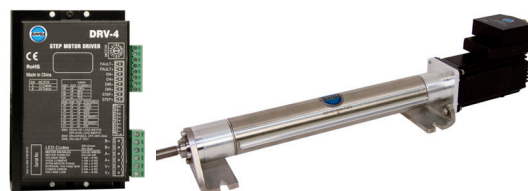




Original Line Electric®

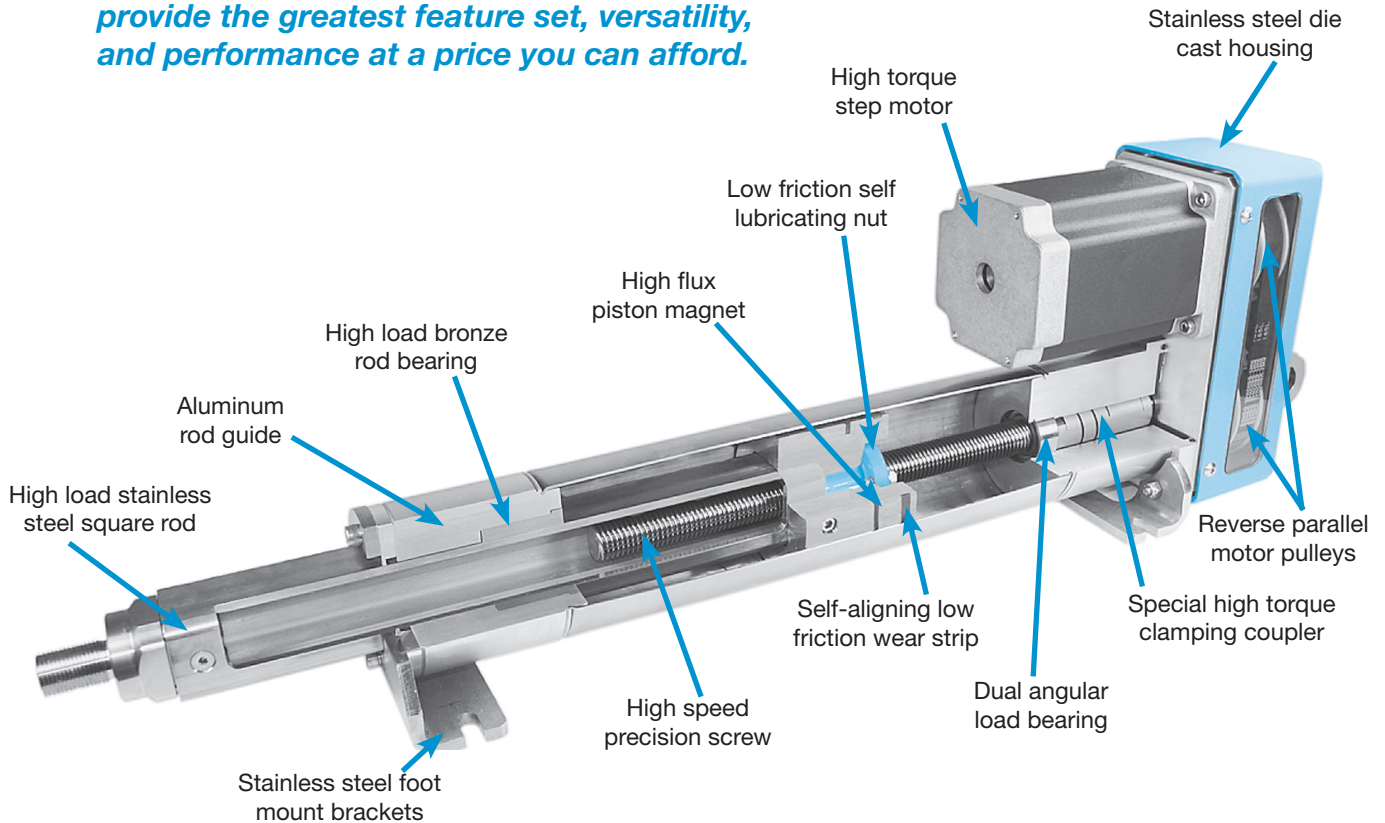


Electric motion control solutions
for extreme precision and
customized performance



Bimba Original Line Electric® Actuators

Bimba Original Line Electric® actuators provide the greatest feature set, versatility, and performance at a price you can afford.



Original Line Electric® (OLE) actuators are alternatives to pneumatics where plant air quality, compressor availability, portability, and precise control and positioning are needed.

The model above is OLE-3508-20S-P3W; 350 series, 8 inch stroke, reverse parallel motor mount, 0.20 inch lead. The self locking thread holds the rod in position, even with no power to the motor. Using a 34-frame stepper, the actuator is capable of about 350 pounds thrust at 1 inch/second, or 50 pounds at about 6 inches/second. Two other leads enable speeds up to 24 inches/second.

Features	Benefits
<ul style="list-style-type: none"> • Modular design 	<ul style="list-style-type: none"> • Order exactly what you need: actuator, motor, and drive, actuator and motor, or actuator only
<ul style="list-style-type: none"> • Special screws 	<ul style="list-style-type: none"> • High speeds, high precision, and enables longer standard strokes
<ul style="list-style-type: none"> • Special composite nuts 	<ul style="list-style-type: none"> • High efficiency, high load capacity, high speed, and low noise
<ul style="list-style-type: none"> • Special custom motor couplers 	<ul style="list-style-type: none"> • High torque and moment load capacity, corrects axial misalignment of the screw and motor shaft
<ul style="list-style-type: none"> • Reverse parallel motor mount 	<ul style="list-style-type: none"> • Allows rear pivot or clevis mount and saves space
<ul style="list-style-type: none"> • Square rod 	<ul style="list-style-type: none"> • Prevents rotation and with the bronze rod bearing, provides high durability and side load capacity
<ul style="list-style-type: none"> • Massive bronze rod bearing and low friction piston wear strip 	<ul style="list-style-type: none"> • Provides side load capacity
<ul style="list-style-type: none"> • Dual angular load bearing 	<ul style="list-style-type: none"> • Absorbs axial loads to protect the motor

Bimba Original Line Electric® Actuators

Bimba's Original Line Electric Actuators are designed, built, and tested to provide the longest life, greatest durability, highest speed, and greatest thrust per dollar. They are ideal for applications requiring greater control for enhanced flexibility. OLE actuators can adapt to applications that utilize our Original Line pneumatic cylinders, and are available without motors (sized for steppers or servos), with integral DC stepper motors, AC stepper motors, integrated motors, and also with matching AC and DC drives.

Many popular standard features and options are available. If you need a special design feature or special adaptation, call on our custom solutions and specials design capabilities for the right product for your application. Bimba looks forward to serving your electric actuator needs with the responsiveness and engineering expertise you have come to expect from Bimba.

Mounting options:

- Four tapped holes for mounting standard
- Block front option
- Foot mount option
- Trunnion mount option
- Front pivot or clevis mount rod end kits
- Rear pivot or clevis available with reverse parallel motor mount option
- Extra rod extension
- Female thread rod end optional (male standard)

Motor options:

- Offset reverse parallel motor mounts (to conserve space)
- No motor
- AC or DC Motor and Encoder
- AC or DC Motor and drive
- AC or DC Motor, Encoder, and drive
- IntelliMotor®

Performance options:

- Brake option (with motor) – longer lead times may apply. Compatible brakes are specified.
- Self-locking threads (selected models)
- Switches – band or track mounting

Specials:

- Low backlash designs
- Washdown motors

Materials and Definitions

Part Name	Material
Piston	6061-T6511 aluminum
Square Rod	304 stainless steel
Motor Mount	2024-T350 aluminum
Angular Bearing	52100 steel
Rod End	303 stainless steel
Drive Nut	Acetal
Coupler	17-4 PH stainless steel
Fasteners	Alloy steel and stainless steel
Washdown Cap	6061-T6511 aluminum
O-Rings	Buna-Nitrile
Wear Ring	Glass-filled Teflon
Rod Bearing	SAE 660 bronze
Drive Screw	303 stainless steel
Fasteners	18-8 stainless steel
Retaining Rings	Stainless steel, phosphate Covered spring steel
Pulleys	Anodized aluminum
Belt	Nylon Covered, fiberglass reinforced Neoprene
Mounting Brackets	304 stainless steel
Trunnion Pins	303 stainless steel
R, Q, S Cap	CF8 cast stainless steel
Switch Track	6063-T6 aluminum
MF Plates	2024 or 6061-T6 aluminum

Thrust - Output force of the actuator

Load – Total of all forces opposing the actuator

Repeatability – Window within which the actuator can reposition itself

Backlash – Amount of travel for the actuator with the screw held fixed (measured at the rod end)

Accuracy – Amount of error possible in linear position on screw thread

Lead – The linear distance moved for one turn of the screw

Static Load – Force required to move the mass at a constant speed

Dynamic Load – Force required to accelerate the mass

Friction Load – Force opposing motion of the mass due to surface contact

External Load – All forces not accounted for above

Weight – The force of the mass due to Earth's gravity

Stroke – The distance the mass is moved

Bimba Original Line Electric® Actuators

How to Order

The model number of all Original Line Electric Actuators consists of alphanumeric clusters designating product Type, body size (number designates maximum thrust capacity in pounds), stroke length, lead, mounting style, motor Type and configuration, and options. The example below describes OLE-7512.12-50BF-T1Y2, a 75 pound maximum thrust model with 1.5 inch diameter body, 12.12 inch stroke, 0.50 inch lead, block front mount, switch track, 23 frame stepper motor with Encoder, and drive. Piston magnets are included.

OLE - 75 12.12 - 50 BF - T1Y2

MODEL	BODY SIZE	STROKE LENGTHS	LEAD (inches per turn of screw)	MOUNTING	OPTIONS																																																																																						
OLE	75 - 75 lbs. thrust - 1.5" dia. 150 - 150 lbs. thrust - 2" dia. 350 - 350 lbs. thrust - 3" dia.	1 to 18 inches continuous (speed limited)	<table border="1"> <thead> <tr> <th>Model</th> <th>Leads</th> </tr> </thead> <tbody> <tr> <td>75</td> <td>12¹ 50 75</td> </tr> <tr> <td>150</td> <td>16¹ 25 50</td> </tr> <tr> <td>350</td> <td>20¹ 50 100</td> </tr> <tr> <th>Lead</th> <th>Value</th> </tr> <tr> <td>12</td> <td>.125 inch¹</td> </tr> <tr> <td>16</td> <td>.16 inch¹</td> </tr> <tr> <td>20</td> <td>.20 inch¹</td> </tr> <tr> <td>25</td> <td>.25 inch</td> </tr> <tr> <td>50</td> <td>.50 inch</td> </tr> <tr> <td>75</td> <td>.75 inch</td> </tr> <tr> <td>100</td> <td>1.0 inch</td> </tr> </tbody> </table> <p>¹Self locking threads. Back-drive thrust limit exceeds that of the actuator.</p>	Model	Leads	75	12 ¹ 50 75	150	16 ¹ 25 50	350	20 ¹ 50 100	Lead	Value	12	.125 inch ¹	16	.16 inch ¹	20	.20 inch ¹	25	.25 inch	50	.50 inch	75	.75 inch	100	1.0 inch	<ul style="list-style-type: none"> Blank - Tapped Holes BF - Block Front FM - Foot Mount Q - Reverse parallel motor mount with rear clevis R - Reverse parallel motor mount S - Reverse parallel motor mount with rear pivot T - Trunnion Mount Front Clevis² Front Pivot² <p>²For front clevis or pivot mounting, order kits in accessories section.</p>	<p>FT - Female Rod Threads T - Switch Track (T1, T2, T3, T4 specify track position on body) EE - Extra Rod Extension (x.xx inches)</p> <p>Brakes</p> <table border="1"> <thead> <tr> <th>Motor Size Compatibility</th> <th>Brake Option</th> </tr> </thead> <tbody> <tr> <td>Nema 17, P1, E1, Y1, Z1</td> <td>K1³</td> </tr> <tr> <td>Nema 23, P2, E2, Y2, Z2</td> <td>K2³</td> </tr> <tr> <td>Nema 34, P3, E3, Y3, Z3</td> <td>K3³</td> </tr> </tbody> </table> <p>³Longer lead times may apply for brake option. Contact Bimba Technical Support for details.</p> <table border="1"> <thead> <tr> <th>Coupler</th> <th>Motor Shaft Diameter</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>5 mm</td> </tr> <tr> <td>B</td> <td>6 mm</td> </tr> <tr> <td>C</td> <td>0.25 inch</td> </tr> <tr> <td>D</td> <td>8 mm</td> </tr> <tr> <td>E</td> <td>12 mm</td> </tr> <tr> <td>F</td> <td>0.50 inch</td> </tr> <tr> <td>G</td> <td>14 mm</td> </tr> <tr> <td>H</td> <td>11 mm</td> </tr> </tbody> </table> <p>Motors and Drives (pick only one option)</p> <table border="1"> <thead> <tr> <th></th> <th>75</th> <th>150</th> <th>350</th> </tr> </thead> <tbody> <tr> <td>No motor (second digit defines coupler)</td> <td>NA⁴, NB⁴, NC⁴</td> <td>NB, NC, ND</td> <td>NE, NF, NG</td> </tr> <tr> <td>DC Stepper</td> <td>P1, P2, P6</td> <td>P2, P8</td> <td>P3, P10</td> </tr> <tr> <td>DC Stepper and Encoder</td> <td>E1, E2, E6</td> <td>E2, E8</td> <td>E3, E10</td> </tr> <tr> <td>DC Stepper and drive^{5 6}</td> <td>Y1, Y2</td> <td>Y2</td> <td>Y3</td> </tr> <tr> <td>DC Stepper, Encoder, and drive^{5 6}</td> <td>Z1, Z2</td> <td>Z2</td> <td>Z3</td> </tr> <tr> <td>AC Stepper⁶</td> <td>A1</td> <td>A5</td> <td>A9</td> </tr> <tr> <td>Integrated Stepper IntelliMotor[®]</td> <td>S1, S3, S5, S7, S9, S11</td> <td>S2, S4, S6, S8, S10, S12</td> <td>--</td> </tr> <tr> <td>AC Stepper and Encoder⁶</td> <td>A2</td> <td>A6</td> <td>A10</td> </tr> </tbody> </table> <p>⁴Adapter D-109957 is required for mounting 17 frame steppers. ⁵Non-Programmable step/direction drive. ⁶For AC and DC Intelligent Programmable drives, see page 8.</p>	Motor Size Compatibility	Brake Option	Nema 17, P1, E1, Y1, Z1	K1 ³	Nema 23, P2, E2, Y2, Z2	K2 ³	Nema 34, P3, E3, Y3, Z3	K3 ³	Coupler	Motor Shaft Diameter	A	5 mm	B	6 mm	C	0.25 inch	D	8 mm	E	12 mm	F	0.50 inch	G	14 mm	H	11 mm		75	150	350	No motor (second digit defines coupler)	NA ⁴ , NB ⁴ , NC ⁴	NB, NC, ND	NE, NF, NG	DC Stepper	P1, P2, P6	P2, P8	P3, P10	DC Stepper and Encoder	E1, E2, E6	E2, E8	E3, E10	DC Stepper and drive ^{5 6}	Y1, Y2	Y2	Y3	DC Stepper, Encoder, and drive ^{5 6}	Z1, Z2	Z2	Z3	AC Stepper ⁶	A1	A5	A9	Integrated Stepper IntelliMotor [®]	S1, S3, S5, S7, S9, S11	S2, S4, S6, S8, S10, S12	--	AC Stepper and Encoder ⁶	A2	A6	A10
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Bimba Original Line Electric® Actuators

Incompatible Options - the following options cannot be ordered together.

Model	BF	FM	T*	R	S	Q	Couplers	Motors	Motor and Encoder	Motor and Drive	Motor, Encoder, and Drive
75	FM,T*	BF,T*	FM,BF	N,S,Q	N,R,Q	N,R,S	D,E,F,G	P3,P8,P9,P10, P11,P12	E3,A5,A6,A7,A8,A9,A10, A11,A12,E3,E8,E9,E10, E11,E12	Y3	Z3,S2,S4,S6,S8, S10,S12
150	FM,T*	BF,T*	FM,BF	N,S,Q	N,R,Q	N,R,S	A,E,F,G	P1,P3,P4,P5,P6, P7,P10,P11	E1,E3,E4,E5,E6,E7,E10, E11,S1,S3,S5,S7,S9,S11, A1,A2,A3,A4,A9,A10,A11, A12	Y1,Y3	Z1,Z3,S1,S3,S5, S7,S9,S11
350	FM,T*	BF,T*	FM,BF	N,S,Q	N,R,Q	N,R,S	A,B,C,D	P1,P2,P4,P5,P6, P7,P8,P9,A1,A2, A3,A4,A5,A6, A7,A8	E1,E2,E3,E4,E5,E6,E7,E8, E9,A2,A4,A6,A8	Y1,Y2	Z1,Z2,S1,S2,S3, S4,S5,S6,S7,S8, S9,S10,S11

Bimba Original Line Electric® Actuators

List Prices

Model, No Motor	Base Price	Stroke adder per inch	Mounting Options			Reverse Parallel Motor Mount			K	EE
			BF	FM	T	R	S	Q		
			Block Front	Foot Mount	Trunnion Mount	Standard	Rear Pivot	Rear Clevis	Brake	Extra Extension (per inch)
OLE-75x-12x-x ¹	\$376.74	\$18.90	\$25.20	\$50.40	\$50.40	\$151.20	\$151.20	\$151.20	\$611.10	\$6.30
OLE-75x-50x-x	376.74	18.90	25.20	50.40	50.40	151.20	151.20	151.20	611.10	6.30
OLE-75x-75x-x	376.74	18.90	25.20	50.40	50.40	151.20	151.20	151.20	611.10	6.30
OLE-150x-16x-x ¹	502.74	25.20	31.50	56.70	56.70	189.00	189.00	189.00	674.10	11.34
OLE-150x-25x-x	502.74	25.20	31.50	56.70	56.70	189.00	189.00	189.00	674.10	11.34
OLE-150x-50x-x	502.74	25.20	31.50	56.70	56.70	189.00	189.00	189.00	674.10	11.34
OLE-350x-20x-x ¹	691.74	31.50	37.80	63.00	63.00	226.80	226.80	226.80	938.70	15.12
OLE-350x-50x-x	691.74	31.50	37.80	63.00	63.00	226.80	226.80	226.80	938.70	15.12
OLE-350x-100x-x	691.74	31.50	37.80	63.00	63.00	226.80	226.80	226.80	938.70	15.12

¹Self-locking threads

No Charge - Female Rod Thread, No Motor Option

For anodized aluminum or stainless steel construction, contact Bimba Technical Support.

Model, Motor Adder	Switch Track	Step Motor and Drive			Step Motor, Encoder, and Drive		
Alphanumeric Cluster	T	Y1	Y2	Y3	Z1	Z2	Z3
Frame		Size 17	Size 23	Size 34	Size 17	Size 23	Size 34
OLE-75x-12x-x ¹	\$10.08	\$262.50	\$346.50		\$367.50	\$462.00	
OLE-75x-50x-x	10.08	262.50	346.50		367.50	462.00	
OLE-75x-75x-x	10.08	262.50	346.50		367.50	462.00	
OLE-150x-16x-x ¹	10.08		346.50			462.00	
OLE-150x-25x-x	10.08		346.50			462.00	
OLE-150x-50x-x	10.08		346.50			462.00	
OLE-350x-20x-x ¹	10.08			525.00			661.50
OLE-350x-50x-x	10.08			525.00			661.50
OLE-350x-100x-x	10.08			525.00			661.50

¹Self-locking threads

Accessories

Clevis Pin

Part Number	For Model	List Price
RS-CP500	75, 150	\$14.45
RS-CP750	350	24.10

Rod Eye

Part Number	For Model	List Price	Mating Bkt.	List Price
RS-RE437	75	\$24.25	ACB-1	\$25.22
RS-RE500	150	24.25	ACB-1	25.22
RS-RE750	350	59.35	ACB-2	45.60

Adapter Plate

Part Number	For Model	List Price
D-109957	75	\$34.45
D-109960	75	34.45
D-109968	75	34.45
D-109958	150	51.65
D-111352	150	34.45
D-109959	350	68.80
D-111353	350	34.45

Rod Clevis

Part Number	For Model	List Price	Mating Bkt.	List Price
RS-RC437	75	\$44.00	APB-1	\$22.45
RS-RC500	150	44.00	APB-1	22.45
RS-RC750	350	102.60	APB-2	35.00

MF1 Mounting Flange

(Allows OLE to front mount to standard NFPA MF1 dimensions.)

Part Number	For Model	List Price
MFEA-75	75	\$99.35
MFEA-150	150	104.10
MFEA-350	350	112.20

OLE actuators are designed for 1500 miles life at continuous duty, 23° C (73° F), clean dry ambient, and 15% below the published speed/thrust curve. Higher ambient temperatures, higher speeds, higher loads, and the presence of moisture and contaminants will cause accelerated wear. The actual life of the actuator in an application is dependent upon all these factors which must be considered prior to sizing the actuator.

