Mach Motion Products

MLA-AB Industrial Linear Actuator

2026 Catalog

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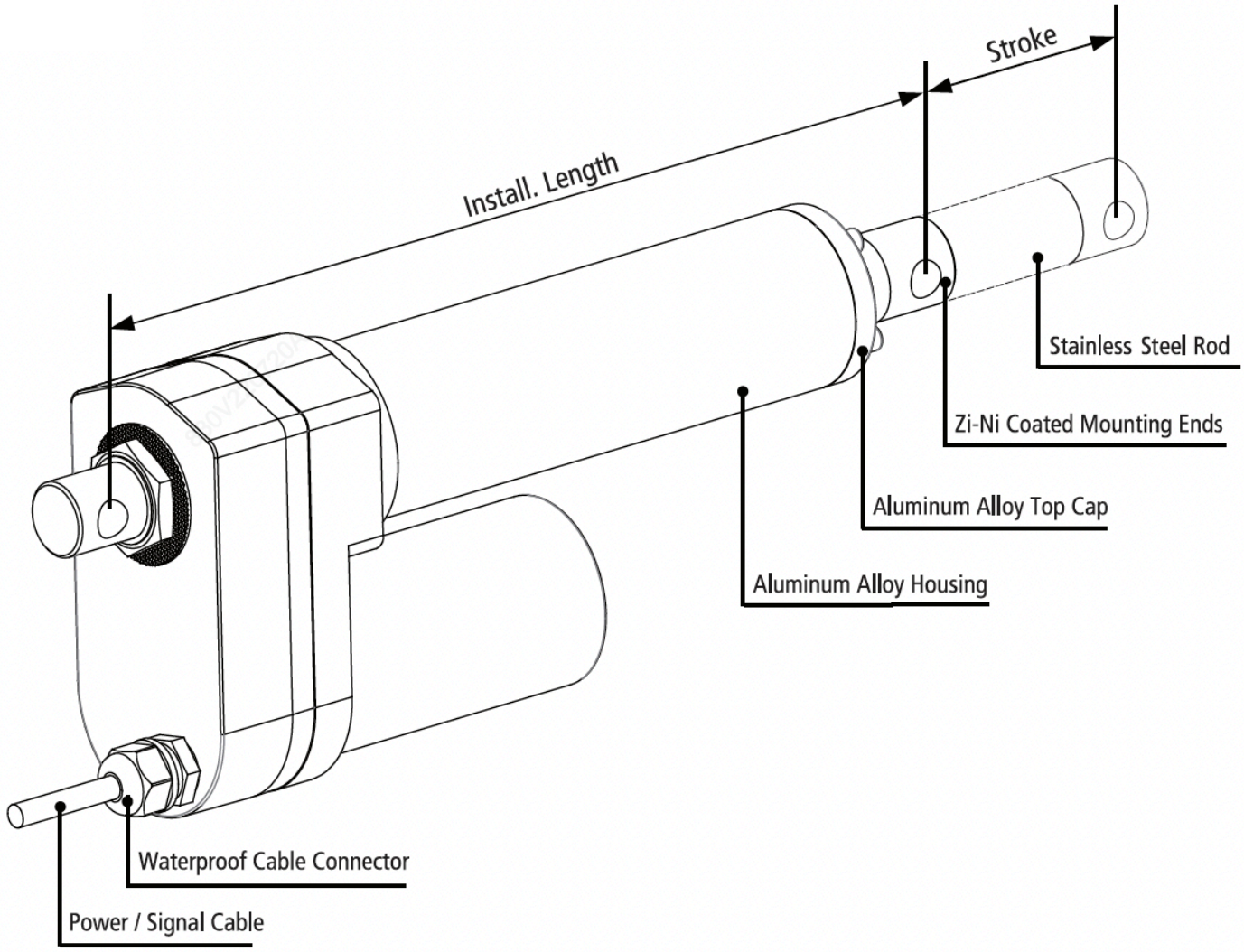
• Glossary of Terms



