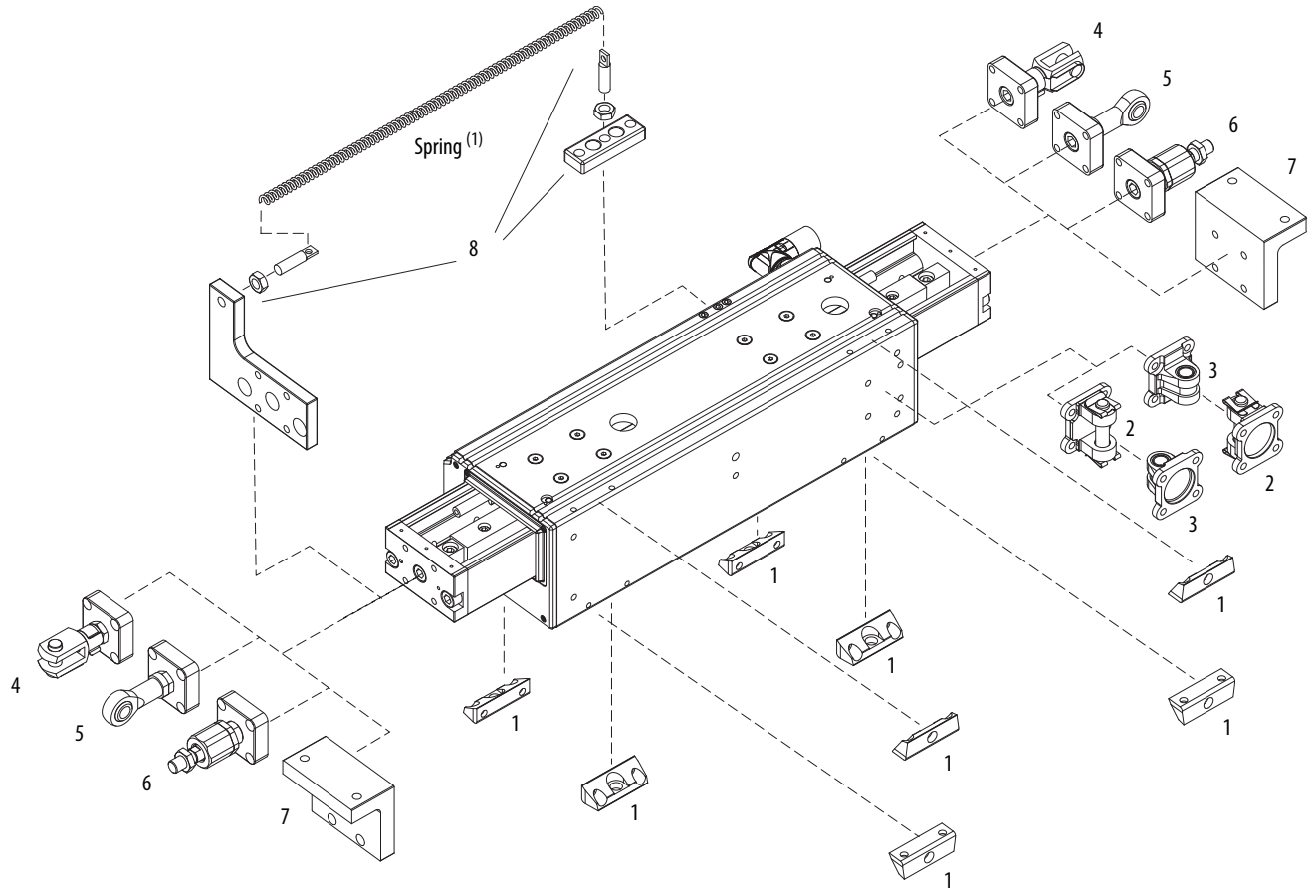
Version
S = Base version

Series
LDAT= LDAT-Series

(1) Magnetic strip has 1.0 mm (0.039 in.) pole pitch. Final resolution when used with a Kinetix 300 drive is 0.488 µm (0.000019 in.). Servo drive compatibility includes: Kinetix 5700 (400V-class), Kinetix 300 and Kinetix 5500 (200 and 400V-class) servo drives.

LDAT-Series Integrated Linear Thrusters Accessories

These accessory items apply to the LDAT-Series integrated linear thrusters.



(1) Size and purchase spring according to your application needs. Contact your Rockwell Automation sales representative for assistance.

Mounting Attachments

Accessory Item		Frame	Accessory Cat. No.	Description	Dimensions
1	Foot mount bracket kit	30	LDAT-SMID-FTMOUNT	Use to attach thruster unit to machine with side or bottom mount. Kit includes foot mounts and mounting screws.	page 30
		50			
		70			
		100	LDAT-SLARGE-FTMOUNT	Use to attach thruster unit to machine with side or bottom mount. Kit includes foot mounts and mounting screws. This kit also includes M6x1.0x25 mounting screws required for center feet on only LDAT-S1*x4xxx* and LDAT-S1*x6xxx* thruster units.	
		150			
2	Clevis (male) attachment	30	LDAT-S03-CLVSM	Attachment includes flange, pivot pin, retaining clips, and mounting screws.	page 31
		50	LDAT-S0507-CLVSM		
		70			
		100	LDAT-S1015-CLVSM		
		150			

Mounting Attachments (continued)

Accessory Item		Frame	Accessory Cat. No.	Description	Dimensions
3	Clevis (female) attachment	30	LDAT-S03-CLVSF	Attachment includes swivel flange and mounting screws.	page 31
		50	LDAT-S0507-CLVSF		
		70			
		100	LDAT-S1015-CLVSF		
		150			

Slider-end Attachments

Accessory Item		Frame	Accessory Cat. No.	Description	Dimensions
4	Rod eye kit	30	LDAT-S03-RODEYE	Attachment includes rod-eye, adapter, and mounting bolts.	page 32
		50	LDAT-S0507-RODEYE		
		70			
		100	LDAT-S1015-RODEYE		
		150			
5	Rod clevis kit	30	LDAT-S03-RODCLVS	Attachment includes rod clevis, adapter, hinged spring pin, hex nut, and mounting bolts.	page 33
		50	LDAT-S0507-RODCLVS		
		70			
		100	LDAT-S015-RODCLVS		
		150			
6	Rod coupler kit	30	LDAT-S03-RODCPLR	Attachment includes self-aligning rod coupler, adapter, hex nut, and mounting bolts.	page 34
		50	LDAT-S0507-RODCPLR		
		70			
		100	LDAT-S1015-RODCPLR		
		150			
7	Horizontal payload mounting bracket	30	LDAT-S03-HPBRKT	Attachment includes payload bracket and mounting screws.	page 35
		50	LDAT-S0507-HPBRKT		
		70			
		100	LDAT-S10-HPBRKT		
		150	LDAT-S15-HPBRKT		
8	Counterbalance kit	30	LDAT-S03-CBRKT	Kit includes slide-end bracket, stator bracket, spring anchors with hex nuts, and socket head cap screws. Extension springs are customer-supplied and specific to each application.	page 36
		50	LDAT-S0507-CBRKT		
		70			
		100	LDAT-S10-CBRKT		
		150	LDAT-S15-CBRKT		

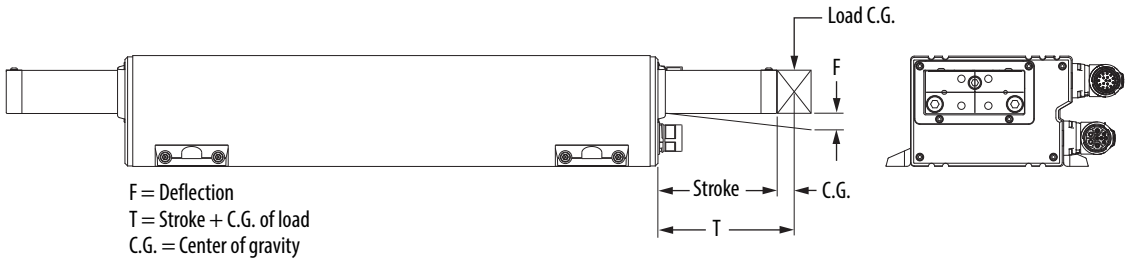
Technical Specifications - LDAT-Series Integrated Linear Thrusters

Product specifications include information on mounting options, payload and deflection, performance, and weights.

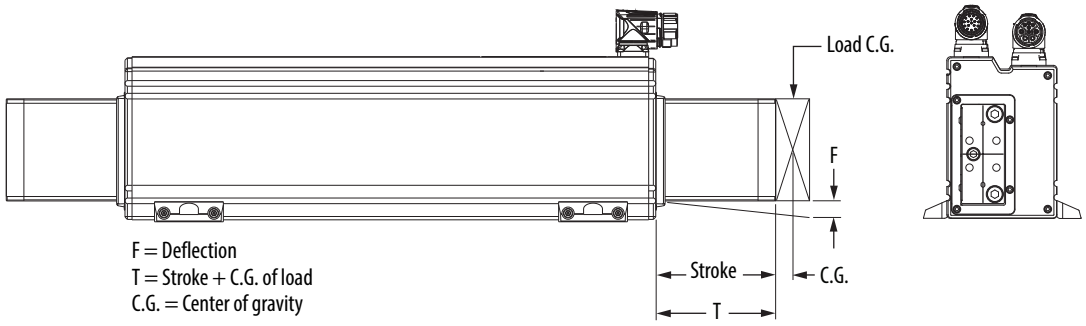
Mounting Options

The LDAT-Series linear thrusters can be mounted by using the foot mount brackets relative to the coil side or cable connector side of the unit.

Coil Side Mounting

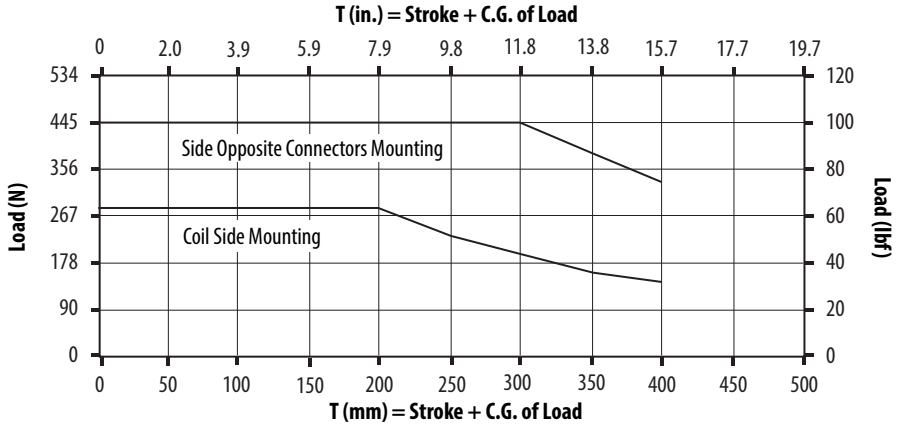


Side Opposite Connectors Mounting

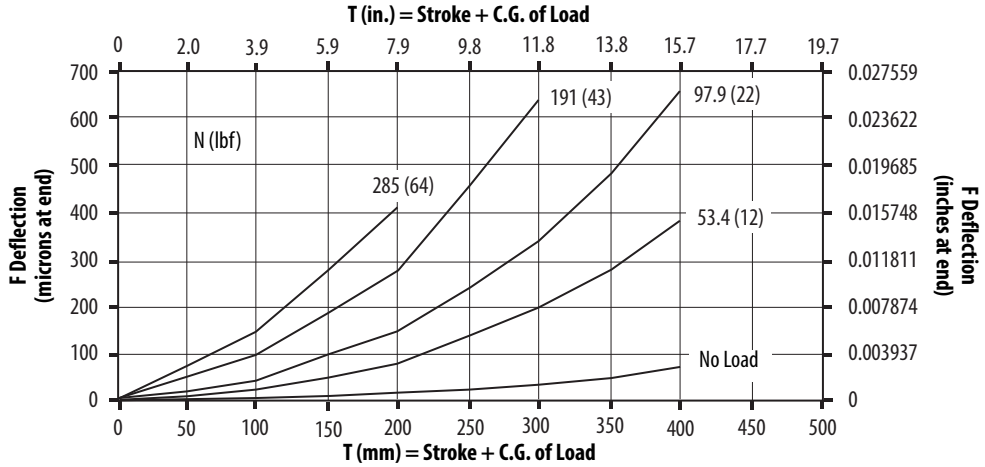


Payload Limitation and Deflection Specifications

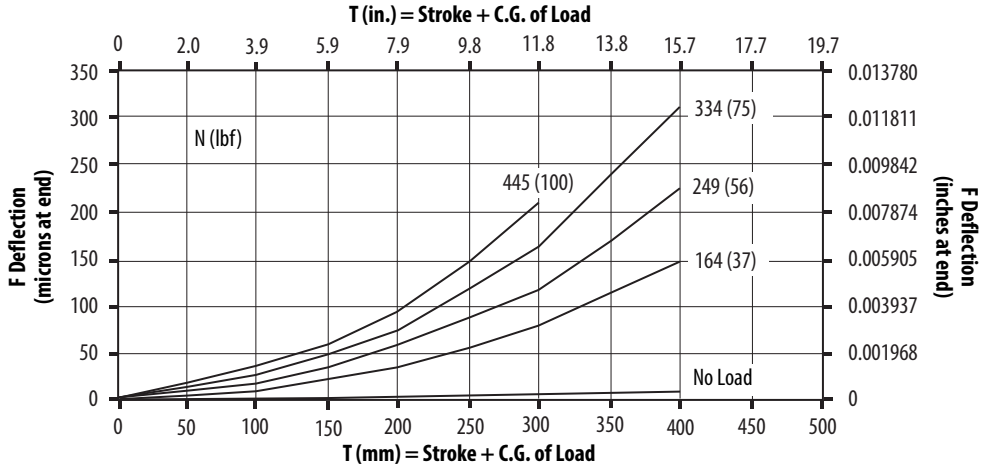
Maximum Load at T (frame 30)



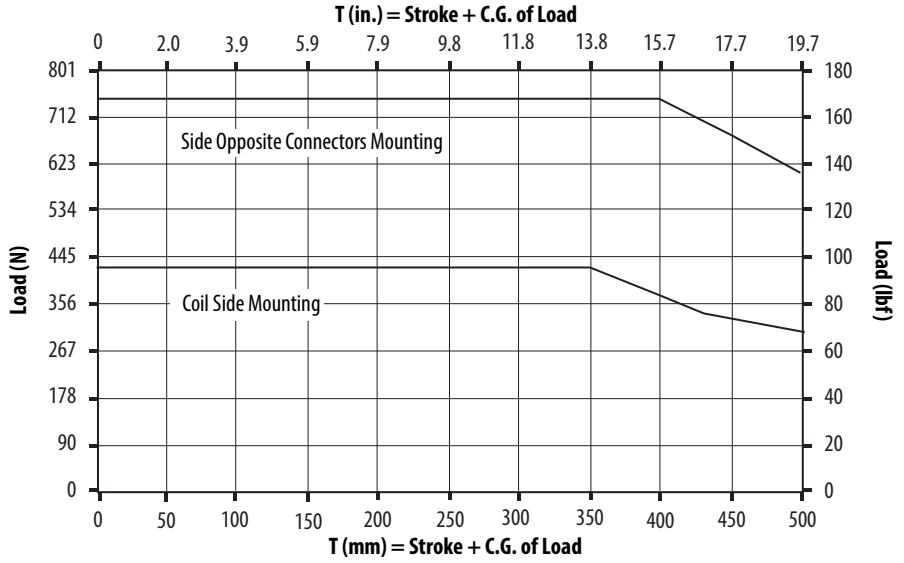
Cantilever Beam Deflection (frame 30) When Mounted on the Coil Side



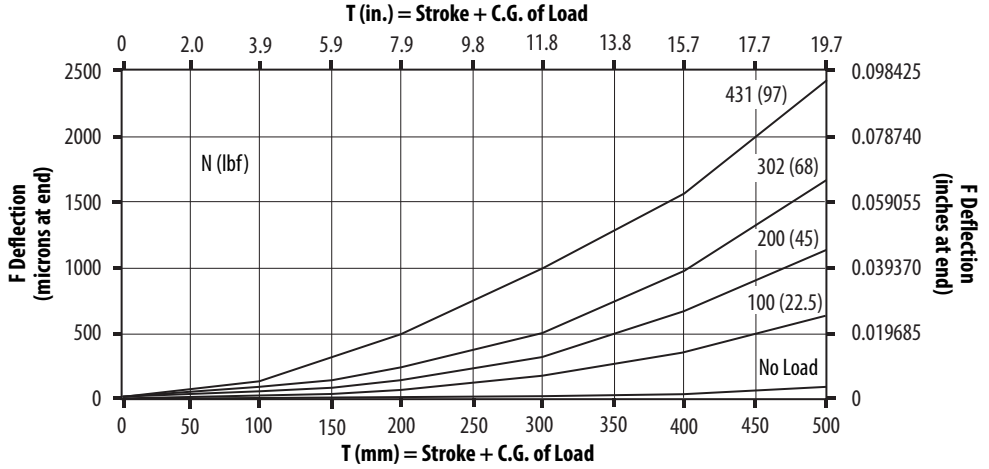
Cantilever Beam Deflection (frame 30) When Mounted on the Side Opposite Connectors



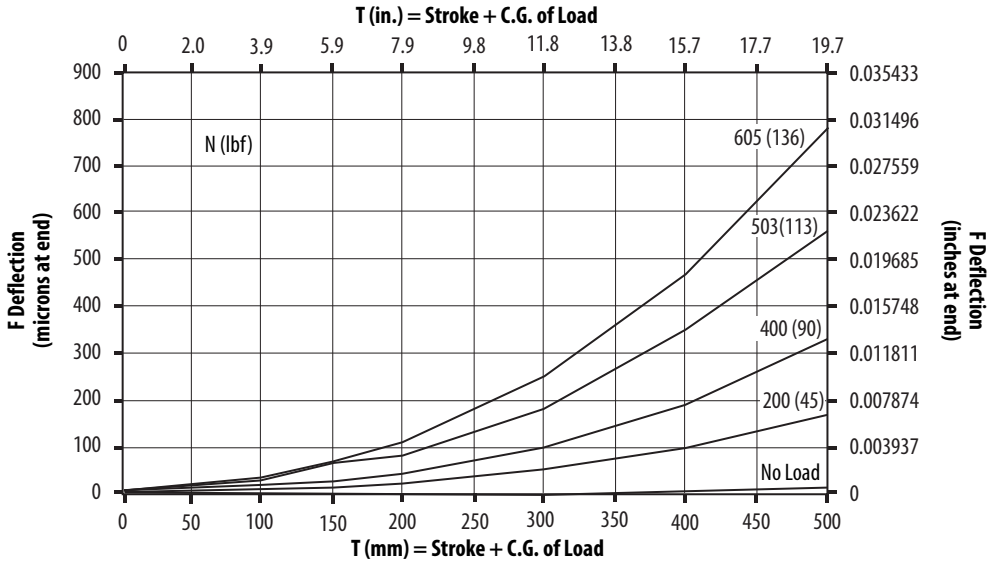
Maximum Load at T (frame 50 and 70)



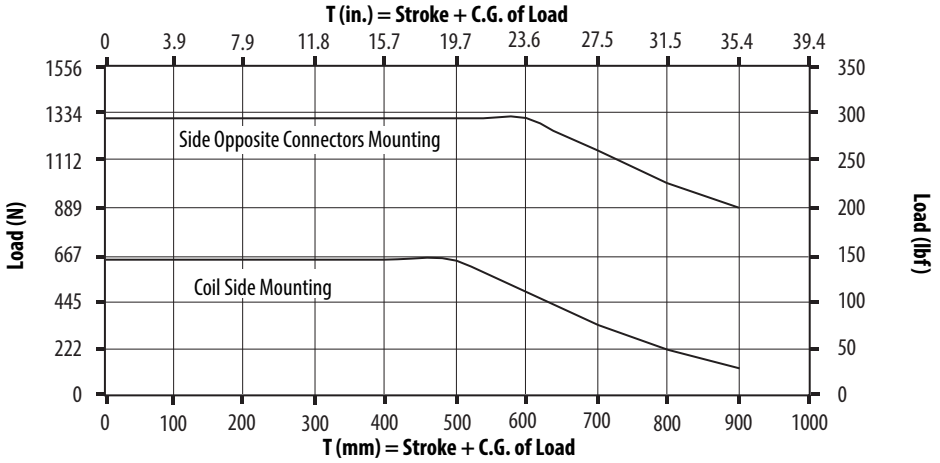
Cantilever Beam Deflection (frame 50 and 70) When Mounted on the Coil Side



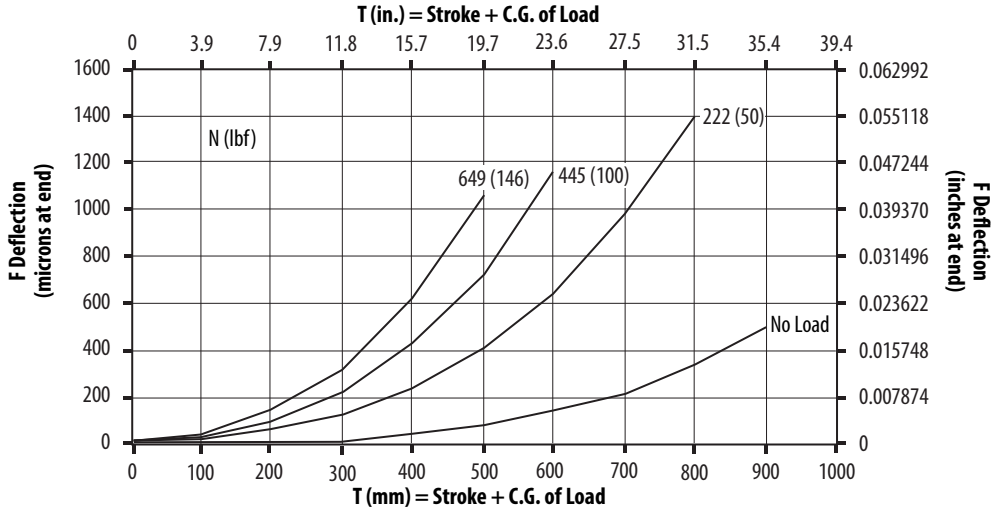
Cantilever Beam Deflection (frame 50 and 70) When Mounted on the Side Opposite Connectors



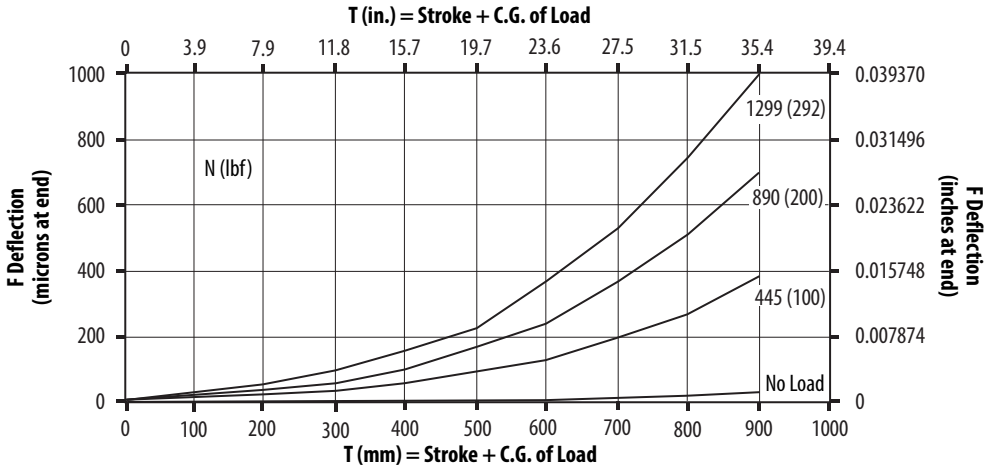
Maximum Load at T (frame 100)



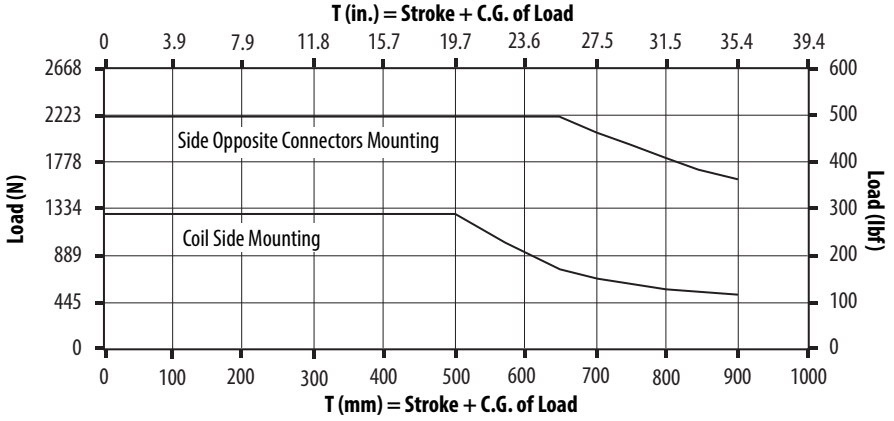
Cantilever Beam Deflection (frame 100) When Mounted on the Coil Side



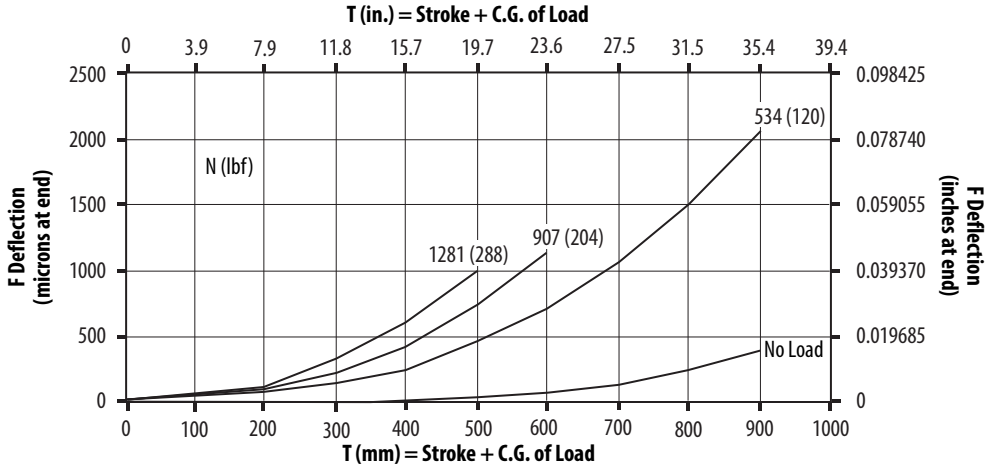
Cantilever Beam Deflection (frame 100) When Mounted on the Side Opposite Connectors



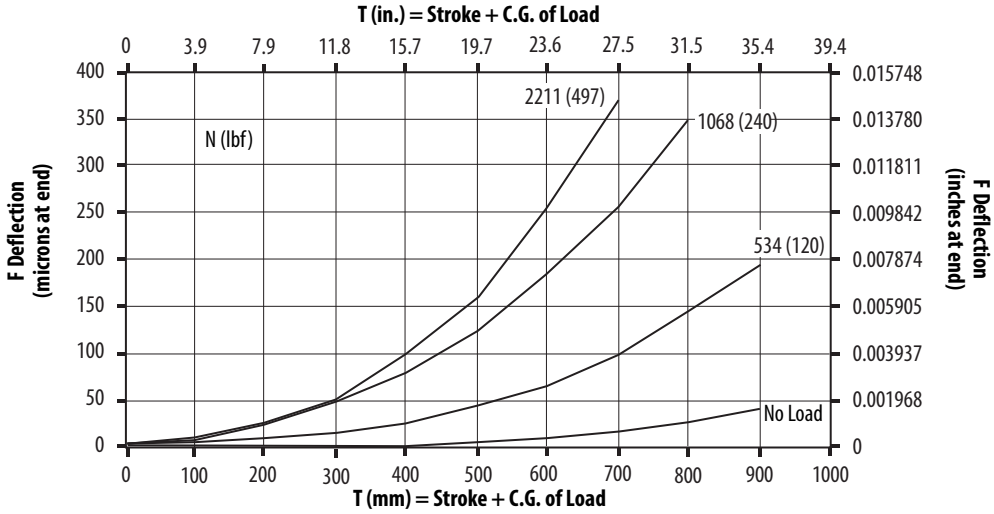
Maximum Load at T (frame 150)



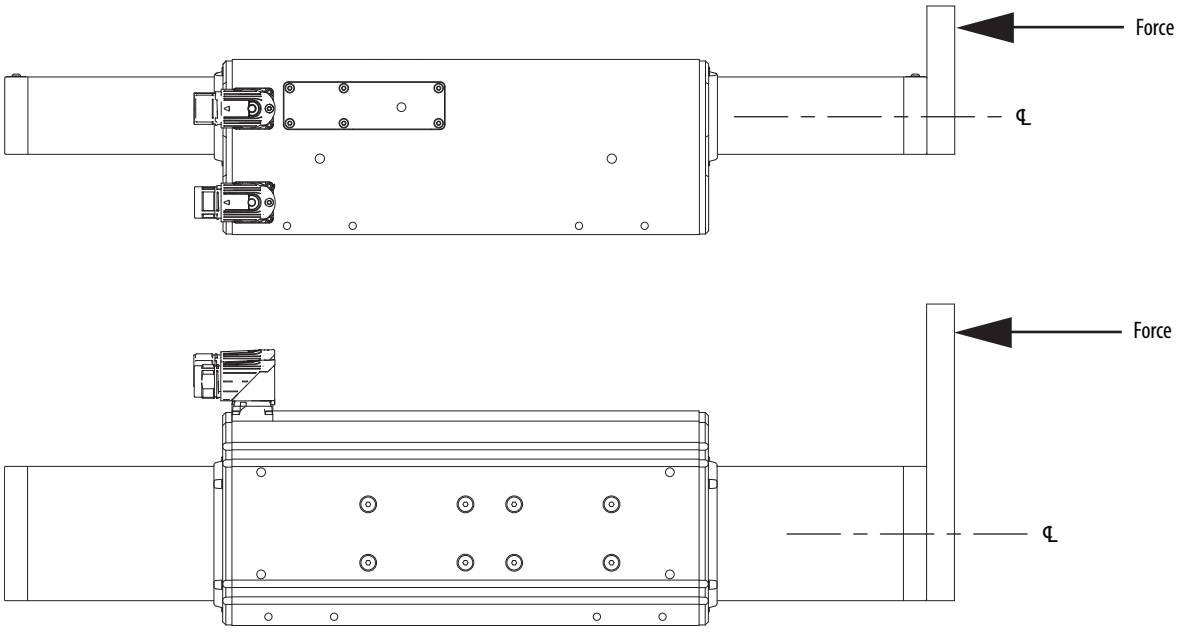
Cantilever Beam Deflection (frame 150) When Mounted on the Coil Side



Cantilever Beam Deflection (frame 150) When Mounted on the Side Opposite Connectors



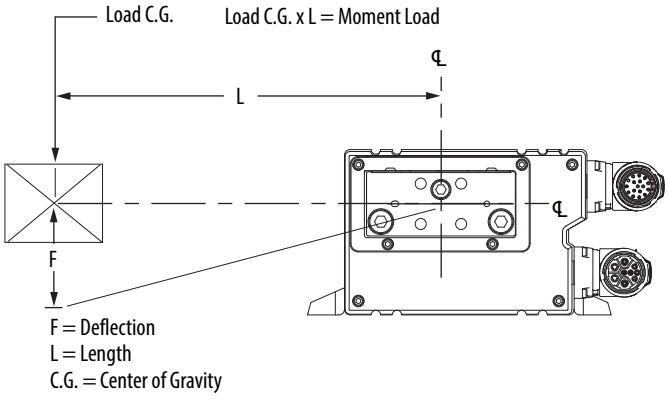
Maximum Pitch and Yaw Moment



End Cap Maximum Mounting Moment

Linear Thruster Cat. No.	Frame Size	Value, max N•m (lb•ft)
LDAT-S03*xxxx*	30	27.50 (20.0)
LDAT-S05*xxxx*	50	47.50 (35.0)
LDAT-S07*xxxx*	70	
LDAT-S10*xxxx*	100	102.38 (76.0)
LDAT-S15*xxxx*	150	102.38 (75.5)

Maximum Torsional Moment



Maximum Twist

Linear Thruster Cat. No.	Frame Size	Value, max N•m (lb•in)
LDAT-S03*xxxx*	30	18.6 (165)
LDAT-S05*xxxx*	50	33.9 (300)
LDAT-S07*xxxx*	70	
LDAT-S10*xxxx*	100	113 (1000)
LDAT-S15*xxxx*	150	226 (2000)

Performance Specifications with 200V-class Drives

Performance Specifications (frame 30) with 200V-class Drives

Linear Thruster Cat. No.	Velocity, max 230V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 230V AC kW
LDAT-S031010-D*xx*	2.4	4.8	81 (18)	12.2	168 (38)	0.20
LDAT-S031020-D*xx*	3.1					0.25
LDAT-S031030-D*xx*	3.5					0.29
LDAT-S031040-D*xx*	3.8					0.31
LDAT-S032010-D*xx*	3.1	7.4	126 (28)	24.3	336 (76)	0.44
LDAT-S032020-D*xx*	4.1					0.52
LDAT-S032030-D*xx*	4.7					0.59
LDAT-S032040-D*xx*	5.0					0.63
LDAT-S032010-E*xx*	3.1	3.7		12.2		0.40
LDAT-S032020-E*xx*	4.1					0.47
LDAT-S032030-E*xx*	4.7					0.52
LDAT-S032040-E*xx*	5.0					0.55
LDAT-S033010-D*xx*	3.5	11.1	190 (43)	36.5	504 (113)	0.67
LDAT-S033020-D*xx*	4.7					0.88
LDAT-S033030-D*xx*	5.0					0.95
LDAT-S033040-D*xx*						
LDAT-S033010-E*xx*	3.5	3.7		12.2		0.55
LDAT-S033020-E*xx*	4.4					0.65
LDAT-S033030-E*xx*						
LDAT-S033040-E*xx*						

Performance Specifications (frame 50) with 200V-class Drives

Linear Thruster Cat. No.	Velocity, max 230V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 230V AC kW
LDAT-S051010-D*xx*	2.8	3.1	119 (27)	11.4	363 (82)	0.31
LDAT-S051020-D*xx*	3.7					0.38
LDAT-S051030-D*xx*	4.1					0.42
LDAT-S051040-D*xx*	4.4					0.44
LDAT-S051050-D*xx*	4.7					0.46
LDAT-S052010-D*xx*	3.7	6.2	251 (56)	22.7	727 (163)	0.79
LDAT-S052020-D*xx*	4.8					0.97
LDAT-S052030-D*xx*	5.00					1.01
LDAT-S052040-D*xx*						
LDAT-S052050-D*xx*						
LDAT-S052010-E*xx* … LDAT-S052050-E*xx*	2.6	3.1		11.4		0.50

Performance Specifications (frame 50) with 200V-class Drives (continued)

Linear Thruster Cat. No.	Velocity, max 230V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 230V AC kW
LDAT-S053010-D*xx*	4.1	9.4	378 (85)	34.2	1093 (246)	1.31
LDAT-S053020-D*xx*	5.0					1.53
LDAT-S053030-D*xx* … LDAT-S053050-D*xx*	5.0					1.53
LDAT-S053010-E*xx* … LDAT-S053050-E*xx*	1.7	3.1		11.4		0.47
LDAT-S054010-D*xx*	4.4	12.4	509 (114)	45.5	1453 (327)	1.87
LDAT-S054020-D*xx* … LDAT-S054050-D*xx*	5.0					2.05
LDAT-S054010-E*xx* … LDAT-S054050-E*xx*	2.6	6.2		22.7		1.02

Performance Specifications (frame 70) with 200V-class Drives

Linear Thruster Cat. No.	Velocity, max 230V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 230V AC kW
LDAT-S072010-D*xx* … LDAT-S072070-D*xx*	3.5	6.0	364 (82)	22.0	1055 (237)	1.03
LDAT-S072010-E*xx* … LDAT-S072070-E*xx*	1.7	3.0		11.0		0.47
LDAT-S073010-D*xx* … LDAT-S073070-D*xx*	3.5	9.0	554 (125)	32.8	1576 (354)	1.57
LDAT-S073010-E*xx* … LDAT-S073070-E*xx*	1.2	3.0		10.9		0.41
LDAT-S074010-D*xx* … LDAT-S074070-D*xx*	3.5	11.9	730 (164)	43.5	2088 (469)	2.08
LDAT-S074010-E*xx* … LDAT-S074070-E*xx*	1.8	6.0		21.7		0.95
LDAT-S076010-D*xx* … LDAT-S076070-D*xx*	3.5	18.2	1122 (252)	66.4	3189 (717)	3.17
LDAT-S076010-E*xx* … LDAT-S076070-E*xx*	1.8	9.1		33.2		1.45

Performance Specifications (frame 100) with 200V-class Drives

Linear Thruster Cat. No.	Velocity, max 230V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 230V AC kW
LDAT-S102010-D*xx* … LDAT-S102090-D*xx*	2.6	5.7	456 (103)	21.0	1289 (290)	0.96
LDAT-S102010-E*xx* … LDAT-S102090-E*xx*	1.3	2.9		10.5		0.42
LDAT-S103010-D*xx* … LDAT-S103090-D*xx*	2.7	8.6	702 (158)	31.5	1935 (435)	1.47
LDAT-S103010-E*xx* … LDAT-S103090-E*xx*	0.9	2.9		10.5	1388 (312)	0.30
LDAT-S104010-D*xx* … LDAT-S104090-D*xx*	2.7	11.5	929 (209)	42.0	2578 (580)	2.07
LDAT-S104010-E*xx* … LDAT-S104090-E*xx*	1.3	5.7		21.0		0.86
LDAT-S106010-D*xx* … LDAT-S106090-D*xx*	2.7	17.3	1403 (315)	63.0	3871 (870)	2.94
LDAT-S106010-E*xx* … LDAT-S106090-E*xx*	1.3	8.6		31.5		1.28

Performance Specifications (frame 150) with 200V-class Drives

Linear Thruster Cat. No.	Velocity, max 230V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 230V AC kW
LDAT-S152010-D*xx* … LDAT-S152090-D*xx*	1.8	5.3	643 (145)	19.5	1799 (404)	0.87
LDAT-S152010-E*xx* … LDAT-S152090-E*xx*	0.9	2.7		9.8	1679 (377)	0.34
LDAT-S153010-D*xx* … LDAT-S153090-D*xx*	1.8	8.0	978 (220)	29.1	2680 (602)	1.33
LDAT-S154010-D*xx* … LDAT-S154090-D*xx*	1.8	10.7	1306 (294)	39.1	3597 (809)	1.78
LDAT-S154010-E*xx* … LDAT-S154090-E*xx*	0.9	5.3		19.5	3383 (761)	0.70
LDAT-S156010-D*xx* … LDAT-S156090-D*xx*	1.8	16.3	1997 (449)	59.4	5469 (1229)	2.71
LDAT-S156010-E*xx* … LDAT-S156090-Ex	0.9	8.1		19.8	5110 (1149)	1.05

Performance Specifications with 400V-class Drives

Performance Specifications (frame 30) with 400V-class (three-phase) Drives

Linear Thruster Cat. No.	Velocity, max 460V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 460V AC kW
LDAT-S031010-D*xx*	2.4	4.8	81 (18)	12.2	168 (38)	0.20
LDAT-S031020-D*xx*	3.1					0.25
LDAT-S031030-D*xx*	3.5					0.29
LDAT-S031040-D*xx*	3.8					0.31
LDAT-S032010-D*xx*	3.1	7.4	126 (28)	24.3	336 (76)	0.40
LDAT-S032020-D*xx*	4.1					0.52
LDAT-S032030-D*xx*	4.7					0.59
LDAT-S032040-D*xx*	5.0					0.63
LDAT-S032010-E*xx*	3.1	3.7		12.2		0.40
LDAT-S032020-E*xx*	4.1					0.52
LDAT-S032030-E*xx*	4.7					0.59
LDAT-S032040-E*xx*	5.0					0.63
LDAT-S033010-D*xx*	3.5	11.1	190 (43)	36.5	504 (113)	0.67
LDAT-S033020-D*xx*	4.7					0.88
LDAT-S033030-D*xx*	5.0					0.95
LDAT-S033040-D*xx*						
LDAT-S033010-E*xx*	3.5	3.7		12.2		0.67
LDAT-S033020-E*xx*	4.7					0.87
LDAT-S033030-E*xx*	5.0					0.91
LDAT-S033040-E*xx*						

Performance Specifications (frame 50) with 400V-class (three-phase) Drives

Linear Thruster Cat. No.	Velocity, max 460V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 460V AC kW
LDAT-S051010-D*xx*	2.8	3.1	119 (27)	11.4	363 (82)	0.34
LDAT-S051020-D*xx*	3.7					0.43
LDAT-S051030-D*xx*	4.1					0.49
LDAT-S051040-D*xx*	4.4					0.53
LDAT-S051050-D*xx*	4.7					0.55
LDAT-S052010-D*xx*	3.7	6.2	251 (56)	22.7	727 (163)	0.92
LDAT-S052020-D*xx*	4.8					1.20
LDAT-S052030-D*xx*	5.0					1.24
LDAT-S052040-D*xx*						
LDAT-S052050-D*xx*						
LDAT-S052010-E*xx*	3.7	3.1		11.4		0.80
LDAT-S052020-E*xx*	4.6					0.98
LDAT-S052030-E*xx*	4.6					1.02
LDAT-S052040-E*xx*						
LDAT-S052050-E*xx*						

Performance Specifications (frame 50) with 400V-class (three-phase) Drives (continued)

Linear Thruster Cat. No.	Velocity, max 460V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 460V AC kW
LDAT-S053010-D*xx*	4.1	9.4	378 (85)	34.2	1093 (246)	1.56
LDAT-S053020-D*xx*	5.0					1.87
LDAT-S053030-D*xx* … LDAT-S053050-D*xx*						
LDAT-S053010-E*xx* … LDAT-S053050-E*xx*	3.5	3.1		11.4		1.04
LDAT-S054010-D*xx*	4.4	12.4	509 (114)	45.5	1453 (327)	2.26
LDAT-S054020-D*xx* … LDAT-S054050-D*xx*	5.00					2.53
LDAT-S054010-E*xx*	4.4	6.2		22.7		1.87
LDAT-S054020-E*xx* … LDAT-S054050-E*xx*	5.0					2.05

Performance Specifications (frame 70) with 400V-class (three-phase) Drives

Linear Thruster Cat. No.	Velocity, max 460V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 460V AC kW
LDAT-S072010-D*xx*	3.9	6.0	364 (82)	22.0	1055 (237)	1.37
LDAT-S072020-D*xx*	5.0					1.64
LDAT-S072030-D*xx* … LDAT-S072070-D*xx*						
LDAT-S072010-E*xx* … LDAT-S072070-E*xx*	3.5	3.0		11.0		1.03
LDAT-S073010-D*xx*	4.4	9.0	554 (125)	32.8	1576 (354)	2.27
LDAT-S073020-D*xx* … LDAT-S073070-D*xx*	5.0					2.50
LDAT-S073010-E*xx* … LDAT-S073070-E*xx*	2.4	3.0		10.9		1.01
LDAT-S074010-D*xx*	4.7	11.9	730 (164)	43.5	2088 (469)	3.15
LDAT-S074020-D*xx* … LDAT-S074070-D*xx*	5.0					3.30
LDAT-S074010-E*xx* … LDAT-S074070-E*xx*	3.5	6.0		21.7		2.08
LDAT-S076010-D*xx* … LDAT-S076070-D*xx*	5.0	18.2	1122 (252)	66.4	3189 (717)	5.02
LDAT-S076010-E*xx* … LDAT-S076070-E*xx*	3.5	9.1		33.2		3.18

Performance Specifications (frame 100) with 400V-class (three-phase) Drives

Linear Thruster Cat. No.	Velocity, max 460V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 460V AC kW
LDAT-S102010-D*xx*	3.4	5.7	456 (103)	21.0	1289 (290)	1.44
LDAT-S102020-D*xx*	4.4					1.74
LDAT-S102030-D*xx*	5.0					1.91
LDAT-S102040-D*xx*						
LDAT-S102050-D*xx* … LDAT-S102090-D*xx*						
LDAT-S102010-E*xx* … LDAT-S102090-E*xx*	2.6	2.9		10.5		0.96
LDAT-S103010-D*xx*	3.8	8.6	702 (158)	31.5	1935 (435)	2.41
LDAT-S103020-D*xx* … LDAT-S103090-D*xx*	5.0					2.93
LDAT-S103010-E*xx* … LDAT-S103090-E*xx*	1.8	2.9		10.5		0.92
LDAT-S104010-D*xx*	4.1	11.5	929 (209)	42.0	2578 (580)	3.76
LDAT-S104020-D*xx* … LDAT-S104090-D*xx*	5.0					4.29
LDAT-S104010-E*xx* … LDAT-S104090-E*xx*	2.7	5.7		21.0		2.07
LDAT-S106010-D*xx*	4.5	17.3	1403 (315)	63.0	3871 (870)	5.41
LDAT-S106020-D*xx* … LDAT-S106090-D*xx*	5.0					5.87
LDAT-S106010-E*xx* … LDAT-S106090-E*xx*	2.7	8.6		31.5		2.94

Performance Specifications (frame 150) with 400V-class (three-phase) Drives

Linear Thruster Cat. No.	Velocity, max 460V AC m/s	System Continuous Stall Current Amps 0-pk	System Continuous Stall Force N (lb)	System Peak Stall Current Amps 0-pk	System Peak Stall Force N (lb)	Rated Output 460V AC kW
LDAT-S152010-D*xx*	3.2	5.3	643 (145)	19.5	1799 (404)	1.76
LDAT-S152020-D*xx* … LDAT-S152090-D*xx*	3.5					1.89
LDAT-S152010-E*xx* … LDAT-S152090-E*xx*	1.8	2.7		9.8		0.87
LDAT-S153010-D*xx* … LDAT-S153090-D*xx*	3.6	8.0	978 (220)	29.1	2680 (602)	2.87
LDAT-S153010-E*xx* … LDAT-S153090-E*xx*	1.2	2.7		9.1		0.80
LDAT-S154010-D*xx* … LDAT-S154090-D*xx*	3.5	10.7	1306 (294)	39.1	3597 (809)	3.83
LDAT-S154010-E*xx* … LDAT-S154090-E*xx*	1.8	5.3		19.5		1.78
LDAT-S156010-D*xx* … LDAT-S156090-D*xx*	3.6	16.3	1997 (449)	59.4	5469 (1229)	5.85
LDAT-S156010-E*xx* … LDAT-S156090-E*xx*	1.8	8.1		19.8		2.71

Weight Specifications

LDAT-Series Integrated Linear Thrusters (frame 30)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S031010-*xxx*	6.9 (15.2)
LDAT-S031020-*xxx*	7.5 (16.6)
LDAT-S031030-*xxx*	8.1 (17.9)
LDAT-S031040-*xxx*	8.7 (19.2)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S032010-*xxx*	9.7 (21.5)
LDAT-S032020-*xxx*	10.3 (22.8)
LDAT-S032030-*xxx*	10.9 (24.1)
LDAT-S032040-*xxx*	11.6 (25.5)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S033010-*xxx*	12.6 (26.9)
LDAT-S033020-*xxx*	13.2 (30.4)
LDAT-S033030-*xxx*	13.8 (31.7)
LDAT-S033040-*xxx*	14.4 (31.7)

LDAT-Series Integrated Linear Thrusters (frame 50)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S051010-*xxx*	10.3 (22.7)
LDAT-S051020-*xxx*	11.3 (24.8)
LDAT-S051030-*xxx*	12.2 (26.9)
LDAT-S051040-*xxx*	13.2 (29.0)
LDAT-S051050-*xxx*	14.1 (31.7)
LDAT-S052010-*xxx*	14.6 (32.2)
LDAT-S052020-*xxx*	15.6 (34.3)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S052030-*xxx*	16.5 (36.4)
LDAT-S052040-*xxx*	17.5 (38.5)
LDAT-S052050-*xxx*	18.4 (40.6)
LDAT-S053010-*xxx*	18.9 (41.6)
LDAT-S053020-*xxx*	19.8 (43.7)
LDAT-S053030-*xxx*	20.8 (45.8)
LDAT-S053040-*xxx*	21.8 (48.0)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S053050-*xxx*	22.7 (50.1)
LDAT-S054010-*xxx*	23.3 (51.3)
LDAT-S054020-*xxx*	24.2 (53.4)
LDAT-S054030-*xxx*	25.2 (55.5)
LDAT-S054040-*xxx*	26.1 (57.6)
LDAT-S054050-*xxx*	27.1 (59.7)

LDAT-Series Integrated Linear Thrusters (frame 70)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S072010-*xxx*	17.7 (39.1)
LDAT-S072020-*xxx*	18.9 (41.8)
LDAT-S072030-*xxx*	20.2 (44.4)
LDAT-S072040-*xxx*	21.4 (47.1)
LDAT-S072050-*xxx*	22.6 (49.8)
LDAT-S072060-*xxx*	23.8 (52.2)
LDAT-S072070-*xxx*	25.0 (55.2)
LDAT-S073010-*xxx*	23.0 (50.7)
LDAT-S073020-*xxx*	24.2 (53.3)
LDAT-S073030-*xxx*	25.4 (56.0)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S073040-*xxx*	26.6 (58.7)
LDAT-S073050-*xxx*	27.8 (61.4)
LDAT-S073060-*xxx*	29.1 (64.1)
LDAT-S073070-*xxx*	28.2 (62.1)
LDAT-S074010-*xxx*	30.3 (66.8)
LDAT-S074020-*xxx*	29.4 (64.8)
LDAT-S074030-*xxx*	30.6 (67.5)
LDAT-S074040-*xxx*	31.8 (70.2)
LDAT-S074050-*xxx*	33.1 (72.9)
LDAT-S074060-*xxx*	34.3 (75.6)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S074070-*xxx*	35.5 (78.2)
LDAT-S076010-*xxx*	38.6 (85.1)
LDAT-S076020-*xxx*	39.8 (87.7)
LDAT-S076030-*xxx*	41.0 (90.4)
LDAT-S076040-*xxx*	42.2 (93.1)
LDAT-S076050-*xxx*	43.5 (95.8)
LDAT-S076060-*xxx*	44.7 (98.5)
LDAT-S076070-*xxx*	45.9 (101.2)

LDAT-Series Integrated Linear Thrusters (frame 100)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S102010-*xxx*	27.9 (61.5)
LDAT-S102020-*xxx*	29.9 (65.8)
LDAT-S102030-*xxx*	31.9. (70.2)
LDAT-S102040-*xxx*	33.8 (74.6)
LDAT-S102050-*xxx*	35.8 (79.0)
LDAT-S102060-*xxx*	37.8 (83.4)
LDAT-S102070-*xxx*	39.8 (87.7)
LDAT-S102080-*xxx*	41.8 (92.1)
LDAT-S102090-*xxx*	43.8 (96.9)
LDAT-S103010-*xxx*	36.0 (79.4)
LDAT-S103020-*xxx*	38.0 (83.8)
LDAT-S103030-*xxx*	40.0 (88.1)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S103040-*xxx*	42.0 (92.1)
LDAT-S103050-*xxx*	44.0 (96.9)
LDAT-S103060-*xxx*	45.9 (101.3)
LDAT-S103070-*xxx*	47.9 (105.6)
LDAT-S102080-*xxx*	49.9 (110.0)
LDAT-S102090-*xxx*	51.9 (114.4)
LDAT-S104010-*xxx*	44.1 (97.3)
LDAT-S104020-*xxx*	46.1 (101.7)
LDAT-S104030-*xxx*	48.1 (106.1)
LDAT-S104040-*xxx*	50.1 (110.4)
LDAT-S104050-*xxx*	52.1 (114.8)
LDAT-S104060-*xxx*	54.1 (119.2)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S104070-*xxx*	56.0 (123.3)
LDAT-S104080-*xxx*	58.0 (127.9)
LDAT-S104090-*xxx*	60.0 (132.3)
LDAT-S106010-*xxx*	60.2 (132.7)
LDAT-S106020-*xxx*	62.2 (137.1)
LDAT-S106030-*xxx*	64.2 (141.5)
LDAT-S106040-*xxx*	66.1 (145.8)
LDAT-S106050-*xxx*	68.1 (150.2)
LDAT-S106060-*xxx*	70.1 (154.6)
LDAT-S106070-*xxx*	72.1 (159.0)
LDAT-S106080-*xxx*	74.1 (163.3)
LDAT-S106090-*xxx*	76.1 (167.7)

LDAT-Series Integrated Linear Thrusters (frame 150)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S152010-*xxx*	38.6 (85.1)
LDAT-S152020-*xxx*	41.6 (91.7)
LDAT-S152030-*xxx*	44.6 (98.4)
LDAT-S152040-*xxx*	47.7 (105.1)
LDAT-S152050-*xxx*	50.7 (111.8)
LDAT-S152060-*xxx*	53.7 (118.5)
LDAT-S152070-*xxx*	56.8 (125.2)
LDAT-S152080-*xxx*	59.8 (131.9)
LDAT-S152090-*xxx*	62.9 (138.6)
LDAT-S153010-*xxx*	49.5 (109.2)
LDAT-S153020-*xxx*	52.6 (115.9)
LDAT-S153030-*xxx*	55.6 (122.6)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S153040-*xxx*	58.6 (129.2)
LDAT-S153050-*xxx*	61.7 (135.9)
LDAT-S153060-*xxx*	64.7 (142.6)
LDAT-S153070-*xxx*	67.7 (149.3)
LDAT-S152080-*xxx*	70.8 (156.0)
LDAT-S152090-*xxx*	73.8 (162.7)
LDAT-S154010-*xxx*	60.4 (133.2)
LDAT-S154020-*xxx*	63.4 (139.9)
LDAT-S154030-*xxx*	66.5 (146.6)
LDAT-S154040-*xxx*	69.5 (153.3)
LDAT-S154050-*xxx*	72.5 (159.9)
LDAT-S154060-*xxx*	75.6 (166.6)

Linear Thruster Cat. No.	Weight, approx kg (lb)
LDAT-S154070-*xxx*	78.6 (173.3)
LDAT-S154080-*xxx*	81.7 (180.0)
LDAT-S154090-*xxx*	84.7 (186.7)
LDAT-S156010-*xxx*	82.4 (181.7)
LDAT-S156020-*xxx*	85.5 (188.4)
LDAT-S156030-*xxx*	88.5 (195.1)
LDAT-S156040-*xxx*	91.5 (201.8)
LDAT-S156050-*xxx*	94.6 (208.5)
LDAT-S156060-*xxx*	97.6 (215.1)
LDAT-S156070-*xxx*	100.6 (221.8)
LDAT-S156080-*xxx*	103.7 (228.5)
LDAT-S156090-*xxx*	106.7 (235.2)

LDAT-Series Integrated Linear Thrusters Mounting Accessories

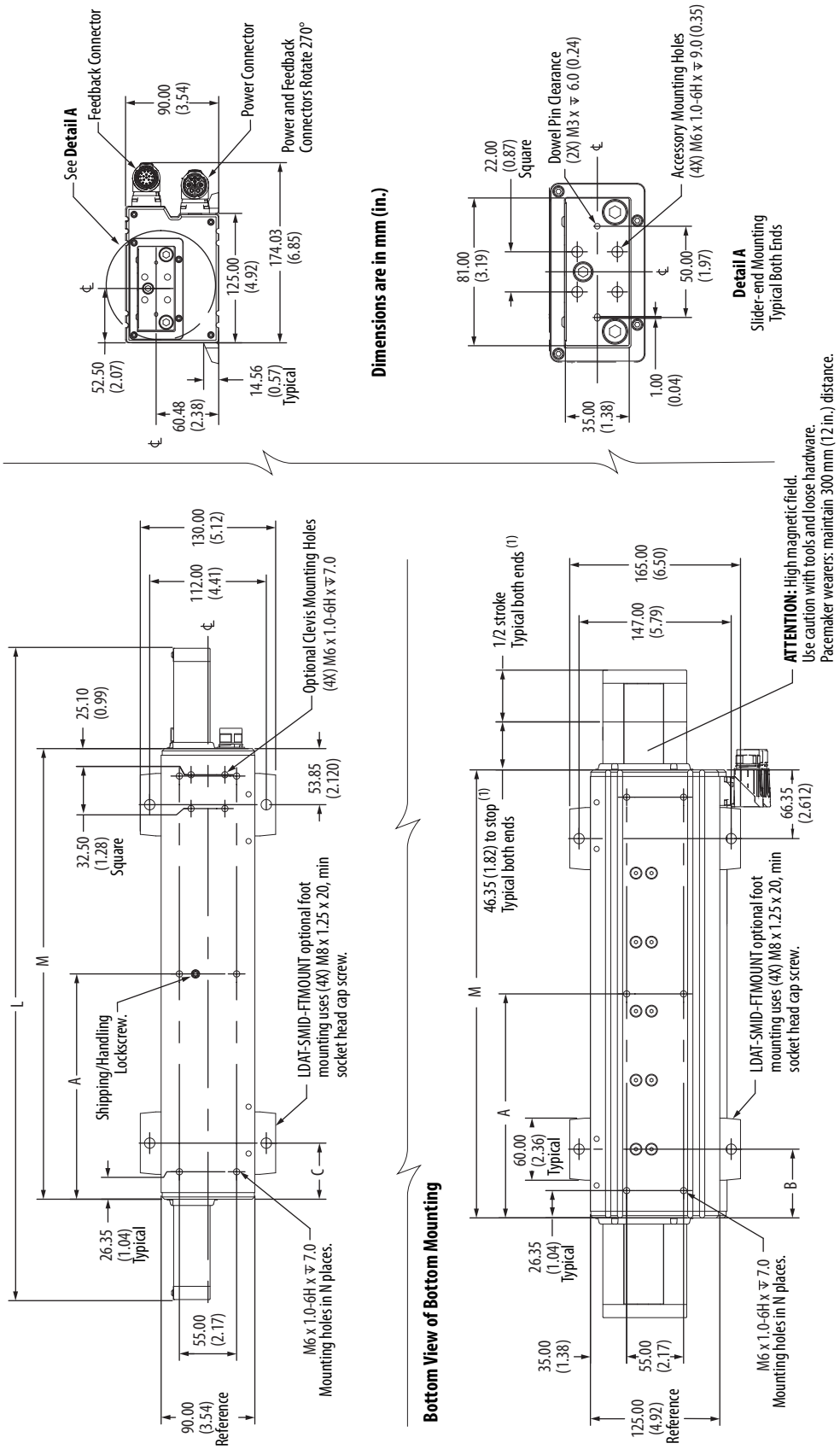
Accessory Item		Frame	Cat. No.	Weight, approx g (oz)
1	Foot Mount	30	LDAT-SMID-FTMOUNT	30 (1.06)
		50		
		70		
		100	LDAT-SLARGE-FTMOUNT	40 (1.41)
		150		
2	Clevis, Male	30	LDAT-03-CLVSM	100 (3.53)
		50	LDAT-0507-CLVSM	150 (5.29)
		70		
		100	LDAT-1015-CLVSM	370 (13.05)
		150		
3	Clevis, Female	30	LDAT-03-CLVSF	75 (2.65)
		50	LDAT-0507-CLVSF	100 (3.53)
		70		
		100	LDAT-1015-CLVSF	250 (8.82)
		150		

LDAT-Series Integrated Linear Thrusters Slider-end Accessories

Accessory Item		Frame	Cat. No.	Weight, approx g (oz)
4	Rod Clevis Kit	30	LDAT-S03-RODCLVS	190 (6.70)
		50	LDAT-S0507-RODCLVS	320 (11.29)
		70		
		100	LDAT-S015-RODCLVS	770 (27.16)
		150		
5	Rod Eye Kit	30	LDAT-S03-RODEYE	150 (5.29)
		50	LDAT-S0507-RODEYE	260 (9.17)
		70		
		100	LDAT-S1015-RODEYE	590 (20.81)
		150		
6	Rod Coupler Kit	30	LDAT-S03-RODCPLR	290 (10.05)
		50	LDAT-S0507-RODCPLR	370 (13.05)
		70		
		100	LDAT-S1015-RODCPLR	1030 (36.33)
		150		
7	Horizontal Payload Mounting Bracket	30	LDAT-S03-HPBRKT	260 (9.17)
		50	LDAT-S0507-HPBRKT	430 (15.17)
		70		
		100	LDAT-S10-HPBRKT	910 (32.10)
		150	LDAT-S15-HPBRKT	1300 (54.86)
8	Counterbalance Kit	30	LDAT-S03-CBRKT	380 (13.4)
		50	LDAT-S0507-CBRKT	600 (21.2)
		70		
		100	LDAT-S10-CBRKT	950 (33.5)
		150	LDAT-S15-CBRKT	1160 (40.9)

Dimensions - LDAT-Series Integrated Linear Thrusters

LDAT-Series Integrated Linear Thrusters Dimensions (frame 30)



(1) Up to approximately 5 mm (0.2 in.) overtravel at each end. An additional 12.7 (0.5 in.) overtravel at each end when stop is fully compressed in a crash condition.

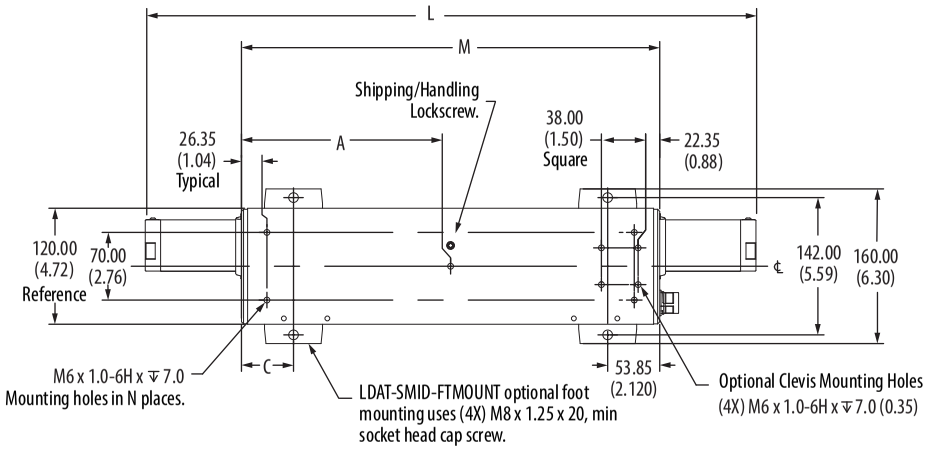
LDAT-Series Integrated Linear Thruster Dimensions (frame 30)

Linear Thruster Cat. No.	**Motor size** (reference)	**Stroke** mm (in.)	**L** mm (in.)	**M** mm (in.)	**A** mm (in.)	**B** mm (in.)	**C** mm (in.)	**N**
LDAT-S031010-*xxx*	100	100 (3.9)	425.4 (16.75)	232.70 (9.161)	–	51.35 (2.022)	38.85 (1.530)	4
LDAT-S031020-*xxx*		200 (7.9)	525.4 (20.69)					
LDAT-S031030-*xxx*		300 (11.8)	625.4 (24.62)					
LDAT-S031040-*xxx*		400 (15.7)	725.4 (28.56)					
LDAT-S032010-*xxx*	200	100 (3.9)	525.4 (20.69)	332.70 (13.098)		66.35 (2.612)	53.85 (2.120)	
LDAT-S032020-*xxx*		200 (7.9)	625.4 (24.62)					
LDAT-S032030-*xxx*		300 (11.8)	725.4 (28.56)					
LDAT-S032040-*xxx*		400 (15.7)	825.4 (32.50)					
LDAT-S033010-*xxx*	300	100 (3.9)	625.4 (24.62)	432.70 (17.035)	216.35 (8.518)			6
LDAT-S033020-*xxx*		200 (7.9)	725.4 (28.56)					
LDAT-S033030-*xxx*		300 (11.8)	825.4 (32.50)					
LDAT-S033040-*xxx*		400 (15.7)	925.4 (36.43)					

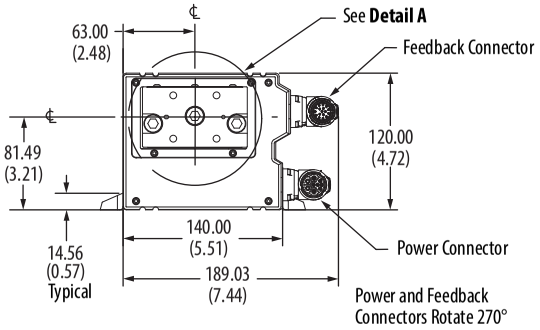
Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

LDAT-Series Integrated Linear Thruster Dimensions (frame 50 and 70)

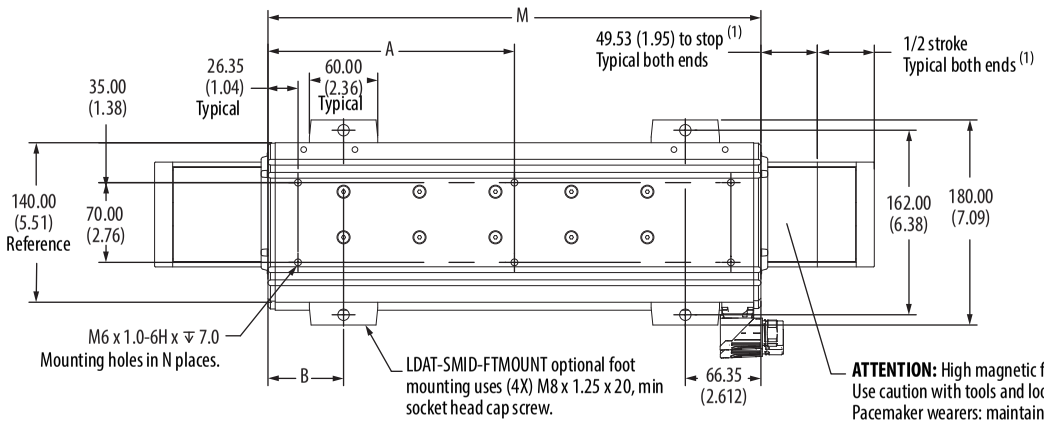
Bottom View of Side Mounting



End View of Bottom Mounting

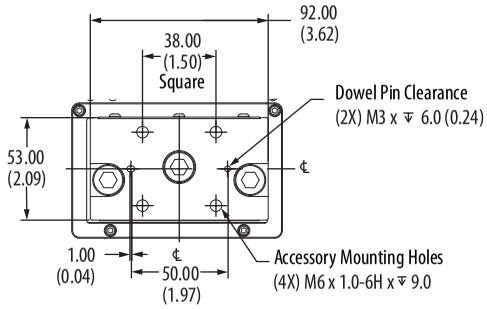


Bottom View of Bottom Mounting



ATTENTION: High magnetic field.
Use caution with tools and loose hardware.
Pacemaker wearers: maintain 300 mm (12 in.) distance.

Dimensions are in mm (in.)



Detail A
Slider-end Mounting
Typical Both Ends

(1) Up to approximately 5 mm (0.2 in.) overtravel at each end. An additional 12.7 (0.5 in.) overtravel at each end when stop is fully compressed in a crash condition.

LDAT-Series Integrated Linear Thruster Dimensions (frame 50)

Linear Thruster Cat. No.	Motor size (reference)	Stroke mm (in.)	L mm (in.)	M mm (in.)	A mm (in.)	B mm (in.)	C mm (in.)	N
LDAT-S051010-*xxx*	100	100 (3.9)	431.8 (16.998)	232.70 (9.161)	–	51.35 (2.022)	38.85 (1.530)	4
LDAT-S051020-*xxx*		200 (7.9)	531.8 (20.935)					
LDAT-S051030-*xxx*		300 (11.8)	631.8 (24.872)					
LDAT-S051040-*xxx*		400 (15.7)	731.8 (28.809)					
LDAT-S051050-*xxx*		500 (19.7)	831.8 (32.746)					
LDAT-S052010-*xxx*	200	100 (3.9)	531.8 (20.935)	332.70 (13.098)				
LDAT-S052020-*xxx*		200 (7.9)	631.8 (24.872)					
LDAT-S052030-*xxx*		300 (11.8)	731.8 (28.809)					
LDAT-S052040-*xxx*		400 (15.7)	831.8 (32.746)					
LDAT-S052050-*xxx*		500 (19.7)	931.8 (36.683)					
LDAT-S053010-*xxx*	300	100 (3.9)	631.8 (24.872)	432.70 (17.035)	216.35 (8.518)	66.35 (2.612)	53.85 (2.120)	5
LDAT-S053020-*xxx*		200 (7.9)	731.8 (28.809)					
LDAT-S053030-*xxx*		300 (11.8)	831.8 (32.746)					
LDAT-S053040-*xxx*		400 (15.7)	931.8 (36.683)					
LDAT-S053050-*xxx*		500 (19.7)	1031.8 (40.620)					
LDAT-S054010-*xxx*	400	100 (3.9)	731.8 (28.809)	532.70 (20.972)	266.35 (10.486)			
LDAT-S054020-*xxx*		200 (7.9)	831.8 (32.746)					
LDAT-S054030-*xxx*		300 (11.8)	931.8 (36.683)					
LDAT-S054040-*xxx*		400 (15.7)	1031.8 (40.620)					
LDAT-S054050-*xxx*		500 (19.7)	1131.8 (44.557)					

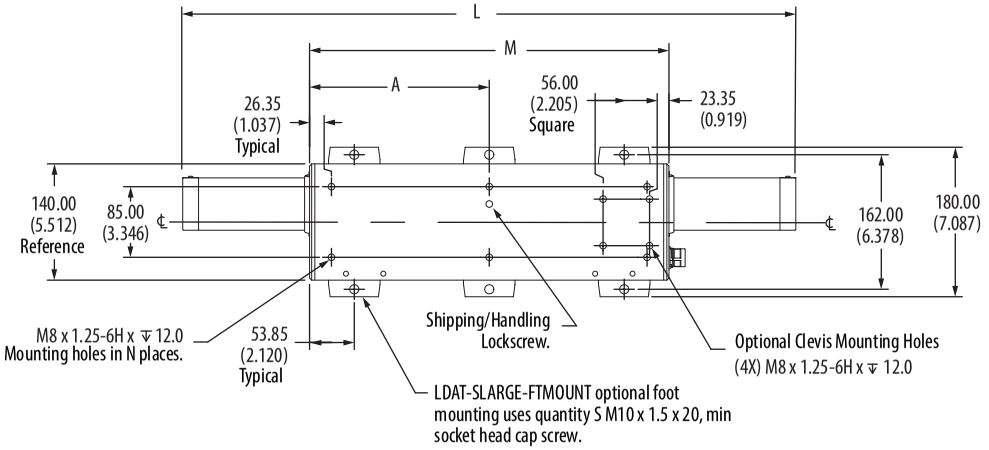
LDAT-Series Integrated Linear Thruster Dimensions (frame 70)

Linear Thruster Cat. No.	Motor size (reference)	Stroke mm (in.)	L mm (in.)	M mm (in.)	A mm (in.)	B mm (in.)	C mm (in.)	N
LDAT-S072010-*xxx*	200	100 (3.9)	531.8 (20.94)	332.70 (13.098)	–	66.35 (2.612)	53.850 (2.120)	4
LDAT-S072020-*xxx*		200 (7.9)	631.8 (24.87)					
LDAT-S072030-*xxx*		300 (11.8)	731.8 (28.81)					
LDAT-S072040-*xxx*		400 (15.7)	831.8 (32.75)					
LDAT-S072050-*xxx*		500 (19.7)	931.8 (36.68)					
LDAT-S072060-*xxx*		600 (23.6)	1031.8 (40.62)					
LDAT-S072070-*xxx*		700 (27.6)	1131.8 (44.56)					
LDAT-S073010-*xxx*	300	100 (3.9)	631.8 (24.87)	432.70 (17.035)	216.35 (8.52)			5
LDAT-S073020-*xxx*		200 (7.9)	731.8 (28.81)					
LDAT-S073030-*xxx*		300 (11.8)	831.8 (32.75)					
LDAT-S073040-*xxx*		400 (15.7)	931.8 (36.68)					
LDAT-S073050-*xxx*		500 (19.7)	1031.8 (40.62)					
LDAT-S073060-*xxx*		600 (23.6)	1131.8 (44.56)					
LDAT-S073070-*xxx*		700 (27.6)	1231.8 (48.49)					
LDAT-S074010-*xxx*	400	100 (3.9)	731.8 (28.81)	532.70 (20.97)	266.350 (10.49)			
LDAT-S074020-*xxx*		200 (7.9)	831.8 (32.75)					
LDAT-S074030-*xxx*		300 (11.8)	931.8 (36.68)					
LDAT-S074040-*xxx*		400 (15.7)	1031.8 (40.62)					
LDAT-S074050-*xxx*		500 (19.7)	1131.8 (44.56)					
LDAT-S074060-*xxx*		600 (23.6)	1231.8 (48.49)					
LDAT-S074070-*xxx*		700 (27.6)	1331.8 (52.43)					
LDAT-S076010-*xxx*	600	100 (3.9)	931.8 (36.68)	732.70 (28.85)	366.350 (14.42)			
LDAT-S076020-*xxx*		200 (7.9)	1031.8 (40.62)					
LDAT-S076030-*xxx*		300 (11.8)	1131.8 (44.56)					
LDAT-S076040-*xxx*		400 (15.7)	1231.8 (48.49)					
LDAT-S076050-*xxx*		500 (19.7)	1331.8 (52.43)					
LDAT-S076060-*xxx*		600 (23.6)	1431.8 (56.37)					
LDAT-S076070-*xxx*		700 (27.6)	1531.8 (60.31)					

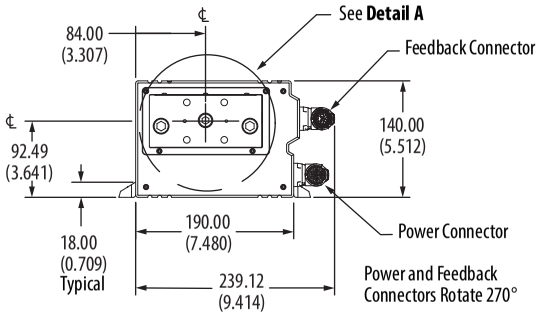
Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

LDAT-Series Integrated Linear Thruster Dimensions (frame 100)

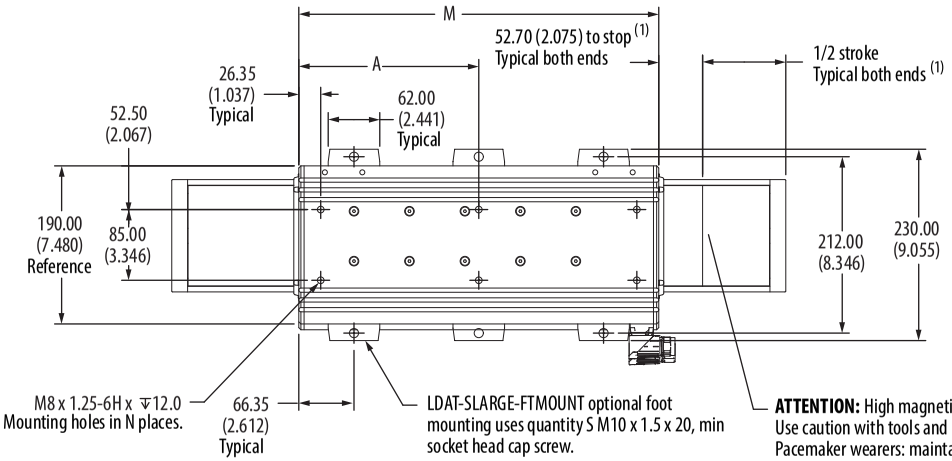
Bottom View of Side Mounting



End View of Bottom Mounting

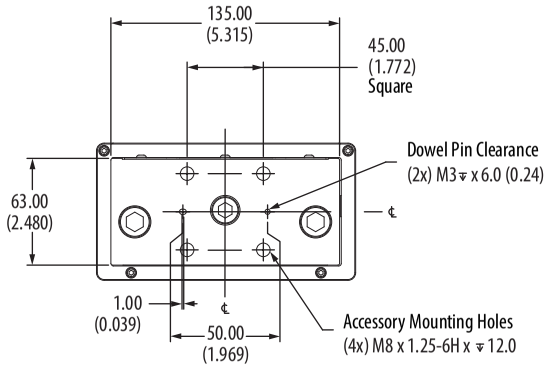


Bottom View of Bottom Mounting



ATTENTION: High magnetic field.
Use caution with tools and loose hardware.
Pacemaker wearers: maintain 300 mm (12 in.) distance.

Dimensions are in mm (in.)



Detail A
Slider-end Mounting
Typical Both Ends

(1) Up to approximately 5 mm (0.2 in.) overtravel at each end. An additional 12.7 (0.5 in.) overtravel at each end when stop is fully compressed in a crash condition.

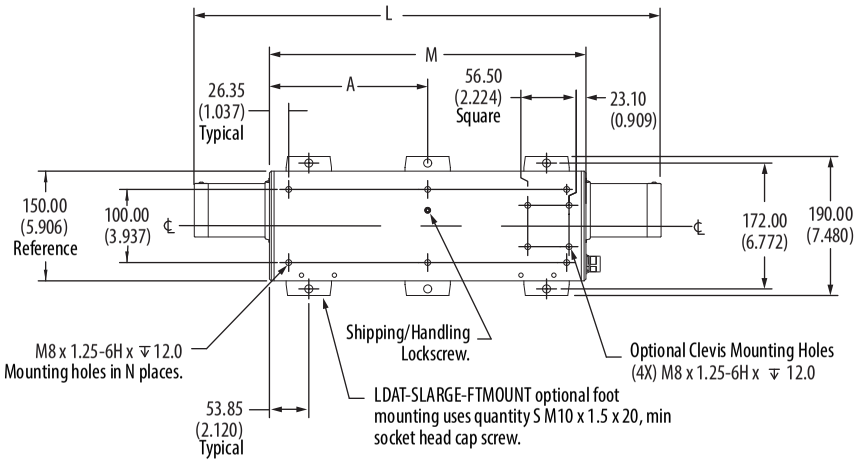
LDAT-Series Integrated Linear Thruster Dimensions (frame 100)

Linear Thruster Cat. No.	Motor size (reference)	Stroke mm (in.)	L mm (in.)	M mm (in.)	A mm (in.)	N	S
LDAT-S102010-*xxx*	200	100 (3.9)	538.1 (21.18)	332.70 (13.098)	–	4	4
LDAT-S102020-*xxx*		200 (7.9)	638.1 (25.12)				
LDAT-S102030-*xxx*		300 (11.8)	738.1 (29.06)				
LDAT-S102040-*xxx*		400 (15.7)	838.1 (33.00)				
LDAT-S102050-*xxx*		500 (19.7)	938.1 (36.93)				
LDAT-S102060-*xxx*		600 (23.6)	1038.1 (40.87)				
LDAT-S102070-*xxx*		700 (27.6)	1138.1 (44.81)				
LDAT-S102080-*xxx*		800 (31.5)	1238.1 (48.74)				
LDAT-S102090-*xxx*		900 (35.4)	1338.1 (52.68)				
LDAT-S103010-*xxx*	300	100 (3.9)	638.1 (25.12)	432.70 (17.035)	216.35 (8.518)	6	
LDAT-S103020-*xxx*		200 (7.9)	738.1 (29.06)				
LDAT-S103030-*xxx*		300 (11.8)	838.1 (33.00)				
LDAT-S103040-*xxx*		400 (15.7)	938.1 (36.93)				
LDAT-S103050-*xxx*		500 (19.7)	1038.1 (40.87)				
LDAT-S103060-*xxx*		600 (23.6)	1138.1 (44.81)				
LDAT-S103070-*xxx*		700 (27.6)	1238.1 (48.74)				
LDAT-S102080-*xxx*		800 (31.5)	1338.1 (52.68)				
LDAT-S102090-*xxx*		900 (35.4)	1438.1 (56.62)				
LDAT-S104010-*xxx*	400	100 (3.9)	738.1 (29.06)	532.70 (20.972)	266.35 (10.486)		6
LDAT-S104020-*xxx*		200 (7.9)	838.1 (33.00)				
LDAT-S104030-*xxx*		300 (11.8)	938.1 (36.93)				
LDAT-S104040-*xxx*		400 (15.7)	1038.1 (40.87)				
LDAT-S104050-*xxx*		500 (19.7)	1138.1 (44.81)				
LDAT-S104060-*xxx*		600 (23.6)	1238.1 (48.74)				
LDAT-S104070-*xxx*		700 (27.6)	1338.1 (52.68)				
LDAT-S104080-*xxx*		800 (31.5)	1438.1 (56.62)				
LDAT-S104090-*xxx*		900 (35.4)	1538.1 (60.55)				
LDAT-S106010-*xxx*	600	100 (3.9)	938.1 (36.93)	732.70 (28.846)	366.35 (14.423)		
LDAT-S106020-*xxx*		200 (7.9)	1038.1 (40.87)				
LDAT-S106030-*xxx*		300 (11.8)	1138.1 (44.81)				
LDAT-S106040-*xxx*		400 (15.7)	1238.1 (48.74)				
LDAT-S106050-*xxx*		500 (19.7)	1338.1 (52.68)				
LDAT-S106060-*xxx*		600 (23.6)	1438.1 (56.62)				
LDAT-S106070-*xxx*		700 (27.6)	1538.1 (60.55)				
LDAT-S106080-*xxx*		800 (31.5)	1638.1 (64.49)				
LDAT-S106090-*xxx*		900 (35.4)	1738.1 (68.43)				

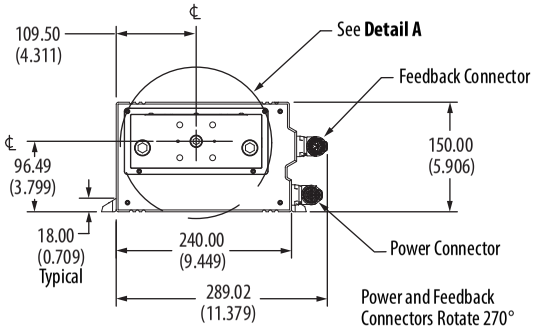
Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

LDAT-Series Integrated Linear Thruster Dimensions (frame 150)

Bottom View of Side Mounting

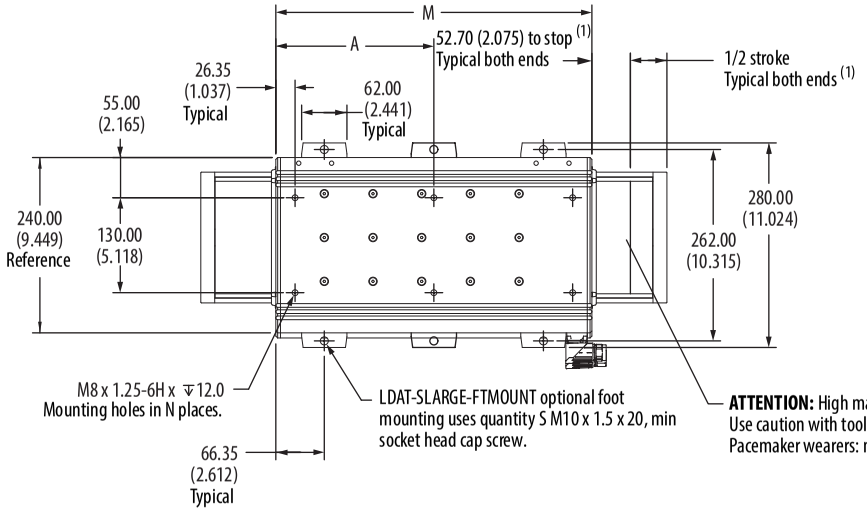


End View of Bottom Mounting

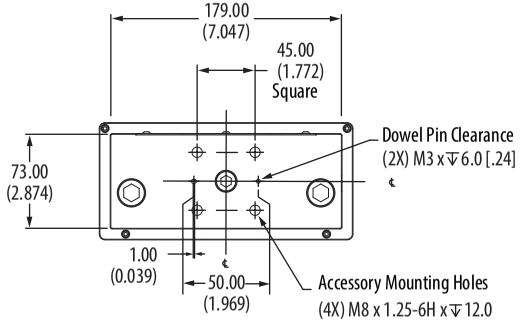


Dimensions are in mm (in.)