Bimba Original Line Electric® Actuators

"IntelliMotor®" Integrated DC Step Motor/Drive

Bimba Part Number	Description	Bimba Code	List Price
ITM-23Q-2-2-N	NEMA23-2, RS232, Programmable, 125 oz-in	S1	\$487.00
ITM-23Q-3-2-N	NEMA23-3, RS232, Programmable, 210 oz-in	S2	477.00
ITM-23Q-2-2-E	NEMA23-2, RS232, Encoder, Programmable, 125 oz-in	S3	653.00
ITM-23Q-3-2-E	NEMA23-3, RS232, Encoder, Programmable, 210 oz-in	S4	712.00
ITM-23Q-2-5-N	NEMA23-2, RS485, Programmable, 125 oz-in	S5	555.00
ITM-23Q-3-5-N	NEMA23-3, RS485, Programmable, 210 oz-in	S6	576.00
ITM-23Q-2-5-E	NEMA23-2, RS485, Encoder, Programmable, 125 oz-in	S7	689.00
ITM-23Q-3-5-E	NEMA23-3, RS485, Encoder, Programmable, 210 oz-in	S8	697.00
ITM-23Q-2-EIP-E-M12	NEMA23-2, Ethernet/IP, Encoder, Programmable, M12 Connector, 125 oz-in	S9	1,136.00
ITM-23Q-3-EIP-E-M12	NEMA23-3, Ethernet/IP, Encoder, Programmable, M12 Connector, 210 oz-in	S10	1,160.00
ITM-23Q-2-EIP-N-M12	NEMA23-2, Ethernet/IP, Q Programmable, M12 Connector, 125 oz-in	S11	989.00
ITM-23Q-3-EIP-N-M12	NEMA23-3, Ethernet/IP, Q Programmable, M12 Connector, 210 oz-in	S12	1,012.00

AC Stepper Motors

Bimba Part Number	Description	Bimba Code	List Price
MTR-AC23T-753-S	10' Shielded Boot Cable, 167 oz-in	A1	\$107.00
MTR-AC23T-753D-S	10' Shielded Boot and Cable Gland Encoder, 167 oz-in	A2	286.00
MTR-AC23W-753-S	IP65, 10' Shielded Cable and Cable Gland Encoder	A3	*
MTR-AC23W-753D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	A4	*
MTR-AC23T-754-S	10' Shielded Boot Cable, 255 oz-in	A5	136.00
MTR-AC23T-754D-S	10' Shielded Boot and Cable Gland Encoder, 255 oz-in	A6	314.00
MTR-AC23W-754-S	IP65, 10' Shielded Cable and Cable Gland	A7	*
MTR-AC23W-754D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	A8	*
MTR-AC34T-696-S	10' Shielded Boot Cable, 1110 oz-in	A9	539.00
MTR-AC34T-696D-S	10' Shielded Boot and Cable Gland Encoder, 1110 oz-in	A10	717.00
MTR-AC34W-696-S	IP65, 10' Shielded Cable and Cable Gland	A11	*
MTR-AC34W-696D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	A12	*

Note: Torque values in "oz-in" are peak torque values.

Inventory items noted in **BLUE**

*Coming Soon

Bimba Original Line Electric® Actuators

DC Stepper Motors

Bimba Part Number	Description	Bimba Code	List Price
MTR-DC17T-275-F	Flying Leads, 78 oz-in	P1	\$53.00
MTR-DC17T-275D-F	Flying Leads with Encoder, 78 oz-in	E1	232.00
MTR-DC23T-598-F	Flying Leads, 158 oz-in (for OLE-75)	P2	65.00
MTR-DC23T-598D-F	Flying Leads with Encoder, 158 oz-in (for OLE-75)	E2	244.00
MTR-DC23T-601-F	Flying Leads, 269 oz-in (for OLE-150)	P2	105.00
MTR-DC23T-601D-F	Flying Leads with Encoder, 269 oz-in (for OLE-150)	E2	284.00
MTR-DC34T-506-F	Flying Leads, 1260 oz-in	P3	248.00
MTR-DC34T-506D-F	Flying Leads with Encoder, 1260 oz-in	E3	427.00
MTR-DC17T-275-S	*	P4	*
MTR-DC17T-275D-S	*	E4	*
MTR-DC17W-275-S	*	P5	*
MTR-DC17W-275D-S	*	E5	*
MTR-DC23T-598-S	Cable, No Encoder, 158 oz-in	P6	90.00
MTR-DC23T-598D-S	Cable with Encoder Cover, 158 oz-in	E6	361.00
MTR-DC23W-598-S	IP65, 10' Shielded Cable and Cable Gland	P7	*
MTR-DC23W-598D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	E7	*
MTR-DC23T-601-S	10' Shielded Cable, No Encoder, 269 oz-in	P8	130.00
MTR-DC23T-601D-S	Cable with Encoder Cover, 269 oz-in	E8	401.00
MTR-DC23W-601-S	IP65, 10' Shielded Cable and Cable Gland	P9	*
MTR-DC23W-601D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	E9	*
MTR-DC34T-506-S	Cable, No Encoder, 1260 oz-in	P10	274.00
MTR-DC34T-506D-S	Cable with Encoder Cover, 1260 oz-in	E10	544.00
MTR-DC34W-506-S	IP65, 10' Shielded Cable and Cable Gland	P11	*
MTR-DC34W-506D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	E11	*

Inventory items noted in **BLUE**

*Coming Soon

Bimba Original Line Electric® Actuators

Stepper Drives

DC Programmable Stepper Drives

Bimba Part Number	Description	List Price
STP-10-2-N-Q	10 Amp, RS232, Programmable	\$526.00
STP-10-2-E-Q	10 Amp, RS232, Encoder, Programmable	652.00
STP-10-5-N-Q	10 Amp, RS485, Programmable	641.00
STP-10-5-E-Q	10 Amp, RS485, Encoder, Programmable	702.00
STP-10-EIP-N-Q	10 Amp, EthernetIP, Programmable	664.00
STP-10-EIP-E-Q	10 Amp, EthernetIP, Encoder, Programmable	676.00

AC Programmable Step Drives

Bimba Part Number	Description	List Price
STP-AC5-EIP-1-E-Q	AC120 Step, 5A, EthernetIP, Encoder	\$839.00
STP-AC5-EIP-2-E-Q	AC220 Step, 5A, EthernetIP, Encoder	823.00
STP-AC5-EIP-1-N-Q	AC120 Step, 5A, EthernetIP	765.00
STP-AC5-EIP-2-N-Q	AC220 Step, 5A, EthernetIP	749.00
STP-AC5-E-1-E-S	AC120 Step, 5A, Ethernet, Encoder, Streaming	683.00
STP-AC5-E-2-E-S	AC220 Step, 5A, Ethernet, Encoder, Streaming	668.00
STP-AC5-E-1-N-S	AC120 Step, 5A, Ethernet, Streaming	616.00
STP-AC5-E-2-N-S	AC220 Step, 5A, Ethernet, Streaming	602.00

DC Step and Direction Drives

Bimba Part Number	Description	List Price
DRV-4	24/48 VDC, 4.5A Step and Direction	\$260.00
DRV-8	24/48 VDC, 8A Step and Direction	290.00

Inventory items noted in **BLUE**.

Bimba Original Line Electric® Actuators

Accessories

Stepper Cables

Bimba Part Number	Description	List Price
CBL-3004-189	Serial Programming Cable for RS232 Ports	\$20.00
CBL-3004-195-10	Encoder Extension Cable	67.00
CBL-PWR-M12-5	M12 Power Cable, 5m	102.00
CBL-IO-M12-5	M12 I/O Cable, 5m	84.00
CBL-EIP-M12-5	M12 Ethernet/IP Cable, 5m	61.00

Power Supply

Bimba Part Number	Description	List Price
PWR-150A24	24VDC, 150W Power Supply	\$146.00
PWR-320A48	48VDC, 320W Power Supply	223.00

Inventory items noted in **BLUE**.

Bimba Original Line Electric[®] Actuators

Specifications and Sizing

No Motor Option (N)

Base Part Number	Lead ² (inches)	Backlash ³ (inches)	Screw Accuracy (in./in.)	Screw Repeatability (micro inches)	Maximum Load (lbs.)	Base Actuator Inertia (oz-in ²)	Actuator Inertia per inch (oz-in ²) ⁴
OLE-75-xx-12xx-Nx ¹	.125	.003	0.0006	50	75	.003	.006
OLE-75-xx-50xx-Nx	.50	.005	0.0006	50	75	.003	.006
OLE-75-xx-75xxx-Nx	.75	.007	0.0006	50	75	.003	.006
OLE-150-xx-16xx-Nx ¹	.16	.005	0.0006	50	150	.218	.021
OLE-150-xx-25xx-Nx	.25	.006	0.0006	50	150	.218	.021
OLE-150-xx-50xx-Nx	.50	.008	0.0006	50	150	.218	.021
OLE-350-xx-20xx-Nx ¹	.20	.003	0.0006	50	350	1.588	.103
OLE-350-xx-50xx-Nx	.75	.005	0.0006	50	350	1.588	.103
OLE-350-xx-100xx-Nx	1.0	.007	0.0006	50	350	1.588	.103

Operating temperature range: -20° F to 160° F (-29° C to 71° C)
Standard IP rating: None
Maximum stroke: 18 inches
RoHS compliant

¹Self-locking threads

²Inches per revolution of screw

³Amount of end play on screw. Low backlash designs are available. Contact Technical Support.

⁴Inertia is given per inch of stroke

Caution! When specifying actuator stroke before ordering, always add at least 1/8 inch to the full stroke required in your application. The actuator should not reach mechanical end of stroke during extend or retract. Repeatedly reaching mechanical end of stroke, especially under load at operating speeds, may damage the actuator.

Sizing your actuator and specifying the right motor

The following procedure is for sizing an actuator and arriving at a single-point speed/torque specification for a motor **not** supplied by Bimba. Speed and thrust performance of Bimba's standard motor and actuator combinations may not be equivalent.

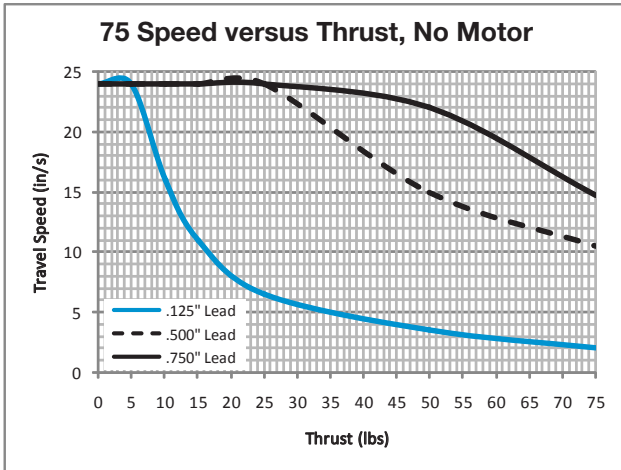
1. Determine the thrust, maximum speed, and stroke your application requires. Overstating speed and thrust will make your actuator more expensive than it needs to be. Understating the speed and thrust will compromise performance and durability.
2. Use the "Speed versus Thrust" graph. Actuators' curves that are ABOVE your speed/thrust data point are usable. Curves below the data point are not.

You have just identified the series of actuator (75, 150, or 350) that is best suited for your application.

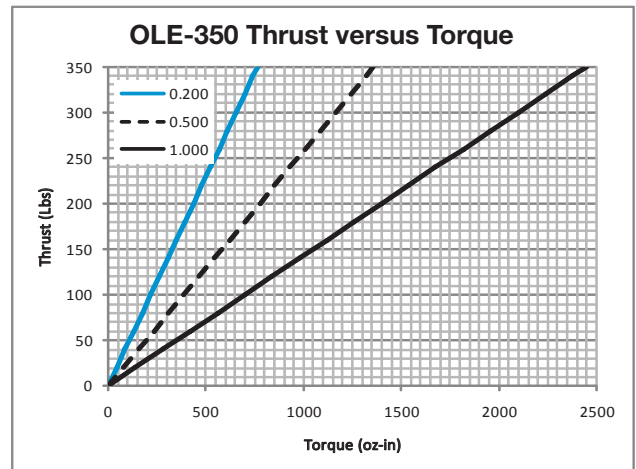
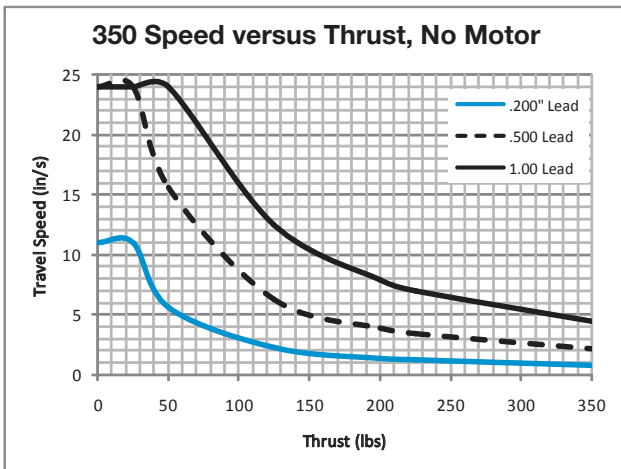
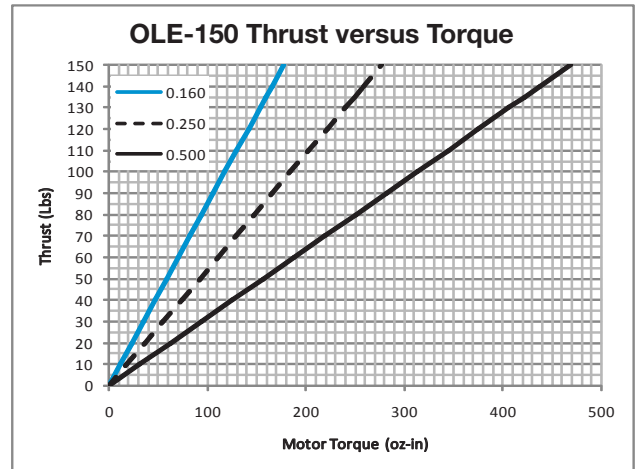
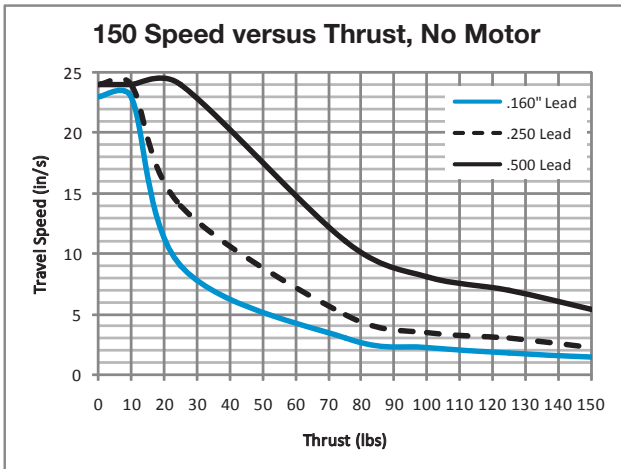
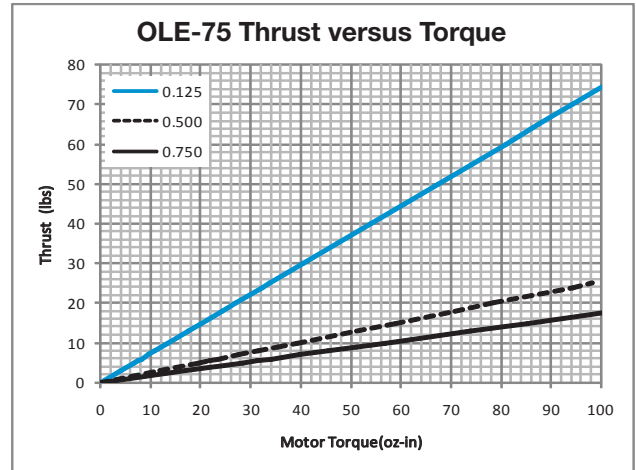
3. Use the "Thrust versus Torque" graphs for the actuator series identified above. Select the lead (inches per turn of the screw) that will provide the thrust you require with the minimum motor torque.
4. Use the "Speed versus RPM" graphs for the actuator series and lead you selected. Find the motor speed in RPM required to provide the actuator speed (inches per second) using the chosen lead (inches per rev). You might need to evaluate several different OLE series or leads in order to identify an achievable speed/torque motor specification.

Bimba Original Line Electric[®] Actuators

Speed Versus Thrust

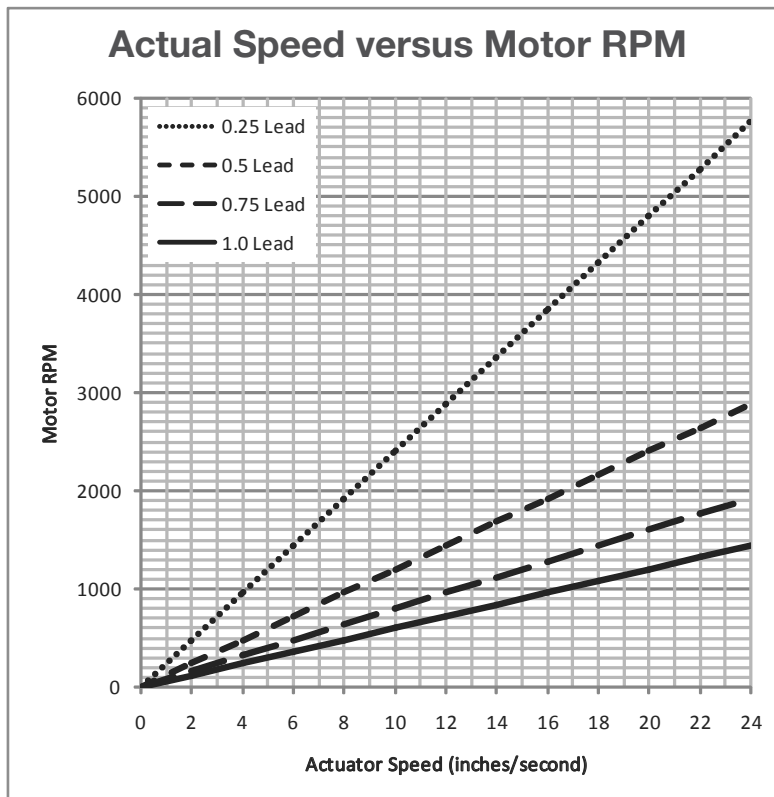
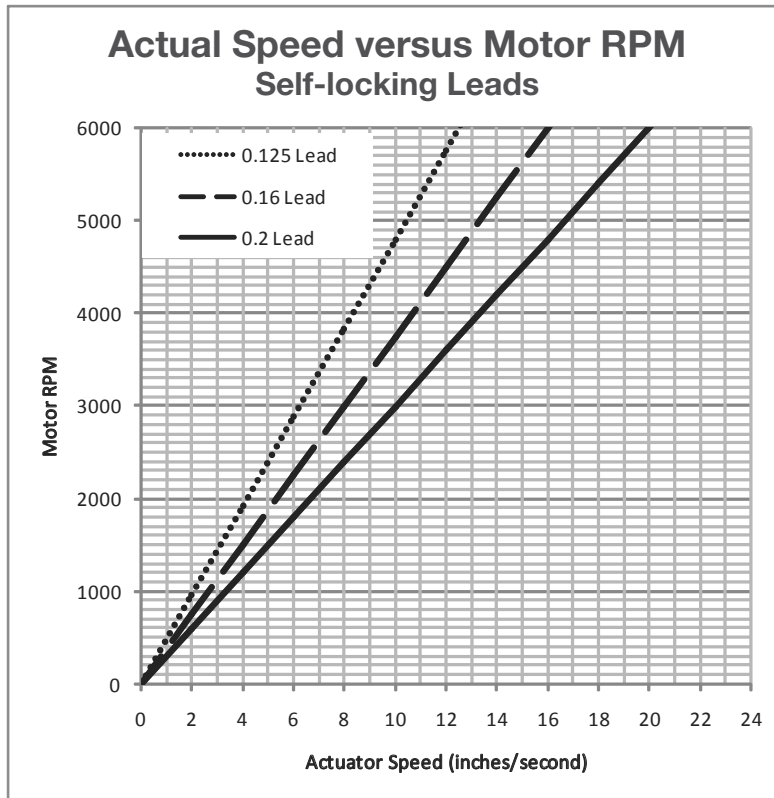


Thrust vs. Torque



Note: The curves above are based on a number of design factors, including the PV limit of the nut and the maximum torque compatibility of the coupler. Other factors combine to limit speed. Do not exceed thrust/speed values shown in above graphs as damage to actuator may result.

Bimba Original Line Electric[®] Actuators



Bimba Original Line Electric® Actuators

Specifications and Sizing

Step Motor and Motor/Drive Options (P, E, Y, Z, S, A)

Actuator Specifications

Base Part Number	Lead ² (inches)	Backlash ³ (inches)	Screw Accuracy (in./in.)	Screw Repeatability (micro inches)	Base Actuator Inertia (oz-in ²)	Actuator Inertia per inch (oz-in ²) ⁴
OLE-75-xx-12xx-P1 ¹	.125	.003	0.0006	50	.003	.006
OLE-75-xx-50xx-P1	.50	.005	0.0006	50	.003	.006
OLE-75-xx-75xxx-P1	.75	.007	0.0006	50	.003	.006
OLE-75-xx-12xx-xx ¹	.125	.003	0.0006	50	.003	.006
OLE-75-xx-50xx-xx	.50	.005	0.0006	50	.003	.006
OLE-75-xx-75xxx-xx	.75	.007	0.0006	50	.003	.006
OLE-150-xx-16xx-xx ¹	.16	.005	0.0006	50	.218	.021
OLE-150-xx-25xx-xx	.25	.006	0.0006	50	.218	.021
OLE-150-xx-50xx-xx	.50	.008	0.0006	50	.218	.021
OLE-350-xx-20xx-xx ¹	.20	.003	0.0006	50	1.588	.103
OLE-350-xx-50xx-xx	.50	.005	0.0006	50	1.588	.103
OLE-350-xx-100xx-xx	1.0	.007	0.0006	50	1.588	.103

Motor Specifications

Base Part Number	DC Motor Inertia Adder (P*, E*) (oz-in ²) ⁵	DC Maximum Current Draw ⁶	IntelliMotor® Motor Inertia Adder (S*) (oz-in ²) ⁵	AC Max Current Draw	IntelliMotor® Max Current Draw	AC Motor Inertia Adder (A*) (oz-in ²) ⁵
OLE-75-xx-12xx-P1 ¹	.44	1.7	--	--	--	--
OLE-75-xx-50xx-P1	.44	1.7	--	--	--	--
OLE-75-xx-75xxx-P1	.44	1.7	--	--	--	--
OLE-75-xx-12xx-xx ¹	1.42	4.24	1.42	1.41	5	1.64
OLE-75-xx-50xx-xx	1.42	4.24	1.42	1.41	5	1.64
OLE-75-xx-75xxx-xx	1.42	4.24	1.42	1.41	5	1.64
OLE-150-xx-16xx-xx ¹	2.51	4.24	2.52	1.41	5	2.63
OLE-150-xx-25xx-xx	2.51	4.24	2.52	1.41	5	2.63
OLE-150-xx-50xx-xx	2.51	4.24	2.52	1.41	5	2.63
OLE-350-xx-20xx-xx ¹	15.03	5.6	--	4.10	--	17.5
OLE-350-xx-50xx-xx	15.03	5.6	--	4.10	--	17.5
OLE-350-xx-100xx-xx	15.03	5.6	--	4.10	--	17.5

Operating temperature range: 32° F to 122° F (0° C to 50° C) limited by the drive. If the drive is remotely mounted and protected from heat, maximum operating temperature will be 160° F (71° C).