Stroke	How far the rod extends outwards from the body. The difference between fully extended length and fully retracted length. (Customizable)
Installation Length	The length of unit when fully closed. (Customizable)
Front Mounting End	Optional, 0° or 90°.
Rear Mounting End	Optional, 0° or 90°.
Dynamic Force	The max. force the actuator can carry while it is moving.
Self-locking	The max. force the actuator can hold when it is stopped.
Weather Protection	IPXX. The first digit: Dust Protection. The Second Digit: Liquids Protection. Please refer to [Table 1.]
Duty Cycle	Continuous working time "a", rest time "b". Duty Cycle is a/(a+b)x100%. Please refer to [Table 1.]
Speed	Includes free-load speed and full load speed.
Hall Sensor	Provides pulse signals. Displacement measurement is achieved through pulse counting, and the phase difference of the waveform can be used to identify the rotation of motor. Check [Table 1] for availability.
Potentiometer	Potentiometer is a three-terminal variable resistor with a rotating contact whch is used to measure the displacement of actuators. Check [Table 1] for availability.
Manual Override	Can be used to extend or retract the actuator when there is no power in an emergency situation. Check [Table 1] for availability.

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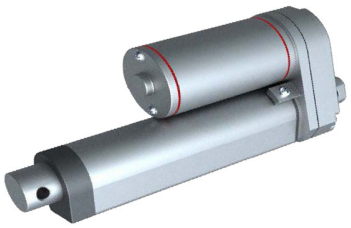
• General Specifications

Color	_ Black	X Silver	_ Custom			
Lead Screw	X Acme Screw	_ Ball Screw				
Operation Mode	X Electrical	_ Electrical + Manual				
Application	X Industrial	_ Furniture	_ Medical			
Operational Temp.	_ 5°C to 40°C	_ -10°C to 65°C	X -25°C to 65°C			
Operating Noise	_ ≤45dB	X ≤55dB	_ ≤70dB			
Stroke Range	X 25.4 to 1,016mm	See [Table 3]				
Dynamic Load	X ≤900N	_ ≤2,000N	_ ≤4,000N	_ ≤7,000N	_ ≤12,000N	_ ≤20,000N
Duty Cycle	_ 10%	_ 20%	X 25%*	_ ≤50%	_ 100%	
Motor Type	X Brushed DC	_ Stepper Motor	X Brushless Option	_ Servo Motor		
Overload Protection	_ None	X Clutch	X Electronic	_ Thermistor		
Weather Protection	_ IP20	_ IP43	X IP54	X IP65	_ IP66	_ IP67
Position Feedback	X None	X Feedback Signal	X Hall Sensor***	X Potentiometer***	X Encoder***	X Reed Switches**
Input Voltage	X 12VDC	X 24VDC	X 36VDC	X 48VDC	_ 110VAC	_ 220VAC
Available Certifications	X CE	X UL60601-1	X IEC60601-1	X RoHS		

Notes: [Table 1] X Options for MLA-AB _ Available Other Models

* Duty Cycle Measurement made with 24VDC stabilized power supply.
** Limit Switches Not Included in Stroke Lengths >24".
*** Hall Sensors, Potentiometer and Encoder Available with MLA-APB Linear Actuator.

• Technical Parameters

MLA-AB-_ Model Number	Lead Screw	Duty Cycle	Max. Dynamic Load (*See Note 2)	Speed +/-10% (*See Note 1) (mm/sec)		Max. Stroke Without Pot. (*See Note 2)
			(N)	Free Load	Full Load	(mm)
3	ACME Screw	25% (5 minutes on, 15 minutes off)	900	3	3	1,016
6			900	6	4	1,016
10			750	10	7	1,016
16			600	16	9	1,016
20			450	20	14	1,016
24			350	24	16	1,016
29			300	29	21	1,016
40			200	40	23	1,016
50			150	50	30	1,016
MLA-S-_ Model Number	Lead Screw	Duty Cycle	Max. Dynamic Load (*See Note 2)	Speed +/-10% (*See Note 1) (mm/sec)		Max. Stroke Without Pot. (*See Note 2)
			(N)	Free Load	Full Load	(mm)
6	Acme Screw	25% (5 minutes on, 15 minutes off)	400	6	5.2	1,016
10			350	10	8.5	1,016
16			300	16	13	1,016
20			250	20	17	1,016
24			200	24	20	1,016
29			150	29	24	1,016