Bottom View of Bottom Mounting



ATTENTION: High magnetic field.
Use caution with tools and loose hardware.
Pacemaker wearers: maintain 300 mm (12 in.) distance.



Detail A
Slider-end Mounting
Typical Both Ends

(1) Up to approximately 5 mm (0.2 in.) overtravel at each end. An additional 12.7 (0.5 in.) overtravel at each end when stop is fully compressed in a crash condition.

LDAT-Series Integrated Linear Thruster Dimensions (frame 150)

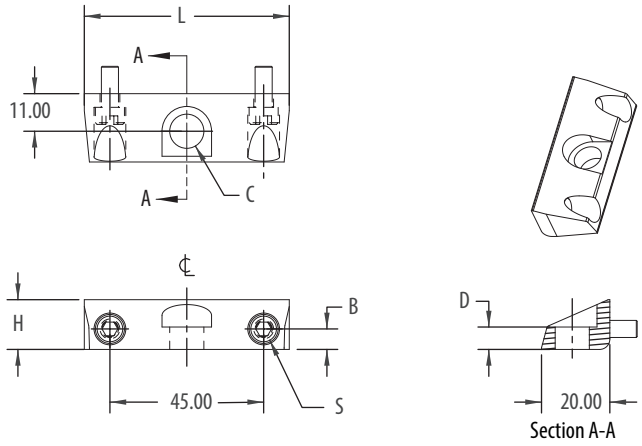
Linear Thruster Cat. No.	**Motor size** (reference)	**Stroke** mm (in.)	**L** mm (in.)	**M** mm (in.)	**A** mm (in.)	**N**	**S**
LDAT-S152010-*xxx*	200	100 (3.9)	538.1 (21.18)	332.70 (13.098)	–	4	4
LDAT-S152020-*xxx*		200 (7.9)	638.1 (25.12)				
LDAT-S152030-*xxx*		300 (11.8)	738.1 (29.06)				
LDAT-S152040-*xxx*		400 (15.7)	838.1 (33.00)				
LDAT-S152050-*xxx*		500 (19.7)	938.1 (36.93)				
LDAT-S152060-*xxx*		600 (23.6)	1038.1 (40.87)				
LDAT-S152070-*xxx*		700 (27.6)	1138.1 (44.81)				
LDAT-S152080-*xxx*		800 (31.5)	1238.1 (48.74)				
LDAT-S152090-*xxx*		900 (35.4)	1338.1 (52.68)				
LDAT-S153010-*xxx*	300	100 (3.9)	638.1 (25.12)	432.70 (17.035)	216.35 (8.518)	6	4
LDAT-S153020-*xxx*		200 (7.9)	738.1 (29.06)				
LDAT-S153030-*xxx*		300 (11.8)	838.1 (33.00)				
LDAT-S153040-*xxx*		400 (15.7)	938.1 (36.93)				
LDAT-S153050-*xxx*		500 (19.7)	1038.1 (40.87)				
LDAT-S153060-*xxx*		600 (23.6)	1138.1 (44.81)				
LDAT-S153070-*xxx*		700 (27.6)	1238.1 (48.74)				
LDAT-S153080-*xxx*		800 (31.5)	1338.1 (52.68)				
LDAT-S153090-*xxx*		900 (35.4)	1438.1 (56.62)				
LDAT-S154010-*xxx*	400	100 (3.9)	738.1 (29.06)	532.70 (20.972)	266.35 (10.486)	6	6
LDAT-S154020-*xxx*		200 (7.9)	838.1 (33.00)				
LDAT-S154030-*xxx*		300 (11.8)	938.1 (36.93)				
LDAT-S154040-*xxx*		400 (15.7)	1038.1 (40.87)				
LDAT-S154050-*xxx*		500 (19.7)	1138.1 (44.81)				
LDAT-S154060-*xxx*		600 (23.6)	1238.1 (48.74)				
LDAT-S154070-*xxx*		700 (27.6)	1338.1 (52.68)				
LDAT-S154080-*xxx*		800 (31.5)	1438.1 (56.62)				
LDAT-S154090-*xxx*		900 (35.4)	1538.1 (60.55)				
LDAT-S156010-*xxx*	600	100 (3.9)	938.1 (36.93)	732.7 (28.846)	366.35 (14.423)	6	6
LDAT-S156020-*xxx*		200 (7.9)	1038.1 (40.87)				
LDAT-S156030-*xxx*		300 (11.8)	1138.1 (44.81)				
LDAT-S156040-*xxx*		400 (15.7)	1238.1 (48.74)				
LDAT-S156050-*xxx*		500 (19.7)	1338.1 (52.68)				
LDAT-S156060-*xxx*		600 (23.6)	1438.1 (56.62)				
LDAT-S156070-*xxx*		700 (27.6)	1538.1 (60.55)				
LDAT-S156080-*xxx*		800 (31.5)	1638.1 (64.49)				
LDAT-S156090-*xxx*		900 (35.4)	1738.1 (68.43)				

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

LDAT-Series Integrated Linear Thrusters Mounting Accessories

These accessories apply to LDAT-Series linear thrusters. Components are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

Foot Mount Bracket Kit



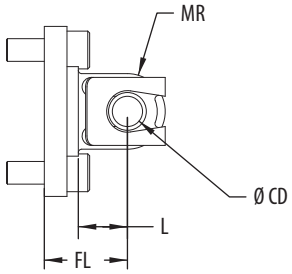
Dimensions are in mm (in.)

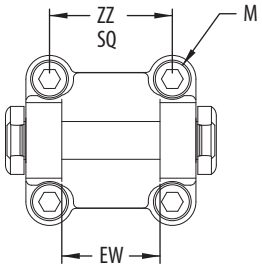
Cat. No. (1)	Frame	L mm (in.)	H mm (in.)	B mm (in.)	C, min mm (in.)	D mm (in.)	S mm (in.)	Kit Includes (2)
LDAT-SMID-FTMOUNT	30	60.0 (2.36)	14.6 (0.57)	6.0 (0.24)	M8 x 1.25 x 20	6.56 (0.26)	M5 x 0.8 x 12	• 4 foot mounts • 8 screws
	50							
	70							
LDAT-SLARGE-FTMOUNT	100	62.0 (2.44)	18.0 (0.71)	7.8 (0.31)	M10 x 1.5 x 25	6.50 (0.26)	M6 x 1.0 x 16 M6 x 1.0 x 25	• 2 foot mounts • 8 screws
	150							

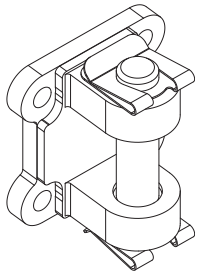
(1) Material is black anodized 6061-T6 aluminum. Stainless steel mounting hardware is included.

(2) Catalog number LDAT-SLARGE-FTMOUNT ships with two mounting screw lengths. Use the M6 x 1.0 x 25 LG screws to mount center feet on the LDAT-S1*x4xxx* and LDAT-S1*x6xxx* thruster units.

Clevis (male) Attachment







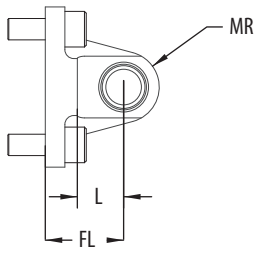
Dimensions are in mm (in.)

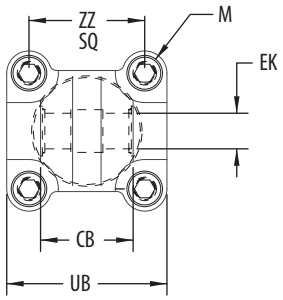
Attachment includes:
- 1 Flange
- 1 Pivot pin
- 2 Retaining clips
- 4 Mounting screws

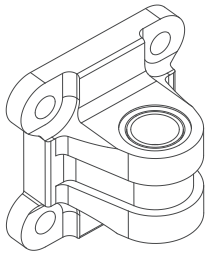
Cat. No. (1)	Frame	Ø CD mm (in.) H9	EW (2) mm (in.)	FL (3) mm (in.)	L mm (in.)	MR mm (in.)	ZZ mm (in.)	M mm (in.)
LDAT-S03-CLVSM	30	10.0 (0.39)	26.0 (1.02)	22.0 (0.87)	13.0 (0.51)	8.5 (0.33)	32.5 (1.28)	M6 x 1.0 x 16 (0.04 x 0.63)
LDAT-S0507-CLVSM	50	12.0 (0.47)	28.0 (1.10)	25.0 (0.98)	16.0 (0.63)	12.0 (0.47)	38.0 (1.50)	
	70							
LDAT-S1015-CLVSM	100	16.0 (0.63)	40.0 (1.57)	32.0 (1.26)	21.0 (0.83)	16.0 (0.63)	56.5 (2.22)	M8 x 1.25 x 18 (0.05 x 0.71)
	150							

(1) Material is die cast aluminum. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is a range between -0.2…-0.6 mm (-0.007…0.023 in.).
(3) Tolerance for this dimension is ± 0.2 (± 0.008).

Clevis (female) Attachment







Dimensions are in mm (in.)

Attachment includes:
- 1 Swivel flange
- 4 mounting screws

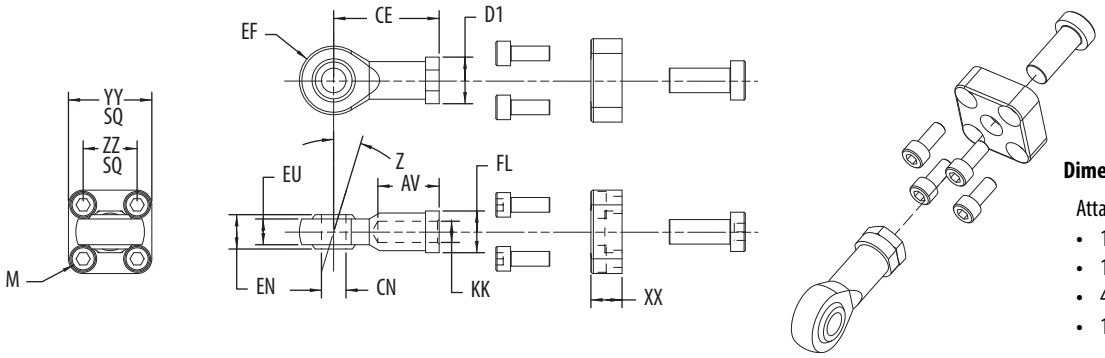
Cat. No. (1)	Frame	CB mm (in.) H14	Ø EK mm (in.) e8	FL (2) mm (in.)	L mm (in.)	MR mm (in.)	UB mm (in.) h14	ZZ mm (in.)	M mm (in.)
LDAT-S03-CLVSF	30	26.0 (1.02)	10.0 (0.39)	22.0 (0.87)	13.0 (0.51)	8.5 (0.33)	45.0 (1.8)	32.5 (1.28)	M6 x 1.0 x 16
LDAT-S0507-CLVSF	50	28.0 (1.10)	12.0 (0.47)	25.0 (0.98)	16.0 (0.63)	12.0 (0.47)	52.0 (2.1)	38.0 (1.50)	M6 x 1.0 x 16
	70								
LDAT-S1015-CLVSF	100	40.0 (1.57)	16.0 (0.63)	32.0 (1.26)	21.0 (0.83)	16.0 (0.63)	70.0 (2.8)	56.5 (2.22)	M8 x 1.25 x 18
	150								

(1) Material is die cast aluminum. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ± 0.2 (± 0.008).

LDAT-Series Linear Thruster Slider-end Accessories

These accessories apply to LDAT-Series linear thrusters. Components are designed to metric dimensions. Inch dimensions are approximate conversion from millimeters. Dimensions with tolerances are for reference.

Rod Eye Attachment



Dimensions are in mm (in.)

Attachment includes:

- 1 Rod eye
- 1 Adapter
- 4 Bolts to DIN 912
- 1 Bolt to DIN 7984

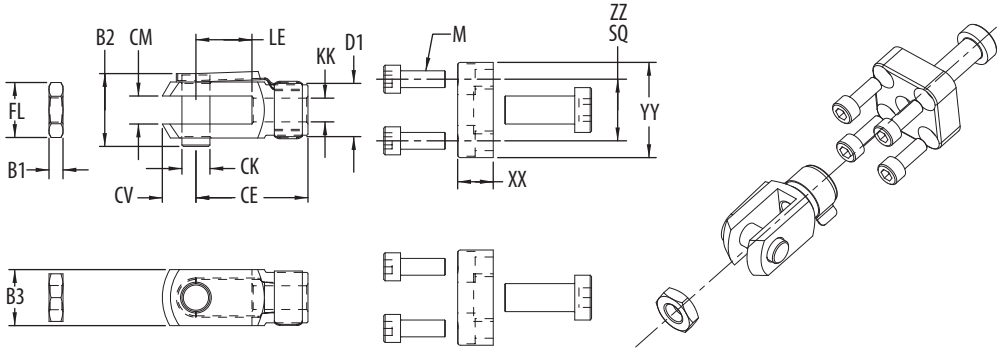
Cat. No. (1)	Frame	KK	AV (2) mm (in.)	CE mm (in.)	Ø CN mm (in.) H7	Ø D1 mm (in.)	EF (3) mm (in.)	EN mm (in.)	EU mm (in.)	Z Angle
LDAT-S03-RODEYE	30	M10 x 1.25	20.0 (0.79)	43.0 (1.69)	10.0 (0.39)	19.0 (0.75)	14.0 (0.55)	14.0 (0.55)	10.5 (0.41)	13 °
LDAT-S0507-RODEYE	50	M12 x 1.25	22.0 (0.87)	50.0 (1.97)	12.0 (0.47)	22.0 (0.87)	16.0 (0.63)	16.0 (0.63)	12.0 (0.47)	
	70									
LDAT-S1015-RODEYE	100	M16 x 1.5	28.0 (1.10)	64.0 (2.52)	16.0 (0.63)	27.0 (1.06))	21.0 (0.83)	21.0 (0.83)	15.0 (0.59))	15 °
	150									

(1) Material is galvanized steel.
(2) Tolerance for this dimension is -2.0 mm (-0.079 in.).
(3) Tolerance for this dimension is ±0.5 mm (±0.020 in.).

Cat. No. (1)	Frame	FL mm	XX mm (in.)	YY mm (in.)	ZZ mm (in.)	M
LDAT-S03-RODEYE	30	17.0	12.7 (0.50)	34.0 (1.34)	22.0 (0.86)	M6 x 1.0 x14
LDAT-S0507-RODEYE	50	19.0	15.875 (0.6)	50.0 (1.97)	38.0 (1.49)	M6 x 1.0 x 16
	70					
LDAT-S1015-RODEYE	100	22.0	25.4 (1.0)	62.0 (2.44)	45.0 (1.77)	M8 x 1.25 x 25
	150					

(1) Material is galvanized steel.

Rod Clevis Kit



Dimensions are in mm (in.)

Attachment includes:
- 1 Rod clevis
- 1 Adapter
- 1 Hinged spring pin
- 4 Bolts to DIN 912
- 1 Bolt to DIN 7984
- 1 Hex nut

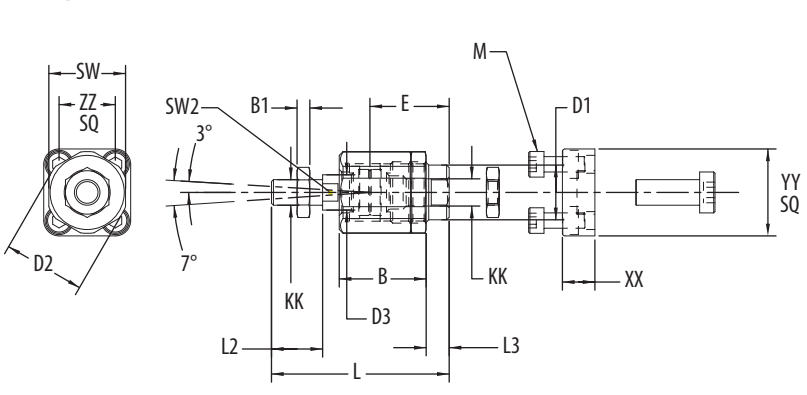
Cat. No. (1)	Frame	KK	B1 mm (in.)	B2 mm (in.)	B3 mm (in.)	CE (2) mm (in.)	Ø CK mm (in.) H11	CM mm (in.)	CV mm (in.)	Ø D1 mm (in.)	LE (3) mm (in.)
LDAT-S03-RODCLVS	30	M10 x 1.25	5.0 (0.20)	26.0 (1.02)	20.0 (0.79)	40.0 (1.57)	10.0 (0.39)	10.0 (4) (0.39)	12.0 (0.47)	18.0 (0.71)	20.0 (0.79)
LDAT-S0507-RODCLVS	50	M12 x 1.25	6.0 (0.24)	31.1 (1.22)	24.0 (0.94)	48.0 (1.89)	12.0 (0.47)	12.0 (5) (0.47)	14.0 (0.55)	20.0 (0.79)	24.0 (0.94)
	70										
LDAT-S1015-RODCLVS	100	M16 x 1.25	8.0 (0.31)	39.5 (1.56)	32.0 (1.26)	64.0 (2.52)	16.0 (0.63)	16.0 (5) (0.63)	19.0 (0.75)	26.0 (1.02)	32.0 (1.26)
	150										

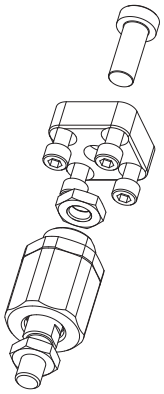
(1) Material is galvanized steel. Contains no copper, PTFE, or silicone.
(2) The tolerance for this dimension is ±0.4 (±0.016).
(3) The tolerance for this dimension is ±0.5 (±0.020).
(4) The tolerance for this dimension is B13.
(5) Tolerance for this dimension is a range between +0.7…+0.15 mm (+0.027…0.006 in.).

Cat. No. (1)	Frame	FL mm ⌯	XX mm (in.)	YY mm (in.)	ZZ mm (in.)	M
LDAT-S03-RODCLVS	30	17.0	12.7 (0.50)	34.0 (1.34)	22.0 (0.87)	M6 x 1.0 x 14
LDAT-S0507-RODCLVS	50	19.0	15.875 (0.6)	50.0 (1.97)	38.0 (1.50)	M6 x 1.0 x 16
	70					
LDAT-S1015-RODCLVS	100	24.0	25.4 (1.00)	62.0 (2.44)	45.0 (1.77)	M8 x 1.25 x 25
	150					

(1) Material is galvanized steel. Contains no copper, PTFE, or silicone.

Rod Coupler Kit





Dimensions are in mm (in.)

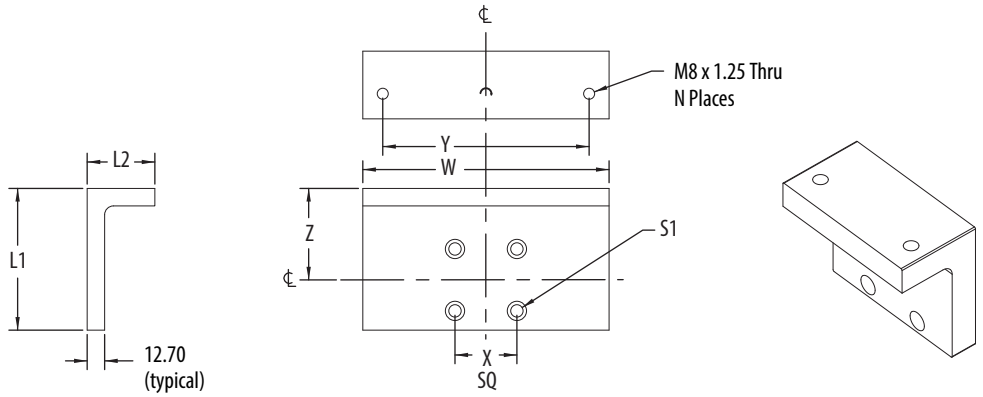
Attachment includes:
- 1 Self-aligning rod coupler
- 1 Adapter
- 4 Bolts to DIN 912
- 1 Bolt to DIN 7984
- 1 Hex nut

Cat. No. (1)	Frame	KK	B mm (in.)	B1 mm (in.)	D1 mm (in.)	D2 mm (in.)	D3 mm (in.)	E mm (in.)	L mm (in.)	L2 mm (in.)	L3 mm (in.)	SW mm (in.)	SW2 mm
LDAT-S03-RODCPLR	30	M10 x1.25	34.0 (1.34)	5.0 (0.20)	21.8 (0.86)	32.0 (1.26)	14.0 (0.55)	31.0 (1.22)	69.5 (2.74)	20.0 (0.79)	8.0 (0.31)	30.0 (1.18)	12
LDAT-S0507-RODCPLR	50	M12 x 1.25		6.0 (0.24)				32.0 (1.26)	74.5 (2.93)	24.0 (0.94)	9.0 (0.35)		
	70												
LDAT-S1015-RODCPLR	100	M16 x 1.15	53.0 (2.09)	8.0 (0.31)	33.8 (1.33)	45.0 (1.77)	22.0 (0.87)	44.5 (1.75)	103.0 (4.06)	32.0 (1.26)		41.0 (1.61)	
	150												

Cat. No.(1)	Frame	XX mm (in.)	YY mm (in.)	ZZ mm (in.)	M	Radial Deviation mm (in.)
LDAT-S03-RODCPLR	30	12.7 (0.50)	34 (1.34)	22.0 (0.87)	M6 x 1.0 x 14	± 0.7 (0.028)
LDAT-S0507-RODCPLR	50	15.9 (0.63)	50 (1.97)	38.0 (1.50)	M6 x 1.0 x 16	
	70					
LDAT-S1015-RODCPLR	100	25.4 (1.00)	62 (2.44)	45.0 (1.77)	M8 x 1.25 x 25	± 1.0 (0.039)
	150					

(1) Material is galvanized steel. Contains no copper, PTFE, or silicone.

Payload Bracket Attachment



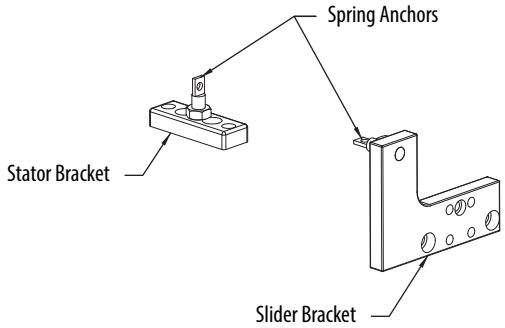
Dimensions are in mm (in.)

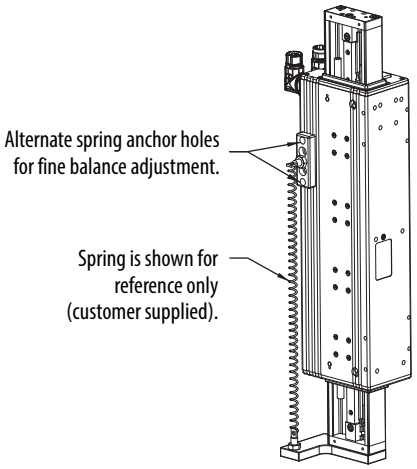
Attachment includes:
- 1 Payload bracket
- 4 Mounting screws

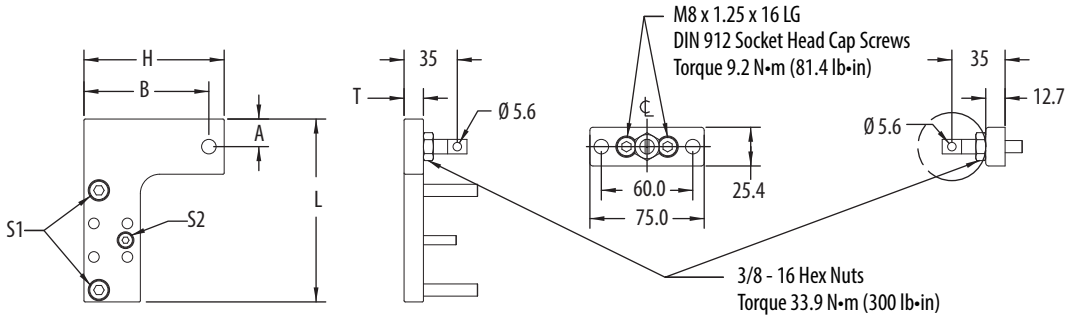
Cat. No. (1)	Frame	L1 mm (in.)	L2 mm (in.)	W mm (in.)	X mm (in.)	Y mm (in.)	Z mm (in.)	N	S1 mm
LDAT-S03-HPBRKT	30	60.0 (2.36)	51.9 (2.04)	81.0 (3.18)	22.0 (0.86)	60.0 (2.36)	42.5 (1.67)	2	M6 x 1.0 x 14
LDAT-S0507-HPBRKT	50	78.0 (3.07)	55.6 (2.18)	92.0 (3.62)	38.0 (1.50)	70.0 (2.76)	51.5 (2.03)	2	
	70								
LDAT-S10-HPBRKT	100	93.0 (3.66)	49.20 (1.94)	135.0 (5.31)	45.0 (1.77)	100.0 (3.94)	61.5 (2.42)	2	M8 x 1.25 x 14
LDAT-S15-HPBRKT	150	103.0 (4.06)		179.0 (7.04)		150.0 (5.91)	66.5 (2.62)	3	

(1) Material is black anodized 6061-T6 aluminum.

Counter Balance Kit







Dimensions are in mm (in.)

Attachment includes:
- 1 Slider-end bracket
- 1 Stator bracket
- 2 Spring anchors
- 2 Hex nuts
- 5 Socket head cap screws

Cat. No. (1)	Frame	L mm (in.)	H mm (in.)	A mm (in.)	B mm (in.)	T mm (in.)	S1 mm	S2 mm	Moving Weight kg (lb)
LDAT-S03-CBKIT	30	120.0 (4.72)	92.0 (3.62)	18.1 (0.71)	82.0 (3.23)	12.7 (0.50)	M8 x 1.25 x 40	M6 x 1.0 x 30	0.27 (0.595)
LDAT-S0507-CBKIT	50	130.0 (5.12)	110.0 (4.33)	16.6 (0.65)	99.9 (3.923)	15.9 (0.63)	M10 x 1.5 x 50	M10 x 1.5 x 30	0.49 (1.080)
	70								
LDAT-S10-CBKIT	100	175.0 (6.89)	125.0 (4.92)	18.5 (0.73)	114.8 (4.52)	19.1 (0.75)	M12 x 1.75 x 60		0.84 (1.852)
LDAT-S15-CBKIT	150	220.0 (8.66)	135.0 (5.31)	19.8 (0.78)	124.9 (4.92)		M14 x 2.0 x 60		1.16 (2.491)

(1) Material is black anodized 6061-T6 aluminum.

MP-Series Integrated Linear Stages

MP-Series™ integrated linear stages extend the performance and reliability of MP-Series servo motor technology to ballscrew and direct-drive linear slide-type actuators. MP-Series linear stages are specifically designed for abusive, high-throughput industrial automation applications instead of clean, high-accuracy lab environments. Wear items such as cable track and strip seals can be changed in minutes to minimize machine down-time. Because the MP-Series linear stages are provided as fully integrated motor/actuators supported by Motion Analyzer software and the Studio 5000 Logix Designer® application, the time required for mechanical design, installation, setup, and programming is dramatically reduced.

MP-Series Direct-drive Linear Stage Features

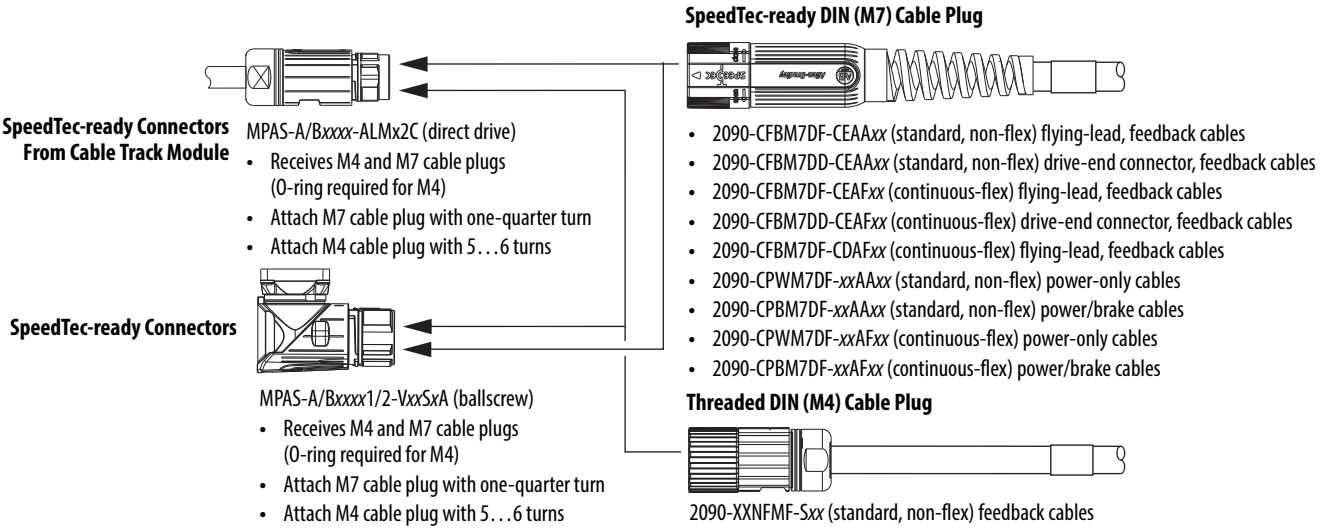
- High-performance linear motor, linear guide bearings, and 5 micron resolution linear encoder integrated into a single, compact package
- Long life due to the elimination of a mechanical transmission
- Quick-change cable track module to minimize downtime
- Available with and without cover/strip seal option
- Peak forces to 601 N (135 lb) and peak velocities to 5000 mm/s (197 in/s)
- Stroke lengths from 120...1940 mm (4.7...76.4 in.)

MP-Series Ballscrew-drive Linear Stage Features

- High performance MP-Series servo motor, ballscrew, and linear guide bearings integrated in to single, compact package
- Peak forces to 1212 N (273 lb) and peak velocities to 1124 mm/s (44 in/s)
- Stroke lengths from 120...1020 mm (4.7...40.2 in.)

Motor Connector/Cable Compatibility

MP-Series (Bulletin MPAS) linear stages are equipped with SpeedTec DIN connectors. However, the incremental encoder on direct-drive linear stages requires threaded DIN (M4) feedback cables in non-flex applications. This is due to the number of conductors required for incremental encoder connections.



Catalog Numbers - MP-Series Integrated Linear Stages

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your actuator. For questions regarding product availability, contact your Allen-Bradley distributor.

MP AS - x x xxx x - x xx x x x

Cable
A = No cable track module (ballscrew only)
C = Cable track module with IP67 intercontec connectors (direct-drive only)

Brake
2 = No brake
4 = 24V DC brake (ballscrew only)

Cover
S = Covered with strip seals (IP30 protection)
O = Open (direct-drive only)

Screw Lead/Motor Type
05 = 5.0 mm/rev (0.19 in./rev) ballscrew with rotary motor
20 = 20.0 mm/rev (0.79 in./rev) ballscrew with rotary motor
LM = Linear motor (direct-drive only)

Feedback
V = Multi-turn high-resolution encoder (absolute feedback) 128 cycle/rev. (ballscrew only)
A = 5 micron resolution incremental magnetic linear encoder (direct-drive only)

Mechanical Drive/Motor Type
1 = Ballscrew/MPLS-*x*210E-V
2 = Ballscrew/MPLS-*x*220H-V
B = Direct Drive/6-frame, 200V-class
K = Direct Drive/9-frame, 200V-class
E = Direct Drive/8-frame, 200V-class
L = Direct Drive/9-frame, 400V-class
F = Direct Drive/8-frame, 400V-class

Stroke Length (1)
xxx = *xxx* mm x 10

Frame Size (2)
6 = 150 mm base width
8 = 200 mm base width
9 = 250 mm base width

Voltage Class
A = 200V
B = 400V

Actuator Type
AS = Actuator, linear stage

Actuator Series
MP = MP-Series

(1) For 6-frame direct-drive linear stages, variable *xxx* (mm stroke x 10) is 012, 018, 024, 030, 036, 042, 054, 066, 078, 090, 102, or 114.
For 8 and 9-frame direct-drive linear stages, variable *xxx* (mm stroke x 10) is 014, 020, 026, 032, 038, 044, 056, 068, 080, 092, 104, 128, 152, 176, or 194.
For 6-frame ballscrew linear stages, variable *xxx* (mm stroke x 10) is 012, 018, 024, 030, 036, 042, 054, or 066.
For 8 and 9-frame ballscrew linear stages, variable *xxx* (mm stroke x 10) is 012, 018, 024, 030, 036, 042, 054, 066, 078, 090, or 102.

(2) The 150 mm (6-frame) linear stages are available in ballscrew (200 and 400V-class) and direct drive (200V-class only).
The 200 mm (8-frame) linear stages are available in ballscrew and direct drive (200 and 400V-class).
The 250 mm (9-frame) linear stages are available in ballscrew and direct drive (200 and 400V-class).

MP-Series Integrated Linear Stage Accessory Kits

- Cable track module replacement kits
- Strip seal replacement kits
- Top cover kits
- Side cover kits
- Coupling kits
- Tee-nut kit (package of 10)
- Toe-clip kit (package of 10)
- Grease gun kit
- Grease replacement cartridge

Accessory Kits Common to All Single-axis Linear Stages

Linear Stage Cat. No.	Description	Accessory Cat. No.
MPAS-A/B*xxxx*	Kit, grease gun for all integrated linear stages.	MPAS-GPUMP
	Grease gun refill cartridge for all integrated linear stages.	MPAS-CART
	Kit, toe clamps (10 per package) for all integrated linear stages.	MPAS-TOE
MPAS-A6*xxx*, MPAS-B6*xxx*	Kit, Tee-nuts (10 per package).	MPAS-6-TNUT
MPAS-A8*xxx*, MPAS-B8*xxx*		MPAS-8-TNUT
MPAS-A9*xxx*, MPAS-B9*xxx*		MPAS-9-TNUT

Accessory Kits for Single-axis Direct-drive Linear Stages

Linear Stage Cat. No.	Description	Accessory Cat. No.
MPAS-*x6xxxx*-ALM*x*2A	Cable track module for direct-drive linear stage.	MPAS-6*xxx*B-CABLE (1)
MPAS-*x8xxxx*-ALM*x*2A		MPAS-8*xxx*E-CABLE (2)
MPAS-*x9xxxx*-ALM*x*2A		MPAS-9*xxx*K-CABLE (2)
MPAS-*x6xxxx*-ALMS2A	Kit, strip seal for direct-drive linear stage.	MPAS-6*xxx*B-SEAL (1)
MPAS-*x8xxxx*-ALMS2A		MPAS-8*xxx*E-SEAL (2)
MPAS-*x9xxxx*-ALMS2A		MPAS-9*xxx*K-SEAL (2)
MPAS-*x6xxxx*-ALMS2A	Kit, side covers for direct-drive linear stage.	MPAS-6*xxx*B-SIDE (1)
MPAS-*x8xxxx*-ALMS2A		MPAS-8*xxx*E-SIDE (2)
MPAS-*x9xxxx*-ALMS2A		MPAS-9*xxx*K-SIDE (2)
MPAS-*x6xxxx*-ALMS2A	Kit, top cover for direct-drive linear stage.	MPAS-6*xxx*B-TOP (1)
MPAS-*x8xxxx*-ALMS2A		MPAS-8*xxx*E-TOP (2)
MPAS-*x9xxxx*-ALMS2A		MPAS-9*xxx*K-TOP (2)

(1) Variable *xxx* (mm stroke x 10) is 012, 018, 024, 030, 036, 042, 054, 066, 078, 090, 102, or 114.
(2) Variable *xxx* (mm stroke x 10) is 014, 020, 026, 032, 038, 044, 056, 068, 080, 092, 104, 128, 152, 176, or 194.

Accessory Kits for Single-axis Ballscrew Linear Stages

Linear Stage Cat. No.	Description	Accessory Cat. No.
MPAS-*x6xxxx*-V*xx*S*x*A	Coupler, for ballscrew linear stage.	MPAS-6-COUP
MPAS-*x8xxxx*-V*xx*S*x*A		MPAS-8-COUP
MPAS-*x9xxxx*-V*xx*S*x*A		MPAS-9-COUP
MPAS-A*xxxx*1-V05S2A	Motor, 200V-class, without brake for 5 mm/rev ballscrew linear stage.	MPLS-A210E-V-X246
MPAS-A*xxxx*1-V05S4A	Motor, 200V-class, with brake for 5 mm/rev ballscrew linear stage.	MPLS-A210E-V-X247
MPAS-B*xxxx*1-V05S2A	Motor, 400V-class, without brake for 5 mm/rev ballscrew linear stage.	MPLS-B210E-V-X248
MPAS-B*xxxx*1-V05S4A	Motor, 400V-class, with brake for 5 mm/rev ballscrew linear stage.	MPLS-B210E-V-X249
MPAS-A*xxxx*2-V20S2A	Motor, 200V-class, without brake for 20 mm/rev ballscrew linear stage.	MPLS-A220H-V-X250
MPAS-A*xxxx*2-V20S4A	Motor, 200V-class with brake for 20 mm/rev ballscrew linear stage.	MPLS-A220H-V-X251
MPAS-B*xxxx*2-V20S2A	Motor, 400V-class, without brake for 20 mm/rev ballscrew linear stage.	MPLS-B220H-V-X252
MPAS-B*xxxx*2-V20S4A	Motor, 400V-class with brake for 20 mm/rev ballscrew linear stage.	MPLS-B220H-V-X253
MPAS-*x6xxxx*-V*xx*S*x*A	Kit, strip seal for ballscrew linear stage.	MPAS-6*xxx*1-SEAL (1)
MPAS-*x8xxxx*-V*xx*S*x*A		MPAS-8*xxx*1-SEAL (2)
MPAS-*x9xxxx*-V*xx*S*x*A		MPAS-9*xxx*1-SEAL (2)
MPAS-*x6xxxx*-V*xx*S*x*A	Kit, side cover for ballscrew linear stage.	MPAS-6*xxx*1-SIDE (1)
MPAS-*x8xxxx*-V*xx*S*x*A		MPAS-8*xxx*1-SIDE (2)
MPAS-*x9xxxx*-V*xx*S*x*A		MPAS-9*xxx*1-SIDE (2)
MPAS-*x6xxxx*-V*xx*S*x*A	Kit, top cover for ballscrew linear stage.	MPAS-6*xxx*1-TOP (1)
MPAS-*x8xxxx*-V*xx*S*x*A		MPAS-8*xxx*1-TOP (2)
MPAS-*x9xxxx*-V*xx*S*x*A		MPAS-9*xxx*1-TOP (2)

(1) Variable *xxx* (mm stroke x 10) is 012, 018, 024, 030, 036, 042, 054, or 066.

(2) Variable *xxx* (mm stroke x 10) is 012, 018, 024, 030, 036, 042, 054, 066, 078, 090, or 102.

Technical Specifications - MP-Series Integrated Linear Stages

MP-Series Integrated Linear Stage Life Specifications

Attribute	Value
Linear bearings	10,000 km (6213.7 mi) or one year minimum life with a maximum load of 22.7 kg (50 lb) centered on lubrication intervals every 5000 km (3106.8 mi) or three months.
Ballscrew	300,000 krevs or one year minimum life with a maximum load of 11.3 kg (25 lb), 1 g maximum acceleration in a clean dry, noncontaminating environment with lubrication every 150,000 krevs or three months.
Strip seal	10,000,000 cycles or 10,000 km min life in clean, dry, noncontaminating environment.
Cable track module	10,000,000 cycles minimum life.
Mechanical stop bumper	56.49 N•m (500 lb•in) potential energy.

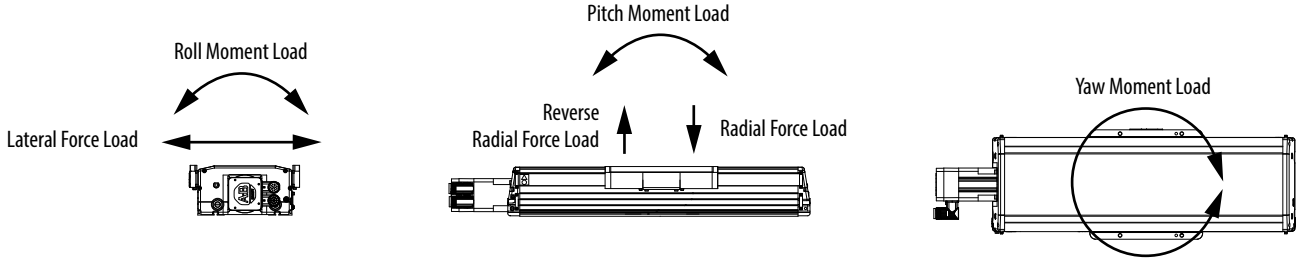
MP-Series Integrated Linear Stage Accuracy Specifications

Linear Stage Cat. No.	Drive Mechanism and Feedback Type	Bi-directional Repeatability (1)	Accuracy (1)	Straightness	Flatness
MPAS-A/B6*xxx*1-V05S*x*A MPAS-A/B6*xxx*2-V20S*x*A MPAS-A/B8*xxx*1-V05S*x*A MPAS-A/B8*xxx*2-V20S*x*A MPAS-A/B9*xxx*1-V05S*x*A MPAS-A/B9*xxx*2-V20S*x*A	Ballscrew with absolute multi-turn rotary encoder	±60 µm (±0.002 in.)	60 µm + 167 µm/m (0.002 in. + 0.002 in./ft)	10 µm + 50 µm/m	10 µm + 50 µm/m
MPAS-A6*xxx*B-ALM*x*2C MPAS-A8*xxx*E-ALM*x*2C MPAS-B8*xxx*F-ALM*x*2C MPAS-A9*xxx*K-ALM*x*2C MPAS-B9*xxx*L-ALM*x*2C	Linear Motor with incremental linear encoder	±15 µm (±0.0005 in.)	100 µm + 20 µm/m (0.004 in. + 0.0002 in./ft)		

(1) Measured at 20 °C (68 °F).

Load Force Ratings Specifications

The static moment and force ratings shown in the performance specifications tables are the maximum permissible values possible before permanent damage to the linear stage can occur. To determine the estimated L10 bearing and ballscrew life of MP-Series Integrated Linear Stages, use Motion Analyzer software, version 4.4 or later.



Performance Specifications with 200V-class Drives

MP-Series Integrated Linear Stage Performance Specifications (150 mm frame size)

Linear Stage Cat. No.	Screw Lead mm (in.)	Stroke Length mm (in.)	Velocity, max mm/s (in/s)	Cont. Stall Force N (lb)	Peak Stall Force N (lb)	Static Load, max (1)			Static Moment Load, max (1)		
						Radial N (lb)	Reverse Radial N (lb)	Lateral N (lb)	Pitch N•m (lb•ft)	Yaw N•m (lb•ft)	Roll N•m (lb•ft)
MPAS-A6*xxx*1-V05S*x*A	5.0 (0.2)	120…660 (4.7…26.0)	200 (7.9)	521 (117)	1212 (272)	5506 (1238)	2367 (532)	2753 (619)	195 (144)	227 (167)	92 (68)
MPAS-A6*xxx*2-V20S*x*A	20.0 (0.8)		1124 (44.3)	462 (104)	968 (218)						
MPAS-A6012B-ALM02C	N/A	120 (4.7)	1568 (61.7)	105 (24)	359 (81)	5506 (1238)	2367 (532)	2753 (619)	195 (144)	227 (167)	92 (68)
MPAS-A6018B-ALM02C		180 (7.1)	1920 (75.6)								
MPAS-A6024B-ALM02C		240 (9.5)	2217 (87.3)								
MPAS-A6030B-ALM02C		300 (11.8)	2478 (97.6)								
MPAS-A6036B-ALM02C		360 (14.2)	2715 (106.9)								
MPAS-A6042B-ALM02C		420 (16.5)	2933 (115.5)								
MPAS-A6054B-ALM02C		540 (21.3)	3325 (130.9)								
MPAS-A6066B-ALM02C		660 (26.0)	3676 (144.7)								
MPAS-A6078B-ALM02C		780 (30.7)	3996 (157.3)								
MPAS-A6090B-ALM02C		900 (35.4)	4293 (169.0)								
MPAS-A6102B-ALM02C	N/A	1020 (40.2)	4570 (179.9)	105 (24)	359 (81)	5506 (1238)	2367 (532)	2753 (619)	195 (144)	227 (167)	92 (68)
MPAS-A6114B-ALM02C		1140 (44.9)	4831 (190.2)								
MPAS-A6012B-ALMC2C		120 (4.7)	1485 (58.5)	83 (19)	312 (70)						
MPAS-A6018B-ALMC2C		180 (7.1)	1819 (71.6)								
MPAS-A6024B-ALMC2C		240 (9.5)	2100 (82.7)								
MPAS-A6030B-ALMC2C		300 (11.8)	2348 (92.4)								
MPAS-A6036B-ALMC2C		360 (14.2)	2572 (101.3)								
MPAS-A6042B-ALMC2C		420 (16.5)	2778 (109.4)								
MPAS-A6054B-ALMC2C		540 (21.3)	3150 (124.0)								
MPAS-A6066B-ALMC2C		660 (26.0)	3483 (137.1)								
MPAS-A6078B-ALMC2C		780 (30.7)	3786 (149.1)								
MPAS-A6090B-ALMC2C		900 (35.4)	4067 (160.1)								
MPAS-A6102B-ALMC2C		1020 (40.2)	4330 (170.5)								
MPAS-A6114B-ALMC2C		1140 (44.9)	4577 (180.2)								

(1) Values apply to bearing ratings only. Contact your Rockwell Automation sales representative for structural considerations.

MP-Series Integrated Linear Stage Performance Specifications (200 mm frame size)

Linear Stage Cat. No.	Screw Lead mm (in.)	Stroke Length mm (in.)	Velocity, max mm/s (in/s)	Cont. Stall Force N (lb)	Peak Stall Force N (lb)	Static Load, max (1)			Static Moment Load, max (1)		
						Radial N (lb)	Reverse Radial N (lb)	Lateral N (lb)	Pitch N•m (lb•ft)	Yaw N•m (lb•ft)	Roll N•m (lb•ft)
MPAS-A8*xxx*1-V05S*x*A	5.0 (0.2)	120…780 (4.7…30.7)	200 (7.9)	521 (117)	1212 (273)	9365 (2105)	4027 (905)	4683 (1053)	336 (248)	391 (288)	258 (190)
		900 (35.4)	176 (6.9)								
		1020 (40.1)	143 (5.6)								
MPAS-A8*xxx*2-V20S*x*A	20.0 (0.8)	120…660 (4.7…26.0)	1124 (44.3)	462 (104)	968 (218)						
		780 (30.7)	889 (35.0)								
		900 (35.4)	715 (28.1)								
		1020 (40.1)	582 (22.9)								
MPAS-A8014E-ALM02C	N/A	140 (5.5)	1802 (70.9)	189 (43)	456 (103)	9100 (2046)	4100 (922)	4700 (1057)	402 (297)	492 (363)	245 (181)
MPAS-A8020E-ALM02C		200 (7.9)	2154 (84.8)								
MPAS-A8026E-ALM02C		260 (10.2)	2456 (96.7)								
MPAS-A8032E-ALM02C		320 (12.6)	2725 (107.3)								
MPAS-A8038E-ALM02C		380 (15.0)	2969 (116.9)								
MPAS-A8044E-ALM02C		440 (17.3)	3195 (125.8)								
MPAS-A8056E-ALM02C		560 (22.0)	3605 (141.9)								
MPAS-A8068E-ALM02C		680 (26.8)	3972 (156.4)								
MPAS-A8080E-ALM02C		800 (31.5)	4308 (169.6)								
MPAS-A8092E-ALM02C		920 (36.2)	4620 (181.9)								
MPAS-A8104E-ALM02C		1040 (40.9)	4912 (193.4)								
MPAS-A8128E-ALM02C		1280 (50.4)	5000 (196.8)								
MPAS-A8152E-ALM02C		1520 (59.8)									
MPAS-A8176E-ALM02C		1760 (69.3)									
MPAS-A8194E-ALM02C		1940 (76.4)									
MPAS-A8014E-ALMS2C		140 (5.5)	1710 (67.3)	159 (36)	399 (90)						
MPAS-A8020E-ALMS2C		200 (7.9)	2044 (80.5)								
MPAS-A8026E-ALMS2C		260 (10.2)	2330 (91.7)								
MPAS-A8032E-ALMS2C		320 (12.6)	2585 (101.8)								
MPAS-A8038E-ALMS2C		380 (15.0)	2817 (110.9)								
MPAS-A8044E-ALMS2C		440 (17.3)	3032 (119.4)								
MPAS-A8056E-ALMS2C		560 (22.0)	3420 (134.6)								
MPAS-A8068E-ALMS2C		680 (26.8)	3769 (148.4)								
MPAS-A8080E-ALMS2C		800 (31.5)	4088 (160.9)								
MPAS-A8092E-ALMS2C		920 (36.2)	4384 (172.6)								
MPAS-A8104E-ALMS2C		1040 (40.9)	4661 (183.5)								
MPAS-A8128E-ALMS2C		1280 (50.4)	5000 (196.8)								
MPAS-A8152E-ALMS2C		1520 (59.8)									
MPAS-A8176E-ALMS2C		1760 (69.3)									
MPAS-A8194E-ALMS2C		1940 (76.4)									

(1) Values apply to bearing ratings only. Contact your Rockwell Automation sales representative for structural considerations.

MP-Series Integrated Linear Stage Performance Specifications (250 mm frame size)

Linear Stage Cat. No.	Screw Lead mm (in.)	Stroke Length mm (in.)	Velocity, max mm/s (in/s)	Cont. Stall Force N (lb)	Peak Stall Force N (lb)	Static Load, max (1)			Static Moment Load, max (1)		
						Radial N (lb)	Reverse Radial N (lb)	Lateral N (lb)	Pitch N•m (lb•ft)	Yaw N•m (lb•ft)	Roll N•m (lb•ft)
MPAS-A9*xxx*1-V05S*x*A	5.0 (0.2)	120…780 (4.7…30.7)	200 (7.9)	521 (117)	1212 (273)	13,282 (2986)	5711 (1284)	6641 (1493)	477 (352)	555 (409)	468 (345)
		900 (35.4)	176 (6.9)								
		1020 (40.1)	143 (5.6)								
MPAS-A9*xxx*2-V20S*x*A	20.0 (0.8)	120…660 (4.7…26.0)	1124 (44.3)	462 (104)	968 (218)						
		780 (30.7)	889 (35.0)								
		900 (35.4)	715 (28.1)								
		1020 (40.1)	582 (22.9)								
MPAS-A9014K-ALM02C	N/A	140 (5.5)	1875 (73.8)	285 (64)	680 (153)	12,900 (2900)	5800 (1304)	6600 (1484)	582 (429)	714 (527)	444 (328)
MPAS-A9020K-ALM02C		200 (7.9)	2241 (88.2)								
MPAS-A9026K-ALM02C		260 (10.2)	2555 (100.6)								
MPAS-A9032K-ALM02C		320 (12.6)	2834 (111.6)								
MPAS-A9038K-ALM02C		380 (15.0)	3089 (121.6)								
MPAS-A9044K-ALM02C		440 (17.3)	3324 (130.9)								
MPAS-A9056K-ALM02C		560 (22.0)	3749 (147.6)								
MPAS-A9068K-ALM02C		680 (26.8)	4132 (162.7)								
MPAS-A9080K-ALM02C		800 (31.5)	4481 (176.4)								
MPAS-A9092K-ALM02C		920 (36.2)	4806 (189.2)								
MPAS-A9104K-ALM02C		1040 (40.9)	5000 (196.8)								
MPAS-A9128K-ALM02C		1280 (50.4)									
MPAS-A9152K-ALM02C		1520 (59.8)									
MPAS-A9176K-ALM02C		1760 (69.3)									
MPAS-A9194K-ALM02C		1940 (76.4)									
MPAS-A9014K-ALMS2C		140 (5.5)	1779 (70.0)	245 (55)	601 (135)						
MPAS-A9020K-ALMS2C		200 (7.9)	2127 (83.7)								
MPAS-A9026K-ALMS2C		260 (10.2)	2425 (95.5)								
MPAS-A9032K-ALMS2C		320 (12.6)	2690 (105.9)								
MPAS-A9038K-ALMS2C		380 (15.0)	2931 (115.4)								
MPAS-A9044K-ALMS2C		440 (17.3)	3154 (124.2)								
MPAS-A9056K-ALMS2C		560 (22.0)	3559 (140.1)								
MPAS-A9068K-ALMS2C		680 (26.8)	3921 (154.4)								
MPAS-A9080K-ALMS2C		800 (31.5)	4253 (167.4)								
MPAS-A9092K-ALMS2C		920 (36.2)	4561 (179.6)								
MPAS-A9104K-ALMS2C		1040 (40.9)	4850 (190.9)								
MPAS-A9128K-ALMS2C		1280 (50.4)	5000 (196.8)								
MPAS-A9152K-ALMS2C		1520 (59.8)									
MPAS-A9176K-ALMS2C		1760 (69.3)									
MPAS-A9194K-ALMS2C		1940 (76.4)									

(1) Values apply to bearing ratings only. Contact your Rockwell Automation sales representative for structural considerations.

Performance Specifications with 400V-class Drives

MP-Series Integrated Linear Stage Performance Specifications (150 mm frame size)

Linear Stage Cat. No.	Screw Lead mm (in.)	Stroke Length mm (in.)	Velocity, max mm/s (in/s)	Cont. Stall Force N (lb)	Peak Stall Force N (lb)	Static Load, max (1)			Static Moment Load, max (1)		
						Radial N (lb)	Reverse Radial N (lb)	Lateral N (lb)	Pitch N•m (lb•ft)	Yaw N•m (lb•ft)	Roll N•m (lb•ft)
MPAS-B6*xxx*1-V05S*x*A	5.0 (0.2)	120…660 (4.7…26.0)	200 (7.9)	521 (117)	1212 (273)	5506 (1238)	2367 (532)	2753 (619)	195 (144)	227 (167)	92 (68)
MPAS-B6*xxx*2-V20S*x*A	20.0 (0.8)		1124 (44.3)	462 (104)	968 (218)						

(1) Values apply to bearing ratings only. Contact your Rockwell Automation sales representative for structural considerations.

MP-Series Integrated Linear Stage Performance Specifications (200 mm frame size)

Linear Stage Cat. No.	Screw Lead mm (in.)	Stroke Length mm (in.)	Velocity, max mm/s (in/s)	Cont. Stall Force N (lb)	Peak Stall Force N (lb)	Static Load, max (1)			Static Moment Load, max (1)		
						Radial N (lb)	Reverse Radial N (lb)	Lateral N (lb)	Pitch N•m (lb•ft)	Yaw N•m (lb•ft)	Roll N•m (lb•ft)
MPAS-B8*xxx*1-V05S*x*A	5.0 (0.2)	120…780 (4.7…30.7)	200 (7.9)	521 (117)	1212 (273)	9365 (2105)	4027 (905)	4683 (1053)	336 (248)	391 (288)	258 (190)
		900 (35.4)	176 (6.9)								
		1020 (40.1)	143 (5.6)								
MPAS-B8*xxx*2-V20S*x*A	20.0 (0.8)	120…660 (4.7…26.0)	1124 (44.3)	462 (104)	968 (218)						
		780 (30.7)	889 (35.0)								
		900 (35.4)	715 (28.1)								
		1020 (40.1)	582 (22.9)								
MPAS-B8014F-ALM02C	N/A	140 (5.5)	1802 (70.9)	189 (43)	456 (103)	9100 (2046)	4100 (922)	4700 (1057)	402 (297)	492 (363)	245 (181)
MPAS-B8020F-ALM02C		200 (7.9)	2154 (84.8)								
MPAS-B8026F-ALM02C		260 (10.2)	2456 (96.7)								
MPAS-B8032F-ALM02C		320 (12.6)	2725 (107.3)								
MPAS-B8038F-ALM02C		380 (15.0)	2969 (116.9)								
MPAS-B8044F-ALM02C		440 (17.3)	3195 (125.8)								
MPAS-B8056F-ALM02C		560 (22.0)	3605 (141.9)								
MPAS-B8068F-ALM02C		680 (26.8)	3972 (156.4)								
MPAS-B8080F-ALM02C		800 (31.5)	4308 (169.6)								
MPAS-B8092F-ALM02C		920 (36.2)	4620 (181.9)								
MPAS-B8104F-ALM02C		1040 (40.9)	4912 (193.4)								
MPAS-B8128F-ALM02C		1280 (50.4)	5000 (196.8)								
MPAS-B8152F-ALM02C		1520 (59.8)	5000 (196.8)								
MPAS-B8176F-ALM02C		1760 (69.3)									
MPAS-B8194F-ALM02C		1940 (76.4)									

MP-Series Integrated Linear Stage Performance Specifications (200 mm frame size) (continued)

Linear Stage Cat. No.	Screw Lead mm (in.)	Stroke Length mm (in.)	Velocity, max mm/s (in/s)	Cont. Stall Force N (lb)	Peak Stall Force N (lb)	Static Load, max (1)			Static Moment Load, max (1)		
						Radial N (lb)	Reverse Radial N (lb)	Lateral N (lb)	Pitch N•m (lb•ft)	Yaw N•m (lb•ft)	Roll N•m (lb•ft)
MPAS-B8014F-ALMS2C	N/A	140 (5.5)	1710 (67.3)	159 (36)	399 (90)	9100 (2046)	4100 (922)	4700 (1057)	402 (297)	492 (363)	245 (181)
MPAS-B8020F-ALMS2C		200 (7.9)	2044 (80.5)								
MPAS-B8026F-ALMS2C		260 (10.2)	2330 (91.7)								
MPAS-B8032F-ALMS2C		320 (12.6)	2585 (101.8)								
MPAS-B8038F-ALMS2C		380 (15.0)	2817 (110.9)								
MPAS-B8044F-ALMS2C		440 (17.3)	3032 (119.4)								
MPAS-B8056F-ALMS2C		560 (22.0)	3420 (134.6)								
MPAS-B8068F-ALMS2C		680 (26.8)	3769 (148.4)								
MPAS-B8080F-ALMS2C		800 (31.5)	4088 (160.9)								
MPAS-B8092F-ALMS2C		920 (36.2)	4384 (172.6)								
MPAS-B8104F-ALMS2C		1040 (40.9)	4661 (183.5)								
MPAS-B8128F-ALMS2C		1280 (50.4)	5000 (196.8)								
MPAS-B8152F-ALMS2C		1520 (59.8)									
MPAS-B8176F-ALMS2C		1760 (69.3)									
MPAS-B8194F-ALMS2C		1940 (76.4)									

(1) Values apply to bearing ratings only. Contact your Rockwell Automation sales representative for structural considerations.

MP-Series Integrated Linear Stage Performance Specifications, 250 mm frame size

Linear Stage Cat. No.	Screw Lead mm (in.)	Stroke Length mm (in.)	Velocity, max mm/s (in/s)	Cont. Stall Force N (lb)	Peak Stall Force N (lb)	Static Load, max (1)			Static Moment Load, max (1)		
						Radial N (lb)	Reverse Radial N (lb)	Lateral N (lb)	Pitch N•m (lb•ft)	Yaw N•m (lb•ft)	Roll N•m (lb•ft)
MPAS-B9*xxx*1-V05S*x*A	5.0 (0.2)	120…780 (4.7…30.7)	200 (7.9)	521 (117)	1212 (273)	13,282 (2986)	5711 (1284)	6641 (1493)	477 (352)	555 (409)	468 (345)
		900 (35.4)	176 (6.9)								
		1020 (40.1)	143 (5.6)								
MPAS-B9*xxx*2-V20S*x*A	20.0 (0.8)	120…660 (4.7…26.0)	1124 (44.3)	462 (104)	968 (218)						
		780 (30.7)	889 (35.0)								
		900 (35.4)	715 (28.1)								
		1020 (40.1)	582 (22.9)								

MP-Series Integrated Linear Stage Performance Specifications, 250 mm frame size (continued)

Linear Stage Cat. No.	Screw Lead mm (in.)	Stroke Length mm (in.)	Velocity, max mm/s (in/s)	Cont. Stall Force N (lb)	Peak Stall Force N (lb)	Static Load, max (1)			Static Moment Load, max (1)		
						Radial N (lb)	Reverse Radial N (lb)	Lateral N (lb)	Pitch N•m (lb•ft)	Yaw N•m (lb•ft)	Roll N•m (lb•ft)
MPAS-B9014L-ALM02C	N/A	140 (5.5)	1875 (73.8)	285 (64)	680 (153)	12,900 (2900)	5800 (1304)	6600 (1484)	582 (429)	714 (527)	444 (328)
MPAS-B9020L-ALM02C		200 (7.9)	2241 (88.2)								
MPAS-B9026L-ALM02C		260 (10.2)	2555 (100.6)								
MPAS-B9032L-ALM02C		320 (12.6)	2834 (111.6)								
MPAS-B9038L-ALM02C		380 (15.0)	3089 (121.6)								
MPAS-B9044L-ALM02C		440 (17.3)	3324 (130.9)								
MPAS-B9056L-ALM02C		560 (22.0)	3749 (147.6)								
MPAS-B9068L-ALM02C		680 (26.8)	4132 (162.7)								
MPAS-B9080L-ALM02C		800 (31.5)	4481 (176.4)								
MPAS-B9092L-ALM02C		920 (36.2)	4806 (189.2)								
MPAS-B9104L-ALM02C		1040 (40.9)	5000 (196.8)								
MPAS-B9128L-ALM02C		1280 (50.4)									
MPAS-B9152L-ALM02C		1520 (59.8)									
MPAS-B9176L-ALM02C		1760 (69.3)									
MPAS-B9194L-ALM02C		1940 (76.4)									
MPAS-B9014L-ALMS2C		140 (5.5)	1779 (70.0)	245 (55)	601 (135)						
MPAS-B9020L-ALMS2C		200 (7.9)	2127 (83.7)								
MPAS-B9026L-ALMS2C		260 (10.2)	2425 (95.5)								
MPAS-B9032L-ALMS2C		320 (12.6)	2690 (105.9)								
MPAS-B9038L-ALMS2C		380 (15.0)	2931 (115.4)								
MPAS-B9044L-ALMS2C		440 (17.3)	3154 (124.2)								
MPAS-B9056L-ALMS2C		560 (22.0)	3559 (140.1)								
MPAS-B9068L-ALMS2C		680 (26.8)	3921 (154.4)								
MPAS-B9080L-ALMS2C		800 (31.5)	4253 (167.4)								
MPAS-B9092L-ALMS2C		920 (36.2)	4561 (179.6)								
MPAS-B9104L-ALMS2C		1040 (40.9)	4850 (190.9)								
MPAS-B9128L-ALMS2C		1280 (50.4)	5000 (196.8)								
MPAS-B9152L-ALMS2C		1520 (59.8)									
MPAS-B9176L-ALMS2C		1760 (69.3)									
MPAS-B9194L-ALMS2C		1940 (76.4)									

(1) Values apply to bearing ratings only. Contact your Rockwell Automation sales representative for structural considerations.

Motor Brake Specifications

Linear Stage Cat. No.	Backlash, max (brake engaged) µm (in.)	Holding Force N (lb)	Coil Current at 24V DC A	Brake Response Time		
				Release ms	Engage (by using external arc suppression device)	
					MOV ms	Diode ms
MPAS-A/B*xxxx*1-V05S*x*A	100 (0.004)	5187 (1166)	0.46…0.56	58	20	42
MPAS-A/B*xxxx*2-V20S*x*A		1294 (291)				

Standard Stroke Length and Weight Specifications

MP-Series Integrated Linear Stages, Ballscrew (150 mm frame size)

Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx kg (lb)
MPAS-A/B6*xxx*2-V20S2A 20 mm/rev (0.8 in./rev) Ballscrew without brake	120 (4.7)	14.5 (32.0)
	180 (7.1)	15.4 (33.9)
	240 (9.5)	16.3 (35.8)
	300 (11.8)	17.1 (37.7)
	360 (14.2)	18.0 (39.6)
	420 (16.5)	18.9 (41.5)
	540 (21.3)	20.6 (45.4)
	660 (26.0)	22.4 (49.2)
MPAS-A/B6*xxx*2-V20S4A 20 mm/rev (0.8 in./rev) Ballscrew with brake	120 (4.7)	15.0 (33.0)
	180 (7.1)	15.9 (34.9)
	240 (9.5)	16.7 (36.8)
	300 (11.8)	17.6 (38.7)
	360 (14.2)	18.5 (40.6)
	420 (16.5)	19.3 (42.5)
	540 (21.3)	21.1 (46.4)
	660 (26.0)	22.8 (50.2)

Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx kg (lb)
MPAS-A/B6*xxx*1-V05S2A 5 mm/rev (0.2 in./rev) Ballscrew without brake	120 (4.7)	13.9 (30.5)
	180 (7.1)	14.7 (32.4)
	240 (9.5)	15.6 (34.3)
	300 (11.8)	16.4 (36.2)
	360 (14.2)	17.3 (38.1)
	420 (16.5)	18.2 (40.0)
	540 (21.3)	19.9 (43.7)
	660 (26.0)	21.6 (47.5)
MPAS-A/B6*xxx*1-V05S4A 5 mm/rev (0.2 in./rev) Ballscrew with brake	120 (4.7)	14.3 (31.5)
	180 (7.1)	15.2 (33.4)
	240 (9.5)	16.0 (35.3)
	300 (11.8)	16.9 (37.2)
	360 (14.2)	17.8 (39.1)
	420 (16.5)	18.6 (40.9)
	540 (21.3)	20.3 (44.7)
	660 (26.0)	22.1 (48.5)

MP-Series Integrated Linear Stages, Direct Drive (150 mm frame size)

Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx without Cover kg (lb)	Weight, approx with Cover kg (lb)
MPAS-A6*xxx*B-ALM*x*2C Direct drive without brake	120 (4.7)	18.7 (41.0)	20.3 (44.7)
	180 (7.1)	20.0 (44.0)	21.8 (48.0)
	240 (9.5)	21.4 (47.1)	23.4 (51.4)
	300 (11.8)	22.8 (50.1)	24.9 (54.8)
	360 (14.2)	24.1 (53.1)	26.5 (58.2)
	420 (16.5)	25.5 (56.1)	28.0 (61.6)
	540 (21.3)	28.3 (62.3)	31.1 (68.4)
	660 (26.0)	31.0 (68.3)	34.2 (75.2)
	780 (30.7)	33.8 (74.3)	37.2 (81.9)
	900 (35.4)	36.5 (80.4)	40.3 (88.7)
	1020 (40.2)	39.5 (86.9)	43.6 (95.9)
	1140 (44.9)	42.3 (93.0)	46.7 (102.7)

MP-Series Integrated Linear Stages, Ballscrew (200 mm frame size)

Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx kg (lb)
MPAS-A/B8*xxx*2-V20S2A 20 mm/rev (0.8 in./rev) Ballscrew without brake	120 (4.7)	16.5 (36.3)
	180 (7.1)	17.5 (38.4)
	240 (9.5)	18.4 (40.5)
	300 (11.8)	19.4 (42.7)
	360 (14.2)	20.4 (44.8)
	420 (16.5)	21.4 (47.0)
	540 (21.3)	23.3 (51.3)
	660 (26.0)	25.2 (55.5)
	780 (30.7)	27.2 (59.8)
	900 (35.4)	29.1 (64.1)
	1020 (40.2)	31.1 (68.4)
MPAS-A/B8*xxx*2-V20S4A 20 mm/rev (0.8 in./rev) Ballscrew with brake	120 (4.7)	16.9 (37.2)
	180 (7.1)	17.9 (39.4)
	240 (9.5)	18.9 (41.5)
	300 (11.8)	19.9 (43.7)
	360 (14.2)	20.8 (45.8)
	420 (16.5)	21.8 (48.0)
	540 (21.3)	23.8 (52.3)
	660 (26.0)	25.7 (56.5)
	780 (30.7)	27.7 (60.8)
	900 (35.4)	29.6 (65.1)
	1020 (40.2)	31.6 (69.4)

Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx kg (lb)
MPAS-A/B8*xxx*1-V05S2A 5 mm/rev (0.2 in./rev) Ballscrew without brake	120 (4.7)	15.9 (34.9)
	180 (7.1)	16.8 (37.0)
	240 (9.5)	17.8 (39.2)
	300 (11.8)	18.8 (41.3)
	360 (14.2)	19.8 (43.5)
	420 (16.5)	20.7 (45.6)
	540 (21.3)	22.7 (49.9)
	660 (26.0)	24.6 (54.2)
	780 (30.7)	26.6 (58.5)
	900 (35.4)	28.5 (62.7)
	1020 (40.2)	30.5 (67.1)
MPAS-A/B8*xxx*1-V05S4A 5 mm/rev (0.2 in./rev) Ballscrew with brake	120 (4.7)	16.3 (35.9)
	180 (7.1)	17.3 (38.0)
	240 (9.5)	18.3 (40.2)
	300 (11.8)	19.2 (42.3)
	360 (14.2)	20.2 (44.5)
	420 (16.5)	21.2 (46.6)
	540 (21.3)	23.1 (50.9)
	660 (26.0)	25.1 (55.2)
	780 (30.7)	27.0 (59.5)
	900 (35.4)	29.0 (63.8)
	1020 (40.2)	30.9 (68.0)

MP-Series Integrated Linear Stages, Direct Drive (200 mm frame size)

Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx without Cover kg (lb)	Weight, approx with Cover kg (lb)
MPAS-A8*xxx*E-ALM*x*2C MPAS-B8*xxx*F-ALM*x*2C Direct drive without brake	140 (5.5)	21.0 (46.1)	22.6 (49.8)
	200 (7.9)	21.9 (48.2)	23.7 (52.2)
	260 (10.2)	22.8 (50.2)	24.9 (54.7)
	320 (12.6)	24.1 (53.0)	26.3 (57.8)
	380 (15.0)	24.7 (54.3)	27.1 (59.5)
	440 (17.3)	26.0 (57.1)	28.5 (62.7)
	560 (22.0)	27.9 (61.3)	30.8 (67.7)
	680 (26.8)	29.7 (65.4)	33.0 (72.5)

Standard Stroke Lengths mm (in.)	Weight, approx without Cover kg (lb)	Weight, approx with Cover kg (lb)
800 (31.5)	31.9 (70.2)	35.5 (78.1)
920 (36.2)	34.1 (75.1)	38.1 (83.7)
1040 (40.9)	36.2 (79.6)	40.5 (89.1)
1280 (50.4)	39.9 (87.8)	44.9 (98.8)
1520 (59.8)	44.4 (97.6)	50.1 (110.1)
1760 (69.3)	48.1 (105.8)	54.5 (119.9)
1940 (76.4)	51.2 (112.7)	58.1 (127.9)

MP-Series Integrated Linear Stages, Ballscrew (250 mm frame size)

Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx kg (lb)
MPAS-A/B9*xxx*2-V20S2A 20 mm/rev (0.8 in./rev) Ballscrew without brake	120 (4.7)	19.8 (43.6)
	180 (7.1)	21.1 (46.4)
	240 (9.5)	22.4 (49.2)
	300 (11.8)	23.6 (52.0)
	360 (14.2)	24.9 (54.8)
	420 (16.5)	26.2 (57.6)
	540 (21.3)	28.7 (63.2)
	660 (26.0)	31.3 (68.8)
	780 (30.7)	33.8 (74.3)
	900 (35.4)	36.3 (79.9)
	1020 (40.2)	38.9 (85.5)
MPAS-A/B9*xxx*2-V20S4A 20 mm/rev (0.8 in./rev) Ballscrew with brake	120 (4.7)	20.3 (44.6)
	180 (7.1)	21.5 (47.4)
	240 (9.5)	22.8 (50.2)
	300 (11.8)	24.1 (53.0)
	360 (14.2)	25.4 (55.8)
	420 (16.5)	26.6 (58.6)
	540 (21.3)	29.2 (64.2)
	660 (26.0)	31.7 (69.7)
	780 (30.7)	34.2 (75.3)
	900 (35.4)	36.8 (80.9)
	1020 (40.2)	39.3 (86.5)

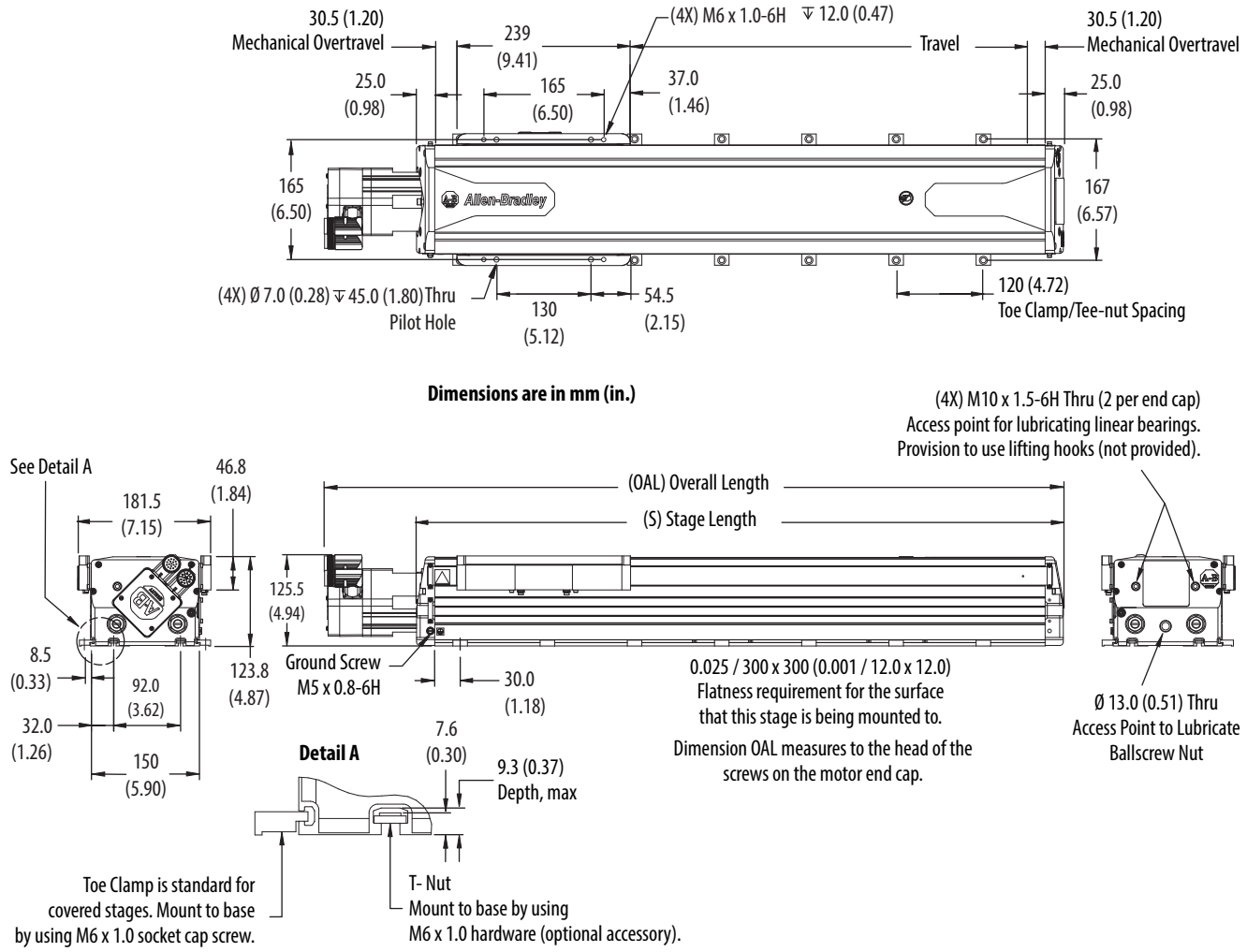
Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx kg (lb)
MPAS-A/B9*xxx*1-V05S2A 5 mm/rev (0.2 in./rev) Ballscrew without brake	120 (4.7)	19.2 (42.3)
	180 (7.1)	20.5 (45.0)
	240 (9.5)	21.8 (47.9)
	300 (11.8)	23.0 (50.6)
	360 (14.2)	24.3 (53.4)
	420 (16.5)	25.6 (56.2)
	540 (21.3)	28.1 (61.8)
	660 (26.0)	30.6 (67.4)
	780 (30.7)	33.2 (73.0)
	900 (35.4)	35.7 (78.6)
	1020 (40.2)	38.2 (84.1)
MPAS-A/B9*xxx*1-V05S4A 5 mm/rev (0.2 in./rev) Ballscrew with brake	120 (4.7)	19.7 (43.3)
	180 (7.1)	20.9 (46.0)
	240 (9.5)	22.2 (48.8)
	300 (11.8)	23.5 (51.6)
	360 (14.2)	24.7 (54.4)
	420 (16.5)	26.0 (57.2)
	540 (21.3)	28.5 (62.8)
	660 (26.0)	31.1 (68.4)
	780 (30.7)	33.6 (74.0)
	900 (35.4)	36.2 (79.6)
	1020 (40.2)	38.7 (85.1)

MP-Series Integrated Linear Stages, Direct Drive (250 mm frame size)

Linear Stage Cat. No.	Standard Stroke Lengths mm (in.)	Weight, approx without Cover kg (lb)	Weight, approx with Cover kg (lb)
MPAS-A9*xxx*K-ALM*x*2C MPAS-B9*xxx*L-ALM*x*2C Direct drive without brake	140 (5.5)	26.8 (59.0)	29.0 (63.7)
	200 (7.9)	28.6 (62.8)	30.9 (68.0)
	260 (10.2)	29.8 (65.6)	32.5 (71.4)
	320 (12.6)	31.1 (68.5)	34.0 (74.7)
	380 (15.0)	32.4 (71.3)	35.5 (78.0)
	440 (17.3)	33.7 (74.2)	37.0 (81.4)
	560 (22.0)	36.8 (80.9)	40.5 (89.1)
	680 (26.8)	40.0 (87.9)	43.5 (95.8)
	800 (31.5)	42.4 (93.2)	47.0 (103.4)
	920 (36.2)	45.0 (98.9)	50.1 (110.1)
	1040 (40.9)	47.8 (105.1)	53.3 (117.3)
	1280 (50.4)	53.4 (117.4)	59.8 (131.6)
	1520 (59.8)	59.0 (129.8)	66.4 (146.0)
	1760 (69.3)	64.6 (142.1)	72.9 (160.3)
	1940 (76.4)	68.5 (150.6)	77.4 (170.3)

Dimensions - MP-Series Integrated Linear Stages

MPAS-A/B6*xxx*1/2-V*xx*S*x*A (ballscrew) Linear Stage



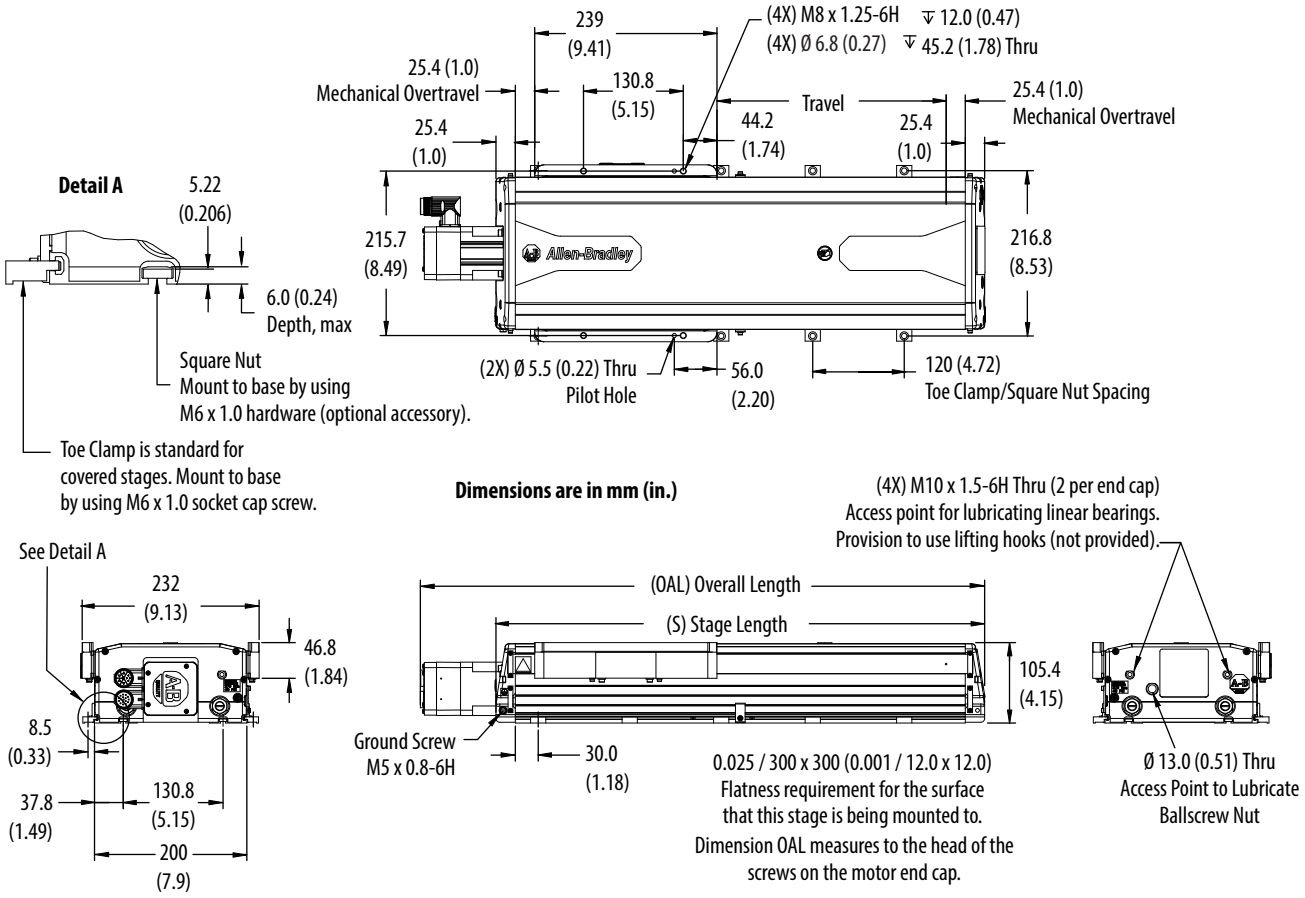
Linear Stage Cat. No.	S mm (in.)	OAL (5 mm/rev) (1) mm (in.)	OAL (20 mm/rev) (2) mm (in.)
MPAS-A/B6012*x*-V*xx*S*x*A	470 (18.5)	569 (22.4)	594 (23.4)
MPAS-A/B6018*x*-V*xx*S*x*A	530 (20.9)	629 (24.7)	654 (25.8)
MPAS-A/B6024*x*-V*xx*S*x*A	590 (23.2)	689 (27.1)	714 (28.1)
MPAS-A/B6030*x*-V*xx*S*x*A	650 (25.6)	749 (29.5)	774 (30.5)

Linear Stage Cat. No.	S mm (in.)	OAL (5 mm/rev) (1) mm (in.)	OAL (20 mm/rev) (2) mm (in.)
MPAS-A/B6036*x*-V*xx*S*x*A	710 (28.0)	809 (31.8)	834 (32.8)
MPAS-A/B6042*x*-V*xx*S*x*A	770 (30.3)	869 (34.2)	894 (35.2)
MPAS-A/B6054*x*-V*xx*S*x*A	890 (35.0)	989 (38.9)	1014 (39.9)
MPAS-A/B6066*x*-V*xx*S*x*A	1010 (39.8)	1109 (43.6)	1134 (44.6)

(1) If ordering an MPAS-A/B6*xxx*-V05S4A actuator with brake, add 39.0 mm (1.53 in.) to dimension OAL.
(2) If ordering an MPAS-A/B6*xxx*-V20S4A actuator with brake, add 39.0 mm (1.53 in.) to dimension OAL.