Maximum stroke: 18 inches

RoHS compliant

¹Self-locking threads

²Inches per revolution of screw

³Amount of end play on screw

⁴Inertia is given per inch of stroke

⁵Inertia for motor by itself

⁶For drive sizing for actuators supplied without drives

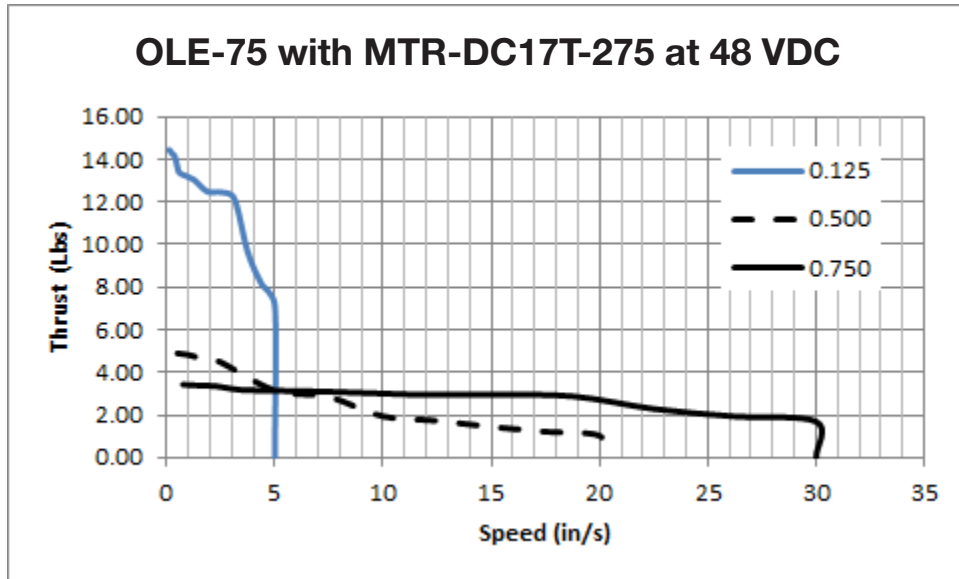
Caution! When specifying actuator stroke before ordering, always add at least 1/8 inch to the full stroke required in your application. The actuator should not reach mechanical end of stroke during extend or retract. Repeatedly reaching mechanical end of stroke, especially under load at operating speeds, may damage the actuator.

Bimba Original Line Electric[®] Actuators

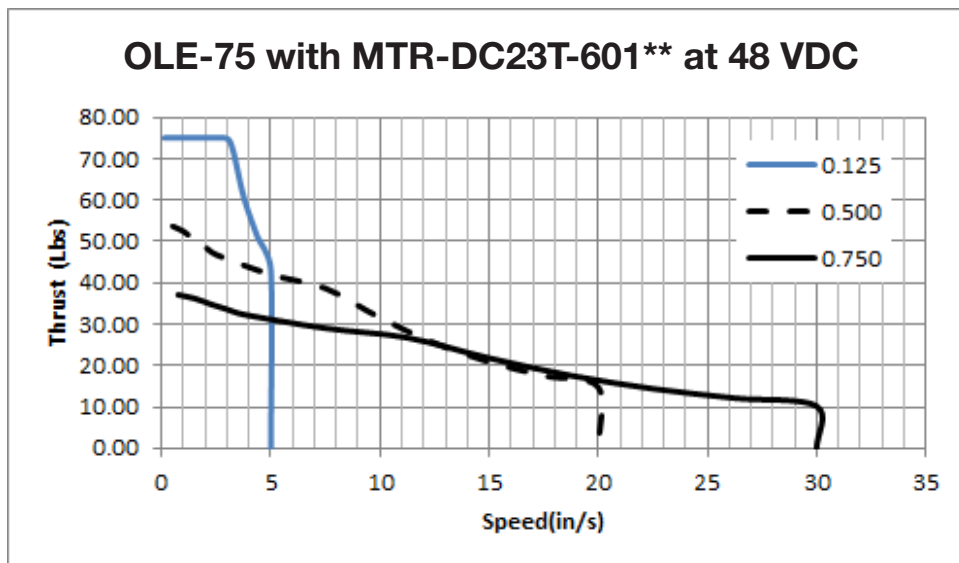
Specifications and Sizing

Step Motor and Motor/Drive Options (P1, E1, Y1, Z1)

Speed/Thrust Performance Vertical Orientation*, Pounds and Inches/Second Maximum Continuous



Step Motor Option (P2, P8, E2, E8)



* Vertical orientation is worse-case. These values are thrust values and in a horizontal orientation will result in moving loads above the thrust values indicated in the graphs.

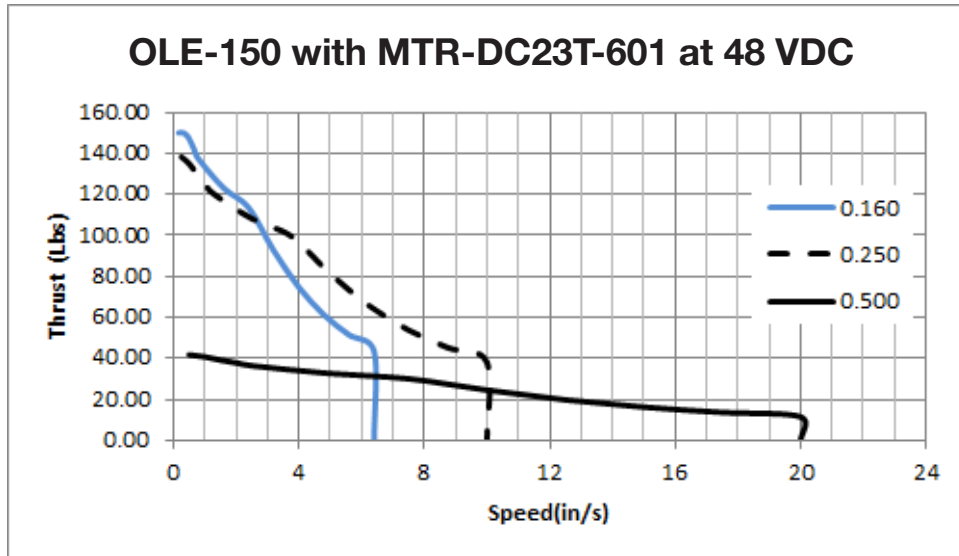
** Original OLE-75 with P2 motor performance graph.

Bimba Original Line Electric[®] Actuators

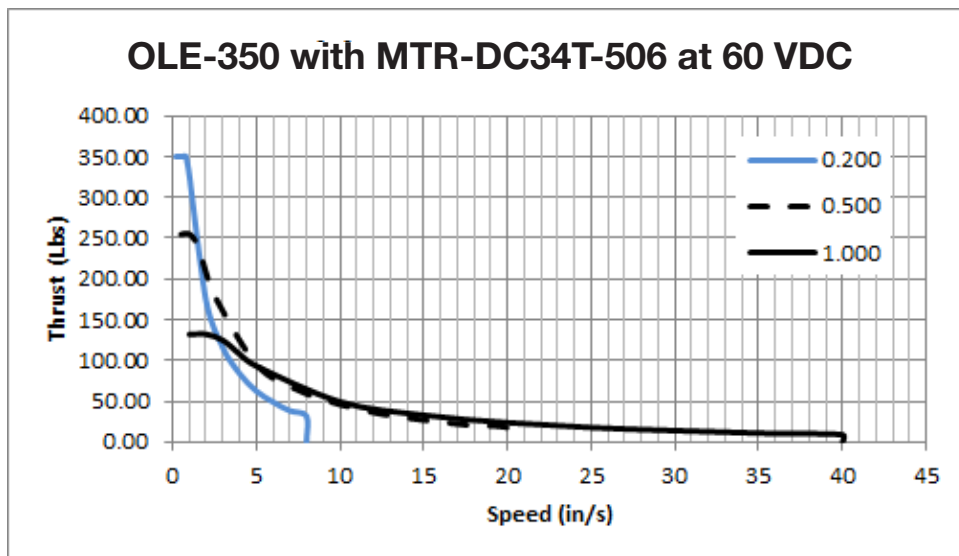
Specifications and Sizing

Step Motor and Motor/Drive Options (P2, P8, E2, E8, Y2, Z2)

Speed/Thrust Performance
Vertical Orientation*, Pounds and Inches/Second
Maximum Continuous



Step Motor and Motor/Drive Options (P3, P10, E3, E10, Y3, Z3)



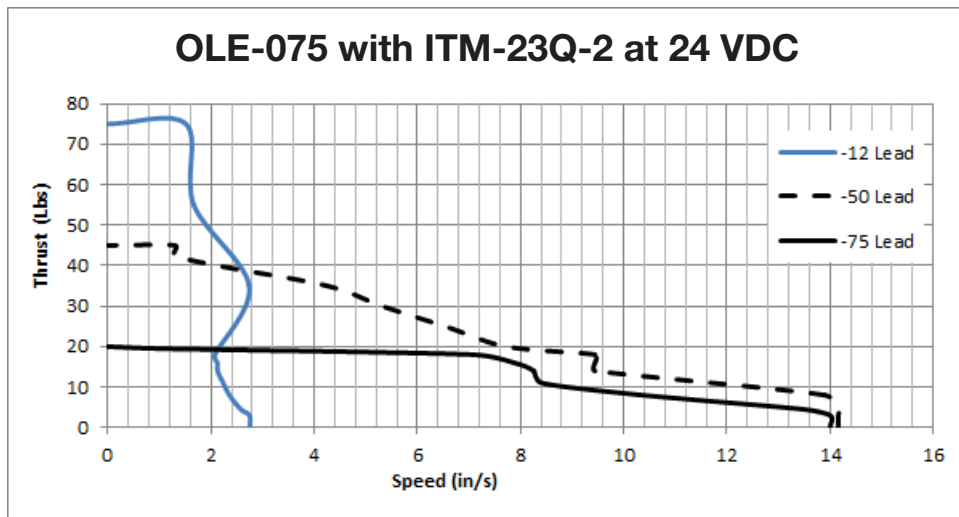
* Vertical orientation is worse-case. These values are thrust values and in a horizontal orientation will result in moving loads above the thrust values indicated in the graphs.

Bimba Original Line Electric[®] Actuators

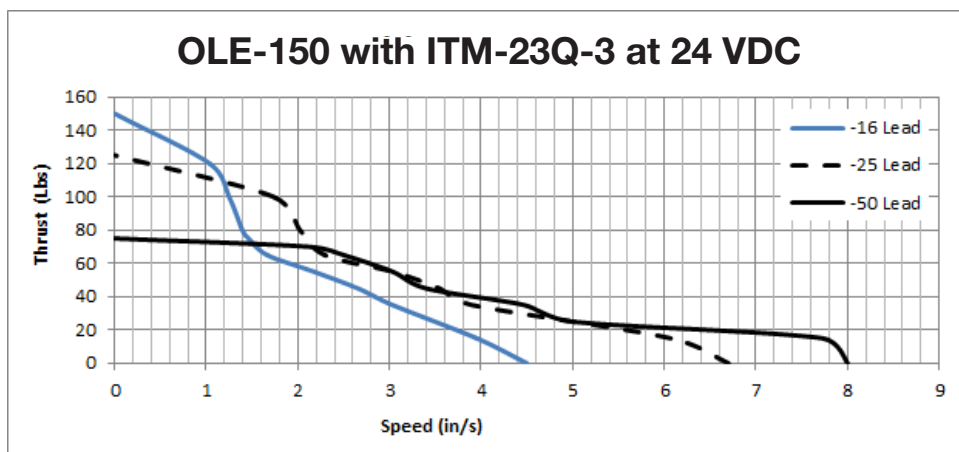
Specifications and Sizing

ITM-23Q Thrust vs. Speed Performance Curves
Vertical Orientation*, 5 amps Current, 4000 steps/rev.

OLE-75 with ITM-23Q-2--* @ 24 VDC (S1, S3, S5, S7, S9, S11)**



OLE-150 with ITM-23Q-3--* @ 24 VDC (S2, S4, S6, S8, S10, S12)**



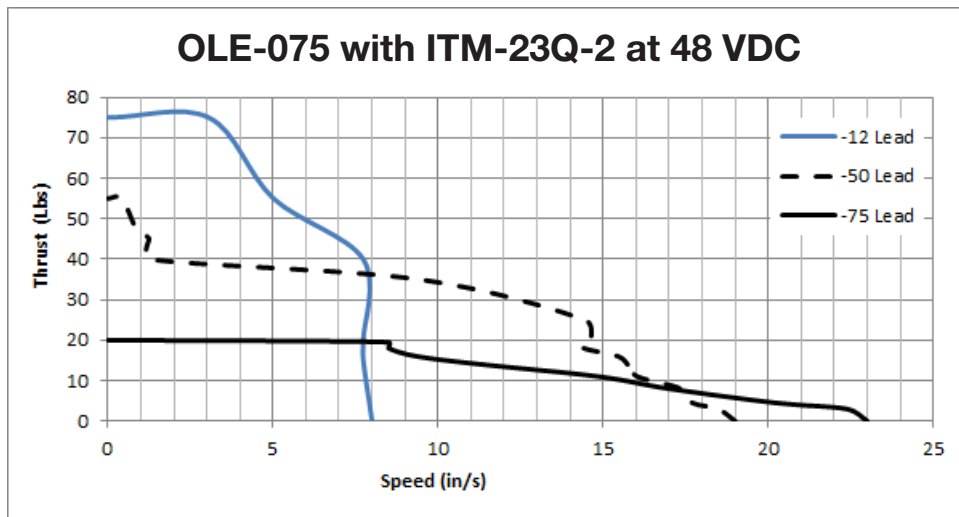
* Vertical orientation is worse-case. These values are thrust values and in a horizontal orientation will result in moving loads above the thrust values indicated in the graphs.

Bimba Original Line Electric[®] Actuators

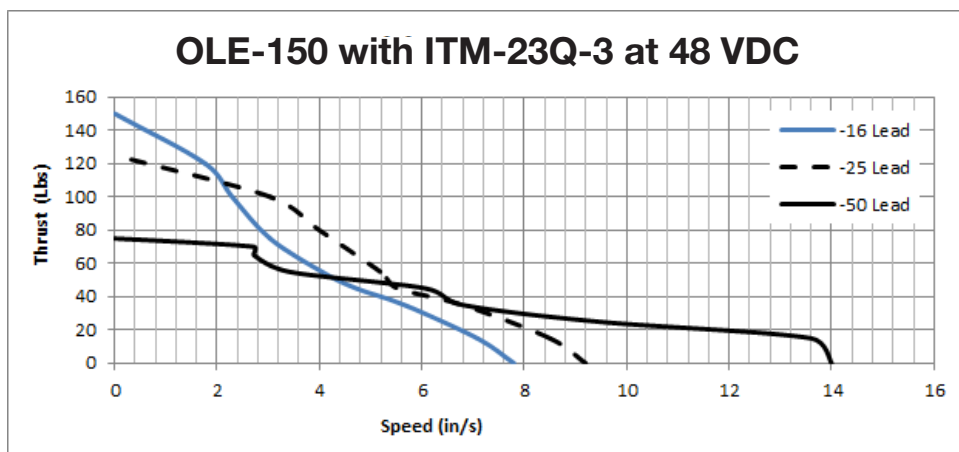
Specifications and Sizing

ITM-23Q Thrust vs. Speed Performance Curves
Vertical Orientation*, 5 amps Current, 4000 steps/rev.

OLE-75 with ITM-23Q-2--* @ 48 VDC (S1, S3, S5, S7, S9, S11)**



OLE-150 with ITM-23Q-3--* @ 48 VDC (S2, S4, S6, S8, S10, S12)**

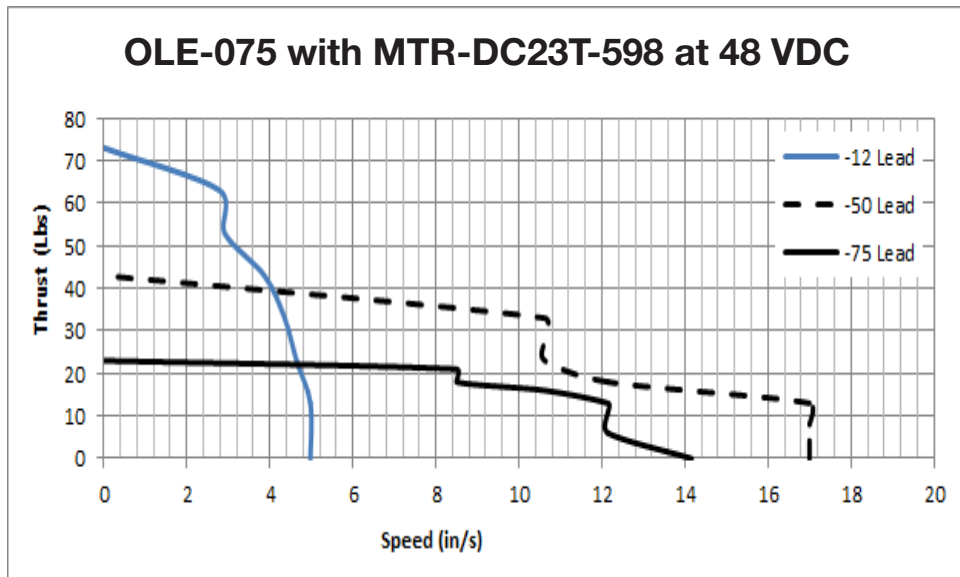
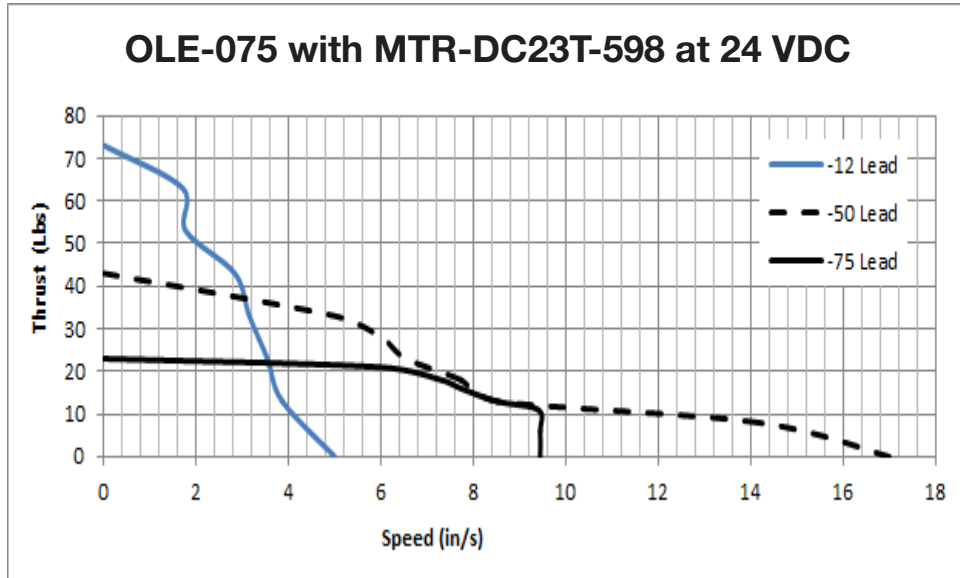


* Vertical orientation is worse-case. These values are thrust values and in a horizontal orientation will result in moving loads above the thrust values indicated in the graphs.

Bimba Original Line Electric[®] Actuators

Specifications and Sizing

OLE-75 with P2, P6, P7, E2, E6, E7 Motors

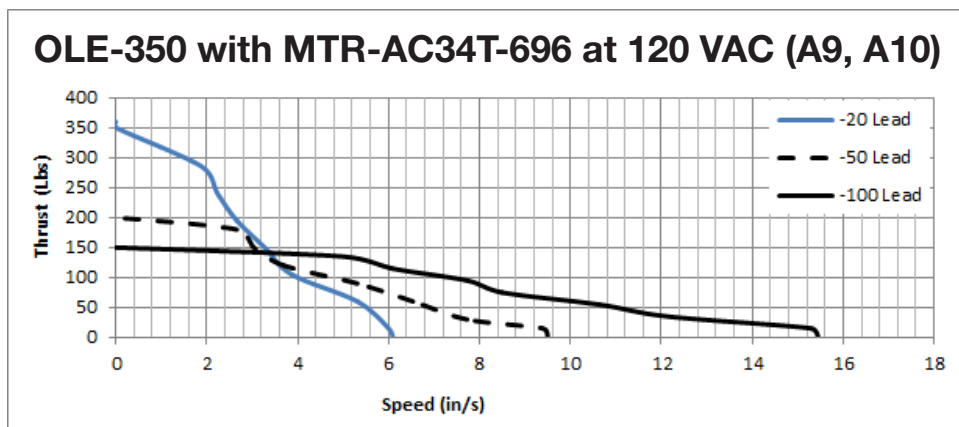
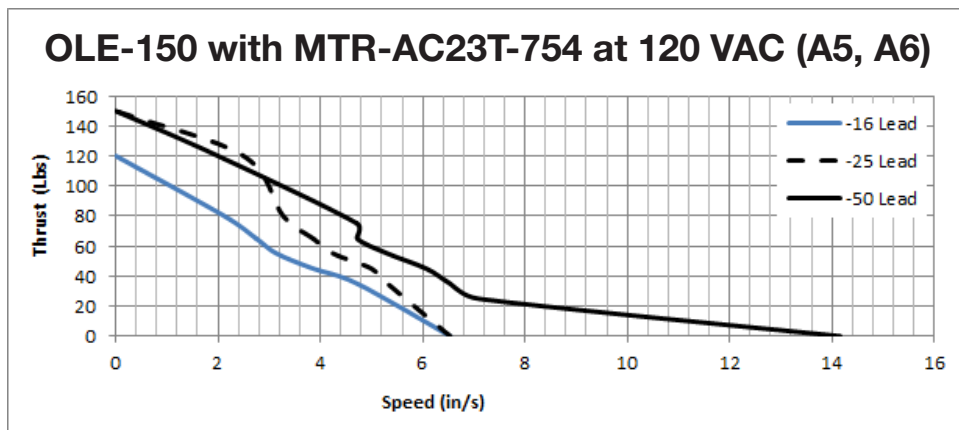
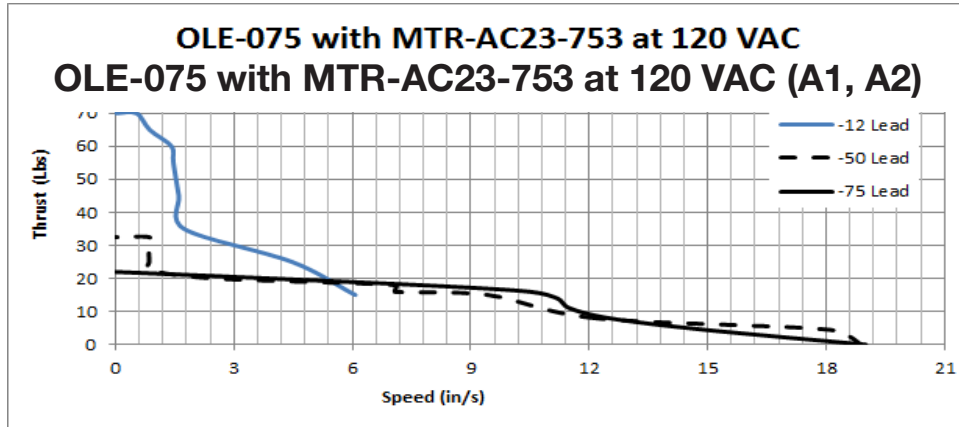