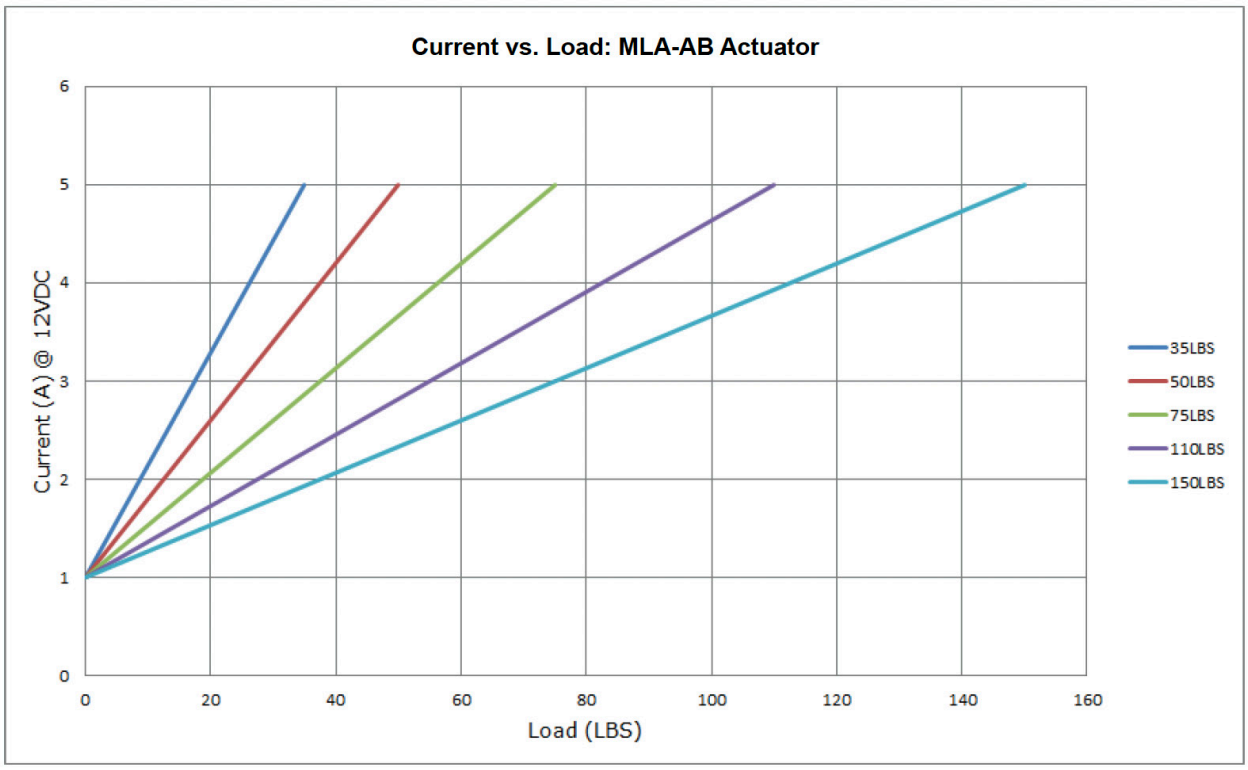
[Table 2]