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPAS-A/B8*xxx*1/2-V*xx*S*x*A (ballscrew) Linear Stage



Linear Stage Cat. No.	S mm (in.)	OAL (5 mm/rev) (1) mm (in.)	OAL (20 mm/rev) (2) mm (in.)
MPAS-A/B8012*x*-V*xx*S*x*A	461 (18.1)	557 (21.9)	582 (22.9)
MPAS-A/B8018*x*-V*xx*S*x*A	521 (20.5)	617 (24.3)	642 (25.3)
MPAS-A/B8024*x*-V*xx*S*x*A	581 (22.9)	677 (26.6)	702 (27.6)
MPAS-A/B8030*x*-V*xx*S*x*A	641 (25.2)	737 (29.0)	762 (30.0)
MPAS-A/B8036*x*-V*xx*S*x*A	701 (27.6)	797 (31.4)	822 (32.4)
MPAS-A/B8042*x*-V*xx*S*x*A	761 (29.9)	857 (33.7)	882 (34.7)

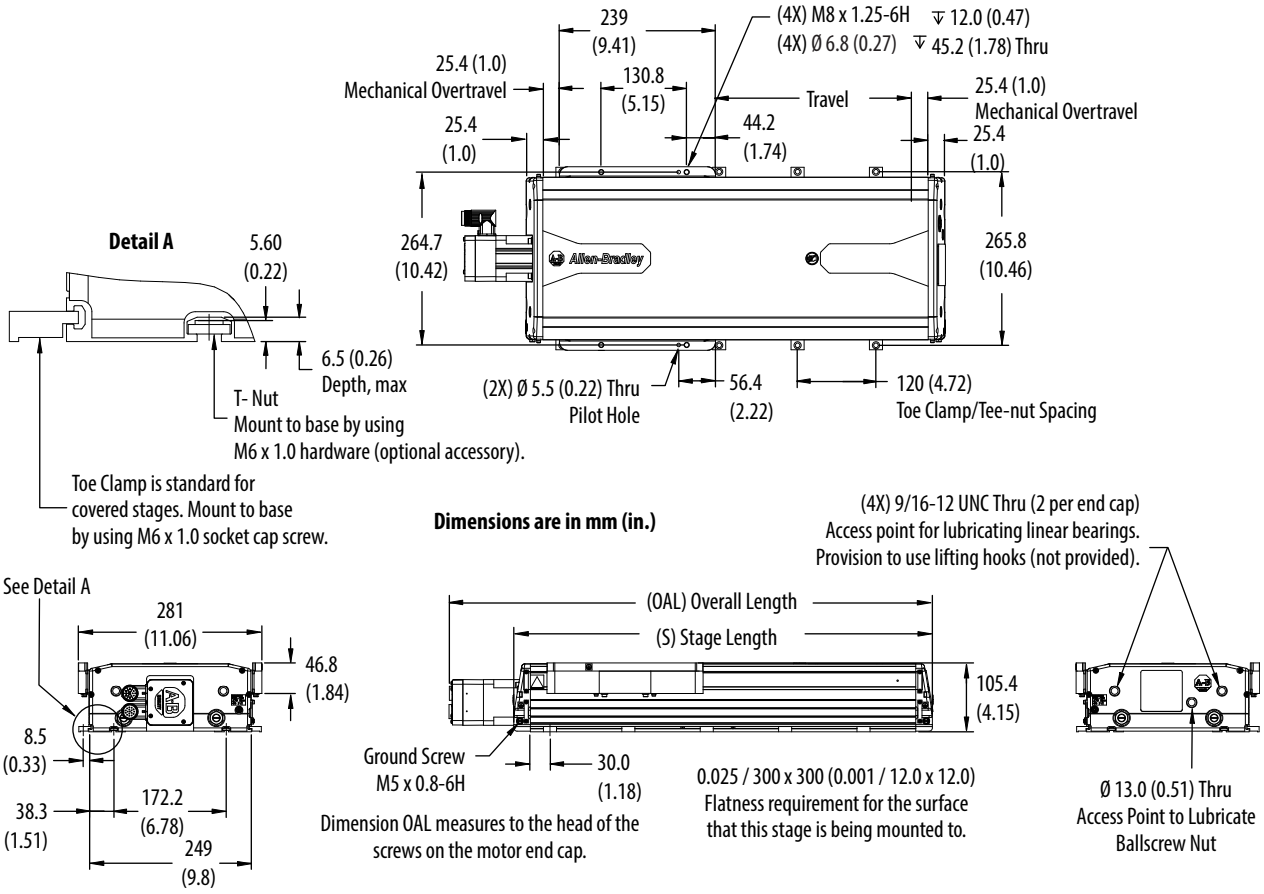
Linear Stage Cat. No.	S mm (in.)	OAL (5 mm/rev) (1) mm (in.)	OAL (20 mm/rev) (2) mm (in.)
MPAS-A/B8054*x*-V*xx*S*x*A	881 (34.7)	977 (38.5)	1002 (39.5)
MPAS-A/B8066*x*-V*xx*S*x*A	1001 (39.4)	1097 (43.2)	1122 (44.2)
MPAS-A/B8078*x*-V*xx*S*x*A	1121 (44.1)	1217 (47.9)	1242 (48.9)
MPAS-A/B8090*x*-V*xx*S*x*A	1241 (48.8)	1337 (52.6)	1362 (53.6)
MPAS-A/B8102*x*-V*xx*S*x*A	1361 (53.6)	1457 (57.4)	1482 (58.4)

(1) If ordering an MPAS-A/B8*xxx*-V05S4A actuator with brake, add 39.0 mm (1.53 in.) to dimension OAL.

(2) If ordering an MPAS-A/B8*xxx*-V20S4A actuator with brake, add 39.0 mm (1.53 in.) to dimension OAL.

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPAS-A/B9*xxx*1/2-V*xx*S*x*A (ballscrew) Linear Stage



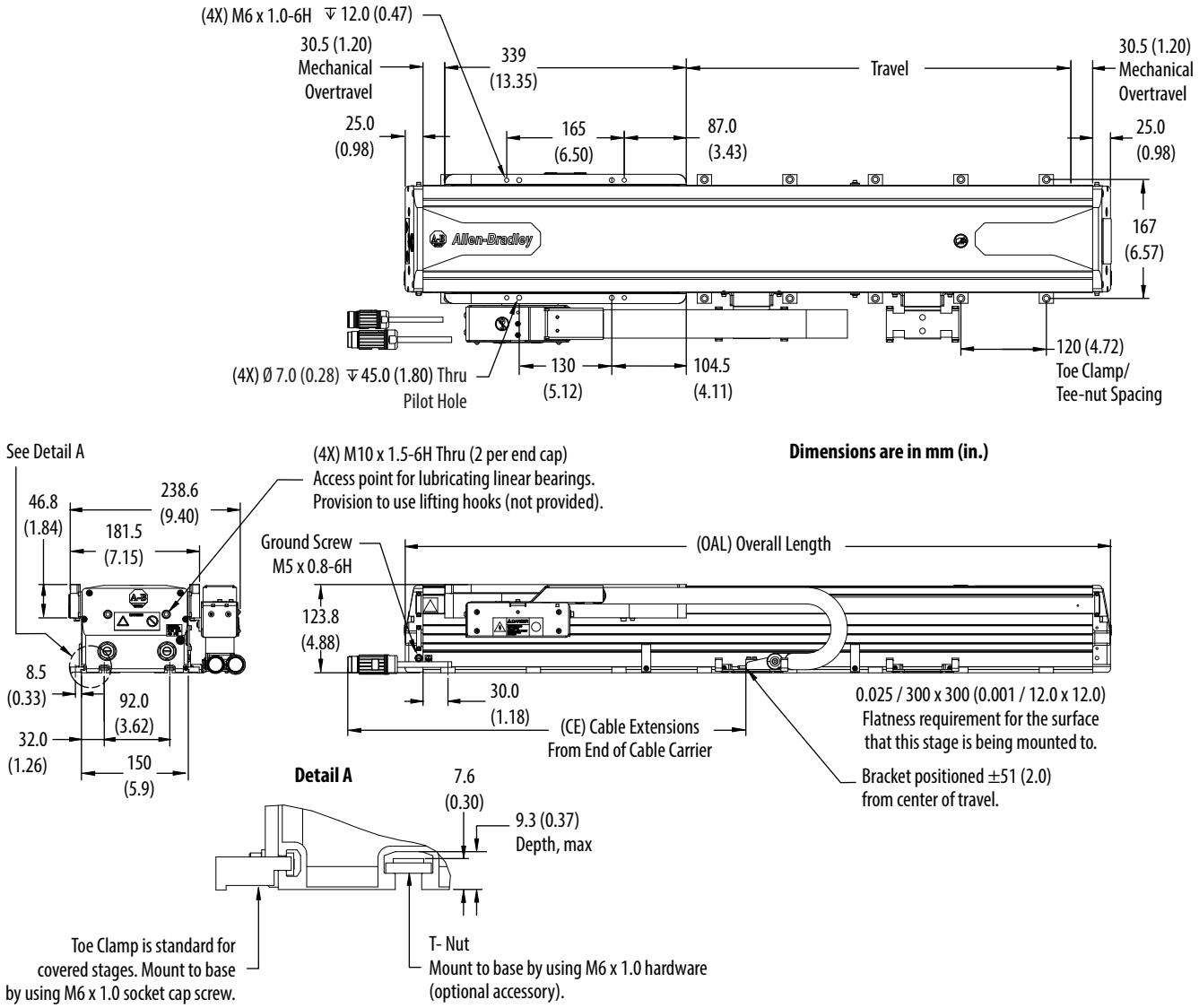
Linear Stage Cat. No.	S mm (in.)	OAL (5 mm/rev) (1) mm (in.)	OAL (20 mm/rev) (2) mm (in.)
MPAS-A/B9012*x*-V*xx*S*x*A	461 (18.1)	557 (21.9)	582 (22.9)
MPAS-A/B9018*x*-V*xx*S*x*A	521 (20.5)	617 (24.3)	642 (25.3)
MPAS-A/B9024*x*-V*xx*S*x*A	581 (22.9)	677 (26.6)	702 (27.6)
MPAS-A/B9030*x*-V*xx*S*x*A	641 (25.2)	737 (29.0)	762 (30.0)
MPAS-A/B9036*x*-V*xx*S*x*A	701 (27.6)	797 (31.4)	822 (32.4)
MPAS-A/B9042*x*-V*xx*S*x*A	761 (29.9)	857 (33.7)	882 (34.7)

Linear Stage Cat. No.	S mm (in.)	OAL (5 mm/rev) (1) mm (in.)	OAL (20 mm/rev) (2) mm (in.)
MPAS-A/B9054*x*-V*xx*S*x*A	881 (34.7)	977 (38.5)	1002 (39.5)
MPAS-A/B9066*x*-V*xx*S*x*A	1001 (39.4)	1097 (43.2)	1122 (44.2)
MPAS-A/B9078*x*-V*xx*S*x*A	1121 (44.1)	1217 (47.9)	1242 (48.9)
MPAS-A/B9090*x*-V*xx*S*x*A	1241 (48.8)	1337 (52.6)	1362 (53.6)
MPAS-A/B9102*x*-V*xx*S*x*A	1361 (53.6)	1457 (57.4)	1482 (58.4)

(1) If ordering an MPAS-A/B9*xxx*-V05S4A actuator with brake, add 39.0 mm (1.53 in.) to dimension OAL.
(2) If ordering an MPAS-A/B9*xxx*-V20S4A actuator with brake, add 39.0 mm (1.53 in.) to dimension OAL.

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPAS-A6*xxx*B-ALM*x*2C (direct drive) Linear Stage

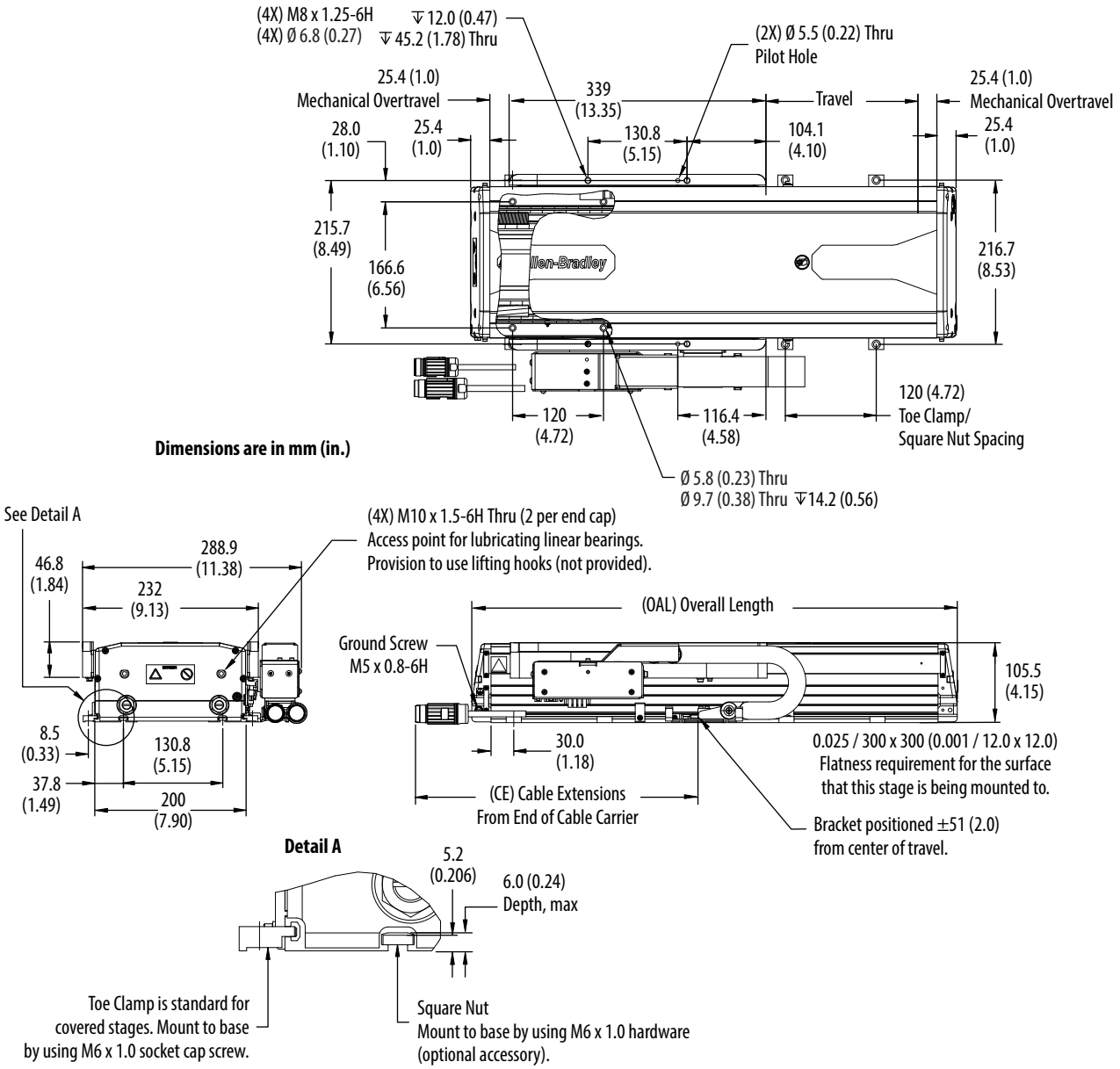


Linear Stage Cat. No.	OAL mm (in.)	CE mm (in.)
MPAS-A6012B-ALM*x*2C	570 (22.4)	1218 (48.0)
MPAS-A6018B-ALM*x*2C	630 (24.8)	1193 (47.0)
MPAS-A6024B-ALM*x*2C	690 (27.2)	1168 (46.0)
MPAS-A6030B-ALM*x*2C	750 (29.5)	1118 (44.0)
MPAS-A6036B-ALM*x*2C	810 (31.9)	1093 (43.0)
MPAS-A6042B-ALM*x*2C	870 (34.3)	1068 (42.0)

Linear Stage Cat. No.	OAL mm (in.)	CE mm (in.)
MPAS-A6054B-ALM*x*2C	990 (39.0)	1018 (40.0)
MPAS-A6066B-ALM*x*2C	1110 (43.7)	943 (37.0)
MPAS-A6078B-ALM*x*2C	1230 (48.4)	893 (35.0)
MPAS-A6090B-ALM*x*2C	1350 (53.1)	818 (32.0)
MPAS-A6102B-ALM*x*2C	1470 (57.9)	1768 (70.0)
MPAS-A6114B-ALM*x*2C	1590 (62.6)	1718 (68.0)

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPAS-A/B8*xxxx*-ALM*x*2C (direct drive) Linear Stage



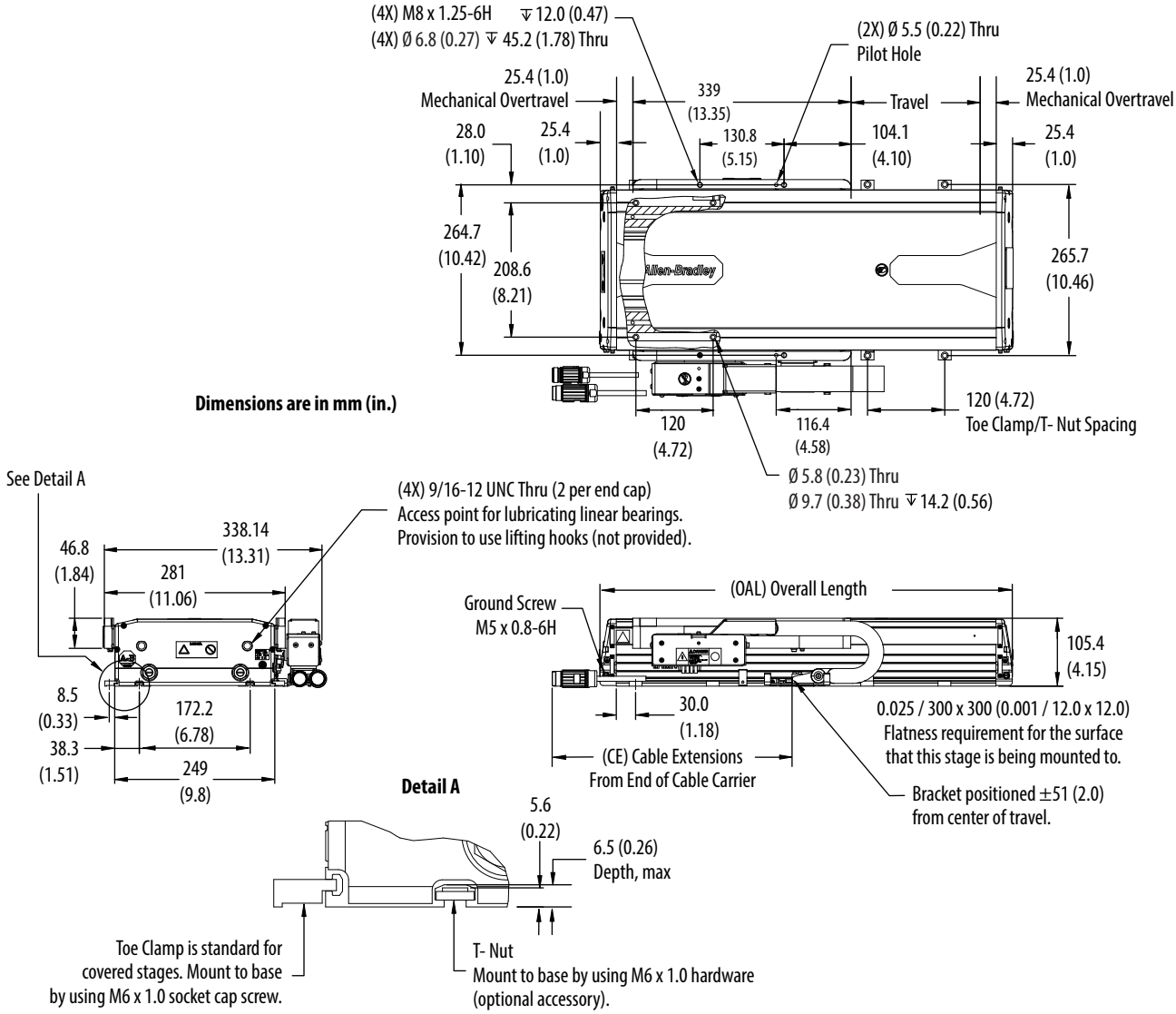
Linear Stage Cat. No.	OAL mm (in.)	CE mm (in.)
MPAS-A/B8014*x*-ALM*x*2C	581 (22.9)	1243 (49.0)
MPAS-A/B8020*x*-ALM*x*2C	641 (25.2)	1218 (48.0)
MPAS-A/B8026*x*-ALM*x*2C	701 (27.6)	1168 (46.0)
MPAS-A/B8032*x*-ALM*x*2C	761 (30.0)	1143 (45.0)
MPAS-A/B8038*x*-ALM*x*2C	821 (32.3)	1118 (44.0)

Linear Stage Cat. No.	OAL mm (in.)	CE mm (in.)
MPAS-A/B8044*x*-ALM*x*2C	881 (34.7)	1093 (43.0)
MPAS-A/B8056*x*-ALM*x*2C	1001 (39.4)	1018 (40.0)
MPAS-A/B8068*x*-ALM*x*2C	1121 (44.1)	968 (38.0)
MPAS-A/B8080*x*-ALM*x*2C	1241 (48.9)	918 (36.0)
MPAS-A/B8092*x*-ALM*x*2C	1361 (53.6)	843 (33.0)

Linear Stage Cat. No.	OAL mm (in.)	CE mm (in.)
MPAS-A/B8104*x*-ALM*x*2C	1481 (58.3)	1793 (71.0)
MPAS-A/B8128*x*-ALM*x*2C	1721 (67.8)	1668 (66.0)
MPAS-A/B8152*x*-ALM*x*2C	1961 (77.2)	1543 (61.0)
MPAS-A/B8176*x*-ALM*x*2C	2201 (86.7)	1418 (56.0)
MPAS-A/B8194*x*-ALM*x*2C	2381 (93.7)	1343 (53.0)

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPAS-A/B9*xxxx*-ALM*x*2C (direct drive) Linear Stage



Linear Stage Cat. No.	OAL mm (in.)	CE mm (in.)
MPAS-A/B9014*x*-ALM*x*2C	581 (22.9)	1240 (49.0)
MPAS-A/B9020*x*-ALM*x*2C	641 (25.2)	1220 (48.0)
MPAS-A/B9026*x*-ALM*x*2C	701 (27.6)	1170 (46.0)
MPAS-A/B9032*x*-ALM*x*2C	761 (30.0)	1140 (45.0)
MPAS-A/B9038*x*-ALM*x*2C	821 (32.3)	1120 (44.0)

Linear Stage Cat. No.	OAL mm (in.)	CE mm (in.)
MPAS-A/B9044*x*-ALM*x*2C	881 (34.7)	1090 (43.0)
MPAS-A/B9056*x*-ALM*x*2C	1001 (39.4)	1020 (40.0)
MPAS-A/B9068*x*-ALM*x*2C	1121 (44.1)	960 (38.0)
MPAS-A/B9080*x*-ALM*x*2C	1241 (48.9)	910 (36.0)
MPAS-A/B9092*x*-ALM*x*2C	1361 (53.6)	840 (33.0)

Linear Stage Cat. No.	OAL mm (in.)	CE mm (in.)
MPAS-A/B9104*x*-ALM*x*2C	1481 (58.3)	1800 (71.0)
MPAS-A/B9128*x*-ALM*x*2C	1721 (67.8)	1670 (66.0)
MPAS-A/B9152*x*-ALM*x*2C	1961 (77.2)	1550 (61.0)
MPAS-A/B9176*x*-ALM*x*2C	2201 (86.7)	1420 (56.0)
MPAS-A/B9194*x*-ALM*x*2C	2381 (93.7)	1350 (53.0)

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MP-Series Integrated Multi-axis Linear Stages

Cartesian X/Y Configuration

Center Stacked X/Y Configuration

Center Stacked X/Z Configuration

MP-Series integrated multi-axis linear stages extend the Allen-Bradley actuator portfolio into pre-defined and pre-assembled multi-axis configurations to suit a variety of manufacturing needs. These configurations come pre-assembled with known orthogonality and cable management, and are selectable in Motion Analyzer sizing software, version 4.7 or later.

The cartesian X/Y configuration is typically used when you need to perform an operation on a workpiece from above such as picking and placing, dispensing, or scanning. This configuration is available with both direct-drive linear motors and ballscrew-actuated stages.

The center stacked X/Y is a configuration that is often used to position your workpiece under a stationary object such as a camera or dispenser head. This configuration is available with both direct-drive linear motors and ballscrew-actuated stages.

The center stacked X/Z configuration is often used in applications where you need to pick an object from one line and place it on a perpendicular line. This configuration is available with both direct-drive linear motors and ballscrew actuated X-axis stages, and ballscrew actuated Z-axis stages.

MP-Series Integrated Multi-axis Linear Stage Features

- Your choice of direct-drive linear motor or ballscrew actuation. Direct-drive linear motor actuation provides greater repeatability, increased reliability, and higher dynamics. Ballscrew actuation provides greater linear thrust capabilities.
- Ease of selection in Motion Analyzer software, version 4.7 or later, that reduces the time and cost associated with selecting a multi-axis linear stage solution.
- Ease of machine design with the availability of CAD and Solid Models that reduce the time needed to generate machine drawings.
- Ease of configuration with the Studio 5000 Logix Designer application that reduces set-up time.
- Factory-supplied cable management that is field replaceable for ease of maintenance.
- Orthogonality of 30 arc seconds.

Catalog Numbers - MP-Series Integrated Multi-axis Linear Stages

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your actuator. For questions regarding product availability, contact your Allen-Bradley distributor.

MP MA - *x x x x x x x x x -x x x*

Cable
C = Cable track module with IP67 SpeedTec DIN connectors (applies to all Bulletin MPMA stages)

Limits and Brake Options

X-axis	Y-axis	Z-axis
1 = No brake, no limits	1 = No brake, no limits	1 = None
2 = No brake, no limits	2 = None	2 = 24V brake, no limits (ballscrew only)

Protection Options (same as Bulletin MPAS options)
S = Covered with strip seals (applies to all Bulletin MPMA stages)

Z-axis 10s of mm

0 = 0 mm	2 = 20 mm	4 = 40 mm	6 = 60 mm	8 = 80 mm
1 = 10 mm	3 = 30 mm	5 = 50 mm	7 = 70 mm	9 = 90 mm

Z-axis 100s of mm

A = 0 mm	C = 200 mm	E = 400 mm
B = 100 mm	D = 300 mm	F = 500 mm

Y-axis 10s of mm

0 = 0 mm	2 = 20 mm	4 = 40 mm	6 = 60 mm	8 = 80 mm
1 = 10 mm	3 = 30 mm	5 = 50 mm	7 = 70 mm	9 = 90 mm

Y-axis 100s of mm

A = 0 mm	C = 200 mm	E = 400 mm	G = 600 mm
B = 100 mm	D = 300 mm	F = 500 mm	

X-axis 10s of mm

0 = 0 mm	2 = 20 mm	4 = 40 mm	6 = 60 mm	8 = 80 mm
1 = 10 mm	3 = 30 mm	5 = 50 mm	7 = 70 mm	9 = 90 mm

X-axis 100s of mm

A = 0 mm	C = 200 mm	E = 400 mm	G = 600 mm	I = 800 mm
B = 100 mm	D = 300 mm	F = 500 mm	H = 700 mm	J = 900 mm

Bulletin MPAS Linear Stage

X-axis (base)	Y-axis (secondary)	Z-axis (secondary)
B = MPAS-*x9xxx*K/L-ALMS2*x*	B = MPAS-*x8xxx*F/E-ALMS2*x*	B = None
C = MPAS-*x9xxx*K/L-ALMS2*x*	C = MPAS-*x9xxx*K/L-ALMS2*x*	C = None
D = MPAS-*x9xxx*K/L-ALMS2*x*	D = None	D = MPAS-*x6xxx*2-V20S4*x*
E = MPAS-*x8xxx*F/E-ALMS2*x*	E = None	E = MPAS-*x6xxx*2-V20S4*x*
I = MPAS-*x8xxx*2-V20S2*x*	I = None	I = MPAS-*x6xxx*2-V20S4*x*
P = MPAS-*x8xxx*2-V20S2*x*	P = MPAS-*x8xxx*2-V20S2*x*	P = None
Q = MPAS-*x9xxx*2-V20S2*x*	Q = MPAS-*x8xxx*2-V20S2*x*	Q = None

Configuration
A = Center stacked XY
B = Center stacked XZ
C = Cartesian stacked XY (left-side cantilever)

Voltage Class
A = 200V
B = 400V

Actuator Type
MA = Actuator, multi-axis linear stage

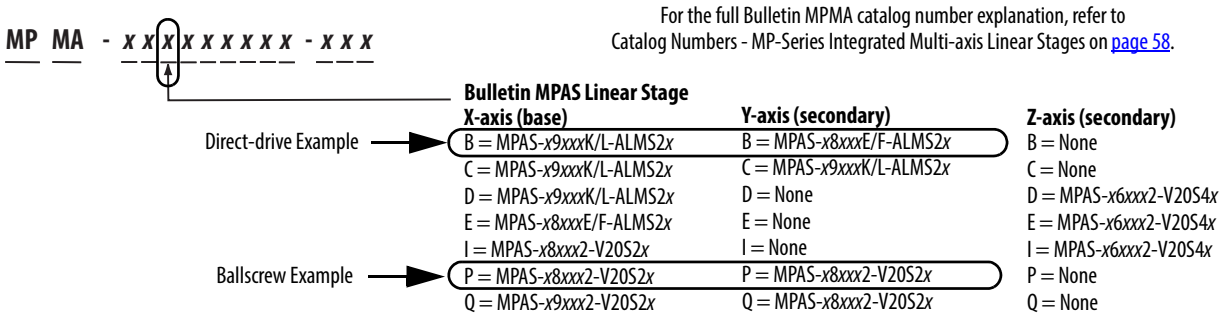
Actuator Series
MP = MP-Series

MP-Series Integrated Multi-axis Linear Stage System Combinations

The Bulletin MPMA multi-axis stages are based on the individual Bulletin MPAS stages, so the Bulletin MPAS force-velocity system performance specifications also apply to the Bulletin MPAS stages. For the Bulletin MPAS linear stage performance specifications with compatible servo drives, refer to the drive system publication for your servo drive family.

Bulletin MPMA multi-axis stages are comprised of custom Bulletin MPAS stages. This is due to the different cable management requirements for stacked-stage assemblies. Additionally, the Bulletin MPAS individual stage identifier embedded in the Bulletin MPMA catalog number does not correspond directly to the Bulletin MPAS catalog number used in the system combinations.

Bulletin MPAS Stage Identifier



MPAS-xxxxxx-ALM Direct-drive Linear Stage

Follow this example to determine the Bulletin MPAS stages for MPMA-AABC0C0A0-S1C multi-axis stages:

- Replace the Voltage Rating designator (*x*) with A (200V-class) or B (400V-class).
- Replace the Mechanical Drive/Motor Type designator.
  - Replace (K/L) with K if 200V-class or L if 400V-class
  - Replace (E/F) with E if 200V-class or F if 400V-class
- Replace the Cable designator (*x*), with the direct-drive standard C option.
- In this example: X-axis = MPAS-*x*9*xxx*K/L-ALMS2 and Y-axis = MPAS-*x*8*xxx*E/F-ALMS2.
  - X-axis stage = MPAS-A9*xxx*K-ALMS2C
  - Y-axis stage = MPAS-A8*xxx*E-ALMS2C

MPAS-xxxxxx-Vxx Ballscrew Linear Stage

Follow this example to determine the Bulletin MPAS stages for MPMA-BAPB8B8A0-S1C multi-axis stages:

- Replace the Voltage Rating designator (*x*) with A (200V-class) or B (400V-class).
- Holding brake (4) or no brake (2) option does not affect system performance.
- In this example: X-axis = MPAS-*x*8*xxx*2-V20S2*x* and Y-axis = MPAS-*x*8*xxx*2-V20S2*x*.
  - X-axis stage = MPAS-B8*xxx*2-V20S*x*A
  - Y-axis stage = MPAS-B8*xxx*2-V20S*x*A

MP-Series Integrated Multi-axis Linear Stage Accessory Kits

- Cable track module replacement kits
- Strip seal replacement kits
- Top cover kits (for Y or Z-axis only)
- Side cover kits
- Coupling kits (for Y or Z-axis only)
- Tee-nut kit (package of 10)
- Tee-nut bar kit
- Grease gun kit
- Grease replacement cartridge
- Rotary servo motor (for Y or Z-axis only)

Accessory Kits Common to All Multi-axis Linear Stages

Linear Stage Cat. No.	Description	Accessory Cat. No.
MPAS-A/B*xxxx*	Kit, grease gun for all integrated linear stages.	MPAS-GPUMP
	Grease gun refill cartridge for all integrated linear stages.	MPAS-CART
MPAS-A6*xxx*, MPAS-B6*xxx*	Kit, Tee-nuts (10 per package).	MPAS-6-TNUT
MPAS-A8*xxx*, MPAS-B8*xxx*		MPAS-8-TNUT
MPAS-A9*xxx*, MPAS-B9*xxx*		MPAS-9-TNUT

Accessory Kits for Multi-axis Direct-drive Linear Stages

Refer to Accessory Kits for Single-axis Direct-drive Linear Stages on page 39 for accessory kit descriptions and catalog numbers.

Accessory Kits for Multi-axis Ballscrew Linear Stages

Refer to Accessory Kits for Single-axis Ballscrew Linear Stages on page 40 for accessory kit descriptions and catalog numbers.

Accessory Kits for Stacked Cable Modules

Accessory Kits for Center Stacked X/Y Cable Modules

Multi-axis Linear Stage Cat. No.	Description	Accessory Cat. No.
MPMA-*x*ABC0C0A0-*xxx*	Cable track module for MPMA-*x*AB series X/Y center stacked stages	MPMA-*x*ABC0C0A0-CBL
MPMA-*x*ABC6C6A0-*xxx*		MPMA-*x*ABC6C6A0-CBL
MPMA-*x*ABD2D2A0-*xxx*		MPMA-*x*ABD2D2A0-CBL
MPMA-*x*ABD8D8A0-*xxx*		MPMA-*x*ABD8D8A0-CBL
MPMA-*x*ABE4E4A0-*xxx*		MPMA-*x*ABE4E4A0-CBL
MPMA-*x*ABF6F6A0-*xxx*		MPMA-*x*ABF6F6A0-CBL
MPMA-*x*ACB4B4A0-*xxx*	Cable track module for MPMA-*x*AC series X/Y center stacked stages	MPMA-*x*ACB4B4A0-CBL
MPMA-*x*ACC0C0A0-*xxx*		MPMA-*x*ACC0C0A0-CBL
MPMA-*x*ACC6C6A0-*xxx*		MPMA-*x*ACC6C6A0-CBL
MPMA-*x*ACD2D2A0-*xxx*		MPMA-*x*ACD2D2A0-CBL
MPMA-*x*APB8B8A0-*xxx*	Cable track module for MPMA-*x*AP series X/Y center stacked stages	MPMA-*x*APB8B8A0-CBL
MPMA-*x*APC4C4A0-*xxx*		MPMA-*x*APC4C4A0-CBL
MPMA-*x*APD0D0A0-*xxx*		MPMA-*x*APD0D0A0-CBL
MPMA-*x*APE2E2A0-*xxx*		MPMA-*x*APE2E2A0-CBL
MPMA-*x*APG6G6A0-*xxx*		MPMA-*x*APG6G6A0-CBL

Accessory Kits for Cartesian Stacked X/Y Cable Modules

Multi-axis Linear Stage Cat. No.	Description	Accessory Cat. No.
MPMA-*x*CBD2D2A0-*xxx*	Cable track module for MPMA-*x*CB series X/Y cartesian stacked stages	MPMA-*x*CBD2D2A0-CBL
MPMA-*x*CBE4D2A0-*xxx*		MPMA-*x*CBE4D2A0-CBL
MPMA-*x*CBE4E4A0-*xxx*		MPMA-*x*CBE4E4A0-CBL
MPMA-*x*CBF6E4A0-*xxx*		MPMA-*x*CBF6E4A0-CBL
MPMA-*x*CBG8E4A0-*xxx*		MPMA-*x*CBG8E4A0-CBL
MPMA-*x*CBG8F6A0-*xxx*		MPMA-*x*CBG8F6A0-CBL
MPMA-*x*CBI0F6A0-*xxx*		MPMA-*x*CBI0F6A0-CBL
MPMA-*x*CBJ2F6A0-*xxx*		MPMA-*x*CBJ2F6A0-CBL
MPMA-*x*CQD0D0A0-*xxx*	Cable track module for MPMA-*x*CQ series X/Y cartesian stacked stages	MPMA-*x*CQD0D0A0-CBL
MPMA-*x*CQE2D0A0-*xxx*		MPMA-*x*CQE2D0A0-CBL
MPMA-*x*CQE2E2A0-*xxx*		MPMA-*x*CQE2E2A0-CBL
MPMA-*x*CQG6E2A0-*xxx*		MPMA-*x*CQG6E2A0-CBL
MPMA-*x*CQG6G6A0-*xxx*		MPMA-*x*CQG6G6A0-CBL
MPMA-*x*CQH8G6A0-*xxx*		MPMA-*x*CQH8G6A0-CBL
MPMA-*x*CQJ0G6A0-*xxx*		MPMA-*x*CQJ0G6A0-CBL

Accessory Kits for Center Stacked X/Z Cable Modules

Multi-axis Linear Stage Cat. No.	Description	Accessory Cat. No.
MPMA-*x*BDD2A0B8-*xxx*	Cable track module for MPMA-*x*BD series X/Z center stacked stages	MPMA-xBDD2A0B8-CBL
MPMA-*x*BDD2A0D0-*xxx*		MPMA-xBDD2A0D0-CBL
MPMA-*x*BDE4A0B8-*xxx*		MPMA-xBDE4A0B8-CBL
MPMA-*x*BDE4A0D0-*xxx*		MPMA-*x*BDE4A0D0-CBL
MPMA-*x*BDE4A0E2-*xxx*		MPMA-*x*BDE4A0E2-CBL
MPMA-*x*BDG8A0B8-*xxx*		MPMA-*x*BDG8A0B8-CBL
MPMA-*x*BDG8A0D0-*xxx*		MPMA-*x*BDG8A0D0-CBL
MPMA-*x*BDG8A0E2-*xxx*		MPMA-*x*BDG8A0E2-CBL
MPMA-*x*BDI0A0B8-*xxx*		MPMA-*x*BDI0A0B8-CBL
MPMA-*x*BDI0A0D0-*xxx*		MPMA-*x*BDI0A0D0-CBL
MPMA-*x*BDI0A0E2-*xxx*		MPMA-*x*BDI0A0E2-CBL
MPMA-*x*BDJ2A0D0-*xxx*		MPMA-*x*BDJ2A0D0-CBL
MPMA-*x*BDJ2A0E2-*xxx*		MPMA-*x*BDJ2A0E2-CBL
MPMA-*x*BDJ2A0F4-*xxx*		MPMA-*x*BDJ2A0F4-CBL
MPMA-*x*BED2A0B8-*xxx*	Cable track module for MPMA-*x*BE series X/Z center stacked stages	MPMA-*x*BED2A0B8-CBL
MPMA-*x*BED2A0D0-*xxx*		MPMA-*x*BED2A0D0-CBL
MPMA-*x*BEE4A0B8-*xxx*		MPMA-*x*BEE4A0B8-CBL
MPMA-*x*BEE4A0D0-*xxx*		MPMA-*x*BEE4A0D0-CBL
MPMA-*x*BEG8A0B8-*xxx*		MPMA-*x*BEG8A0B8-CBL
MPMA-*x*BEG8A0D0-*xxx*		MPMA-*x*BEG8A0D0-CBL
MPMA-*x*BID0A0B8-*xxx*	Cable track module for MPMA-*x*BI series X/Z center stacked stages	MPMA-*x*BID0A0B8-CBL
MPMA-*x*BID0A0D0-*xxx*		MPMA-*x*BID0A0D0-CBL
MPMA-*x*BIE2A0B8-*xxx*		MPMA-*x*BIE2A0B8-CBL
MPMA-*x*BIE2A0D0-*xxx*		MPMA-*x*BIE2A0D0-CBL
MPMA-*x*BIG6A0B8-*xxx*		MPMA-*x*BIG6A0B8-CBL
MPMP-*x*BIG6A0D0-*xxx*		MPMP-*x*BIG6A0D0-CBL

Mounting Bar Accessory Kits for Multi-axis X-axis Linear Stages

Multi-axis Linear Stage Cat. No.	Description	Accessory Cat. No.
MPMA-*xxx*B4*xxxx-xxx*	Mounting bar for X-axis having B4 travel	MPAS-TBAR-B4
MPMA-*xxx*B8*xxxx-xxx*	Mounting bar for X-axis having B8 travel	MPAS-TBAR-B8
MPMA-*xxx*C0*xxxx-xxx*	Mounting bar for X-axis having C0 travel	MPAS-TBAR-C0
MPMA-*xxx*C4*xxxx-xxx*	Mounting bar for X-axis having C4 travel	MPAS-TBAR-C4
MPMA-*xxx*C6*xxxx-xxx*	Mounting bar for X-axis having C6 travel	MPAS-TBAR-C6
MPMA-*xxx*D0*xxxx-xxx*	Mounting bar for X-axis having D0 travel	MPAS-TBAR-D0
MPMA-*xxx*D2*xxxx-xxx*	Mounting bar for X-axis having D2 travel	MPAS-TBAR-D2
MPMA-*xxx*D8*xxxx-xxx*	Mounting bar for X-axis having D8 travel	MPAS-TBAR-D8
MPMA-xxxE2*xxxx-xxx*	Mounting bar for X-axis having E2 travel	MPAS-TBAR-E2
MPMA-*xxx*E4*xxxx-xxx*	Mounting bar for X-axis having E4 travel	MPAS-TBAR-E4
MPMA-*xxx*F6*xxxx-xxx*	Mounting bar for X-axis having F6 travel	MPAS-TBAR-F6
MPMA-*xxx*G6*xxxx-xxx*	Mounting bar for X-axis having G6 travel	MPAS-TBAR-G6
MPMA-*xxx*G8*xxxx-xxx*	Mounting bar for X-axis having G8 travel	MPAS-TBAR-G8
MPMA-*xxx*H8*xxxx-xxx*	Mounting bar for X-axis having H8 travel	MPAS-TBAR-H8
MPMA-*xxx*I0*xxxx-xxx*	Mounting bar for X-axis having I0 travel	MPAS-TBAR-I0
MPMA-*xxx*J0*xxxx-xxx*	Mounting bar for X-axis having J0 travel	MPAS-TBAR-J0
MPMA-*xxx*J2*xxxx-xxx*	Mounting bar for X-axis having J2 travel	MPAS-TBAR-J2

Technical Specifications - MP-Series Integrated Multi-axis Linear Stages

MP-Series Integrated Multi-axis Linear Stage Life Specifications

Attribute	Value
Strip seal	10,000,000 cycles or 10,000 km min life in clean, dry, noncontaminating environment.
Cable track module	10,000,000 cycles minimum life.
Mechanical stop bumper	56.49 N•m (500 lb•in) potential energy.

MP-Series Integrated Multi-axis Linear Stages Motor Brake Specifications

Multi-axis Linear Stage Cat. No.	Backlash, max (brake engaged) µm (in.)	Holding Force N (lb)	Coil Current at 24V DC A	Brake Response Time		
				Release ms	Engage (by using external arc suppression device)	
					MOV ms	**Diode** ms
MPAS-A/B*xxxx*2-V20S*x*A	100 (0.004)	1294 (291)	0.46…0.56	58	20	42

Dimensions - MP-Series Integrated Multi-axis Linear Stages

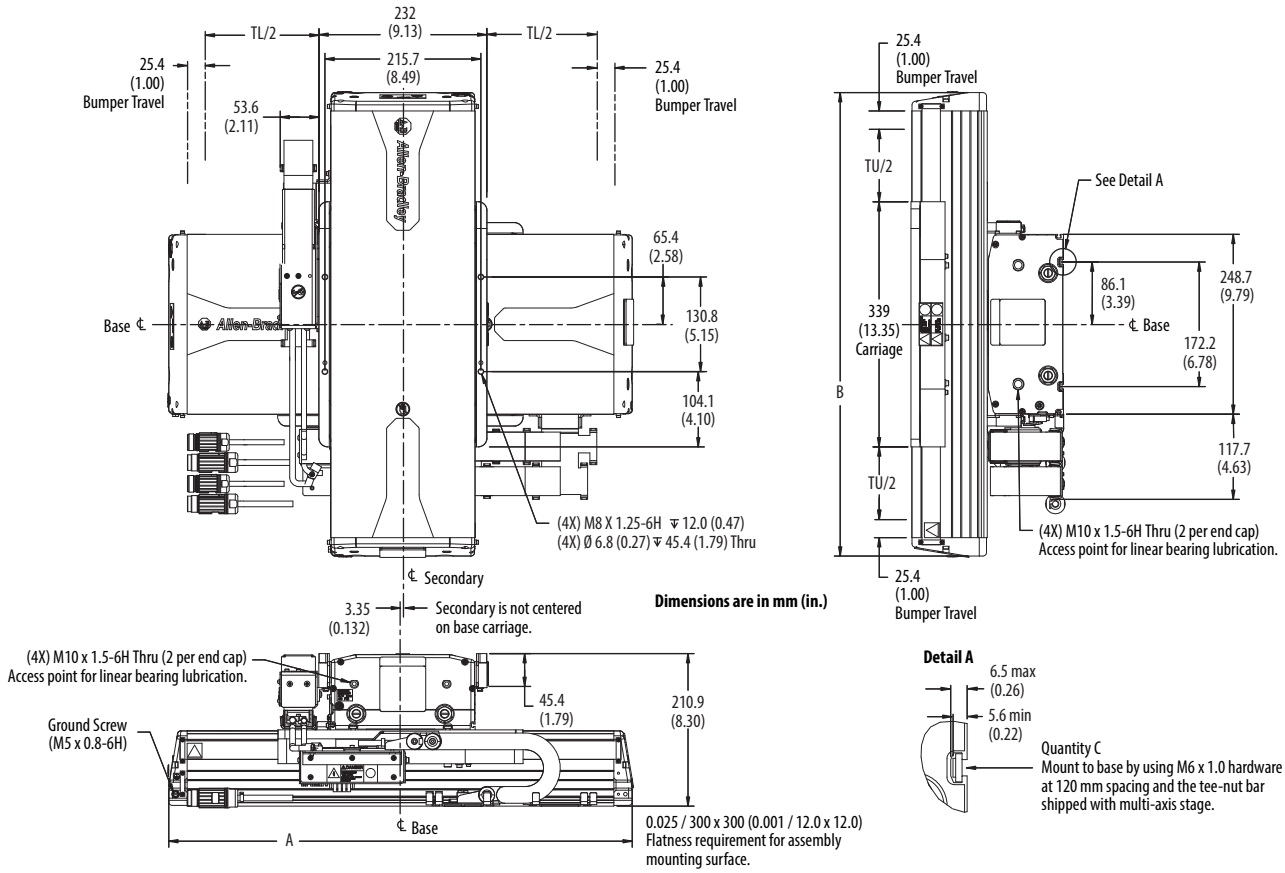
MPMA-xABxxxxxx-xxx Product Specifications and Dimensions

These specifications apply to center stacked X/Y stages with 250 mm frame linear motor driven X-axis and 200 mm frame linear motor driven Y-axis. Maximum payload is 15 kg (33.1 lb). For heavier loads, contact your Rockwell Automation sales representative.

MPMA-*xAB xxxxxx-xxx* Product Specifications

Multi-axis Linear Stage Cat. No.	**Travel** mm (in.)			**Encoder Type**			**Bi-directional Repeatability** (µm)			**Weight, approx** kg (lb)
	X-axis	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	
MPMA-*x*ABC0C0A0-S1C	200 (7.9)		N/A	5 micron resolution incremental magnetic linear encoder (direct-drive only)		N/A	15	15	N/A	56.4 (124.1)
MPMA-*x*ABC6C6A0-S1C	260 (10.2)									59.2 (130.2)
MPMA-*x*ABD2D2A0-S1C	320 (12.6)									62.1 (136.6)
MPMA-*x*ABD8D8A0-S1C	380 (15.0)									64.4 (141.7)
MPMA-*x*ABE4E4A0-S1C	440 (17.3)									67.3 (148.1)
MPMA-*x*ABF6F6A0-S1C	560 (22.0)									73.1 (160.8)

MPMA-*xAB xxxxxx-xxx* Product Dimensions



MPMA-*xAB xxxxxx-xxx* Dimensions

Multi-axis Linear Stage Cat. No.	A Stage Length (X-axis)	TL Travel (X-axis)	B Stage Length (Y-axis)	TU Travel (Y-axis)	C Mounting Locations (X-axis)
	mm (in.)	mm (in.)	mm (in.)	mm (in.)	Qty
MPMA-AABC0C0A0-S1C	641 (25.2)	200 (7.9)	641 (25.2)	200 (7.9)	10
MPMA-AABC6C6A0-S1C	701 (27.6)	260 (10.2)	701 (27.6)	260 (10.2)	12
MPMA-AABD2D2A0-S1C	761 (30.0)	320 (12.6)	761 (30.0)	320 (12.6)	
MPMA-AABD8D8A0-S1C	821 (32.3)	380 (15.0)	821 (32.3)	380 (15.0)	14
MPMA-AABE4E4A0-S1C	881 (34.7)	440 (17.3)	881 (34.7)	440 (17.3)	
MPMA-AABF6F6A0-S1C	1001 (39.4)	560 (22.0)	1001 (39.4)	560 (22.0)	16
MPMA-BABC0C0A0-S1C	641 (25.2)	200 (7.9)	641 (25.2)	200 (7.9)	10
MPMA-BABC6C6A0-S1C	701 (27.6)	260 (10.2)	701 (27.6)	260 (10.2)	12
MPMA-BABD2D2A0-S1C	761 (30.0)	320 (12.6)	761 (30.0)	320 (12.6)	
MPMA-BABD8D8A0-S1C	821 (32.3)	380 (15.0)	821 (32.3)	380 (15.0)	14
MPMA-BABE4E4A0-S1C	881 (34.7)	440 (17.3)	881 (34.7)	440 (17.3)	
MPMA-BABF6F6A0-S1C	1001 (39.4)	560 (22.0)	1001 (39.4)	560 (22.0)	16

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

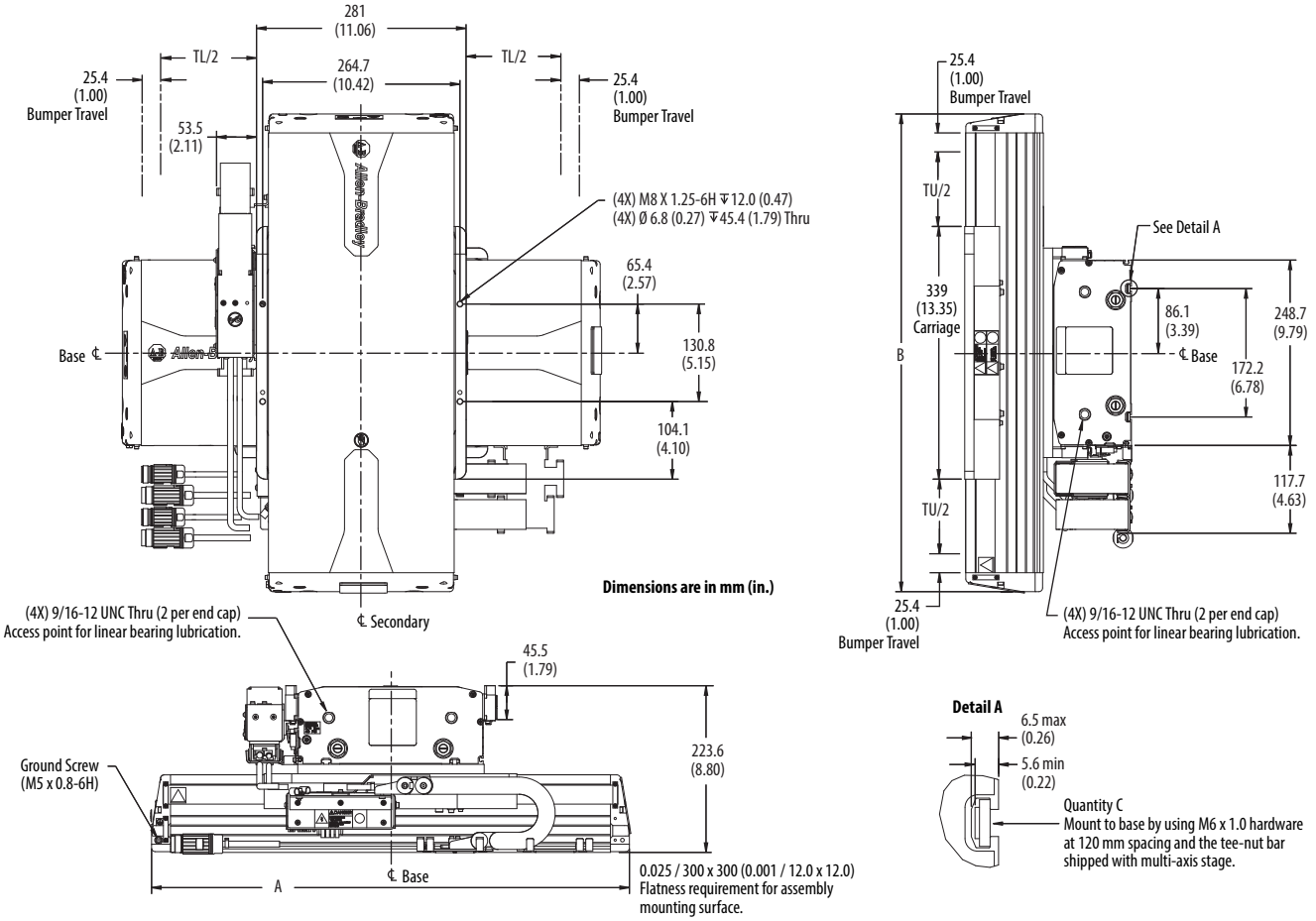
MPMA-xACxxxxxx-xxx Product Specifications and Dimensions

These specifications apply to center stacked X/Y stages with 250 mm frame linear motor driven X-axis and 250 mm frame linear motor driven Y-axis. Maximum payload is 20 kg (44.0 lb). For heavier loads, contact your Rockwell Automation sales representative.

MPMA-*xACxxxxxx-xxx* Product Specifications

Multi-axis Linear Stage Cat. No.	**Travel** mm (in.)			**Encoder Type**			**Bi-directional Repeatability** (µm)			**Weight, approx** kg (lb)
	X-axis	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	
MPMA-*x*ACB4B4A0-S1C	140 (5.5)		N/A	5 micron resolution incremental magnetic linear encoder (direct-drive only)		N/A	15	15	N/A	62.2 (136.8)
MPMA-*x*ACC0C0A0-S1C	200 (7.9)									66.0 (145.2)
MPMA-*x*ACC6C6A0-S1C	260 (10.2)									69.2 (152.2)
MPMA-*x*ACD2D2A0-S1C	320 (12.6)									72.2 (158.8)

MPMA-*xACxxxxxx-xxx* Product Dimensions



MPMA-*xACxxxxxx-xxx* Dimensions

Multi-axis Linear Stage Cat. No.	A Stage Length (X-axis)	TL Travel (X-axis)	B Stage Length (Y-axis)	TU Travel (Y-axis)	C Mounting Locations (X-axis)
	mm (in.)	mm (in.)	mm (in.)	mm (in.)	Qty
MPMA-AACB4B4A0-S1C	581 (22.9)	140 (5.5)	581 (22.9)	140 (5.5)	10
MPMA-AACC0C0A0-S1C	641 (25.2)	200 (7.9)	641 (25.2)	200 (7.9)	
MPMA-AACC6C6A0-S1C	701 (27.6)	260 (10.2)	701 (27.6)	260 (10.2)	12
MPMA-AACD2D2A0-S1C	761 (30.0)	320 (12.6)	761 (30.0)	320 (12.6)	
MPMA-BACB4B4A0-S1C	581 (22.9)	140 (5.5)	581 (22.9)	140 (5.5)	10
MPMA-BACC0C0A0-S1C	641 (25.2)	200 (7.9)	641 (25.2)	200 (7.9)	
MPMA-BACC6C6A0-S1C	701 (27.6)	260 (10.2)	701 (27.6)	260 (10.2)	12
MPMA-BACD2D2A0-S1C	761 (30.0)	320 (12.6)	761 (30.0)	320 (12.6)	

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

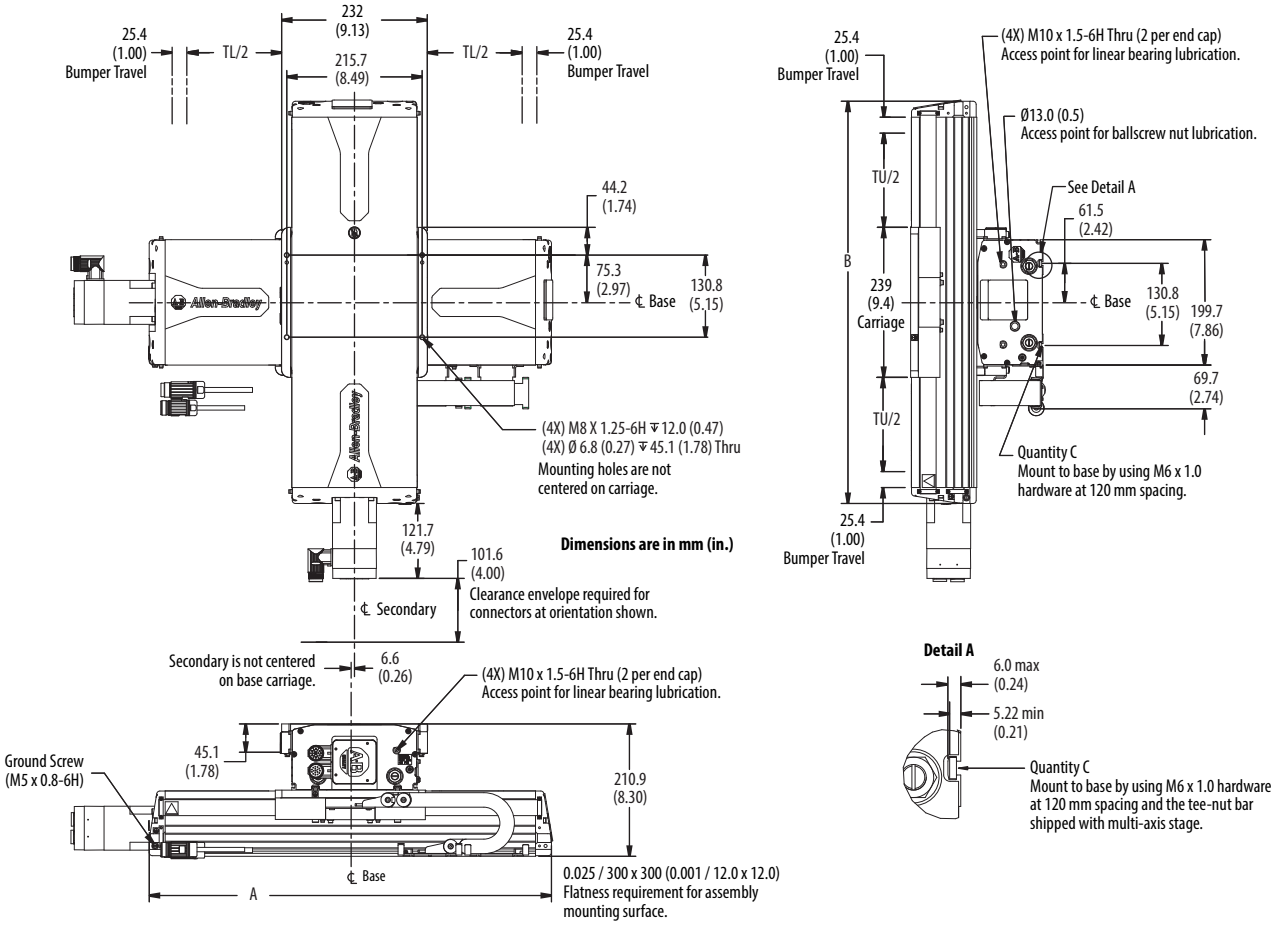
MPMA-xAPxxxxxx-xxx Product Specifications and Dimensions

These specifications apply to center stacked X/Y stages with 200 mm frame ballscrew driven X-axis and 200 mm frame ballscrew driven Y-axis. Maximum payload is 20 kg (44.0 lb). For heavier loads, contact your Rockwell Automation sales representative.

MPMA-*x*AP*xxxxxx-xxx* Product Specifications

Multi-axis Linear Stage Cat. No.	**Travel** mm (in.)			**Encoder Type**			**Bi-directional Repeatability** (µm)			**Weight, approx** kg (lb)
	X-axis	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	
MPMA-*x*APB8B8A0-S1C	180 (7.1)		N/A	Multi-turn high resolution encoder absolute feedback, 128 cycle/rev. (ballscrew only)		N/A	60	60	N/A	36.1 (79.4)
MPMA-*x*APC4C4A0-S1C	240 (9.4)									37.9 (83.4)
MPMA-*x*APD0D0A0-S1C	300 (11.8)									39.9 (87.8)
MPMA-*x*APE2E2A0-S1C	420 (16.5)									43.9 (96.6)
MPMA-*x*APG6G6A0-S1C	660 (26.0)									51.5 (113.3)

MPMA-*xAPxxxxxx-xxx* Product Dimensions



MPMA-*xAPxxxxxx-xxx* Dimensions

Multi-axis Linear Stage Cat. No.	A Stage Length (X-axis)	TL Travel (X-axis)	B Stage Length (Y-axis)	TU Travel (Y-axis)	C Mounting Locations (X-axis)
	mm (in.)	mm (in.)	mm (in.)	mm (in.)	Qty
MPMA-AAPB8B8A0-S1C	521 (20.5)	180 (7.1)	521 (20.5)	180 (7.1)	8
MPMA-AAPC4C4A0-S1C	581 (22.9)	240 (9.4)	581 (22.9)	240 (9.4)	10
MPMA-AAPD0D0A0-S1C	641 (25.2)	300 (11.8)	641 (25.2)	300 (11.8)	
MPMA-AAPE2E2A0-S1C	761 (30.0)	420 (16.5)	761 (30.0)	420 (16.5)	12
MPMA-AAPG6G6A0-S1C	1001 (39.4)	660 (26.0)	1001 (39.4)	660 (26.0)	16
MPMA-BAPB8B8A0-S1C	521 (20.5)	180 (7.1)	521 (20.5)	180 (7.1)	8
MPMA-BAPC4C4A0-S1C	581 (22.9)	240 (9.4)	581 (22.9)	240 (9.4)	10
MPMA-BAPD0D0A0-S1C	641 (25.2)	300 (11.8)	641 (25.2)	300 (11.8)	
MPMA-BAPE2E2A0-S1C	761 (30.0)	420 (16.5)	761 (30.0)	420 (16.5)	12
MPMA-BAPG6G6A0-S1C	1001 (39.4)	660 (26.0)	1001 (39.4)	660 (26.0)	16

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

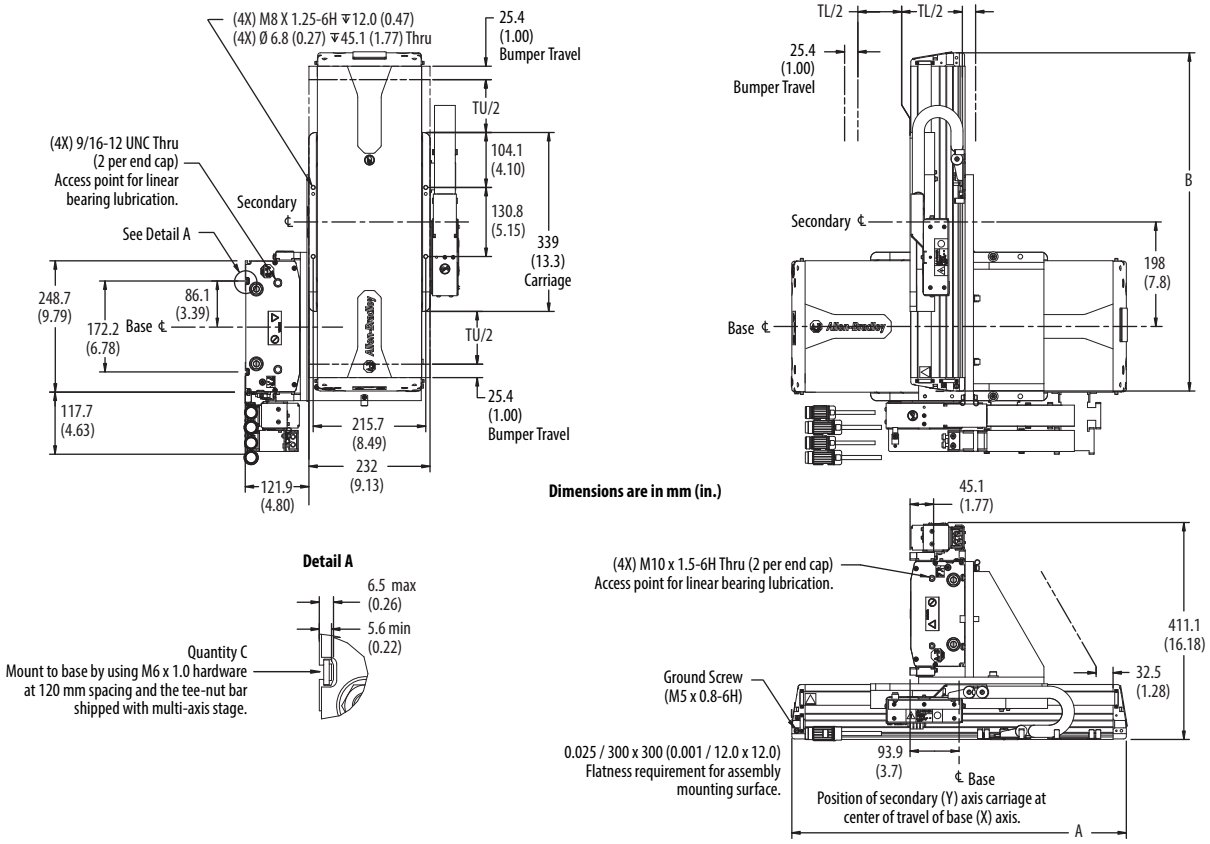
MPMA-xCBxxxxxx-xxx Product Specifications and Dimensions

These specifications apply to cartesian stacked X/Y stages with 250 mm frame linear motor driven X-axis and 200 mm frame linear motor driven Y-axis. Maximum payload is 20 kg (44.0 lb). For heavier loads, contact your Rockwell Automation sales representative.

MPMA-*x*CB*xxxxxx-xxx* Product Specifications

Multi-axis Linear Stage Cat. No.	**Travel** mm (in.)			**Encoder Type**			**Bi-directional Repeatability** (µm)			**Weight, approx** kg (lb)
	X-axis	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	
MPMA-*x*CBD2D2A0-S1C	320 (12.6)	320 (12.6)	N/A	5 micron resolution incremental magnetic linear encoder (direct-drive only)		N/A	15	15	N/A	69.7 (153.3)
MPMA-*x*CBE4D2A0-S1C	440 (17.3)									72.7 (159.9)
MPMA-*x*CBE4E4A0-S1C		440 (17.3)								74.9 (164.7)
MPMA-*x*CBF6E4A0-S1C	560 (22.0)									78.4 (172.4)
MPMA-*x*CBG8E4A0-S1C	680 (26.8)									81.4 (179.0)
MPMA-*x*CBG8F6A0-S1C		560 (22.0)								83.7 (184.1)
MPMA-*x*CBI0F6A0-S1C	800 (31.5)									87.2 (191.8)
MPMA-*x*CBJ2F6A0-S1C	920 (36.2)									90.3 (198.6)

MPMA-*x*CB*xxxxxx-xxx* Product Dimensions



MPMA-*x*CB*xxxxxx-xxx* Dimensions

Multi-axis Linear Stage Cat. No.	A Stage Length (X-axis) mm (in.)	TL Travel (X-axis) mm (in.)	B Stage Length (Y-axis) mm (in.)	TU Travel (Y-axis) mm (in.)	C Mounting Locations (X-axis) Qty
MPMA-ACBD2D2A0-S1C	761 (30.0)	320 (12.6)	761 (30.0)	320 (12.6)	12
MPMA-ACBE4D2A0-S1C	881 (34.7)	440 (17.3)			14
MPMA-ACBE4E4A0-S1C			881 (34.7)	440 (17.3)	
MPMA-ACBF6E4A0-S1C	1001 (39.4)	560 (22.0)			16
MPMA-ACBG8E4A0-S1C	1121 (44.1)	680 (26.8)			18
MPMA-ACBG8F6A0-S1C			1001 (39.4)	560 (22.0)	
MPMA-ACBI0F6A0-S1C	1241 (48.9)	800 (31.5)			20
MPMA-ACBJ2F6A0-S1C	1361 (53.6)	920 (36.2)			22
MPMA-BCBD2D2A0-S1C	761 (30.0)	320 (12.6)	761 (30.0)	320 (12.6)	12
MPMA-BCBE4D2A0-S1C	881 (34.7)	440 (17.3)			14
MPMA-BCBE4E4A0-S1C			881 (34.7)	440 (17.3)	
MPMA-BCBF6E4A0-S1C	1001 (39.4)	560 (22.0)			16
MPMA-BCBG8E4A0-S1C	1121 (44.1)	680 (26.8)			18
MPMA-BCBG8F6A0-S1C			1001 (39.4)	560 (22.0)	
MPMA-BCBI0F6A0-S1C	1241 (48.9)	800 (31.5)			20
MPMA-BCBJ2F6A0-S1C	1361 (53.6)	920 (36.2)			22

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

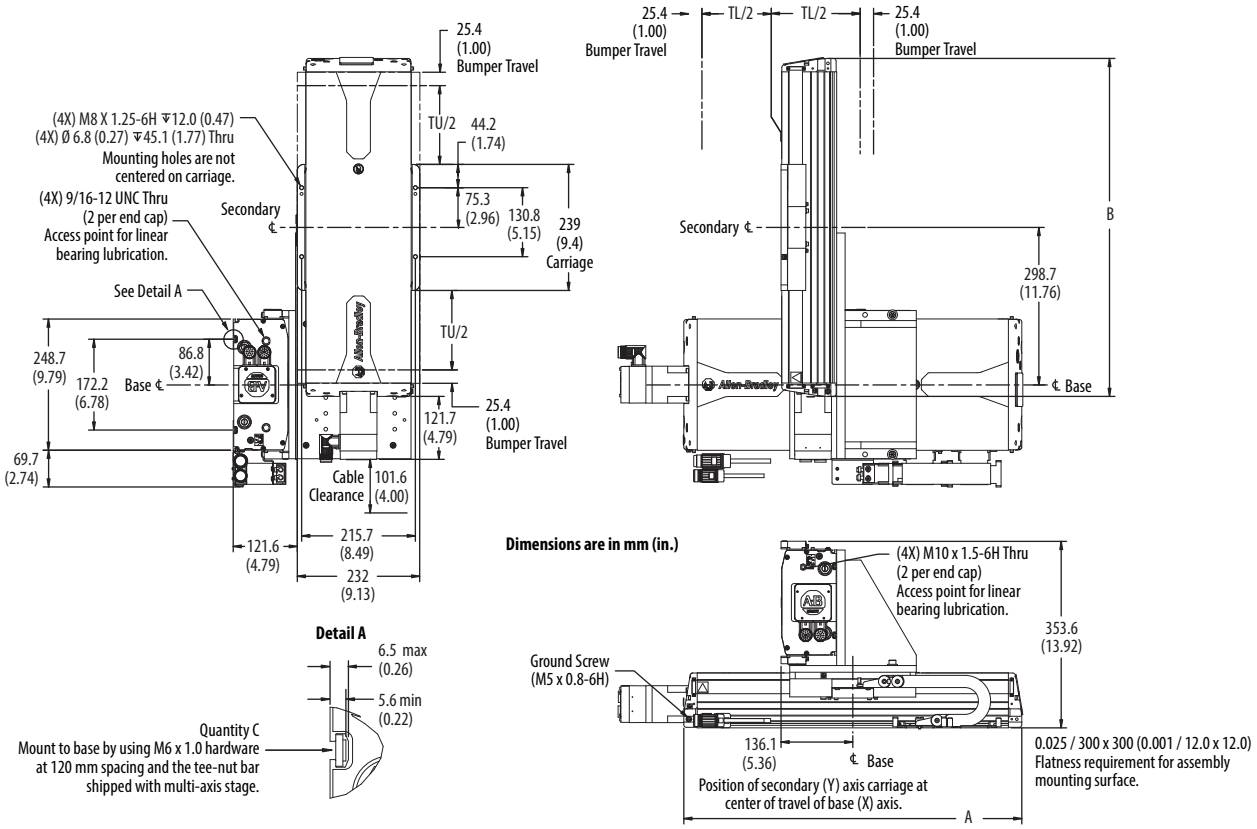
MPMA-xCQxxxxxx-xxx Product Specifications and Dimensions

These specifications apply to cartesian stacked X/Y stages with 250 mm frame ballscrew driven X-axis and 200 mm frame ballscrew driven Y-axis. Maximum payload is 25 kg (55.1 lb). For heavier loads, contact your Rockwell Automation sales representative.