Bimba Original Line Electric[®] Actuators

Specifications and Sizing

Step Motor and Motor/Drive Options (A)

Speed/Thrust Performance Vertical Orientation, Pounds and Inches/Second Maximum Continuous



Bimba Original Line Electric® Actuators

Specifications and Sizing

Reverse Parallel Motor Option (R, S, Q & P, E, Y, Z)

Actuator Specifications

Base Part Number	Lead ² (inches)	Backlash ³ (inches)	Screw Accuracy (in./in.)	Screw Repeatability (micro inches)	Base Actuator Inertia (oz-in ²) ⁴	Actuator Inertia per inch (oz-in ²) ⁴
OLE75-xx-12Rx-P1 ¹	.125	.003	0.0006	50	.096	.006
OLE75-xx-50Rx-P1	.50	.005	0.0006	50	.096	.006
OLE75-xx-75Rx-P1	.75	.007	0.0006	50	.096	.006
OLE75-xx-12Rx-P2 ¹	.125	.003	0.0006	50	.096	.006
OLE75-xx-50Rx-P2	.50	.005	0.0006	50	.096	.006
OLE75-xx-75Rx-P2	.75	.007	0.0006	50	.096	.006
OLE150-xx-16Rx-P2 ¹	.16	.005	0.0006	50	1.01	.021
OLE150-xx-25Rx-P2	.25	.006	0.0006	50	1.01	.021
OLE150-xx-50Rx-P2	.50	.008	0.0006	50	1.01	.021
OLE350-xx-20Rx-P3 ¹	.20	.003	0.0006	50	9.51	.103
OLE350-xx-50Rx-P3	.50	.005	0.0006	50	9.51	.103
OLE350-xx-100Rx-P3	1.0	.007	0.0006	50	9.51	.103

Motor Specifications

Base Part Number	DC Motor Inertia Adder (P*, E*) (oz-in ²) ⁶	DC Maximum Current Draw ⁷	IntelliMotor® Motor Inertia Adder (S*) (oz-in ²) ⁵	AC Max Current Draw	IntelliMotor® Max Current Draw	AC Motor Inertia Adder (A*) (oz-in ²) ⁵
OLE75-xx-12Rx-P1 ¹	.44	1.7	--	--	--	--
OLE75-xx-50Rx-P1	.44	1.7	--	--	--	--
OLE75-xx-75Rx-P1	.44	1.7	--	--	--	--
OLE75-xx-12Rx-P2 ¹	2.51	4.24	1.42	1.41	5	1.64
OLE75-xx-50Rx-P2	2.51	4.24	1.42	1.41	5	1.64
OLE75-xx-75Rx-P2	2.51	4.24	1.42	1.41	5	1.64
OLE150-xx-16Rx-P2 ¹	2.51	4.24	2.52	1.41	5	2.63
OLE150-xx-25Rx-P2	2.51	4.24	2.52	1.41	5	2.63
OLE150-xx-50Rx-P2	2.51	4.24	2.52	1.41	5	2.63
OLE350-xx-20Rx-P3 ¹	15.03	5.6	--	4.10	--	17.5
OLE350-xx-50Rx-P3	15.03	5.6	--	4.10	--	17.5
OLE350-xx-100Rx-P3	15.03	5.6	--	4.10	--	17.5

Operating temperature range: 32° F to 122° F (0° C to 50° C). If the drive is remotely mounted and protected from heat, maximum operating will be 158° F (70° C).

Maximum stroke: 18 inches

RoHS compliant

¹Self-locking threads

²Inches per revolution of screw

³Amount of end play on screw

⁴Inertia for reverse parallel option

⁵Inertia is given per inch of stroke

⁶Inertia for motor by itself

⁷For drive sizing for actuators supplied without drives

Note: Performance ratings for all reverse parallel configurations with any motor combination are derated to 90% of the values shown in the previous graphs.

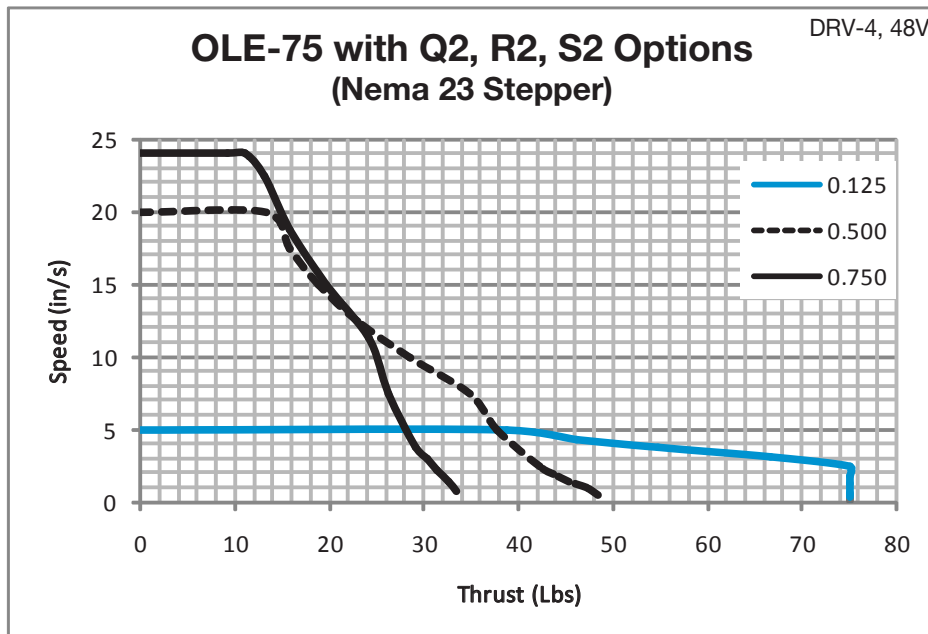
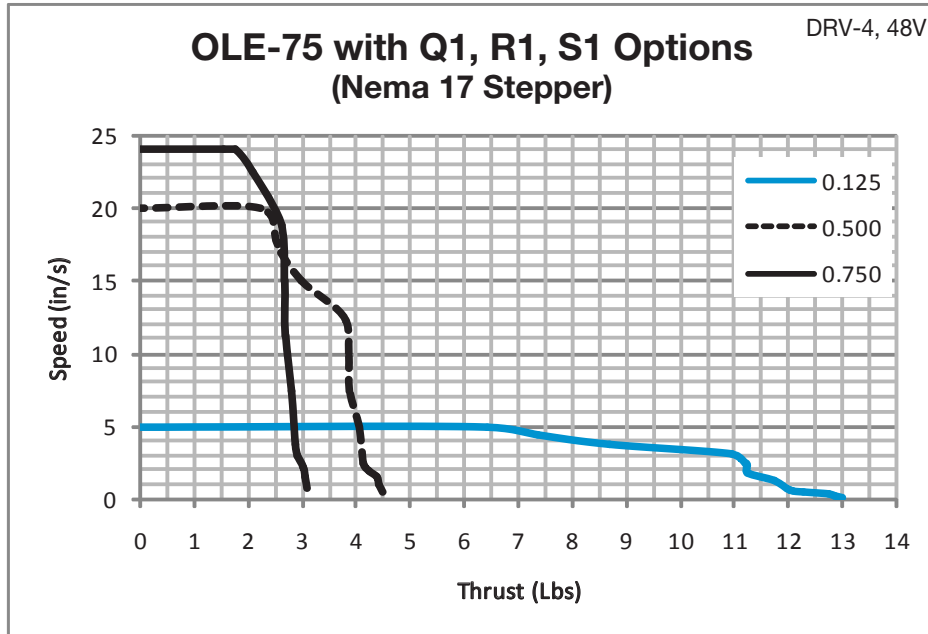
Caution! When specifying actuator stroke before ordering, always add at least 1/8 inch to the full stroke required in your application. The actuator should not reach mechanical end of stroke during extend or retract. Repeatedly reaching mechanical end of stroke, especially under load at operating speeds, may damage the actuator.

Bimba Original Line Electric[®] Actuators

Specifications and Sizing

Reverse Parallel Motor Option (R, S, Q & P, E, Y, Z)

Speed/Thrust Performance
Vertical Orientation*, Pounds and Inches/Second
Maximum Continuous



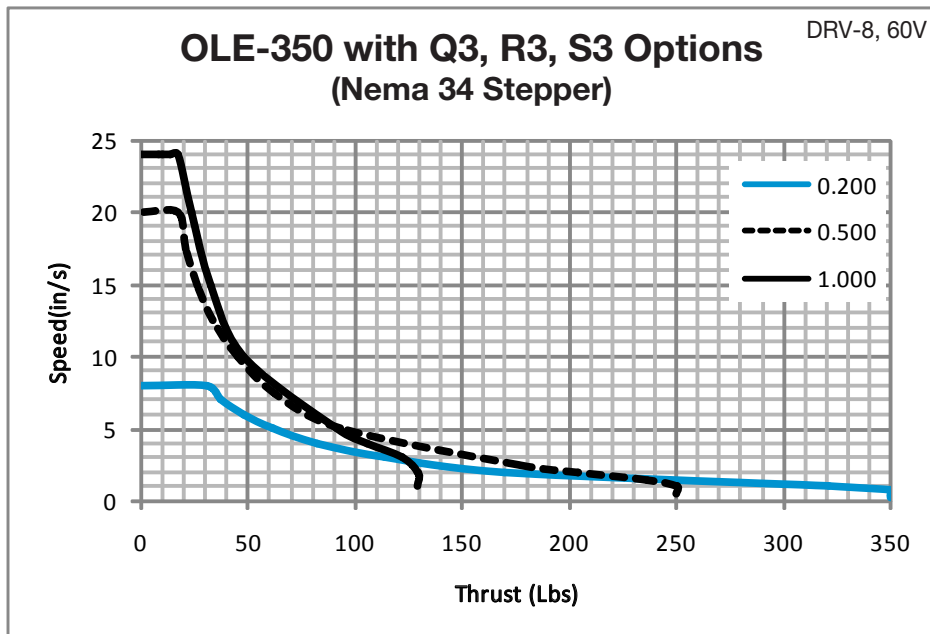
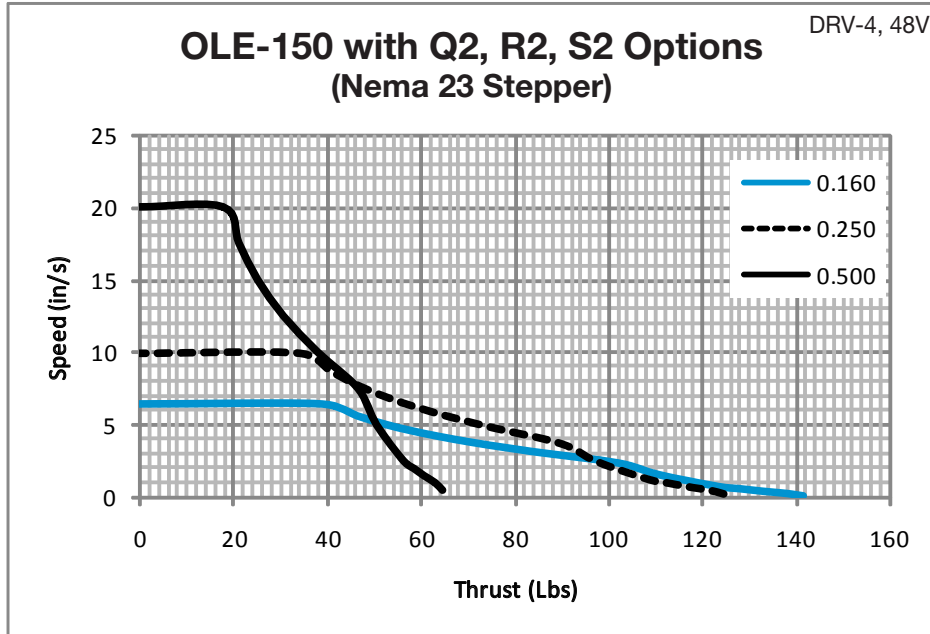
* Vertical orientation is worse-case. These values are thrust values and in a horizontal orientation will result in moving loads above the thrust values indicated in the graphs.

Bimba Original Line Electric[®] Actuators

Specifications and Sizing

Reverse Parallel Motor Option (R, S, Q & P, E, Y, Z)

Speed/Thrust Performance
Vertical Orientation*, Pounds and Inches/Second
Maximum Continuous



* Vertical orientation is worse-case. These values are thrust values and in a horizontal orientation will result in moving loads above the thrust values indicated in the graphs.

Bimba Original Line Electric® Actuators

Specifications and Sizing

Drive Option (Y and Z)

Bimba DRV drives are the simplest OEM control solution. Drives are shipped matched to and configured for the actuator purchased. No software or programming is required. Just provide DC power, attach the motor leads, and connect step and direction (or step clockwise and counterclockwise) inputs and it is ready to run. They are ideal for use with PLC stepper cards.

- Step and direction inputs
- Step clockwise and step counterclockwise inputs (jumper selectable)
- Separate output that signals a fault condition
- Input to disable power to the motor windings
- Accepts step inputs from 200 to 20,000 steps per revolution of the motor
- Micro step emulation on two settings
- Adjustable running current, 70 to 100%
- Adjustable idle current, 50% to 90% of running current
- Selectable load inertia settings
- Self-test feature to verify all connections are correct and actuator is operational
- Optically isolated I/O
- Digital filters prevent position error from electrical noise on command signals
- Electronic damping and anti-resonance



Drive	DCV Input	Bimba Option	Parallel Current Draw	Max. Parallel Current Draw	24V Power Supply Amps	48V Power Supply Amps	Maximum Amps per Phase	Recommended Power Supply
DRV-4	24-48	Y1,Y2,Z1,Z2	1.7	3.4	4	2	4.5	150 (W)
DRV-8	24-75	Y3,Z3	5.6	11.2	12	6	7.8	320 (W)

Microstepping provides smoothest rotation. However, a faster step pulse rate (frequency) is required for a given RPM as shown in the table below. The 200 μ and 400 μ setting use microstep emulation to provide smooth rotation at low speeds. Microstep emulation imparts a slight delay to the motion. If this is not acceptable, use the non-filtered 200 or 400 settings.

Pulses per Revolution: Relationship to Speed and Pulse Frequency			
Pulses per Revolution	Degrees per Step	Pulse Frequency Required for 300 RPM	Pulse Frequency for 3000 RPM
200	1.8	1,000 Hz	10,000 Hz
400	0.9	2,000 Hz	20,000 Hz
2000	0.18	10,000 Hz	100,000 Hz
5000	0.072	25,000 Hz	250,000 Hz
12800	0.028	64,000 Hz	640,000 Hz
20000	0.018	100,000 Hz	1,000,000 Hz

Bimba Original Line Electric[®] Actuators

Model DRV Specifications

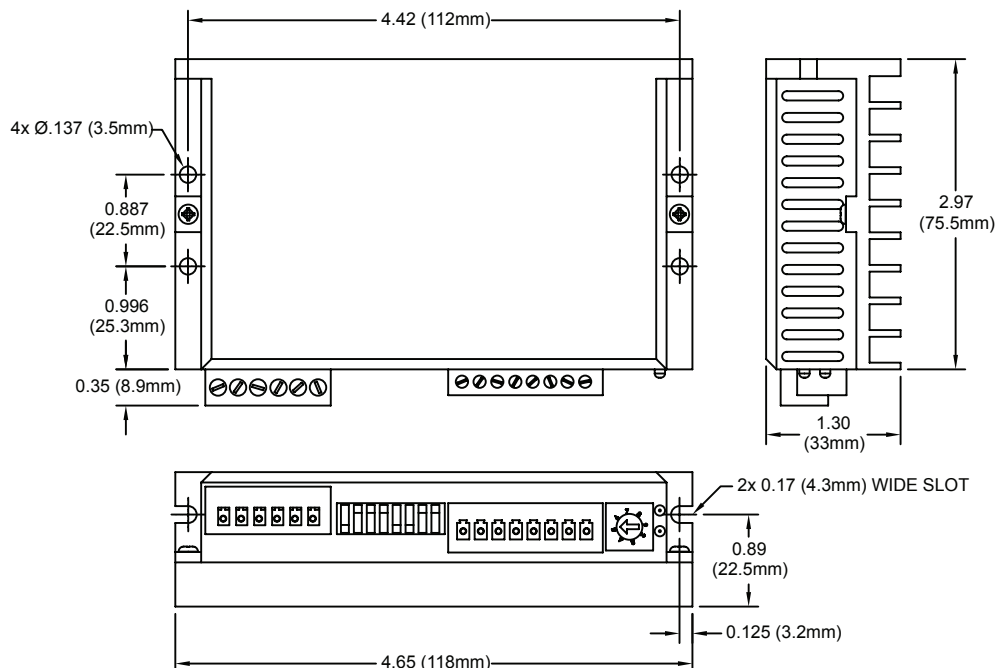
Amplifier	<p>Digital MOSFET. 20 kHz PWM. Suitable for driving two phase and four phase step motors with four, six or eight leads.</p> <p>Supply voltage:</p> <p>DRV-4 24-48 VDC Under voltage alarm: 20 VDC Over voltage shutdown: 60 VDC</p> <p>DRV-8 24-75 VDC Under voltage alarm: 20 VDC Over voltage shutdown: 85 VDC</p> <p>Motor current:</p> <p>0.5 to 7.8 amps/phase peak of sine (DRV8) 0.25 to 4.5 amps/phase peak of sine (DRV4)</p>
Digital Inputs	<p>Optically isolated, 5 - 24V logic. Sourcing, sinking or differential signals can be used.</p> <p>Minimum "on" voltage: 4 VDC. Maximum voltage: 30 VDC. Input current: 5 mA typ at 4V, 15 mA typ at 30V.</p>
Fault Output	<p>Photodarlington, 80 mA, 30 VDC max. Voltage drop: 1.2V max at 80 mA.</p>
Physical	<p>1.3 x 3.0 x 4.65 inches (33 x 75.5 x 118 mm) overall. 10.8 oz (305 g) including mating connectors.</p> <p>Ambient temperature range: 0° C to 50° C (32° F to 122° F).</p>

Mating Connectors

Motor/power supply: PCD P/N ELV06100 (Phoenix Contact 1757051), included with drive.

Signals: PCD P/N ELVH08100 (Phoenix Contact 1803633), included with drive.

Note: DRV drive does not accept encoder feedback.



Bimba Original Line Electric® Actuators

STP-10 Drive Specifications



Amplifier	Digital MOSFET, 20 kHz PWM. STP-10: 24 - 48 VDC, motor current: 0.5 to 10 amps/phase peak of sine
Recommended Power Supply	Bimba PWR-320A48 (48 VDC, 6.7A) Bimba PWR-150A24 (24 VDC, 6.3A)
Digital Inputs	Step & Direction: differential, optically isolated, 5V logic. 330 ohms internal resistance. 0.5 μ sec minimum pulse width. 2 μ sec minimum set up time for direction signal. All other digital inputs: optically isolated, 12 - 24V logic. 2200 ohms. Maximum current: 10 mA.
Analog Inputs	\pm 10VDC, 12 bit ADC, 100k ohms internal impedance.
Outputs	Photodarlington, 100 mA, 30 VDC max. Voltage drop: 1.2V max at 100 mA.
Physical	1.775 x 3 x 5 inches overall. 10 oz (280 g) Ambient temperature range: 0°C to 40°C.
Mating Connectors	Motor/power supply: PCD P/N ELV06100, included with drive. IN/OUT1: DB-25 male. Bimba P/N 5-747912-2. Shell Kit Bimba P/N 5-748678-3. Included. Optional encoder feedback: HD-15 male. Norcomp P/N 180-015-102-001. Shell Kit Bimba P/N 5-748678-1. Not included.

Mounting the Drive

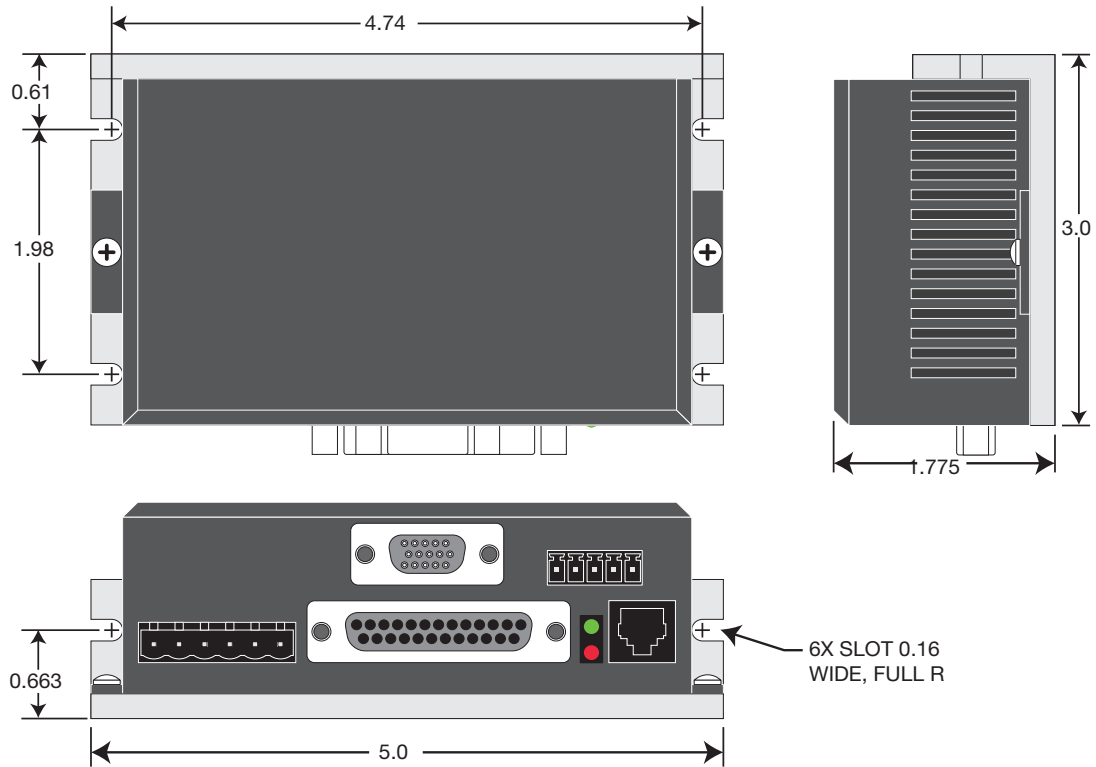
You can mount your drive on the wide or the narrow side of the chassis using #6 screws. If possible, the drive should be securely fastened to a smooth, flat metal surface that will help conduct heat away from the chassis. If this is not possible, then forced airflow from a fan may be required to prevent the drive from overheating.