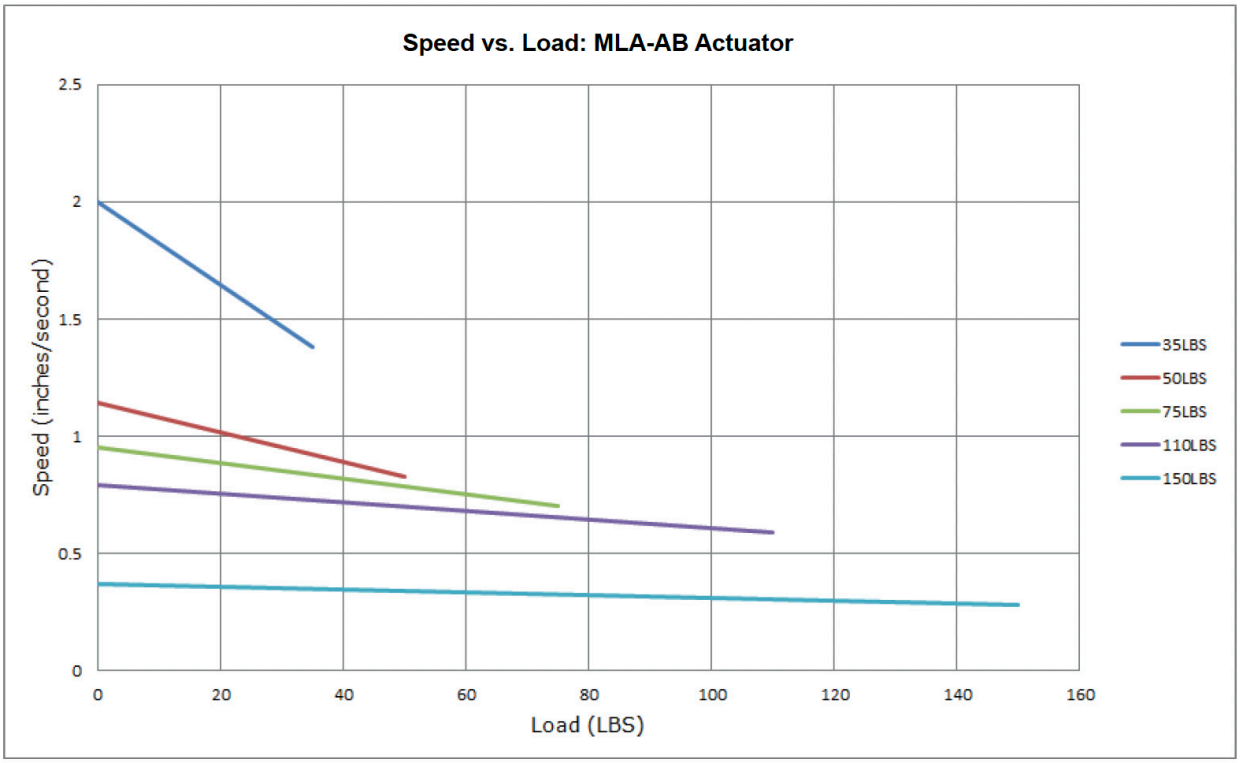
*Notes:

1. Measurements are made with actuators in connection with stable 24VDC power supplies and ambient temperature of 20°C.
2. Many factors affect the "Customizable Maximum Stroke," such as load, speed, and direction of force.
3. When actuators are running, control boxes have the potential to short-circuit the motor terminals (electrodes), giving actuators a higher self-locking load.

Above data is for typical use scenarios. Actual application scenarios should be considered. Please contact cs@machmo.com if your required parameters are not listed.

• Performance





*** Note: Measurements are made with Actuators in Connection with Stable Power Supplies and Ambient Temperature of 20°C.**

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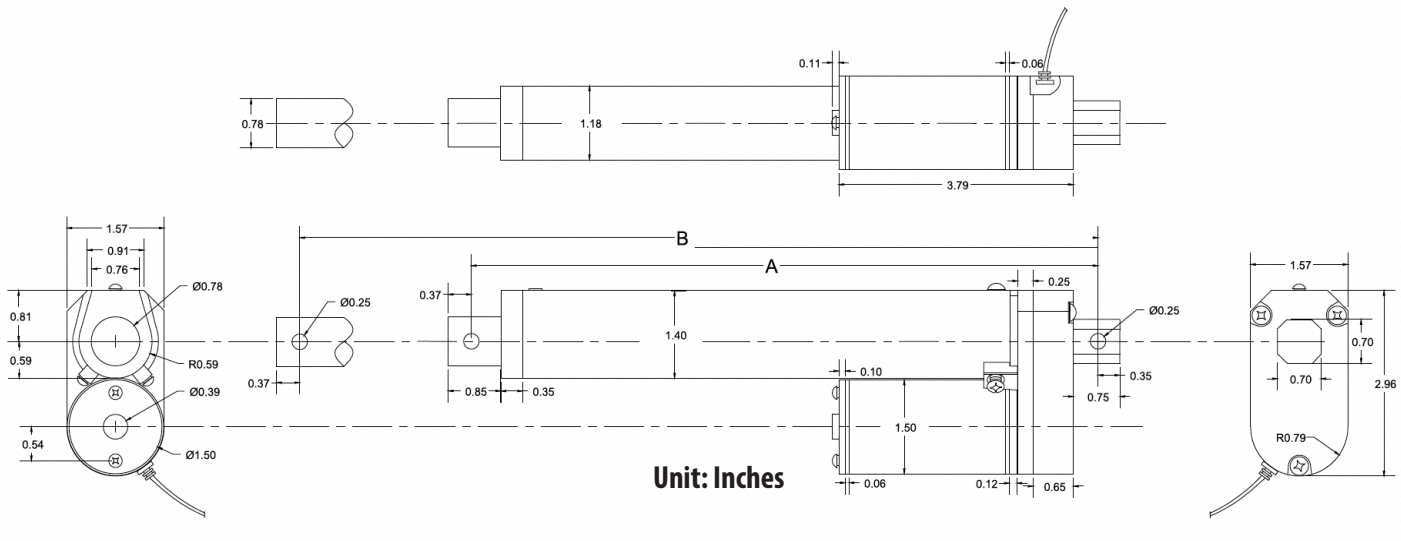
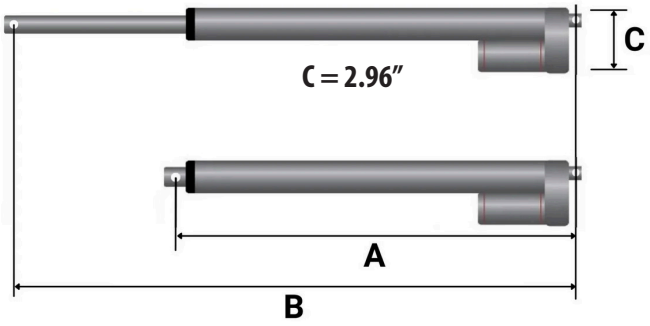
• Product Dimensions