MPMA-*xCQxxxxxx-xxx* Product Specifications

Multi-axis Linear Stage Cat. No.	**Travel** mm (in.)			**Encoder Type**			**Bi-directional Repeatability** (µm)			**Weight, approx** kg (lb)
	X-axis	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	
MPMA-*x*CQD0D0A0-S1C	300 (11.8)	300 (11.8)	N/A	Multi-turn high resolution encoder absolute feedback, 128 cycle/rev. (ballscrew only)		N/A	60	60	N/A	51.7 (113.7)
MPMA-*x*CQE2D0A0-S1C	420 (16.5)									54.3 (119.4)
MPMA-*x*CQE2E2A0-S1C		420 (16.5)								56.3 (123.8)
MPMA-*x*CQG6E2A0-S1C	660 (26.0)									61.4 (135.0)
MPMA-*x*CQG6G6A0-S1C		660 (26.0)								65.2 (143.4)
MPMA-*x*CQH8G6A0-S1C	780 (30.7)									67.7 (148.9)
MPMA-*x*CQJ0G6A0-S1C	900 (35.4)									70.2 (154.4)

MPMA-*xCQxxxxxx-xxx* Product Dimensions



MPMA-*xCQxxxxxx-xxx* Dimensions

Multi-axis Linear Stage Cat. No.	A Stage Length (X-axis)	TL Travel (X-axis)	B Stage Length (Y-axis)	TU Travel (Y-axis)	C Mounting Locations (X-axis)
	mm (in.)	mm (in.)	mm (in.)	mm (in.)	Qty
MPMA-ACQD0D0A0-S1C	641 (25.2)	300 (11.8)	641 (25.2)	300 (11.8)	10
MPMA-ACQE2D0A0-S1C	761 (30.0)	420 (16.5)			12
MPMA-ACQE2E2A0-S1C			761 (30.0)	420 (16.5)	
MPMA-ACQG6E2A0-S1C	1001 (39.4)	660 (26.0)			16
MPMA-ACQG6G6A0-S1C			1001 (39.4)	660 (26.0)	
MPMA-ACQH8G6A0-S1C	1121 (44.1)	780 (30.7)			18
MPMA-ACQJ0G6A0-S1C	1241 (48.9)	900 (35.4)			20
MPMA-BCQD0D0A0-S1C	641 (25.2)	300 (11.8)	641 (25.2)	300 (11.8)	10
MPMA-BCQE2D0A0-S1C	761 (30.0)	420 (16.5)			12
MPMA-BCQE2E2A0-S1C			761 (30.0)	420 (16.5)	
MPMA-BCQG6E2A0-S1C	1001 (39.4)	660 (26.0)			16
MPMA-BCQG6G6A0-S1C			1001 (39.4)	660 (26.0)	
MPMA-BCQH8G6A0-S1C	1121 (44.1)	780 (30.7)			18
MPMA-BCQJ0G6A0-S1C	1241 (48.9)	900 (35.4)			20

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

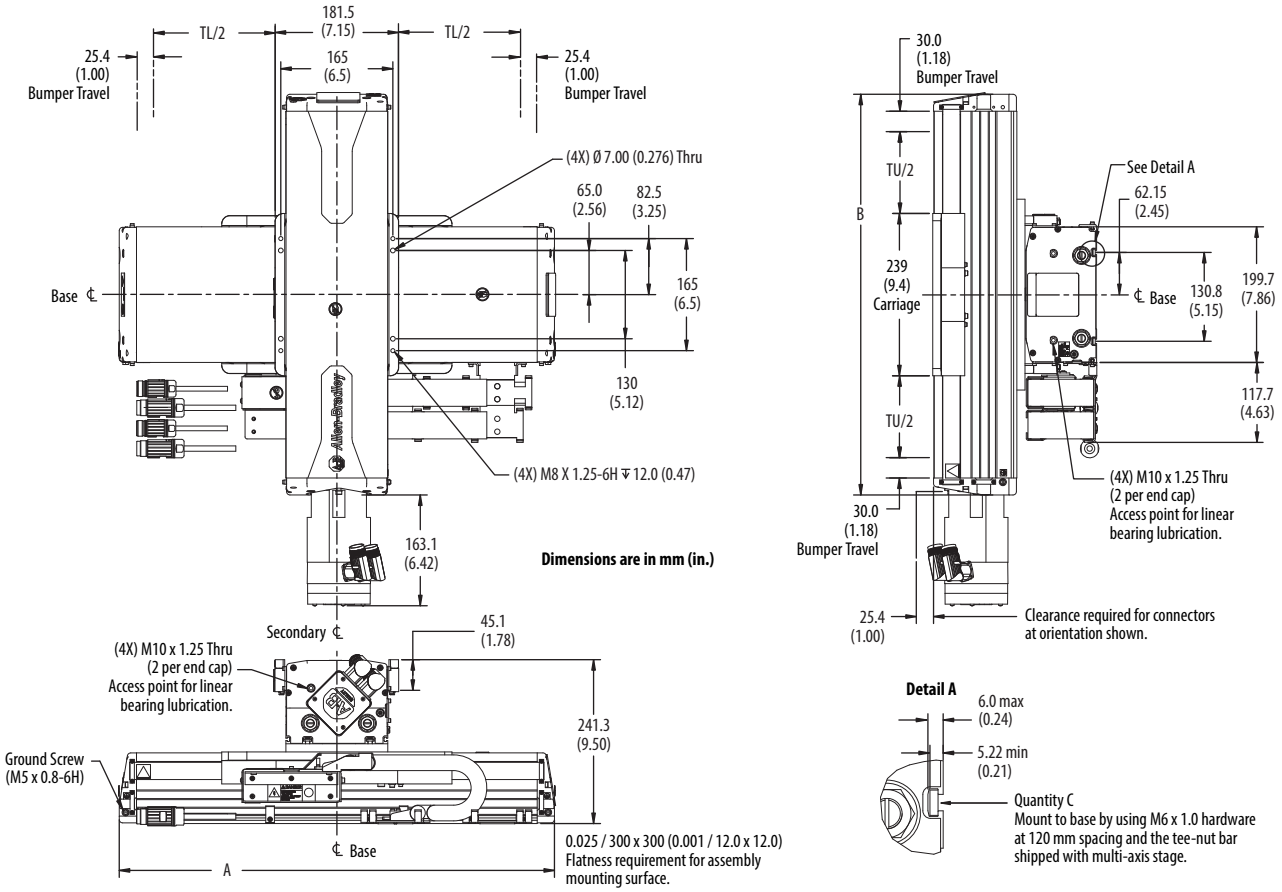
MPMA-xBExxxxxx-xxx Product Specifications and Dimensions

These specifications apply to center stacked X/Z stages with 200 mm frame linear motor driven X-axis and 150 mm frame ballscrew driven Z-axis. Maximum payload is 20 kg (44.0 lb). For heavier loads, contact your Rockwell Automation sales representative.

MPMA-*x*BE*xxxxxx-xxx* Product Specifications

Multi-axis Linear Stage Cat. No.	**Travel** mm (in.)			**Encoder Type**			**Bi-directional Repeatability** (µm)			**Weight, approx** kg (lb)
	X-axis	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	
MPMA-*x*BED2A0B8-S2C	320 (12.6)	N/A	180 (7.1)	5 micron resolution incremental magnetic linear encoder (direct-drive only)	N/A	Multi-turn high resolution encoder absolute feedback, 128 cycle/rev. (ballscrew only)	15	N/A	60	44.5 (98.0)
MPMA-*x*BED2A0D0-S2C			300 (11.8)							46.2 (101.7)
MPMA-*x*BEE4A0B8-S2C	440 (17.3)		180 (7.1)							46.7 (102.8)
MPMA-*x*BEE4A0D0-S2C			300 (11.8)							48.4 (106.6)
MPMA-*x*BEG8A0B8-S2C	680 (26.8)		180 (7.1)							51.2 (112.7)
MPMA-*x*BEG8A0D0-S2C			300 (11.8)							52.9 (116.9)

MPMA-*xBExxxxxx-xxx* Product Dimensions



MPMA-*xBExxxxxx-xxx* Dimensions

Multi-axis Linear Stage Cat. No.	A Stage Length (X-axis)	TL Travel (X-axis)	B Stage Length (Z-axis)	TU Travel (Z-axis)	C Mounting Locations (X-axis)
	mm (in.)	mm (in.)	mm (in.)	mm (in.)	Qty
MPMA-ABED2A0B8-S2C	761 (30.0)	320 (12.6)	530 (20.9)	180 (7.1)	12
MPMA-ABED2A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-ABEE4A0B8-S2C	881 (34.7)	440 (17.3)	530 (20.9)	180 (7.1)	14
MPMA-ABEE4A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-ABEG8A0B8-S2C	1121 (44.1)	680 (26.8)	530 (20.9)	180 (7.1)	18
MPMA-ABEG8A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBED2A0B8-S2C	761 (30.0)	320 (12.6)	530 (20.9)	180 (7.1)	12
MPMA-BBED2A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBEE4A0B8-S2C	881 (34.7)	440 (17.3)	530 (20.9)	180 (7.1)	14
MPMA-BBEE4A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBEG8A0B8-S2C	1121 (44.1)	680 (26.8)	530 (20.9)	180 (7.1)	18
MPMA-BBEG8A0D0-S2C			650 (25.6)	300 (11.8)	

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

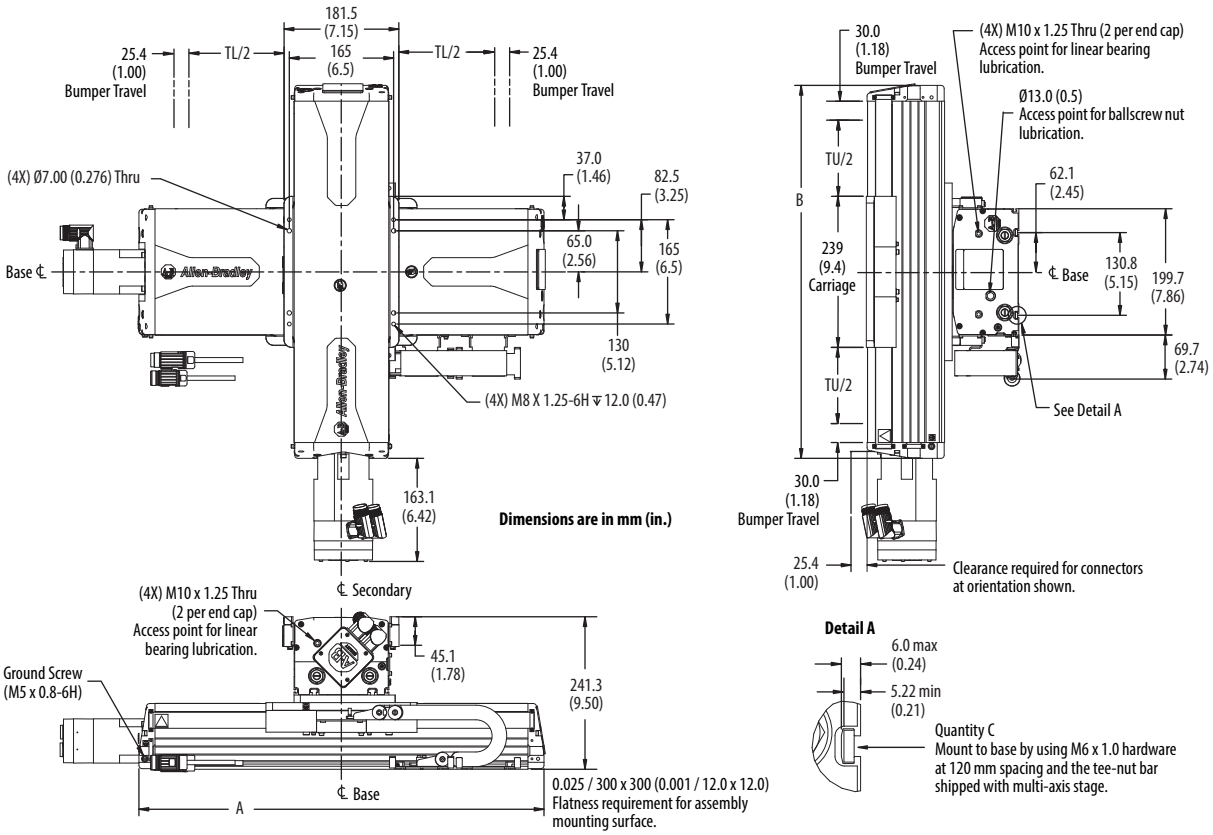
MPMA-xBlxxxxxx-xxx Product Specifications and Dimensions

These specifications apply to center stacked X/Z stages with 200 mm frame ballscrew driven X-axis and 150 mm frame ballscrew driven Z-axis. Maximum payload is 25 kg (55.1 lb). For heavier loads, contact your Rockwell Automation sales representative.

MPMA-*x*Bl*xxxxxx-xxx* Product Specifications

Multi-axis Linear Stage Cat. No.	**Travel** mm (in.)			**Encoder Type**			**Bi-directional Repeatability** (µm)			**Weight, approx** kg (lb)
	X-axis	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	
MPMA-*x*BID0A0B8-S2C	300 (11.8)	N/A	180 (7.1)	Multi-turn high resolution encoder absolute feedback, 128 cycle/rev. (ballscrew only)	N/A	Multi-turn high resolution encoder absolute feedback, 128 cycle/rev. (ballscrew only)	60	N/A	60	37.7 (83.0)
MPMA-*x*BID0A0D0-S2C			300 (11.8)							39.4 (86.8)
MPMA-*x*BIE2A0B8-S2C	420 (16.5)		180 (7.1)							39.7 (87.4)
MPMA-*x*BIE2A0D0-S2C			300 (11.8)							41.4 (91.2)
MPMA-*x*BIG6A0B8-S2C	660 (26.0)		180 (7.1)							43.5 (95.8)
MPMP-*x*BIG6A0D0-S2C			300 (11.8)							45.2 (99.5)

MPMA-*xBIxxxxxx-xxx* Product Dimensions



MPMA-*xBIxxxxxx-xxx* Dimensions

Multi-axis Linear Stage Cat. No.	A Stage Length (X-axis)	TL Travel (X-axis)	B Stage Length (Z-axis)	TU Travel (Z-axis)	C Mounting Locations (X-axis)
	mm (in.)	mm (in.)	mm (in.)	mm (in.)	Qty
MPMA-ABID0A0B8-S2C	641 (25.2)	300 (11.8)	530 (20.9)	180 (7.1)	10
MPMA-ABID0A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-ABIE2A0B8-S2C	761 (30.0)	420 (16.5)	530 (20.9)	180 (7.1)	12
MPMA-ABIE2A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-ABIG6A0B8-S2C	1001 (39.4)	660 (26.0)	530 (20.9)	180 (7.1)	16
MPMA-ABIG6A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBID0A0B8-S2C	641 (25.2)	300 (11.8)	530 (20.9)	180 (7.1)	10
MPMA-BBID0A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBIE2A0B8-S2C	761 (30.0)	420 (16.5)	530 (20.9)	180 (7.1)	12
MPMA-BBIE2A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBIG6A0B8-S2C	1001 (39.4)	660 (26.0)	530 (20.9)	180 (7.1)	16
MPMA-BBIG6A0D0-S2C			650 (25.6)	300 (11.8)	

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

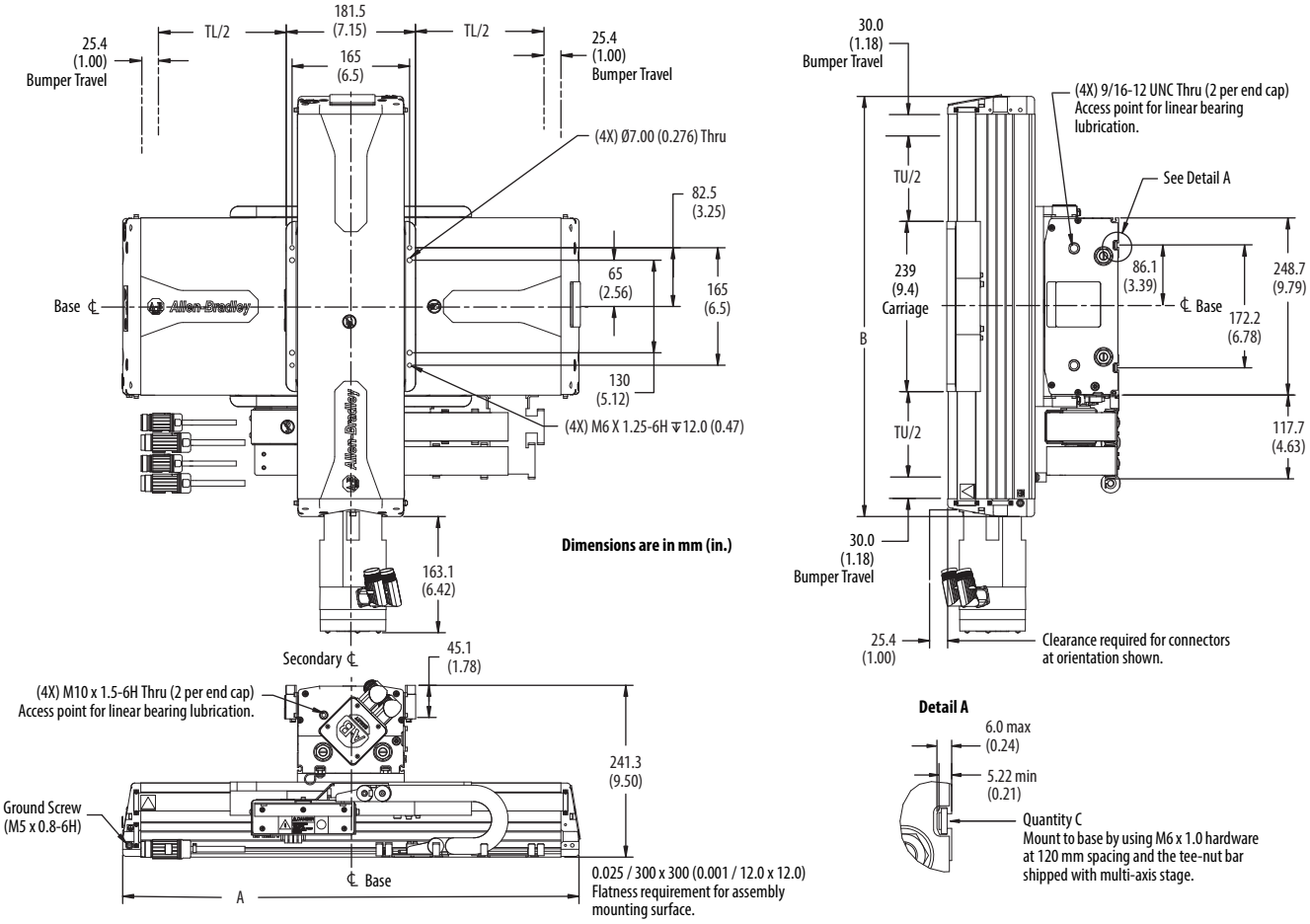
MPMA-xBDxxxxxx-xxx Product Specifications and Dimensions

These specifications apply to center stacked X/Z stages with 250 mm frame linear motor driven X-axis and 150 mm frame ballscrew driven Z-axis. Maximum payload is 20 kg (44.0 lb). For heavier loads, contact your Rockwell Automation sales representative.

MPMA-*x*BD*xxxxxx-xxx* Product Specifications

Multi-axis Linear Stage Cat. No.	**Travel** mm (in.)			**Encoder Type**			**Bi-directional Repeatability** (µm)			**Weight, approx** kg (lb)
	X-axis	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	**X-axis**	**Y-axis**	**Z-axis**	
MPMA-*x*BDD2A0B8-S2C	320 (12.6)	N/A	180 (7.1)	5 micron resolution incremental magnetic linear encoder (direct-drive only)	N/A	Multi-turn high resolution encoder absolute feedback, 128 cycle/rev. (ballscrew only)	15	N/A	60	52.2 (114.9)
MPMA-*x*BDD2A0D0-S2C			300 (11.8)							53.9 (118.7)
MPMA-*x*BDE4A0B8-S2C	440 (17.3)		180 (7.1)							55.2 (121.5)
MPMA-*x*BDE4A0D0-S2C			300 (11.8)							56.9 (125.3)
MPMA-*x*BDE4A0E2-S2C			420 (16.5)							58.6 (129.0)
MPMA-*x*BDG8A0B8-S2C	680 (26.8)		180 (7.1)							61.7 (135.8)
MPMA-*x*BDG8A0D0-S2C			300 (11.8)							63.4 (139.6)
MPMA-*x*BDG8A0E2-S2C			420 (16.5)							65.1 (143.3)
MPMA-*x*BDI0A0B8-S2C	800 (31.5)		180 (7.1)							65.2 (143.5)
MPMA-*x*BDI0A0D0-S2C			300 (11.8)							66.9 (147.3)
MPMA-*x*BDI0A0E2-S2C			420 (16.5)							68.6 (151.0)
MPMA-*x*BDJ2A0D0-S2C	920 (36.2)		300 (11.8)							70.0 (154.1)
MPMA-*x*BDJ2A0E2-S2C			420 (16.5)							71.7 (157.8)
MPMA-*x*BDJ2A0F4-S2C			540 (21.3)							73.5 (161.8)

MPMA-*x*BD*xxxxxx-xxx* Product Dimensions



MPMA-*xBDxxxxxx-xxx* Dimensions

Multi-axis Linear Stage Cat. No.	A Stage Length (X-axis)	TL Travel (X-axis)	B Stage Length (Z-axis)	TU Travel (Z-axis)	C Mounting Locations (X-axis)
	mm (in.)	mm (in.)	mm (in.)	mm (in.)	Qty
MPMA-ABDD2A0B8-S2C	761 (30.0)	320 (12.6)	530 (20.9)	180 (7.1)	12
MPMA-ABDD2A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-ABDE4A0B8-S2C	881 (34.7)	440 (17.3)	530 (20.9)	180 (7.1)	14
MPMA-ABDE4A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-ABDE4A0E2-S2C			770 (30.3)	420 (16.5)	
MPMA-ABDG8A0B8-S2C	1121 (44.1)	680 (26.8)	530 (20.9)	180 (7.1)	18
MPMA-ABDG8A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-ABDG8A0E2-S2C			770 (30.3)	420 (16.5)	
MPMA-ABDI0A0B8-S2C	1241 (48.9)	800 (31.5)	530 (20.9)	180 (7.1)	20
MPMA-ABDI0A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-ABDI0A0E2-S2C			770 (30.3)	420 (16.5)	
MPMA-ABDJ2A0D0-S2C	1361 (53.6)	920 (36.2)	650 (25.6)	300 (11.8)	22
MPMA-ABDJ2A0E2-S2C			770 (30.3)	420 (16.5)	
MPMA-ABDJ2A0F4-S2C			890 (35.0)	540 (21.3)	
MPMA-BBDD2A0B8-S2C	761 (30.0)	320 (12.6)	530 (20.9)	180 (7.1)	12
MPMA-BBDD2A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBDE4A0B8-S2C	881 (34.7)	440 (17.3)	530 (20.9)	180 (7.1)	14
MPMA-BBDE4A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBDE4A0E2-S2C			770 (30.3)	420 (16.5)	
MPMA-BBDG8A0B8-S2C	1121 (44.1)	680 (26.8)	530 (20.9)	180 (7.1)	18
MPMA-BBDG8A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBDG8A0E2-S2C			770 (30.3)	420 (16.5)	
MPMA-BBDI0A0B8-S2C	1241 (48.9)	800 (31.5)	530 (20.9)	180 (7.1)	20
MPMA-BBDI0A0D0-S2C			650 (25.6)	300 (11.8)	
MPMA-BBDI0A0E2-S2C			770 (30.3)	420 (16.5)	
MPMA-BBDJ2A0D0-S2C	1361 (53.6)	920 (36.2)	650 (25.6)	300 (11.8)	22
MPMA-BBDJ2A0E2-S2C			770 (30.3)	420 (16.5)	
MPMA-BBDJ2A0F4-S2C			890 (35.0)	540 (21.3)	

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MP-Series and TL-Series Electric Cylinders

MP-Series Electric Cylinders

TL-Series Electric Cylinders

With the MP-Series and TL-Series™ Electric Cylinders, your applications experience flexible servo control ideal for solutions requiring forces to be built up quickly and positions that need to be approached accurately. Available in three ISO 15552 pneumatic-class frame sizes (32, 40, and 63), these durable, quiet, and energy-efficient non-rotating stainless steel piston rod actuators are an excellent upgrade for pneumatic systems.

With the ability to synchronize and coordinate with multi-axis machine motions, the MP-Series and TL-Series cylinders provide a dynamic, precise response for a wide range of linear motion applications. When seamlessly integrated into the Rockwell Automation® Integrated Architecture™, MP-Series and TL-Series electric cylinders use the Studio 5000 Logix Designer application to extend and retract with precise positioning, velocity or force. In Force mode, an electric cylinder continues to push the load in a manner similar to an air cylinder, but with the convenience of a limit established by using state-of-the art software.

MP-Series and TL-Series Electric Cylinder Features

- Fully assembled and ready to mount cylinders contribute to reductions in mechanical design engineering, assembly, wiring, and commissioning time.
- State-of-the-art design features ballscrew construction with linear stroke lengths up to 800 mm (32 in.), absolute high-resolution feedback, and speeds up to 1.0 m/s (39.4 in/s).
- Operates without externally mounted limit or home switches and retains position during power loss for faster machine restart.
- Rated for 100% duty cycle and designed for repeatable, reproducible performance over the actuator's operating life.
- Linear feed force of up to 2500 N (562 lb).
- Positioning repeatability of ±0.02 mm (0.0008 in.).
- No piping, valving, air, or oil supply required.
- Sizing and engineering with compatible servo drives is made easy with Motion Analyzer software and online CAD files.
- Commissioning is simplified by the use of standard Allen-Bradley motor power and feedback cables.
- Full set-up and programming support by using Allen-Bradley Logix5000™ controllers. Studio 5000 Logix Designer and Ultraware software make setup and commissioning fast and easy.
- Optional 24V DC holding brakes.

Catalog Numbers - MP-Series and TL-Series Electric Cylinders

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your actuator. For questions regarding product availability, contact your Allen-Bradley distributor.

MP-Series and TL-Series Electric Cylinders

xx AR - x x xxx x - x x A

Motor Mounting (1)
A = Axial (in-line)
B = Top, Bulletin MPAR parallel
D = Left, Bulletin MPAR parallel
E = Right, Bulletin MPAR parallel

Holding Brake (1)
2 = No Brake
4 = 24V DC Brake

Feedback (1)
B = Multi-turn, 17-bit (131,072 counts) absolute, battery backed, serial protocol (TL-Series, all frame sizes)
M = Multi-turn, 1024 sin/cos, absolute encoder, Hiperface protocol (MP-Series, frame size 63)
V = Multi-turn, 128 sin/cos, absolute encoder, Hiperface protocol (MP-Series, frame size 32 and 40)

Mechanical Drive/Screw Lead, Motor Type (2)
B = 3.0 mm/rev (0.118 in./rev)
C = 5.0 mm/rev (0.197 in./rev)
E = 10.0 mm/rev (0.394 in./rev)
F = 12.7 mm/rev (0.50 in./rev)
H = 20.0 mm/rev (0.787 in./rev)

Rod Stroke Length (2)

100 = 100 mm (3.94 in.)	400 = 400 mm (15.75 in.)
200 = 200 mm (7.87 in.)	600 = 600 mm (23.62 in.)
300 = 300 mm (11.81 in.)	800 = 800 mm (31.50 in.)

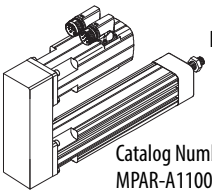
Actuator Frame Size
1 = 32
2 = 40
3 = 63

Voltage Class/Designator
A = 200V (applies to MP-Series and TL-Series actuators)
B = 400V (applies to MP-Series actuators)
X = Actuator cylinder replacement part (refer to Actuator Cylinders on page 93 for ordering examples)

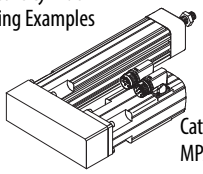
Actuator Type
AR = Actuator Rod

Actuator Series
MP = MP-Series
TL = TL-Series

MP-Series Electric Cylinder
Parallel Mounting Examples



Catalog Number
MPAR-A1100B-V2B



Catalog Number
MPAR-A1100B-V2D

(1) This field does not apply to actuator cylinder replacement parts.
(2) Not all combinations are available. Only the configurations as listed in MP-Series Electric Cylinders Performance Specifications on page 91 and TL-Series Electric Cylinders Performance Specifications on page 91 are available.

MP-Series and TL-Series Electric Cylinder Accessories

MP AR - xx xxxxxx

Accessory Item Number

Accessory Type
NA = Axial (in-line) Mounting Accessory
NP = Parallel Mounting Accessory
NE = Rod-end Accessory

Actuator Type
AR = Actuator Rod

Actuator Series
MP = MP-Series or TL-Series Actuator Accessory

Motor Connector/Cable Compatibility

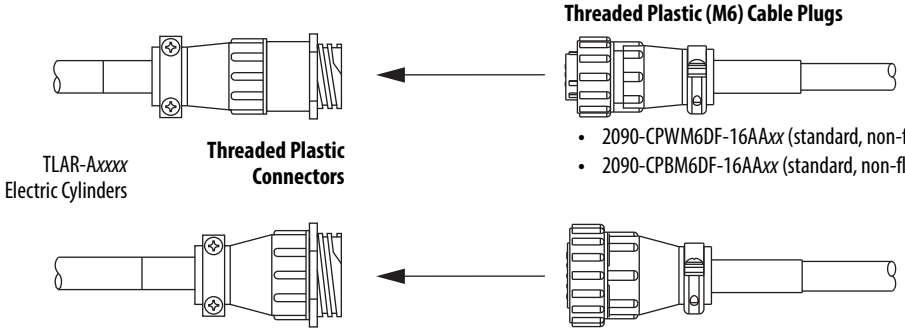
MP-Series (Bulletin MPAR) electric cylinders are equipped with SpeedTec DIN connectors.

- MPAR-A/B*xxxx* electric cylinders
- Receives M4 and M7 cable plugs (O-ring required for M4)
- Attach M7 cable plug with one-quarter turn

- 2090-CFBM7DF-CEAA*xx* (standard, non-flex) flying-lead, feedback cables
- 2090-CFBM7DD-CEAA*xx* (standard, non-flex) drive-end connector, feedback cables
- 2090-CFBM7DF-CEAF*xx* (continuous-flex) flying-lead, feedback cables
- 2090-CFBM7DD-CEAF*xx* (continuous-flex) drive-end connector, feedback cables

- 2090-CPWM7DF-16AA*xx* (standard, non-flex) power-only cables
- 2090-CPBM7DF-16AA*xx* (standard, non-flex) power/brake cables
- 2090-CPWM7DF-16AF*xx* (continuous-flex) power-only cables
- 2090-CPBM7DF-16AF*xx* (continuous-flex) power/brake cables

TL-Series (Bulletin TLAR) electric cylinders are equipped with circular plastic connectors.

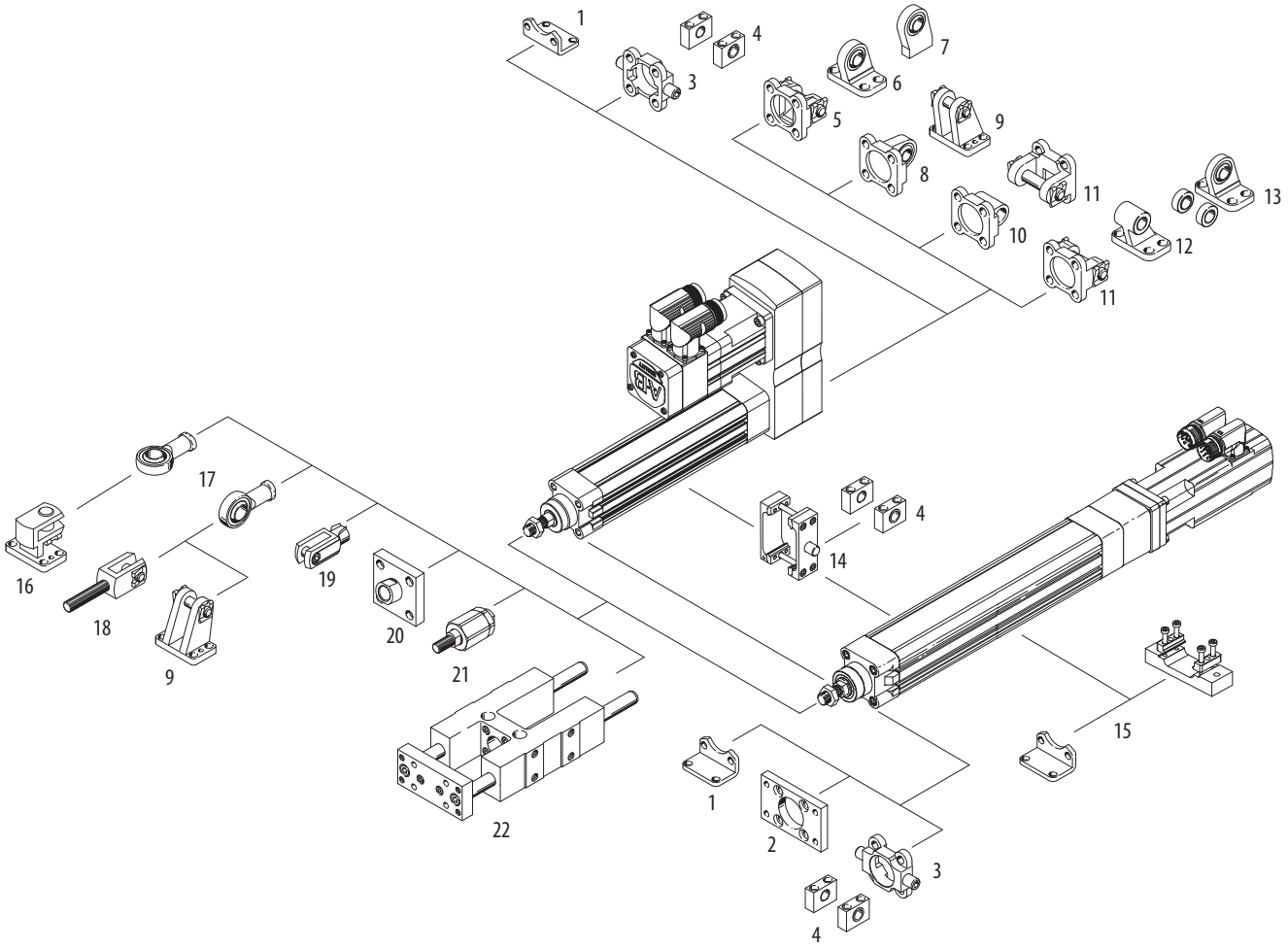


- 2090-CPWM6DF-16AA*xx* (standard, non-flex) power-only cables
- 2090-CPBM6DF-16AA*xx* (standard, non-flex) power-with-brake cables

- 2090-CFBM6DF-CBAA*xx* (standard, non-flex) flying-lead, feedback cables
- 2090-CFBM6DD-CCAA*xx* (standard, non-flex) drive-end connector, feedback cables

MP-Series and TL-Series Electric Cylinders Accessories

These accessory items apply to MP-Series and TL-Series electric cylinders.



Mounting Attachments

Accessory Item		Description	Cat. No. Standard	Cat. No. Corrosion Resistant	Dimensions
1	Foot mount	Parallel applications. Includes two foot mounts and mounting bolts.	MPAR-NP1743*xx*	MPAR-NP1769*xx*	page 108
2	Front flange mounting	In-line or parallel applications. Includes mounting bolts.	MPAR-NA17437*x*	MPAR-NA16184*x*	page 109
3	Trunnion flange		MPAR-NA17441*x*	MPAR-NA16185*x*	page 109
4	Trunnion supports	In-line or parallel applications. Use with items 3 and 14. Two supports are included as shown.	MPAR-NA329*xx*	MPAR-NA16187*x*	page 110
5	Swivel flange (pin, narrow)	Parallel applications. Use with items 6 or 7. Includes swivel flange, pivot pin, mounting screws, and retaining clip.	MPAR-NP17438*x*	N/A	page 111
6	Clevis foot (spherical bearing)	Parallel applications. Use with item 5. Includes 1 flange with spherical bearing.	MPAR-NP3174*x*	N/A	page 112
7	Clevis foot (weld-on)	Parallel applications. Use with item 5. Includes 1 bracket with spherical bearing.	MPAR-NP317*xx*	N/A	page 111
8	Swivel flange (spherical bearing)	Parallel applications. Use with item 9. Includes 1 flange with spherical bearing and mounting bolts.	MPAR-NP174*xxx*	N/A	page 113

Mounting Attachments (continued)

Accessory Item		Description	Cat. No. Standard	Cat. No. Corrosion Resistant	Dimensions
9	Clevis foot (pin)	In-line or parallel applications. Use with items 8 or 17. Includes mount, pivot pin, and retaining clip.	MPAR-NA3176*x*	N/A	page 113
10	Swivel flange	Parallel applications. Use with item 11. Includes flange and mounting bolts.	MPAR-NP17440*x*	N/A	page 114
11	Swivel flange (pin, wide)	Parallel applications. Use with items 10, 12, or 13. Includes swivel flange, pivot pin, mounting screws, and retaining clips.	MPAR-NP17439*x*	MPAR-NP17694*x*	page 114
12	Clevis foot	Parallel applications. Use with item 11.	MPAR-NP3389*x*	MPAR-NP16184*x*	page 115
13	Clevis foot (spherical bearing)	Parallel applications. Use with item 11. Includes flange with spherical bearing and cylindrical spacers.	MPAR-NP556*x*	N/A	page 116
14	Trunnion mount	In-line or parallel applications. For mounting anywhere along the cylinder barrel profile. Cannot be mounted in the vicinity of the motor with parallel motor attachment.	MPAR-NA16352*x*	N/A	page 117
15	Foot mounting kit	In-line applications. For mounting anywhere along the cylinder barrel profile. Kit includes bracket, body clamps, foot mount attachment, and mounting bolts.	MPAR-NA17499*x*	N/A	page 118
16	Clevis foot (right angle)	In-line or parallel applications. Use with item 17. Includes clevis foot, pivot pin, and retaining clip.	MPAR-NA317*xx*	N/A	page 119

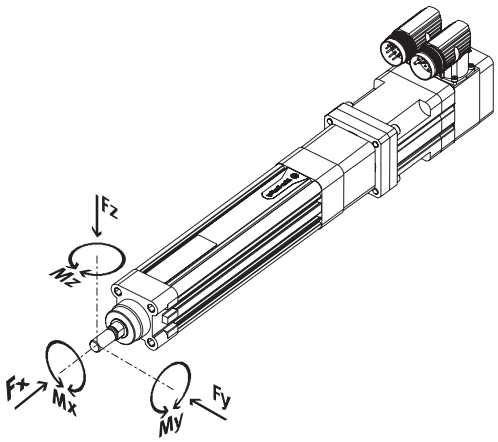
Rod-end Attachments

Accessory Item		Description	Cat. No. Standard	Cat. No. Corrosion Resistant	Dimensions
17	Rod eye	In-line or parallel applications. Use with items 16, 18, or 9. Includes rod eye and hex nut.	MPAR-NE926*x*	MPAR-NE19558*x*	page 120
18	Rod clevis (threaded rod)	In-line or parallel applications. Use with item 17. For spherical connection of cylinders with rod eye. Includes rod clevis, pivot pin, and retaining clip.	MPAR-NE*xxxxx*	N/A	page 121
19	Rod clevis (threaded hole)	In-line or parallel applications. Use with item 17. Permits a swivelling movement of the cylinder in one plane. Includes rod clevis, pivot pin, and retaining clip.	MPAR-NE614*x*	MPAR-NE135*xx*	page 121
20	Coupling piece	In-line or parallel applications. Links the piston rod-end of the cylinder to the machine parts to be moved. Used to compensate for radial misalignment. Includes flange plate and threaded coupling.	MPAR-NE3612*x*	N/A	page 123
21	Self-aligning rod coupler	In-line or parallel applications. Links the piston rod-end of the cylinder to the machine parts to be moved. Used to compensate for radial and angular misalignment. Includes rod coupler and hex nut.	MPAR-NE614*x*	N/A	page 124
22	Rod guide	In-line or parallel applications. Used to protect piston rod against radial or torsional side loads.	MPAR-NE*xxxxx*	N/A	page 127

MP-Series and TL-Series Electric Cylinders Rod Load Ratings

Electric cylinders must have the weight of the load supported and guided separately so that only axial force (no radial load) is required of the piston rod throughout the complete extend and retract motion. If some residual radial and/or torsional loading remains unavoidable, a rod guide can be added. Refer to Motion Analyzer software, version 4.7 or later, for assistance when making these calculations and to determine when a rod guide is needed.

Maximum Permissible Lateral Forces Fy_{max} and Fz_{max} on the Piston Rod



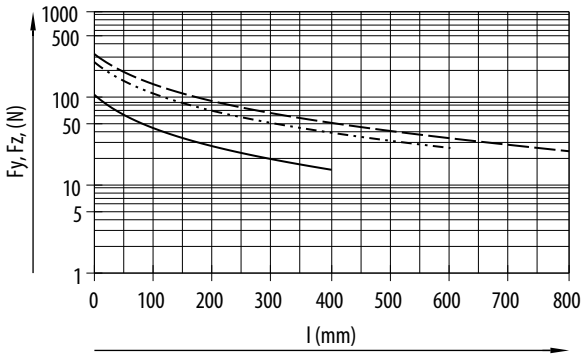
If there are two or more forces and torques acting simultaneously on the piston rod, the following equations must be true:

$$\frac{[Fy]}{Fy\,max} + \frac{[Fz]}{Fz\,max} + \frac{[My]}{My\,max} + \frac{[Mz]}{Mz\,max} \leq 1$$

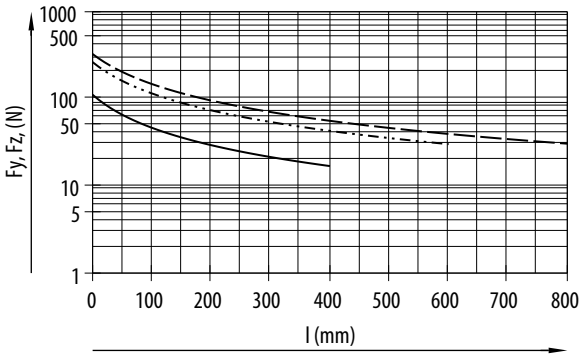
$$[Fx] \leq Fx\,max$$

$$[Mx] \leq Mx\,max$$

Horizontal Mounting Position



Vertical Mounting Position



MP-Series or TL-Series (frame 32)
MP-Series or TL-Series (frame 40)
MP-Series or TL-Series (frame 63)

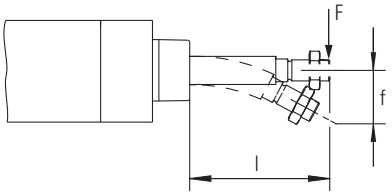
Load Force Ratings

Attribute	MP-Series and TL-Series Electric Cylinders		
	Frame 32	Frame 40	Frame 63
Fx max (static)	600 N (135 lb)	1400 N (315 lb)	3700 N (832 lb)
Mx max	1 N•m (8.8 lb•in)	1 N•m (8.8 lb•in)	1.5 N•m (13.3 lb•in)
My max, Mz max	8 N•m (70.7 lb•in)	20 N•m (177 lb•in)	27 N•m (239 lb•in)

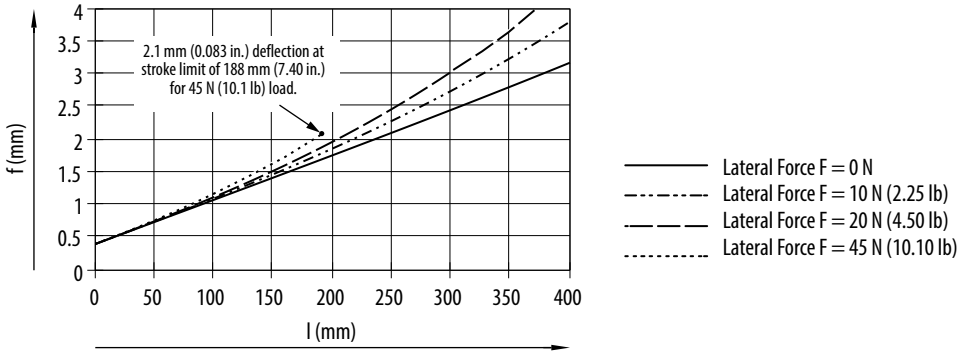
MP-Series and TL-Series Electric Cylinders Piston Rod Deflection Specifications

These specifications are for determining the amount of shaft deflection to expect from a given load.

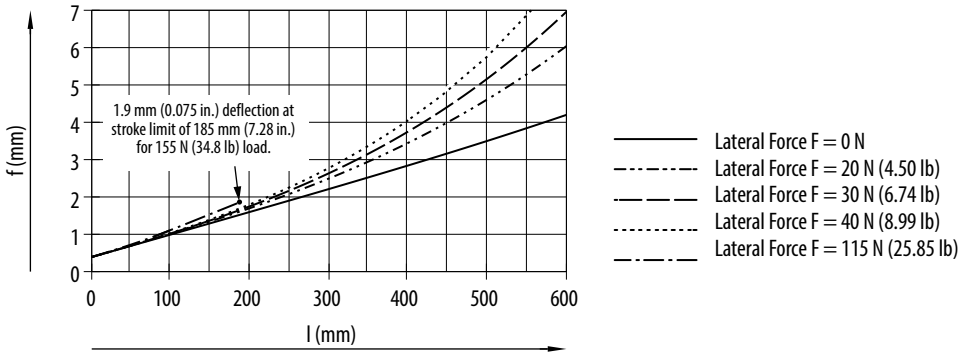
Piston-rod deflection specifications are a function of stroke length.



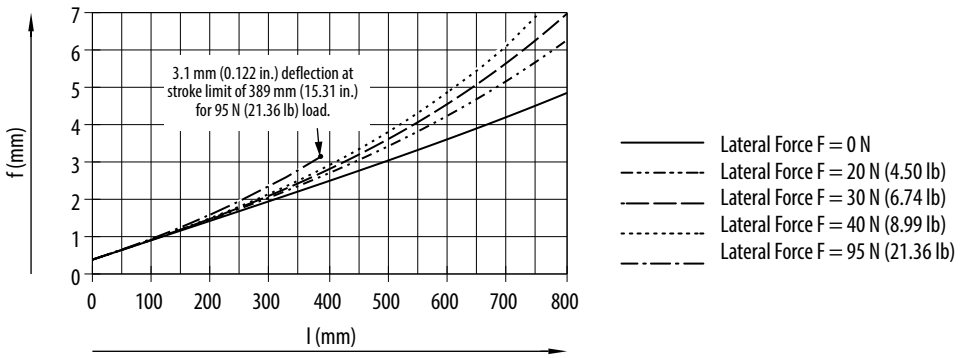
MP-Series and TL-Series Electric Cylinders (frame 32)



MP-Series and TL-Series Electric Cylinders (frame 40)



MP-Series and TL-Series Electric Cylinders (frame 63)



MP-Series and TL-Series Electric Cylinders Life Specifications

Electric cylinder life specifications (running performance) are based on a combination of tested and calculated data. If the parameters of your application are different, your results can be different. The achievable running performance, expressed as L (km), is a function of mean feed force F, according to DIN 69051-4 as shown below and illustrated on page 89. Refer to Motion Analyzer software, version 4.7 or later, for assistance when making these calculations and determining the running performance for your application.

Calculation of the Feed Force Fx

The peak feed force value must not exceed the maximum feed force within a movement cycle. In the case of vertical operation, the peak value is generally achieved during the acceleration phase of the upwards stroke. If the maximum feed force is exceeded, you can increase wear and shorten the service life of the ballscrew. The maximum speed must likewise not be exceeded.

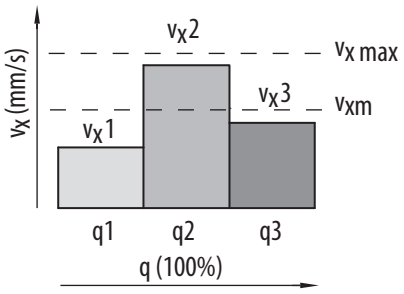
$F_x \leq F_{x\,max}$
and
$V_x \leq V_{x\,max}$

During operation, the continuous feed force can be briefly exceeded up to the maximum feed force. The continuous feed force must, however, be adhered to when averaged over a movement cycle.

$F_{xm} \leq F_{x\,cont}$

Mean Feed Speed (to DIN 69051-4)

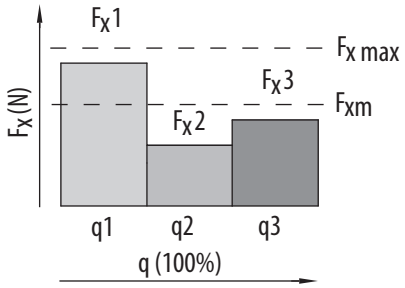
$$v_{xm} = \sum |v_x| \times \frac{q}{100} + |v_{x1}| \times \frac{q1}{100} + |v_{x2}| \times \frac{q2}{100} + |v_{x3}| \times \frac{q3}{100} + \ldots$$



Mean Feed Force (to DIN 69051-4)

$$F_{xm} = \sqrt[3]{\sum |F_x|^3 \times \frac{|v_x|}{|v_{xm}|} \times \frac{q}{100}} =$$

$$F_{xm} = \sqrt[3]{|F_{x1}|^3 \times \frac{|v_{x1}|}{|v_{xm}|} \times \frac{q1}{100} + |F_{x2}|^3 \times \frac{|v_{x2}|}{|v_{xm}|} \times \frac{q2}{100} + |F_{x3}|^3 \times \frac{|v_{x3}|}{|v_{xm}|} \times \frac{q3}{100} + \ldots}$$

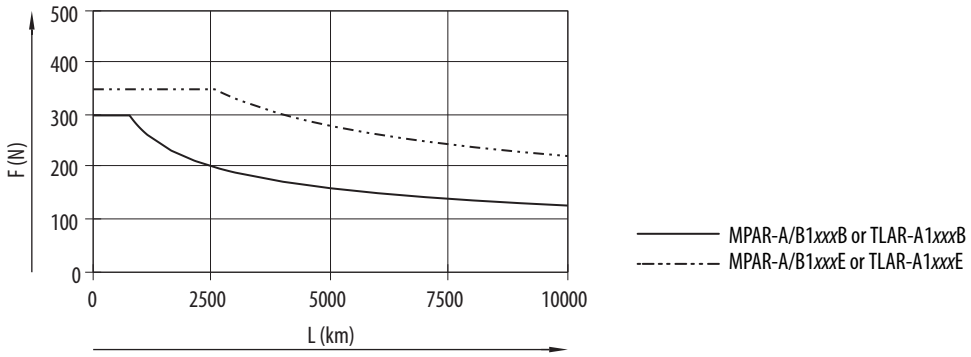


F_x = Feed Force
F_{xm} = Mean Feed Force
F_{xmax} = Maximum Feed Force
F_{xcont} = Continuous Feed Force
q = % of Time

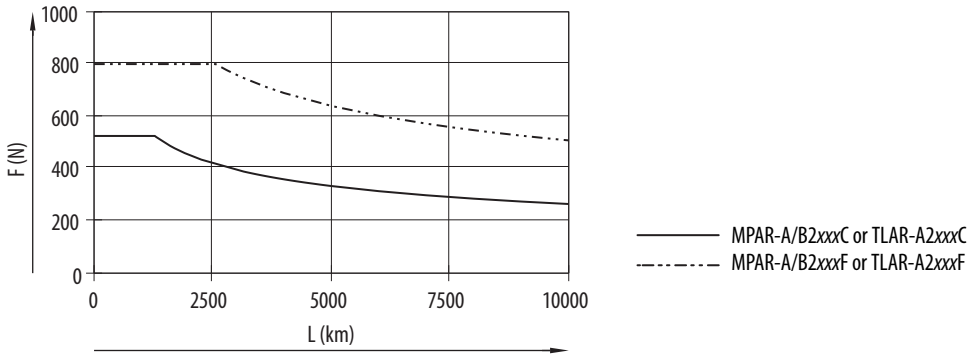
V_x = Feed Speed
V_{xm} = Mean Feed Speed
V_{xmax} = Maximum Feed Speed

The achievable running performance, L (km), is a function of mean feed force F, according to DIN 69051-4 as illustrated in the figures below.

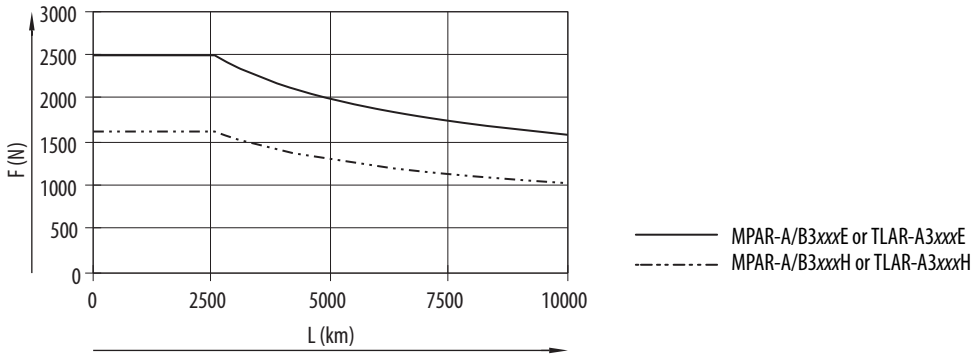
MP-Series and TL-Series Electric Cylinders (frame 32)



MP-Series and TL-Series Electric Cylinders (frame 40)



MP-Series and TL-Series Electric Cylinders (frame 63)



Technical Specifications - MP-Series and TL-Series Electric Cylinders

MP-Series and TL-Series Electric Cylinders General Specifications

Attribute	Frame 32	Frame 40	Frame 63
Construction design	Ballscrew servo-driven non-rotating piston rod (1)		
Piston rod thread	M10x1.25	M12x1.25	M16x1.50
Working stroke	100 mm (3.94 in.) 200 mm (7.87 in.) 300 mm (11.81 in.) 400 mm (15.75 in.)	100 mm (3.94 in.) 200 mm (7.87 in.) 300 mm (11.81 in.) 400 mm (15.75 in.) 600 mm (23.62 in.)	100 mm (3.94 in.) 200 mm (7.87 in.) 300 mm (11.81 in.) 400 mm (15.75 in.) 600 mm (23.62 in.) 800 mm (31.50 in.)
Protection against torsion/guide	Plain bearing guide		
Stroke reserve	0 mm		
Angle of rotation at the piston rod, max	±0.30°	±0.25°	±0.20°
Impact energy (E) at the end positions $E=0.5 \times m \times v^2$	0.0001 J	0.0002 J	0.0004 J
Positioning repeatability, max	±0.02 mm (0.0008 in.)		
Reversing backlash, max (2)	0.05 mm (0.002 in.)		
Duty cycle	100%		
Position sensing (feedback)	Multi-turn absolute encoder		
Type of mounting	Via female threads		
	Via accessories		
Mounting position	Any		

(1) The maximum rotational force (Mx) applied in the application is limited as specified in Load Force Ratings on page 86.

(2) In new condition.

MP-Series and TL-Series Electric Cylinders Motor Brake Specifications

Electric Cylinder Cat. No.	Holding Force N (lb)	Coil Current at 24V DC A	Brake Response Time		
			Release ms	Engage (by using external arc suppression device)	
				MOV ms	Diode ms
TLAR-A1*xxx*B	300 (67)	0.18…0.22	21	7	40
TLAR-A1*xxx*E	350 (79)	0.333…0.407	22	13	73
TLAR-A2*xxx*C	525 (118)				
TLAR-A2*xxx*F	552 (124)				
TLAR-A3*xxx*E	1414 (318)	0.351…0.429	42	14	86
TLAR-A3*xxx*H	707 (159)				
MPAR-A/B1*xxx*B	300 (67)	0.43…0.53	23	9	18
MPAR-A/B1*xxx*E	350 (79)				
MPAR-A/B2*xxx*C	525 (118)				
MPAR-A/B2*xxx*F	800 (180)	0.46…0.56	58	20	42
MPAR-A/B3*xxx*E	2364 (531)	0.45…0.55	50	20	110
MPAR-A/B3*xxx*H	1625 (365)	0.576…0.704	110	25	160

MP-Series Electric Cylinders Performance Specifications

Electric Cylinder (1) Cat. No.	Frame	Peak Feed Force N (lb)	Continuous Stall Force N (lb)	Speed, max m/s (in/s)	Stroke Lengths mm (in.)	Acceleration, max m/s^2 (in/s^2)
MPAR-A1*xxx*B-V*xx* MPAR-B1*xxx*B-V*xx*	32	300 (67)	240 (54)	0.15 (5.9)	100 (3.94) 200 (7.87) 300 (11.81) 400 (15.75)	6.0 (236)
MPAR-A1*xxx*E-V*xx* MPAR-B1*xxx*E-V*xx*		350 (79)	280 (63)	0.50 (19.7)		
MPAR-A2*xxx*C-V*xx* MPAR-B2*xxx*C-V*xx*	40	525 (118)	420 (94)	0.25 (9.8)	100 (3.94) 200 (7.87) 300 (11.81) 400 (15.75) 600 (23.62)	
MPAR-A2*xxx*F-V*xx* MPAR-B2*xxx*F-V*xx*		800 (180)	640 (144)	0.64 (25.2)		
MPAR-A3*xxx*E-M*xx* MPAR-B3*xxx*E-M*xx*	63	2500 (562)	2000 (450)	0.50 (19.7)	100 (3.94) 200 (7.87) 300 (11.81) 400 (15.75) 600 (23.62) 800 (31.50)	
MPAR-A3*xxx*H-M*xx* MPAR-B3*xxx*H-M*xx*		1625 (365)	1300 (292)	1.0 (39.4)		

(1) Stroke length replaces *xxx* in each catalog number.

TL-Series Electric Cylinders Performance Specifications

Electric Cylinder (1) Cat. No.	Frame	Peak Feed Force N (lb)	Continuous Stall Force N (lb)	Speed, max m/s (in/s)	Stroke Lengths mm (in.)	Acceleration, max m/s^2 (in/s^2)
TLAR-A1*xxx*B-B*x*A	32	300 (67)	240 (54)	0.15 (5.9)	100 (3.94) 200 (7.87) 300 (11.81) 400 (15.75)	6.0 (236)
TLAR-A1*xxx*E-B*x*A		350 (79)	280 (63)	0.50 (19.7)		
TLAR-A2*xxx*C-B*x*A	40	525 (118)	420 (94)	0.25 (9.8)	100 (3.94) 200 (7.87) 300 (11.81) 400 (15.75) 600 (23.62)	
TLAR-A2*xxx*F-B*x*A		800 (180)	520 (117)	0.64 (25.2)		
TLAR-A3*xxx*E-B*x*A	63	2500 (562)	1750 (393)	0.50 (19.7)	100 (3.94) 200 (7.87) 300 (11.81) 400 (15.75) 600 (23.62) 800 (31.50)	
TLAR-A3*xxx*H-B*x*A		1625 (365)	975 (219)	1.0 (39.4)		

(1) Stroke length replaces *xxx* in each catalog number.

MP-Series and TL-Series Electric Cylinders Moving Load Specifications

Attribute	MPAR-*x*1*xxx*B TLAR-A1*xxx*B	MPAR-*x*1*xxx*E TLAR-A1*xxx*E	MPAR-*x*2*xxx*C TLAR-A2*xxx*C	MPAR-*x*2*xxx*F TLAR-A2*xxx*F	MPAR-*x*3*xxx*E TLAR-A3*xxx*E	MPAR-*x*3*xxx*H TLAR-A3*xxx*H
	Frame 32, Weight, approx g (oz)		Frame 40, Weight, approx g (oz)		Frame 63, Weight, approx g (oz)	
Moving load with 0 mm stroke	170 (6.0)	200 (7.05)	310 (10.93)	380 (13.40)	810 (28.57)	810 (1.79)
Moving load per 10 mm stroke	6.9 (0.24)	6.9 (0.24)	8.9 (0.31)	8.9 (0.31)	12.8 (0.45)	12.8 (0.028)

Weight Specifications

MP-Series Electric Cylinders (weight of cylinder with non-brake motor)

Electric Cylinder Cat. No.	Weight, [1] approx kg (lb)
MPAR-*x*1100B-V2A	2.6 (5.73)
MPAR-*x*1100B-V2B/D/E	3.5 (7.72)
MPAR-*x*1200B-V2A	2.9 (6.39)
MPAR-*x*1200B-V2B/D/E	3.8 (8.377)
MPAR-*x*1300B-V2A	3.2 (7.05)
MPAR-*x*1300B-V2B/D/E	4.1 (9.04)
MPAR-*x*1400B-V2A	3.5 (7.72)
MPAR-*x*1400B-V2B/D/E	4.5 (9.92)
MPAR-*x*1100E-V2A	3.0 (6.61)
MPAR-*x*1100E-V2B/D/E	3.8 (8.377)
MPAR-*x*1200E-V2A	3.3 (7.27)
MPAR-*x*1200E-V2B/D/E	4.1 (9.04)
MPAR-*x*1300E-V2A	3.6 (7.94)
MPAR-*x*1300E-V2B/D/E	4.5 (9.92)
MPAR-*x*1400E-V2A	4.0 (8.82)
MPAR-*x*1400E-V2B/D/E	4.8 (10.58)

Electric Cylinder Cat. No.	Weight, approx kg (lb)
MPAR-*x*2100C-V2A	3.7 (8.16) [1]
MPAR-*x*2100C-V2B/D/E	4.4 (9.70) [1]
MPAR-*x*2200C-V2A	4.1 (9.04) [1]
MPAR-*x*2200C-V2B/D/E	4.9 (10.80) [1]
MPAR-*x*2300C-V2A	4.6 (10.14) [1]
MPAR-*x*2300C-V2B/D/E	5.3 (11.68) [1]
MPAR-*x*2400C-V2A	5.0 (11.02) [1]
MPAR-*x*2400C-V2B/D/E	5.8 (12.79) [1]
MPAR-*x*2600C-V2A	6.0 (11.02) [1]
MPAR-*x*2600C-V2B/D/E	6.7 (14.77) [1]
MPAR-*x*2100F-V2A	4.2 (9.26) [3]
MPAR-*x*2100F-V2B/D/E	6.5 (14.33) [3]
MPAR-*x*2200F-V2A	4.7 (10.36) [3]
MPAR-*x*2200F-V2B/D/E	7.0 (15.43) [3]
MPAR-*x*2300F-V2A	5.2 (11.46) [3]
MPAR-*x*2300F-V2B/D/E	7.5 (16.53) [3]
MPAR-*x*2400F-V2A	5.6 (12.34) [3]
MPAR-*x*2400F-V2B/D/E	7.9 (17.42) [3]
MPAR-*x*2600F-V2A	6.6 (14.55) [3]
MPAR-*x*2600F-V2B/D/E	8.9 (19.62) [3]

Electric Cylinder Cat. No.	Weight, approx kg (lb)
MPAR-*x*3100E-M2A	9.5 (20.94) [2]
MPAR-*x*3100E-M2B/D/E	13.6 (29.98) [2]
MPAR-*x*3200E-M2A	10.3 (22.71) [2]
MPAR-*x*3200E-M2B/D/E	14.4 (31.75) [2]
MPAR-*x*3300E-M2A	11.1 (24.47) [2]
MPAR-*x*3300E-M2B/D/E	15.2 (33.51) [2]
MPAR-*x*3400E-M2A	11.9 (26.23) [2]
MPAR-*x*3400E-M2B/D/E	16.1 (35.49) [2]
MPAR-*x*3600E-M2A	13.5 (29.76) [2]
MPAR-*x*3600E-M2B/D/E	17.7 (39.02) [2]
MPAR-*x*3800E-M2A	15.2 (33.51) [2]
MPAR-*x*3800E-M2B/D/E	19.3 (42.55) [2]
MPAR-*x*3100H-M2A	9.3 (20.50) [4]
MPAR-*x*3100H-M2B/D/E	13.2 (29.10) [4]
MPAR-*x*3200H-M2A	10.1 (22.27) [4]
MPAR-*x*3200H-M2B/D/E	14.0 (30.86) [4]
MPAR-*x*3300H-M2A	10.9 (24.03) [4]
MPAR-*x*3300H-M2B/D/E	14.8 (32.63) [4]
MPAR-*x*3400H-M2A	11.7 (25.79) [4]
MPAR-*x*3400H-M2B/D/E	15.7 (34.61) [4]
MPAR-*x*3600H-M2A	13.4 (29.54) [4]
MPAR-*x*3600H-M2B/D/E	17.3 (38.14) [4]
MPAR-*x*3800H-M2A	15.0 (33.07) [4]
MPAR-*x*3800H-M2B/D/E	18.9 (41.67) [4]

(1) If ordering MPAR-*x*1*xxxx*-V4*x* or MPAR-*x*2*xxx*C-V4*x* electric cylinder with brake, add 0.2 kg (0.4 lb).
(2) If ordering MPAR-*x*3*xxx*E-M4*x* electric cylinder with brake, add 1.0 kg (2.2 lb).
(3) If ordering MPAR-*x*2*xxx*F-V4*x* electric cylinder with brake, add 0.4 kg (0.9 lb).
(4) If ordering MPAR-*x*3*xxx*H-M4*x* electric cylinder with brake, add 1.7 kg (3.7 lb).

TL-Series Electric Cylinders (weight of cylinder with non-brake motor)

Electric Cylinder Cat. No.	Weight, approx kg (lb)
TLAR-A1100B-B2A	1.7 (3.75) (3)
TLAR-A1200B-B2A	2.0 (4.41) (3)
TLAR-A1300B-B2A	2.4 (5.29) (3)
TLAR-A1400B-B2A	2.7 (5.95) (3)
TLAR-A1100E-B2A	2.4 (5.29) (4)
TLAR-A1200E-B2A	2.8 (6.17) (4)
TLAR-A1300E-B2A	3.1 (6.83) (4)
TLAR-A1400E-B2A	3.4 (7.49) (4)

Electric Cylinder Cat. No.	Weight, approx (1) kg (lb)
TLAR-A2100C-B2A	3.1 (6.83)
TLAR-A2200C-B2A	3.6 (7.94)
TLAR-A2300C-B2A	4.0 (8.82)
TLAR-A2400C-B2A	4.5 (9.92)
TLAR-A2600C-B2A	5.4 (11.90)
TLAR-A2100F-B2A	3.7 (8.16)
TLAR-A2200F-B2A	4.1 (9.04)
TLAR-A2300F-B2A	4.6 (10.14)
TLAR-A2400F-B2A	5.1 (11.24)
TLAR-A2600F-B2A	6.0 (13.23)

Electric Cylinder Cat. No.	Weight, approx (2) kg (lb)
TLAR-A3100E-B2A	8.7 (19.18)
TLAR-A3200E-B2A	9.5 (20.94)
TLAR-A3300E-B2A	10.3 (22.71)
TLAR-A3400E-B2A	11.1 (24.47)
TLAR-A3600E-B2A	12.7 (28.0)
TLAR-A3800E-B2A	14.3 (31.52)
TLAR-A3100H-B2A	8.7 (19.18)
TLAR-A3200H-B2A	9.5 (20.94)
TLAR-A3300H-B2A	10.3 (22.71)
TLAR-A3400H-B2A	11.1 (24.47)
TLAR-A3600H-B2A	12.7 (28.0)
TLAR-A3800H-B2A	14.3 (31.52)

(1) If ordering TLAR-A2*xxxx*-B4A electric cylinder with brake, add 0.4 kg (0.9 lb).
(2) If ordering TLAR-A3*xxxx*-B4A electric cylinder with brake, add 0.6 kg (1.3 lb).
(3) If ordering TLAR-A1*xxx*B-B4A electric cylinder with brake, add 0.2 kg (0.4 lb).
(4) If ordering TLAR-A1*xxx*E-B4A electric cylinder with brake, add 0.5 kg (1.1 lb).

Actuator Cylinders (weight of replacement cylinder)

Actuator Cylinder (1) Cat. No.	Weight, approx kg (lb)
MPAR-X1100B	1.1 (2.43)
MPAR-X1200B	1.4 (3.09)
MPAR-X1300B	1.7 (3.75)
MPAR-X1400B	2.1 (4.63)
MPAR-X1100E	1.1 (2.43)
MPAR-X1200E	1.4 (3.09)
MPAR-X1300E	1.8 (3.97)
MPAR-X1400E	2.1 (4.63)

Actuator Cylinder (1) Cat. No.	Weight, approx kg (lb)
MPAR-X2100C	1.7 (3.75)
MPAR-X2200C	2.2 (4.85)
MPAR-X2300C	2.6 (5.73)
MPAR-X2400C	3.1 (6.83)
MPAR-X2600C	4.0 (8.82)
MPAR-X2100F	1.8 (3.97)
MPAR-X2200F	2.3 (5.07)
MPAR-X2300F	2.8 (6.17)
MPAR-X2400F	3.2 (7.05)
MPAR-X2600F	4.2 (9.26)

Actuator Cylinder (1) Cat. No.	Weight, approx kg (lb)
MPAR-X3100E	3.8 (8.38)
MPAR-X3200E	4.6 (10.14)
MPAR-X3300E	5.4 (11.90)
MPAR-X3400E	6.3 (13.89)
MPAR-X3600E	7.9 (17.42)
MPAR-X3800E	9.5 (20.94)
MPAR-X3100H	3.8 (8.38)
MPAR-X3200H	4.6 (10.14)
MPAR-X3300H	5.4 (11.90)
MPAR-X3400H	6.3 (13.89)
MPAR-X3600H	7.9 (17.42)
MPAR-X3800H	9.5 (20.94)

(1) Replacement actuator cylinders apply to MP-Series and TL-Series electric cylinders. For example, if ordering a replacement cylinder for electric cylinder catalog numbers MPAR-A2100C-V2A or TLAR-A2100C-B2A, the replacement actuator cylinder catalog number is MPAR-X2100C.

MP-Series and TL-Series Electric Cylinders Mounting Accessories

Accessory Item		Frame	Cat. No.	Weight, approx g (oz)
1	Foot mount attachment	32	MPAR-NP174369	140 (4.94)
		40	MPAR-NP174370	280 (9.87)
		63	MPAR-NP174372	550 (19.40)
2	Flange mounting	32	MPAR-NA174376	240 (8.46)
		40	MPAR-NA174377	280 (9.88)
		63	MPAR-NA174379	690 (24.34)
3	Trunnion flange	32	MPAR-NA174411	130 (4.58)
		40	MPAR-NA174412	240 (8.46)
		63	MPAR-NA174414	600 (21.16)
4	Trunnion support	32	MPAR-NA32959	130 (4.58)
		40	MPAR-NA32960	400 (14.11)
		63	MPAR-NA32961	480 (16.93)
5	Swivel flange (pin, narrow)	32	MPAR-NP174383	90 (3.17)
		40	MPAR-NP174384	120 (4.23)
		63	MPAR-NP174386	320 (11.29)
7	Clevis foot (weld-on)	32	MPAR-NP31747	105 (3.70)
		40	MPAR-NP31748	160 (5.64)
		63	MPAR-NP31747	365 (12.87)
9	Clevis foot (pin)	32	MPAR-NA31761	220 (7.76)
		40	MPAR-NA31762	300 (10.58)
		63	MPAR-NA31764	580 (20.46)
11	Swivel flange (pin, wide)	32	MPAR-NP174390	100 (3.53)
		40	MPAR-NP174391	150 (5.29)
		63	MPAR-NP174393	370 (13.05)
12	Clevis foot	32	MPAR-NP33890	170 (6.00)
		40	MPAR-NP33891	240 (8.46)
		63	MPAR-NP33893	520 (18.34)
13	Clevis foot (spherical bearing)	32	MPAR-NP5561	160 (5.64)
		40	MPAR-NP5562	270 (9.52)
		63	MPAR-NP5564	605 (21.34)
15	Foot mounting kit	32	MPAR-NA174991	240 (8.46)
		40	MPAR-NA174992	310 (10.93)
		63	MPAR-NA174993	510 (17.99)

Accessory Item		Frame	Cat. No.	Weight, approx g (oz)
1	Foot mount attachment (corrosion resistant)	32	MPAR-NP176937	140 (4.94)
		40	MPAR-NP176938	280 (9.87)
		63	MPAR-NP176940	550 (19.40)
2	Flange mounting (corrosion resistant)	32	MPAR-NA161846	240 (8.46)
		40	MPAR-NA161847	300 (10.58)
		63	MPAR-NA161849	710 (25.04)
3	Trunnion flange (corrosion resistant)	32	MPAR-NA161852	150 (5.29)
		40	MPAR-NA161853	260 (9.17)
		63	MPAR-NA161855	640 (22.57)
4	Trunnion support (corrosion resistant)	32	MPAR-NA161874	200 (7.05)
		40	MPAR-NA161875	330 (11.64)
		63	MPAR-NA161876	440 (11.64)
6	Clevis foot (spherical bearing)	32	MPAR-NP31740	185 (6.53)
		40	MPAR-NP31741	295 (10.40)
		63	MPAR-NP31743	655 (23.10)
8	Swivel flange (spherical bearing)	32	MPAR-NP174397	85 (3.00)
		40	MPAR-NP174398	125 (4.41)
		63	MPAR-NP174400	280 (9.88)
10	Swivel flange	32	MPAR-NP174404	75 (2.64)
		40	MPAR-NP174405	100 (3.53)
		63	MPAR-NP174407	250 (8.82)
11	Swivel flange (corrosion resistant)	32	MPAR-NP176944	100 (3.53)
		40	MPAR-NP176945	150 (5.29)
		63	MPAR-NP176947	370 (13.05)
12	Clevis foot (corrosion resistant)	32	MPAR-NP161840	120 (4.23)
		40	MPAR-NP161841	210 (7.41)
		63	MPAR-NP161843	450 (15.87)
14	Trunnion mounting	32	MPAR-NA163525	210 (7.41)
		40	MPAR-NA163526	390 (13.76)
		63	MPAR-NA163528	890 (31.39)
16	Clevis foot (right angle)	32	MPAR-NA31768	290 (10.23)
		40	MPAR-NA31769	360 (12.70)
		63	MPAR-NA31771	880 (31.0)

MP-Series and TL-Series Electric Cylinders Rod-end Accessories

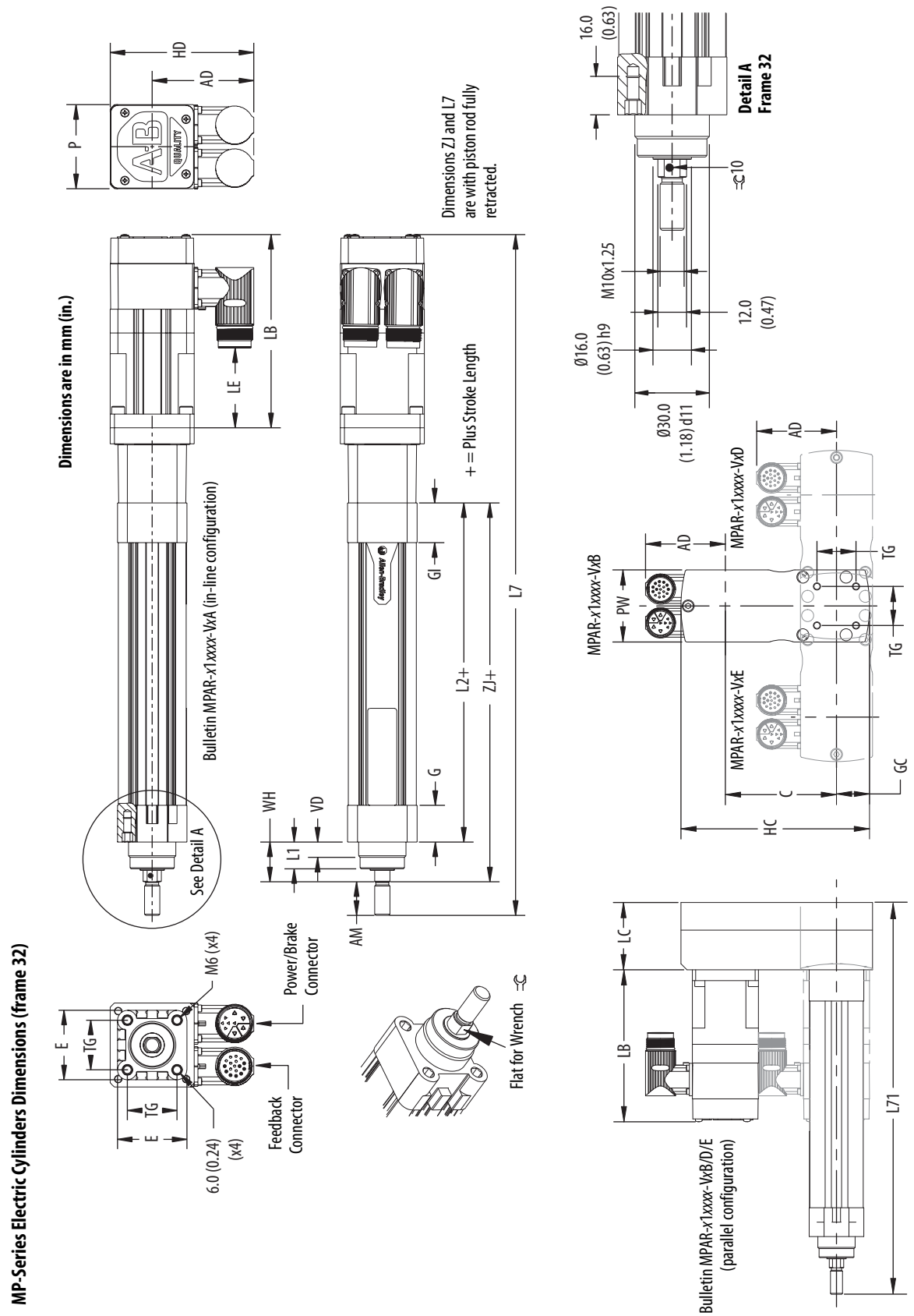
Accessory Item		Frame	Cat. No.	Weight, approx g (oz)
17	Rod eye	32	MPAR-NE9261	70 (2.47)
		40	MPAR-NE9262	110 (3.53)
		63	MPAR-NE9263	210 (7.41)
18	Rod clevis (threaded rod)	32	MPAR-NE32954	140 (4.94)
		40	MPAR-NE10767	210 (7.41)
		63	MPAR-NE10768	500 (17.64)
19	Rod clevis (corrosion resistant)	32	MPAR-NE13569	110 (3.88)
		40	MPAR-NE13570	180 (6.35)
		63	MPAR-NE13571	400 (14.11)
21	Self-aligning rod coupler	32	MPAR-NE6140	210 (7.41)
		40	MPAR-NE6141	220 (7.76)
		63	MPAR-NE6142	650 (22.93)

Accessory Item		Frame	Cat. No.	Weight, approx g (oz)
17	Rod eye (corrosion resistant)	32	MPAR-NE195582	70 (2.47)
		40	MPAR-NE195583	110 (3.53)
		63	MPAR-NE195584	210 (7.41)
19	Rod clevis	32	MPAR-NE6144	110 (3.88)
		40	MPAR-NE6145	170 (6.00)
		63	MPAR-NE6146	390 (13.76)
20	Coupling piece	32	MPAR-NE36125	110 (3.88)
		40	MPAR-NE36126	180 (6.35)
		63	MPAR-NE36127	250 (8.82)

MP-Series and TL-Series Electric Cylinders Rod Guide (item 22) Accessories

Rod Guide Cat. No.	Frame	Stroke Length mm (in.)	Weight, approx kg (lb)
MPAR-NE34494	32	100 (3.9)	1.7 (3.75)
MPAR-NE34496		200 (7.9)	1.9 (4.19)
MPAR-NE34497		320 (12.6)	2.1 (4.63)
MPAR-NE150290		400 (15.7)	2.3 (5.07)
MPAR-NE34500	40	100 (3.9)	2.7 (5.95)
MPAR-NE34502		200 (7.9)	3.0 (6.61)
MPAR-NE34504		320 (12.6)	3.4 (7.50)
MPAR-NE150291		400 (15.7)	3.7 (8.16)
MPAR-NE34505		500 (19.7)	4.0 (8.82)
MPAR-NE34514	63	100 (3.9)	5.9 (13.01)
MPAR-NE34516		200 (7.9)	6.4 (14.11)
MPAR-NE34518		320 (12.6)	7.0 (15.43)
MPAR-NE34519		400 (15.7)	7.4 (16.31)
MPAR-NE34520		500 (19.7)	7.9 (17.42)

Dimensions - MP-Series Electric Cylinders



MP-Series Electric Cylinder Dimensions (in-line configuration, frame 32)

Electric Cylinder Cat. No.	L7 (1) mm (in.)	LB (1) mm (in.)	LE (2) mm (in.)	P mm (in.)	AD mm (in.)	HD mm (in.)	AM mm (in.)	G mm (in.)	G1 mm (in.)	L1 mm (in.)	L2 mm (in.)	ZJ (3) mm (in.)	VD mm (in.)	WH mm (in.)	E mm (in.)	TG mm (in.)
MPAR-*x*1100B-V2A	445.7 (17.55)	126.5 (4.98)	52.4 (2.06)	55.0 (2.17)	66.5 (2.62)	94.0 (3.70)	22.0 (0.87)	24.0 (0.94)	26.0 (1.02)	18.0 (0.71)	122.0 (4.80)	148.0 (5.83)	10.0 (0.39)	26.0 (1.02)	45.5 (1.79)	32.5 (1.28)
MPAR-*x*1200B-V2A	545.7 (21.48)															
MPAR-*x*1300B-V2A	645.7 (25.42)															
MPAR-*x*1400B-V2A	745.7 (29.36)															
MPAR-*x*1100E-V2A	470.7 (18.53)	151.5 (5.96)	77.2 (3.04)													
MPAR-*x*1200E-V2A	570.7 (22.47)															
MPAR-*x*1300E-V2A	670.7 (26.41)															
MPAR-*x*1400E-V2A	770.7 (30.34)															

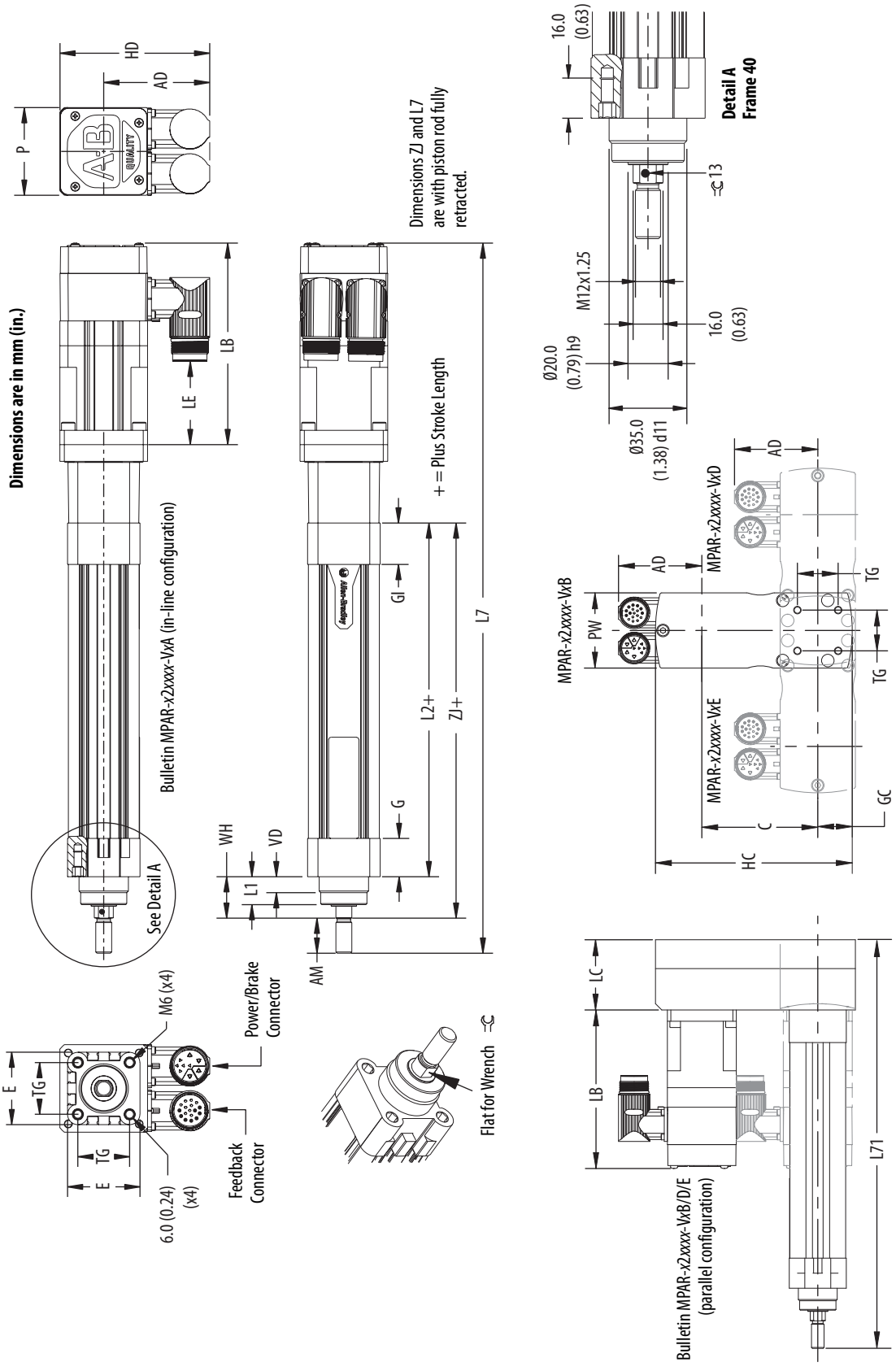
(1) If ordering MPAR-A/B1*xxxx*-V4A actuator with brake, add 36.1 mm (1.42 in.) to dimensions L7 and LB.
(2) If ordering MPAR-A/B1*xxxx*-V4A actuator with brake, add 33.4 mm (1.31 in.) to dimension LE.
(3) The tolerance for this dimension is ±1.0 mm (0.039 in.).