- **Never use your drive in a space where there is no air flow or where other devices cause the surrounding air to be more than 40°C.**
- **Never put the drive where it can get wet or where metal or other electrically conductive particles can get on the circuitry.**
- **Always provide air flow around the drive. When mounting multiple STP drives near each other, maintain at least one half inch of space between drives.**

Bimba Original Line Electric[®] Actuators

STP-10 Drive Specifications

Mechanical Outline

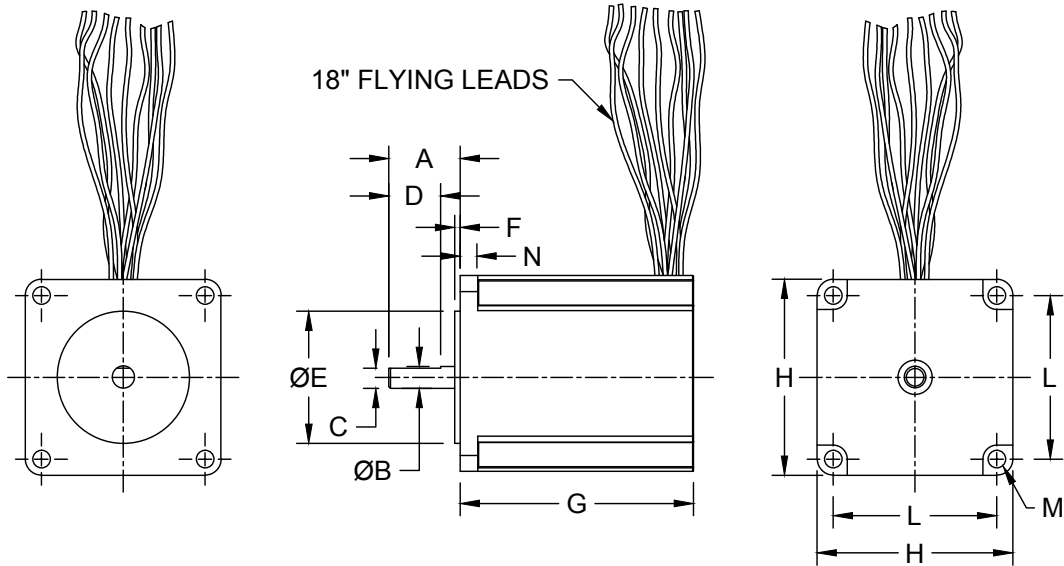


Bimba Original Line Electric® Actuators

DC Motor Dimensions

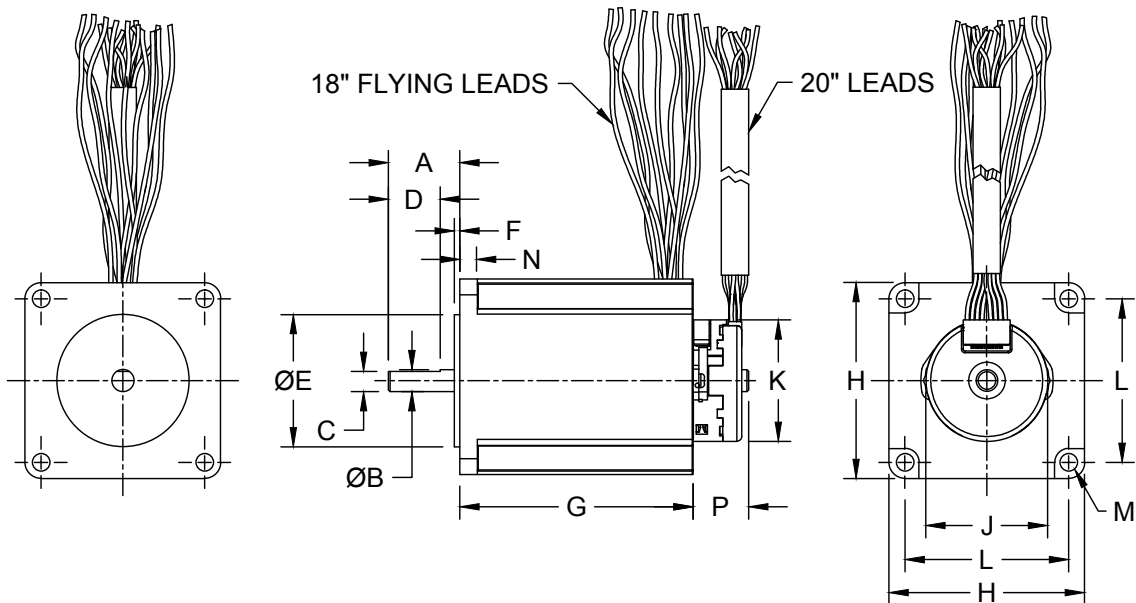
Motors (P2, P3, Y2, Y3)

Add motor dimensions to no motor actuator dimensions.



Motors (E2, E3, Z2, Z3)

Add motor dimensions to no motor actuator dimensions.



Model	Motor	Frame	A	B	C	D	E	F	G	H	J	K	L	M	N	P
75	P2/E2	23	0.79	.249/.250	0.23	0.59	1.498/1.502	0.06	2.13	2.22	1.38	1.38	1.86	Ø0.20	0.19	0.63
150	P2/E2	23	0.79	.249/.250	0.23	0.59	1.498/1.502	0.06	2.99	2.22	1.38	1.38	1.86	Ø0.20	0.19	0.63
350	P3/E3	34	1.46	.499/.500	0.45	0.98	2.874/2.876	0.08	4.94	3.34	1.38	1.38	2.74	Ø0.26	0.39	1.12

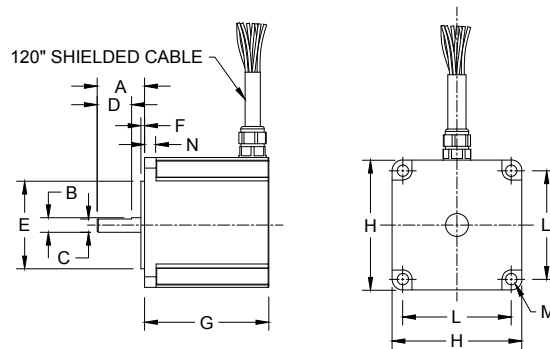
Bimba Original Line Electric® Actuators

DC Motor Dimensions

Motors (P6, P7, P8, P9, E6, E7, E8, E9)

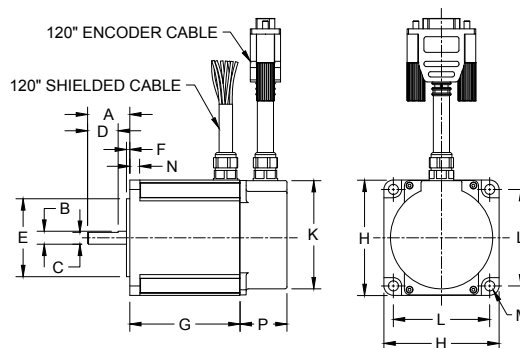
Motor Dimensions

OLE-75, -150; No Encoder



Code	DC Motor	A	B	C	D	E	F	G	H	L	M	N
P6	MTR-DC23T-598-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.13	2.22	1.86	0.20	0.19
P7	MTR-DC23W-598-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.19	2.22	1.86	0.20	0.19
P8	MTR-DC23T-601-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.13	2.22	1.86	0.20	0.19
P9	MTR-DC23W-601-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.19	2.22	1.86	0.20	0.19

OLE-75, -150; Encoder Version



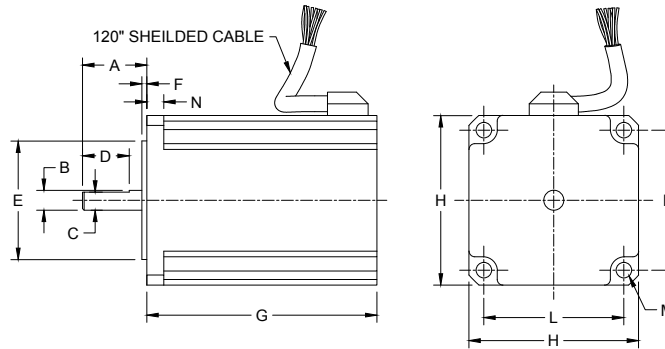
Code	DC Motor	A	B	C	D	E	F	G	H	K	L	M	N	P
E6	MTR-DC23T-598D-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.13	2.22	2.20	1.86	0.20	0.19	0.91
E7	MTR-DC23W-598D-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.19	2.22	2.20	1.86	0.20	0.19	0.91
E8	MTR-DC23T-601D-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.13	2.22	2.20	1.86	0.20	0.19	0.91
E9	MTR-DC23W-601D-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.19	2.22	2.20	1.86	0.20	0.19	0.91

Bimba Original Line Electric[®] Actuators

DC Motor Dimensions

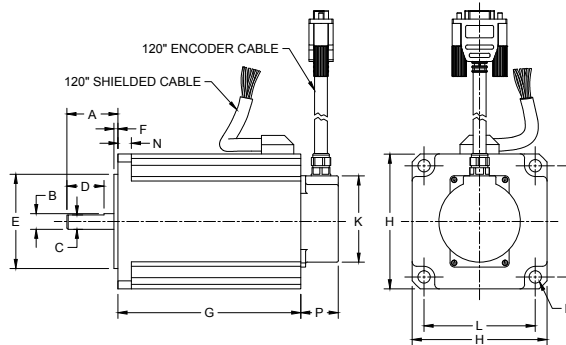
Motors (P10, P11, E10, E11)

OLE-350; No Encoder



Code	DC Motor	A	B	C	D	E	F
P10	MTR-DC34T-506-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08
P11	MTR-DC34W-506-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08

OLE-350; Encoder Version



Code	DC Motor	A	B	C	D	E	F
E10	MTR-DC34T-506-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08
E11	MTR-DC34W-506D-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08

Bimba Original Line Electric[®] Actuators

STP-AC5 Drive Specifications



Amplifier Type	Digital MOSFET, dual H-bridge, 4 quadrant
Current Control	4 state PWM at 16 KHz
Output Current	STP-AC5-120: 0.5-5.0 amps/phase (peak of sine) in 0.01 amp increments STP-AC5-220: 0.5-2.55 amps/phase (peak of sine) in 0.01 amp increments
Power Supply	STP-AC5-120: 94-135 VAC, 50/60 Hz STP-AC5-220: 94-245 VAC, 50/60 Hz
Protection	Over-voltage, under-voltage, over-temp, motor/wiring shorts (phase-to-phase, phase-to-ground), internal amplifier shorts
Motor Inductance	STP-AC5-120: 5-20 mH STP-AC5-220: 20-60 mH
Motor Regeneration	Built-in regeneration circuit, 10 watts max.
Idle Current Reduction	Reduction range of 0-90% of running current after delay selectable in milliseconds
Microstep Resolution	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev
Microstep Emulation	Performs high resolution stepping by synthesizing fine microsteps from coarse steps. Reduces jerk and extraneous system resonances. (Step & direction mode only).
Anti-Resonance (Electronic Damping)	Raises the system damping ratio to eliminate midrange instability and allow stable operation throughout the speed range and improves settling time.
Torque Ripple Smoothing	Allows for fine adjustment of phase current waveform harmonic content to reduce low-speed torque ripple in the range of 0.25 to 1.5 rps.
Communication Interface	Ethernet 100BASE-T, supports TCP and UDP
Encoder Interface	For connecting to motor-mounted encoder. Used to provide stall detection and stall prevention with static position maintenance. Differential line receivers, up to 2 MHz.
Inputs/Outputs: E models	X1, X2 inputs: Optically isolated, differential, 5-24 VDC logic (2.5V switching threshold), minimum pulse width = 250 nsec, maximum pulse frequency = 2 MHz, 2 usec minimum set up time for direction signal, maximum current = 10 mA. X3, X4 inputs: Optically isolated, differential, 5-24 VDC logic (2.5V switching threshold), 50 usec minimum pulse width, maximum current = 10 mA. Y1, Y2 outputs: Optical darlington, sinking or sourcing, 30 VDC max, 100 mA max, voltage drop = 1.2V max at 100 mA. Analog input: Single-ended. Range is software selectable 0-5, +/-5, 0-10, or +/-10 VDC. Software configurable offset, deadband, and filtering. Resolution is 12 bits (+/- 10 volt range), 11 bits (+/-5 or 0-10 volt range), or 10 bits (0-5 volt range). 100 kohms internal impedance.

Bimba Original Line Electric® Actuators

STP-AC5 Drive Specifications

Inputs/Outputs: EIP model only	EIP model has the same I/O as above plus the following: IN1, IN2, IN7, IN8 inputs: Optically isolated, differential, 5-24 VDC logic (2.5V switching threshold), 50 usec minimum pulse width, maximum current = 10 mA. IN3-IN6 inputs: Optically isolated, single-ended, shared common emitter, sinking or sourcing, 12-24 VDC logic, 2200 ohms, maximum current = 10 mA. OUT1-OUT3 outputs: Optical darlington, single-ended, shared common, sinking, 30 VDC max, 100 mA max, voltage drop = 1.2V max at 100 mA. OUT4 output: Optical darlington, sinking or sourcing, 30 VDC max, 100 mA max, voltage drop = 1.2V max at 100 mA.
Non-Volatile Storage	Drive configuration and IntelliQ program are stored in FLASH memory onboard the DSP.
Agency Approvals	“RoHS CE EN61800-3:2004, EN61800-5-1:2003 UL 508c”
Humidity	90% max, non-condensing
Ambient Temperature	0 to 40 °C (32 to 104 °F) with adequate ventilation
Dimensions	2.0 x 4.5 x 5.5 inches overall
Weight	22.4 oz (630 g)
Mating Connectors	Motor/power supply: PCD P/N ELV06100, included with drive. IN/OUT1: DB-15 male. P/N 5-747908-2. Shell Kit P/N 5-748678-2. Included. IN/OUT2: DB-25 male. P/N 5-747912-2. Shell Kit P/N 5-748678-3. Included. Optional encoder feedback: HD-15 male. Norcomp P/N 180-015-102-001. Shell Kit P/N 5-748678-1. Not included.
Mating Accessories	Screw terminal connectors with housings that mate directly to the D-Sub connectors on the drive: DB-25, Phoenix Contact P/N 2761622 DB-15, Phoenix Contact P/N 2761606 HD-15 (encoder), Phoenix Contact P/N 5604602 These connectors are not available from Bimba. You must purchase them from a Phoenix distributor .
Mating Cable for IN/OUT2 Connector with “Flying Leads”	Black Box P/N: BC00702 This cable is not available from Bimba. You must purchase it from Black Box . Useful for custom wired applications. This shielded cable has a DB-25 connector on each end. You can cut off the female end to create a 6 foot “DB-25 to flying lead cable”. It’ll be easier to wire if you get the cable color chart from Black Box’s web site .

Bimba Original Line Electric[®] Actuators

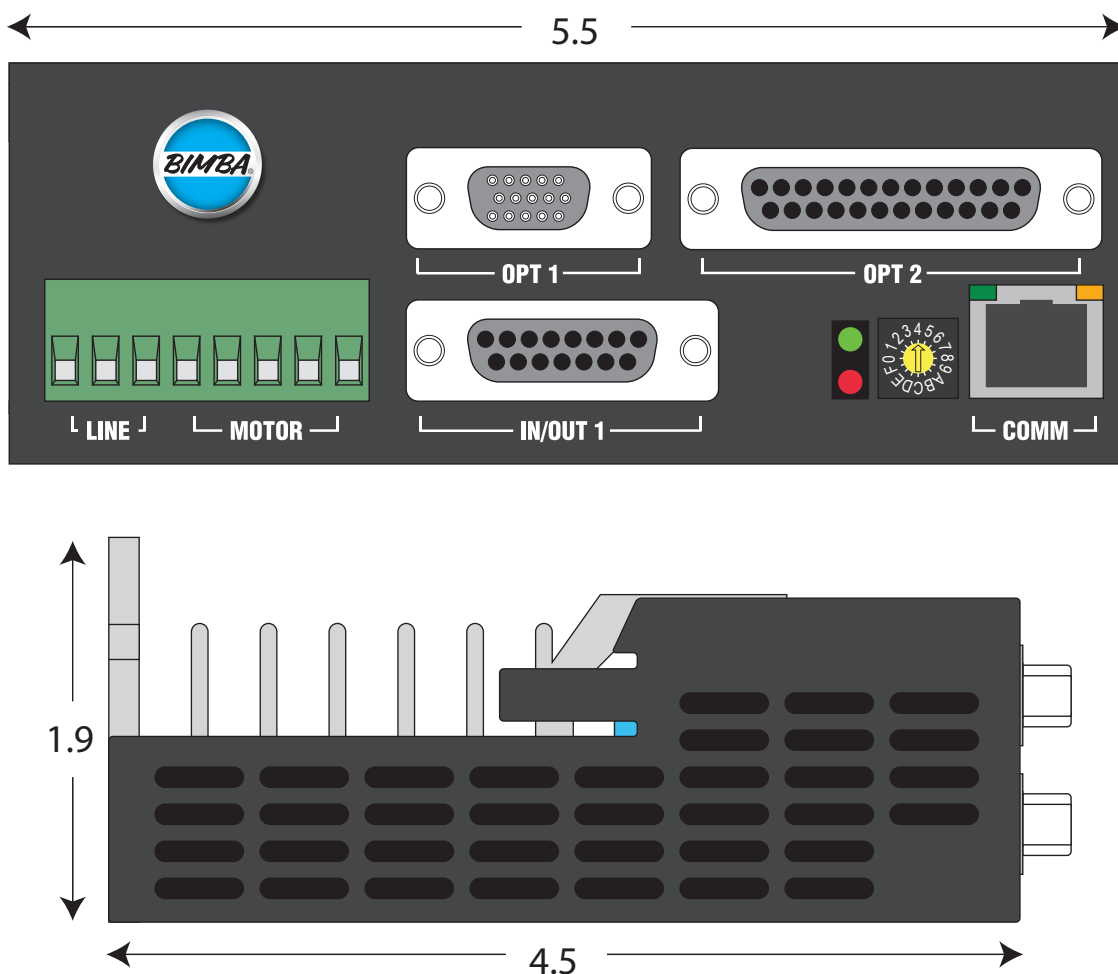
STP-AC5 Drive Specifications

Mounting the Drive

Use #6 screws to mount your drive. If possible, the drive should be securely fastened to a smooth, flat metal surface that will help conduct heat away from the chassis. If this is not possible, then forced airflow from a fan may be required to prevent the drive from overheating.