MLA-AB Stroke vs Dimensions (Hole to Hole)

MLA-AB Stroke (Inches)	A = Stroke Length + 4.13″ (Inches)	B = Stroke Length x2 + 4.13″ (Inches)	MLA-AB Stroke (mm)	A = Stroke Length + 105mm (mm)	B = Stroke Length x2 + 105mm (mm)
1	5.13	6.13	25.4	130.3	155.8
2	6.13	8.13	50.8	155.7	206.6
3	7.13	10.13	76.2	181.2	257.4
4	8.13	12.13	101.6	206.6	308.2
6	10.13	16.13	152.4	257.4	409.8
8	12.13	20.13	203.2	308.2	511.4
9	13.13	22.13	228.6	334.6	562.2
10	14.13	24.13	250.4	355.4	605.8
12	16.13	28.13	304.8	409.8	714.6
14	18.13	32.13	355.6	460.6	816.2
16	20.13	36.13	406.4	511.4	917.8
18	22.13	40.13	457.2	562.2	1,019.4
20	24.13	44.13	508	613	1,121
22	26.13	48.13	558.8	663.8	1,267
24	28.13	52.13	609.6	714.6	1,324.2
30	34.13	64.13	762	867	1,629
40	44.13	84.13	1,016	1,121	2,137

[Table 3]