MP-Series Electric Cylinder Dimensions (parallel configuration, frame 32)

Electric Cylinder Cat. No.	L71 mm (in.)	LC mm (in.)	HC mm (in.)	C (1) mm (in.)	GC mm (in.)	PW mm (in.)
MPAR-*x*1100B-V2B/D/E	326.0 (12.8)	56.0 (2.20)	157 (6.18)	92.5 (3.64)	27.5 (1.08)	60.0 (2.36)
MPAR-*x*1200B-V2B/D/E	426.0 (16.8)					
MPAR-*x*1300B-V2B/D/E	526.0 (20.7)					
MPAR-*x*1400B-V2B/D/E	626.0 (24.6)					
MPAR-*x*1100E-V2B/D/E	326.0 (12.8)					
MPAR-*x*1200E-V2B/D/E	426.0 (16.8)					
MPAR-*x*1300E-V2B/D/E	526.0 (20.7)					
MPAR-*x*1400E-V2B/D/E	626.0 (24.6)					

(1) The tolerance for this dimension is ±1.0 mm (0.039 in.).

MP-Series Electric Cylinders Dimensions (frame 40)



MP-Series Electric Cylinder Dimensions (in-line configuration, frame 40)

Electric Cylinder Cat. No.	L7 (1) mm (in.)	LB (1) mm (in.)	LE (2) mm (in.)	P mm (in.)	AD mm (in.)	HD mm (in.)	AM mm (in.)	G mm (in.)	G1 mm (in.)	L1 mm (in.)	L2 mm (in.)	ZJ (3) mm (in.)	VD mm (in.)	WH mm (in.)	E mm (in.)	TG mm (in.)
MPAR-*x*2100C-V2A	501.2 (19.73)	151.5 (5.96)	77.2 (3.04)	55.0 (2.17)	66.5 (2.62)	94.0 (3.70)	24.0 (0.94)	28.5 (1.12)	30.0 (1.18)	21.5 (0.85)	146.5 (5.77)	176.5 (6.95)	10.5 (0.41)	30.0 (1.18)	54.0 (2.13)	38.0 (1.50)
MPAR-*x*2200C-V2A	601.2 (23.67)															
MPAR-*x*2300C-V2A	701.2 (27.61)															
MPAR-*x*2400C-V2A	801.2 (31.54)															
MPAR-*x*2600C-V2A	1001.2 (39.42)															
MPAR-*x*2100F-V2A	492.1 (19.37)	140.1 (5.52)	65.1 (2.56)	70.0 (2.76)	74.0 (2.91)	109.0 (4.29)										
MPAR-*x*2200F-V2A	592.1 (23.31)															
MPAR-*x*2300F-V2A	692.1 (27.25)															
MPAR-*x*2400F-V2A	792.1 (31.19)															
MPAR-*x*2600F-V2A	992.1 (39.06)															

(1) If ordering MPAR-A/B2*xxx*C-V4A actuator with brake, add 36.1 mm (1.42 in.) to dimensions L7 and LB.
If ordering MPAR-A/B2*xxx*F-V4A actuator with brake, add 39.0 mm (1.54 in.) to dimensions L7 and LB.

(2) If ordering MPAR-A/B2*xxx*C-V4A actuator with brake, add 33.4 mm (1.31 in.) to dimension LE.
If ordering MPAR-A/B2*xxx*F-V4A actuator with brake, add 24.7 mm (0.97 in.) to dimension LE.

(3) The tolerance for this dimension is ±1.0 mm (0.039 in.).

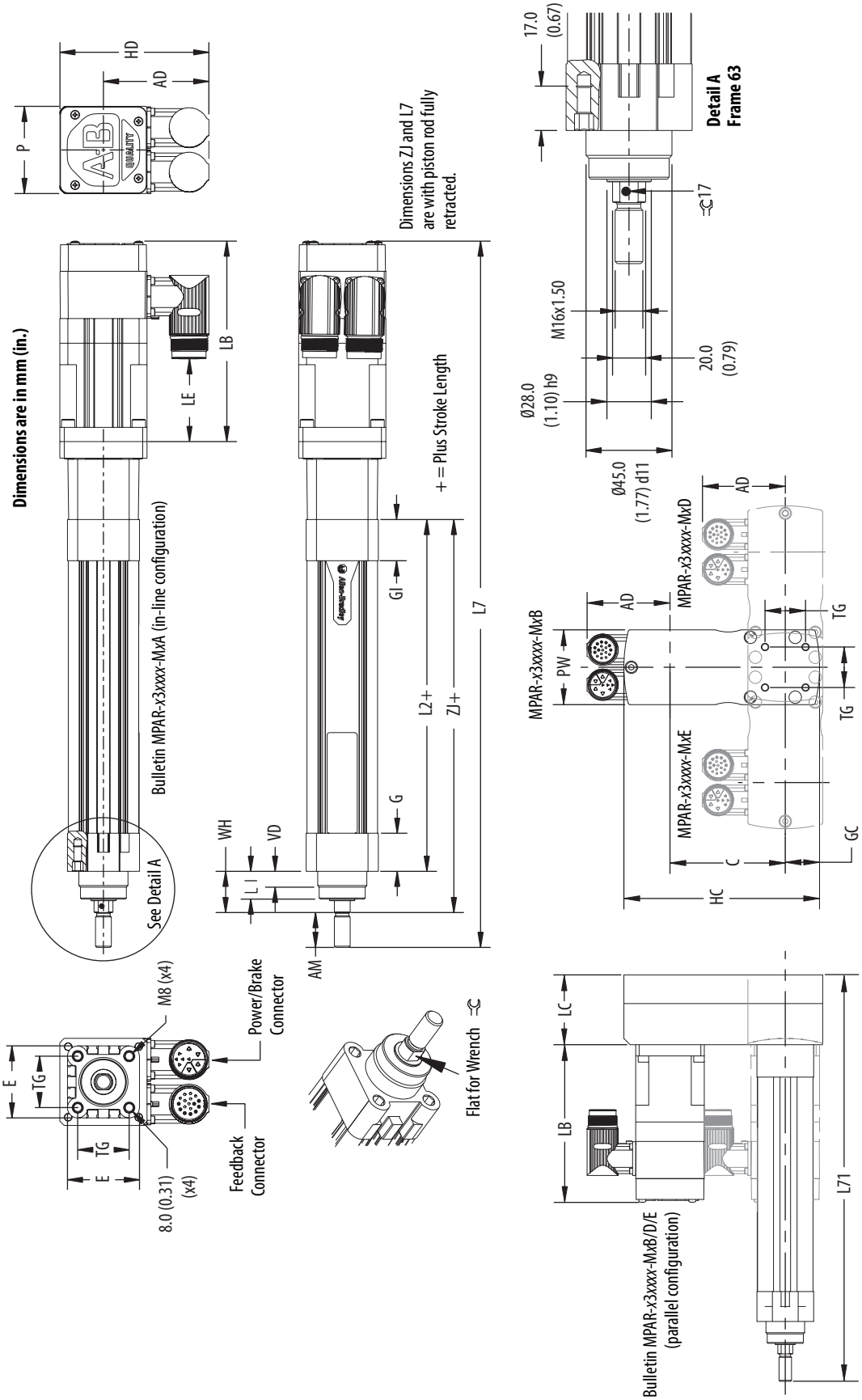
MP-Series Electric Cylinder Dimensions (parallel configuration, frame 40)

Electric Cylinder Cat. No.	L71 mm (in.)	LC mm (in.)	HC mm (in.)	C (1) mm (in.)	GC mm (in.)	PW mm (in.)
MPAR-*x*2100C-V2B/D/E	356.5 (14.03)	56.0 (2.20)	157.0 (6.18)	91.5 (3.60)	27.0 (1.06)	60.0 (2.36)
MPAR-*x*2200C-V2B/D/E	456.5 (17.97)					
MPAR-*x*2300C-V2B/D/E	556.5 (21.91)					
MPAR-*x*2400C-V2B/D/E	656.5 (25.84)					
MPAR-*x*2600C-V2B/D/E	856.5 (33.72)					
MPAR-*x*2100F-V2B/D/E	369.5 (14.55)	69.0 (2.72	188.5 (7.42)	102.5 (4.03)	38.0 (1.50)	86.0 (3.38)
MPAR-*x*2200F-V2B/D/E	469.5 (18.48)					
MPAR-*x*2300F-V2B/D/E	569.5 (22.42)					
MPAR-*x*2400F-V2B/D/E	669.5 (26.36)					
MPAR-*x*2600F-V2B/D/E	869.5 (34.23)					

(1) The tolerance for this dimension is ±1.0 mm (0.039 in.).

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MP-Series Electric Cylinders Dimensions (frame 63)



MP-Series Electric Cylinder Dimensions (in-line configuration, frame 63)

Electric Cylinder Cat. No.	L7 (1) mm (in.)	LB (1) mm (in.)	LE (1) mm (in.)	P mm (in.)	AD mm (in.)	HD mm (in.)	AM mm (in.)	G mm (in.)	G1 mm (in.)	L1 mm (in.)	L2 mm (in.)	ZJ (2) mm (in.)	VD mm (in.)	WH mm (in.)	E mm (in.)	TG mm (in.)
MPAR-x3100E-M2A	603.8 (23.77)	178.8 (7.04)	121.5 (4.78)	89.4 (3.52)	80.9 (3.19)	125.7 (4.95)	32.0 (1.26)	34.0 (1.34)	36.0 (1.42)	28.5 (1.12)	177.0 (6.97)	214.0 (8.43)	15.0 (0.59)	37.0 (1.46)	75.5 (2.97)	56.5 (2.22)
MPAR-x3200E-M2A	703.8 (27.71)															
MPAR-x3300E-M2A	803.8 (31.65)															
MPAR-x3400E-M2A	903.8 (35.58)															
MPAR-x3600E-M2A	1103.8 (43.46)															
MPAR-x3800E-M2A	1303.8 (51.33)															
MPAR-x3100H-M2A	574.8 (22.63)	149.8 (5.90)	92.5 (3.64)	98.3 (3.87)	83.9 (3.30)	132.8 (5.23)										
MPAR-x3200H-M2A	674.8 (26.57)															
MPAR-x3300H-M2A	774.8 (30.50)															
MPAR-x3400H-M2A	874.8 (34.44)															
MPAR-x3600H-M2A	1074.8 (42.31)															
MPAR-x3800H-M2A	1274.8 (50.19)															

(1) If ordering MPAR-A/B3*xxx*E-M4A actuator with brake, add 34.5 mm (1.36 in.) to dimensions L7, LB, and LE.
If ordering MPAR-A/B3*xxx*H-M4A actuator with brake, add 48.5 mm (1.91 in.) to dimensions L7, LB, and LE.

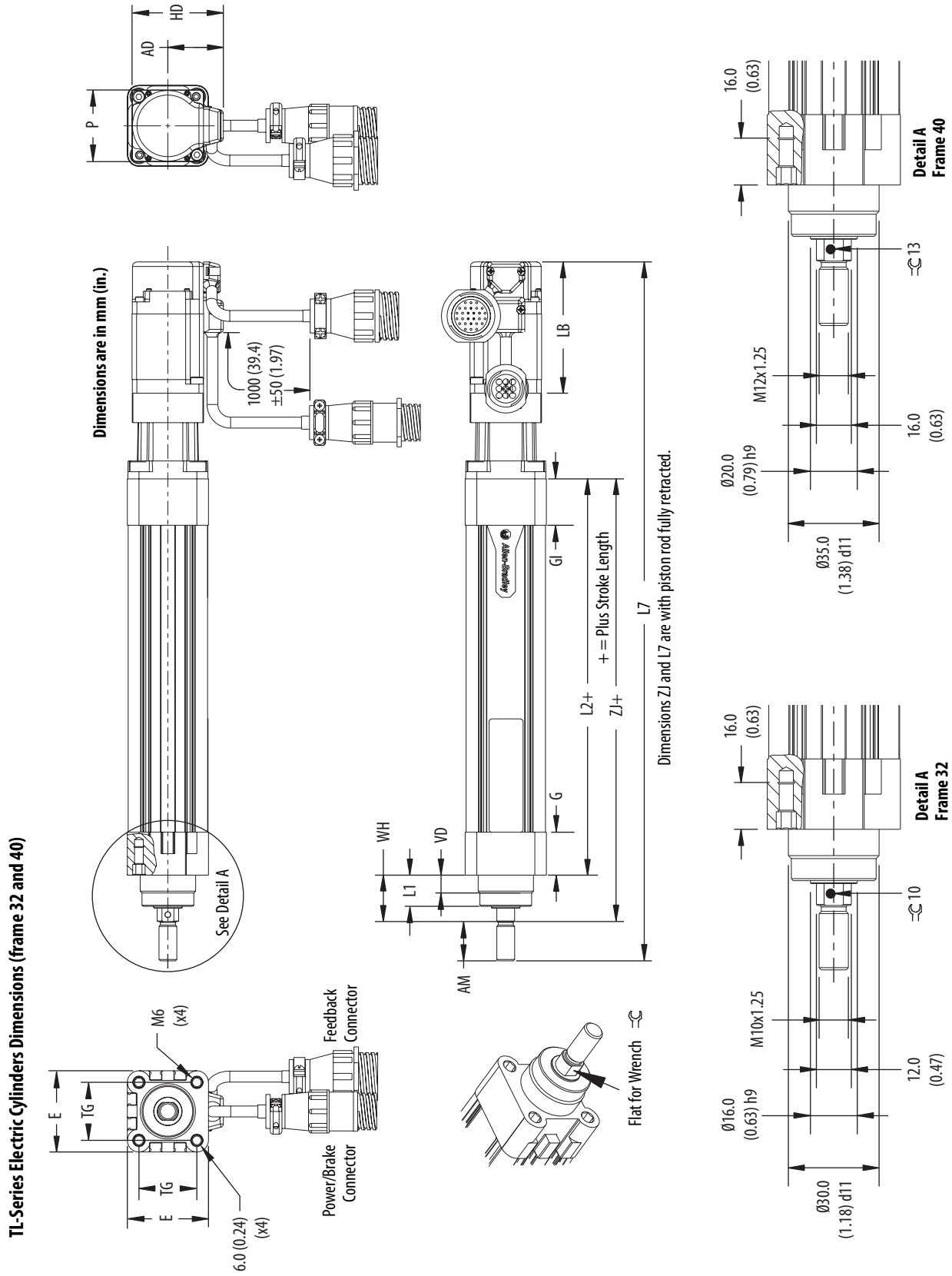
(2) The tolerance for this dimension is ±1.0 mm (0.039 in.).

MP-Series Electric Cylinder Dimensions (parallel configuration, frame 63)

Electric Cylinder Cat. No.	L71 mm (in.)	LC mm (in.)	HC mm (in.)	C (1) mm (in.)	GC mm (in.)	PW mm (in.)
MPAR-x3100E-M2B/D/E	428.0 (16.85)	82.0 (3.23)	225.0 (8.86)	120.0 (4.72)	45.0 (1.77)	110.0 (4.33)
MPAR-x3200E-M2B/D/E	528.0 (20.79)					
MPAR-x3300E-M2B/D/E	628.0 (24.72)					
MPAR-x3400E-M2B/D/E	728.0 (28.66)					
MPAR-x3600E-M2B/D/E	928.0 (36.53)					
MPAR-x3800E-M2B/D/E	1128.0 (44.41)					
MPAR-x3100H-M2B/D/E	428.0 (16.85)					
MPAR-x3200H-M2B/D/E	528.0 (20.79)					
MPAR-x3300H-M2B/D/E	628.0 (24.72)					
MPAR-x3400H-M2B/D/E	728.0 (28.66)					
MPAR-x3600H-M2B/D/E	928.0 (36.53)					
MPAR-x3800H-M2B/D/E	1128.0 (44.41)					

(1) The tolerance for this dimension is ±1.0 mm (0.039 in.).

Dimensions - TL-Series Electric Cylinders



TL-Series Electric Cylinder Dimensions (frame 32)

Electric Cylinder Cat. No.	L7 (1) mm (in.)	LB (1) mm (in.)	P mm (in.)	AD mm (in.)	HD mm (in.)	AM mm (in.)	G mm (in.)	G1 mm (in.)	L1 mm (in.)	L2 mm (in.)	ZJ (2) mm (in.)	VD mm (in.)	WH mm (in.)	E mm (in.)	TG mm (in.)
TLAR-A1100B-B2A	391.5 (15.41)	73.5 (2.89)	40.0 (1.57)	31.1 (1.22)	51.1 (2.01)	22.0 (0.87)	24.0 (0.94)	26.0 (1.02)	18.0 (0.71)	122.0 (4.80)	148.0 (5.83)	10.0 (0.39)	26.0 (1.02)	45.5 (1.79)	32.5 (1.28)
TLAR-A1200B-B2A	491.5 (19.35)														
TLAR-A1300B-B2A	591.5 (23.29)														
TLAR-A1400B-B2A	691.5 (27.22)														
TLAR-A1100E-B2A	405.5 (15.96)	76.1 (3.0)	60.0 (2.36)	43.0 (1.69)	73.0 (2.87)										
TLAR-A1200E-B2A	505.5 (19.90)														
TLAR-A1300E-B2A	605.5 (23.84)														
TLAR-A1400E-B2A	705.5 (27.78)														

(1) If ordering TLAR-A1*xxx*B-B4A actuator with brake, add 35.4 mm (1.39 in.) to dimensions L7 and LB.
If ordering TLAR-A2*xxx*E-B4A actuator with brake, add 34.6 mm (1.36 in.) to dimensions L7 and LB.

(2) The tolerance for this dimension is ±1.0 mm (0.039 in.).

TL-Series Electric Cylinder Dimensions (frame 40)

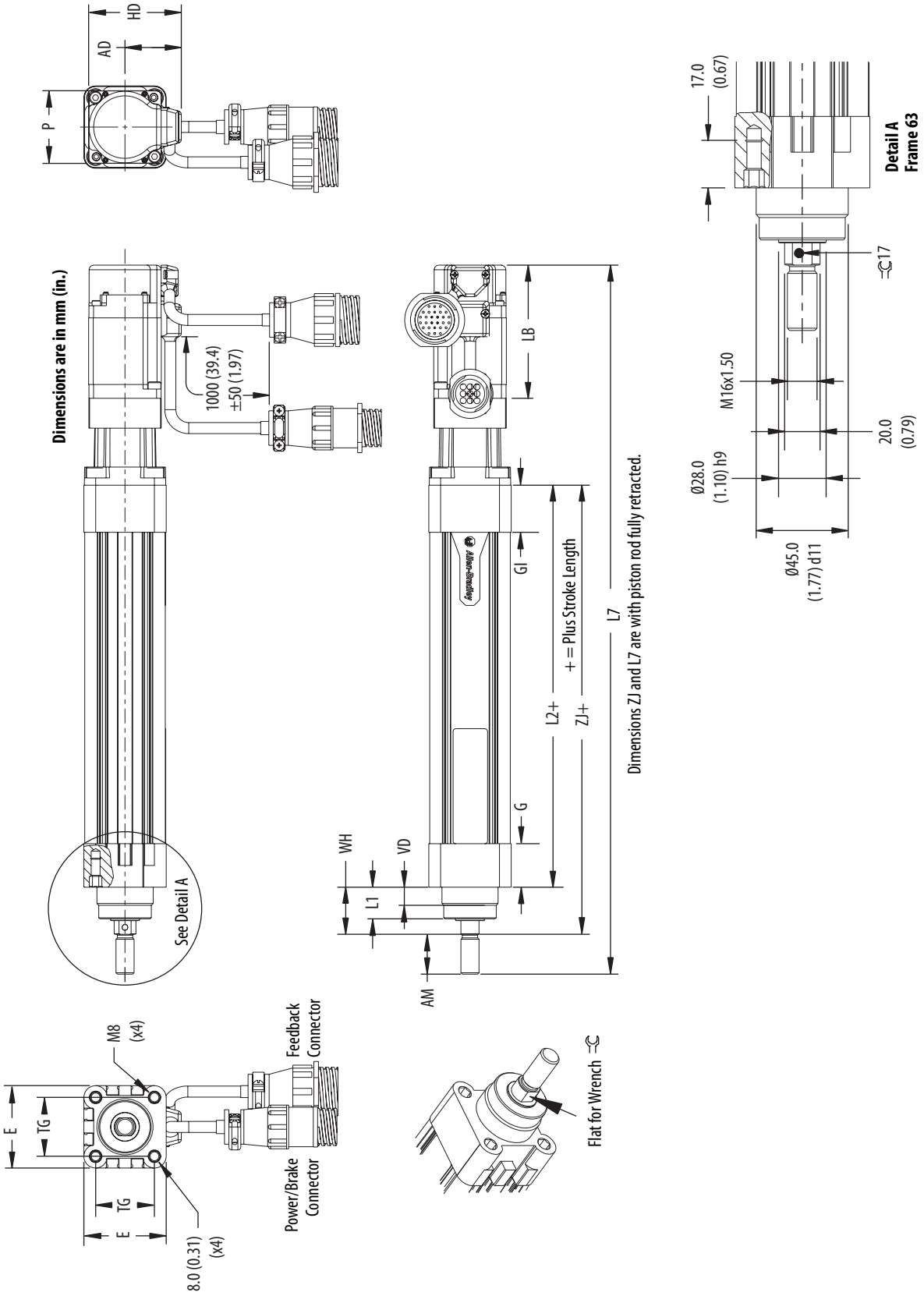
Electric Cylinder Cat. No.	L7 (1) mm (in.)	LB (1) mm (in.)	P mm (in.)	AD mm (in.)	HD mm (in.)	AM mm (in.)	G mm (in.)	G1 mm (in.)	L1 mm (in.)	L2 mm (in.)	ZJ (2) mm (in.)	VD mm (in.)	WH mm (in.)	E mm (in.)	TG mm (in.)
TLAR-A2100C-B2A	436.0 (17.17)	76.1 (3.0)	60.0 (2.36)	43.0 (1.69)	73.0 (2.87)	24.0 (0.94)	28.5 (1.12)	30.0 (1.18)	21.5 (0.85)	146.5 (5.77)	176.5 (6.95)	10.5 (0.41)	30.0 (1.18)	54.0 (2.13)	38.0 (1.50)
TLAR-A2200C-B2A	536.0 (21.10)														
TLAR-A2300C-B2A	636.0 (25.04)														
TLAR-A2400C-B2A	736.0 (28.98)														
TLAR-A2600C-B2A	936.0 (36.85)														
TLAR-A2100F-B2A	457.9 (18.03)	98.1 (3.86)													
TLAR-A2200F-B2A	557.9 (21.96)														
TLAR-A2300F-B2A	657.9 (25.90)														
TLAR-A2400F-B2A	757.9 (29.84)														
TLAR-A2600F-B2A	957.9 (37.71)														

(1) If ordering TLAR-A2*xxxx*-B4A actuator with brake, add 34.6 mm (1.36 in.) to dimensions L7 and LB.

(2) The tolerance for this dimension is ±1.0 mm (0.039 in.).

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

TL-Series Electric Cylinders Dimensions (frame 63)



TL-Series Electric Cylinder Dimensions (frame 63)

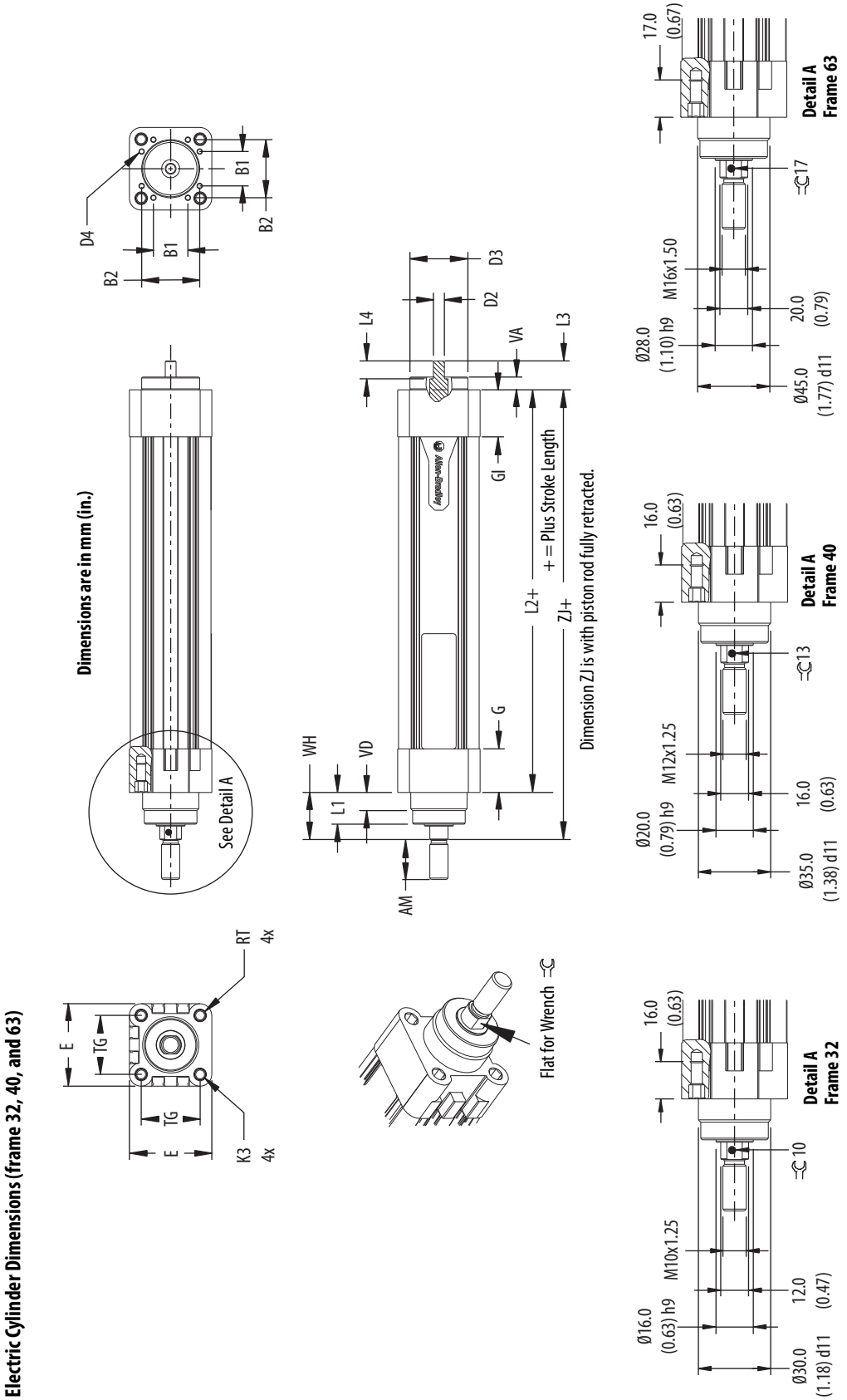
Electric Cylinder Cat. No.	L7 [1] mm (in.)	LB [1] mm (in.)	P mm (in.)	AD mm (in.)	HD mm (in.)	AM mm (in.)	G mm (in.)	G1 mm (in.)	L1 mm (in.)	L2 mm (in.)	ZJ [2] mm (in.)	VD mm (in.)	WH mm (in.)	E mm (in.)	TG mm (in.)
TLAR-A3100E-B2A	564.6 (22.23)	144.2 (5.68)	86.0 (3.39)	56.0 (2.20)	99.0 (3.90)	32.0 (1.26)	34.0 (1.34)	36.0 (1.42)	28.5 (1.12)	177.0 (6.97)	214.0 (8.43)	15.0 (0.59)	37.0 (1.46)	75.5 (2.97)	56.5 (2.22)
TLAR-A3200E-B2A	664.6 (26.17)														
TLAR-A3300E-B2A	764.6 (30.10)														
TLAR-A3400E-B2A	864.6 (34.04)														
TLAR-A3600E-B2A	1064.6 (41.91)														
TLAR-A3800E-B2A	1264.6 (49.79)														
TLAR-A3100H-B2A	564.6 (22.23)														
TLAR-A3200H-B2A	664.6 (26.17)														
TLAR-A3300H-B2A	764.6 (30.10)														
TLAR-A3400H-B2A	864.6 (34.04)														
TLAR-A3600H-B2A	1064.6 (41.91)														
TLAR-A3800H-B2A	1264.6 (49.79)														

(1) If ordering TLAR-A3*xxxx*-B4A actuator with brake, add 23.0 mm (0.91 in.) to dimensions L7 and LB.

(2) The tolerance for this dimension is ±1.0 mm (0.039 in.).

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

Dimensions - Electric Cylinders (replacement components)



Electric Cylinder Replacement Components

Electric Cylinder Cat. No. (1)	Frame	AM mm (in.)	G mm (in.)	G1 mm (in.)	L1 mm (in.)	L2 mm (in.)	L3 mm (in.)	L4 mm (in.)	ZJ (2) mm (in.)	VA mm (in.)	VD mm (in.)	WH mm (in.)	D2 mm (in.) h6	D3 mm (in.) f7	D4	B1 mm (in.)	B2 mm (in.)	E mm (in.)	RT	TG mm (in.)	K3 mm (in.)
MPAR-X1*xxx*B	32	22.0 (0.87)	24.0 (0.94)	26.0 (1.02)	18.0 (0.71)	122.0 (4.80)	15.9 (0.63)	8.0 (0.31)	148.0 (5.83)	7.0 (0.28)	10.0 (0.39)	26.0 (1.02)	6.0 (0.24)	32.0 (1.26)	M3	19.0 (0.75)	32.0 (1.26)	45.5 (1.79)	M6	32.5 (1.28)	6.0 (0.24)
MPAR-X1*xxx*E																					
MPAR-X2*xxx*C	40	24.0 (0.94)	28.5 (1.12)	30.0 (1.18)	21.5 (0.85)	146.5 (5.77)	18.4 (0.72)	14.0 (0.55)	176.5 (6.95)	7.0 (0.28)	10.5 (0.41)	30.0 (1.18)	8.0 (0.31)	40.0 (1.57)	M4	20.0 (0.79)	42.0 (1.65)	54.0 (2.13)	M6	38.0 (1.50)	6.0 (0.24)
MPAR-X2*xxx*F																					
MPAR-X3*xxx*E	63	32.0 (1.26)	34.0 (1.34)	36.0 (1.42)	28.5 (1.12)	177.0 (6.97)	23.5 (0.93)	17.0 (0.67)	214.0 (8.43)	9.0 (0.35)	15.0 (0.59)	37.0 (1.46)	12.0 (0.47)	60.0 (2.36)	M5	31.0 (1.22)	62.0 (2.44)	75.5 (2.97)	M8	56.5 (2.22)	8.0 (0.31)
MPAR-X3*xxx*H																					

(1) These catalog numbers apply to both MP-Series and TL-Series electric cylinders. For example, the replacement cylinder for MPAR-A1100B-V2A and TLAR-A1100B-B2A is catalog number MPAR-X1100B.

(2) The tolerance for this dimension is ±1.0 mm (0.039 in.).

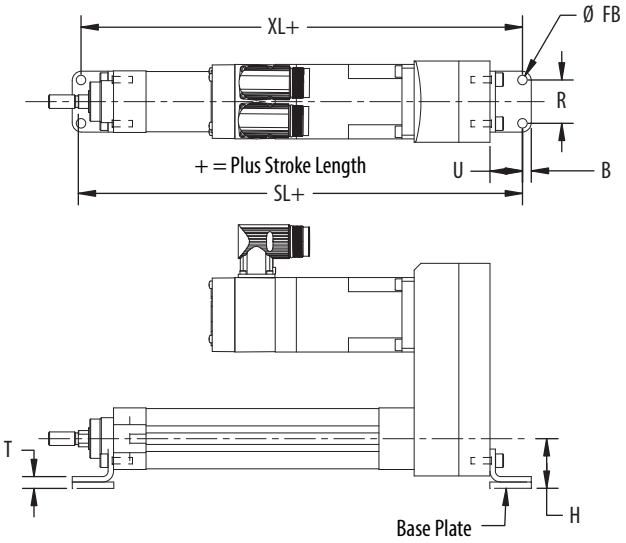
These replacement cylinders are available in the event of bent rods or other damage to the cylinder. For replacement motors, couplings, and belts, refer to MP-Series and TL-Series Electric Cylinder Replacement Parts Installation Instructions, publication MPAR-IN002.

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

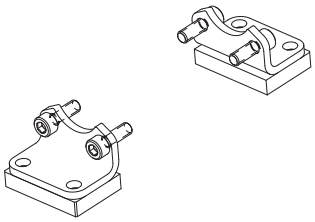
MP-Series and TL-Series Electric Cylinder Mounting Accessories

These accessories apply to MP-Series and TL-Series electric cylinders. Components are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

Foot Mount Attachment



Dimensions are in mm (in.)



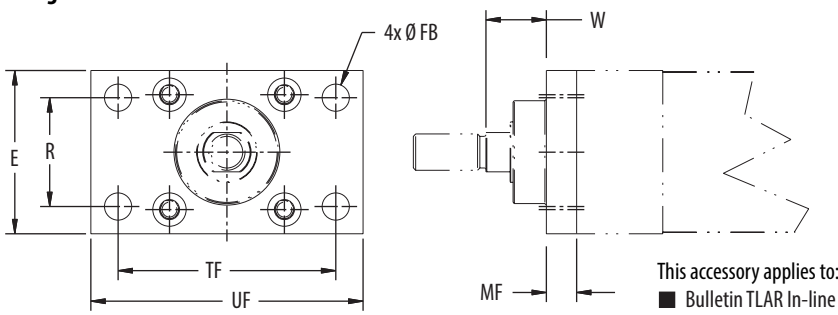
Attachment includes:
- 2 Foot mount attachments
- 4 Mounting bolts

This accessory applies to:
- ☐ Bulletin TLAR In-line
- ☐ Bulletin MPAR In-line
- ■ Bulletin MPAR Parallel

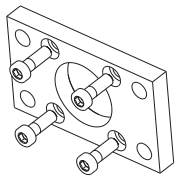
Cat. No. (1)	Cat. No. (2) Corrosion Resistant	Frame	T mm (in.)	FB mm (in.)	H mm (in.)	B mm (in.)	U mm (in.)	R mm (in.)	S mm (in.)	SL+ mm (in.)	XL+ mm (in.)
MPAR-NP174369	MPAR-NP176937	32	4.0 (0.16)	7.0 (0.27)	32.0 (1.26)	6.5 (0.25)	24.0 (0.94)	32.0 (1.26)	45.0 (1.77)	228.0 (8.97)	226.0 (8.90)
MPAR-NP174370	MPAR-NP176938	40	14.0 (3) (0.55)	10.0 (0.39)	46.0 (3) (1.81)	9.0 (0.34)	28.0 (1.10)	36.0 (1.42)	54.0 (2.12)	260.5 (4) (10.25)	258.5 (4) (10.18)
MPAR-NP174372	MPAR-NP176940	63	13.0 (3) (0.51)	10.0 (0.39)	58.0 (3) (2.28)	12.5 (0.49)	32.0 (1.26)	50.0 (1.97)	75.0 (2.95)	328.3 (12.92)	323.3 (12.73)

(1) Material is galvanized steel. Contains no copper, PTFE, or silicone.
(2) Material is high-alloy steel for high-corrosion protection. Contains no copper, PTFE, or silicone.
(3) This dimension includes base plate provided with frame 40 and frame 63 foot mount attachments.
(4) Add 13 mm (0.51 in.) for catalog number MPAR-*x2xxx*F-V*xx*.

Flange Mounting Attachment



Dimensions are in mm (in.)



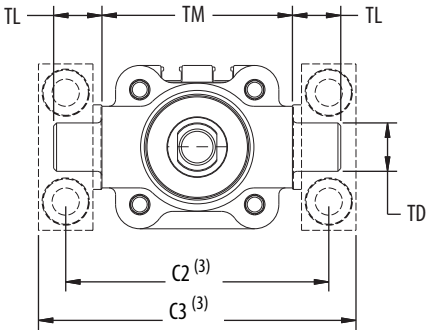
This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

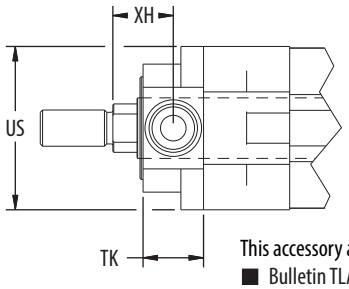
Attachment includes:
- 1 Flange mounting
- 4 Mounting bolts

Cat. No. (1)	Cat. No. (2) Corrosion Resistant	Frame	E mm (in.)	FB mm (in.) H13	MF mm (in.)	R mm (in.)	TF mm (in.)	UF mm (in.)	W mm (in.)
MPAR-NA174376	MPAR-NA161846	32	45.0 (1.77)	7.0 (0.28)	10.0 (0.39)	32.0 (1.26)	64.0 (2.52)	80.0 (3.15)	16.0 (0.63)
MPAR-NA174377	MPAR-NA161847	40	54.0 (2.13)	9.0 (0.35)	10.0 (0.39)	36.0 (1.42)	72.0 (2.83)	90.0 (3.54)	20.0 (0.79)
MPAR-NA174379	MPAR-NA161849	63	75.0 (2.95)	9.0 (0.35)	12.0 (0.47)	50.0 (1.97)	100 (3.94)	120 (4.72)	25.0 (0.98)

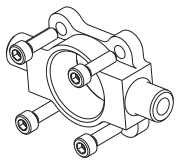
(1) Material is galvanized steel and subject to moderate corrosion stress. Contains no copper, PTFE, or silicone.
(2) Material is high-alloy steel for environments requiring higher corrosion resistance. Contains no copper, PTFE, or silicone.

Trunnion Flange Attachment





Dimensions are in mm (in.)



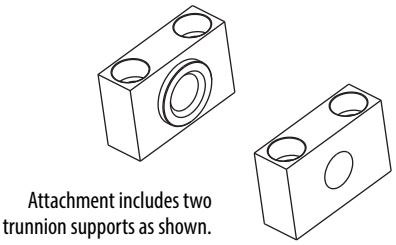
This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

Attachment includes:
- 1 Trunnion mounting
- 4 Mounting bolts

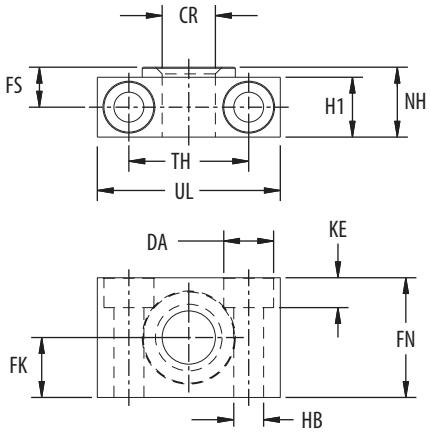
Cat. No. (1)	Cat. No. (2) Corrosion Resistant	Frame	C2 mm (in.)	C3 mm (in.)	TD mm (in.) e9	TK mm (in.)	TL mm (in.)	TM mm (in.)	US mm (in.)	XH mm (in.)
MPAR-NA174411	MPAR-NA161852	32	71.0 (2.80)	86.0 (3.39)	12.0 (0.47)	16.0 (0.63)	12.0 (0.47)	50.0 (1.97)	45.0 (1.77)	18.0 (0.71)
MPAR-NA174412	MPAR-NA161853	40	87.0 (3.43)	105 (4.13)	16.0 (0.63)	20.0 (0.79)	16.0 (0.63)	63.0 (2.48)	54.0 (2.13)	20.0 (0.79)
MPAR-NA174414	MPAR-NA161855	63	116 (4.57)	136 (5.35)	20.0 (0.79)	24.0 (0.94)	20.0 (0.79)	90.0 (3.54)	75.0 (2.95)	25.0 (0.98)

(1) Material is special steel casting and subject to moderate corrosion stress. Contains no copper, PTFE, or silicone.
(2) Material is electrolytically-polished special steel casting for environments requiring higher corrosion resistance. Contains no copper, PTFE, or silicone.
(3) These dimensions are drawn to the trunnion support blocks as shown on page 110 (not included with the trunnion flange attachment).

Trunnion Support Block Attachments



Attachment includes two trunnion supports as shown.



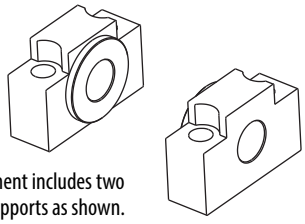
Dimensions are in mm (in.)

This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

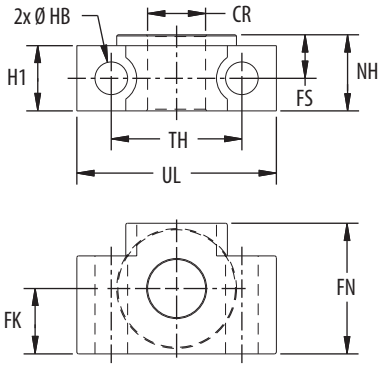
Cat. No. (1)	Frame	CR mm (in.) D11	DA mm (in.) H13	FK (2) mm (in.)	FN mm (in.)	FS mm (in.)	H1 mm (in.)	HB mm (in.) H13	KE mm (in.)	NH mm (in.)	TH (3) mm (in.)	UL mm (in.)
MPAR-NA32959	32	12.0 (0.47)	11.0 (0.43)	15.0 (0.59)	30.0 (1.18)	10.5 (0.41)	15.0 (0.59)	6.6 (0.26)	6.8 (0.27)	18.0 (0.71)	32.0 (1.26)	46.0 (1.81)
MPAR-NA32960	40	16.0 (0.63)	15.0 (0.59)	18.0 (0.71)	36.0 (1.42)	12.0 (0.47)	18.0 (0.71)	9.0 (0.35)	9.0 (0.35)	21.0 (0.83)	36.0 (1.42)	55.0 (2.17)
MPAR-NA32961	63	20.0 (0.79)	18.0 (0.71)	20.0 (0.79)	40.0 (1.57)	13.0 (0.51)	20.0 (0.79)	11.0 (0.43)	11.0 (0.43)	23.0 (0.91)	42.0 (1.65)	65.0 (2.56)

(1) Material is anodized aluminum and subject to moderate corrosion stress. Plain bearing: Polymer. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ±0.1 mm (±0.0039 in.).
(3) Tolerance for this dimension is ±0.2 mm (±0.0079 in.).

Trunnion Support Block (corrosion resistant) Attachments



Attachment includes two trunnion supports as shown.



Dimensions are in mm (in.)

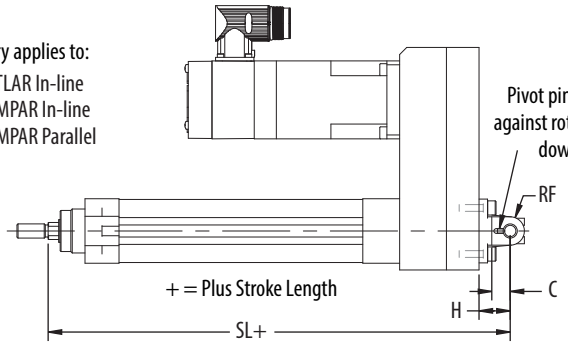
This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

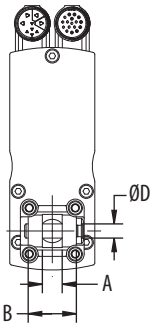
Cat. No. (1)	Frame	CR mm (in.) D11	FK (2) mm (in.)	FN mm (in.)	FS mm (in.)	H1 mm (in.)	HB mm (in.) H13	NH mm (in.)	TH (3) mm (in.)	UL mm (in.)
MPAR-NA161874	32	12.0 (0.47)	15.0 (0.59)	30.0 (1.18)	10.5 (0.41)	15.0 (0.59)	6.6 (0.26)	18.0 (0.71)	32.0 (1.26)	46.0 (1.81)
MPAR-NA161875	40	16.0 (0.63)	18.0 (0.71)	36.0 (1.42)	12.0 (0.47)	18.0 (0.71)	9.0 (0.35)	21.0 (0.83)	36.0 (1.42)	55.0 (2.17)
MPAR-NA161876	63	20.0 (0.79)	20.0 (0.79)	40.0 (1.57)	13.0 (0.51)	20.0 (0.79)	11.0 (0.43)	23.0 (0.91)	42.0 (1.65)	65.0 (2.56)

(1) Material is high-alloy steel for environments requiring higher corrosion resistance. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ±0.1 mm (±0.0039 in.).
(3) Tolerance for this dimension is ±0.2 mm (±0.0079 in.).

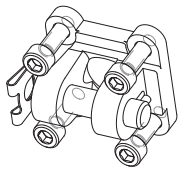
Swivel Flange (pin, narrow) Attachment

This accessory applies to:
- ☐ Bulletin TLAR In-line
- ☐ Bulletin MPAR In-line
- ■ Bulletin MPAR Parallel





Dimensions are in mm (in.)

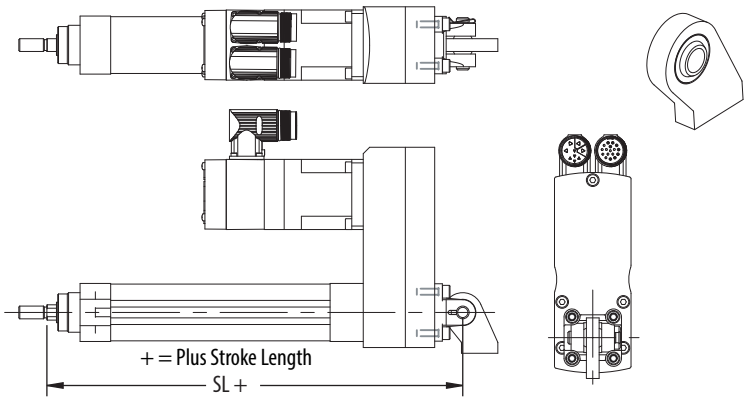


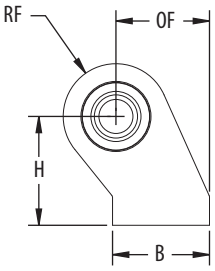
Attachment includes:
- 1 Swivel flange
- 1 Pivot pin
- 4 Mounting screws
- 1 Retaining clip

Cat. No. (1)	Frame	D mm (in.)	A mm (in.) H14	B mm (in.) h14	C mm (in.)	H (2) mm (in.)	RF mm (in.)	SL+ mm (in.)
MPAR-NP174383	32	10.0 (0.39)	14.0 (0.55)	34.0 (1.34)	13.0 (0.51)	22.0 (0.86)	10.0 (0.39)	226.0 (8.90)
MPAR-NP174384	40	12.0 (0.47)	16.0 (0.63)	40.0 (1.57)	16.0 (0.63)	25.0 (0.98)	12.0 (0.47)	257.5 (10.14) (3)
MPAR-NP174386	63	16.0 (0.63)	21.0 (0.82)	51.0 (2.01)	21.0 (0.82)	32.0 (0.26)	16.0 (0.63)	328.3 (12.92)

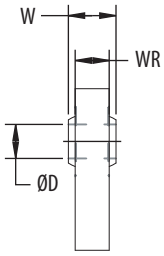
(1) Material is die cast aluminum. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ±0.2 mm (±0.0079 in.).
(3) Add 13 mm (0.51 in.) for catalog number MPAR-*x2xxx*F-V*xx*.

Clevis Foot (weld-on) Attachment





Dimensions are in mm (in.)

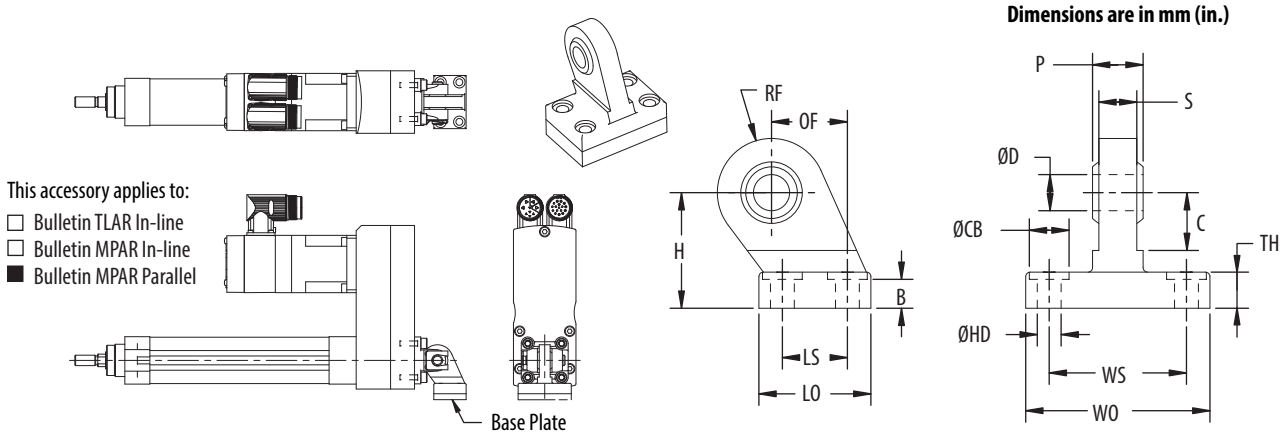


This accessory applies to:
- ☐ Bulletin TLAR In-line
- ☐ Bulletin MPAR In-line
- ■ Bulletin MPAR Parallel

Cat. No. (1)	Frame	D mm (in.)	B mm (in.)	H mm (in.) js14	OF (2) mm (in.)	RF (2) mm (in.)	W (3) mm (in.)	WR (4) mm (in.)	SL+ mm (in.)
MPAR-NP31747	32	10.0 (0.39) (5)	28.5 (1.12)	32.0 (1.26)	27.5 (1.08)	15.5 (0.61)	14.0 (0.55)	10.5 (0.41)	226.0 (8.90)
MPAR-NP31748	40	12.0 (0.47) (6)	33.5 (1.32)	36.0 (1.42)	30.5 (1.20)	17.5 (0.69)	16.0 (0.63)	12.0 (0.47)	257.5 (10.14) (7)
MPAR-NP31750	63	16.0 (0.63) (6)	48.0 (1.89)	50.0 (1.97)	44.5 (1.75)	22.5 (0.88)	21.0 (0.82)	15.0 (0.89)	328.3 (12.92)

(1) Material is die cast aluminum. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ±0.5 mm (±0.0197 in.).
(3) Tolerance for this dimension is -0.1 mm (±0.0039 in.).
(4) Tolerance for this dimension is -0.2 mm (±0.0079 in.).
(5) Tolerance for this dimension is +0.013 mm (±0.00051 in.).
(6) Tolerance for this dimension is +0.015 mm (±0.00059 in.).
(7) Add 13 mm (0.51 in.) for catalog number MPAR-*x2xxx*F-V*xx*.

Clevis Foot (spherical bearing) Attachment



Cat. No. (1)	Frame	D mm (in.)	B (2) mm (in.)	C mm (in.)	CB mm (in.)	H mm (in.) js14	HD mm (in.) H13	LO mm (in.)	LS mm (in.) js14
MPAR-NP31740	32	10.0 (3) (0.39)	8.50 (0.33)	N/A	11.0 (0.43)	32.0 (1.26)	6.6 (0.26)	31.0 (1.22)	18.0 (0.71)
MPAR-NP31741	40	12.0 (4) (0.47)	18.5 (5) (0.73)	N/A	11.0 (0.43)	46.0 (5) (1.81)	6.6 (0.26)	35.0 (1.38)	22.0 (0.86)
MPAR-NP31743	63	16.0 (4) (0.63)	18.5 (5) (0.73)	27.0 (1.06)	15.0 (0.59)	58.0 (5) (2.28)	9.0 (0.35)	50.0 (1.97)	35.0 (1.38)

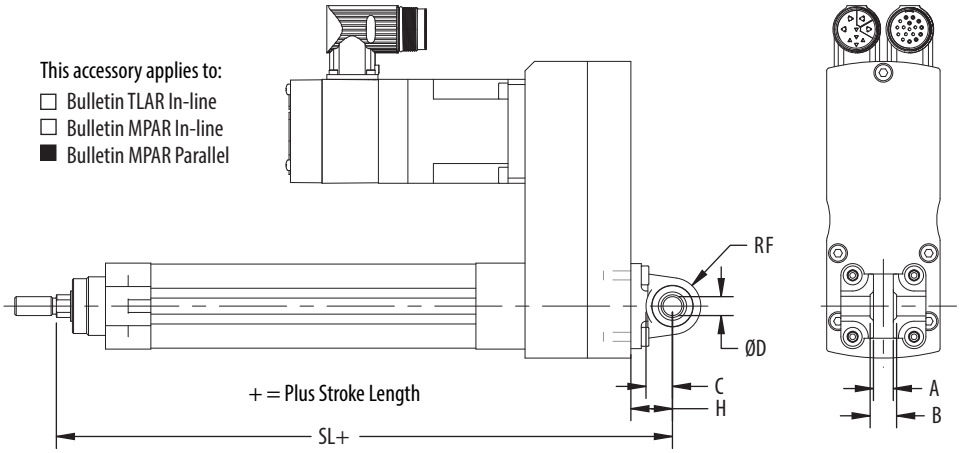
(1) Frame 32 and 40 material is high-alloy steel. Frame 63 material is nodular graphite cast iron. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ±0.8 mm (±0.0315 in.).
(3) Tolerance for this dimension is +0.013 mm (±0.00051 in.).
(4) Tolerance for this dimension is +0.015 mm (±0.00059 in.).
(5) This dimension includes base plate provided with frame 40 and frame 63 foot mount attachments.

Cat. No.	Frame	OF mm (in.) js14	P (1) mm (in.) js14	RF mm (in.)	S (2) mm (in.)	TH mm (in.)	WO mm (in.)	WS mm (in.) js14
MPAR-NP31740	32	21.0 (0.82)	14.0 (0.55)	15.0 (0.59)	10.5 (0.41)	10.0 (3) (0.39)	51.0 (2.01)	38.0 (1.49)
MPAR-NP31741	40	24.0 (0.94)	16.0 (0.63)	17.0 (0.67)	12.0 (0.47)	20.0 (3) (4) (0.79)	54.0 (2.12)	41.0 (1.61)
MPAR-NP31743	63	37.0 (1.45)	21.0 (0.82)	22.0 (0.86)	15.0 (0.59)	20.0 (5) (4) (0.79)	67.0 (2.64)	52.0 (2.05)

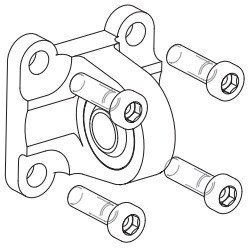
(1) Tolerance for this dimension is -0.1 mm (±0.0039 in.).
(2) Tolerance for this dimension is -0.2 mm (±0.0079 in.).
(3) Tolerance for this dimension is ±0.2 mm (±0.0079 in.).
(4) This dimension includes base plate provided with frame 40 and frame 63 foot mount attachments.
(5) Tolerance for this dimension is ±0.6 mm (±0.0236 in.).

Swivel Flange (spherical bearing) Attachment

This accessory applies to:
- ☐ Bulletin TLAR In-line
- ☐ Bulletin MPAR In-line
- ■ Bulletin MPAR Parallel



Dimensions are in mm (in.)



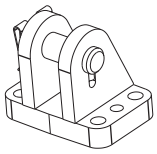
Attachment includes:
- 1 Swivel flange with spherical bearing
- 4 Mounting screws

Cat. No. (1)	Frame	D mm (in.) H7	A (2) mm (in.)	B mm (in.)	C mm (in.)	H (2) mm (in.)	RF mm (in.)	SL+ mm (in.)
MPAR-NP174397	32	10.0 (0.39)	10.5 (0.41)	14.0 (0.55)	13.0 (0.51)	22.0 (0.86)	15.0 (0.59)	226.0 (8.90)
MPAR-NP174398	40	12.0 (0.47)	12.0 (0.47)	16.0 (0.63)	16.0 (0.63)	25.0 (0.98)	17.0 (0.67)	257.5 (3) (10.14)
MPAR-NP174400	63	16.0 (0.63)	15.0 (0.59)	21.0 (0.82)	21.0 (0.82)	32.0 (0.26)	22.0 (0.86)	328.3 (12.92)

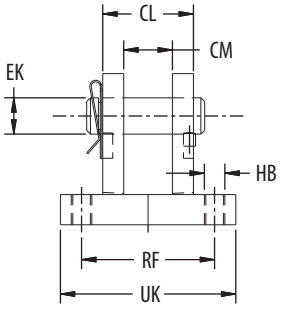
(1) Material is die cast aluminum. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ±0.2 mm (±0.0079 in.).
(3) Add 13 mm (0.51 in.) for catalog number MPAR-*x2xxxF-Vxx*.

Clevis Foot (pin) Attachment

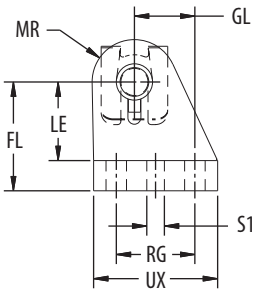
This accessory applies to:
- ■ Bulletin TLAR In-line
- ■ Bulletin MPAR In-line
- ■ Bulletin MPAR Parallel



Attachment includes:
- 1 Clevis foot
- 1 Pivot pin (2)
- 1 Retaining clip



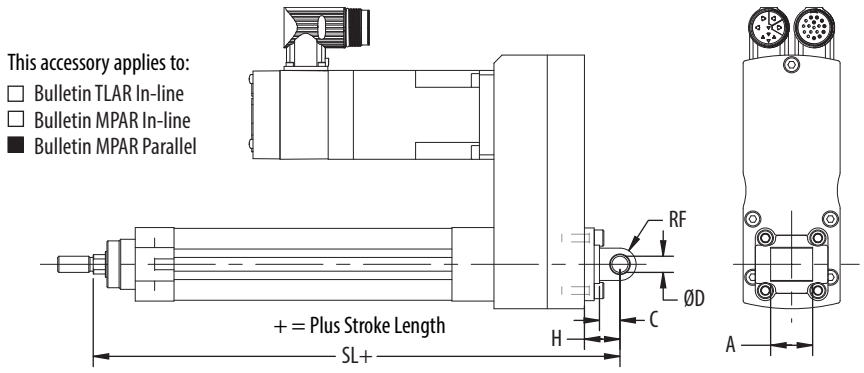
Dimensions are in mm (in.)



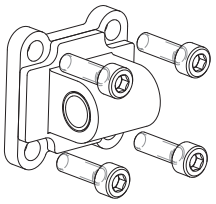
Cat. No. (1)	Frame	CL mm (in.)	CM mm (in.)	EK mm (in.)	FL mm (in.)	GL mm (in.)	HB mm (in.)	LE mm (in.)	MR mm (in.)	RF mm (in.)	RG mm (in.)	S1 mm (in.)	UK mm (in.)	UX mm (in.)
MPAR-NA31761	32	28.0 (1.10)	14.1 (0.56)	10.0 (0.39)	32.0 (1.26)	16.0 (0.63)	6.8 (0.27)	24.0 (0.94)	12.0 (0.47)	42.0 (1.65)	20.0 (0.79)	4.8 (0.19)	56.0 (2.20)	36.0 (1.42)
MPAR-NA31762	40	30.0 (1.18)	16.1 (0.63)	12.0 (0.47)	36.0 (1.42)	20.0 (0.79)	6.8 (0.27)	26.0 (1.02)	14.0 (0.55)	44.0 (1.73)	26.0 (1.02)	5.8 (0.23)	58.0 (2.28)	41.5 (1.63)
MPAR-NA31764	63	40.0 (1.57)	21.1 (0.83)	16.0 (0.63)	50.0 (1.97)	25.0 (0.98)	9.0 (0.35)	38.0 (1.50)	17.0 (0.67)	56.0 (2.20)	31.0 (1.22)	7.8 (0.31)	70.0 (2.76)	47.0 (1.85)

(1) Material is nodular graphite cast iron for environments requiring moderate corrosion resistance. Contains no copper, PTFE, or silicone.
(2) The pivot pin is secured against rotation with a dowel pin.

Swivel Flange Attachment



Dimensions are in mm (in.)

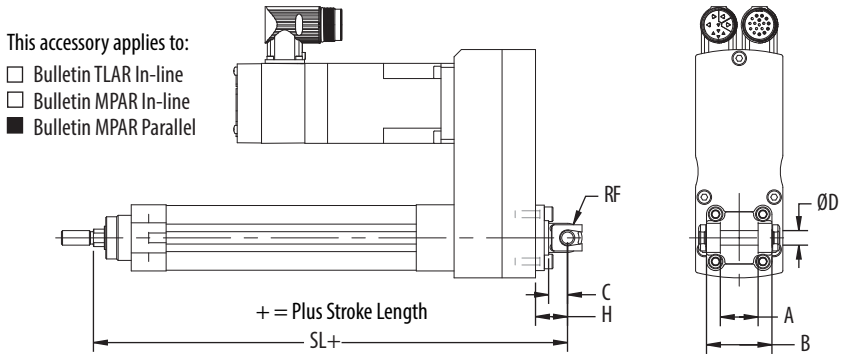


Attachment includes:
- 1 Swivel flange
- 4 Mounting screws

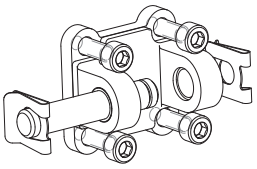
Cat. No. (1)	Frame	D mm (in.) H9	A (2) mm (in.) h12	C mm (in.)	H (2) mm (in.)	RF mm (in.)	SL+ mm (in.)
MPAR-NP174404	32	10.0 (0.39)	26.0 (1.02)	13.0 (0.51)	22.0 (0.86)	10.0 (0.39)	226.0 (8.90)
MPAR-NP174405	40	12.0 (0.47)	28.0 (1.10)	16.0 (0.63)	25.0 (0.98)	12.0 (0.47)	257.5 (3) (10.14)
MPAR-NP174407	63	16.0 (0.63)	40.0 (1.57)	21.0 (0.82)	32.0 (0.26)	16.0 (0.63)	328.3 (12.92)

(1) Material is die cast aluminum. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ±0.2 mm (±0.0079 in.).
(3) Add 13 mm (0.51 in.) for catalog number MPAR-*x2xxx*F-V*xx*.

Swivel Flange (pin, wide) Attachment



Dimensions are in mm (in.)

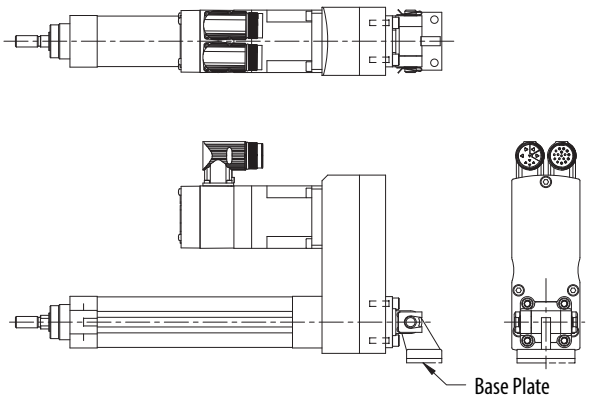


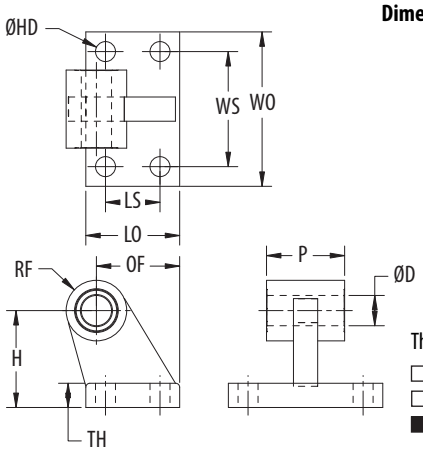
Attachment includes:
- 1 Swivel flange
- 1 Pivot pin
- 2 Retaining clips
- 4 Mounting screws

Cat. No. (1)	Cat. No. (2) Corrosion Resistant	Frame	D mm (in.) e8	A mm (in.) H14	B mm (in.) h14	C mm (in.)	H (3) mm (in.)	RF mm (in.)	SL+ mm (in.)
MPAR-NP174390	MPAR-NP176944	32	10.0 (0.39)	26.0 (1.02)	45.0 (1.77)	13.0 (0.51)	22.0 (0.86)	10.0 (0.39)	226.0 (8.90)
MPAR-NP174391	MPAR-NP176945	40	12.0 (0.47)	28.0 (1.10)	52.0 (2.05)	16.0 (0.63)	25.0 (0.98)	12.0 (0.47)	257.5 (4) (10.14)
MPAR-NP174393	MPAR-NP176947	63	16.0 (0.63)	40.0 (1.57)	70.0 (2.75)	21.0 (0.82)	32.0 (0.26)	16.0 (0.63)	328.3 (12.92)

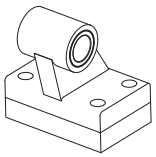
(1) Material is die cast aluminum. Contains no copper, PTFE, or silicone.
(2) Material is die cast aluminum, high-corrosion protection. Contains no copper, PTFE, or silicone.
(3) Tolerance for this dimension is ±0.2 mm (±0.0079 in.).
(4) Add 13 mm (0.51 in.) for catalog number MPAR-*x2xxx*F-V*xx*.

Clevis Foot Attachment





Dimensions are in mm (in.)



Attachment includes 1 clevis foot.

This accessory applies to:

- ☐ Bulletin TLAR In-line
- ☐ Bulletin MPAR In-line
- ■ Bulletin MPAR Parallel

Cat. No. (1)	Cat. No. (2) Corrosion Resistant	Frame	D mm (in.) D11	H mm (in.)	HD mm (in.) H13	LO mm (in.)	LS mm (in.)	OF mm (in.)	P (3) mm (in.)	RF mm (in.)	TH mm (in.)	WO mm (in.)	WS mm (in.)
MPAR-NP33890	MPAR-NP161840	32	10.0 (0.39)	32.0 (1.26)	6.6 (0.26)	31.0 (1.22)	18.0 (0.71)	21.0 (0.82)	25.8 (1.01)	10.0 (0.39)	8.0 (0.31)	51.0 (2.01)	38.0 (1.49)
MPAR-NP33891	MPAR-NP161841	40	12.0 (0.47)	46.0 (4) (1.81)	6.6 (0.26)	35.0 (1.38)	22.0 (0.86)	24.0 (0.94)	27.8 (1.09)	11.0 (0.43)	20.0 (4) (0.79)	54.0 (2.12)	41.0 (1.61)
MPAR-NP33893	MPAR-NP161843	63	16.0 (0.63)	58.0 (4) (2.28)	9.0 (0.35)	50.0 (1.97)	35.0 (1.38)	37.0 (1.45)	39.8 (1.56)	15.0 (1.56)	20.0 (4) (0.79)	67.0 (2.64)	52.0 (2.05)

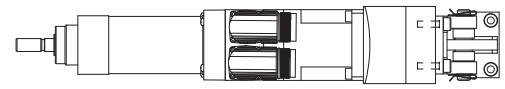
(1) Frame 32 and 40 material is high-alloy steel. Frame 63 material is nodular graphite cast iron. Contains no copper, PTFE, or silicone.

(2) Material is spacial steel casting, high corrosion protection stainless steel. Contains no copper, PTFE, or silicone.

(3) Tolerance for this dimension is -0.4 mm (-0.0157 in.).

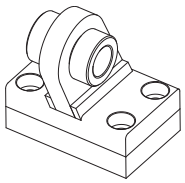
(4) This dimension includes base plate provided with frame 40 and frame 63 foot mount attachments.

Clevis Foot (spherical bearing) Attachment

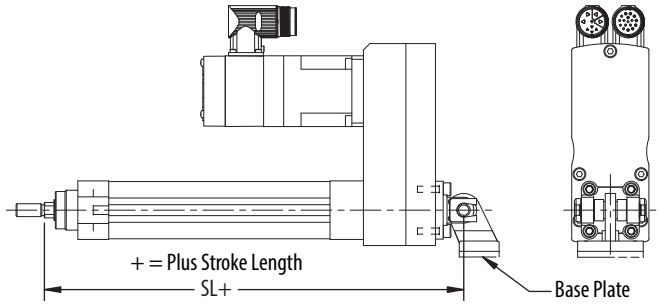


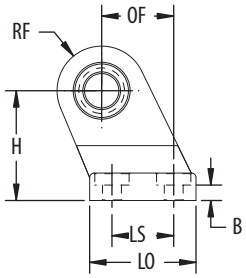
Dimensions are in mm (in.)

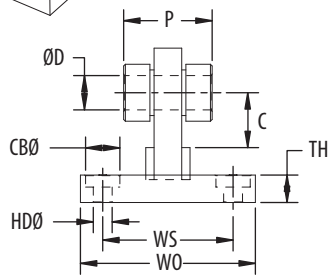
This accessory applies to:
- ☐ Bulletin TLAR In-line
- ☐ Bulletin MPAR In-line
- ■ Bulletin MPAR Parallel



Attachment includes:
- 1 Clevis foot with spherical bearing
- 2 cylindrical spacers







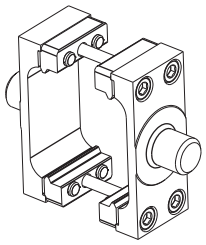
Cat. No. (1)	Frame	D (2) mm (in.)	B mm (in.)	C mm (in.)	CB mm (in.)	H (3) mm (in.)	HD mm (in.)	LO mm (in.)	LS mm (in.)
MPAR-NP5561	32	10.0 (0.39)	4.50 (0.18)	16.0 (0.63)	10.0 (0.39)	32.0 (1.26)	5.5 (0.21)	31.0 (1.22)	18.0 (0.71)
MPAR-NP5562	40	12.0 (0.47)	14.30 (4) (0.56)	20.0 (0.79)	10.0 (0.39)	46.0 (4) (1.81)	5.5 (0.21)	35.0 (1.38)	22.0 (0.86)
MPAR-NP5564	63	16.0 (0.63)	13.2 (4) (0.52)	30.0 (1.18)	11.0 (0.43)	58.0 (4) (2.28)	6.6 (0.26)	50.0 (1.97)	35.0 (1.38)

(1) Frame 32 and 40 material is high-alloy steel. Frame 63 material is nodular graphite cast iron. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is -0.008 mm (-0.00031 in.).
(3) Tolerance for this dimension is ±0.5 mm (±0.0197 in.).
(4) This dimension includes base plate provided with frame 40 and frame 63 foot mount attachments.

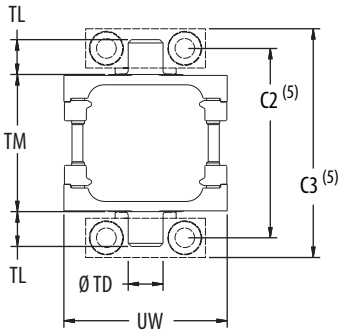
Cat. No.	Frame	OF mm (in.)	P mm (in.)	RF (1) mm (in.)	SL+ mm (in.)	TH mm (in.)	WO mm (in.)	WS mm (in.)
MPAR-NP5561	32	21.0 (0.82)	25.8 (1.01)	13.0 (0.51)	226.0 (8.90)	10.0 (0.39)	51.0 (2.01)	38.0 (1.49)
MPAR-NP5562	40	24.0 (0.94)	27.8 (1.09)	15.0 (0.59)	257.5 (2) (10.14)	20.0 (3) (0.79)	54.0 (2.12)	41.0 (1.61)
MPAR-NP5564	63	37.0 (1.45)	39.8 (1.56)	20.0 (0.79)	328.3 (12.92)	20.0 (3) (0.79)	67.0 (2.64)	52.0 (2.05)

(1) Tolerance for this dimension is -0.1 mm (±0.0039 in.).
(2) Add 13 mm (0.51 in.) for catalog number MPAR-*x2xxx*F-V*xx*.
(3) This dimension includes base plate provided with frame 40 and frame 63 foot mount attachments.

Trunnion Mounting Attachment

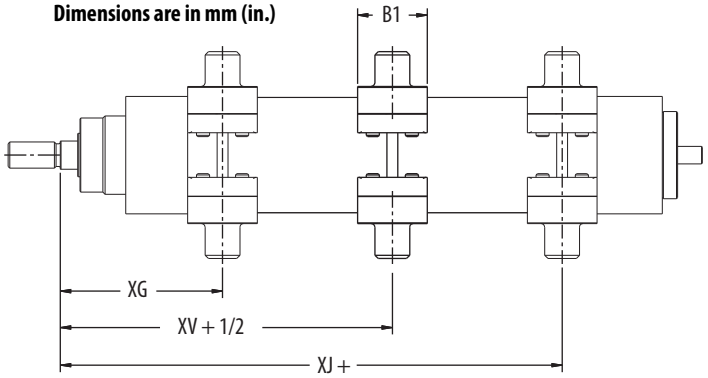


+ = Plus Stroke Length
+ 1/2 = Plus Stroke Length



This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

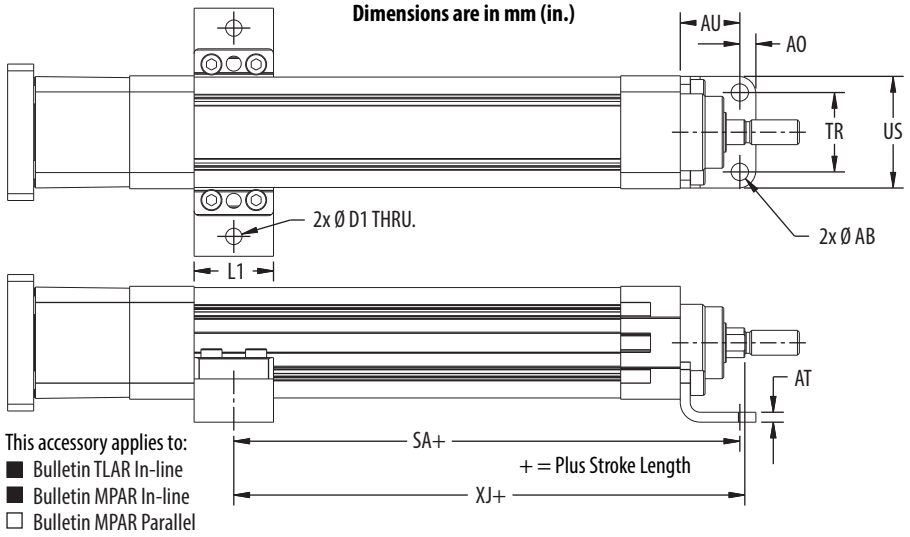
Dimensions are in mm (in.)



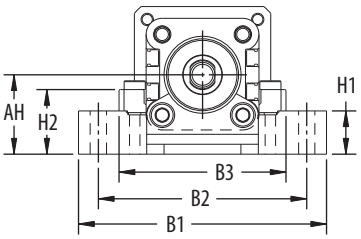
Cat. No. (1) (2)	Frame	B1 mm (in.)	C2 mm (in.)	C3 mm (in.)	TD mm (in.) e9	TL mm (in.)	TM mm (in.)	UW mm (in.)	XG mm (in.)	XJ mm (in.)	XV mm (in.)	Tightening Torque N•m (lb•in)
MPAR-NA163525	32	30.0 (1.18)	71.0 (2.80)	86.0 (3.39)	12.0 (0.47)	12.0 (0.47)	50.0 (1.97)	65.0 (2.56)	65.0 (2.56)	107 (4.21)	86.0 (3.39)	4.0 (35.4) (3)
MPAR-NA163526	40	32.0 (1.26)	87.0 (3.43)	105 (4.13)	16.0 (0.63)	16.0 (0.63)	63.0 (2.48)	75.0 (2.95)	74.5 (2.93)	130.5 (5.14)	102.5 (4.04)	8.0 (70.7) (3)
MPAR-NA163528	63	41.0 (1.61)	116 (4.57)	136 (5.35)	20.0 (0.79)	20.0 (0.79)	90.0 (3.54)	105 (4.13)	91.5 (3.60)	157.5 (6.20)	124.5 (4.90)	18.0 (159) (4)

(1) Material is tempered steel and subject to moderate corrosion stress.
(2) You can attach the trunnion mounting kit anywhere along the cylinder barrel.
(3) Tolerance for this tightening torque value is +1.0 N•m (+8.8 lb•in).
(4) Tolerance for this tightening torque value is +2.0 N•m (+17.7 lb•in).
(5) These dimensions are drawn to the trunnion support blocks as shown on page 110 (not included with the trunnion mounting attachment).