- *Never use your drive in a space where there is no air flow or where other devices cause the surrounding air to be more than 40°C.*
- *Never put the drive where it can get wet or where metal or other electrically conductive particles can get on the circuitry.*
- *Always provide air flow around the drive. When mounting multiple STP-AC5 drives near each other, maintain at least one half inch of space between drives.*

Mechanical Outline



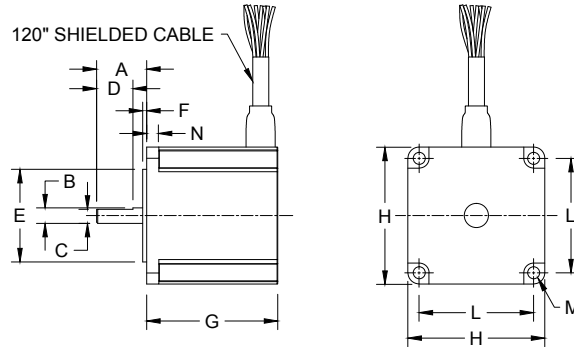
Bimba Original Line Electric[®] Actuators

AC Motor Dimensions

Motors (A1, A3, A5, A7, A9, A11)

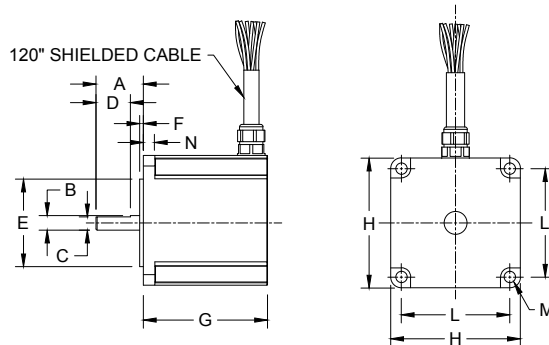
Motor Dimensions

OLE-75, -150; No Encoder



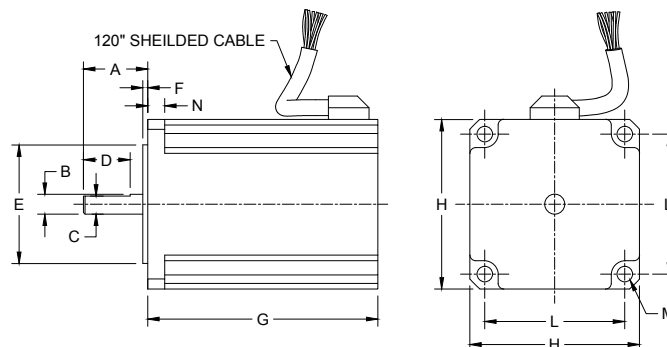
Code	AC Motor	A	B	C	D	E	F	G	H	L	M	N
A1	MTR-AC23T-753-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.17	2.22	1.86	0.20	0.19
A5	MTR-AC23T-754-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.99	2.22	1.86	0.20	0.19

OLE-75, -150, -350 Washdown Motor; No Encoder



Code	AC Motor	A	B	C	D	E	F	G	H	L	M	N
A3	MTR-AC23W-753-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.17	2.22	1.86	0.20	0.19
A7	MTR-AC23W-754-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.99	2.22	1.86	0.20	0.19
A11	MTR-AC34W-696-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08	4.53	3.38	2.74	0.26	0.39

OLE-350; No Encoder



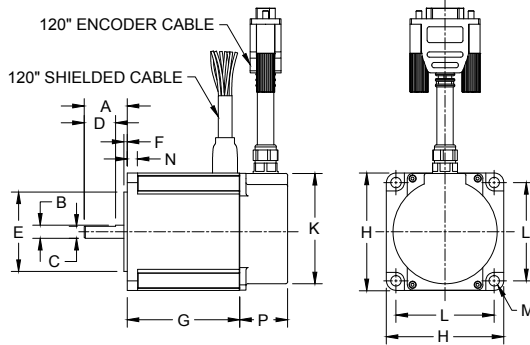
Code	AC Motor	A	B	C	D	E	F	G	H	L	M	N
A9	MTR-AC34T-696-S	1.46	0.50	N/A	1.00	2.873/2.877	0.08	4.53	3.38	2.74	0.26	0.39

Bimba Original Line Electric® Actuators

AC Motor Dimensions

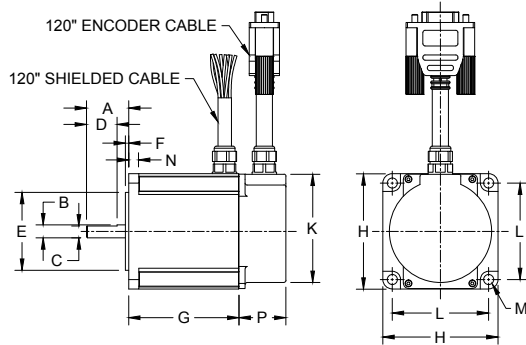
Motors (A2, A4, A6, A8, A10, A12)

OLE-75, -150; Encoder Version



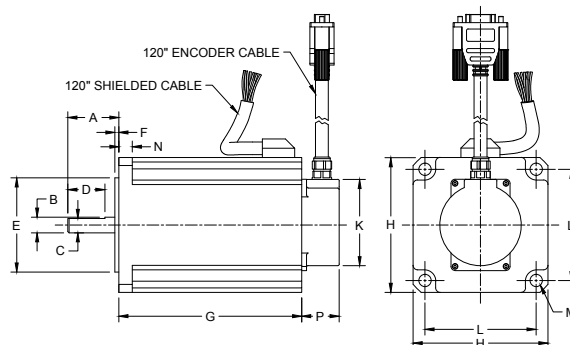
Code	AC Motor	A	B	C	D	E	F	G	H	K	L	M	N	P
A2	MTR-AC23T-753D-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.17	2.22	2.20	1.86	0.20	0.19	0.91
A6	MTR-AC23T-754D-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.99	2.22	2.20	1.86	0.20	0.19	0.91

OLE-75, -150; Washdown Motor; Encoder



Code	AC Motor	A	B	C	D	E	F	G	H	K	L	M	N	P
A4	MTR-AC23W-753D-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.17	2.22	2.20	1.86	0.20	0.19	0.91
A8	MTR-AC23W-754D-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.99	2.22	2.20	1.86	0.20	0.19	0.91
A12	MTR-AC34W-696D-S	1.46	0.50	N/A	1.00	2.873/2.877	0.08	4.53	3.38	2.20	2.74	0.26	0.39	0.91

OLE-350; Encoder Version



Code	AC Motor	A	B	C	D	E	F	G	H	K	L	M	N	P
A10	MTR-AC34T-696D-S	1.46	0.50	N/A	1.00	2.873/2.877	0.08	4.53	3.38	2.20	2.74	0.26	0.39	0.91

Bimba Original Line Electric® Actuators

IntelliMotor® ITM Specifications



POWER AMPLIFIER	
Amplifier Type	Dual H-Bridge, 4 Quadrant
Current Control	4 state PWM at 20 Khz
Output Torque	ITM-23Q-2: 125 oz-in with suitable power supply ITM-23Q-3: 210 oz-in with suitable power supply
Power Supply	External 12 - 48 VDC power supply required
Protection	Over-voltage (shutdown at 74VDC), under-voltage (shutdown at 11VDC), over-temp, motor/wiring shorts (phase-to-phase, phase-to-ground).
Idle Current Reduction	Reduction range of 0 – 90% of Running Current after delay selectable in milliseconds.
Ambient Temperature	0 to 40°C (32 - 104°F) (mounted to suitable heatsink)
Humidity	90% non-condensing.

CONTROLLER - ITM-23Q	
Microstep Resolution	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev.
Anti-Resonance (Electronic Damping)	Raises the system damping ratio to eliminate midrange instability and allow stable operation throughout the speed range and improves settling time.
Torque Ripple Smoothing	Allows for fine adjustment of phase current waveform harmonic content to reduce low-speed torque ripple in the range 0.25 to 1.5 rps
Auto Setup	Measures motor parameters and configures motor current control and anti-resonance gain settings
Self Test	Checks Internal & External Power supply voltages. Diagnoses open motor phases and motor resistance changes >40%.
Microstep Emulation	Performs high resolution stepping by synthesizing fine microsteps from coarse steps (Step & Direction Mode Only)
Command Signal Smoothing	Software configurable filtering reduces jerk and excitation of extraneous system resonances (Step & Direction Mode Only).

Bimba Original Line Electric® Actuators

IntelliMotor® ITM Specifications

CONTROLLER: ITM-23S Models	
Non-Volatile Storage	Configurations are saved in FLASH memory on-board the DSP.
Mode of Operation	Step & Direction, CW/CCW, A/B Quadrature, Oscillator, Joystick, SCL streaming commands.
Step and Direction Inputs	<p>STEP +/- Optically Isolated, 5-24 Volt. 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3MHz. Function: Step, CW Step, A Quadrature, Encoder Following, CW Limit , CW Jog, START/ STOP (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p> <p>DIR+/- Optically Isolated, 5-24 Volt. 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: DIR, CCW Step, B Quadrature, Encoder Following, CCW Limit , CCW Jog, Sensor, DIR (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p>
Enable Input	<p>EN+/- Optically Isolated, 5-24 Volt. 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: ENABLE, RESET , SPEED 1/SPEED 2 (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p>
Output	Optically Isolated, 30V, 40mA MAX. Function: Fault, Motion, Alarm, Tach and general purpose programmable
Analog Input Range	Ain Gnd Range 0 to 5VDC
Analog Input Resolution	12 bits
Communication Interface	RS-232 or RS-485
+ 5 Volt User Output	4.8V to 5.0V @ 50mA Maximum

Bimba Original Line Electric® Actuators

IntelliMotor® ITM Specifications

CONTROLLER - ITM-23Q	
Inputs	<p>STEP +/- Optically Isolated, 5-24 Volt. 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: Step, CW Step, A Quadrature, Encoder Following, CW Limit , CW Jog, START/STOP (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p> <p>DIR+/- Optically Isolated, 5-24 Volt. 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: DIR, CCW Step, B Quadrature, Encoder Following, CCW Limit , CCW Jog, Sensor, DIR (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p> <p>EN+/- Optically Isolated, 5-24 Volt. 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: ENABLE, RESET , SPEED 1 /SPEED 2 (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p>
Output	Optically Isolated, 30V, 40mA MAX. NPN/sinking. Function: Fault, Motion, Alarm, Tach or general purpose programmable
Analog Input	Ain Gnd Range 0 to 5VDC
Analog Input Resolution	12 bits
Communication Interface	ITM-23Q-*-2-* RS232 ITM-23Q-*-5-* RS485 ITM-23Q-*-EIP-* Ethernet/IP
+ 5 Volt User Output	4.8V to 5.0V @ 50ma Maximum

MOTOR DATA	
Mass	ITM-23Q-2 = 1lb 14oz ITM-23Q-3 = 2lb 10oz
Rotor Inertia	ITM-23Q-2 = 1.42 oz-in ² 3.68x10 ⁻³ oz-in-sec ² (260 g-cm ²) ITM-23Q-3 = 2.51 oz-in ² 6.5x10 ⁻³ oz-in-sec ² (460 g-cm ²)

Bimba Original Line Electric® Actuators

IntelliMotor® ITM-23Q-*-EIP-*-M12 Connector Diagram

Connection Diagrams - ITM-23Q-*-EIP-*-M12

The ITM-23Q-M12 controller/drive uses three M12 style connectors to make all electrical connections. Bimba recommends Bimba cabled connectors CBL-PWR-M12-□, CBL-IO-M12-□, CBL-EIP-M12-□ for connecting power, I/O and Ethernet/IP connections.

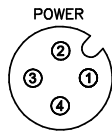
All information and guidance for using and connecting the various I/O and power connections are same for the M12 version of ITM-23Q as they are for the RS-232 and/or RS-485 versions found throughout the ITM-23Q Hardware Manual. Please heed those instructions.

Wire the IntelliMotor® to the 24 vdc or 48 vdc DC power source. Pin 1 (brown) and Pin 3 (blue) connect to “V+” and Pin 2 (white) and Pin 4 connect to “V-” of your power supply. **(Do not apply power until all connections to the drive have been made.)**

Note, the ITM-23Q accepts DC voltages from 24-48 Vdc.
(Recommended power supply: Bimba P/N PWR-150A24 or PWR-320A48)

POWER CONNECTION CHART		
PIN	SIGNAL	WIRE COLOR
1	VDC+	BRN
2	VDC-	WHT
3	VDC+	BLU
4	VDC-	BLK
METAL HOUSING		SHIELD

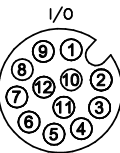
MATING CABLE
 CBL-PWR-M12-□



PHOENIX 1523450
 A-CODED
 MALE CONNECTOR

I/O CONNECTION CHART		
PIN	SIGNAL	WIRE COLOR
1	STEP+	BRN
2	GND	BLU
3	STEP-	WHT
4	EN-	GRN
5	DIR+	PNK
6	EN+	YEL
7	GND	BLK
8	DIR-	GRY
9	5V 50ma	RED
10	AIN	VIO
11	OUT+	GRY/PNK
12	OUT-	RED/BLU
METAL HOUSING		SHIELD

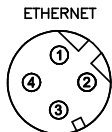
MATING CABLE
 CBL-IO-M12-□



PHOENIX 1556252
 A-CODED
 FEMALE CONNECTOR

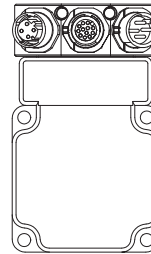
ETHERNET CONNECTION CHART			
PIN	SIGNAL	WIRE COLOR	RJ45
1	TX+	BRN	1
2	RX+	WHT	3
3	TX-	BLU	2
4	RX-	BLK	6
SHIELD		METAL HOUSING	

MATING CABLE
 CBL-EIP-M12-□



PHOENIX 1535202
 D-CODED
 FEMALE CONNECTOR

REAR VIEW
 ETHERNET I/O POWER



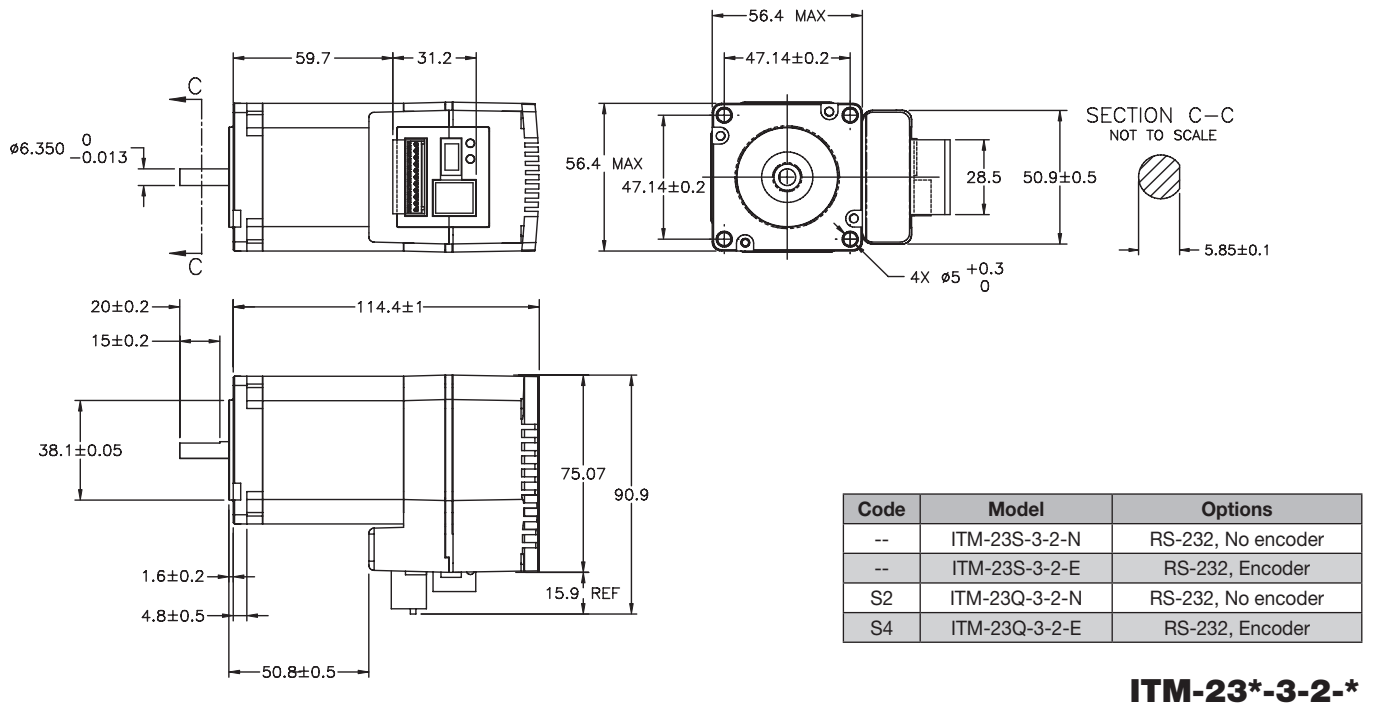
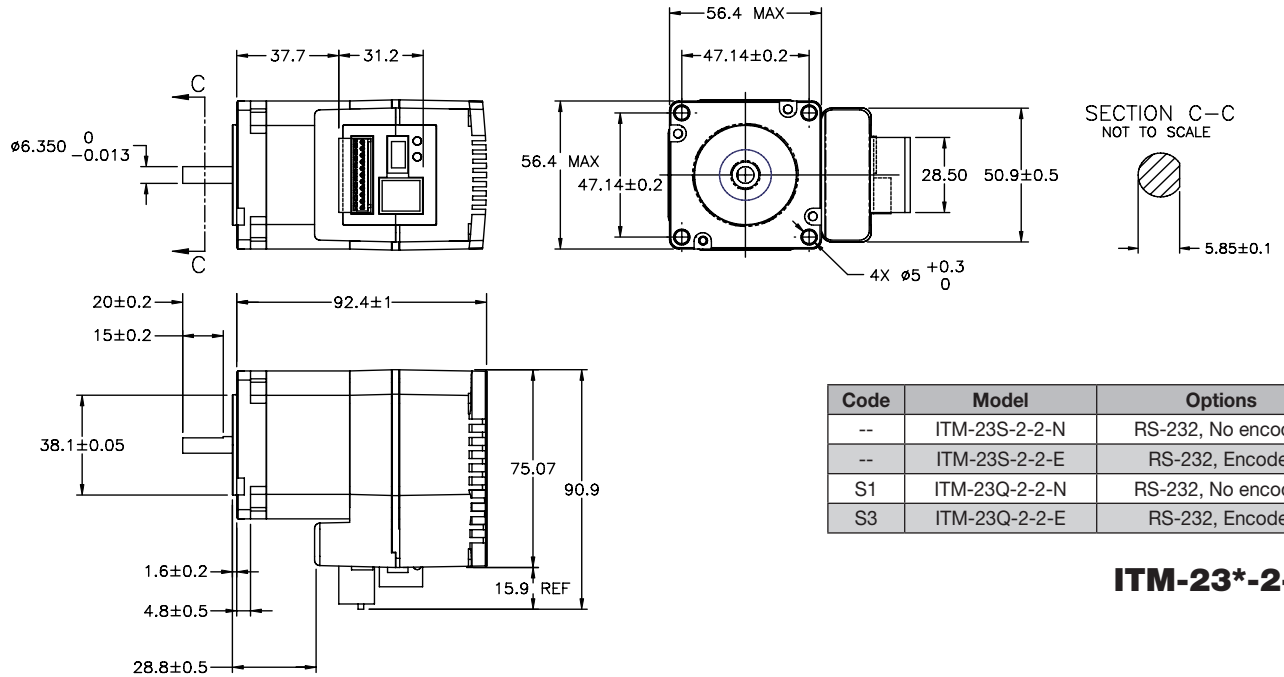
The M12 connector for each of the power, I/O and Ethernet/IP connections are as shown above when viewing the ITM-23Q-M12 from the rear. Similarly the individual conductor connections are identified by pin number, signal definition and wire color shown in the tables. Please follow this wiring information when installing and wiring your ITM-23Q-M12 motor/drive.

Bimba Original Line Electric[®] Actuators

IntelliMotor[®] ITM Dimensions

Reference Materials - ITM-23Q

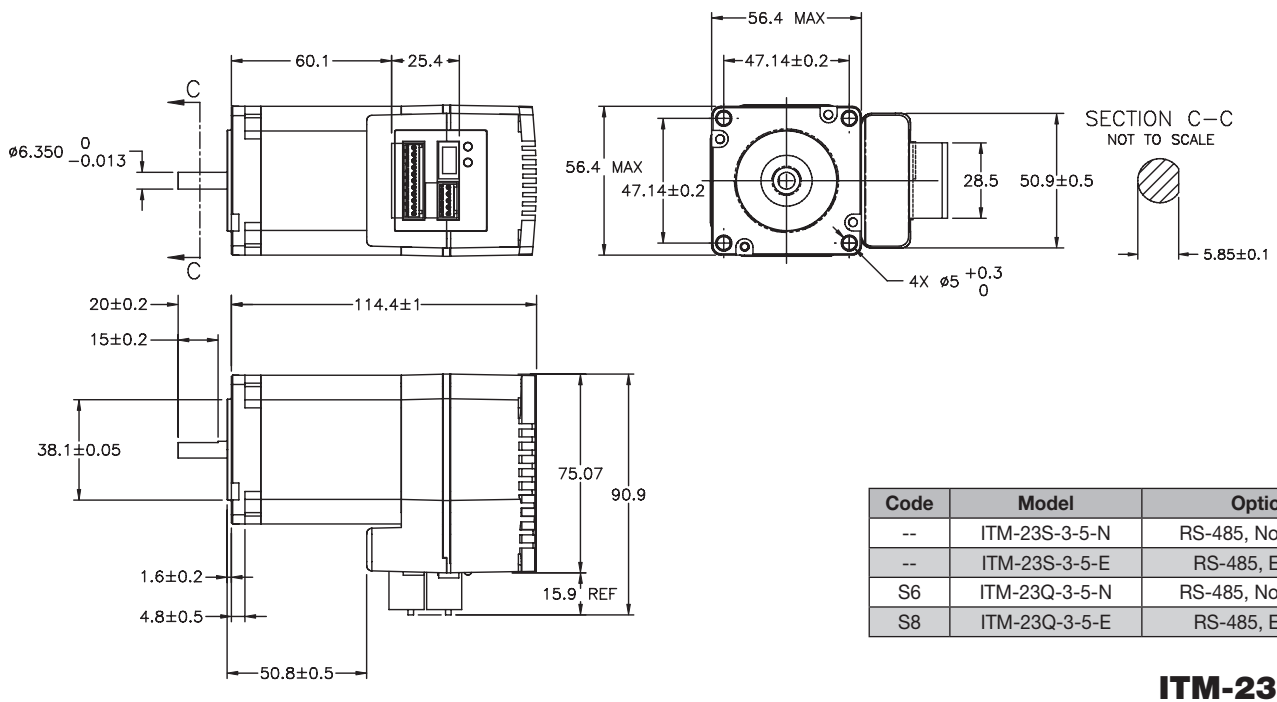
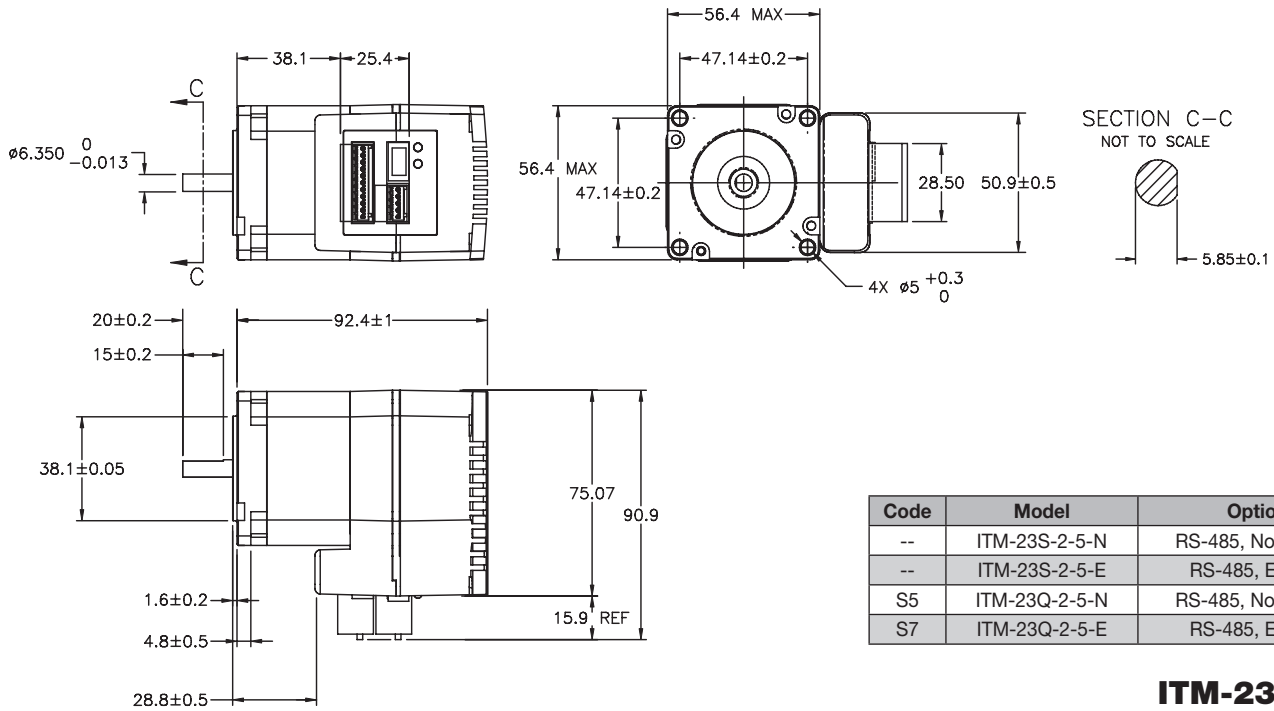
Mechanical Outlines