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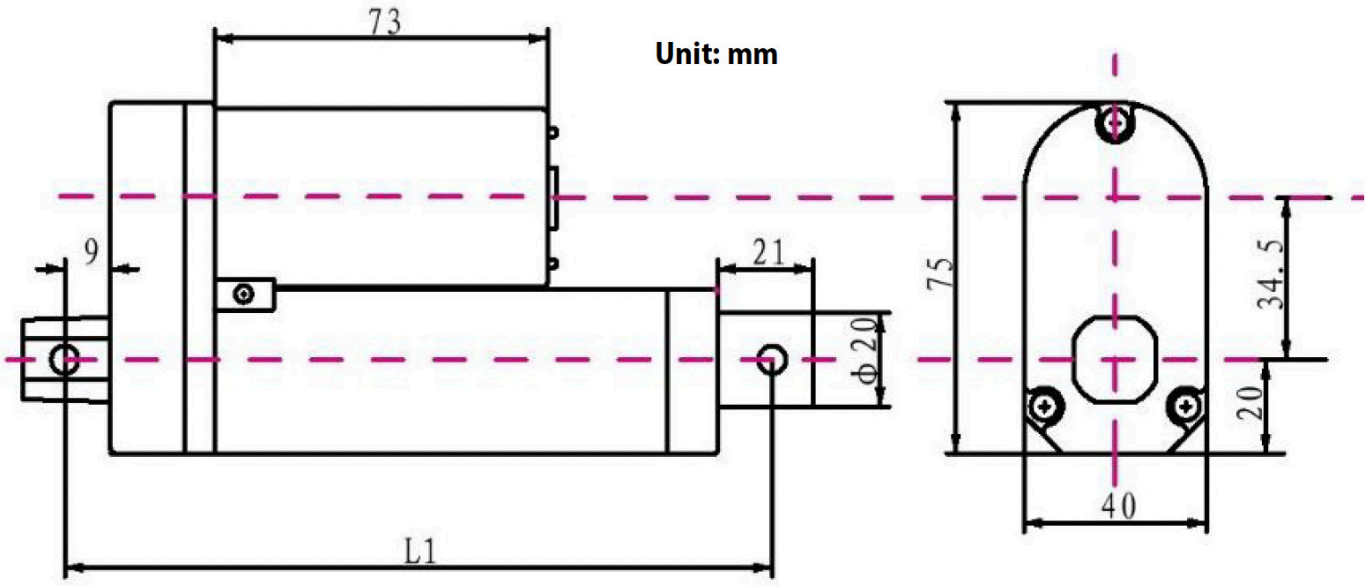
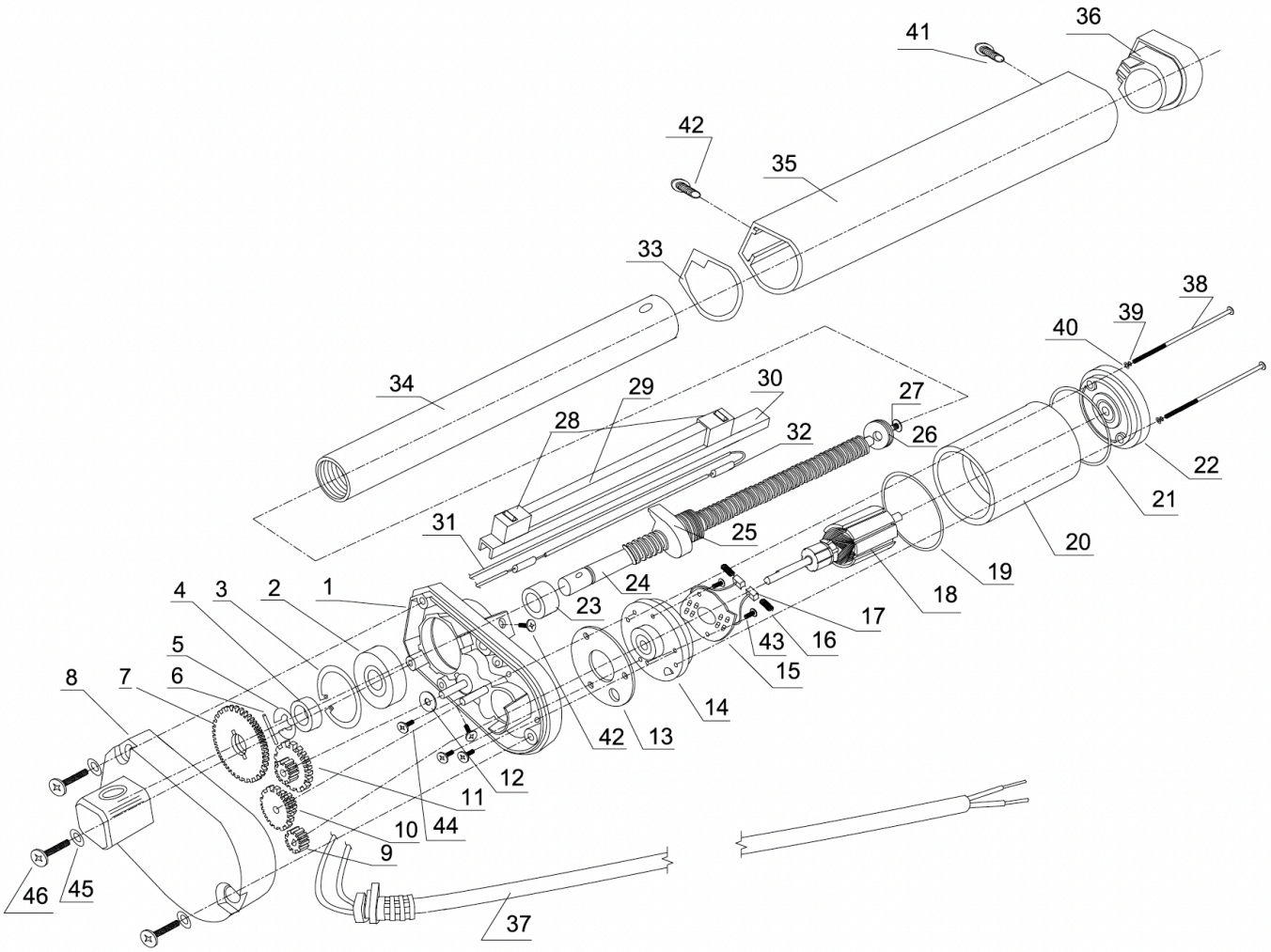
• Product Dimensions (continued)