Foot Mounting Kit



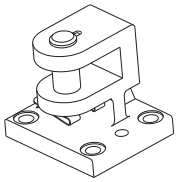
Frame	ØAB mm (in.)	ØD1 mm (in.)
32	7.0 (0.28)	6.6 (0.26)
40	10.0 (0.39)	9.0 (0.35)
63	10.0 (0.39)	9.0 (0.35)



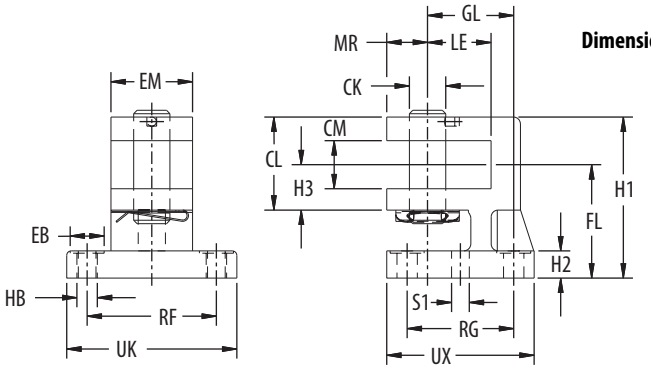
Cat. No. (1)	Frame	AH mm (in.)	AO mm (in.)	AT mm (in.)	AU mm (in.)	B1 mm (in.)	B2 mm (in.)	B3 mm (in.)	H1 mm (in.)	H2 mm (in.)	TR mm (in.)	US mm (in.)	XJ mm (in.)	SA mm (in.)	L1 mm (in.)
MPAR-NA174991	32	32.0 (1.26)	6.5 (0.26)	4.0 (0.16)	24.0 (0.94)	100 (3.94)	84.0 (3.31)	66.1 (2.60)	17.5 (0.69)	26.1 (1.03)	32.0 (1.26)	45.0 (1.77)	106 (4.17)	104 (4.09)	32.0 (1.26)
MPAR-NA174992	40	36.0 (1.42)	9.0 (0.35)	4.0 (0.16)	28.0 (1.10)	130 (5.12)	108 (4.25)	85.2 (3.35)	15.7 (0.62)	23.3 (0.92)	36.0 (1.42)	54.0 (2.13)	129.5 (5.10)	127.5 (5.02)	34.0 (1.34)
MPAR-NA174993	63	50.0 (1.97)	12.5 (0.49)	5.0 (0.20)	32.0 (1.26)	150 (5.91)	128 (5.04)	104.8 (4.13)	22.9 (0.90)	30.4 (1.20)	50.0 (1.97)	75.0 (2.95)	157.5 (6.20)	152.5 (6.00)	41.0 (1.61)

(1) Material is galvanized steel and subject to low corrosion stress. Contains no copper, PTFE, or silicone.

Clevis Foot (right-angle) Attachment



Attachment includes:
- 1 Clevis foot
- 1 Pivot pin (5)
- 1 Retaining clip



Dimensions are in mm (in.)

This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

Cat. No. (1)	Frame	CK mm (in.) h9	CL mm (in.)	CM (2) mm (in.)	EB mm (in.)	EM mm (in.)	FL (3) mm (in.)	GL (3) mm (in.)	H1 (4) mm (in.)	H2 mm (in.)	H3 mm (in.)	HB mm (in.)	LE mm (in.)
MPAR-NA31768	32	10.0 (0.39)	27.0 (1.06)	14.2 (0.56)	11.0 (0.43)	25.0 (0.98)	32.0 (1.26)	22.0 (0.87)	45.0 (1.77)	9.0 (0.35)	14.0 (0.55)	6.6 (0.26)	18.0 (0.71)
MPAR-NA31769	40	12.0 (0.47)	31.0 (1.22)	16.2 (0.64)	11.0 (0.43)	25.0 (0.98)	36.0 (1.42)	22.0 (0.87)	52.0 (2.05)	9.0 (0.35)	15.0 (0.59)	6.6 (0.26)	22.0 (0.87)
MPAR-NA31771	63	16.0 (0.63)	41.0 (1.61)	21.2 (0.83)	15.0 (0.59)	36.0 (1.42)	50.0 (1.97)	38.0 (1.50)	71.0 (2.80)	12.0 (0.47)	20.0 (0.79)	9.0 (0.35)	28.0 (1.10)

(1) Material is nodular graphite cast iron for environments requiring moderate corrosion resistance.
(2) Tolerance for this dimension is +0.2 mm (+0.008 in.).
(3) Tolerance for this dimension is ±0.3 mm (±0.012 in.) for Frame 32. Tolerance is js14 for Frame 40 and Frame 63.
(4) Tolerance for this dimension is ±0.5 mm (±0.019 in.) for Frame 32 and Frame 40.
(5) The pivot pin is secured against rotation with a dowel pin.

Cat. No.	Frame	MR mm (in.)	RF (1) mm (in.)	RG (1) mm (in.)	S1 mm (in.)	UK mm (in.)	UX mm (in.)
MPAR-NA31768	32	12.5 (0.49)	40.0 (1.57)	29.0 (1.14)	4.8 (0.19)	56.0 (2.20)	45.0 (1.77)
MPAR-NA31769	40	15.0 (0.59)	40.0 (1.57)	29.0 (1.14)	5.8 (0.23)	56.0 (2.20)	45.0 (1.77)
MPAR-NA31771	63	18.0 (0.71)	57.0 (2.24)	47.0 (1.85)	7.8 (0.31)	75.0 (2.95)	65.0 (2.56)

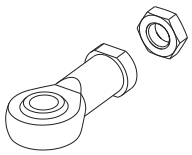
(1) Tolerance for this dimension is ±0.3 mm (±0.012 in.) for Frame 32. Tolerance is js14 for Frame 40 and Frame 63.

MP-Series and TL-Series Electric Cylinder Rod-end Accessories

These accessories apply to MP-Series and TL-Series electric cylinders. Components are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

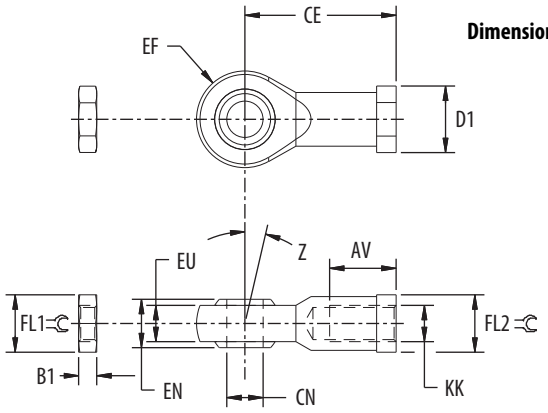
Rod-eye Attachment

This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel



Attachment includes:
- 1 Rod eye
- 1 Hex nut

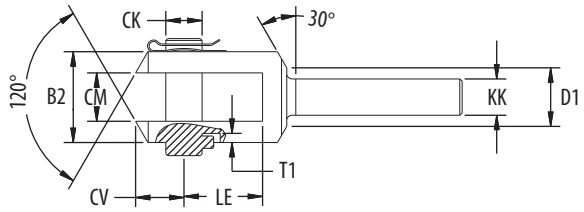
Dimensions are in mm (in.)



Cat. No. (1)	Cat. No. (2) Corrosion Resistant	Frame	AV (3) mm (in.)	B1 mm (in.)	CE mm (in.)	CN mm (in.) H7	D1 mm (in.)	EF (4) mm (in.)	EN mm (in.)	EU mm (in.)	Z Angle	FL1 mm ⌭	FL2 mm ⌭	KK
MPAR-NE9261	MPAR-NE195582	32	20.0 (0.79)	5.0 (0.20)	43.0 (1.69)	10.0 (0.39)	19.0 (0.75)	14.0 (0.55)	14.0 (0.55)	10.5 (0.41)	13°	17	17	M10x1.25
MPAR-NE9262	MPAR-NE195583	40	22.0 (0.87)	6.0 (0.24)	50.0 (1.97)	12.0 (0.47)	22.0 (0.87)	16.0 (0.63)	16.0 (0.63)	12.0 (0.47)	13°	19	19	M12x1.25
MPAR-NE9263	MPAR-NE195584	63	28.0 (1.10)	8.0 (0.31)	64.0 (2.52)	16.0 (0.63)	27.0 (1.06)	21.0 (0.83)	21.0 (0.83)	15.0 (0.59)	15°	24	22	M16x1.50

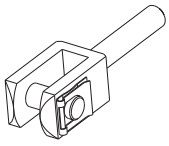
(1) Material is galvanized steel and subject to moderate corrosion stress. Contains no copper, PTFE, or silicone.
(2) Material is high-alloy steel for environments requiring higher corrosion resistance. Contains no copper, PTFE, or silicone.
(3) Tolerance for this dimension is -2.0 mm (-0.079 in.).
(4) Tolerance for this dimension is ±0.5 mm (±0.020 in.).

Rod Clevis (threaded rod) Attachment

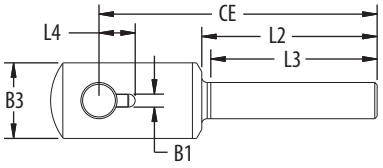


Dimensions are in mm (in.)

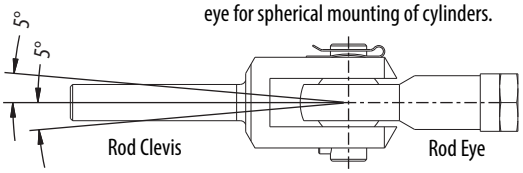
Attachment includes:
- 1 Rod clevis
- 1 Pivot pin (2)
- 1 Retaining clip



Use the rod clevis in combination with the rod eye for spherical mounting of cylinders.



This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

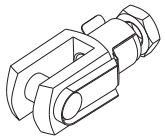


Cat. No. (1)	Frame	B1 mm (in.)	B2 mm (in.) d12	B3 mm (in.)	CE mm (in.)	CK mm (in.) F7/h9	CM mm (in.) B12	CV mm (in.)	D1 mm (in.)	L2 mm (in.)	L3 mm (in.)	L4 mm (in.)	LE mm (in.)	T1 mm (in.)	KK
MPAR-NE32954	32	3.3 (0.13)	28.0 (1.10)	20.0 (0.79)	78.0 (3.07)	10.0 (0.39)	14.0 (0.55)	12.0 (0.47)	18.0 (0.71)	53.0 (2.09)	50.0 (1.97)	11.0 (0.43)	20.0 (0.79)	3.0 (0.12)	M10x1.25
MPAR-NE10767	40	4.3 (0.17)	30.0 (1.18)	25.0 (0.98)	92.0 (3.62)	12.0 (0.47)	16.0 (0.63)	16.0 (0.63)	19.0 (0.75)	58.0 (2.28)	55.0 (2.17)	12.0 (0.47)	26.0 (1.02)	3.0 (0.12)	M12x1.25
MPAR-NE10768	63	4.3 (0.17)	40.0 (1.57)	35.0 (1.38)	108 (4.25)	16.0 (0.63)	21.0 (0.83)	21.0 (0.83)	24.0 (0.94)	65.0 (2.56)	62.0 (2.44)	14.0 (0.55)	31.0 (1.22)	3.0 (0.12)	M16x1.50

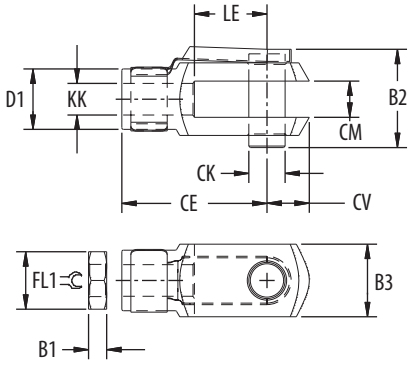
(1) Material is galvanized steel and subject to moderate corrosion stress. Contains no copper, PTFE, or silicone.

(2) The pivot pin is secured against rotation with a dowel pin.

Rod Clevis Attachment



Attachment includes:
- 1 Rod clevis
- 1 Hinged spring pin
- 1 Hex nut



Dimensions are in mm (in.)

This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

Cat. No. (1)	Frame	B1 mm (in.)	B2 mm (in.)	B3 mm (in.)	CE (2) mm (in.)	CK (3) mm (in.) H9	CM mm (in.)	CV mm (in.)	D1 mm (in.)	LE (4) mm (in.)	FL1 mm ⌭	KK
MPAR-NE6144	32	5.0 (0.20)	26.0 (1.02)	20.0 (0.79)	40.0 (1.57)	10.0 (0.39)	10.0 (5) (0.39)	12.0 (0.47)	18.0 (0.71)	20.0 (0.79)	17	M10x1.25
MPAR-NE6145	40	6.0 (0.24)	31.0 (1.22)	24.0 (0.94)	48.0 (1.89)	12.0 (0.47)	12.0 (6) (0.47)	14.0 (0.55)	20.0 (0.79)	24.0 (0.94)	19	M12x1.25
MPAR-NE6146	63	8.0 (0.31)	39.0 (1.54)	32.0 (1.26)	64.0 (2.52)	16.0 (0.63)	16.0 (6) (0.63)	19.0 (0.75)	26.0 (1.02)	32.0 (1.26)	24	M16x1.50

(1) Material is galvanized steel and subject to moderate corrosion stress. Contains no copper, PTFE, or silicone.

(2) Tolerance for this dimension is ±0.4 (0.016 in.).

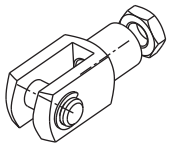
(3) Tolerance for this dimension is H9.

(4) Tolerance for this dimension is ±0.5 (0.019 in.).

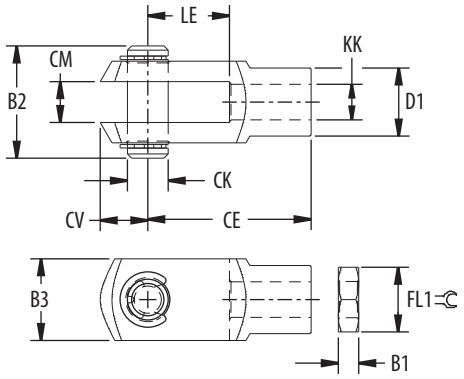
(5) Tolerance for this dimension is B13.

(6) Tolerance for this dimension is a range between +0.7…+0.15 mm (+0.027…0.006 in.).

Rod Clevis Attachment (corrosion resistant)



Attachment includes:
- 1 Rod clevis
- 1 Pivot pin
- 1 Hex nut



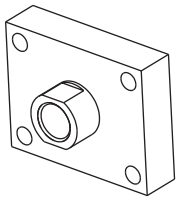
Dimensions are in mm (in.)

This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel

Cat. No. (1)	Frame	B1 mm (in.)	B2 mm (in.)	B3 mm (in.)	CE (2) mm (in.)	CK mm (in.) H9	CM mm (in.)	CV mm (in.)	D1 mm (in.)	LE (3) mm (in.)	FL1 mm	KK
MPAR-NE13569	32	5.0 (0.20)	27.0 (1.06)	20.0 (0.79)	40.0 (1.57)	10.0 (0.39)	10.0 (4) (0.39)	12.0 (0.47)	18.0 (0.71)	20.0 (0.79)	16	M10x1.25
MPAR-NE13570	40	6.0 (0.24)	33.0 (1.30)	24.0 (0.94)	48.0 (1.89)	12.0 (0.47)	12.0 (5) (0.47)	14.0 (0.55)	20.0 (0.79)	24.0 (0.94)	18	M12x1.25
MPAR-NE13571	63	8.0 (0.31)	43.0 (1.69)	32.0 (1.26)	64.0 (2.52)	16.0 (0.63)	16.0 (5) (0.63)	19.0 (0.75)	26.0 (1.02)	32.0 (1.26)	24	M16x1.50

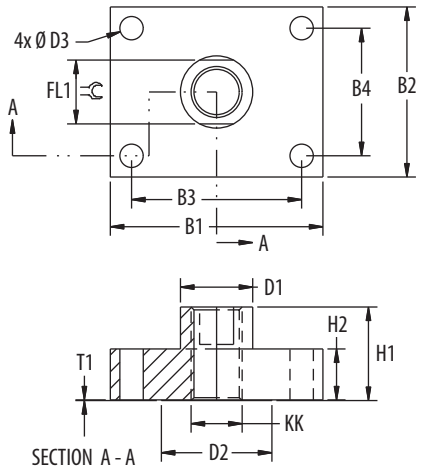
(1) Material is high-alloy steel for environments requiring higher corrosion resistance. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is ±0.4 (0.016 in.).
(3) Tolerance for this dimension is ±0.5 (0.019 in.).
(4) Tolerance for this dimension is B13.
(5) Tolerance for this dimension is a range between +0.7…+0.15 mm (+0.027…0.006 in.).

Coupling Piece Attachment



Attachment includes:
- 1 Flange plate
- 1 Threaded coupling

This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel



Dimensions are in mm (in.)

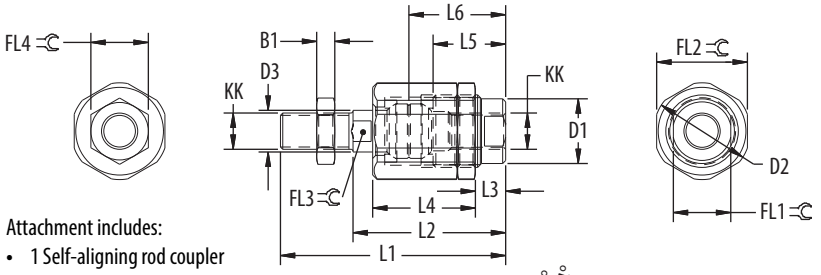
Cat. No. (1) (2)	Frame	B1 mm (in.)	B2 mm (in.)	B3 mm (in.)	B4 mm (in.)	D1 (3) mm (in.)	D2 mm (in.)	D3 mm (in.) H13	H1 mm (in.)	H2 mm (in.)	T1 mm (in.)	FL1 mm ⌯	KK
MPAR-NE36125	32	40.0 (1.57)	35.0 (1.38)	30.0 (1.18)	25.0 (0.98)	17.0 (0.67)	26.0 (1.02)	5.5 (0.22)	20.0 (0.79)	10.0 (0.39)	0.10 (0.004)	15	M10x1.25
MPAR-NE36126	40	50.0 (1.97)	40.0 (1.57)	40.0 (1.57)	30.0 (1.18)	17.0 (0.67)	26.0 (1.02)	5.5 (0.22)	22.0 (0.87)	12.0 (0.47)	0.10 (0.004)	15	M12x1.25
MPAR-NE36127	63	60.0 (2.36)	45.0 (1.77)	48.0 (1.89)	33.0 (1.30)	22.0 (0.87)	34.0 (1.34)	6.6 (0.26)	25.0 (0.98)	12.0 (0.47)	0.10 (0.004)	19	M16x1.50

(1) Material is galvanized steel and subject to moderate corrosion stress. Contains no copper, PTFE, or silicone.

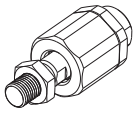
(2) Coupling is for non-rotating piston rods with male threads. You can use these coupling pieces to connect a cylinder with a non-rotating piston rod to another component with a defined orientation, without rotating either the cylinder or the other component.

(3) Tolerance for this dimension is -0.2 mm (-0.008 in.).

Self-aligning Rod Coupler Attachment

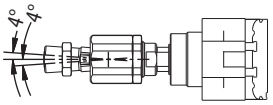


Dimensions are in mm (in.)

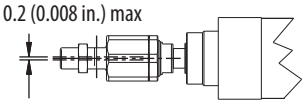


Attachment includes:
- 1 Self-aligning rod coupler
- 1 Hex nut

This accessory applies to:
- Bulletin TLAR In-line
- Bulletin MPAR In-line
- Bulletin MPAR Parallel



Angular Compensation



Radial Compensation of Central Axis

Cat. No. (1)	Frame	B1 mm (in.)	D1 mm (in.)	D2 mm (in.)	D3 mm (in.)	L1 mm (in.)	L2 mm (in.)	L3 mm (in.)	L4 mm (in.)	L5 mm (in.)	L6 mm (in.)
MPAR- NE6140	32	5.0 (0.20)	21.4 (0.84)	32.0 (1.26)	13.8 (0.54)	69.5 (2.74)	49.5 (1.95)	9.0 (0.35)	34.0 (1.34)	23.0 (0.91)	31.0 (1.22)
MPAR-NE6141	40	6.0 (0.24)	21.4 (0.84)	32.0 (1.26)	13.8 (0.54)	74.5 (2.93)	50.5 (1.99)	10.0 (0.39)	34.0 (1.34)	24.0 (0.94)	32.0 (1.26)
MPAR-NE6142	63	8.0 (0.31)	33.8 (1.33)	45.0 (1.77)	22.0 (0.87)	103 (4.06)	71.0 (2.80)	10.0 (0.39)	53.0 (2.09)	32.0 (1.26)	44.5 (1.75)

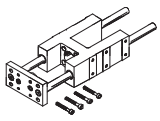
Cat. No. (1)	Frame	FL1 mm ⌭	FL2 mm ⌭	FL3 mm ⌭	FL4 mm ⌭	Radial Deviation mm (in.)	KK
MPAR-NE6140	32	19	30	12	17	±0.7 (±0.027)	M10x1.25
MPAR-NE6141	40	19	30	12	19	±0.7 (±0.027)	M12x1.25
MPAR-NE6142	63	30	41	19	24	±1.0 (±0.039)	M16x1.50

(1) Material is galvanized steel and subject to moderate corrosion stress. Contains no copper, PTFE, or silicone.

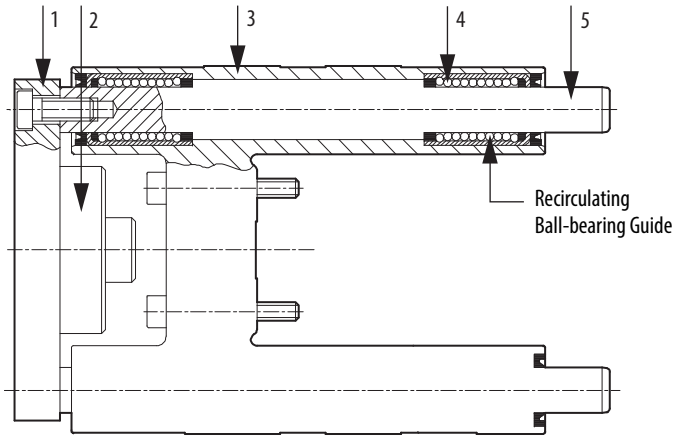
Technical Specifications - MP-Series and TL-Series Electric Cylinder Rod Guides

Rod guides protect ISO standard cylinders from torsion when subjected to radial or torsional side loads. They provide high-precision guidance for workpiece handling and other handling applications.

Rod Guides for Fixed Strokes

Rod Guide	Cat. No. Frame 32	Stroke mm (in.)	Cat. No. Frame 40	Stroke mm (in.)	Cat. No. Frame 63	Stroke mm (in.)
	MPAR-NE34494	10…100 (0.39…3.94)	MPAR-NE34500	10…100 (0.39…3.94)	MPAR-NE34514	10…100 (0.39…3.94)
	MPAR-NE34496	10…200 (0.39…7.87)	MPAR-NE34502	10…200 (0.39…7.87)	MPAR-NE34516	10…200 (0.39…7.87)
	MPAR-NE34497	10…320 (0.39…12.60)	MPAR-NE34504	10…320 (0.39…12.60)	MPAR-NE34518	10…320 (0.39…12.60)
	MPAR-NE150290	10…400 (0.39…15.75)	MPAR-NE150291	10…400 (0.39…15.75)	MPAR-NE34519	10…400 (0.39…15.75)
			MPAR-NE34505	10…500 (0.39…19.68)	MPAR-NE34520	10…500 (0.39…19.68)

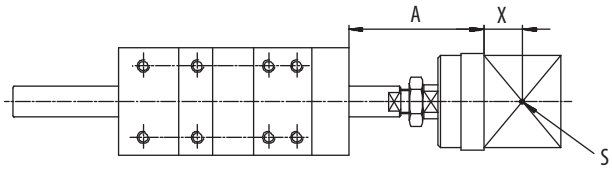
Material Specifications



Item	Attribute	Value (1)
1	Yoke Plate	Aluminium
2	Coupling	Steel
3	Guide	Aluminium
4	Bearing	Steel
5	Guide Rods	Steel

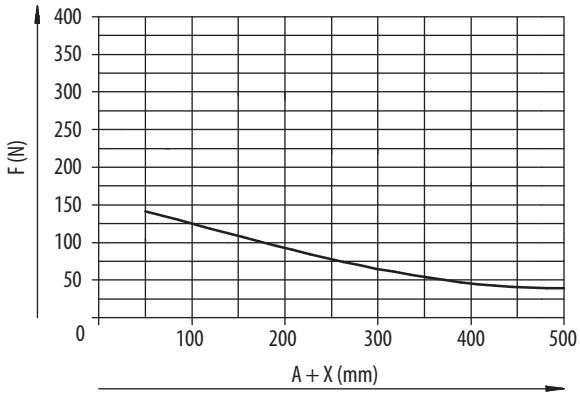
(1) Contains no copper, PTFE, or silicone.

Maximum Working Load (F) as a Function of Cantilever Extension A

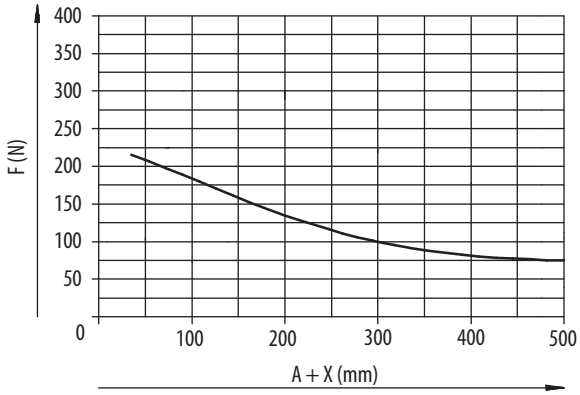


A = Cantilever Extension
X = Distance for Center of Gravity of Working Load
S = Center of Gravity of Working Load

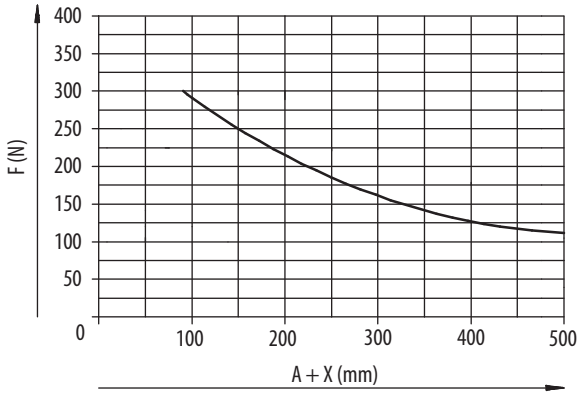
Maximum Load Forces (frame 32)



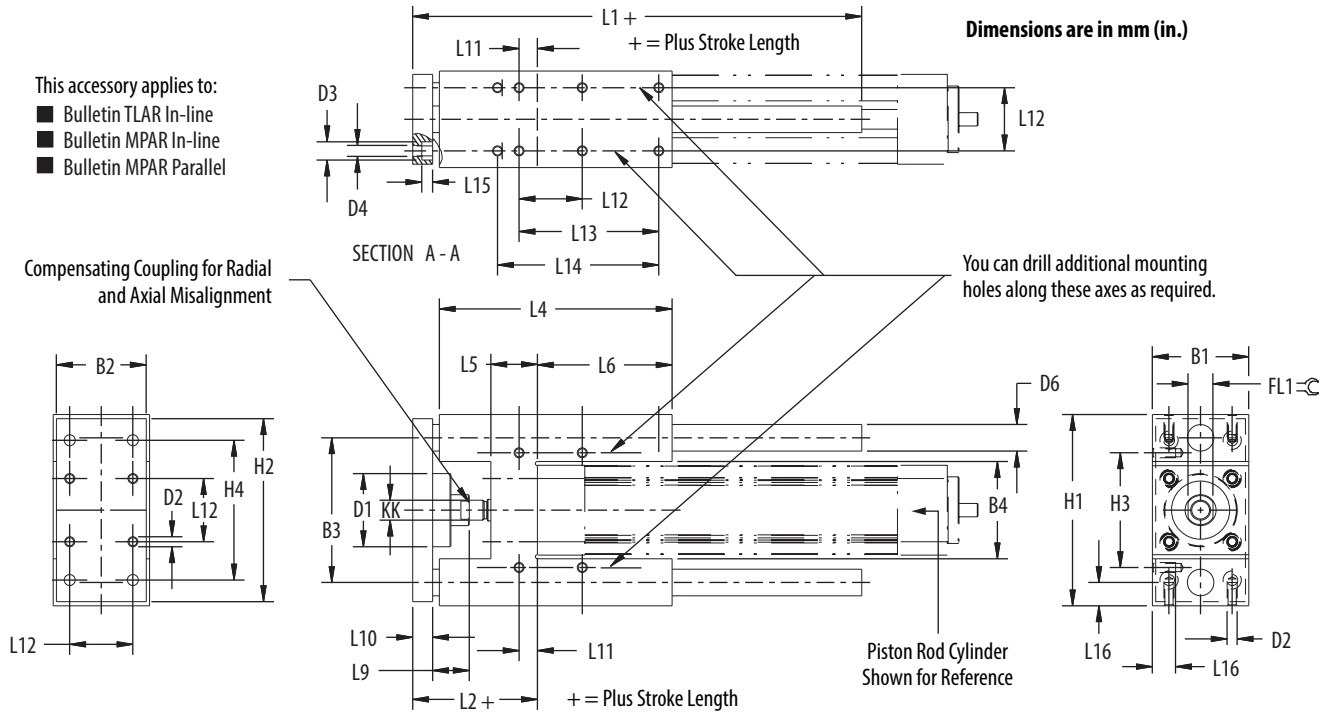
Maximum Load Forces (frame 40)



Maximum Load Forces (frame 63)



Rod Guide Dimensions



Frame	B1 (1) mm (in.)	B2 mm (in.)	B3 (2) mm (in.)	B4 (3) mm (in.)	D1 mm (in.)	D2	D3 mm (in.)	D4 mm (in.)	D6 mm (in.) h6	H1 mm (in.)	H2 mm (in.)	H3 (2) mm (in.)	H4 (2) mm (in.)	KK
32	50.0 (1.97)	45.0 (1.77)	74.0 (2.91)	50.5 (1.99)	44.0 (1.73)	M6	11.0 (0.43)	6.6 (0.26)	12.0 (0.47)	97.0 (4) (3.82)	90.0 (3.54)	61.0 (2.40)	78.0 (3.07)	M10x1.25
40	58.0 (2.28)	54.0 (2.13)	87.0 (3.43)	58.5 (2.30)	44.0 (1.73)	M6	11.0 (0.43)	6.6 (0.26)	16.0 (0.63)	115 (4) (4.53)	110 (4.33)	69.0 (2.72)	84.0 (3.31)	M12x1.25
63	85.0 (3.35)	80.0 (3.15)	119 (4.69)	85.5 (3.37)	60.0 (2.36)	M8	15.0 (0.59)	9.0 (0.35)	20.0 (0.79)	152 (5) (5.98)	145 (5.71)	100 (3.94)	105 (4.13)	M16x1.50

(1) Tolerance for this dimension is -0.3 mm (-0.012 in.).
(2) Tolerance for this dimension is ±0.2 mm (±0.008 in.).
(3) Tolerance for this dimension is ±0.3 mm (±0.012 in.).
(4) Tolerance for this dimension is -0.4 mm (-0.016 in.).
(5) Tolerance for this dimension is -0.5 mm (-0.019 in.).

Frame	L1 mm (in.)	L2 mm (in.)	L4 mm (in.)	L5 mm (in.)	L6 mm (in.)	L9 mm (in.)	L10 mm (in.)	L11 mm (in.)	L12 (1) mm (in.)	L13 (1) mm (in.)	L14 (1) mm (in.)	L15 mm (in.)	L16 mm (in.)	FL1 mm ⌭
32	155 (6.10)	67.0 (2) (2.64)	125 (4.92)	24.0 (0.94)	76.0 (2.99)	20.0 (0.79)	12.0 (0.47)	4.3 (0.17)	32.5 (1.28)	70.3 (2.77)	78.0 (3.07)	6.5 (0.26)	12.0 (0.47)	15
40	170 (6.69)	75.0 (2) (2.95)	140 (5.51)	28.0 (1.10)	81.0 (3.19)	22.0 (0.87)	12.0 (0.47)	11.0 (0.43)	38.0 (1.50)	84.0 (3.31)	–	6.5 (0.26)	14.0 (0.55)	15
63	220 (8.66)	89.0 (3) (3.50)	182 (7.17)	34.0 (1.34)	111 (4.37)	25.0 (0.98)	15.0 (0.59)	15.3 (0.60)	56.5 (2.22)	105 (4.13)	–	9.0 (0.35)	16.0 (0.63)	19

(1) Tolerance for this dimension is ±0.2 mm (±0.008 in.).
(2) Tolerance for this dimension is +5.0 mm (+0.197 in.).
(3) Tolerance for this dimension is +10.0 mm (+0.394 in.).

Notes:

MP-Series Heavy Duty Electric Cylinders

The MP-Series (Bulletin MPAI) heavy-duty electric cylinders are compact, lightweight, high-force actuators that serve as a cost-effective alternative to fluid power solutions. These ready-to-install electric cylinders are energy efficient and provide machine flexibility, including precise, multi-point (positioning or force) motion profiles, that you can customize for movements with smooth startup and soft stops.

MP-Series Heavy Duty Electric Cylinder Features

- Fully integrated servo motor and mechanics, these ready to install cylinders contribute to reductions in mechanical design engineering, assembly, wiring, and commissioning time.
- Standard and food-grade paint configurations are available in 64, 83, 110, and 144 mm frames sizes.
- State-of-the-art design features ballscrew or roller screw construction with linear stroke lengths up to 450 mm (18 in.), absolute high-resolution feedback, and speeds up to 610 mm/s (24 in/s).
- Lower operating costs... energy efficient actuators for 200V and 400V-class motion control systems.
- Extend and retract accurately. End with a soft touch.
- Linear feed force of up to 14,679 N (3300 lb).
- Sizing and engineering with compatible servo drives is made easy with Motion Analyzer software and online CAD files.
- Commissioning is simplified by the use of standard Allen-Bradley motor power and feedback cables.
- Full set-up and programming support by using Allen-Bradley Logix5000 controllers. Studio 5000 Logix Designer and Ultraware software make setup and commissioning fast and easy.
- Closed loop control (absolute encoder feedback, standard).
- IP66 and IP67 environmental ratings, standard.

Bulletin MPAI (food-grade paint) Heavy Duty Electric Cylinder

Food Grade Paint Option Features

- Stainless steel actuator rod with Viton seals.
- Smooth body design with durable two-part (white) food-grade epoxy coating and corrosion resistant stainless steel fasteners.
- Fully encapsulated windings for moisture protection and increased thermal efficiency.
- Designed to meet the needs of many food, beverage, and medical requirements, with mounting below the food line.
- Two standard mounting options:
  - Front face mount: All surfaces epoxy coated, except for machined aluminum face-mounting surface used for direct mounting or with an optional stainless-steel front flange. Face mounted surface with type 316 stainless-steel wiper seal retaining rings are designed to eliminate pockets that can accumulate residue.
  - Rear clevis mount: All surfaces are epoxy coated including clevis mount attachment that has stainless steel inserts for the pivot and wear points.
- Field replaceable front wiper (Viton) seal.

Catalog Numbers - MP-Series Heavy Duty Electric Cylinders

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your actuator. For questions regarding product availability, contact your Allen-Bradley distributor.

MP-Series Heavy Duty Electric Cylinders

MP AI -x x xxx x x x x x -x

Special Feature (1)
Blank = IP67 with use of Bulletin 2090 environmentally sealed cable connectors in stationary applications (2)
W = Food grade (white paint) stainless steel rod

Actuator Mounting
A = Front face, side front, bottom front, and rear tapped mounting holes
B = Front trunnion, no tapped mounting holes
C = Rear clevis mount, no tapped mounting holes (food-grade paint only)
E = Front face mount, front face tapped mounting holes (food-grade paint only)

Holding Brake
2 = No brake
4 = 24V DC brake

Motor Type
3 = Applies to 150…450 mm (6.0…18 in.) stroke lengths
1 = Applies to 076 mm (3.0 in.) stroke length

Feedback Type
M = Multi-turn, 1024 sin/cos, absolute encoder, Hiperface protocol
V = Multi-turn, 128 sin/cos, absolute encoder, Hiperface protocol

Mechanical Drive/Screw Lead, Type (2)
C = 5.0 mm/rev ball screw (0.197 in./rev)
E = 10.0 mm/rev ball screw (0.394 in./rev)
R = 5.0 mm/rev roller screw (0.197 in./rev)
S = 10.0 mm/rev roller screw (0.394 in./rev)

Rod Stroke Length (2)
076 = 76.2 mm (3.0 in.)
150 = 152.4 mm (6.0 in.)
300 = 304.8 mm (12.0 in.)
450 = 457.2 mm (18.0 in.)

Actuator Frame Size
2 = 64 mm
3 = 83 mm
4 = 110 mm
5 = 144 mm

Voltage Class
A = 200V
B = 400V

Actuator Type
AI = Actuator rod (threaded male rod end)

Actuator Series
MP = MP-Series

(1) The Special Feature field is used for customer-specific coding.
(2) Maintain the front bearing and wiper seal at the prescribed interval. Wipe rods dry before motion occurs or liquid could be drawn inside the actuator.
(3) Not all combinations are available. Only the configurations as listed in Performance Specifications (standard, ball screw), Performance Specifications (standard, roller screw), and Performance Specifications (food-grade paint, ball screw) beginning on page 137, are available.

MP-Series Heavy Duty Electric Cylinder Accessories

MP AI - ***xx x xx xx***

Stroke Length (applies to only NEx02 anti-rotation option)
76 = 76.2 mm (3.0 in.)
15 = 152.4 mm (6.0 in.)
30 = 304.8 mm (12.0 in.)
45 = 457.2 mm (18.0 in.)

Option Number
01 = If NA*x*01, Front flange mount
If NE*x*01, Self-aligning rod coupler
21 = NA*x*21, Front flange mount (stainless steel)
02 = NE*x*02, Anti-rotation option
03 = If NA*x*03 = Rear clevis mount
If NE*x*03 = Spherical rod-eye
23 = NE*x*23, Spherical rod-eye (corrosion resistant)
04 = NE*x*04, Rod clevis
24 = NE*x*24, Rod clevis (stainless steel)
06 = NA*x*06 = Mounting plates kit

Actuator Frame Size
2 = 64 mm
3 = 83 mm
4 = 110 mm
5 = 144 mm

Accessory Type
NA = Mounting accessory
NE = Rod-end accessory
NR = Replacement kit accessory

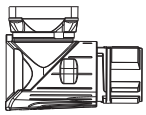
Actuator Type
AI = Actuator rod (threaded male rod end)

Actuator Series
MP = MP-Series

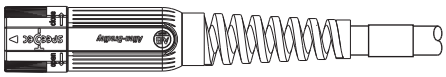
Motor Connector/Cable Compatibility

MP-Series (Bulletin MPAI) Heavy Duty Electric Cylinders

SpeedTec-ready DIN Connectors



SpeedTec DIN (M7) Cable Plug



- MPAI-A/B*xxxxx* electric cylinders
- Receives M4 and M7 cable plugs (O-ring required for M4)
- Attach M7 cable plug with one-quarter turn

- 2090-CFBM7DF-CEAA*xx* (standard, non-flex) flying-lead, feedback cables
- 2090-CFBM7DD-CEAA*xx* (standard, non-flex) drive-end connector, feedback cables
- 2090-CFBM7DF-CEAF*xx* (continuous-flex) flying-lead, feedback cables
- 2090-CFBM7DD-CEAF*xx* (continuous-flex) drive-end connector, feedback cables

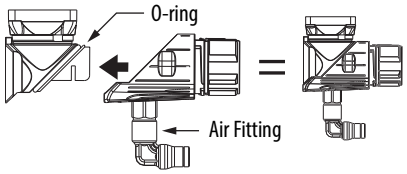
- 2090-CPWM7DF-*xx*AA*xx* (standard, non-flex) power-only cables
- 2090-CPBM7DF-*xx*AA*xx* (standard, non-flex) power/brake cables
- 2090-CPWM7DF-*xx*AF*xx* (continuous-flex) power-only cables
- 2090-CPBM7DF-*xx*AF*xx* (continuous-flex) power/brake cables

MPAI-A/B2*xxx*, MPAI-A/B3*xxx*, MPAI-A/B4*xxx*, and MPAI-B5*xxx* electric cylinders require 16 AWG power cables. MPAI-A5*xxx* electric cylinders require 14 AWG power cables.

MP-Series Heavy Duty Electric Cylinder Accessories and Options

- 24V DC holding brake.
- Rod-end attachments, mounting attachments, and anti-rotation accessories.
- Positive Air Pressure kit (catalog number MPF-7-AIR-PURGE) is mounted on the feedback connector to provide positive air pressure to further reduce the chance of contamination inside the electric cylinder.

  Refer to the MP-Series Heavy Duty Electric Cylinders Installation Instructions, publication MPAI-IN001, for more information on the positive air pressure kit.



MP-Series Heavy Duty Electric Cylinder Configurations

The Bulletin MPAI electric cylinders are available in standard and food-grade paint configurations. Both configurations are available in two mounting options and can be accessorized in the field with various mounting attachments.

Standard Configurations

- The front-face mount and front trunnion mount cylinders provide tapped holes for mounting attachments.
- The front trunnion mount cylinders are compatible with only the rod-end attachments.
- On standard configurations, the rear-clevis mounting bracket is purchased separately and field-installed.

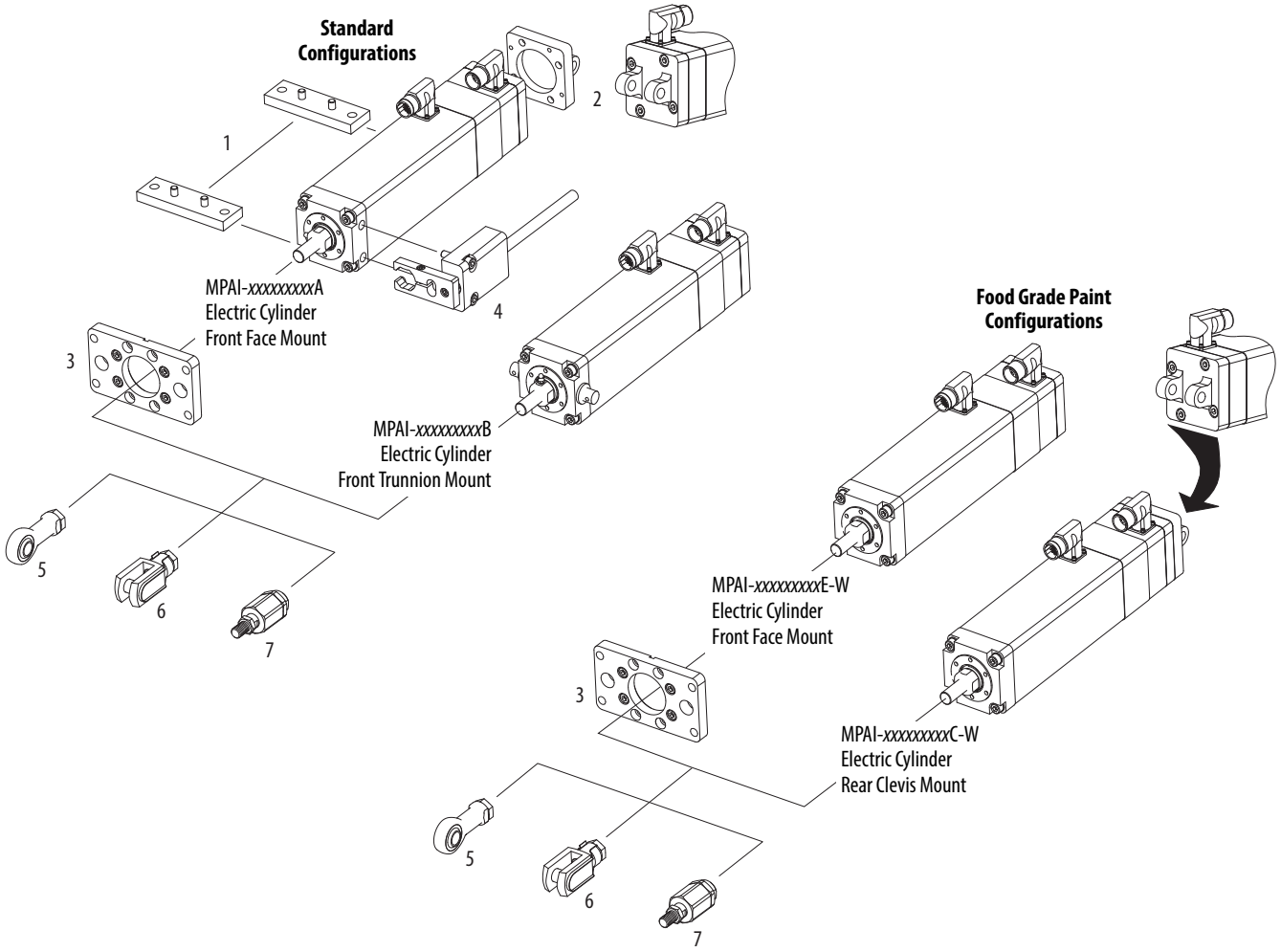
Food Grade Paint Configurations

- Food-grade paint configurations are factory pre-assembled and epoxy painted.
- Pre-assembly and epoxy (white) paint is essential for the overall environmental integrity of the unit.
- No unnecessary accessory mounting holes are included.
- On food-grade paint configurations, the rear-clevis mounting bracket is pre-assembled and the cylinder is epoxy painted as a single unit.

Configurations and Accessories

Mounting Attachments

Accessory Item		Description	Dimensions
1	Mounting plates	Includes two mounting plates and mounting hardware.	page 150
2	Rear clevis mounting kit	Includes replacement gasket to maintain IP rating, end-cap mounting bolts are reused.	page 151
3	Front flange mount	For front face mounting. Includes mounting hardware.	page 152
4	Anti-rotation option	Needed to prevent piston rod from rotating when piston rod is not connected to the load. Includes mounting hardware.	page 154



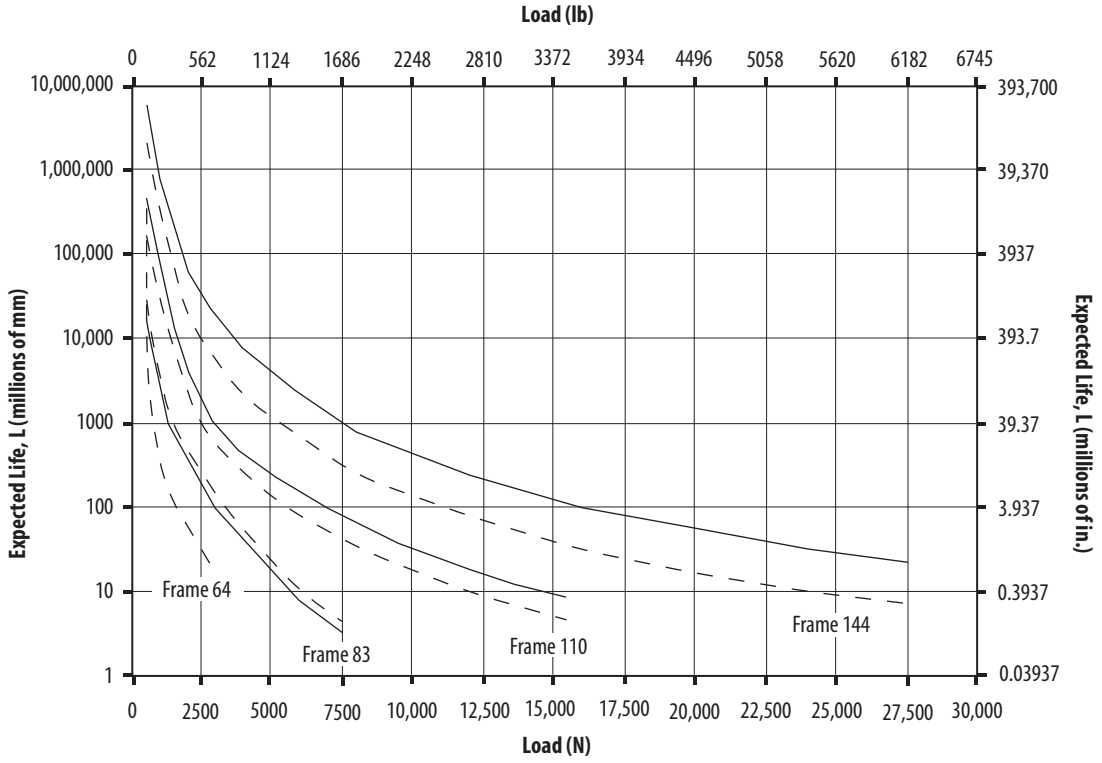
Rod-end Attachments

Accessory Item		Description	Dimensions
5	Rod eye	Includes mounting hardware.	page 155
6	Rod clevis	Permits a swivelling movement of the cylinder in one plane. Includes mounting hardware.	page 156
7	Self-aligning rod coupler	Links the piston rod-end of the cylinder to the machine parts to be moved. Used to compensate for radial and angular misalignment. Includes rod coupler and hex nut.	page 156

MP-Series Heavy Duty Electric Cylinders Life Specifications

Electric cylinder life specifications (total running performance) are based on a combination of tested and calculated data. If the parameters of your application are different, your results can be different. The achievable running performance, expressed as L, is a function of mean feed force F, according to DIN 69051-4 as illustrated below. Refer to Motion Analyzer software, version 4.800 or later, for assistance when making these calculations for determining the running performance for your application.

Ball Screw Expected Life Specifications



Load = Mean cubic feed force.
Life, L = Accumulated total travel running performance.
All curves represent properly lubricated and maintained actuators.

The L_{10} expected life of a ball-screw linear actuator is expressed as the linear travel distance that 90% of properly maintained ball-screws are expected to meet or exceed. This is not a guarantee. Use this graph for estimation purposes only.

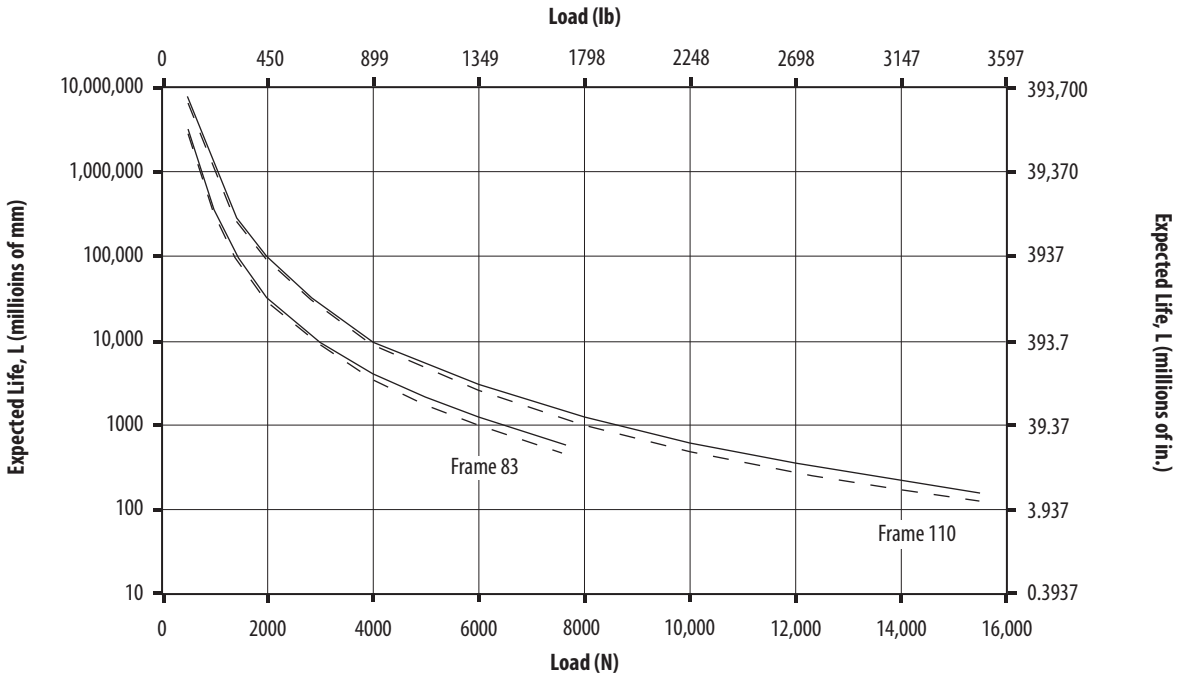
Legend
10 mm Lead
5 mm Lead

The underlying formula that defines this value is:

$$L_{10} = (P)\left(\frac{C}{F}\right)^3$$

Where:
L_{10} = Travel life in m (in.)
C = Dynamic load rating N (lb)
F = Cubic mean applied load N (lb)
P = Screw lead mm (in.)

Roller Screw Expected Life Specifications



Load = Mean cubic feed force.
Life, L = Accumulated total travel running performance.
All curves represent properly lubricated and maintained actuators.

The L_{10} expected life of a roller-screw linear actuator is expressed as the linear travel distance that 90% of properly maintained roller-screws are expected to meet or exceed. This is not a guarantee. Use this graph for estimation purposes only.

Legend
10 mm Lead
5 mm Lead

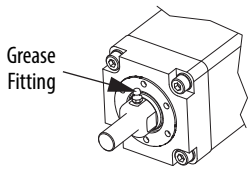
The underlying formula that defines this value is:

$$L_{10} = (P)\left(\frac{C}{F}\right)^3$$

Where:
L_{10} = Travel life in millions of mm (in.)
C = Dynamic load rating N (lb)
F = Cubic mean applied load N (lb)
P = Screw lead mm (in.)

Application Guidelines

All Loads must be separately supported and guided (1). Align loads along the line-of-thrust rod motion. Side loading affects the life of the actuator. Actuators have been lubricated at the factory and are ready for installation. For moderate to light use, no lubrication is required for the life of the actuator. For more severe duty use (higher loads and/or higher duty cycles), periodic lubrication is necessary to achieve actuator expected life (2). Add grease via the built-in grease fitting. Removing the cylinder from the machine is seldom necessary (3).



(1) Bulletin MPAI actuators are not meant for use where side loading occurs. This is a common application characteristic shared by fluid power cylinders.
(2) Refer to the MP-Series Heavy Duty Electric Cylinders Installation Instructions, publication MPAI-IN001, for lubrication guidelines and specifications.
(3) You can extend or retract the rod to a point where the grease fitting (if present) is more accessible.

Technical Specifications - MP-Series Heavy Duty Electric Cylinders

General Specifications

Attribute	Frame 64	Frame 83	Frame 110	Frame 144
Construction design	Ball screw servo-driven actuator	Ball screw or roller screw servo-driven actuator		Ball screw servo-driven actuator
Piston rod thread	M10 x 1.25	M16 x 1.50	M20 x 1.50	M27 x 2.00
Working stroke length	76.2 mm (3.0 in.) 152.4 mm (6.0 in.) 304.8 mm (12.0 in.)	76.2 mm (3.0 in.) 152.4 mm (6.0 in.) 304.8 mm (12.0 in.) 457.2 mm (18.0 in.)	152.4 mm (6.0 in.) 304.8 mm (12.0 in.) 457.2 mm (18.0 in.)	
Protection against torsion/guide	Plain bearing guide			
Stroke reserve	0 mm			
Positioning repeatability, max	±0.02 mm (0.0008 in.)			
Reversing backlash, max (1) Ball screw Roller screw	 0.10 mm (0.004 in.) N/A	 0.10 mm (0.004 in.) 0.03 mm (0.001 in.)	 0.13 mm (0.005 in.) 0.03 mm (0.001 in.)	 0.13 mm (0.005 in.) N/A
Duty cycle	100%			
Position sensing (feedback)	Multi-turn absolute encoder			
Mounting position	Any			

(1) In new condition.

Materials Specifications

Attribute	Standard Configuration Cat. No. MPAI-*xxxxxxxxx*A or MPAI-*xxxxxxxxx*B	Food Grade Paint Configuration Cat. No. MPAI-*xxxxxxxxx*E-W or MPAI-*xxxxxxxxx*C-W
Chassis body/finish	Black anodized extruded aluminum	White painted anodized aluminum
Assembly hardware	Standard hardened steel	304 or 316 stainless steel
Rod end	Zinc plated steel alloy	304 or 316 stainless steel
Rod	Salt bath nitride treated steel Hardness = 65 HRC Thickness = 0.0004…0.0008 in.	304 or 316 stainless steel
Rod wiper seal	Nitrile/standard grease	Viton
Body seals	Nitrile	Viton
Front bearing block	Machined anodized aluminum	Machined (not casted) aluminum on front face mounting surface
Wiper seal cover	316 stainless steel	316 stainless steel
Zerk fitting (1)	Steel	Stainless steel
Mounting hole	Stainless steel inserts 18…8 (304)	
Connectors	Zinc die cast, blue chromated plate	Zinc die cast, blue chromated plate with epoxy paint (same as Bulletin MPF motors)
Label	Same as used on Bulletin MPL motors	Clear overlay label with same adhesive as used on Bulletin MPF motors
Environmental rating	IP66/67	

(1) Zerk fitting not present on MPAI-*x2xxx* (64 frame) electric cylinders.

Performance Specifications (standard, ball screw)

Electric Cylinder [1] Cat. No.	Frame	Peak Feed Force N (lb)	System Continuous [2] Stall Force N (lb)		Speed, max mm/s (in/s)	Ball Screw Lead mm/rev (in./rev)	Stroke Lengths mm (in.)	Dynamic Load Rating (1 million revs) N (lb)
			25 °C (77 °F)	40 °C (104 °F)				
MPAI-*x*2076CV1*xx*	64	1446 (325)	890 (200)	706 (159)	305 (12)	5.0 (0.197)	76.2 (3.0)	4502 (1012)
MPAI-*x*2150CV3*xx*			1446 (325)	1147 (258)			152.4 (6.0)	
MPAI-*x*2300CV3*xx*							304.8 (12.0)	
MPAI-*x*3076CM1*xx* [3]	83	5140 (1155)	1624 (365)	1290 (290)	305 (12)	5.0 (0.197)	76.2 (3.0) [4]	7602 (1709)
MPAI-*x*3150CM3*xx*		4448 (1000)	4003 (900)	3176 (714)	279 (11)		152.4 (6.0)	
MPAI-*x*3300CM3*xx*							304.8 (12.0)	
MPAI-*x*3450CM3*xx*					188 (7.3)		457.2 (18.0)	
MPAI-*x*3076EM1*xx* [3]		2570 (578)	814 (183)	645 (145)	610 (24)	10.0 (0.394)	76.2 (3.0) [4]	5400 (1214)
MPAI-*x*3150EM3*xx*		4003 (900)	2002 (450)	1588 (357)	559 (22)		152.4 (6.0)	
MPAI-*x*3300EM3*xx*							304.8 (12.0)	
MPAI-*x*3450EM3*xx*					376 (15)		457.2 (18.0)	
MPAI-*x*4150CM3*xx*	110	8896 (2000)	7784 (1750)	6179 (1389)	279 (11)	5.0 (0.197)	152.4 (6.0)	15,100 (3395)
MPAI-*x*4300CM3*xx*							304.8 (12.0)	
MPAI-*x*4450CM3*xx*					245 (9.5)		457.2 (18.0)	
MPAI-*x*4150EM3*xx*		7784 (1750)	3892 (875)	3092 (695)	559 (22)	10.0 (0.394)	152.4 (6.0)	15,000 (3372)
MPAI-*x*4300EM3*xx*							304.8 (12.0)	
MPAI-*x*4450EM3*xx*					491 (19)		457.2 (18.0)	
MPAI-*x*5150CM3*xx*	144	13,345 (3000)	13,122 (2950)	10,415 (2341)	200 (7.9)	5.0 (0.197)	152.4 (6.0)	28,865 (6714)
MPAI-*x*5300CM3*xx*							304.8 (12.0)	
MPAI-*x*5450CM3*xx*							457.2 (18.0)	
MPAI-*x*5150EM3*xx*		13,122 (2950)	6561 (1475)	5208 (1171)	400 (15.7)	10.0 (0.394)	152.4 (6.0)	35,255 (7476)
MPAI-*x*5300EM3*xx*							304.8 (12.0)	
MPAI-*x*5450EM3*xx*							457.2 (18.0)	

(1) MPAI-A (200V-class) or MPAI-B (400V-class) replaces *x* in catalog number.
(2) Characteristics when mounted to 279 x 279 x 12.7 mm (11 x 11 x 0.5 in.) aluminum mounting surface.
(3) Duty cycle for peak feed force is 1.0 second on and at least 15.0 seconds off.
(4) This stroke length is available in only 64 and 83 frame sizes.

Performance Specifications (standard, roller screw)

Electric Cylinder (1) Cat. No.	Frame	Peak Feed Force N (lb)	System Continuous (2) Stall Force N (lb)		Speed, max mm/s (in/s)	Roller Screw Lead mm/rev	Stroke Lengths mm (in.)	Dynamic Load Rating (1 million revs) N (lb)
			25 °C (77 °F)	40 °C (104 °F)				
MPAI-*x*3076RM1*xx* (3)	83	4862 (1093)	1557 (350)	1237 (278)	305 (12)	5.0 (0.197)	76.2 mm (3.0 in.) (4)	35,030 (7875)
MPAI-*x*3150RM3*xx*		7562 (1700)	3781 (850)	3003 (675)	279 (11)		152.4 mm (6.0 in.)	
MPAI-*x*3300RM3*xx*							304.8 mm (12.0 in.)	
MPAI-*x*3450RM3*xx*					176 (6.9)		457.2 mm (18.0 in.)	
MPAI-*x*3076SM1*xx* (3)		2431 (547)	778 (175)	618 (139)	610 (24)	10.0 (0.394)	76.2 mm (3.0 in.) (4)	30,270 (6805)
MPAI-*x*3150SM3*xx*		3781 (850)	1891 (425)	1499 (337)	559 (22)		152.4 mm (6.0 in.)	
MPAI-*x*3300SM3*xx*							304.8 mm (12.0 in.)	
MPAI-*x*3450SM3*xx*					353 (14)		457.2 mm (18.0 in.)	
MPAI-*x*4150RM3*xx*	110	14,679 (3300)	7340 (1650)	5827 (1310)	279 (11)	5.0 (0.197)	152.4 mm (6.0 in.)	47,520 (10,683)
MPAI-*x*4300RM3*xx*							304.8 mm (12.0 in.)	
MPAI-*x*4450RM3*xx*					196 (7.6)		457.2 mm (18.0 in.)	
MPAI-*x*4150SM3*xx*		7340 (1650)	3670 (825)	2914 (655)	559 (22)	10.0 (0.394)	152.4 mm (6.0 in.)	40,968 (9210)
MPAI-*x*4300SM3*xx*							304.8 mm (12.0 in.)	
MPAI-*x*4450SM3*xx*					393 (15)		457.2 mm (18.0 in.)	

(1) MPAI-A (200V-class) or MPAI-B (400V-class) replaces *x* in catalog number.
(2) Characteristics when mounted to 279 x 279 x 12.7 mm (11 x 11 x 0.5 in.) aluminum mounting surface.
(3) Duty cycle for peak feed force is 1.0 second on and at least 15.0 seconds off.
(4) This stroke length is available in only the 83 mm frame size.

Performance Specifications (food-grade paint, ball screw)

Electric Cylinder (1) Cat. No.	Frame	Peak Feed Force N (lb)	System Continuous (2) Stall Force N (lb)		Speed, max mm/s (in/s)	Ball Screw Lead mm/rev (in./rev)	Stroke Lengths mm (in.)	Dynamic Load Rating (1 million revs) N (lb)
			25 °C (77 °F)	40 °C (104 °F)				
MPAI-*x*2076CV1*xx*-W	64	1446 (325)	890 (200)	706 (159)	305 (12)	5.0 (0.197)	76.2 (3.0)	4502 (1012)
MPAI-*x*2150CV3*xx*-W			1446 (325)	1147 (258)			152.4 (6.0)	
MPAI-*x*2300CV3*xx*-W							304.8 (12.0)	
MPAI-*x*3076CM1*xx*-W (3)	83	5140 (1155)	1624 (365)	1290 (290)	305 (12)	5.0 (0.197)	76.2 (3.0) (4)	7602 (1709)
MPAI-*x*3150CM3*xx*-W		4448 (1000)	4003 (900)	3176 (714)	279 (11)		152.4 (6.0)	
MPAI-*x*3300CM3*xx*-W							304.8 (12.0)	
MPAI-*x*3450CM3*xx*-W					188 (7.3)		457.2 (18.0)	
MPAI-*x*3076EM1*xx*-W (3)		2570 (578)	814 (183)	645 (145)	610 (24)	10.0 (0.394)	76.2 (3.0) (4)	5400 (1214)
MPAI-*x*3150EM3*xx*-W		4003 (900)	2002 (450)	1588 (357)	559 (22)		152.4 (6.0)	
MPAI-*x*3300EM3*xx*-W							304.8 (12.0)	
MPAI-*x*3450EM3*xx*-W					376 (15)		457.2 (18.0)	
MPAI-*x*4150CM3*xx*-W	110	8896 (2000)	7784 (1750)	6179 (1389)	279 (11)	5.0 (0.197)	152.4 (6.0)	15,100 (3395)
MPAI-*x*4300CM3*xx*-W							304.8 (12.0)	
MPAI-*x*4450CM3*xx*-W					245 (9.5)		457.2 (18.0)	
MPAI-*x*4150EM3*xx*-W		7784 (1750)	3892 (875)	3092 (695)	559 (22)	10.0 (0.394)	152.4 (6.0)	15,000 (3372)
MPAI-*x*4300EM3*xx*-W							304.8 (12.0)	
MPAI-*x*4450EM3*xx*-W					491 (19)		457.2 (18.0)	
MPAI-*x*5150CM3*xx*-W	144	13,345 (3000)	13,122 (2950)	10,415 (2341)	200 (7.9)	5.0 (0.197)	152.4 (6.0)	28,865 (6714)
MPAI-*x*5300CM3*xx*-W							304.8 (12.0)	
MPAI-*x*5450CM3*xx*-W							457.2 (18.0)	
MPAI-*x*5150EM3*xx*-W		13,122 (2950)	6561 (1475)	5208 (1171)	400 (15.7)	10.0 (0.394)	152.4 (6.0)	35,255 (7476)
MPAI-*x*5300EM3*xx*-W							304.8 (12.0)	
MPAI-*x*5450EM3*xx*-W							457.2 (18.0)	

(1) MPAI-A (200V-class) or MPAI-B (400V-class) replaces *x* in catalog number.
(2) Characteristics when mounted to 279 x 279 x 12.7 mm (11 x 11 x 0.5 in.) aluminum mounting surface.
(3) Duty cycle for peak feed force is 1.0 second on and at least 15.0 seconds off.
(4) This stroke length is available in only 64 and 83 frame sizes.

MP-Series Heavy Duty Electric Cylinder Motor Brake Specifications

Electric Cylinder Cat. No.	Static Torque N•m (lb•in)	Coil Current at 24V DC A_{peak}	Brake Response Time		
			Release ms	Engage (by using external arc suppression device)	
				MOV ms	**Diode** ms
MPAI-*x*2*xxxx*Vx4*x*	1.6 (14.0)	0.35	20	75	150
MPAI-*x*3*xxxx*Mx4*x*	4.0 (35.4)	0.43	50	40	80
MPAI-*x*4*xxxx*Mx4*x*	10.0 (88.5)	0.67	35	25	50
MPAI-*x*5*xxxx*Mx4*x*	16.4 (145)	0.66	25	15	30

Estimated Brake Holding Force

Electric Cylinder Cat. No.	MPAI-*xxxxx*CV*x*4*x* [1] MPAI-*xxxxx*CM*x*4*x* N (lb)	MPAI-*xxxxx*EM*x*4*x* [1] N (lb)	MPAI-*xxxxx*RM*x*4*x* [2] N (lb)	MPAI-*xxxxx*SM*x*4*x* [2] N (lb)
MPAI-*x*2*xxxx*V*x*4*x*	2300 (517)	N/A	N/A	N/A
MPAI-*x*3*xxxx*M*x*4*x*	5818 (1308)	2909 (654)	6423 (1444)	3212 (722)
MPAI-*x*4*xxxx*M*x*4*x*	14,550 (3271)	7272 (1635)	16,063 (3611)	8029 (1805)
MPAI-*x*5*xxxx*M*x*4*x*	23,838 (5359)	11,921 (2680)	N/A	N/A

(1) MPAI-*xxxxx*CM*x*4*x* is a 5 mm ball-screw actuator and MPAI-*xxxxx*EM*x*4*x* is a 10 mm ball-screw actuator.

(2) MPAI-*xxxxx*RM*x*4*x* is a 5 mm roller-screw actuator and MPAI-*xxxxx*SM*x*4*x* is a 10 mm roller-screw actuator.

In vertical applications, an unpowered Bulletin MPAI electric cylinder requires a holding brake to maintain position if the load on the actuator exceeds these values.

Back Drive Force

Electric Cylinder Cat. No.	MPAI-*xxxxx*CV*xxx* MPAI-*xxxxx*CM*xxx* N (lb)	MPAI-*xxxxx*EM*xxx* N (lb)	MPAI-*xxxxx*RM*xxx* N (lb)	MPAI-*xxxxx*SM*xxx* N (lb)
MPAI-*x*2*xxxx*V*xxx*	218 (49)	N/A	N/A	N/A
MPAI-*x*3*xxxx*M*xxx*	267 (60)	126 (28)	592 (133)	525 (118)
MPAI-*x*4*xxxx*M*xxx*	445 (100)	196 (44)	734 (165)	623 (140)
MPAI-*x*5*xxxx*M*xxx*	667 (153)	343 (77)	N/A	N/A

Weight Specifications

Standard Mount and Trunnion Mount Electric Cylinders

Electric Cylinder [1] (frame 64) Cat. No.	Weight, approx kg (lb)
MPAI-*x*2076*x*V12*x*	3.2 (7.1)
MPAI-*x*2150*x*V12*x*	4.7 (10.4)
MPAI-*x*2300*x*V12*x*	5.8 (12.8)
N/A	
MPAI-*x*2076*x*V14*x*	3.7 (8.2)
MPAI-*x*2150*x*V14*x*	5.2 (11.5)
MPAI-*x*2300*x*V14*x*	6.3 (13.9)
N/A	

Electric Cylinder (frame 83) Cat. No.	Weight, approx kg (lb)
MPAI-*x*3076*x*M12*x*	7.0 (15.4)
MPAI-*x*3150*x*M32*x*	8.3 (18.3)
MPAI-*x*3300*x*M32*x*	10.1 (22.2)
MPAI-*x*3450*x*M32*x*	11.9 (26.2)
MPAI-*x*3076*x*M14*x*	7.9 (17.4)
MPAI-*x*3150*x*M34*x*	9.3 (20.5)
MPAI-*x*3300*x*M34*x*	11.1 (24.4)
MPAI-*x*3450*x*M34*x*	12.9 (28.4)

Electric Cylinder (frame 110) Cat. No.	Weight, approx kg (lb)
N/A	
MPAI-*x*4150*x*M32*x*	15.8 (34.8)
MPAI-*x*4300*x*M32*x*	18.8 (41.4)
MPAI-*x*4450*x*M32*x*	21.8 (48.0)
N/A	
MPAI-*x*4150*x*M34*x*	17.3 (38.1)
MPAI-*x*4300*x*M34*x*	20.3 (44.7)
MPAI-*x*4450*x*M34*x*	23.3 (51.4)

Electric Cylinder [2] (frame 144) Cat. No.	Weight, [3] [4] approx kg (lb)
N/A	
MPAI-*x*5150*x*M32A	32.1 (70.7)
MPAI-*x*5300*x*M32A	37.8 (83.3)
MPAI-*x*5450*x*M32A	43.6 (96.1)
N/A	
MPAI-*x*5150*x*M34A	34.4 (75.8)
MPAI-*x*5300*x*M34A	40.2 (88.6)
MPAI-*x*5450*x*M34A	45.9 (101.2)

(1) For MPAI-*x*2*xx x*CV*xx*C-W (rear clevis mount) cylinders, add 0.2 kg (0.44 lb).

(2) Includes MPAI-*x*5*xxxx*M3*x*A and MPAI-*x*5*xxxx*M3*x*E-W (front face mount) cylinders.

(3) For MPAI-*x*5*xxxx*M3*x*B (front trunnion mount) cylinders, add 0.5 kg (1.1 lb).

(4) For MPAI-*x*5*xxxx*M3*x*C-W (rear clevis mount) cylinders, add 2.1 kg (4.6 lb).

Mounting Accessories

Accessory	Frame	Cat. No.	Weight, approx g (oz)
Mounting plates	64	MPAI-NA206	500 (17.6)
	83	MPAI-NA306	920 (32.5)
	110	MPAI-NA406	1150 (40.6)
	144	MPAI-NA506	3080 (108.6)
Rear clevis mount	64	MPAI-NA203	310 (10.9)
	83	MPAI-NA303	700 (24.7)
	110	MPAI-NA403	1430 (50.4)
	144	MPAI-NA503	3010 (106.2)

Accessory	Frame	Cat. No.	Weight, approx g (oz)
Front flange mount	64	MPAI-NA201	490 (17.3)
	83	MPAI-NA301	1070 (37.7)
	110	MPAI-NA401	1740 (61.4)
	144	MPAI-NA501	4170 (147.1)
Front flange mount (stainless steel)	64	MPAI-NA221	500 (17.6)
	83	MPAI-NA321	1090 (38.4)
	110	MPAI-NA421	1770 (62.4)
	144	MPAI-NA521	4250 (149.9)

Rod-end Accessories

Accessory	Frame	Cat. No.	Weight, approx g (oz)
Rod eye	64	MPAI-NE203	90 (3.2)
	83	MPAI-NE303	255 (9.0)
	110	MPAI-NE403	497 (17.5)
	144	MPAI-NE503	1330 (46.9)
Rod eye (stainless steel)	64	MPAI-NE223	70 (2.5)
	83	MPAI-NE323	210 (7.4)
	110	MPAI-NE423	380 (13.4)
	144	MPAI-NE523	1300 (45.8)
Self-aligning rod coupler	64	MPAI-N201	220 (7.8)
	83	MPAI-NE301	660 (23.3)
	110	MPAI-NE401	730 (25.7)
	144	MPAI-NE501	2200 (77.6)

Accessory	Frame	Cat. No.	Weight, approx g (oz)
Rod clevis	64	MPAI-NE204	100 (3.53)
	83	MPAI-NE304	350 (12.3)
	110	MPAI-NE404	710 (25.0)
	144	MPAI-NE504	2030 (71.6)
Rod clevis (stainless steel)	64	MPAI-NE224	110 (3.9)
	83	MPAI-NE324	390 (13.7)
	110	MPAI-NE424	800 (28.2)
	144	MPAI-NE524	1900 (67.0)

Anti-rotation Option Accessories

Anti-rotation (frame 64) Cat. No.	Weight, approx g (oz)
MPAI-NE20276	330 (11.6)
MPAI-NE20215	370 (13.1)
MPAI-NE20230	450 (15.9)
N/A	

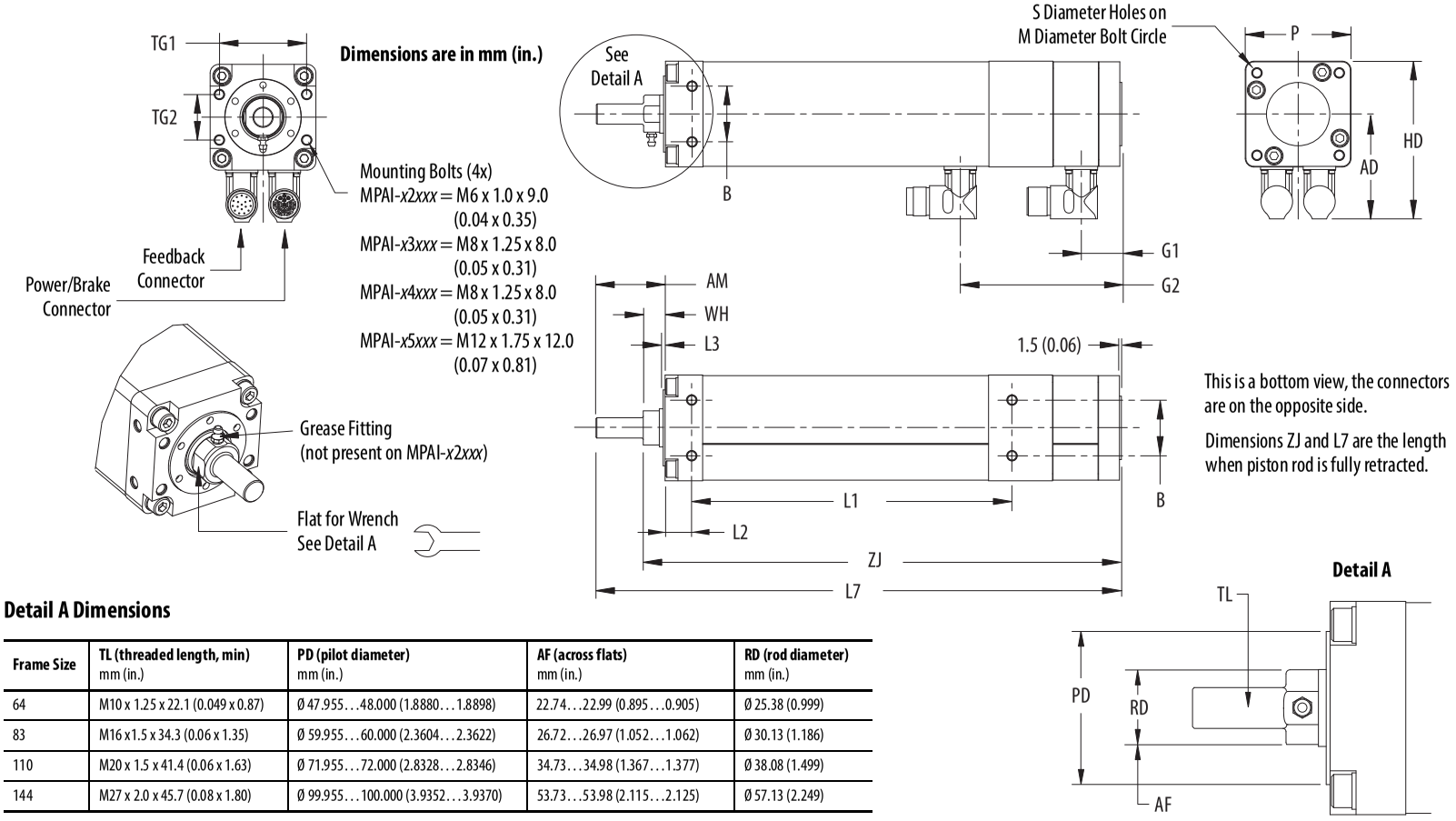
Anti-rotation (frame 83) Cat. No.	Weight, approx g (oz)
MPAI-NE30276	660 (23.3)
MPAI-NE30215	740 (26.1)
MPAI-NE30230	890 (31.4)
MPAI-NE30245	1040 (36.7)

Anti-rotation (frame 110) Cat. No.	Weight, approx g (oz)
N/A	
MPAI-NE40215	820 (28.9)
MPAI-NE40230	980 (34.6)
MPAI-NE40245	1130 (39.8)

Anti-rotation (frame 144) Cat. No.	Weight, approx g (oz)
N/A	
MPAI-NE50215	2330 (82.2)
MPAI-NE50230	2660 (93.8)
MPAI-NE50245	3000 (105.8)

These dimensions apply to MPAI-*xxxxxxxxxx*A face mount (standard) configuration.

MP-Series Heavy Duty Electric Cylinder (face-mount standard) Dimensions (frame 64, 83, 110, and 144)



Detail A Dimensions

Frame Size	TL (threaded length, min) mm (in.)	PD (pilot diameter) mm (in.)	AF (across flats) mm (in.)	RD (rod diameter) mm (in.)
64	M10 x 1.25 x 22.1 (0.049 x 0.87)	Ø 47.955…48.000 (1.8880…1.8898)	22.74…22.99 (0.895…0.905)	Ø 25.38 (0.999)
83	M16 x 1.5 x 34.3 (0.06 x 1.35)	Ø 59.955…60.000 (2.3604…2.3622)	26.72…26.97 (1.052…1.062)	Ø 30.13 (1.186)
110	M20 x 1.5 x 41.4 (0.06 x 1.63)	Ø 71.955…72.000 (2.8328…2.8346)	34.73…34.98 (1.367…1.377)	Ø 38.08 (1.499)
144	M27 x 2.0 x 45.7 (0.08 x 1.80)	Ø 99.955…100.000 (3.9352…3.9370)	53.73…53.98 (2.115…2.125)	Ø 57.13 (2.249)

MP-Series Heavy Duty Electric Cylinder (face-mount standard) Dimensions (frame 64)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	B mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L1 mm (in.)	L2 mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	M (2) mm (in.)	P mm (in.)	S mm (in.)	TG1 mm (in.)	TG2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B2076CV12A	72.8 (2.87)	41.9 (1.65)	34.0 (1.34)	28.8 (1.13)	106.9 (4.21)	104.5 (4.11)	144.0 (5.67)	20.00 (0.787)	1.50 (0.06)	288.1 (11.34)	70.0 (2.76)	63.5 (2.50)	M6 x 1.0 x 9.0 (0.04 x 0.35)	54.0 (2.13)	20.0 (0.79)	17.3 (0.68)	263.5 (10.37)
MPAI-A/B2150CV32A							220.2 (8.67)			364.3 (14.34)							339.7 (13.37)
MPAI-A/B2300CV32A							372.6 (14.67)			516.7 (20.34)							492.1 (19.37)

(1) If ordering MPAI-A/B2*xxxx*V*x*4A actuator with brake, add 37.6 mm (1.48 in.) to dimensions G2, L7, and ZJ.