Bimba Original Line Electric® Actuators

IntelliMotor® ITM Dimensions

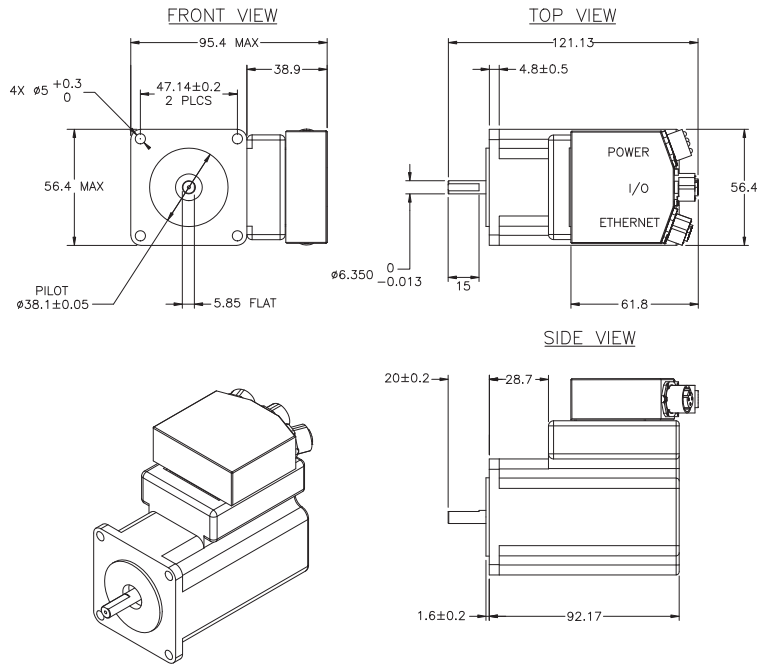
Mechanical Outlines



Bimba Original Line Electric® Actuators

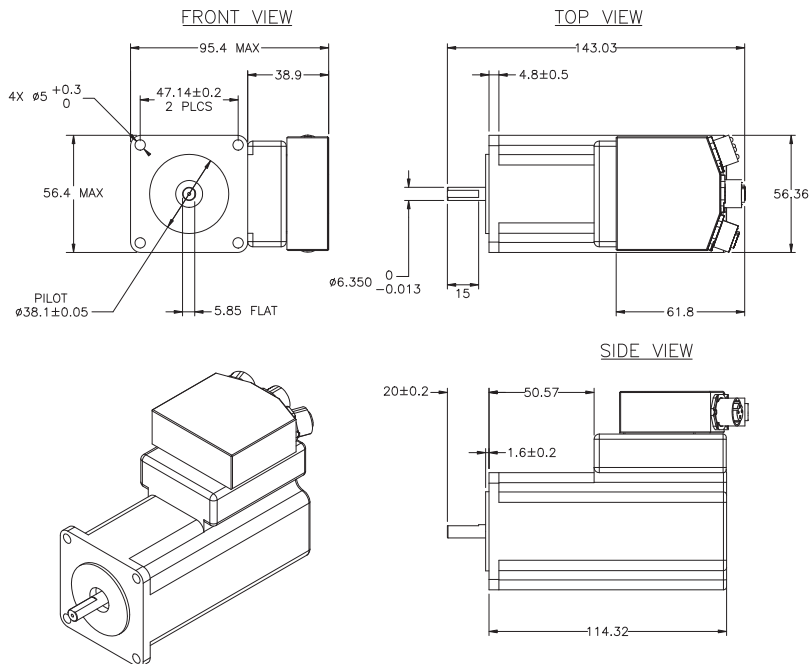
IntelliMotor® ITM Dimensions

Mechanical Outlines



Code	Model	Options
S11	ITM-23Q-2-EIP-N-M12	Ethernet/IP, No Encoder
S9	ITM-23Q-2-EIP-E-M12	Ethernet/IP, Encoder

ITM-23Q-2-EIP-*-M12



Code	Model	Options
S12	ITM-23Q-3-EIP-N-M12	Ethernet/IP, No Encoder
S10	ITM-23Q-3-EIP-E-M12	Ethernet/IP, Encoder

ITM-23Q-3-EIP-*-M12

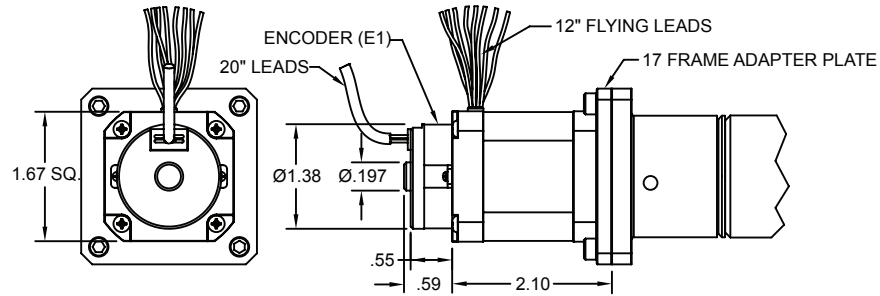
Bimba Original Line Electric[®] Actuators

Dimensions

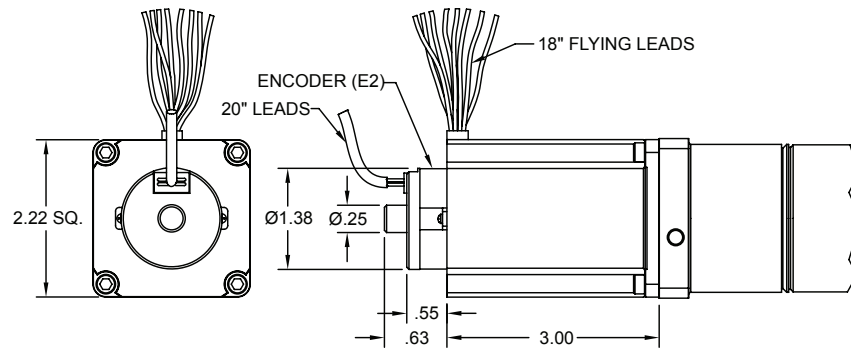
Motor and Encoder (E and Z Options)

Add motor and encoder dimensions below to no motor actuator dimensions.

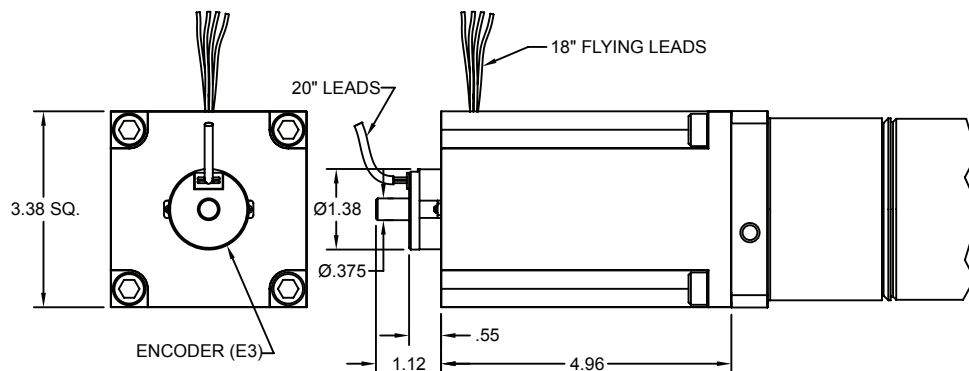
17 Frame Stepper Motor (E1, Z1)



23 Frame Stepper Motor (E2, Z2)



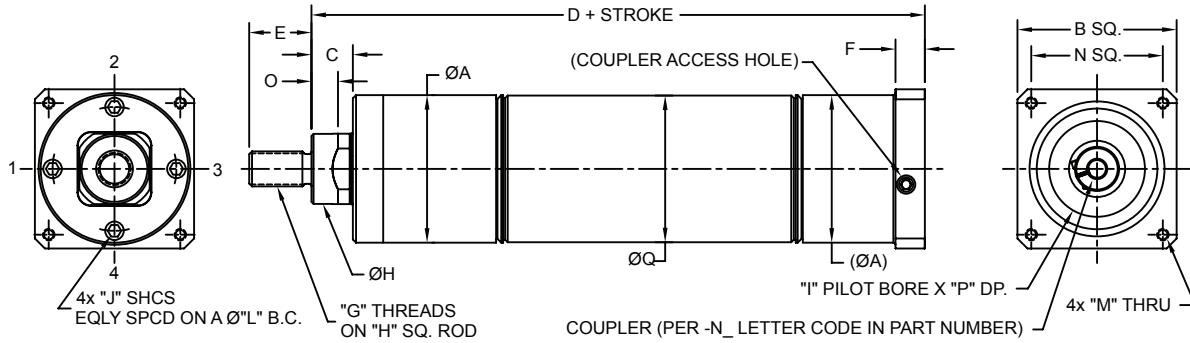
34 Frame Stepper Motor (E3, Z3)



Bimba Original Line Electric® Actuators

Dimensions

No Motor (N)

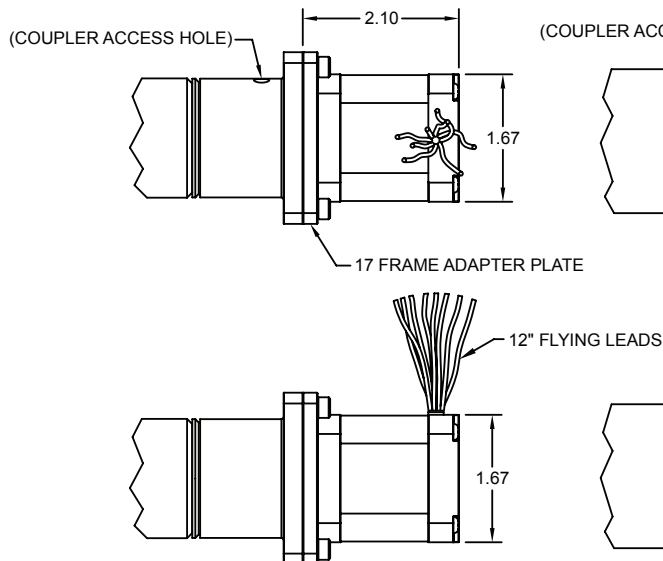


Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
75	1.56	2.25	0.58	5.75	1.00	0.25	7/16-20 UNF	0.74	1.502	#8-32 UNC	0.30	1.25	#8-32 UNC	1.86	0.21	0.13	1.56
150	2.09	2.25	0.59	7.84	0.88	0.42	1/2-20 UNF	1.00	1.502	#10-24 UNC	0.38	1.75	#8-32 UNC	1.86	0.30	0.13	2.07
350	3.13	3.39	0.87	10.11	1.13	0.55	3/4-16 UNF	1.50	2.878	1/4-20 UNC	0.50	2.50	#10-24 UNC	2.74	0.38	0.15	3.10

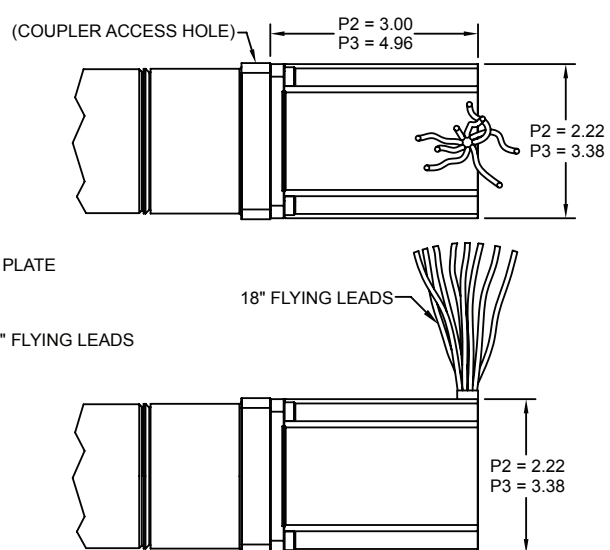
Motors (P1, P2, P3, and Y1, Y2, Y3 Options)

Add motor dimensions to no motor actuator dimensions.

17 Frame Stepper Motor (P1)



23 and 34 Frame Stepper Motor (P2/P3)



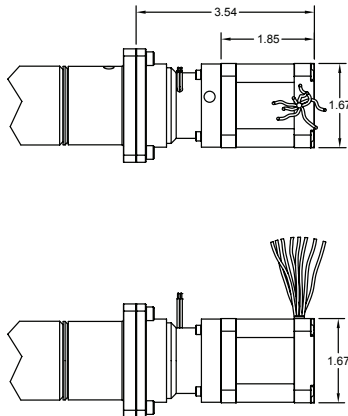
Bimba Original Line Electric® Actuators

Dimensions

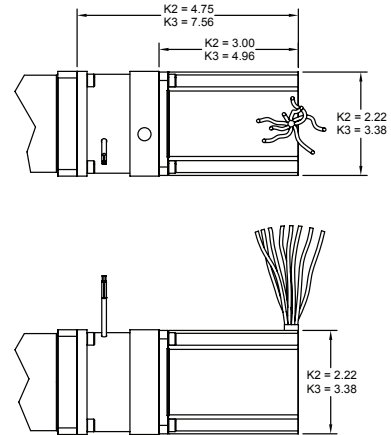
Brake (K Option)

Add motor and brake dimensions below to no motor actuator dimensions.

17 Frame Stepper and Brake (K1)

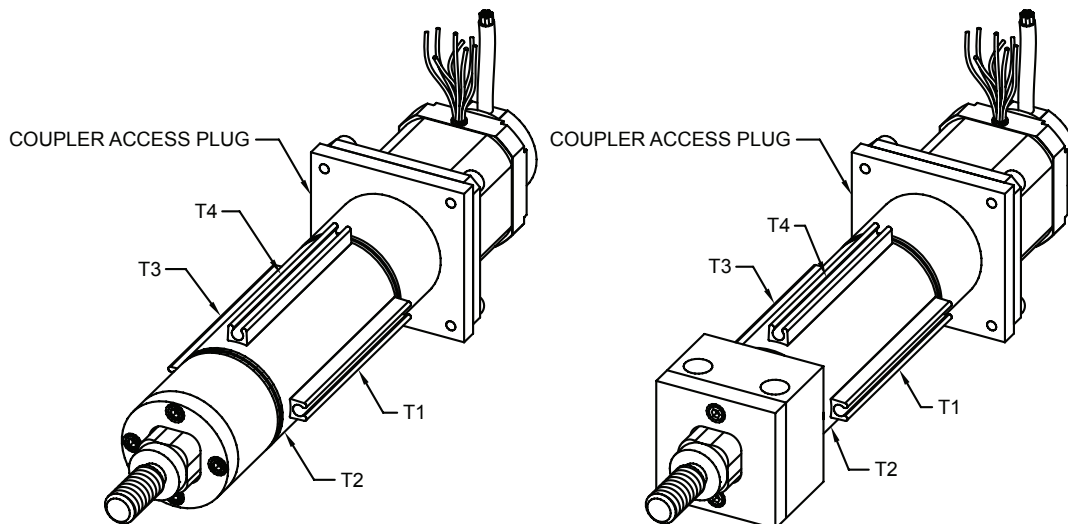


23 and 34 Frame Stepper and Brake (K2/K3)



Switch Track (T1, T2, T3, T4 Options)

Numbers indicate the position of the switch track relative to the plug that provides access to the coupler.



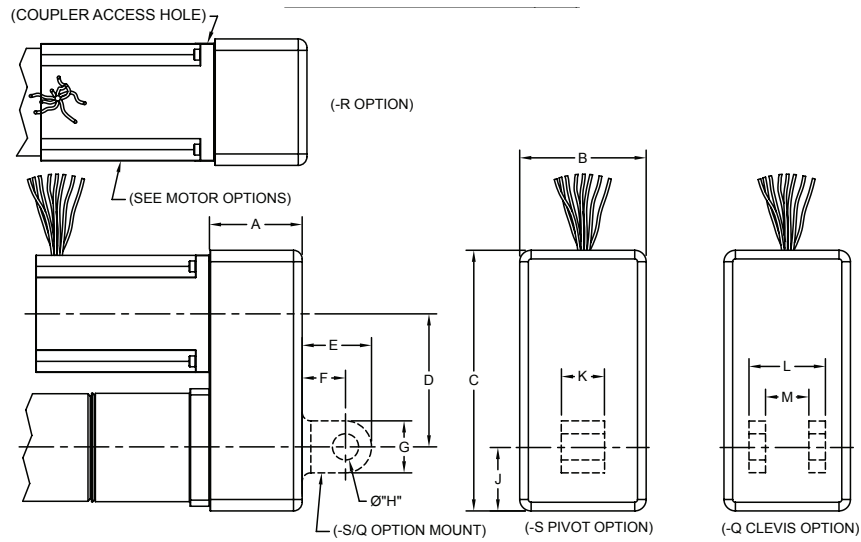
For use with Bimba MR, MS, MSC, or MSK track mount switches.

Bimba Original Line Electric[®] Actuators

Dimensions

Reverse Parallel Motor Mounting (R, S, and Q Options)

Add reverse parallel dimensions to no motor actuator dimensions.



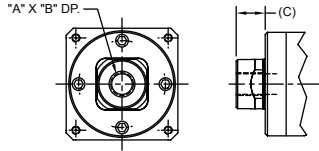
Motor	A	B	C	D	E	F	G	H	J	K	L	M
P1	1.50	2.61	4.60	1.99	1.25	0.75	1.00	0.50	1.31	0.75	1.75	0.76
P2	1.65	2.59	5.14	2.56	1.25	0.75	1.00	0.50	1.31	0.75	1.75	0.76
P3	2.65	3.65	7.52	3.86	2.00	1.25	1.50	0.75	1.85	1.25	2.50	1.26

Bimba Original Line Electric[®] Actuators

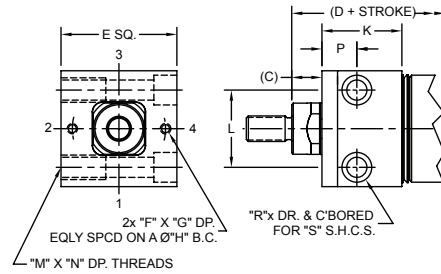
Dimensions

Mounting Options

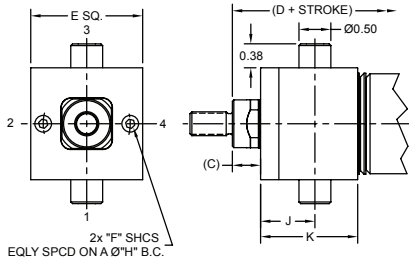
Female Rod End (FT)



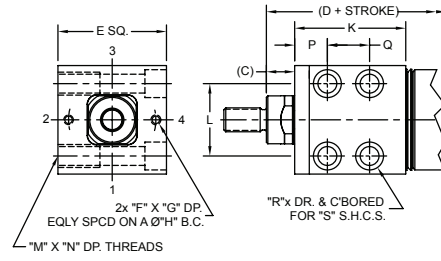
Block Front (BF) for 75, 150



Trunnion Mount (T)

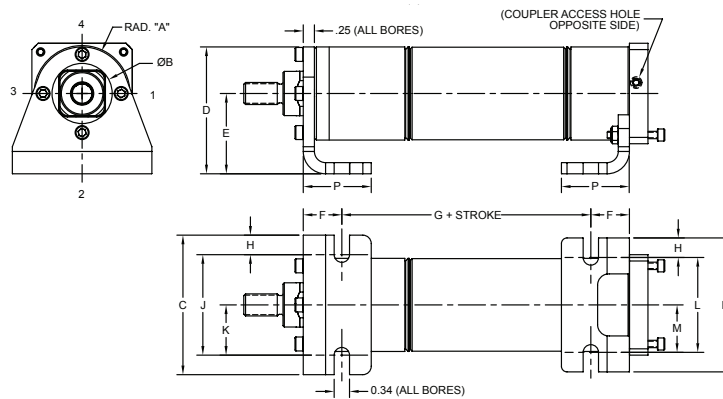


Block Front (BF) for 350



Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
75	7/16-20 UNF	.75	0.58	5.75	1.75	#8-32 UNC	.30	1.25	0.67	1.34	1.13	5/16-18 UNC	0.63	0.813	n/a	2	#10
150	1/2-20 UNF	.65	0.59	7.84	2.25	#10-24 UNC	.38	1.75	1.00	2.00	1.50	7/16-20 UNF	0.63	1.25	n/a	2	3/8
350	3/4-16 UNF	.85	0.87	10.11	3.50	1/4-20 UNC	.50	2.50	1.25	2.50	2.63	9/16-18 UNF	1.13	0.72	0.86	4	1/2

Foot Mount

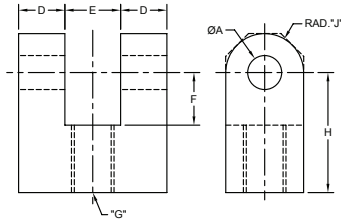


Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P
75	0.78	1.00	2.75	2.40	1.63	0.94	3.29*	0.31	2.13	1.06	2.13	1.06	2.75	1.52
150	1.04	1.35	3.13	2.84	1.80	0.86	5.37*	0.44	2.25	1.13	2.13	1.06	3.01	1.52
350	1.56	2.00	4.38	3.61	2.05	1.06	6.82*	0.44	3.50	1.75	3.50	1.75	4.38	1.68

Bimba Original Line Electric[®] Actuators

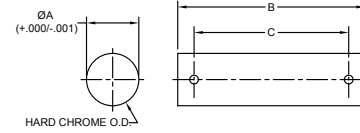
Accessories

Rod Clevis



Model	Part No.	A	D	E	F	G	H	J
75	RS-RC437	0.50	0.50	0.75	0.75	7/16-20	1.50	0.50
150	RS-RC500					1/2-20		
350	RS-RC750	0.75	0.63	1.25	1.25	3/4-16	2.38	0.75

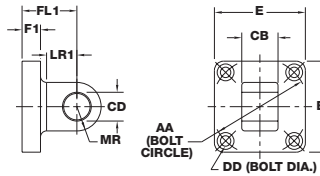
Clevis Pin



Model	Part No.	A	B	C
75, 150	RS-CP500	0.50	2.25	1.94
350	RS-CP750	0.75	3.00	2.72

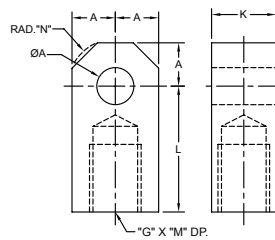
(Clevis pins sold with (2) S.S. cottter pins)