• Internal Components Diagram

Please see next page for Numbered Diagram Components list.



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• Internal Components Diagram (Key)

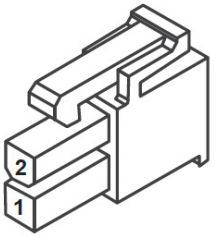
Please see Diagram on prior page.

Item	Description		Item	Description	Qty
1	Actuator Base	1	24	Threaded Shaft Drive / Lead Screw	1
2	Shaft Bearing	1	25	Shaft Base with LImit Switches Arm	1
3	Shaft Bearing Lock	1	26	Shaft Drive End Support	1
4	Shaft Base Spacer	1	27	Shaft Drive End Support Screw	1
5	Shaft Base Spacer Lock	1	28	Limit Switch	2
6	Shaft Gear Wheel Holder	1	29	Limit Switches Spacer	1
7	Shaft Gear Wheel	1	30	Limit Switches Base	1
8	Base Cover with Mounting Support	1	31	Limit Switches Wiring	1
9	Electric Motor Gear Wheel	1	32	Diode	2
10	Small Intermediate Gear Wheel	1	33	Shaft Encloser Bottom Washer	1
11	Medium Intermediate Gear	1	34	Shaft with Mounting Hole	1
12	Teflon Washer	1	35	Shaft Enclosure	1
13	Electric Motor Base Washer	1	36	Shaft Enclosure Top Cap	1
14	Electric Motor Base	1	37	Power Cable	1
15	Brush Holder PCB	1	38	Motor Enclosure Screw	2
16	Electric Motor Brush	2	39	Motor Screw Spring Washer	2
17	Electric Motor Brush Spring	2	40	Motor Screw Washer	2
18	Electric Motor Rotor	1	41	Shaft Enclosure Top Cap Screw	1
19	Motor Enclosure Bottom Washer	1	42	Shaft Enclosure Base Screw	3
20	Electric Motor Encloser with Stator	1	43	Brush Holder PCB Screw	2
21	Motor Enclosure Top Washer	1	44	Motor Base Screw	3
22	Electric Motor Cap with Rotor Bearing	1	45	Base Cover Washer	3
23	Shaft Spacer	1	46	Base Cover Screw	3

[Table 4]

• Mounting Connectors

1. 2-Pin Connector (Standard)



Motor	
2	1
M -	M +

[Table 5]

Component	Part Name	Part Number	Mating Part Number
Housing	Molex Mini Fit Jr. 2-Pin	39-01-2025	39-01-2029 / 39-01-2026
Terminal	Molex Mini Fit Jr Female Terminal	39-00-0038	39-00-0040

[Table 6]

• Available Accessories

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• Product Inquiry Table

Selection	Specification	Available Options			
	Voltage	1 = 12V	2 = 24V	3 = 36V	4 = 48V
	Load and Speed	See [Table 2]			
	Stroke (mm)	Please contact cs@machmo.com if required stroke is out of range.			
	Installation Length (mm)	See [Table 3]			
	Signal Feedback	0 = None	1 = Endstop Signal	2 = Hall Sensor	3 = Magnetic Switches
		4 - Potentiometer	5 = Encoder		
	Overload Protection	1 = Clutch		2 = Adjustable Over Current Protection	
	Cable Length	1 = 600mm	2 = 1,000mm	3 = 1,500mm	4 = 2,000mm
		X = Custom			
	Connector	0 = Molex 2-Pin		X = Custom	
Application	Working Temperature	1 = -25°C ~ 65°C			
	Working Frequency	Estimated Work Cycles Per Day			
	End Use	Indoor or Outdoor?			