(2) The tolerance for this dimension is +0.0, -0.038 mm (+0.0, -0.0015 in.).

MP-Series Heavy Duty Electric Cylinder (face-mount standard) Dimensions (frame 83)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	B mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L1 mm (in.)	L2 mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	M (2) mm (in.)	P mm (in.)	S mm (in.)	TG1 mm (in.)	TG2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B3076xM12A	82.8 (3.26)	54.6 (2.15)	44.0 (1.73)	31.9 (1.25)	127.5 (5.02)	124.6 (4.90)	177.0 (6.97)	21.0 (0.83)	1.50 (0.06)	337.6 (13.29)	92.0 (3.622)	83.6 (3.29)	M8 x 1.25 x12 (0.05 x 0.47)	69.0 (2.72)	36.0 (1.42)	17.3 (0.68)	300.0 (11.81)
MPAI-A/B3150xM32A							253.1 (9.97)			413.6 (16.29)							376.3 (14.81)
MPAI-A/B3300xM32A							405.5 (15.97)			566.0 (22.29)							528.7 (20.81)
MPAI-A/B3450xM32A							557.9 (21.97)			718.4 (28.29)							681.1 (26.81)

(1) If ordering MPAI-A/B3*xxxx*M*x*4A actuator with brake, add 47.7 mm (1.88 in.) to dimensions G2, L7, and ZJ.

(2) The tolerance for this dimension is +0.0, -0.038 mm (+0.0, -0.0015 in.).

MP-Series Heavy Duty Electric Cylinder (face-mount standard) Dimensions (frame 110)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	B mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L1 mm (in.)	L2 mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	M (2) mm (in.)	P mm (in.)	S mm (in.)	TG1 mm (in.)	TG2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B4150xM32A	96.3 (3.79)	61.3 (2.41)	50.0 (1.97)	31.9 (1.25)	130.7 (5.15)	151.5 (5.96)	295.4 (11.63)	25.0 (0.98)	1.50 (0.06)	466.6 (18.37)	127.0 (5.0)	110.5 (4.35)	M8 x 1.25 x12 (0.05 x 0.47)	85.0 (3.35)	55.0 (2.17)	16.8 (0.66)	422.1 (16.62)
MPAI-A/B4300xM32A							447.8 (17.63)			619.0 (24.37)							574.5 (22.62)
MPAI-A/B4450xM32A							600.2 (23.63)			771.4 (30.37)							726.9 (28.62)

(1) If ordering MPAI-A/B4*xxxx*M*x*4A actuator with brake, add 46.2 mm (1.81 in.) to dimensions G2, L7, and ZJ.

(2) The tolerance for this dimension is +0.0, -0.038 mm (+0.0, -0.0015 in.).

MP-Series Heavy Duty Electric Cylinder (face-mount standard) Dimensions (frame 144)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	B mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L1 mm (in.)	L2 mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	M (2) mm (in.)	P mm (in.)	S mm (in.)	TG1 mm (in.)	TG2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B5150xM32A	110.1 (4.33)	74.9 (2.75)	85.00 (3.346)	34.4 (1.35)	146.8 (5.78)	181.9 (7.16)	343.6 (13.53)	30.00 (1.181)	1.40 (0.06)	553.4 (21.79)	155.00 (6.102)	143.6 (5.66)	M12 x 1.75 x 12 (0.07 x 0.47)	110.00 (4.331)	65.00 (2.559)	24.1 (0.95)	502.6 (19.79)
MPAI-A/B5300xM32A							496.0 (19.53)			705.8 (27.79)							655.0 (25.79)
MPAI-A/B5450xM32A							648.4 (25.53)			858.2 (33.79)							807.4 (31.79)

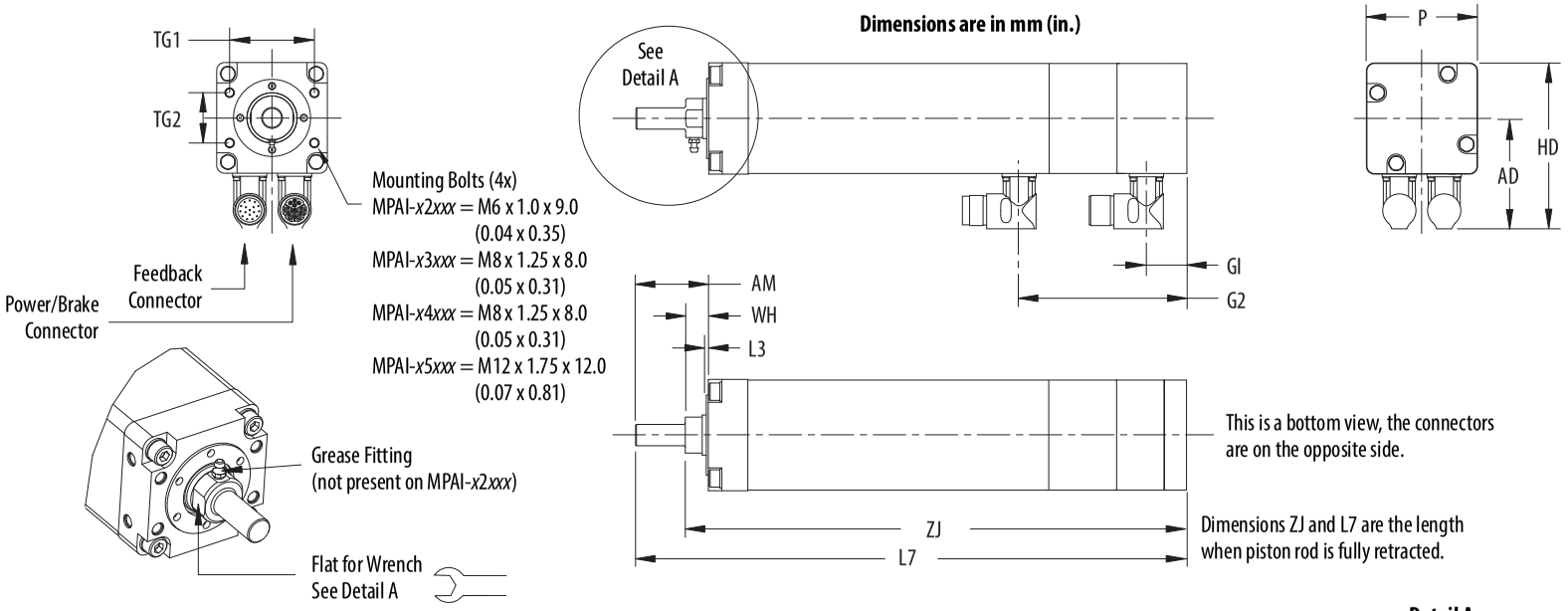
(1) If ordering MPAI-A/B5*xxxx*M*x*4A actuator with brake, add 51.5 mm (2.03 in.) to dimensions G2, L7, and ZJ.

(2) The tolerance for this dimension is +0.0, -0.038 mm (+0.0, -0.0015 in.).

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

These dimensions apply to MPAI-*xxxxxxxxx*E-W face mount (food-grade paint) configuration.

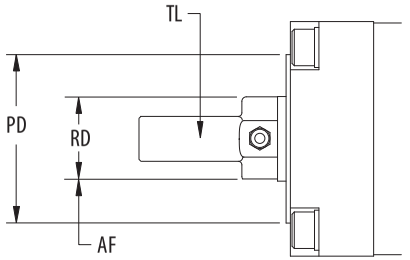
MP-Series Heavy Duty Electric Cylinder (face-mount food-grade paint) Dimensions (frame 64, 83, 110, and 144)



Detail A Dimensions

Frame Size	TL (threaded length, min) mm (in.)	PD (pilot diameter) mm (in.)	AF (across flats) mm (in.)	RD (rod diameter) mm (in.)
64	M10 x 1.25 x 22.1 (0.049 x 0.87)	Ø 47.955…48.000 (1.8880…1.8898)	22.74…22.99 (0.895…0.905)	Ø 25.38 (0.999)
83	M16 x1.5 x 34.3 (0.06 x 1.35)	Ø 59.955…60.000 (2.3604…2.3622)	26.72…26.97 (1.052…1.062)	Ø 30.13 (1.186)
110	M20 x 1.5 x 41.4 (0.06 x 1.63)	Ø 71.955…72.000 (2.8328…2.8346)	34.73…34.98 (1.367…1.377)	Ø 38.08 (1.499)
144	M27 x 2.0 x 45.7 (0.08 x 1.80)	Ø 99.955…100.000 (3.9352…3.9370)	53.73…53.98 (2.115…2.125)	Ø 57.13 (2.249)

Detail A



MP-Series Heavy Duty Electric Cylinder (face-mount food-grade paint) Dimensions (frame 64)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	P mm (in.)	TG1 mm (in.)	TG2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B2076CV12E-W	72.8 (2.87)	42.1 (1.66)	26.9 (1.06)	104.6 (4.12)	104.5 (4.11)	1.8 (0.07)	285.8 (11.25)	63.5 (2.5)	54.0 (2.13)	20.0 (0.79)	17.5 (0.69)	261.2 (10.28)
MPAI-A/B2150CV32E-W							362.0 (14.25)					337.4 (13.28)
MPAI-A/B2300CV32E-W							514.4 (20.25)					489.8 (19.28)

(1) If ordering MPAI-A/B2*xxxx*V*x*4E-W actuator with brake, add 37.6 mm (1.48 in.) to dimensions G2, L7, and ZJ.

MP-Series Heavy Duty Electric Cylinder (face-mount food-grade paint) Dimensions (frame 83)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	P mm (in.)	TG1 mm (in.)	TG2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B3076*x*M12E-W	82.8 (3.26)	54.9 (2.16)	30.0 (1.18)	126.0 (4.96)	124.6 (4.90)	1.8 (0.07)	337.6 (13.29)	83.6 (3.29)	69.0 (2.72)	36.0 (1.42)	17.6 (0.69)	300.4 (11.83)
MPAI-A/B3150*x*M32E-W							413.6 (16.29)					376.6 (14.83)
MPAI-A/B3300*x*M32E-W							566.0 (22.29)					529.0 (20.83)
MPAI-A/B3450*x*M32E-W							718.4 (28.29)					681.4 (26.83)

(1) If ordering MPAI-A/B3*xxxx*M*x*4E-W actuator with brake, add 47.7 mm (1.88 in.) to dimensions G2, L7, and ZJ.

MP-Series Heavy Duty Electric Cylinder (face-mount food-grade paint) Dimensions (frame 110)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	P mm (in.)	TG1 mm (in.)	TG2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B4150*x*M32E-W	96.3 (3.79)	61.5 (2.42)	30.0 (1.18)	130.8 (5.15)	151.5 (5.96)	1.8 (0.07)	466.8 (18.38)	110.5 (4.35)	85.0 (3.35)	55.0 (2.17)	16.8 (0.66)	422.3 (16.62)
MPAI-A/B4300*x*M32E-W							619.2 (24.38)					574.7 (22.62)
MPAI-A/B4450*x*M32E-W							771.6 (30.38)					727.1(28.62)

(1) If ordering MPAI-A/B4*xxxx*M*x*4E-W actuator with brake, add 46.2 mm (1.81 in.) to dimensions G2, L7, and ZJ.

MP-Series Heavy Duty Electric Cylinder (face-mount food-grade paint) Dimensions (frame 144)

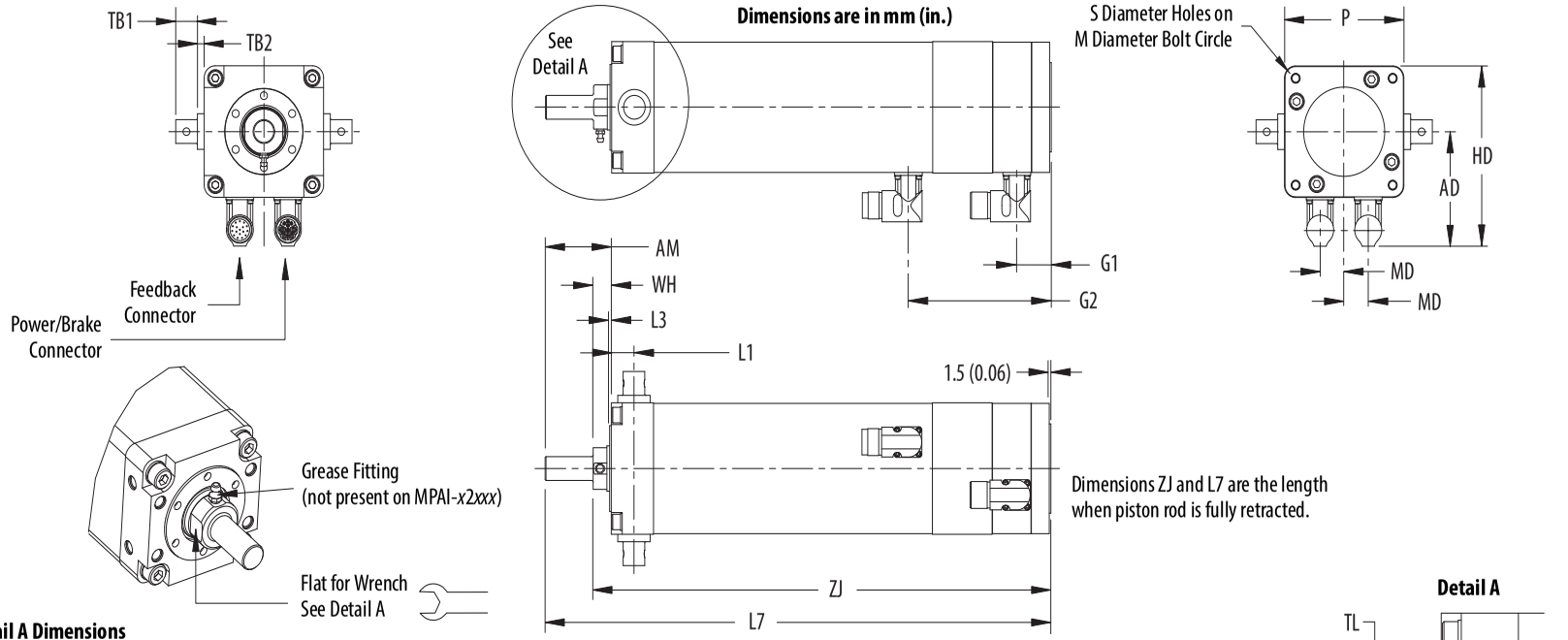
Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	P mm (in.)	TG1 mm (in.)	TG2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B5150*x*M32E-W	110.1 (4.33)	75.2 (2.96)	34.0 (1.34)	146.0 (5.75)	181.9 (7.16)	1.7 (0.07)	552.6 (21.76)	143.6 (5.66)	110.00 (4.331)	65.00 (2.559)	24.4 (0.96)	501.8 (19.76)
MPAI-A/B5300*x*M32E-W							705.0 (27.76)					654.2 (25.76)
MPAI-A/B5450*x*M32E-W							857.4 (33.76)					806.6 (31.76)

(1) If ordering MPAI-A/B5*xxxx*M*x*4E-W actuator with brake, add 51.5 mm (2.03 in.) to dimensions G2, L7, and ZJ.

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

These dimensions apply to MPAI-*xxxxxxxxx*B trunnion mount (standard) configurations.

MP-Series Heavy Duty Electric Cylinder (trunnion-mount standard) Dimensions (frame 64, 83, 110, and 144)



Detail A Dimensions

Frame Size	TL (threaded length, min) mm (in.)	PD (pilot diameter) mm (in.)	AF (across flats) mm (in.)	RD (rod diameter) mm (in.)	TD (trunnion diameter) mm (in.)
64	M10 x 1.25 x 22.1 (0.049 x 0.87)	Ø 47.955…48.000 (1.8880…1.8898)	22.74…22.99 (0.895…0.905)	Ø 25.38 (0.999)	Ø 11.97…11.98 (0.471…0.472)
83	M16 x1.5 x 34.3 (0.06 x 1.35)	Ø 59.955…60.000 (2.3604…2.3622)	26.72…26.97 (1.052…1.062)	Ø 30.13 (1.186)	Ø 15.96…15.98 (0.628…0.629)
110	M20 x 1.5 x 41.4 (0.06 x 1.63)	Ø 71.955…72.000 (2.8328…2.8346)	34.73…34.98 (1.367…1.377)	Ø 38.08 (1.499)	Ø 19.96…19.99 (0.786…0.787)
144	M27 x 2.0 x 45.7 (0.08 x 1.80)	Ø 99.955…100.000 (3.9352…3.9370)	53.73…53.98 (2.115…2.125)	Ø 57.13 (2.249)	Ø 24.97…24.99 (0.983…0.984)

MP-Series Heavy Duty Electric Cylinder (trunnion-mount standard) Dimensions (frame 64)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L1 mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	M (2) mm (in.)	MD mm (in.)	P mm (in.)	S mm (in.)	TB1 mm (in.)	TB2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B2076CV12B	72.8 (2.87)	41.9 (1.65)	28.8 (1.13)	106.9 (4.21)	104.5 (4.11)	15.0 (0.591)	1.5 (0.06)	288.1 (11.34)	70.00 (2.756)	9.5 (0.38)	63.5 (2.50)	M6 x 1.0 x 9 (0.04 x 0.35)	8.7 (0.34)	2.3 (0.09)	17.3 (0.68)	263.5 (10.37)
MPAI-A/B2150CV32B								364.3 (14.34)								339.7 (13.37)
MPAI-A/B2300CV32B								516.7 (20.34)								492.1 (19.37)

(1) If ordering MPAI-A/B2*xxxx*V*x*4B actuator with brake, add 37.6 mm (1.48 in.) to dimensions G2, L7, and ZJ.

(2) The tolerance for this dimension is +0.0, -0.038 mm (+0.0, -0.0015 in.).

MP-Series Heavy Duty Electric Cylinder (trunnion-mount standard) Dimensions (frame 83)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L1 mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	M (2) mm (in.)	MD mm (in.)	P mm (in.)	S mm (in.)	TB1 mm (in.)	TB2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B3150*x*M32B	82.8 (3.26)	54.6 (2.15)	30.4 (1.20)	127.5 (5.02)	124.6 (4.90)	15.00 (0.59)	1.5 (0.06)	413.6 (16.29)	92.0 (3.622)	16.8 (0.66)	83.6 (3.29)	M8 x 1.25 x12 (0.05 x 0.47)	16.0 (0.63)	3.2 (0.13)	17.3 (0.68)	376.3 (14.81)
MPAI-A/B3300*x*M32B								566.0 (22.29)								528.7 (20.81)
MPAI-A/B3450*x*M32B								718.4 (28.29)								681.1 (26.81)

(1) If ordering MPAI-A/B3*xxxx*M*x*4B actuator with brake, add 47.7 mm (1.88 in.) to dimensions G2, L7, and ZJ.

(2) The tolerance for this dimension is +0.0, -0.038 mm (+0.0, -0.0015 in.).

MP-Series Heavy Duty Electric Cylinder (trunnion-mount standard) Dimensions (frame 110)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L1 mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	M (2) mm (in.)	MD mm (in.)	P mm (in.)	S mm (in.)	TB1 mm (in.)	TB2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B4150*x*M32B	96.3 (3.79)	61.3 (2.41)	30.4 (1.20)	130.7 (5.15)	151.5 (5.96)	21.00 (0.83)	1.5 (0.06)	466.6 (18.37)	127.0 (5.0)	22.2 (0.87)	110.5 (4.35)	M8 x 1.25 x12 (0.05 x 0.47)	20.05 (0.79)	6.25 (0.25)	16.8 (0.66)	422.1 (16.62)
MPAI-A/B4300*x*M32B								619.0 (24.37)								574.5 (22.62)
MPAI-A/B4450*x*M32B								771.4 (30.37)								726.9 (28.62)

(1) If ordering MPAI-A/B4*xxxx*M*x*4B actuator with brake, add 46.2 mm (1.81 in.) to dimensions G2, L7, and ZJ.

(2) The tolerance for this dimension is +0.0, -0.038 mm (+0.0, -0.0015 in.).

MP-Series Heavy Duty Electric Cylinder (trunnion-mount standard) Dimensions (frame 144)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	HD mm (in.)	L1 mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	M (2) mm (in.)	MD mm (in.)	P mm (in.)	S mm (in.)	TB1 mm (in.)	TB2 mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B5150*x*M32B	110.1 (4.33)	74.9 (2.95)	34.4 (1.35)	146.8 (5.78)	181.9 (7.16)	28.0 (1.10)	1.4 (0.06)	553.4 (21.79)	155.0 (6.10)	22.2 (0.88)	143.6 (5.66)	M12 x 1.75 x12 (0.07 x 0.47)	24.9 (0.98)	8.2 (0.32)	24.1 (0.95	502.6 (19.79)
MPAI-A/B5300*x*M32B								705.8 (27.79)								655.0 (25.79)
MPAI-A/B5450*x*M32B								858.2 (33.79)								807.4 (31.79)

(1) If ordering MPAI-A/B5*xxxx*M*x*4B actuator with brake, add 51.5 mm (2.03 in.) to dimensions G2, L7, and ZJ.

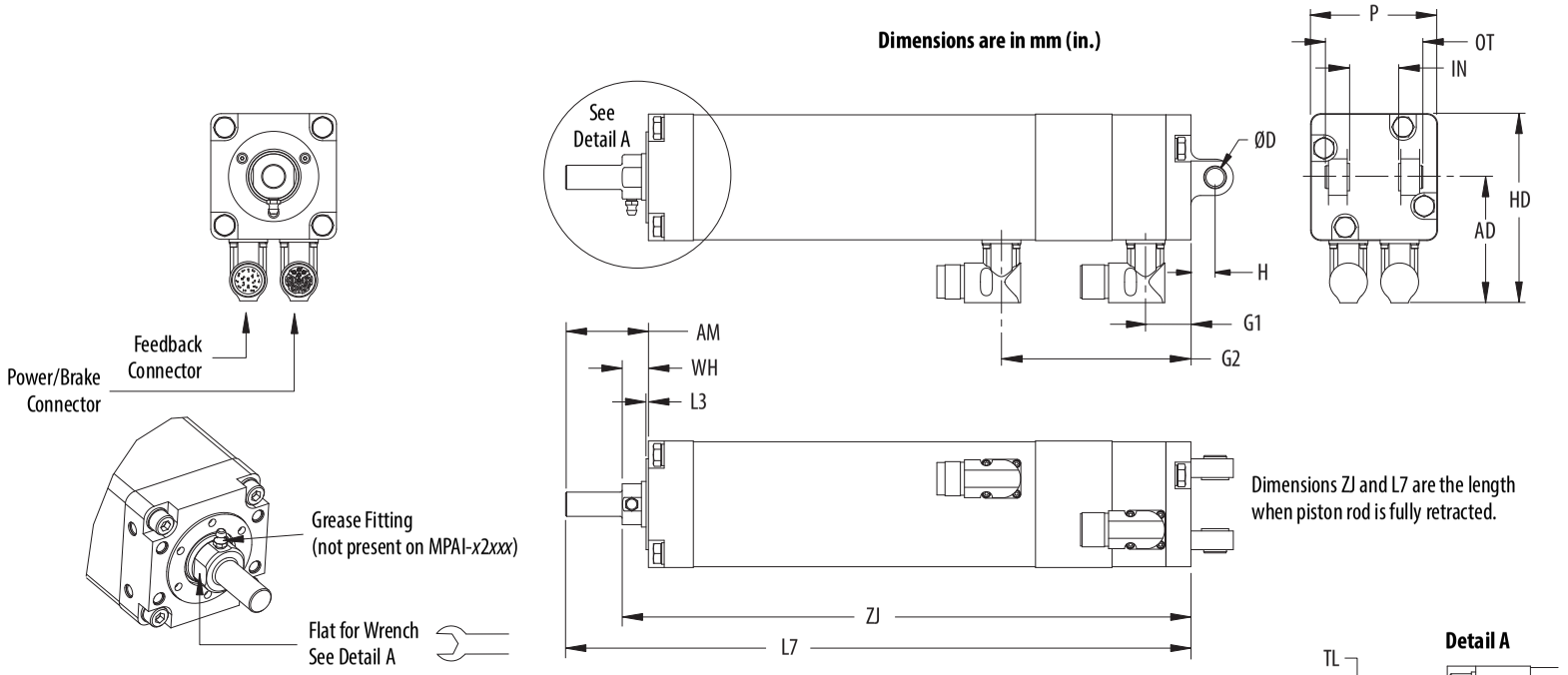
(2) The tolerance for this dimension is +0.0, -0.038 mm (+0.0, -0.0015 in.).

Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

These dimensions apply to MPAI-*xxxxxxxxx*C-W clevis mount (food-grade paint) configurations.

MP-Series Heavy Duty Electric Cylinder (clevis-mount food-grade paint) Dimensions (frame 64, 83, 110, and 144)

Dimensions are in mm (in.)



Detail A Dimensions

Frame Size	TL (threaded length, min) mm (in.)	PD mm (in.)	AF (across flats) mm (in.)	RD (rod diameter) mm (in.)
64	M10 x 1.25 x 22.1 (0.049 x 0.87)	Ø 48.000 (1.89)	22.74…22.99 (0.895…0.905)	Ø 25.38 (0.999)
83	M16 x1.5 x 34.3 (0.06 x 1.35)	Ø 60.000 (2.36)	26.72…26.97 (1.052…1.062)	Ø 30.13 (1.186)
110	M20 x 1.5 x 41.4 (0.06 x 1.63)	Ø 72.000 (2.83)	34.73…34.98 (1.367…1.377)	Ø 38.08 (1.499)
144	M27 x 2.0 x 45.7 (0.08 x 1.80)	Ø 100.000 (3.94)	53.73…53.98 (2.115…2.125)	Ø 57.13 (2.249)

MP-Series Heavy Duty Electric Cylinder (clevis-mount food-grade paint) Dimensions (frame 64)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	ØD mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	H mm (in.)	HD mm (in.)	IN mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	OT mm (in.)	P mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B2076CV12C-W	72.8 (2.87)	41.9 (1.65)	10.01…10.02 (0.394…0.395)	26.9 (1.06)	104.6 (4.12)	13.0 (0.51)	104.5 (4.11)	26.3 (1.03)	1.5 (0.06)	285.8 (11.25)	46.25 (1.821)	63.5 (2.50)	17.3 (0.68)	261.2 (10.28)
MPAI-A/B2150CV32C-W										362.0 (14.25)				337.4 (13.28)
MPAI-A/B2300CV32C-W										514.4 (20.25)				489.8 (19.28)

(1) If ordering MPAI-A/B2*xxxx*V*x*4C-W actuator with brake, add 37.6 mm (1.48 in.) to dimensions G2, L7, and ZJ.

MP-Series Heavy Duty Electric Cylinder (clevis-mount food-grade paint) Dimensions (frame 83)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	ØD mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	H mm (in.)	HD mm (in.)	IN mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	OT mm (in.)	P mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B3076*x*M12C-W	82.8 (3.26)	54.6 (2.15)	12.01 (0.473)	30.0 (1.18)	127.5 (5.02)	16.0 (0.630)	124.6 (4.90)	32.3 (1.27)	1.50 (0.06)	337.4 (13.28)	64.3 (2.53)	83.6 (3.29)	17.3 (0.68)	300.1 (11.81)
MPAI-A/B3150*x*M32C-W										413.6 (16.29)				376.3 (14.81)
MPAI-A/B3300*x*M32C-W										566.0 (22.29)				528.7 (20.81)
MPAI-A/B3450*x*M32C-W										718.4 (28.29)				681.1 (26.81)

(1) If ordering MPAI-A/B3*xxxx*M*x*4C-W actuator with brake, add 47.7 mm (1.88 in.) to dimensions G2, L7, and ZJ.

MP-Series Heavy Duty Electric Cylinder (clevis-mount food-grade paint) Dimensions (frame 110)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	ØD mm (in.)	G1 mm (in.)	G2 (1) mm (in.)	H mm (in.)	HD mm (in.)	IN mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	OT mm (in.)	P mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B4150*x*M32C-W	96.3 (3.79)	61.3 (2.41)	16.01 (0.630)	30.0 (1.18)	130.7 (5.15)	22.0 (0.866)	151.5 (5.96)	50.3 (1.98)	1.50 (0.06)	466.6 (18.37)	94.3 (3.71)	110.5 (4.35)	16.8 (0.66)	422.1 (16.62)
MPAI-A/B4300*x*M32C-W										619.0 (24.37)				574.5 (22.62)
MPAI-A/B4450*x*M32C-W										771.4 (30.37)				726.9 (28.62)

(1) If ordering MPAI-A/B4*xxxx*M*x*4C-W actuator with brake, add 46.2 mm (1.82 in.) to dimensions G2, L7, and ZJ.

MP-Series Heavy Duty Electric Cylinder (clevis-mount food-grade paint) Dimensions (frame 144)

Electric Cylinder Cat. No.	AD mm (in.)	AM mm (in.)	ØD (1) mm (in.)	G1 mm (in.)	G2 (2) mm (in.)	H mm (in.)	HD mm (in.)	IN mm (in.)	L3 mm (in.)	L7 (1) mm (in.)	OT mm (in.)	P mm (in.)	WH mm (in.)	ZJ (1) mm (in.)
MPAI-A/B5150*x*M32C-W	110.1 (4.33)	74.9 (2.95)	20.02 (0.788)	34.0 (1.34)	146.0 (5.75)	27.0 (1.063)	181.9 (7.16)	60.33 (2.375)	1.40 (0.06)	552.6 (21.76)	114.30 (4.500)	143.6 (5.66)	24.1 (0.95)	501.8 (19.76)
MPAI-A/B5300*x*M32C-W										705.0 (27.76)				654.2 (25.76)
MPAI-A/B5450*x*M32C-W										857.4 (33.76)				806.6 (31.76)

(1) Tolerance for this dimension is +0.02 mm (+0.001 in.)

(2) If ordering MPAI-A/B5*xxxx*M*x*4C-W actuator with brake, add 51.5 mm (2.03 in.) to dimensions G2, L7, and ZJ.

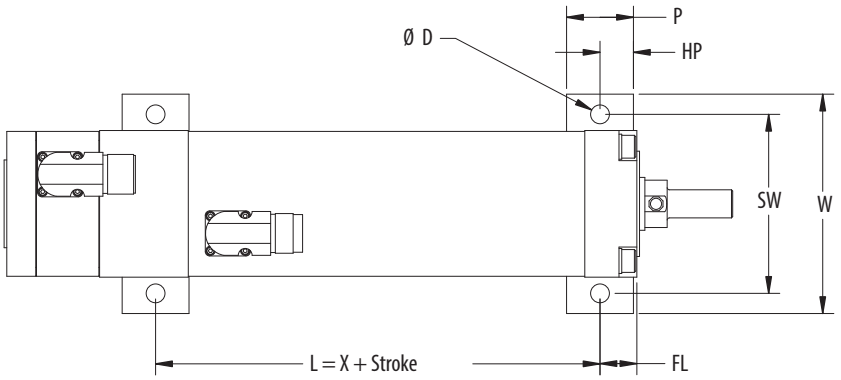
Actuators are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

Accessories - MP-Series Heavy Duty Electric Cylinders

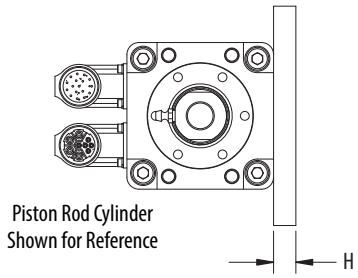
Mounting Accessories

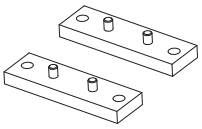
These accessories apply to standard-mount electric cylinders. Components are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

Mounting Plates Attachment



Dimensions are in mm (in.)





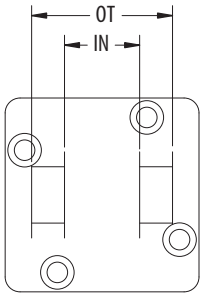
Attachment includes:
- 2 mounting plates
- Mounting hardware

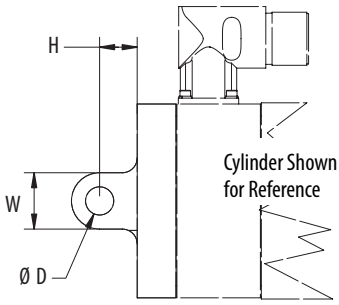
This accessory applies to:
- ■ Bulletin MPAI Standard
- □ Bulletin MPAI Food Grade Paint

Cat. No. (1)	Frame	X mm (in.)	FL mm (in.)	D mm (in.)	P mm (in.)	HP mm (in.)	SW mm (in.)	W mm (in.)	H mm (in.)
MPAI-NA206	64	67.8 (2.67)	20.0 (0.79)	8.7 (0.34)	30.0 (1.18)	15.0 (0.59)	80.0 (3.15)	100 (3.94)	11.0 (0.43)
MPAI-NA306	83	100.7 (3.96)	21.0 (0.83)	10.7 (0.42)	38.1 (1.50)	19.05 (0.75)	102 (4.02)	125 (4.92)	12.7 (0.50)
MPAI-NA406	110	143 (5.63)	25.0 (0.98)				130 (5.12)	155 (6.10)	
MPAI-NA506	144	343.6 (13.53)	30.0 (1.18)	15.1 (0.59)	50.0 (1.97)	25.0 (0.98)	170 (6.69)	200 (7.87)	20.0 (0.79)

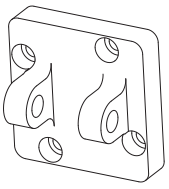
(1) Material is carbon steel and finish is melonite. Contains no copper, PTFE, or silicone.

Rear Clevis Mount Attachment





Dimensions are in mm (in.)



Attachment includes replacement gasket.

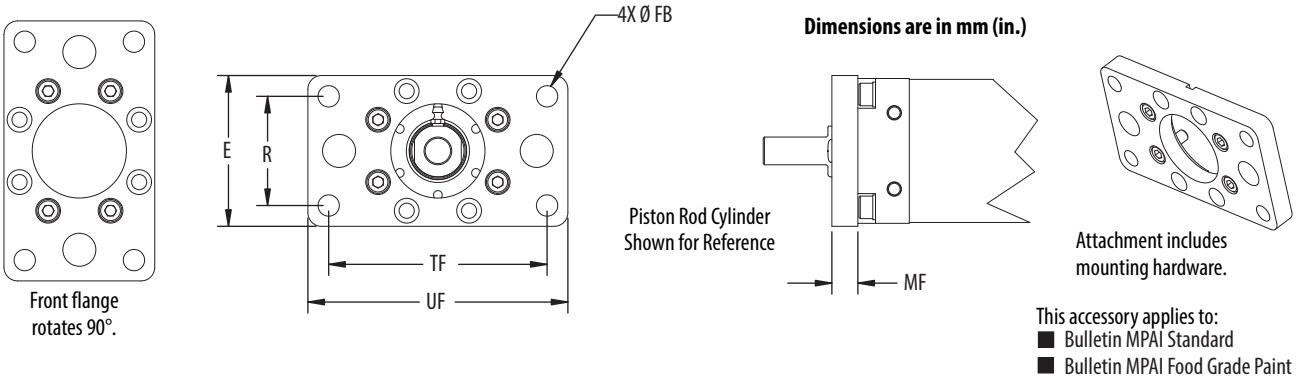
This accessory applies to:
- ■ Bulletin MPAI Standard
- ☐ Bulletin MPAI Food Grade Paint

Cat. No. (1)	Frame	ØD (2) mm (in.)	IN (3) mm (in.)	OT (4) mm (in.)	W mm (in.)	H mm (in.)
MPAI-NA203	64	10.0 (0.39)	26.0 (1.02)	45.0 (1.77)	20.0 (0.787)	13.0 (0.512)
MPAI-NA303	83	12.0 (0.4724)	32.0 (1.260)	60.0 (2.36)	24.0 (0.945)	16.0 (0.630)
MPAI-NA403	110	16.0 (0.6299)	50.0 (1.9685)	90.0 (3.54)	36.0 (1.417)	22.0 (0.866)
MPAI-NA503	144	20.0 (0.7874)	60.0 (2.3622)	110 (4.3307)	40.0 (1.575)	27.0 (1.063)

(1) Material is carbon steel and finish is melonite. Contains no copper, PTFE, or silicone.
(2) Tolerance for this dimension is +0.043, -0 mm (+0.017, -0 in.).
(3) Tolerance for this dimension is +0.62, -0 mm (+0.024, -0 in.).
(4) Tolerance for this dimension is +0, -0.62 mm (+0, -0.024 in.).

TIP Rear clevis mount attachments for food-grade paint configurations are factory pre-assembled. Refer to the figure on page 133.

Front Flange Attachment



Cat. No.	Frame	E mm (in.)	ØFB mm (in.)	MF mm (in.)	R mm (in.)	TF mm (in.)	UF mm (in.)
MPAI-NA201	64	67.3 (1.47)	8.7 (0.34)	11.2 (0.44)	50.0 (1.97)	100 (3.94)	117.4 (4.62)
MPAI-NA221							
MPAI-NA301 (1)	83	87.0 (3.43)	12.3 (0.48)	15.0 (0.59)	63.0 (2.48)	126 (4.96)	150 (5.90)
MPAI-NA321 (2)							
MPAI-NA401 (1)	110	110.5 (4.35)	14.7 (0.58)	16.0 (0.63)	75.0 (2.95)	150 (5.90)	170 (6.69)
MPAI-NA421 (2)							
MPAI-NA501 (1)	144	150 (5.91)	16.7 (0.66)	17.8 (0.70)	115 (4.53)	230 (9.05)	260 (10.24)
MPAI-NA521 (2)							

(1) Material is carbon steel and finish is melonite. Contains no copper, PTFE, or silicone.

(2) Material is stainless steel, type 316.

Anti-rotation Option Accessory

The Bulletin MPAI actuator design lets the extending rod rotate. This provides simple setup of the actuator letting you rotate the rod and thread it in and out of the actuator for mechanical attachment or system testing. This feature also requires that the rod be kept from rotating when used in it's dedicated application for proper linear motion. In most applications, for example, where the load is coupled to linear bearings or some support device, the load cannot rotate and thus provides anti-rotation for the extending actuator rod. For applications where the load is free to rotate, Allen-Bradley offers the anti-rotation option as shown on page 153.

IMPORTANT The anti-rotation option is not a guide or support mechanism. It is intended as only an anti-rotation device.

Anti-rotation Option for Fixed Strokes

Cat. No. Frame 64	Stroke mm (in.)
MPAI-NE20276	76.2 (3.0)
MPAI-NE20215	152.4 (6.0)
MPAI-NE20230	304.8 (12.0)

Cat. No. Frame 83	Stroke mm (in.)
MPAI-NE30276	76.2 (3.0)
MPAI-NE30215	152.4 (6.0)
MPAI-NE30230	304.8 (12.0)
MPAI-NE30245	457.2 (18.0)

Cat. No. Frame 110	Stroke mm (in.)
MPAI-NE40215	152.4 (6.0)
MPAI-NE40230	304.8 (12.0)
MPAI-NE40245	457.2 (18.0)

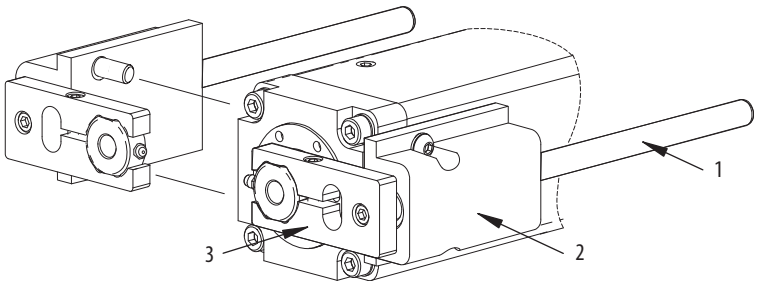
Cat. No. Frame 144	Stroke mm (in.)
MPAI-NE50215	152.4 (6.0)
MPAI-NE50230	304.8 (12.0)
MPAI-NE50245	457.2 (18.0)

Anti-rotation Option Material Specifications

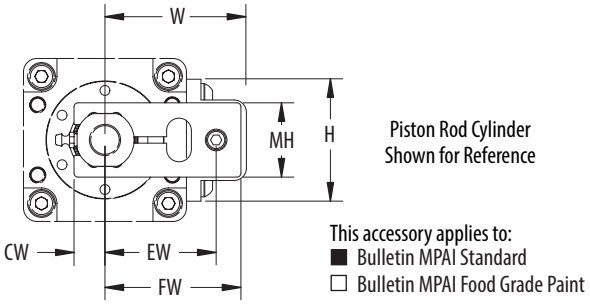
You can mount the anti-rotation option from either side of the standard mount cylinder.

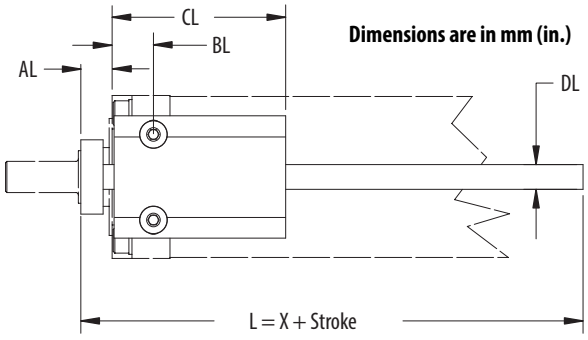
Item	Attribute	Value (1)
1	Rod	C1060 ground hardened steel
2	Bearing block	Anodized aluminium
3	Clamp	Zinc-plated carbon steel

(1) Contains no copper, PTFE, or silicone.



Anti-rotation Option Dimensions





When the anti-rotate option is used in conjunction with a front flange attachment, the actuator total stroke length is reduced by this amount.

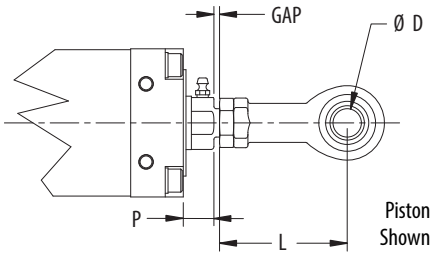
Frame	Value
64	7.6 (0.30)
83	11.4 (0.45)
110	13.0 (0.51)
144	11.2 (0.44)

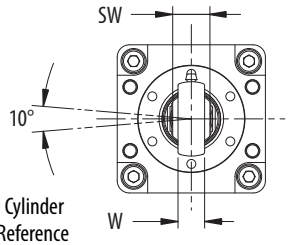
Cat. No.	Frame	Stroke	X mm (in.)	L mm (in.)	AL mm (in.)	BL mm (in.)	CL mm (in.)	DL mm (in.)	W mm (in.)	CW mm (in.)	EW mm (in.)	FW mm (in.)	H mm (in.)	MH mm (in.)
MPAI-NE20276	64	076	81.0 (3.19)	157.2 (6.19)	17.4 (0.68)	18.5 (0.73)	63.5 (2.50)	9.5 (0.37)	54.9 (2.16)	12.7 (0.50)	43.3 (1.70)	51.2 (2.01)	46.2 (1.82)	34.9 (1.37)
MPAI-NE20215		150		233.4 (9.19)										
MPAI-NE20230		300		385.8 (15.19)										
MPAI-NE30276	83	076	105.2 (4.14)	181.4 (7.14)	17.1 (0.67)	20.0 (0.79)	88.0 (3.46)	12.7 (0.50)	72.3 (2.85)	15.9 (0.63)	57.0 (2.24)	69.7 (2.74)	62.7 (2.47)	38.1 (1.50)
MPAI-NE30215		150		257.6 (10.14)										
MPAI-NE30230		300		410.0 (16.14)										
MPAI-NE30245		450		562.4 (22.14)										
MPAI-NE40215	110	150	108.5 (4.27)	260.9 (10.27)	17.1 (0.67)	20.0 (0.79)	88.0 (3.46)	12.7 (0.50)	85.7 (3.37)	19.8 (0.78)	70.5 (2.78)	83.2 (3.28)	64.3 (2.53)	45.9 (1.81)
MPAI-NE40230		300		413.3 (16.27)										
MPAI-NE40245		450		565.7 (22.27)										
MPAI-NE50215	144	150	142.5 (5.60)	294.9 (11.6)	25.4 (1.00)	27.5 (1.08)	113.0 (4.55)	19.0 (0.75)	118.3 (4.66)	31.8 (1.25)	95.1 (3.74)	109.7 (4.32)	106.7 (4.20)	68.2 (2.69)
MPAI-NE50230		300		447.3 (17.6)										
MPAI-NE50245		450		599.7 (23.6)										

Rod-end Accessories

These accessories apply to standard and front trunnion-mount electric cylinders. Components are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

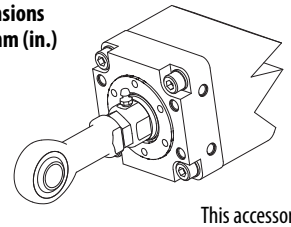
Rod-eye Attachment





Piston Rod Cylinder
Shown for Reference

Dimensions are in mm (in.)



Attachment includes mounting hardware.

This accessory applies to:
- Bulletin MPAI Standard
- Bulletin MPAI Food Grade Paint

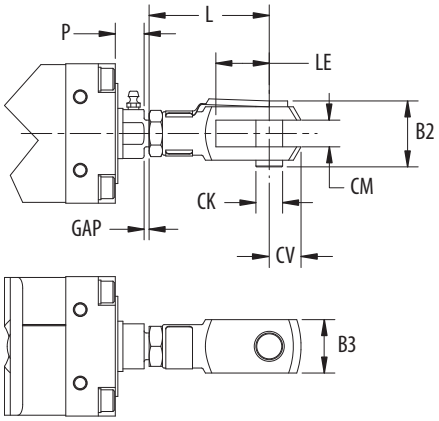
Cat. No.	Frame	ØD mm (in.)	P mm (in.)	L mm (in.)	W mm (in.)	SW mm (in.)	GAP mm (in.)
MPAI-NE203 (1)	64	10.0 (0.39)	17.3 (0.68)	48.0 (1.89)	10.5 (0.41)	14.0 (0.55)	2.5…9.6 (0.10…0.38)
MPAI-NE223 (2)							
MPAI-NE303 (1)	83	16.0 (0.63)	17.3 (0.68)	72.0 (2.83)	15.0 (0.59)	21.0 (0.83)	3.0…13.3 (0.12…0.52)
MPAI-NE323 (2)							
MPAI-NE403 (1)	110	20.0 (0.79)	16.8 (0.66)	87.0 (3.43)	18.0 (0.71)	25.0 (0.98)	3.0…14.5 (0.12…0.57)
MPAI-NE423 (2)							
MPAI-NE503 (1)	144	30.0 (1.18)	24.1 (0.95)	123.5 (4.86)	25.0 (0.94)	37.0 (1.46)	5.1…10.3 (0.20…0.41)
MPAI-NE523 (2)							

(1) Material is steel and finish is clear zinc.

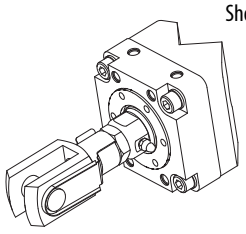
(2) Material is high-alloy steel for environments requiring higher corrosion resistance. Contains no copper, PTFE, or silicone.

IMPORTANT The spherical rod-eye attachment must be used with an anti-rotation option or the load that the actuator is attached to must be kept from rotating. Without one of these two methods, the spherical rod-eye lets the actuator rod rotate and result in inaccurate positioning due to lost rotational motion.

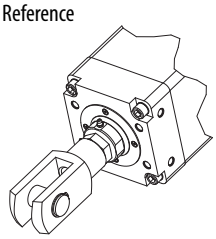
Rod Clevis Attachment



Piston Rod Cylinder
Shown for Reference



Catalog Number MPAI-NEx24
(stainless steel)



Catalog Number MPAI-NEx04
(galvanized steel)

Dimensions are in mm (in.)

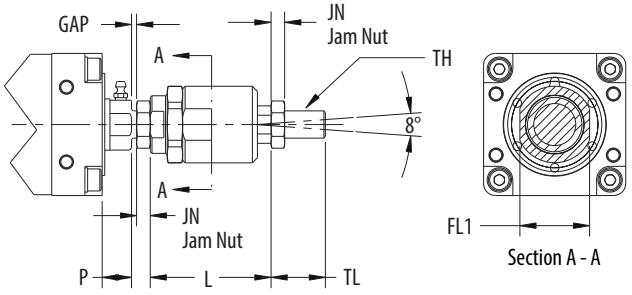
Attachment includes:
- 1 Rod clevis
- 1 Hinged spring pin
- 1 Hex nut

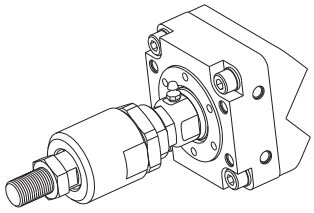
This accessory applies to:
- ■ Bulletin MPAI Standard
- ■ Bulletin MPAI Food Grade Paint

Cat. No.	Frame	B2 mm (in.)	B3 mm (in.)	ØCK mm (in.) H9	CM mm (in.)	CV mm (in.)	LE mm (in.)	L mm (in.)	P mm (in.)	GAP mm (in.)
MPAI-NE204	64	27.0 (1.06)	20.0 (0.79)	10.0 (0.39)	10.0 (0.39)	11.2 (0.44)	20.0 (0.79)	45.0 (1.77)	17.3 (0.68)	2.5…9.6 (0.10…0.38)
MPAI-NE224						12.0 (0.47)				
MPAI-NE304 (1)	83	40.0 (1.57)	32.0 (1.26)	16.0 (0.63)	16.0 (0.63)	19.0 (0.75)	32.0 (1.26)	72.0 (2.83)	17.3 (0.68)	3.0…13.1 (0.12…0.52)
MPAI-NE324 (2)		43.0 (1.69)								
MPAI-NE404 (1)	110	48.0 (1.89)	40.0 (1.57)	20.0 (0.79)	20.0 (0.79)	25.0 (0.98)	40.0 (1.57)	90.0 (3.54)	16.8 (0.66)	3.0…14.5 (0.12…0.57)
MPAI-NE424 (2)		53.0 (2.09)								
MPAI-NE504 (1)	144	65.0 (2.56)	55.0 (2.17)	30.0 (1.181)	30.0 (1.18)	40.3 (1.59)	54.0 (2.13)	123.5 (4.86)	24.1 (0.95)	3.0…10.3 (0.12…0.41)
MPAI-NE524 (2)		70.0 (2.76)				38.0 (1.50)				

(1) Material is galvanized steel.
(2) Material is stainless steel, type 316.

Self-aligning Rod Coupler





Dimensions are in mm (in.)

Attachment includes:
- 1 Self-aligning rod coupler
- 1 Hex nut

This accessory applies to:
- ■ Bulletin MPAI Standard
- ■ Bulletin MPAI Food Grade Paint

Cat. No. (1)	Frame	TH mm (in.)	TL mm (in.)	L mm (in.)	P mm (in.)	JN mm (in.)	FL1 mm (in.)	GAP mm (in.)
MPAI-NE201	64	M10 x 1.25	20.0 (0.79)	49.5 (1.95)	17.3 (0.68)	6.0 (0.24)	30.0 (1.18)	2.5…9.6 (0.10…0.38)
MPAI-NE301	83	M16 x 1.50	32.0 (1.26)	71.0 (2.80)	17.3 (0.68)	8.0 (0.31)	41.0 (1.61)	3.0…13.3 (0.12…0.52)
MPAI-NE401	110	M20 x 1.50	40.0 (1.57)	80.0 (3.15)	16.8 (0.66)	10.0 (0.39)	41.0 (1.61)	3.1…14.5 (0.12…0.57)
MPAI-NE501	144	M27 x 2.0	54.0 (2.13)	103 (4.06)	24.1 (0.95)	13.5 (0.53)	55.0 (2.17)	5.1…10.3 (0.20…0.41)

(1) Material is steel and finish is clear zinc.

LDC-Series Iron Core Linear Servo Motors

The LDC-Series™ iron core linear motors address a growing interest in linear motor technology as it becomes more affordable and is increasingly recognized as a practical means of improving machine performance. With the iron core product design, you now have cost-effective options to help you improve machine throughput while reducing maintenance and downtime.

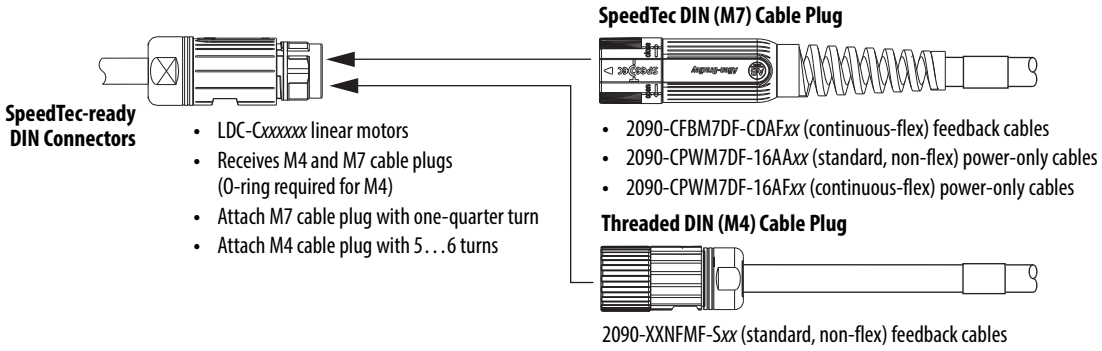
LDC-Series Iron Core Linear Motor Features

- High thrust force to cost ratio lets you use smaller, less expensive motors.
- Cogging torque less than 5% of continuous force.
- Very high acceleration and speeds up to 10 m/s (32.8 ft/s) greatly increase the throughput of your machine.
- No limits to travel distance. Ability to achieve high speeds over short and long travels.
- Direct drive technology for extreme servo responsiveness.
- No-wear, high reliability parts increase productivity.
- Peak forces to 5246 N (1179 lb).
- Ability to size and optimize LDC-Series iron-core linear motors and corresponding servo drives by using Motion Analyzer software reduces product selection time and minimizes cost.
- Full set-up and programming support with the Studio 5000 Logix Designer application reduces set-up time.

Motor Connector/Cable Compatibility

LDC-Series iron-core linear motors are equipped with SpeedTec-ready DIN connectors. However, these motors have incremental encoders and must use threaded DIN (M4) feedback cables in non-flex applications. This is due to the number of conductors required for incremental encoder connections.

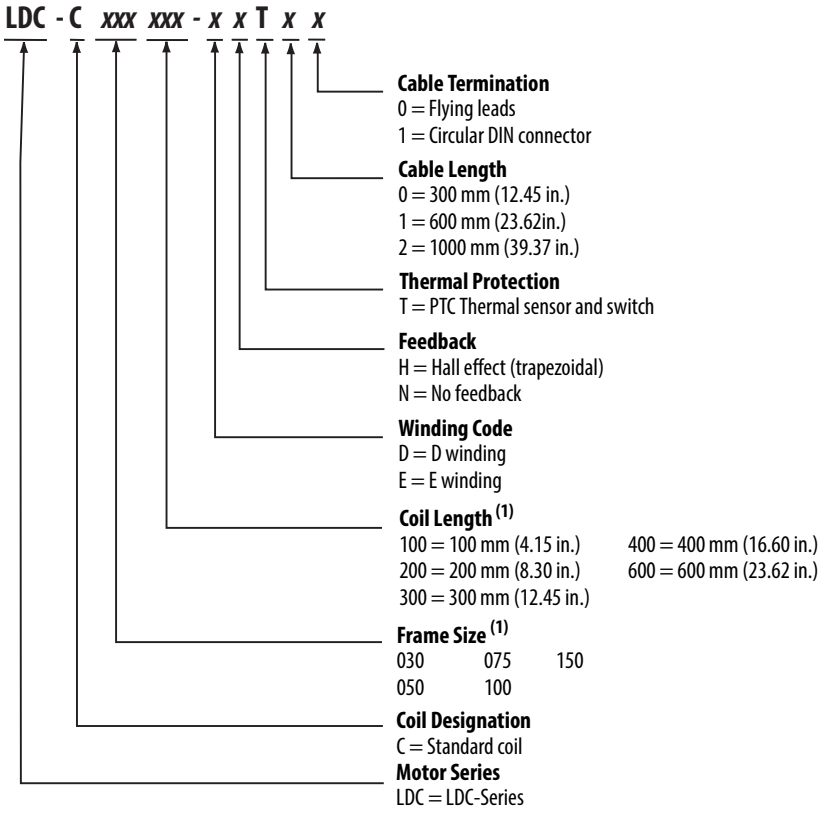
LDC-Series Iron Core Linear Motors



Catalog Numbers - LDC-Series Iron Core Linear Motors

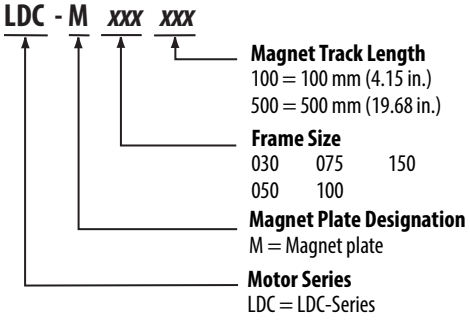
Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your actuator. For questions regarding product availability, contact your Allen-Bradley distributor.

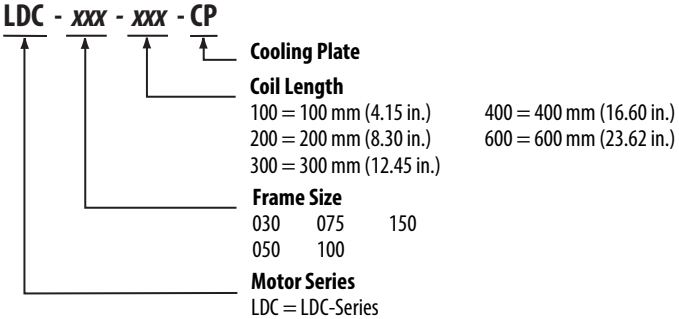
LDC-Series Iron Core Linear Motors



(1) Not all combinations are available. Only the configurations as listed in Technical Specifications - LDC-Series Iron Core Linear Motors on page 160 are available.

LDC-Series Iron Core Linear Motor Magnet Track and Cooling Plates





Accessories - LDC-Series Iron Core Linear Motors

- Cooling plates
- Bulk head connector kit
- Encoder connector kit
- Hall effect replacement module for connectorized coil
- Hall effect replacement module for flying-lead coil

Accessories for LDC-Series Iron Core Linear Motors

Cat. No.	Accessory	Description
LDC-BULK-HD	Bulk head connector kit	For easy mounting of flex cable to non-flex cables. Kit includes flange for feedback and power connectors, o-rings, and nut. Refer to Bulk Head Connector Flange Dimensions on page 178.
LDC-ENC-CNCT	Encoder connector kit	Adapts your encoder to the feedback cable on the Hall effect module.
LDC-HALL-C	Hall effect module	Replacement module for use with connectorized coil.
LDC-HALL-F		Replacement module for use with flying-lead coil.

Cooling Plate Accessories for LDC-Series Iron Core Linear Motors

Cat. No. Coil	Cat. No. Cooling Plate
LDC-C030100-*xxxxx*	LDC-030-100-CP
LDC-C030200-*xxxxx*	LDC-030-200-CP
LDC-C050100-*xxxxx*	LCC-050-100-CP
LDC-C050200-*xxxxx*	LDC-050-200-CP
LDC-C050300-*xxxxx*	LCC-050-300-CP
LDC-C075200-*xxxxx*	LDC-075-200-CP
LDC-C075300-*xxxxx*	LDC-075-300-CP
LDC-C075400-*xxxxx*	LDC-075-400-CP
LDC-C100300-*xxxxx*	LDC-100-300-CP
LDC-C100400-*xxxxx*	LDC-100-400-CP
LDC-C100600-*xxxxx*	LDC-100-600-CP
LDC-C150400-*xxxxx*	LDC-150-400-CP
LDC-C150600-*xxxxx*	LDC-150-600-CP

Technical Specifications - LDC-Series Iron Core Linear Motors

These performance specifications apply to all LDC-Series iron core linear motors.

Common Performance Specifications

Attribute	Value
Motor type	3 phase, wye winding, synchronous permanent magnet stator, non-ventilated linear motor
Operating speed, max	10 m/s (32.8 ft/s)
Operating voltage, (not for direct connection to AC line)	460V AC rms
Dielectric rating of motor power connections (U,V,W), to ground for 1.0 s (1)	2500V AC rms 50/60 Hz
Cogging torque	< 5% of the continuous force
Applied bus voltage, max (2)	650V DC
Electrical cycle length	50 mm (1.9685 in.)
Coil temperature, max	130 °C (266 °F)
Insulation class	130 °C (266 °F) Class B
Thermal time constant, Ref, winding to ambient	45 min
Paint color	Black

(1) Tested during manufacturing process. Do not re-apply test voltage. Contact Application Engineering (631.344.6600) for advice on testing coils post production.
(2) Maximum cable length is 10 m (32.8 ft). Consult Application Engineering (631.344.6600) for applications requiring longer cables.

Motor performance specifications are with sinusoidal commutation. Cooling options include NC (no cooling), AC (air cooling), and WC (water cooling).

LDC-Series Iron Core Linear Motors (30 mm frame size)

Attribute	Units	Symbol	LDC-C030100-D*x*T*xx*			LDC-C030200-D*x*T*xx*			LDC-C030200-E*x*T*xx*		
			NC	AC	WC	NC	AC	WC	NC	AC	WC
Force, continuous (1) (2) (3)	N (lbf)	F_c	74 (17)	93 (21)	111 (25)	148 (33)	185 (42)	222 (50)	148 (33)	185 (42)	222 (50)
Force, peak (4)	N (lbf)	F_p	188 (42)			375 (84)					
Thermal resistance	°C/W	R_{th}	2.24	1.43	1.00	1.12	0.72	0.50	1.12	0.72	0.50
Force constant (5) (6) (7)	N/A_{pk} (lbf/A_{pk})	K_f	18.2 (4.1)			18.2 (4.1)			36.4 (8.2)		
Back EMF constant p-p (5) (6) (7)	V_p/m/s (V_p/in/s)	K_e	21.5 (0.55)			21.5 (0.55)			43.0 (1.09)		
Current, peak (4) (6)	A_{pk} (A_{rms})	I_p	12.1 (8.6)			24.3 (17.1)			12.1 (8.6)		
Current, continuous (1) (2) (3) (6)	A_{pk} (A_{rms})	I_c	4.1 (2.88)	5.1 (3.6)	6.1 (4.3)	8.1 (5.8)	10.2 (7.2)	12.2 (8.6)	4.1 (2.9)	5.1 (3.6)	6.1 (4.3)
Resistance p-p @ 20 °C (68 °F) (5) (7)	Ohms	R_{20}	2.256			1.128			4.51		
Inductance p-p (5) (7)	mH	L	21.6			10.8			43.0		
Magnetic attraction (8)	N (lbf)	F_a	393 (88)			786 (177)					

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 166, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Calculated at 20% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(5) Winding parameters listed are measured line-to-line (phase-to-phase).
(6) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(7) Specifications are ±10%. Phase-to-phase inductance is ±30%.
(8) All specifications are at the standard reference air gap as shown in the drawing on page 168 and page 170.

LDC-Series Iron Core Linear Motors (50 mm frame size)

Attribute	Units	Symbol	LDC-C050100-D*xTxx*			LDC-C050200-D*xTxx*			LDC-C050200-E*xTxx*			LDC-C050300-D*xTxx*			LDC-C050300-E*xTxx*		
			NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC
Force, continuous (1) (2) (3)	N (lbf)	F_c	119 (27)	149 (34)	179 (40)	240 (54)	299 (67)	359 (81)	240 (54)	299 (67)	359 (81)	363 (82)	453 (102)	544 (122)	363 (82)	453 (102)	544 (122)
Force, peak (4)	N (lbf)	F_p	302 (68)			600 (135)						941 (212)					
Thermal resistance	°C/W	R_{th}	1.44	0.92	0.64	0.71	0.46	0.32	0.71	0.46	0.32	0.48	0.31	0.21	0.48	0.31	0.21
Force constant (5) (6) (7)	N/A_{pk} (lbf/A_{pk})	K_f	30.3 (6.8)			30.3 (6.8)			60.7 (13.6)			30.8 (6.9)			92.4 (20.8)		
Back EMF constant p-p (5) (6) (7)	V_p/m/s (V_p/in/s)	K_e	35.8 (0.91)			35.8 (0.91)			71.7 (1.82)			36.4 (0.92)			109.1 (2.77)		
Current, peak (4) (6)	A_{pk} (A_{rms})	I_p	11.7 (8.3)			23.3 (16.5)			11.6 (8.2)			35.9 (25.4)			12.0 (8.5)		
Current, continuous (1) (2) (3) (6)	A_{pk} (A_{rms})	I_c	3.9 (2.8)	4.9 (3.5)	5.9 (4.2)	7.9 (5.6)	9.9 (7.0)	11.8 (8.4)	3.9 (2.8)	4.9 (3.5)	5.9 (4.2)	11.8 (8.3)	14.7 (10.4)	17.7 (12.5)	3.9 (2.8)	4.9 (3.5)	5.9 (4.2)
Resistance p-p @ 20 °C (68 °F) (5) (7)	Ohms	R_{20}	3.76			1.88			7.52			1.25			11.28		
Inductance p-p (5) (7)	mH	L	36			18			72			12			108		
Magnetic attraction (8)	N (lbf)	F_a	690 (155)			1379 (310)						2069 (465)					

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 166, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Calculated at 20% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(5) Winding parameters listed are measured line-to-line (phase-to-phase).
(6) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(7) Specifications are ±10%. Phase-to-phase inductance is ±30%.
(8) All specifications are at the standard reference air gap as shown in the drawing on page 168 and page 170.

LDC-Series Iron Core Linear Motors (75 mm frame size)

Attribute	Units	Symbol	LDC-C075200-D*xTxx*			LDC-C075200-E*xTxx*			LDC-C075300-D*xTxx*			LDC-C075300-E*xTxx*			LDC-C075400-D*xTxx*			LDC-C075400-E*xTxx*		
			NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC
Force, continuous (1) (2) (3)	N (lbf)	F_c	348 (78)	435 (98)	523 (117)	348 (78)	435 (98)	523 (117)	523 (117)	653 (147)	784 (176)	523 (117)	653 (147)	784 (176)	697 (157)	871 (196)	1045 (235)	697 (157)	871 (196)	1045 (235)
Force, peak (4)	N (lbf)	F_p	882 (198)						1368 (308)						1824 (410)					
Thermal resistance	°C/W	R_{th}	0.58	0.37	0.26	0.58	0.37	0.26	0.39	0.25	0.17	0.39	0.25	0.17	0.29	0.19	0.13	0.29	0.19	0.13
Force constant (5) (6) (7)	N/A_{pk} (lbf/A_{pk})	K_f	45.5 (10.2)			91.0 (20.5)			45.5 (10.2)			136.5 (30.7)			45.5 (10.2)			91.0 (20.5)		
Back EMF constant p-p (5) (6) (7)	V_p/m/s (V_p/in/s)	K_e	53.7 (1.37)			107.5 (2.73)			53.7 (1.37)			161.2 (4.10)			53.7 (1.37)			107.5 (2.73)		
Current, peak (4) (6)	A_{pk} (A_{rms})	I_p	22.9 (16.2)			11.5 (8.1)			35.6 (25.1)			11.9 (8.4)			47.4 (33.5)			23.7 (16.8)		
Current, continuous (1) (2) (3) (6)	A_{pk} (A_{rms})	I_c	7.7 (5.4)	9.6 (6.8)	11.5 (8.1)	3.8 (2.7)	4.8 (3.4)	5.7 (4.1)	11.5 (8.1)	14.4 (10.2)	17.2 (12.2)	3.8 (2.7)	4.8 (3.4)	5.7 (4.1)	15.3 (10.8)	19.1 (13.5)	23.0 (16.2)	7.7 (5.4)	9.6 (6.8)	11.5 (8.1)
Resistance p-p @ 20 °C (68 °F) (5) (7)	Ohms	R_{20}	2.47			9.88			1.65			14.82			1.24			4.94		
Inductance p-p (5) (7)	mH	L	24			95			16			142			12			47		
Magnetic attraction (8)	N (lbf)	F_a	2000 (450)						2999 (674)						3999 (899)					

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 166, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Calculated at 20% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(5) Winding parameters listed are measured line-to-line (phase-to-phase).
(6) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(7) Specifications are ±10%. Phase-to-phase inductance is ±30%.
(8) All specifications are at the standard reference air gap as shown in the drawing on page 168 and page 170.

LDC-Series Iron Core Linear Motors (100 mm frame size)

Attribute	Units	Symbol	LDC-C100300-D*x*T*xx*			LDC-C100300-E*x*T*xx*			LDC-C100400-D*x*T*xx*			LDC-C100400-E*x*T*xx*			LDC-C100600-D*x*T*xx*			LDC-C100600-E*x*T*xx*		
			NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC
Force, continuous (1) (2) (3)	N (lbf)	F_c	674 (152)	843 (190)	1012 (227)	674 (152)	843 (190)	1012 (227)	899 (202)	1124 (253)	1349 (303)	899 (202)	1124 (253)	1349 (303)	1349 (303)	1686 (379)	2023 (455)	1349 (303)	1686 (379)	2023 (455)
Force, peak (4)	N (lbf)	F_p	1767 (397)						2356 (530)						3534 (794)					
Thermal resistance	°C/W	R_{th}	0.33	0.21	0.15	0.33	0.21	0.15	0.25	0.16	0.11	0.25	0.16	0.11	0.17	0.11	0.07	0.17	0.11	0.07
Force constant (5) (6) (7)	N/A_{pk} (lbf/A_{pk})	K_f	60.7 (13.6)			182.0 (40.9)			60.7 (13.6)			121.3 (27.3)			60.7 (13.6)			121.3 (27.3)		
Back EMF constant p-p (5) (6) (7)	V_p/m/s (V_p/in/s)	K_e	71.7 (1.82)			215.0 (5.46)			71.7 (1.82)			143.3 (3.64)			71.7 (1.82)			143.3 (3.64)		
Current, peak (4) (6)	A_{pk} (A_{rms})	I_p	34.3 (24.2)			11.4 (8.1)			45.7 (32.3)			22.8 (16.1)			68.5 (48.4)			34.3 (24.2)		
Current, continuous (1) (2) (3) (6)	A_{pk} (A_{rms})	I_c	11.1 (7.9)	13.9 (9.8)	16.7 (11.8)	3.7 (2.6)	4.6 (3.3)	5.6 (3.9)	14.8 (10.5)	18.5 (13.1)	22.2 (15.7)	7.4 (5.2)	9.3 (6.5)	11.1 (7.9)	22.2 (15.7)	27.8 (19.7)	33.3 (23.6)	11.1 (7.9)	13.9 (9.8)	16.7 (11.8)
Resistance p-p @ 20 °C (68 °F) (5) (7)	Ohms	R_{20}	2.04			18.36			1.53			6.12			1.02			4.08		
Inductance p-p (5) (7)	mH	L	20			184			15			61			10			41		
Magnetic attraction (8)	N (lbf)	F_a	3930 (883)						5240 (1178)						7860 (1767)					

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 166, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Calculated at 20% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(5) Winding parameters listed are measured line-to-line (phase-to-phase).
(6) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(7) Specifications are ±10%. Phase-to-phase inductance is ±30%.
(8) All specifications are at the standard reference air gap as shown in the drawing on page 168 and page 170.

LDC-Series Iron Core Linear Motors (150 mm frame size)

Attribute	Units	Symbol	LDC-C150400-D*x*T*xx*			LDC-C150400-E*x*T*xx*			LDC-C150600-D*x*T*xx*			LDC-C150600-E*x*T*xx*		
			NC	AC	WC	NC	AC	WC	NC	AC	WC	NC	AC	WC
Force, continuous (1) (2) (3)	N (lbf)	F_c	1281 (288)	1601 (360)	1922 (432)	1281 (288)	1601 (360)	1922 (432)	1922 (432)	2402 (540)	2882 (648)	1922 (432)	2402 (540)	2882 (648)
Force, peak (4)	N (lbf)	F_p	3498 (786)						5246 (1179)					
Thermal resistance	°C/W	R_{th}	0.20	0.13	0.09	0.20	0.13	0.09	0.13	0.09	0.06	0.13	0.09	0.06
Force constant (5) (6) (7)	N/A_{pk} (lbf/A_{pk})	K_f	91.0 (20.5)			182.0 (40.9)			91.0 (20.5)			182.0 (40.9)		
Back EMF constant p-p (5) (6) (7)	V_p/m/s (V_p/in/s)	K_e	107.5 (2.73)			215.0 (5.46)			107.5 (2.73)			215.0 (5.46)		
Current, peak (4) (6)	A_{pk} (A_{rms})	I_p	45.2 (32.0)			22.6 (16.0)			67.8 (47.9)			33.9 (24.0)		
Current, continuous (1) (2) (3) (6)	A_{pk} (A_{rms})	I_c	14.1 (10.0)	17.6 (12.4)	21.1 (14.9)	7.0 (5.0)	8.8 (6.2)	10.6 (7.5)	21.1 (14.9)	26.4 (18.7)	31.7 (22.4)	10.6 (7.5)	13.2 (9.3)	15.8 (11.2)
Resistance p-p @ 20 °C (68 °F) (5) (7)	Ohms	R_{20}	2.12			8.48			1.41			5.65		
Inductance p-p (5) (7)	mH	L	22			86			14			58		
Magnetic attraction (8)	N (lbf)	F_a	7860 (1768)						11790 (2652)					

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 166, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Calculated at 20% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(5) Winding parameters listed are measured line-to-line (phase-to-phase).
(6) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(7) Specifications are ±10%. Phase-to-phase inductance is ±30%.
(8) All specifications are at the standard reference air gap as shown in the drawing on page 168 and page 170.

Weight Specifications

Motor Coil with Flying Leads and Cooling Plate

Cat. No. Coil	Weight, approx kg (lb)	Cat. No. Cooling Plate	Weight, approx kg (lb)	Coil and Cooling Plate (combined) Weight, approx kg (lb)
LDC-C030100-DHT20	1.41 (3.1)	LDC-030-100-CP	0.12 (0.26)	1.53 (3.4)
LDC-C030200-*x*HT20	2.27 (5.0)	LDC-030-200-CP	0.20 (0.44)	2.47 (5.4)
LDC-C050100-DHT20	2.05 (4.5)	LDC-050-100-CP	0.15 (0.32)	2.19 (4.8)
LDC-C050200-*x*HT20	3.18 (7.0)	LDC-050-200-CP	0.25 (0.55)	3.43 (7.6)
LDC-C050300-*x*HT20	4.55 (10.0)	LDC-050-300-CP	0.36 (0.79)	4.91 (10.8)
LDC-C075200-*x*HT20	4.55 (10.0)	LDC-075-200-CP	0.39 (0.85)	4.93 (10.9)
LDC-C075300-*x*HT20	6.36 (14.0)	LDC-075-300-CP	0.56 (1.23)	6.92 (15.2)
LDC-C075400-*x*HT20	8.18 (18.0)	LDC-075-400-CP	0.73 (1.60)	8.91 (19.6)
LDC-C100300-*x*HT20	7.73 (17.0)	LDC-100-300-CP	0.73 (1.60)	8.46 (18.6)
LDC-C100400-*x*HT20	10.0 (22.0)	LDC-100-400-CP	0.96 (2.10)	10.96 (24.1)
LDC-C100600-*x*HT20	15.45 (34.0)	LDC-100-600-CP	1.39 (3.05)	16.84 (37.0)
LDC-C150400-*x*HT20	14.55 (32.0)	LDC-150-400-CP	1.93 (4.24)	16.47 (36.2)
LDC-C150600-*x*HT20	21.36 (47.0)	LDC-150-600-CP	2.86 (6.29)	24.22 (53.3)

Motor Coil with Connectors and Cooling Plate

Cat. No. Coil	Weight, approx kg (lb)	Cat. No. Cooling Plate	Weight, approx kg (lb)	Coil and Cooling Plate (combined) Weight, approx kg (lb)
LDC-C030100-DHT11	1.61 (3.55)	LDC-030-100-CP	0.12 (0.26)	1.73 (3.81)
LDC-C030200-*x*HT11	2.47 (5.44)	LDC-030-200-CP	0.20 (0.44)	2.67 (5.89)
LDC-C050100-DHT11	2.25 (4.96)	LDC-050-100-CP	0.15 (0.32)	2.40 (5.29)
LDC-C050200-*x*HT11	3.38 (7.45)	LDC-050-200-CP	0.25 (0.55)	3.63 (8.00)
LDC-C050300-*x*HT11	4.75 (10.47)	LDC-050-300-CP	0.36 (0.79)	5.11 (11.3)
LDC-C075200-*x*HT11	4.75 (10.47)	LDC-075-200-CP	0.39 (0.85)	5.14 (11.33)
LDC-C075300-*x*HT11	6.56 (14.46)	LDC-075-300-CP	0.56 (1.23)	7.12 (15.70)
LDC-C075400-*x*HT11	8.38 (18.47)	LDC-075-400-CP	0.73 (1.60)	9.11 (20.08)
LDC-C100300-*x*HT11	7.91 (17.4)	LDC-100-300-CP	0.73 (1.60)	8.64 (18.6)
LDC-C100400-*x*HT11	10.2 (22.5)	LDC-100-400-CP	0.96 (2.10)	11.16 (24.60)
LDC-C100600-*x*HT11	15.65 (34.5)	LDC-100-600-CP	1.39 (3.05)	17.04 (37.57)
LDC-C150400-*x*HT11	14.75 (32.5)	LDC-150-400-CP	1.93 (4.24)	16.19 (35.69)
LDC-C150600-*x*HT11	21.56 (47.5)	LDC-150-600-CP	2.86 (6.29)	23.69 (52.23)

Motor Magnet Track

Cat. No. Magnet Track	Weight, approx kg (lb)
LDC-M030100	0.47 (1.02)
LDC-M050100	0.66 (1.46)
LDC-M075100	0.90 (1.98)
LDC-M100100	1.14 (2.51)
LDC-M150100	1.62 (3.57)
LDC-M030500	2.35 (5.12)
LDC-M050500	3.32 (7.28)
LDC-M075500	4.5 (9.92)
LDC-M100500	5.7 (12.57)
LDC-M150500	8.08 (17.81)

Carriage Weight and Heat Sink Area Requirements

Cat. No.	Required Heat Sink Area cm^2 ($in.^2$)	Required Carriage Plate Weight, approx kg (lb)
LDC-C030100-DHT*xx*	150 X 200 (6 X 8)	1.1 (2.6)
LDC-C030200-*x*HT*xx*	150 X 300 (6 X 12)	1.6 (3.6)
LDC-C050100-DHT*xx*	200 X 200 (8 X 8)	1.8 (4)
LDC-C050200-*x*HT*xx*	200 X 300 (8 X 12)	2.7 (6)
LDC-C050300-*x*HT*xx*	200 X 400 (8 X 16)	3.6 (8)
LDC-C075200-*x*HT*xx*	250 X 300 (10 X 12)	5.4 (12)
LDC-C075300-*x*HT*xx*	250 X 400 (10 X 16)	7.3 (16)
LDC-C075400-*x*HT*xx*	250 X 500 (10 X 20)	9.1 (20)
LDC-C100300-*x*HT*xx*	300 X 400 (12 X 16)	8.7 (19.2)
LDC-C100400-*x*HT*xx*	300 X 500 (12 X 20)	10.9 (24)
LDC-C100600-*x*HT*xx*	300 X 750 (12 X 30)	19.6 (43.2)
LDC-C150400-*x*HT*xx*	400 X 500 (16 X 20)	21.8 (48)
LDC-C150600-*x*HT*xx*	400 X 750 (16 X 30)	32.7 (72)

Cooling Plate Flow Rate Specifications

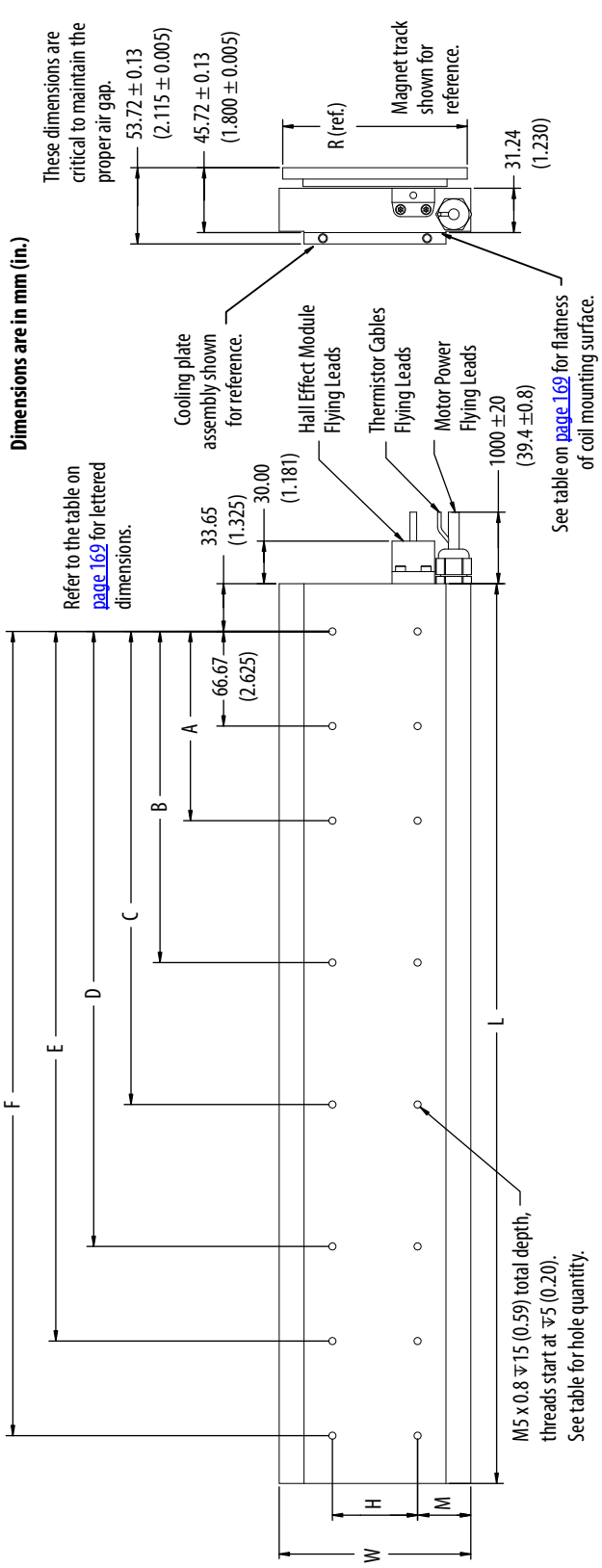
Cat. No. **Coil**	**Cat. No.** **Cooling Plate**	**Air Flow Rate** [1] L/min (ft^3/hr)	**Water Flow Rate** [2] bar (psi)
LDC-C030100-*xxxxx*	LDC-030-100-CP	N/A [3]	N/A [3]
LDC-C030200-*xxxxx*	LDC-030-200-CP	N/A [3]	N/A [3]
LDC-C050100-*xxxxx*	LCC-050-100-CP	N/A [3]	0.41 (6)
LDC-C050200-*xxxxx*	LDC-050-200-CP	N/A [3]	0.48 (7)
LDC-C050300-*xxxxx*	LCC-050-300-CP	N/A [3]	0.55 (8)
LDC-C075200-*xxxxx*	LDC-075-200-CP	N/A [3]	0.48 (7)
LDC-C075300-*xxxxx*	LDC-075-300-CP	N/A [3]	0.55 (8)
LDC-C075400-*xxxxx*	LDC-075-400-CP	N/A [3]	0.69 (10)
LDC-C100300-*xxxxx*	LDC-100-300-CP	61.4 (130)	0.69 (10)
LDC-C100400-*xxxxx*	LDC-100-400-CP	N/A [3]	0.83 (12)
LDC-C100600-*xxxxx*	LDC-100-600-CP	47.2 (100)	0.97 (14)
LDC-C150400-*xxxxx*	LDC-150-400-CP	N/A [3]	0.83 (12l) [4]
LDC-C150600-*xxxxx*	LDC-150-600-CP	N/A [3]	0.93 (13.5) [4]

(1) These are the flow rates required to maintain air pressure at 0.689 bar (10 $lb/in.^2$).
(2) These are the flow rates required to maintain water pressure at 3.8 L/min (1 gal/min).
(3) This flow rate is not available. Call Application Engineering (631-344-6600) for assistance.
(4) These are the flow rates required to maintain water pressure at 7.57 L/min (2 gal/min).