Mating Pivot Bracket



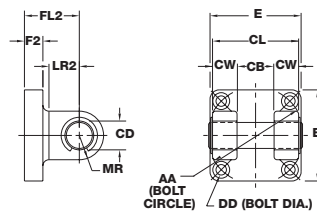
Model	Part No.	AA	CB	CD	DD	E	F1	FL1	LR1	MR
75, 150	APB-1	2.00	0.75	0.50	0.19	1.88	0.38	1.12	0.745	0.50
350	APB-2	2.83	1.25	0.75	0.312	2.75	0.50	1.88	1.10	0.69

Rod Eye



Model	Part No.	A	K	L	G	M	N
75	RS-RE437	0.50	0.75	1.50	7/16-20	0.75	0.63
150	RS-RE500				1/2-20		
350	RS-RE750	0.75	1.25	2.06	3/4-16	1.13	0.88

Mating Clevis Bracket*



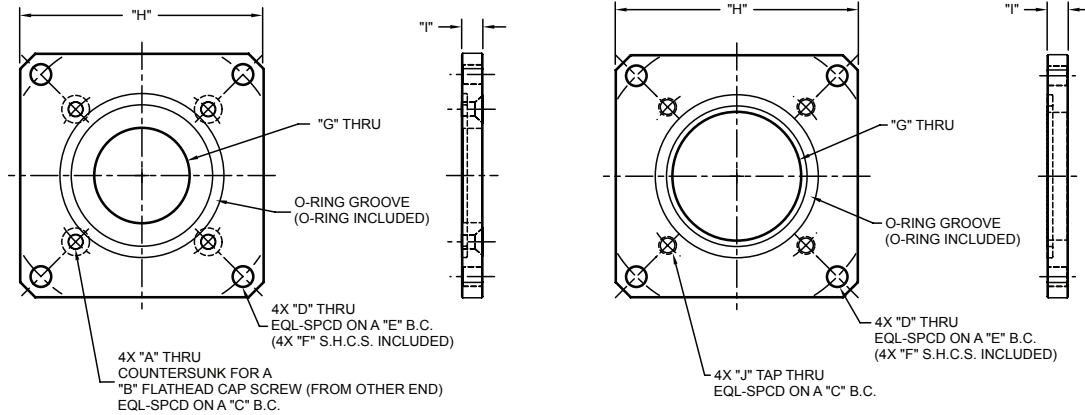
Model	Part No.	AA	CB	CD	CL	CW	DD	E	F2	FL2	LR2	MR
75, 150	ACB-1	2.00	0.75	0.50	1.75	0.50	0.19	1.88	0.38	1.12	0.745	0.50
350	ACB-2	2.83	1.25	0.75	2.50	0.62	0.312	2.75	0.38	1.25	0.85	0.69

*Includes case hardened pin

Bimba Original Line Electric® Actuators

Accessories

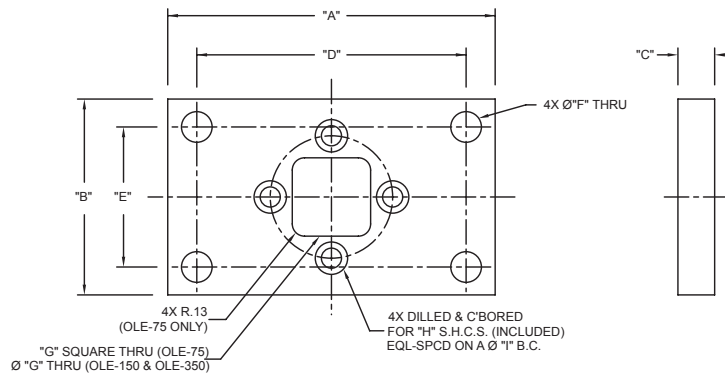
Adapter Plates



Part No.	A	B	C	D	E	F	G	H	I	J
D-109957	.13	#4	1.73	.18	2.63	#8	.87	2.25 SQ.	.20	N/A
D-109958	N/A	N/A	1.81	.18	2.63	#8	1.18	2.25 SQ.	.20	#8-32 UNC-2B
D-109959	N/A	N/A	2.76	.20	3.87	#10	1.97	3.39 SQ.	.30	#10-24 UNC-2B
D-109960	.17	#8	1.41	.18	2.63	#8	.99	2.25 SQ.	.20	N/A
D-109968	.18	#8	1.73	.18	2.63	#8	.87	2.25 SQ.	.20	N/A
D-111352	N/A	N/A	1.77	.18	2.63	#8	1.18	2.25 SQ.	.20	M3
D-111353	N/A	N/A	2.76	.20	3.87	#10	1.97	3.39 SQ.	.30	#8-32 UNC-2B

MF1 Mounting Plate

(Allows OLE to front mount to standard NFPA MF1 dimensions.)



Part Number	Model	A	B	C	D	E	F	G	H	I
MFEA-75	75	3.34	2.00	0.38	2.75	1.43	0.31	0.80	#8	1.25
MFEA-150	150	4.09	2.50	0.38	3.38	1.84	0.38	1.35	#10	1.75
MFEA-350	350	5.47	3.75	0.63	4.69	2.76	0.44	2.00	1/4	2.50

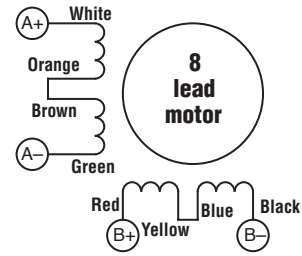
Bimba Original Line Electric® Actuators

Motor Schematics Wiring Diagrams and Specifications

(supplied with A1 through A12 options)

Step Table and Wiring Diagram Series Configuration				
Step	White	Green	Red	Black
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-

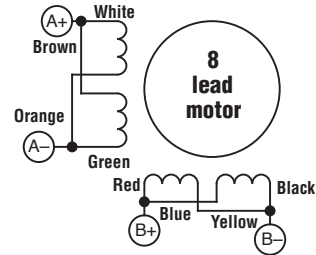
CW facing mounting end



Series Connection
220V Drive

Step Table and Wiring Diagram Parallel Configuration				
Step	White	Green	Red	Black
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-

CW facing mounting end



Parallel Connection
120V Drive

Connect the drive to the motor. If you are using one of the recommended Bimba motors, connect the motor in parallel to the STP-AC5*-1 and in series to the STP-AC5*-2, as shown above. Be sure to connect the motor case ground to the STP-AC5 ground terminal.Ⓢ

For a non-Bimba motor, please refer to your motor specs for wiring information.

Specifications for Bimba 8-lead 1.8 degree step motors are provided in the following table.

Frame	Model Number	Code	Winding Connection	Minimum Holding Torque (oz-in)	Potential (Volts)	Current (Amps)	Resistive (Ohms)	Inductance (mH)	Rotor Inertia (oz-in ² /g-cm ²)
23	MTR-AC23*-753*-S	A1 through A4	Parallel	167	2.9	1.41	3.6	12.8	1.64/300
			Series	167	5.6	0.71	14.4	51.2	1.64/300
23	MTR-AC23*-754*-S	A5 through A8	Parallel	255	2.1	1.41	4.5	15.2	2.62/480
			Series	255	4.2	0.71	18.0	60.8	2.62/480
34	MTR-AC34*-696*-S	A9 through A12	Parallel	1110	2.72	4.10	1.2	10.5	17.49/3200
			Series	1110	5.43	2.05	4.9	42	17.49/3200



To Motor Case

Bimba STP-AC5
Drive Connector

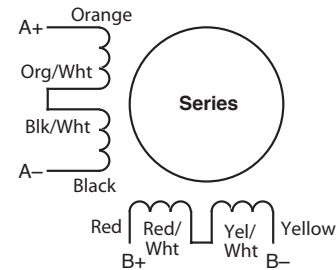
Bimba Original Line Electric® Actuators

Motor Schematics Wiring Diagrams and Specifications

(supplied with P, E, Y, and Z options)

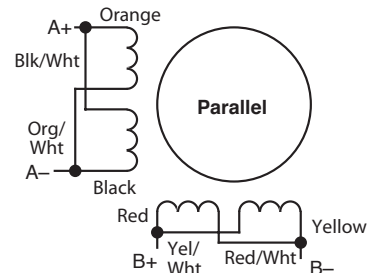
Step Table and Wiring Diagram Series Configuration				
Step	Orange	Black	Red	Yellow
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-

CW facing mounting end



Step Table and Wiring Diagram Parallel Configuration				
Step	Orange	Black	Red	Yellow
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-

CW facing mounting end



Specifications for Bimba 8-lead 1.8 degree step motors are provided in the following table.

Frame	Winding Connection	Minimum Holding Torque (oz-in)	Potential (Volts)	Current (Amps)	Resistive (Ohms)	Inductance (mH)	Rotor Inertia (oz-in ² /g-cm ²)
17	Parallel	62.3	2.9	1.70	1.7	2.5	0.44/82
	Series	62.3	5.6	0.85	6.6	10.0	0.44/82
	Unipolar	43.9	4.0	1.20	3.3	2.5	0.44/82
23	Parallel	269.1	2.1	4.24	0.5	1.7	2.51/460
	Series	269.1	4.2	2.12	2.0	6.8	2.51/460
	Unipolar	191.2	3.0	3.0	1.0	1.7	2.51/460
34	Parallel	1260	2.72	5.6	0.48	5.4	15.0/2750
	Series	1260	5.43	2.8	1.94	21.6	15.0/2750
	Unipolar	906	3.88	4.0	0.97	5.4	15.0/2750

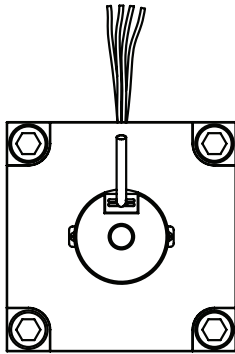
Bimba Original Line Electric® Actuators

Encoder Connections and Specifications

(supplied with E and Z options and A2, A4, A6, A8, A10, A12)

Encoder connections, All Steppers

Encoder connections for all Bimba steppers with encoders are identified below. The cable provided has flying leads which can be connected to your controller.



Pin No.	Wire Color	Function
1	Yellow	Channel A
2	Yellow/White	Channel A-
3	Blue	Channel B
4	Blue/White	Channel B-
5	Orange	Index
6	Orange/White	Index-
7	Green	Not used
8	Green/White	
9	Brown	
10	Brown/White	
11	White	
12	Gray/White	
13	Red	+5 V DC input power
14	Black	Encoder ground
15	Gray	Drain/shield

Encoder Specifications

If you have ordered your actuator with a motor/encoder combination, the encoder specifications are listed below.

Power Input	5 V DC, 160 mA
Resolution	2000 pulses per rev. or 8000 pulses, post quadrature
Output High	2.5 V DC Min.
Output Low	0.5 V DC Max.
Operating Frequency	500 kHz Max.
Operating Temperature	-30 to 115°C
Enclosure Rating	IP40

Brake Connections and Specifications

(supplied with K1, K2, and K3 options)

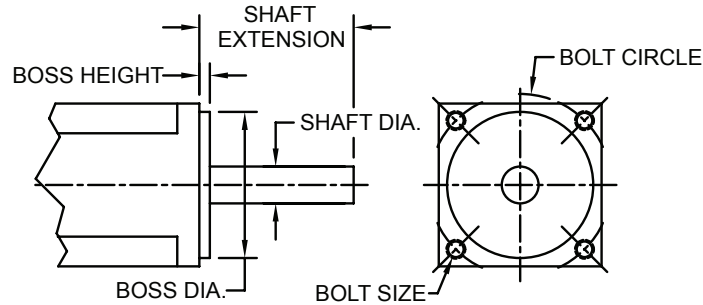
Bimba K_-option brakes are available only when ordered with compatible Bimba step motors as part of an OLE actuator model. They are not available if the no-motor actuator option is selected. With no power applied to the brake, motor shaft and actuator screw rotation are immobilized to the limit of the holding torque specification in the table below. To release the shaft and screw and allow rotation, the operating voltage (24 VDC) must be applied to the two brake leads. Drawings of the brakes are provided on page 46 of this catalog.

Brake Option	Nema Size	Holding Torque (oz-in.)	Inertia (oz-in ²)	Operating Voltage	Resistance (Ohms)	Current Draw (Amps)
K1	17	16	0.0384	24 VDC	117	0.220
K2	23	48	0.1392	24 VDC	132	0.182
K3	34	240	1.792	24 VDC	65.1	0.369

Bimba Original Line Electric® Actuators

Motor Compatibility Chart

For selecting the right actuator with other brands of motors



Step Motors

Ordering Information					Performance with 1/2 inch lead		Motor Performance	
Stepper Brand	Stepper Model	Motor Size	Actuator P/N	Adapter P/N	Thrust (lbs)	Speed (in/sec)	Max Torque (in-oz)	Max Speed (RPM)
Applied Motion	HT17-075	17	OLE-75x-(50)x-NA	D-109957	6	0.3	47	2400
Applied Motion	HT23-401	23	OLE-150x-(50)x-NC	None Required	135	0.5	210	2400
Applied Motion	HT34-478	34	OLE-350x-(50)x-NF	None Required	350	0.5	1284	2400
Lin	4118C-01	17	OLE-75x-(50)x-NA	D-109957	TBD	TBD	102.8	900
Lin	5718L-03P	23	OLE-150x-(50)x-NC	None Required	45	5	210	1200
Lin	8718L-08P	34	OLE-350x-(50)x-NF	None Required	185	2	1000	720
Sanyo Denki	103H5210-52	17	OLE-75x-(50)x-NA	D-109957	20	0.5	70	3000
Sanyo Denki	103H7128	23	OLE-150x-(50)x-NC	None Required	75	0.5	300	1583
Sanyo Denki	SM2863-522	34	OLE-350x-(50)x-NG	None Required	TBD	TBD	1100	2100

Motor Mounting Dimensions										
Stepper Brand	Stepper Model	Motor Size	Actuator P/N	Adapter P/N	Shaft Diameter (in)	Shaft Extension (in)	Boss Diameter (in)	Boss Height (in)	Bolt Size	Bolt Circle
Applied Motion	HT17-075	17	OLE-75x-(50)x-NA	D-109957	5mm (.1968)	0.787	.865/.866	0.079	#4-40 Tapped	1.22 Sq
Applied Motion	HT23-401	23	OLE-150x-(50)x-NC	None Required	0.25	0.787	1.499/1.501	0.063	0.205	1.86 Sq
Applied Motion	HT34-478	34	OLE-350x-(50)x-NF	None Required	0.50	1.46	2.874/2.876	0.08	0.26	2.74 Sq
Lin	4118C-01	17	OLE-75x-(50)x-NA	D-109957	5mm (.1968)	0.94	0.864/0.866	0.08	M3 Tapped	1.22 Sq
Lin	5718	23	OLE-150x-(50)x-NC	None Required	0.25	0.81	1.499/1.501	0.06	0.2	1.86 Sq
Lin	8718	34	OLE-350x-(50)x-NF	None Required	0.50	1.46	2.874/2.876	0.08	0.26	2.74 Sq
Sanyo Denki	103H5210-52	17	OLE-75x-(50)x-NA	D-109957	5mm (.1968)	0.94	0.868/0.870	0.06	M3 Tapped	1.22 Sq
Sanyo Denki	103H7128	23	OLE-150x-(50)x-NC	None Required	0.25	0.81	1.499/1.501	0.06	.18/.2	1.86 Sq
Sanyo Denki	SM2863-522	34	OLE-350x-(50)x-NG	None Required	14mm (.551)	1.18	2.874/2.876	0.06	0.22	2.74 Sq

Bimba Original Line Electric® Actuators

Motor Compatibility Chart

For selecting the right actuator with other brands of motors

Servo Motors

Ordering Information				Performance with 1/2 inch lead		Motor Performance	
Servo Brand	Servo Model	Actuator P/N	Adapter P/N	Thrust (lbs)	Speed (in/sec)	Max Torque (in-oz)	Max Speed (RPM)
Allen Bradley	TLY-A130T-AA	OLE-150x-(50)x-ND	D-109958	29	50	46	6000
Allen Bradley	TLY-A130T-AN	OLE-75x-(50)x-NC	D-109968	29	50	46	6000
Allen Bradley	TLY-A230T-AN	OLE-350x-(50)x-NE	D-109959	117	50	184	6000
Allen Bradley	TLY-A2540P	Special ¹	Special			416	5000
Lin	BL17B40	OLE-75x-(50)x-NA	D-109960	26	33	41	4000
Lin	BL24B46-01	OLE-150x-(50)x-NC	None Required	54	33	87.8	4000
Lin	BL25B19-01	OLE-150x-(50)x-NC	Special	21	33	34	4000
Mitsubishi	HC-KFS13	OLE-150x-(50)x-ND	D-109958	28	25	45	3000
Mitsubishi	HC-KFS43	OLE-350x-(50)x-NG	D-109959	114	25	184	3000
Mitsubishi	HC-KFS73	Special ¹	Special	221	25	340	3000
Mitsubishi	HC-MFS053(B)	OLE-150x-(50)x-ND	D-109958	27	25	22.6	3000
Mitsubishi	HC-MFS43(B)	OLE-350x-(50)x-NG	D-109959	155	25	184	3000
Mitsubishi	HC-MFS73	Special ¹	Special			339	3000
Panasonic	MSMD5A_1_	OLE-150x-(50)x-ND	D-111352	14	42	68	5000
Panasonic	MSMD01_1_	OLE-150x-(50)x-ND	D-111352	28	42	136	5000
Panasonic	MSMD021_1_	OLE-350x-(50)x-NH	D-111353	52	42	272	5000
Panasonic	MSMD041_1_	OLE-350x-(50)x-NG	D-111353	105	42	552	5000
Sanyo Denki	Q1AA06040D	OLE-350x-(50)x-NG	D-109959	111	25	180	3000
Sanyo Denki	Q2EA04010D	OLE-150x-(50)x-NB	D-109958	28	25	45	3000
Sanyo Denki	Q2AA08100D	Special ¹	Special	293	25	450	3000
Yaskawa	SGMJV-01A	OLE-150x-(50)x-ND	D-109958	28	25	67.5	3000
Yaskawa	SGMJV-04A	OLE-350x-(50)x-NG	D-109959	111	25	247	3000

Motor Mounting Dimensions									
Servo Brand	Servo Model	Actuator P/N	Adapter P/N	Shaft Diameter (in)	Shaft Extension (in)	Boss Diameter (in)	Boss Height (in)	Bolt Size	Bolt Circle
Allen Bradley	TLY-A130T-AA	OLE-150x-(50)x-ND	D-109958	8mm	0.98	1.180/1.181	0.1	0.177	1.811
Allen Bradley	TLY-A130T-AN	OLE-75x-(50)x-NC	D-109968	0.25	1.063	0.866	0.08	8-32 Tapped	1.725
Allen Bradley	TLY-A230T-AN	OLE-350x-(50)x-NE	D-109959	12mm	1.181	1.967/1.968	0.12	0.26	2.76
Allen Bradley	TLY-A2540P	Special ¹	Special	16mm(.630)	1.378	2.754/2.755	0.12	0.26	3.94
Lin	BL17B40	OLE-75x-(50)x-NA	D-109960	5mm	0.83	0.988	0.12	M4	1.00 Sq
Lin	BL24B46-01	OLE-150x-(50)x-NC	None Required	0.25	0.81	1.499/1.500	0.06	0.2	1.86 Sq
Lin	BL25B19-01	OLE-150x-(50)x-NC	Special	0.25	0.81	2.124/2.128	0.06	0.2	1.95 Sq
Mitsubishi	HC-KFS13	OLE-150x-(50)x-ND	D-109958	8mm	0.98	1.180/1.181	0.098	0.177	1.811
Mitsubishi	HC-KFS43	OLE-350x-(50)x-NG	D-109959	14mm(.551)	1.181	1.967/1.968	0.118	0.228	2.755
Mitsubishi	HC-KFS73	Special ¹	Special	19mm(.748)	1.575	2.755/2.756	0.118	0.26	3.543
Mitsubishi	HC-MFS053(B)	OLE-150x-(50)x-ND	D-109958	8mm	0.94	1.181	0.098	0.177	1.811
Mitsubishi	HC-MFS43(B)	OLE-350x-(50)x-NG	D-109959	14mm(.551)	1.181	1.967/1.968	0.118	0.228	2.756
Mitsubishi	HC-MFS73	Special ¹	Special	19mm(.748)	1.574	2.754/2.755	0.118	0.26	3.543
Panasonic	MSMD5A_1_	OLE-150x-(50)x-ND	D-111352	8 mm	30 mm	1.811	0.12	0.13	1.181
Panasonic	MSMD01_1_	OLE-150x-(50)x-ND	D-111352	8 mm	30 mm	1.811	0.12	0.13	1.181
Panasonic	MSMD021_1_	OLE-350x-(50)x-NH	D-111353	11 mm	50 mm	1.969	0.12	0.18	2.756
Panasonic	MSMD041_1_	OLE-350x-(50)x-NG	D-111353	14 mm	50 mm	1.969	0.12	0.18	2.756
Sanyo Denki	Q1AA06040D	OLE-350x-(50)x-NG	D-109959	14mm(.551)	1.181	1.967/1.968	0.118	0.216	2.755
Sanyo Denki	Q2EA04010D	OLE-150x-(50)x-NB	D-109958	6mm	0.98	1.180/1.181	0.098	0.177	1.811
Sanyo Denki	Q2AA08100D	Special ¹	Special	16mm(.630)	1.378	3.148/3.150	0.118	0.26	3.937
Yaskawa	SGMJV-01A	OLE-150x-(50)x-ND	D-109958	8mm	0.984	1.181	0.098	0.169	1.811
Yaskawa	SGMJV-04A	OLE-350x-(50)x-NG	D-109959	14mm(.551)	1.181	1.967/1.968	0.118	0.216	2.756

Bimba Original Line Electric[®] Actuators

Notes

Warranty

All Bimba Original Line Electric® products, including but not limited to cataloged standard products are warranted against defects in workmanship or material under normal conditions and usage for a period of one year from the date of shipment. Bimba product that has been repaired at the Bimba factory carries a warranty against defects in workmanship and materials for a period of one year from the date of shipments.

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This warranty does not extend to any product which has been subject to misuse, tampering, accident, abuse, neglect, normal wear and tear, abnormal use, improper machining, improper installation, improper storage, improper maintenance or other application in a way that does not meet the normal use of the product or is at variance from documented specifications, drawings and test procedures.

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