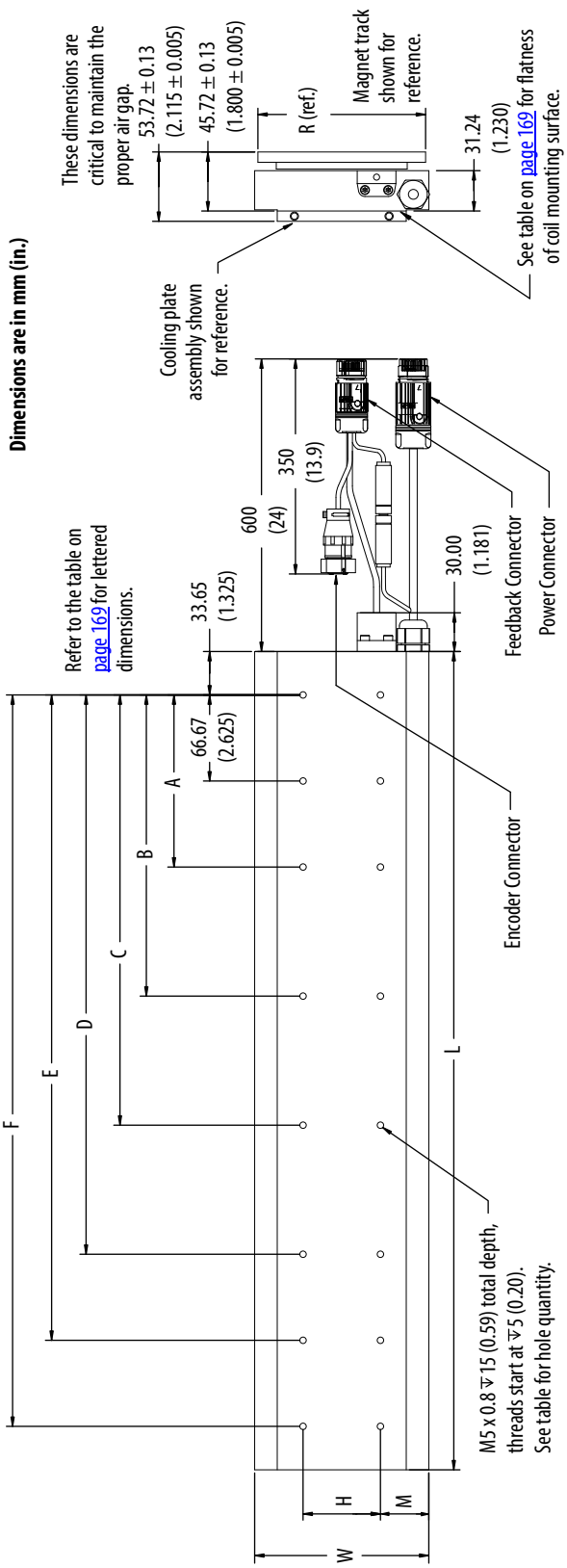
Dimensions - LDC-Series Iron Core Linear Motors

LDC-Series iron core linear motor components are designed to metric dimensions. Inch dimensions are conversions from millimeters. Untoleranced dimensions are for reference.

LDC-C030/050/075/100xxx-xHT20 Motor Coil Dimensions (flying leads)



LDC-C030/050/075/100xxx-xHT11 Motor Coil Dimensions (connectors)



LDC-C030/050/075/100*xxx*-*x*HT*xx* Motor Coil Dimensions

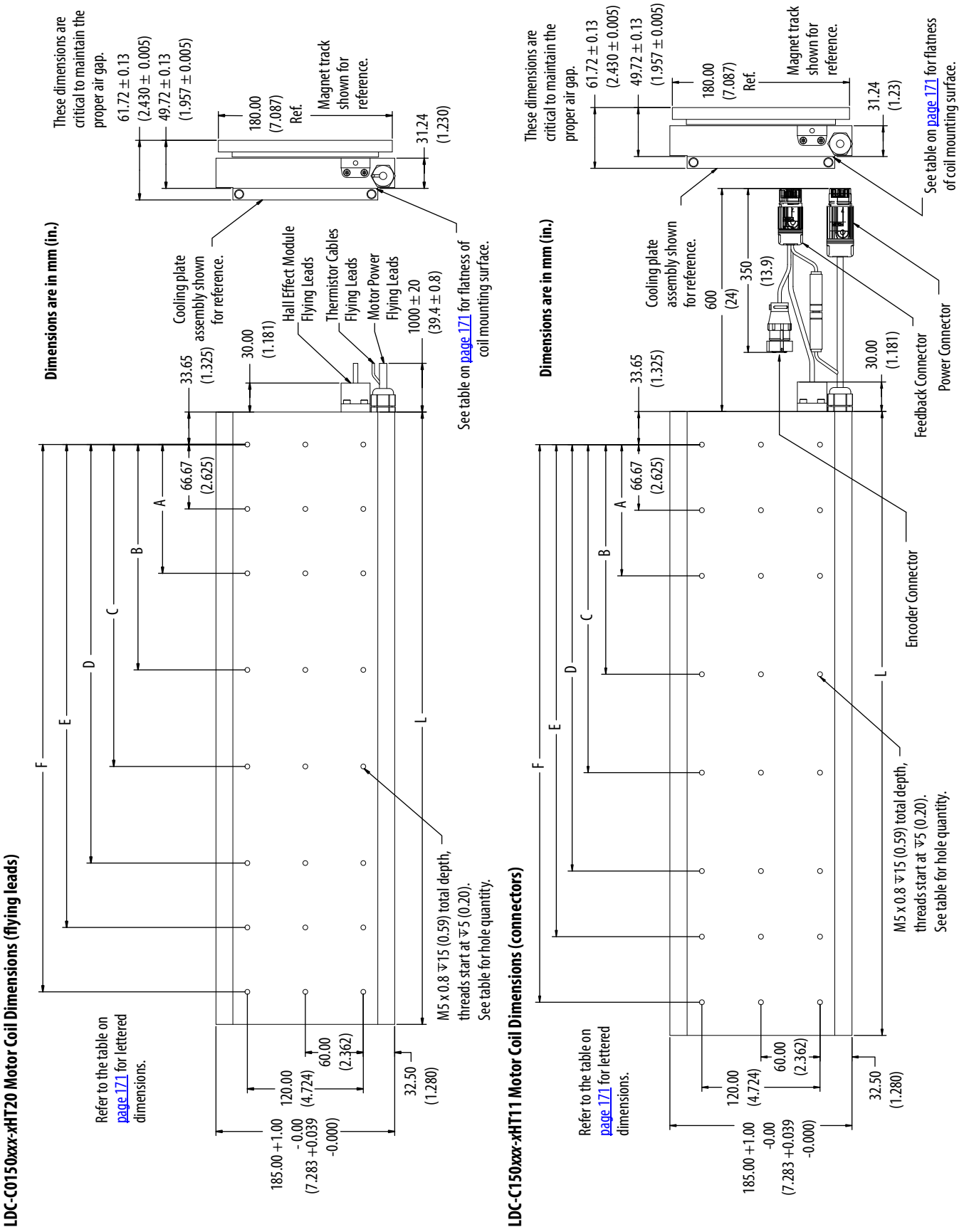
Cat. No.	L mm (in.)	W (1) mm (in.)	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	H mm (in.)	M mm (in.)	R mm (in.)	Hole Qty
LDC-C030100-DHT*xx*	134.0 (5.28)	65.00 (2.559)	–	–	–	–	–	–	15.00 (0.591)	25.00 (0.984)	60.00 (2.362)	4
LDC-C030200-xHT*xx*	234.0 (9.21)		100.00 (3.937)	166.67 (6.562)	–	–	–	–				8
LDC-C050100-DHT*xx*	134.0 (5.28)	85.00 (3.346)	–	–	–	–	–	–	25.00 (0.984)	30.00 (1.181)	80.00 (3.150)	4
LDC-C050200-xHT*xx*	234.0 (9.21)		100.00 (3.937)	166.67 (6.562)	–	–	–	–				8
LDC-C050300-xHT*xx*	334.0 (13.15)		133.33 (5.249)	200.00 (7.874)	266.67 (10.499)	–	–	–				10
LDC-C075200-xHT*xx*	234.0 (9.21)	110.00 (4.331)	100.00 (3.937)	166.67 (6.562)	–	–	–	–	40.00 (1.575)	35.00 (1.378)	105.00 (4.134)	8
LDC-C075300-xHT*xx*	334.0 (13.15)		133.33 (5.249)	200.00 (7.874)	266.67 (10.499)	–	–	–				10
LDC-C075400-xHT*xx*	434.0 (17.09)		133.33 (5.249)	233.33 (9.186)	300.00 (11.811)	366.67 (14.436)	–	–				12
LDC-C100300-xHT*xx*	334.0 (13.15)	135.00 (5.315)	133.33 (5.249)	200.00 (7.874)	266.67 (10.499)	–	–	–	60.00 (2.362)	37.50 (1.476)	130.00 (5.118)	10
LDC-C100400-xHT*xx*	434.0 (17.09)		133.33 (5.249)	233.33 (9.186)	300.00 (11.811)	366.67 (14.436)	–	–				12
LDC-C100600-xHT*xx*	634.0 (25.31)		133.33 (5.249)	233.33 (9.186)	333.33 (13.123)	433.33 (17.060)	500.00 (19.686)	566.66 (22.310)				16

(1) Tolerance for W dimension is +1.00 mm (+0.039 in.), -0.00 mm (-0.000 in.)

Cat. No.	Power Cable Gauge (1) mm^2 (AWG)
LDC-C030*xxx*-*x*HT*xx*	0.75 (18)
LDC-C050*xxx*-*x*HT*xx*	
LDC-C075*xxx*-*x*HT*xx*	
LDC-C100300-*x*HT*xx*	
LDC-C100400-*x*HT*xx*	
LDC-C100600-DHT*xx*	1.5 (16)
LDC-C100600-EHT*xx*	0.75 (18)

Cat. No.	Flatness mm/300 x 300 (in./12 x 12)
LDC-C030*xxx*-*x*HT*xx*	0.25 (0.01)
LDC-C050100-DHT*xx*	
LDC-C050200-*x*HT*xx*	
LDC-C050300-*x*HT*xx*	0.38 (0.15)
LDC-C075200-*x*HT*xx*	0.25 (0.01)
LDC-C075300-*x*HT*xx*	0.38 (0.015)
LDC-C075400-*x*HT*xx*	0.64 (0.25)
LDC-C100300-*x*HT*xx*	0.38 (0.015)
LDC-C100400-*x*HT*xx*	0.64 (0.25)
LDC-C100600-*x*HT*xx*	0.89 (0.035)

(1) Refer to Cable Specifications on page 171 for additional cable specifications.


LDC-C0150xxx-xHT20 Motor Coil Dimensions (flying leads)
Dimensions are in mm (in.)
These dimensions are critical to maintain the proper air gap.
61.72 ± 0.13 (2.430 ± 0.005)
49.72 ± 0.13 (1.957 ± 0.005)
180.00 (7.087) Ref.
Magnet track shown for reference.
31.24 (1.230)
Cooling plate assembly shown for reference.
Hall Effect Module Flying Leads
Thermistor Cables Flying Leads
Motor Power Flying Leads
1000 ± 20 (39.4 ± 0.8)
See table on page 171 for flatness of coil mounting surface.
33.65 (1.325)
30.00 (1.181)
66.67 (2.625)
A
B
C
D
E
F
L
Refer to the table on page 171 for lettered dimensions.
120.00 (4.724)
60.00 (2.362)
185.00 +1.00 -0.00 (7.283 +0.039 -0.000)
32.50 (1.280)
M5 x 0.8 ↧15 (0.59) total depth, threads start at ↧5 (0.20). See table for hole quantity.
LDC-C150xxx-xHT11 Motor Coil Dimensions (connectors)
Dimensions are in mm (in.)
These dimensions are critical to maintain the proper air gap.
61.72 ± 0.13 (2.430 ± 0.005)
49.72 ± 0.13 (1.957 ± 0.005)
180.00 (7.087) Ref.
Magnet track shown for reference.
31.24 (1.23)
See table on page 171 for flatness of coil mounting surface.
Cooling plate assembly shown for reference.
600 (24)
350 (13.9)
Feedback Connector
Power Connector
33.65 (1.325)
30.00 (1.181)
66.67 (2.625)
A
B
C
D
E
F
L
Encoder Connector
Refer to the table on page 171 for lettered dimensions.
120.00 (4.724)
60.00 (2.362)
185.00 +1.00 -0.00 (7.283 +0.039 -0.000)
32.50 (1.280)
M5 x 0.8 ↧15 (0.59) total depth, threads start at ↧5 (0.20). See table for hole quantity.

LDC-C150*xxx*-*x*HT*xx* Motor Coil Dimensions

Cat. No.	L mm (in.)	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	Hole Qty
LDC-C150400-*x*HT*xx*	434.0 (17.09)	133.33 (5.249)	233.33 (9.186)	300.00 (11.811)	366.67 (14.436)	–	–	18
LDC-C150600-*x*HT*xx*	634.0 (25.31)	133.33 (5.249)	233.33 (9.186)	333.33 (13.123)	433.33 (17.060)	500.00 (19.686)	566.66 (22.310)	24

Cable Specifications

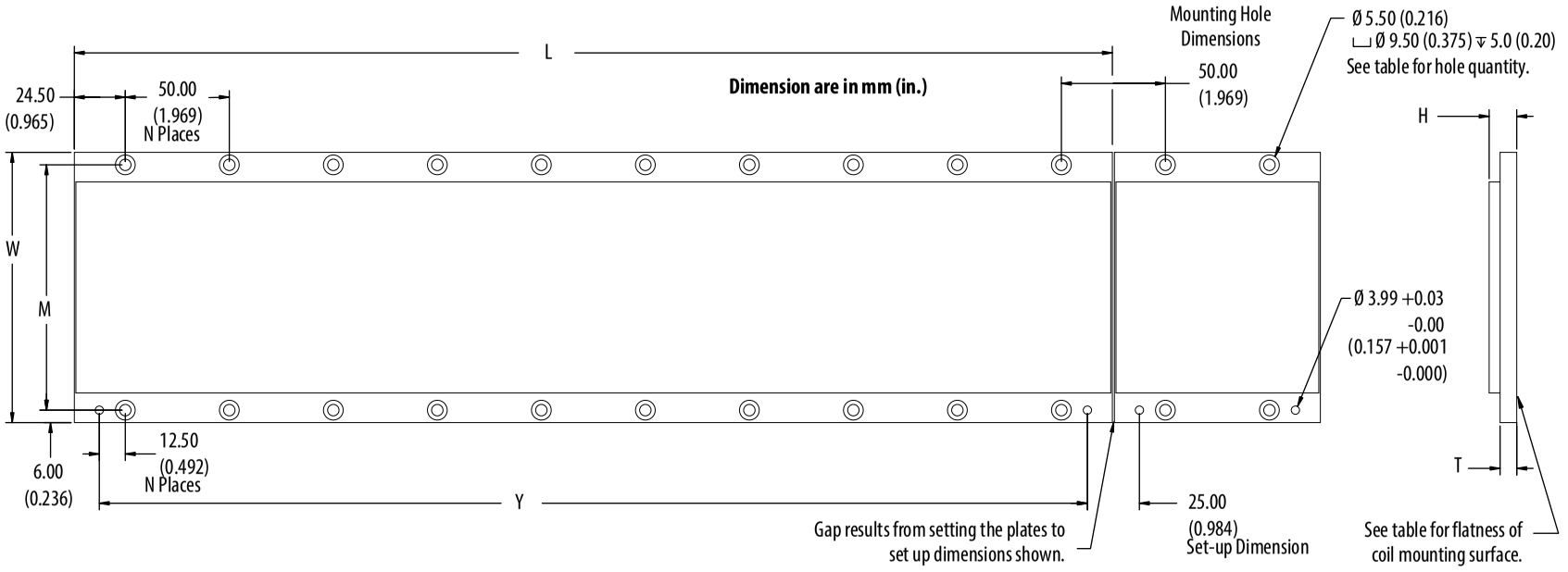
Cable (1)	Conductors	Gauge mm^2 (AWG)	Shield Type	Cable Dia. mm (in.)	Static Bend Radius mm (in.)
Power (2)	4	0.75 (18)	Braid	7.0 (0.28)	18.0 (0.70)
Power (2)	4	1.5 (16)	Braid	8.0 (0.32)	17.0 (0.67)
Power (2)	4	0.50 (20)	Braid	6.4 (0.25)	17.0 (0.67)
Thermistor	2	0.14 (26)	None	4.0 (0.16)	10.0 (0.40)
Hall Module	6	0.25 (24)	Foil	5.0 (0.20)	15.0 (0.59)

Cat. No.	Power Cable Gauge mm^2 (AWG)	Flatness mm/300 x 300 (in./12 x 12)
LDC-C150400-*x*HT*xx*	0.82 (18)	0.64 (0.025)
LDC-C150600-DHT*xx*		0.89 (0.035)
LDC-C150600-EHT*xx*	1.31 (16)	

(1) All cables are non-flex.

(2) Power cable specification is dependent on coil used. See Power Cable Gauge tables on page 169 and page 171.

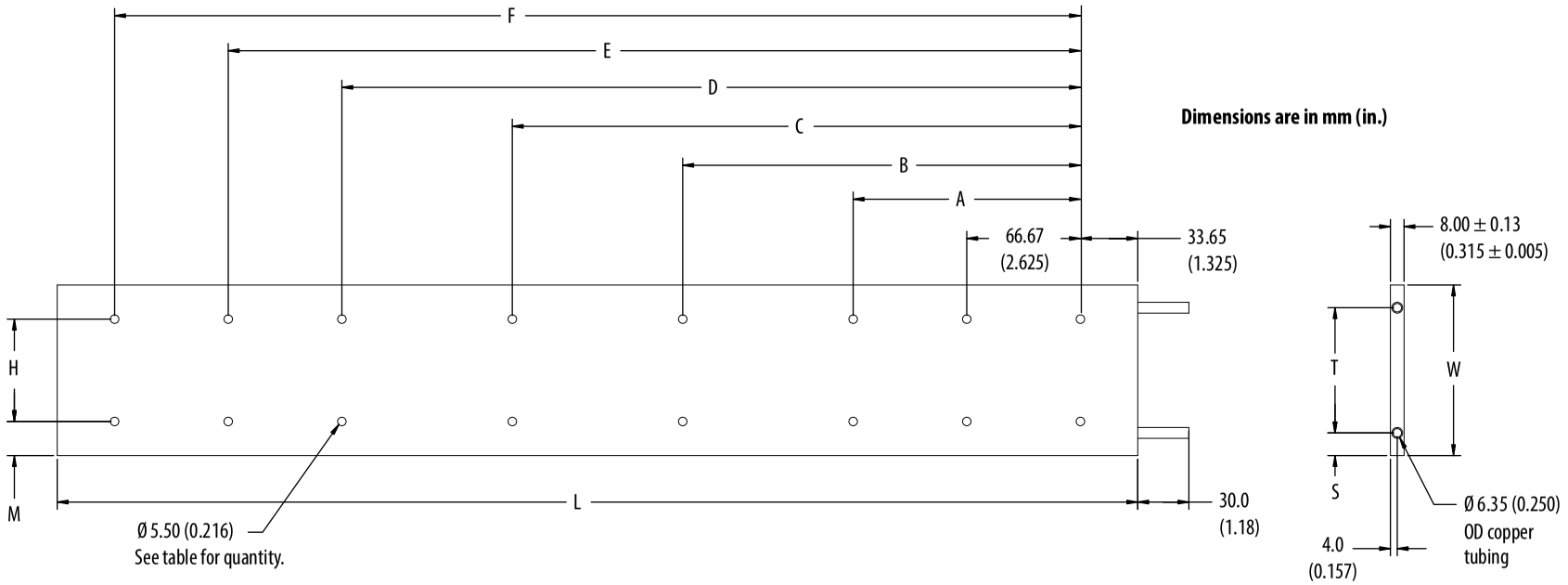
LDC-Series Iron Core Linear Motor Magnet Track Dimensions



Cat. No.	L (1) mm (in.)	Y (2) mm (in.)	W mm (in.)	M mm (in.)	H (3) mm (in.)	T mm (in.)	N	Hole Qty	Flatness (4) mm/300 x 300 (in./12 x 12)
LDC-M030100	99.0 (3.90)	75.00 (2.953)	60.0 (2.36)	48.00 (1.890)	13.26 (0.522)	8.00 (0.315)	1	4	0.06 (0.002)
LDC-M050100			80.0 (3.15)	68.00 (2.677)					
LDC-M075100			105.0 (4.13)	93.00 (3.661)					0.13 (0.005)
LDC-M100100			130.0 (5.12)	118.00 (4.646)					
LDC-M150100			180.0 (7.09)	168.00 (6.614)	17.26 (0.680)	12.00 (0.472)			
LDC-M030500	499.0 (19.65)	475.00 (18.70)	60.0 (2.36)	48.00 (1.890)	13.26 (0.522)	8.00 (0.315)	9	20	0.50 (0.20)
LDC-M050500			80.0 (3.15)	68.00 (2.677)					
LDC-M075500			105.0 (4.13)	93.00 (3.661)					0.90 (0.035)
LDC-M100500			130.0 (5.12)	118.00 (4.646)					
LDC-M150500			180.0 (7.09)	168.00 (6.614)	17.26 (0.680)	12.00 (0.472)			

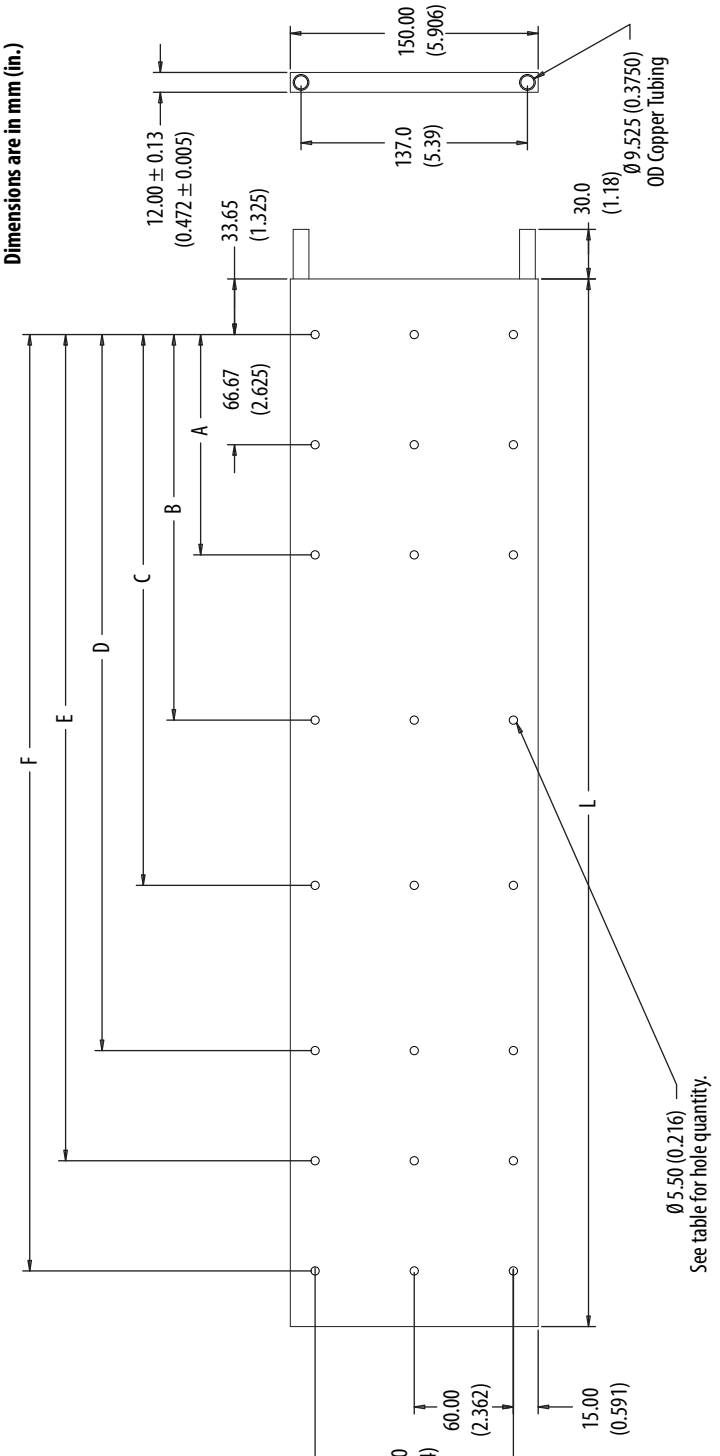
(1) Tolerance for L dimension is ±0.25 mm (±0.010 in.).
(2) Tolerance for Y dimension is ±0.08 mm (±0.003 in.).
(3) Tolerance for H dimension is ±0.16 mm (±0.006 in.).
(4) Specified flatness is in the free state.

LDC-030/050/075/100-*xxx*-CP Motor Coil Cooling Plate Dimensions



Cat. No.	L mm (in.)	W mm (in.)	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	H mm (in.)	M mm (in.)	T mm (in.)	S mm (in.)	Hole Qty
LDC-030-100-CP	134.0 (5.28)	38.00 (1.496)	–	–	–	–	–	–	15.00 (0.591)	11.50 (0.453)	27.5 (1.08)	5.25 (0207)	4
LDC-030-200-CP	234.0 (9.21)		100.00 (3.937)	166.67 (6.562)	–	–	–	–					8
LCC-050-100-CP	134.0 (5.28)	50.00 (1.969)	–	–	–	–	–	–	25.00 (0.984)	12.50 (0.492)	38.1 (1.50)	5.95 (0.234)	4
LDC-050-200-CP	234.0 (9.21)		100.00 (3.937)	166.67 (6.562)	–	–	–	–					8
LCC-050-300-CP	334.0 (131.15)		133.33 (5.249)	200.00 (7.874)	266.67 (10.499)	–	–	–					10
LDC-075-200-CP	234.0 (9.21)	75.00 (2.953)	100.00 (3.937)	166.67 (6.562)	–	–	–	–	40.00 (1.575)	17.50 (0.689)	50.8 (2.00)	12.10 (0.476)	8
LDC-075-300-CP	334.0 (131.15)		133.33 (5.249)	200.00 (7.874)	266.67 (10.499)	–	–	–					10
LDC-075-400-CP	434.0 (17.09)		133.33 (5.249)	233.33 (9.186)	300.00 (11.811)	366.67 (14.436)	–	–					12
LDC-100-300-CP	334.0 (131.15)	100.00 (3.937)	133.33 (5.249)	200.00 (7.874)	266.67 (10.499)	–	–	–	60.00 (2.362)	20.00 (0.787)	73.4 (2.89)	13.30 0.524)	10
LDC-100-400-CP	434.0 (17.09)		133.33 (5.249)	233.33 (9.186)	300.00 (11.811)	366.67 (14.436)	–	–					12
LDC-100-600-CP	634.0 (25.31)		133.33 (5.249)	233.33 (9.186)	333.33 (13.123)	433.33 (17.060)	500.00 (19.686)	566.66 (22.310)					16

LDC-150-*xxx*-CP Motor Coil Cooling Plate Dimensions



Cat. No.	L mm (in.)	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	Hole Qty
LDC-150-400-CP	434.0 (17.09)	133.33 (5.249)	233.33 (9.186)	300.00 (11.811)	366.67 (14.436)	–	–	18
LDC-150-600-CP	634.0 (25.31)	133.33 (5.249)	233.33 (9.186)	333.33 (13.123)	433.33 (17.060)	500.00 (19.686)	566.66 (22.310)	24

Notes:

LDL-Series Ironless Linear Servo Motors

The LDL-Series™ ironless linear motors address a growing interest in linear motor technology as it becomes more affordable and is increasingly recognized as a practical means of improving machine performance. With the ironless product design, you now have cost-effective options to help you improve machine throughput while reducing maintenance and downtime.

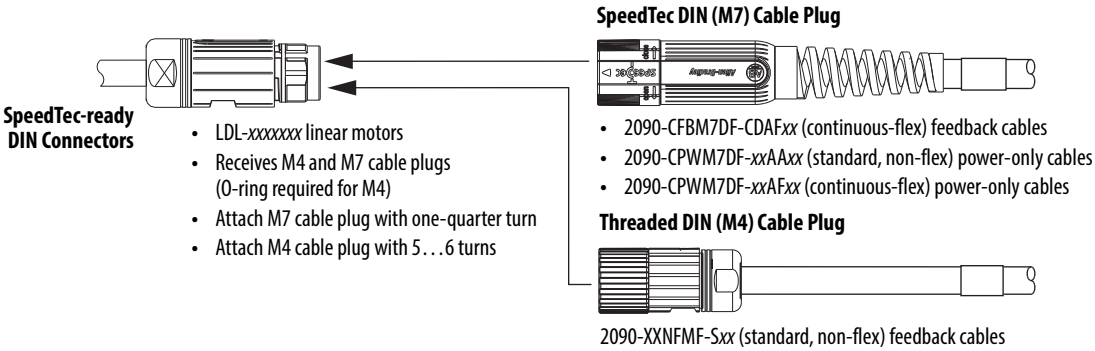
LDL-Series Ironless Linear Motor Features

- No magnetic attraction between the coil and magnet channel allows for the use of smaller, less expensive linear bearings.
- No external magnetic field to have to shield in magnetic sensitive applications.
- Non-cogging technology for super smooth motion.
- Very high acceleration and speeds up to 10 m/s (32.8 ft/s) greatly increase the throughput of your machine.
- No limits to travel distance. Ability to achieve high speeds over short and long travels.
- Direct drive technology for extreme servo responsiveness.
- No-wear, high reliability parts increase productivity.
- Peak forces to 1977 N (444 lb).
- Ability to size and optimize LDL-Series ironless linear motors and corresponding servo drives by using Motion Analyzer software reduces product selection time and minimizes cost.
- Full set-up and programming support with the Studio 5000 Logix Designer application reduces set-up time.

Motor Connector/Cable Compatibility

LDL-Series ironless linear motors are equipped with SpeedTec-ready DIN connectors. However, these motors have incremental encoders and must use threaded DIN (M4) feedback cables in non-flex applications. This is due to the number of conductors required for incremental encoder connections.

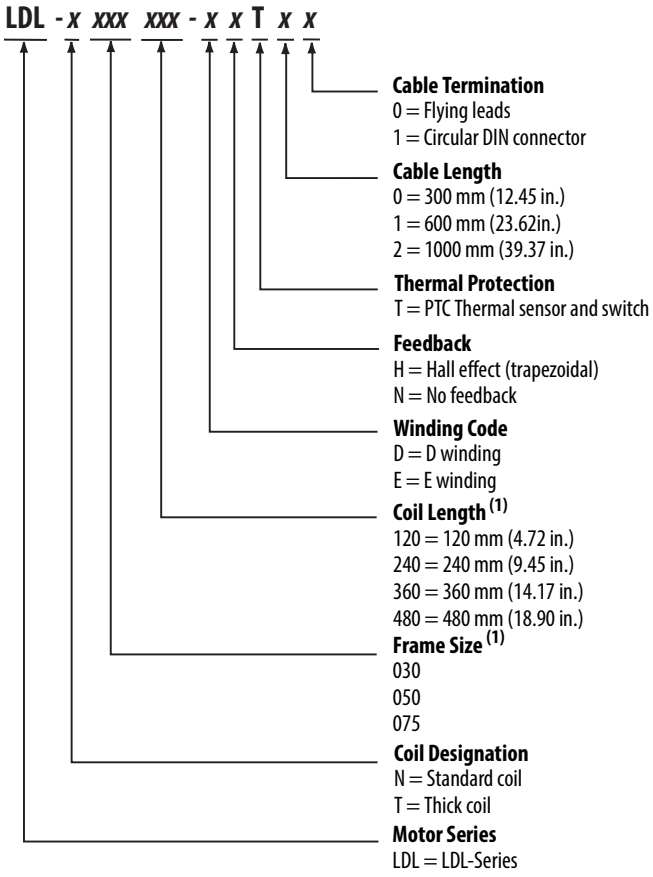
LDL-Series Ironless Linear Motors



Catalog Numbers - LDL-Series Ironless Linear Motors

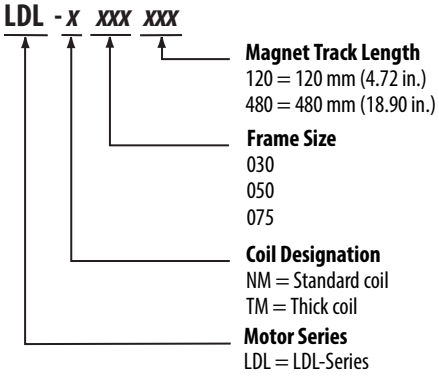
Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your actuator. For questions regarding product availability, contact your Allen-Bradley distributor.

LDL-Series Ironless Linear Motors



(1) Not all combinations are available. Only the configurations as listed in Technical Specifications - LDL-Series Ironless Linear Motors on page 179 are available.

LDL-Series Ironless Linear Motor Magnet Channels



Accessories - LDL-Series Ironless Linear Motors

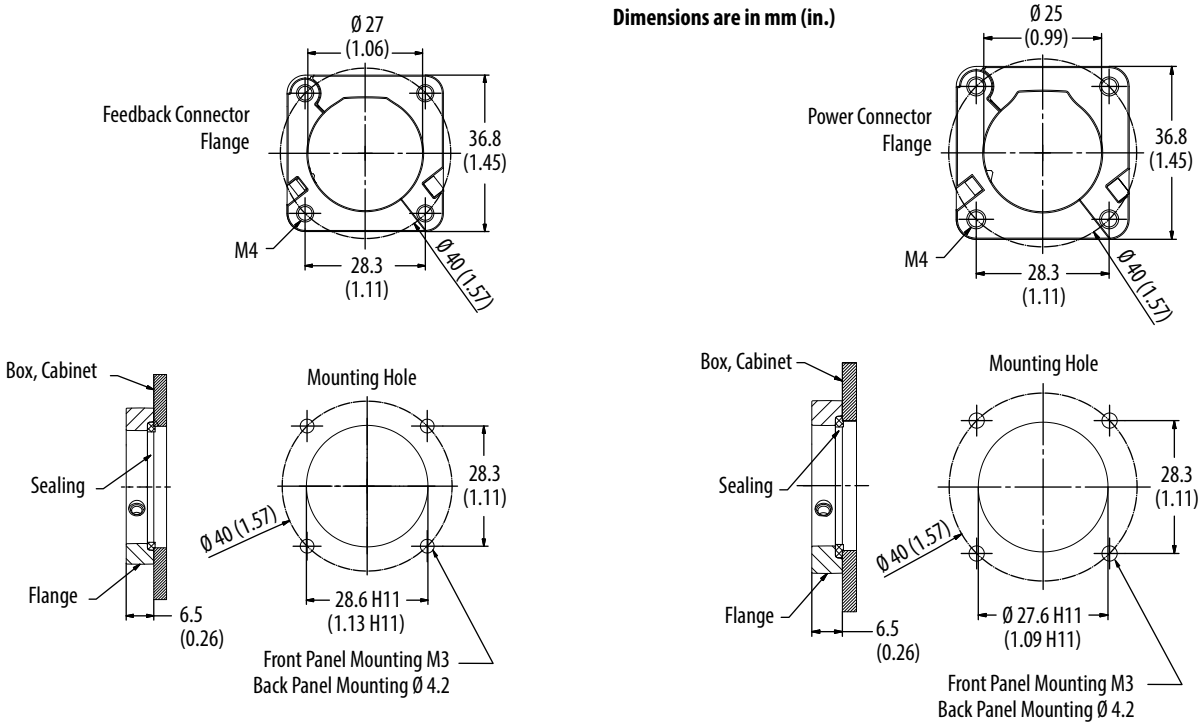
- Bulk head connector kit
- Encoder connector kit
- Hall effect replacement module for connectorized coil
- Hall effect replacement module for flying-lead coil

Accessories for LDL-Series Ironless Linear Motors

Cat. No.	Accessory	Description
LDC-BULK-HD	Bulk head connector kit	For easy mounting of flex cable to non-flex cables. Kit includes flange for feedback and power connectors, o-rings, and nut.
LDC-ENC-CNCT	Encoder connector kit	Adapts your encoder to the feedback cable on the Hall effect module.
LDL-HALL-C	Hall effect module	Replacement module for use with connectorized coil.
LDL-HALL-F		Replacement module for use with flying-lead coil.

Bulk Head Connector Flange Dimensions

Dimensions are in mm (in.)



Technical Specifications - LDL-Series Ironless Linear Motors

These performance specifications apply to all LDL-Series ironless linear motors.

Common Performance Specifications

Attribute	Value
Motor type	3 phase, wye winding, synchronous permanent magnet stator, non-ventilated linear motor.
Operating speed, max	10 m/s (32.8 ft/s)
Operating voltage, (not for direct connection to AC line)	230V AC rms
Dielectric rating of motor power connections (U,V,W), to ground for 1.0 s (1)	1500V AC rms, 50/60 Hz
Cogging torque	Zero
Applied bus voltage, max (2)	325V DC
Electrical cycle length	60 mm (2.36 in.)
Coil temperature, max	130 °C (266 °F)
Insulation class	130 °C (266 °F) Class B
Thermal time constant, Ref, winding to ambient	35 min
Paint color	Black

(1) Tested during manufacturing process, Do not re-apply test voltage. Contact Application Engineering (631.344.6600) for advice on testing coils post production.
(2) Maximum cable length 10 m (32.8 ft). Contact Application Engineering (631.344.6600) for applications requiring longer cables.

LDL-Series Ironless Linear Motor (standard 30 mm frame size)

Attribute	Units	Symbol	LDL-N030120-D*x*T*xx*	LDL-N030240-D*x*T*xx*	LDL-N030240-E*x*T*xx*
Force, continuous [1] [2] [3] [4]	N (lbf)	F_c	63 (14)	126 (28)	
Force, peak [5]	N (lbf)	F_p	209 (47)	417 (94)	
Thermal resistance	°C/W	R_{th}	1.73	0.86	
Force constant [6] [7] [8]	N/A_{pk} (lbf/A_{pk})	K_f	21.0 (4.7)	21.0 (4.7)	42.0 (9.4)
Back EMF constant p-p [6] [7] [8]	V_p/m/s (V_p/in/s)	K_e	24.8 (0.6)	24.8 (0.6)	49.6 (1.3)
Current, peak [5] [7]	A_{pk} (A_{rms})	I_p	9.9 (7.0)	19.9 (14.0)	9.9 (7.0)
Current, continuous [1] [2] [3] [4]	A_{pk} (A_{rms})	I_c	3.0 (2.1)	6.0 (4.2)	3.0 (2.1)
Resistance p-p @ 20 °C (68 °F) [6] [8]	Ohms	R_{20}	5.41	2.70	10.82
Inductance p-p [6] [8]	mH	L	8.43	4.22	16.86
Magnetic attraction	N (lbf)	F_a	0 (0)		

LDL-Series Ironless Linear Motor (thick 30 mm frame size)

Attribute	Units	Symbol	LDL-T030120-D*x*T*xx*	LDL-T030240-D*x*T*xx*	LDL-T030240-E*x*T*xx*
Force, continuous [1] [2] [3] [4]	N (lbf)	F_c	72 (16)	144 (32)	
Force, peak [5]	N (lbf)	F_p	239 (54)	479 (108)	
Thermal resistance	°C/W	R_{th}	1.31	0.65	
Force constant [6] [7] [8]	N/A_{pk} (lbf/A_{pk})	K_f	24.1 (5.4)	24.1 (5.4)	48.2 (10.8)
Back EMF constant p-p [6] [7] [8]	V_p/m/s (V_p/in/s)	K_e	28.5 (0.7)	28.5 (0.7)	56.9 (1.4)
Current, peak [5] [7]	A_{pk} (A_{rms})	I_p	9.9 (7.0)	19.9 (14.0)	9.9 (7.0)
Current, continuous [1] [2] [3] [4]	A_{pk} (A_{rms})	I_c	3.0 (2.1)	6.0 (4.2)	3.0 (2.1)
Resistance p-p @ 20 °C (68 °F) [6] [8]	Ohms	R_{20}	7.15	3.57	14.29
Inductance p-p [6] [8]	mH	L	13.40	6.70	26.80
Magnetic attraction	N (lbf)	F_a	0 (0)		

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 185, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Coil mountings on either of the two narrow sides reduces continuous force by 10%.
(5) Calculated at 11% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(6) Winding parameters listed are measured line-to-line (phase-to-phase).
(7) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(8) Specifications are ±10%. Phase-to-phase inductance is ±30%.

LDL-Series Ironless Linear Motor (standard 50 mm frame size)

Attribute	Units	Symbol	LDL-N050120-D*xTxx*	LDL-N050240-D*xTxx*	LDL-N050240-E*xTxx*
Force, continuous (1) (2) (3) (4)	N (lbf)	F_c	96 (22)	191 (43)	
Force, peak (5)	N (lbf)	F_p	317 (71)	635 (143)	
Thermal resistance	°C/W	R_{th}	1.58	0.79	
Force constant (6) (7) (8)	N/A_{pk} (lbf/A_{pk})	K_f	35.0 (7.9)	35.0 (7.9)	70.0 (15.7)
Back EMF constant p-p (6) (7) (8)	V_p/m/s (V_p/in/s)	K_e	41.3 (1.1)	41.3 (1.1)	82.7 (2.1)
Current, peak (5) (7)	A_{pk} (A_{rms})	I_p	9.1 (6.4)	18.1 (12.8)	9.1 (6.4)
Current, continuous (1) (2) (3) (4)	A_{pk} (A_{rms})	I_c	2.7 (1.9)	5.5 (3.9)	2.7 (1.9)
Resistance p-p @ 20 °C (68 °F) (6) (8)	Ohms	R_{20}	7.11	3.56	14.22
Inductance p-p (6) (8)	mH	L	11.08	5.54	22.16
Magnetic attraction	N (lbf)	F_a	0 (0)		

Attribute	Units	Symbol	LDL-N050360-D*xTxx*	LDL-N050360-E*xTxx*	LDL-N050480-D*xTxx*	LDL-N050480-E*xTxx*
Force, continuous (1) (2) (3) (4)	N (lbf)	F_c	287 (65)		383 (86)	
Force, peak (5)	N (lbf)	F_p	952 (214)		1269 (285)	
Thermal resistance	°C/W	R_{th}	0.53		0.39	
Force constant (6) (7) (8)	N/A_{pk} (lbf/A_{pk})	K_f	35.0 (7.9)	105.0 (23.6)	35.0 (7.9)	70.0 (15.7)
Back EMF constant p-p (6) (7) (8)	V_p/m/s (V_p/in/s)	K_e	41.3 (1.1)	124.0 (3.2)	41.3 (1.1)	82.7 (2.1)
Current, peak (5) (7)	A_{pk} (A_{rms})	I_p	27.2 (19.2)	9.1 (6.4)	36.3 (25.6)	18.1 (12.8)
Current, continuous (1) (2) (3) (4)	A_{pk} (A_{rms})	I_c	8.2 (5.8)	2.7 (1.9)	10.9 (7.7)	5.5 (3.9)
Resistance p-p @ 20 °C (68 °F) (6) (8)	Ohms	R_{20}	2.37	21.33	1.78	7.11
Inductance p-p (6) (8)	mH	L	3.69	33.25	2.77	11.08
Magnetic attraction	N (lbf)	F_a	0 (0)			

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 185, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Coil mountings on either of the two narrow sides reduces continuous force by 10%.
(5) Calculated at 11% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(6) Winding parameters listed are measured line-to-line (phase-to-phase).
(7) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(8) Specifications are ±10%. Phase-to-phase inductance is ±30%.

LDL-Series Ironless Linear Motor (thick 50 mm frame size)

Attribute	Units	Symbol	LDL-T050120-D*xTxx*	LDL-T050240-D*xTxx*	LDL-T050240-E*xTxx*
Force, continuous [1] [2] [3] [4]	N (lbf)	F_c	110 (25)	220 (49)	
Force, peak [5]	N (lbf)	F_p	364 (82)	728 (164)	
Thermal resistance	°C/W	R_{th}	1.19	0.60	
Force constant [6] [7] [8]	N/A_{pk} (lbf/A_{pk})	K_f	40.2 (9.0)	40.2 (9.0)	80.4 (18.1)
Back EMF constant p-p [6] [7] [8]	V_p/m/s (V_p/in/s)	K_e	47.4 (1.2)	47.4 (1.2)	94.9 (2.4)
Current, peak [5] [7]	A_{pk} (A_{rms})	I_p	9.1 (6.4)	18.1 (12.8)	9.1 (6.4)
Current, continuous [1] [2] [3] [4]	A_{pk} (A_{rms})	I_c	2.7 (1.9)	5.5 (3.9)	2.7 (1.9)
Resistance p-p @ 20 °C (68 °F) [6] [8]	Ohms	R_{20}	9.42	4.71	18.83
Inductance p-p [6] [8]	mH	L	18	9	35.31
Magnetic attraction	N (lbf)	F_a	0 (0)		

Attribute	Units	Symbol	LDL-T050360-D*xTxx*	LDL-T050360-E*xTxx*	LDL-T050480-D*xTxx*	LDL-T050480-E*xTxx*
Force, continuous [1] [2] [3] [4]	N (lbf)	F_c	329 (74)		439 (99)	
Force, peak [5]	N (lbf)	F_p	1093 (246)		1457 (327)	
Thermal resistance	°C/W	R_{th}	0.40		0.30	
Force constant [6] [7] [8]	N/A_{pk} (lbf/A_{pk})	K_f	40.2 (9.0)	120.5 (27.1)	40.2 (9.0)	80.4 (18.1)
Back EMF constant p-p [6] [7] [8]	V_p/m/s (V_p/in/s)	K_e	47.4 (1.2)	142.3 (3.6)	47.4 (1.2)	94.9 (2.4)
Current, peak [5] [7]	A_{pk} (A_{rms})	I_p	27.2 (19.2)	9.1 (6.4)	36.3 (25.6)	18.1 (12.8)
Current, continuous [1] [2] [3] [4]	A_{pk} (A_{rms})	I_c	8.2 (5.8)	2.7 (1.9)	10.9 (7.7)	5.5 (3.9)
Resistance p-p @ 20 °C (68 °F) [6] [8]	Ohms	R_{20}	3.14	28.25	2.35	9.42
Inductance p-p [6] [8]	mH	L	5.88	52.96	4.41	17.65
Magnetic attraction	N (lbf)	F_a	0 (0)			

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 185, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Coil mountings on either of the two narrow sides reduces continuous force by 10%.
(5) Calculated at 11% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(6) Winding parameters listed are measured line-to-line (phase-to-phase).
(7) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(8) Specifications are ±10%. Phase-to-phase inductance is ±30%.

LDL-Series Ironless Linear Motor (standard 75 mm frame size)

Attribute	Units	Symbol	LDL-N075480-D*xTxx*	LDL-N075480-E*xTxx*
Force, continuous (1) (2) (3) (4)	N (lbf)	F_c	519 (117)	
Force, peak (5)	N (lbf)	F_p	1723 (387)	
Thermal resistance	°C/W	R_{th}	0.37	
Force constant (6) (7) (8)	N/A_{pk} (lbf/A_{pk})	K_f	52.5 (11.8)	105.0 (23.6)
Back EMF constant p-p (6) (7) (8)	V_p/m/s (V_p/in/s)	K_e	62.0 (1.6)	124.0 (3.2)
Current, peak (5) (7)	A_{pk} (A_{rms})	I_p	32.8 (23.2)	16.4 (11.6)
Current, continuous (1) (2) (3) (4)	A_{pk} (A_{rms})	I_c	9.9 (7.0)	4.9 (3.5)
Resistance p-p @ 20 °C (68 °F) (6) (8)	Ohms	R_{20}	2.31	9.24
Inductance p-p (6) (8)	mH	L	3.60	14.40
Magnetic attraction	N (lbf)	F_a	0 (0)	

LDL-Series Ironless Linear Motor (thick 75 mm frame size)

Attribute	Units	Symbol	LDL-T075480-D*xTxx*	LDL-T075480-E*xTxx*
Force, continuous (1) (2) (3) (4)	N (lbf)	F_c	596 (134)	
Force, peak (5)	N (lbf)	F_p	1977 (444)	
Thermal resistance	°C/W	R_{th}	0.28	
Force constant (6) (7) (8)	N/A_{pk} (lbf/A_{pk})	K_f	60.3 (13.5)	120.5 (27.1)
Back EMF constant p-p (6) (7) (8)	V_p/m/s (V_p/in/s)	K_e	71.2 (1.8)	142.3 (3.6)
Current, peak (5) (7)	A_{pk} (A_{rms})	I_p	32.8 (23.2)	16.4 (11.6)
Current, continuous (1) (2) (3) (4)	A_{pk} (A_{rms})	I_c	9.9 (7.0)	4.9 (3.5)
Resistance p-p @ 20 °C (68 °F) (6) (8)	Ohms	R_{20}	3.06	12.25
Inductance p-p (6) (8)	mH	L	5.74	22.97
Magnetic attraction	N (lbf)	F_a	0 (0)	

(1) Coils at maximum temperature, 130 °C (266 °F), mounted to an aluminium heat sink whose area is noted in table on page 185, and at 40 °C (104 °F) ambient.
(2) Continuous force and current based on coil moving with all phases sharing the same load in sinusoidal commutation.
(3) For standstill conditions, multiply continuous force and continuous current by 0.9.
(4) Coil mountings on either of the two narrow sides reduces continuous force by 10%.
(5) Calculated at 11% duty cycle for 1.0 second, max. Some applications can produce significantly higher peak forces. Call Applications Engineering (631.344.6600) for details.
(6) Winding parameters listed are measured line-to-line (phase-to-phase).
(7) Currents and voltages listed are measured 0-peak of the sine wave unless noted as rms.
(8) Specifications are ±10%. Phase-to-phase inductance is ±30%.

Weight Specifications

Motor Coil with Flying Leads

Cat. No.	Weight, approx kg (lb)
LDL-N030120-DHT20	0.63 (1.38)
LDL-T030120-DHT20	0.74 (1.64)
LDL-N030240-*x*HT20	1.14 (2.51)
LDL-T030240-*x*HT20	1.37 (3.02)
LDL-N050120-DHT20	0.75 (1.66)
LDL-T050120-DHT20	0.91 (2.01)
LDL-N050240-*x*HT20	1.39 (3.07)

Cat. No.	Weight, approx kg (lb)
LDL-T050240-*x*HT20	1.71 (3.77)
LDL-N050360-*x*HT20	2.03 (4.47)
LDL-T050360-*x*HT20	2.50 (5.52)
LDL-N050480-*x*HT20	2.67 (5.88)
LDL-T050480-*x*HT20	3.30 (7.28)
LDL-N075480-*x*HT20	3.32 (7.32)
LDL-T075480-*x*HT20	4.16 (9.18)

Motor Coil with Connectors

Cat. No.	Weight, approx kg (lb)
LDL-N030120-DHT11	0.83 (1.83)
LDL-T030120-DHT11	0.94 (2.07)
LDL-N030240-*x*HT11	1.34 (2.95)
LDL-T030240-*x*HT11	1.57 (3.46)
LDL-N050120-DHT11	0.95 (2.09)
LDL-T050120-DHT11	1.01 (2.22)
LDL-N050240-*x*HT11	1.41 (3.11)

Cat. No.	Weight, approx kg (lb)
LDL-T050240-*x*HT11	1.91 (4.21)
LDL-N050360-*x*HT11	2.23 (4.92)
LDL-T050360-*x*HT11	2.70 (5.95)
LDL-N050480-*x*HT11	3.50 (7.72)
LDL-T050480-*x*HT11	4.36 (9.61)
LDL-N075480-*x*HT11	3.52 (7.76)
LDL-T075480-*x*HT11	4.36 (9.61)

Motor Magnet Channel

Cat. No.	Weight, approx kg (lb)
LDL-NM030120	1.37 (3.02)
LDL-NM030480	5.51 (12.15)
LDL-TM030120	1.40 (3.08)
LDL-TM030480	5.60 (12.35)
LDL-NM050120	1.87 (4.12)
LDL-NM050480	7.48 (116.49)

Cat. No.	Weight, approx kg (lb)
LDL-TM050120	1.89 (4.17)
LDL-TM050480	7.57 (16.69)
LDL-NM075120	2.91 (6.42)
LDL-NM075480	11.64 (25.66)
LDL-TM075120	2.94 (6.48)
LDL-TM075480	11.76 (25.93)

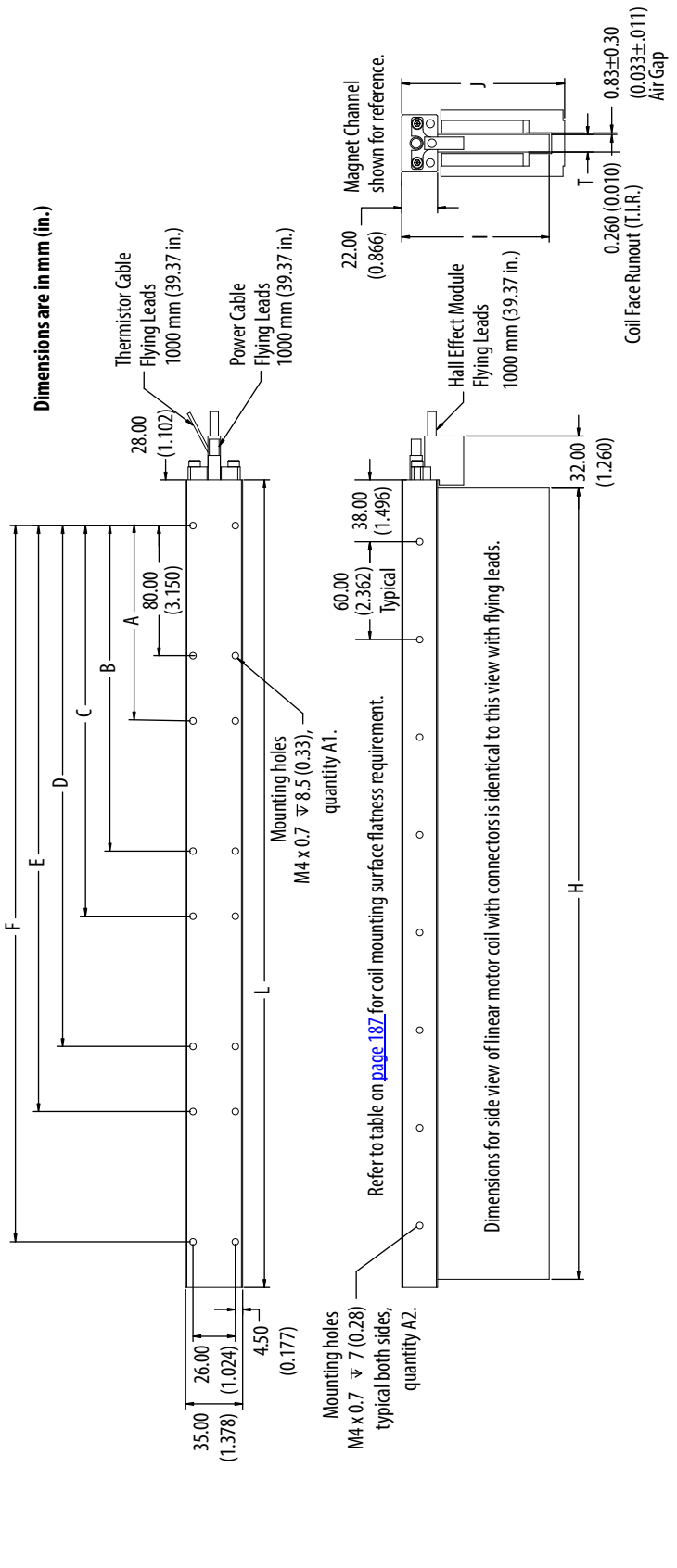
Carriage Weight and Heat Sink Area Requirements

Cat. No.	Required Heat Sink Area cm^2 ($in.^2$)	Required Carriage Plate Weight kg (lb)
LDL-*x*030120-DHT*xx*	774 (120)	1.4 (3)
LDL-*x*030240-*x*HT*xx*	1160 (180)	2.0 (4.5)
LDL-*x*050120-DHT*xx*	774 (120)	2.7 (6)
LDL-*x*050240-DHT*xx*	1160 (180)	4.0 (9)
LDL-*x*050360-DHT*xx*	1680 (260)	5.9 (13)
LDL-*x*050480-DHT*xx*	2060 (320)	7.3 (16)
LDL-*x*075480-*x*HT*xx*	2060 (320)	7.3 (16)

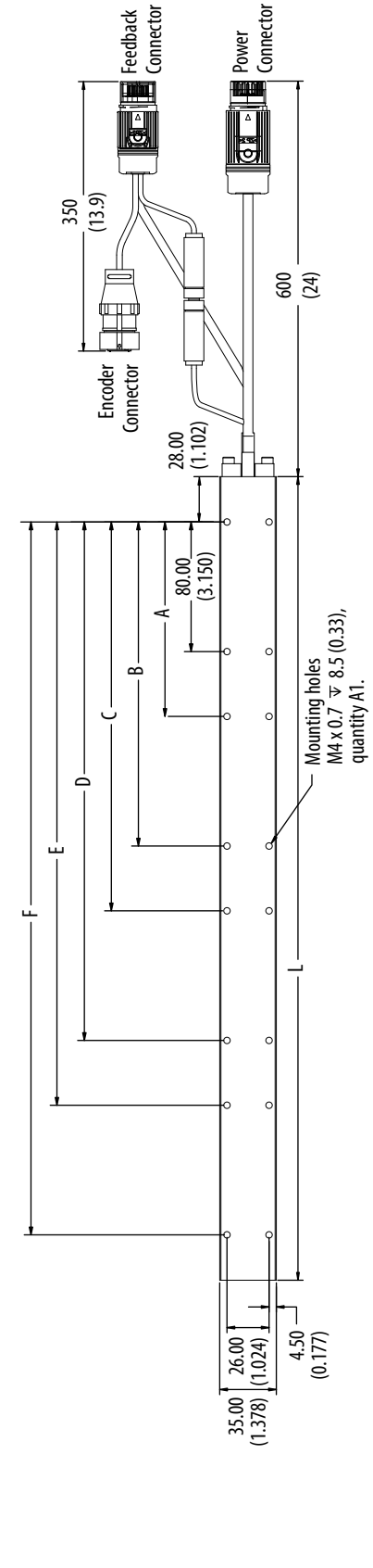
Dimensions - LDL-Series Ironless Linear Motor Components

LDL-Series ironless linear motor components are designed to metric dimensions. Inch dimensions are conversions from millimeters. Untoleranced dimensions are for reference.

LDL-*xxxxxx*-*x*HT20 Motor Coil Dimensions (flying leads)



LDL-*xxxxxx*-*x*HT11 Motor Coil Dimensions (connectors)



LDL-*xxxx*-*x*HT*xx* Motor Coil Dimensions

Cat. No.	L mm (in.)	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)	I mm (in.)	J (1) mm (in.)	T mm (in.)	A1 Qty	A2 Qty	Power Cable Gauge mm^2 (AWG)	Flatness mm/300 x 300 (in./12 x 12)
LDL-N030120-DHT*xx*	136.0 (5.35)	–	–	–	–	–	–	60.00 (2.362)	126.00 (4.961)	70.50 (2.776)	80.00 (3.149)	8.30 (0.33)	4	2	0.50 (20)	0.25 (0.010)
LDL-T030120-DHT*xx*												10.80 (0.43)				
LDL-N030240-*x*HT*xx*	256.0 (10.08)	120.00 (4.724)	200.00 (7.874)	–	–	–	–	180.00 (7.087)	246.00 (9.685)			8.30 (0.33)	8	4		
LDL-T030240-*x*HT*xx*												10.80 (0.43)				
LDL-N050120-DHT*xx*	136.0 (5.35)	–	–	–	–	–	–	60.00 (2.362)	126.00 (4.961)	90.50 (3.563)	100.00 (3.937)	8.30 (0.33)	4	2		
LDL-T050120-DHT*xx*												10.80 (0.43)				
LDL-T050240-*x*HT*xx*	256.0 (10.08)	120.0 (4.724)	200 (7.874)	–	–	–	–	180.00 (7.087)	246.00 (9.685)			8.30 (0.33)	8	4		
LDL-N050240-*x*HT*xx*												10.80 (0.43)				
LDL-T050360-*x*HT*xx*	376.0 (14.80)	120.00 (4.724)	200 (7.874)	240.00 (9.449)	320.00 (12.598)	–	–	300.00 (11.811)	366.00 (14.409)			8.30 (0.33)	12	6		0.38 (0.015)
LDL-N050360-*x*HT*xx*												10.80 (0.43)				
LDL-N050480-DHT*xx*	496.0 (19.53)	120.00 (4.724)	200 (7.874)	240.00 (9.449)	320.00 (12.598)	360.00 (14.173)	440.00 (17.323)	420.00 (16.535)	486.00 (19.134)			8.30 (0.33)	16	8	0.75 (18)	0.64 (0.025)
LDL-N050480-EHT*xx*															0.50 (20)	
LDL-T050480-*x*HT*xx*												10.80 (0.43)			0.50 (20)	
LDL-N075480-DHT*xx*										115.50 (4.547)	130.00 (5.118)	8.30 (0.33)			0.75 (18)	
LDL-N075480-EHT*xx*															0.50 (20)	
LDL-T075480-DHT*xx*												10.80 (0.43)			0.75 (18)	
LDL-T075480-EHT*xx*															0.50 (20)	

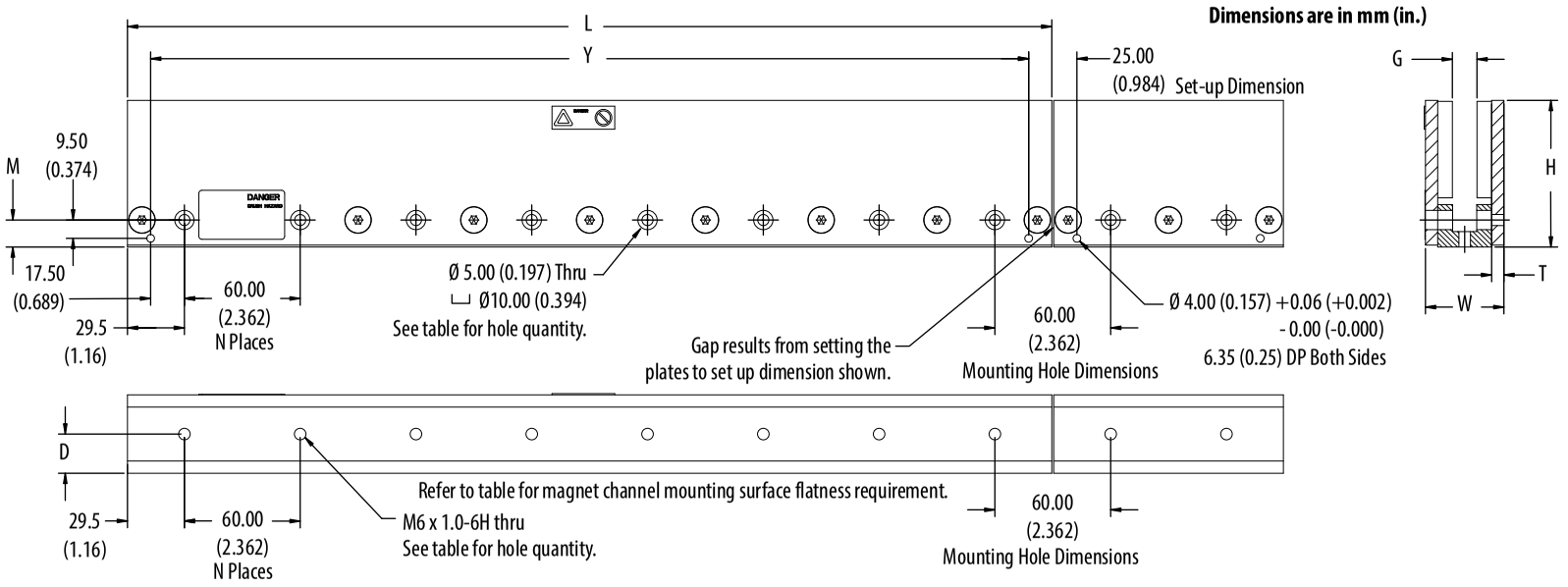
(1) Tolerance for J dimension is ±0.26 mm (0.010 in.).

Cable Specifications

Cable (1)	Conductors	Gauge mm^2 (AWG)	Shield Type	Cable Dia. mm (in.)	Static Bend Radius mm (in.)
Power	4	0.82 (18)	Braid	7.0 (0.28)	18.0 (0.70)
Power	4	0.52 (20)	Braid	6.4 (0.25)	17.0 (0.67)
Thermistor	2	0.20 (26)	None	4.0 (0.16)	10.0 (0.40)
Hall Module	6	0.13 (24)	Foil	5.0 (0.20)	15.0 (0.59)

(1) All cables are non-flex.

LDL-Series Ironless Linear Motor Magnet Channel Dimensions



Cat. No.	W mm (in.)	H mm (in.)	T mm (in.)	G (1) mm (in.)	D mm (in.)	L (2) mm (in.)	M mm (in.)	N	Hole Qty	Y (3) mm (in.)	Flatness mm/300 x 300 (in./12 x 12)
LDL-NM030120	37.80 (1.1488)	56.00 (2.205)	6.35 (0250)	9.86 (0.388)	18.90 (0.744)	119.00 (4.685)	14.00 (0.551)	1	2	95.00 (3.740)	0.13 (0.005)
LDL-NM030480						479.00 (18.858)		7	8	455.00 (17.913)	0.26 (0.010)
LDL-TM030120	40.65 (1.600)			12.57 (0.494)	20.33 (0.800)	119.00 (4.685)		1	2	95.00 (3.740)	0.13 (0.005)
LDL-TM030480						479.00 (18.858)		7	8	455.00 (17.913)	0.26 (0.010)
LDL-NM050120	37.80 (1.488)	76.00 (2.992)	6.35 (0.250)	9.86 (0.388)	18.90 (0.744)	119.00 (4.685)	14.00 (0.551)	1	2	95.00 (3.74)	0.13 (0.005)
LDL-NM050480						479.00 18.858)		7	8	455.00 (17.913)	0.26 (0.010)
LDL-TM050120	40.65 (1.600)			12.57 (0.494)	20.33 (0.800)	119.00 (4.685)		1	2	94.00 (3.740)	0.13 (0.005)
LDL-TM050480						479.00 (18.858)		7	8	455.00 (17.913)	0.26 (0.010)
LDL-NM075120	41.1 (1.62)	106.0 (4.173)	8.00 (0.315)	9.86 (0.388)	20.55 (0.809)	119.00 (4.685)	19.00 (0.748)	1	2	95.00 3.740)	0.13 (0.005)
LDL-NM075480						479.00 (18.858)		7	8	455.00 (17.913)	0.26 (0.010)
LDL-TM075120	43.7 (1.72)			12.57 (0.494)	21.85 (0.860)	119.00 (4.685)		1	2	95.00 (3.740)	0.13 (0.005)
LDL-TM075480						479.00 (18.858)		7	8	455.00 (17.913)	0.26 (0.010)

(1) Tolerance for G dimension is +0.35 mm (+0.012 in.), -0.12 mm (-0.004 in.).
(2) Tolerance for L dimension is ±0.25 mm (±0.010 in.).
(3) Tolerance for Y dimension is ±0.05 mm (±0 in.002 in.).

Common Linear Motion Specifications

These specifications are common to all Kinetix Motion Control linear motor/actuator families.

Environmental Specifications - Kinetix Linear Motion

Attribute	MP-Series Integrated Linear Stages		LDAT-Series Integrated Linear Thrusters	MP-Series and TL-Series Electric Cylinders			LDC-Series and LDL-Series Linear Motors
	Bulletin MPAS	Bulletin MPMA		Bulletin MPAR	Bulletin TLAR	Bulletin MPAI	
Temperature, ambient	0…40 °C (32…104 °F)						
Temperature, storage	-30…70 °C (-22…158 °F)		-25…60 °C (-13…140 °F)				-30…70 °C (-22…158 °F)
Relative humidity (noncondensing)	5…95%						
Shock	20 g peak, 6 ms duration						
Vibration	0.1 grms @ 30…2000 Hz		2.5 g peak @ 30…2000 Hz				

Environmental Ratings - Kinetix Linear Motion

IP Rating	Dust Protection	Liquid Protection	Actuator/Motor
IP30	Objects larger than 2.5 mm (0.098 in.)	No protection from liquids.	• Bulletin MPAS and MPMA • LDAT-Series (1)
IP40	Objects larger than 1.0 mm (0.039 in.)	No protection from liquids.	• Bulletin MPAR • Bulletin TLAR (2)
IP65	Total protection from dust	Protected against low-pressure jets of water from all directions.	• LDC-Series • LDL-Series
IP66		Protected against strong jets of water.	Bulletin MPAR (3) (4)
IP67		Protected against the effects of temporary liquid immersion.	Bulletin MPAI (4)

(1) Applies to only covered units.
(2) Applies to complete unit, including rod-end seal and breather port.
(3) Applies to electronic components.
(4) Requires the use of Bulletin 2090 environmentally sealed cable connectors in stationary applications. Maintain the front bearing and wiper seal at the prescribed interval. Wipe rods dry before motion occurs or liquid could be drawn inside the actuator.

Certifications - Kinetix Linear Motion

Linear Motor/Actuator Family	Bulletin Number	c-UL-us (1)	CE (2)
MP-Series linear stages and electric cylinders	Bulletin MPAR, MPAI, MPAS, MPMA	√	√
TL-Series electric cylinders	Bulletin TLAR	–	√
LDAT-Series linear thrusters	N/A	√	√
LDC-Series linear motors	N/A	√	√
LDL-Series linear motors	N/A	√	√

(1) UL recognized components to applicable UL and CSA standards.
(2) When product is marked, see the Product Certification link at http://www.ab.com for Declarations of Conformity, certificates, and other certification details.

Motor Brake Application Guidelines

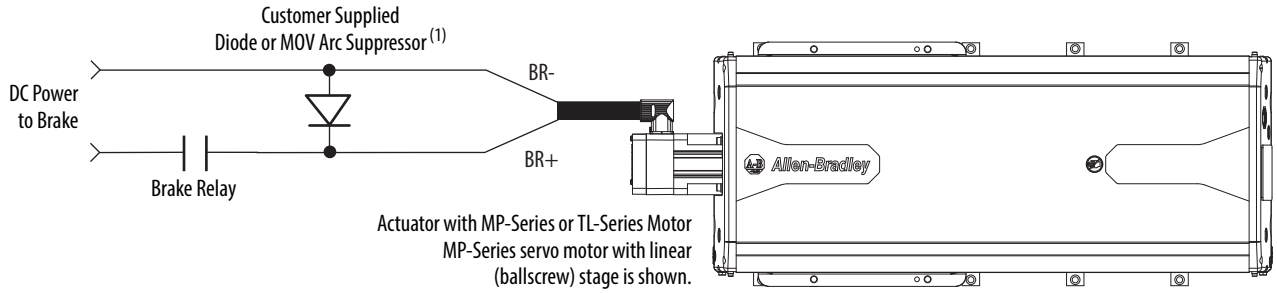
The brakes offered as options on the ballscrew driven linear stages and electric cylinders are holding brakes designed to hold the carriage/rod cylinder in position up to the rated brake holding torque. The brakes release when voltage is applied to the brake coil. Voltage and polarity supplied to the brake must be as specified to be sure of proper brake performance.

The brakes are not designed for stopping an actuator in motion. Use servo drive inputs to stop carriage/rod cylinder motion before the brake is activated. The recommended method of stopping motion is to command the servo drive to decelerate the carriage/rod cylinder to a complete stop and engage the brake only after the carriage/rod cylinder has stopped.

If system main power fails, the brakes can withstand use as stopping brakes. However, use of the brakes as stopping brakes can create mechanical backlash that is potentially damaging to the system, increases brake pad wear and reduces brake life. The brakes are not designed nor are they intended to be used as a safety device.

A separate power source is required to disengage the brake. This power source can be controlled by the linear stage controls, in addition to manual operator controls. Electrical arcing can occur at the relay contacts until the brake power dissipates. A customer supplied diode or metal oxide varistor (MOV) is recommended to prevent arcing. Use of an MOV can also reduce the time to mechanically engage the brake.

Example Suppression Device for Brake Relay Contacts



(1) Kinetix 2000, Kinetix 6000, Kinetix 6200, Kinetix 6500, and Kinetix 7000 servo drives provide motor/actuator brake relay outputs and supply an MOV arc suppressor, so customer-supplied arc suppressor is not required unless the coil current of the brake is greater than the maximum brake current rating of the drive relay output.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Kinetix Motion Control Selection Guide, publication GMC-SG001	Provides an overview of Kinetix servo drives, motors, actuators, and motion accessories designed to help make initial decisions for the motion control products best suited for your system requirements.
Kinetix Rotary Motion Specifications, publication GMC-TD001	Provides product specifications for MP-Series (Bulletin MPL, MPM, MPF, MPS), Kinetix 6000M (Bulletin MDF), TL-Series, RDD-Series™, and HPK-Series™ rotary motors.
Kinetix Servo Drives Specifications, publication GMC-TD003	Provides product specifications for Kinetix Integrated Motion over the EtherNet/IP network, Integrated Motion over sercos interface, EtherNet/IP networking, and component servo drive families.
Kinetix Motion Accessories Specifications, publication GMC-TD004	Provides product specifications for Bulletin 2090 motor and interface cables, low-profile connector kits, drive power components, and other servo drive accessory items.
Kinetix 6000 and Kinetix 6200/6500 Drive Systems, publication GMC-RM003	Provides information to determine and select the required (drive specific) drive module, power accessory, connector kit, motor cable, and interface cable catalog numbers for your drive and motor/actuator motion control system. Includes system performance specifications and torque/speed curves (rotary motion) and force/velocity curves (linear motion) for your motion application.
Kinetix 300/350 Drive Systems, publication GMC-RM004	
Kinetix 3 Drive Systems, publication GMC-RM005	
Kinetix 2000 Drive Systems, publication GMC-RM006	
Ultra3000 Drive Systems, publication GMC-RM008	
MP-Series Integrated Linear Stages User Manual, publication MP-UM001	Provides information for installing, configuring, startup, and troubleshooting your Bulletin MPAS linear stage or Bulletin MPMA multi-axis linear stage.
MP-Series Integrated Multi-axis Linear Stages User Manual, publication MPMA-UM001	
MP-Series Electric Cylinders Installation Instructions, publication MPAR-IN001	Provides information for installing, configuring, startup, and troubleshooting your Bulletin MPAR or TLAR electric cylinders, or Bulletin MPAI heavy-duty electric cylinders.
TL-Series Electric Cylinders Installation Instructions, publication TLAR-IN001	
MP-Series Heavy Duty Electric Cylinders Installation Instructions, publication MPAI-IN001	
System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001	Provides information, examples, and techniques designed to minimize system failures caused by electrical noise.
EMC Noise Management DVD, publication GMC-SP004	
ControlLogix Selection Guide, publication 1756-SG001	Provides information to determine which ControlLogix® controller fits your application and the product specifications to help design a ControlLogix system and select the appropriate components.
CompactLogix Selection Guide, publication 1769-SG001	Provides information to determine which CompactLogix™ controller fits your application and the product specifications to help design a CompactLogix system and select the appropriate components.
Integrated Architecture Recommended Literature Reference Manual, publication IASIMP-RM001	Provides lists of technical publications for Integrated Architecture products. These lists are not all-inclusive, but they do include the most-commonly accessed publications for the related products.
Industrial Ethernet Media Brochure, publication 1585-BR001	Provides information to determine which Bulletin 1585 Ethernet cable fits your application and the product specifications to help select the appropriate components.
Motion Analyzer software, access online at https://motionanalyzer.rockwellautomation.com/	Comprehensive motion application used for sizing, analysis, optimization, selection, and validation of your Kinetix motion control system.
Rockwell Automation Configuration and Selection Tools, website http://www.ab.com	Provides online product selection and system configuration tools, including AutoCad (DXF) drawings.

You can view or download publications at http://www.rockwellautomation.com/literature/. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Important Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

Reproduction of the contents of this manual, in whole or in part, without written permission of Rockwell Automation, Inc., is prohibited.

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication RA-DU002, available at http://www.rockwellautomation.com/literature/.

Rockwell Automation maintains current product environmental information on its website at
http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page.

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacifi : Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Publication GMC-TD002D-EN-P - September 2015
Supersedes Publication GMC-TD002C-EN-P - September 2013