Product Overview

SCREW DRIVEN LINEAR ACTUATORS

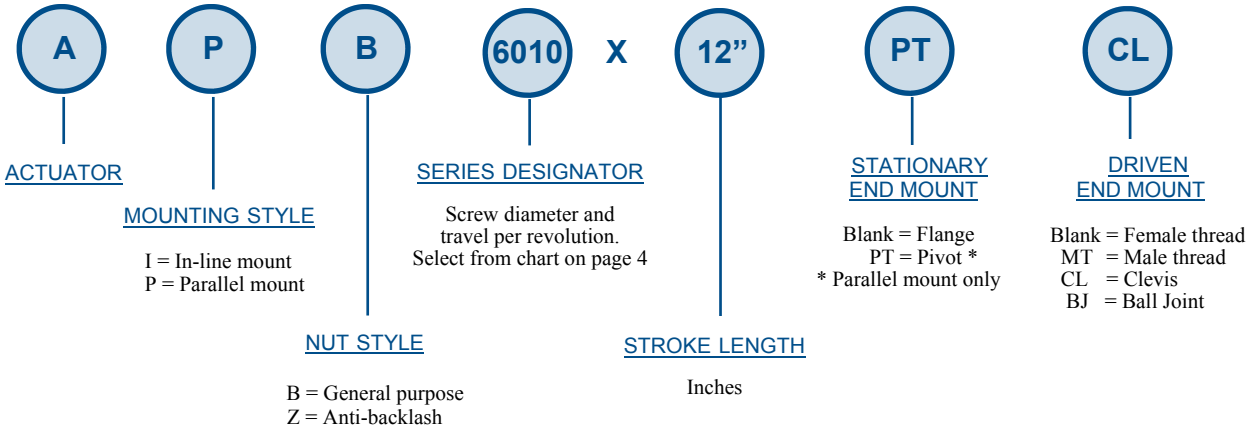
Kerk Motion Products now offers a cost effective screw driven actuator series that can accurately position loads with a maintenance free, long life, packaged solution approach. The A Series is motor driven with a variety of choices of leadscrew diameter, lead, travel distance, and mounting options. Kerk® actuators come equipped with standard mounting provisions for a NEMA 17 motor (Axx6000) or a NEMA 23 motor (Axx8000). Optional provisions allow mounting of some face-mount DC motors. Motors may be in-line mounted or parallel mounted to minimize package length.

The A Series utilizes Kerk's proven leadscrew technology with Kerkite® high performance polymers running on Kerkote® lubricated surfaces. The result is a maintenance free, low coefficient of friction, long life product. The drive nut design inside an A actuator offers the user a choice of Kerk's B series non-compensating nut or our wear compensating anti-backlash (no axial play), anti-torsion (no rotational play) nut. Mounting slots are provided for optional induction limit switches which are triggered by an internal magnet.

The A Series actuator is an ideal replacement for pneumatic cylinders where programmable positioning enhances performance and allows for adjustability to accommodate size and other changes. Ideal applications exist in packaging, transportation, robotics, and custom machinery. For OEM applications, the A Series can be customized and modified with a wide variety of enhancements to make it a more perfect solution for your application needs. Contact the factory with your specific application requirements.

Part Number Designator

HOW TO ORDER



Examples

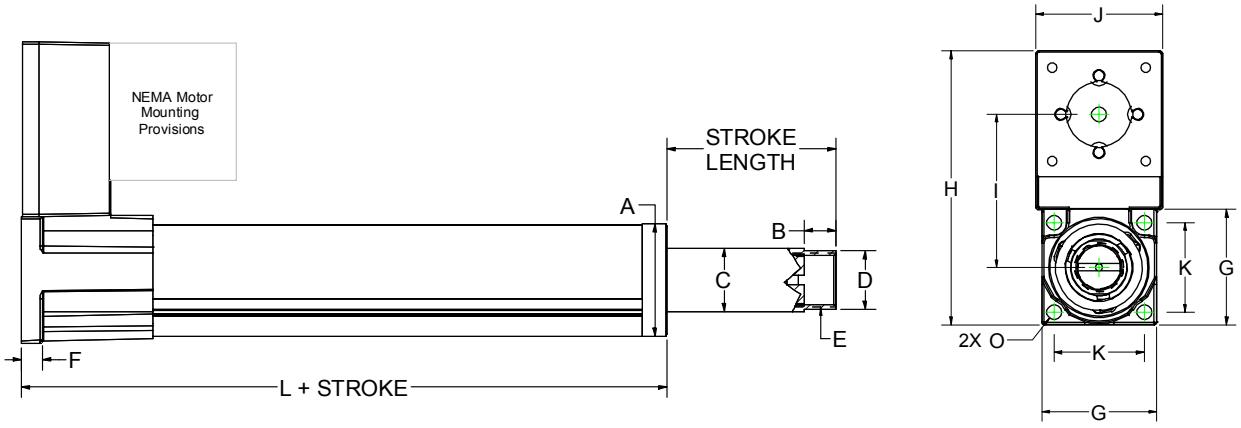
AIZ6010 x 6 MT = 3/8" diameter x .100" lead, anti-backlash nut, in-line motor mount provision, flange stationary mount and male thread end mount, and 6 inches of stroke.

Other modifications can be specified and would include an "M" in the part number (i.e. - APBM6010 x 12") **:**

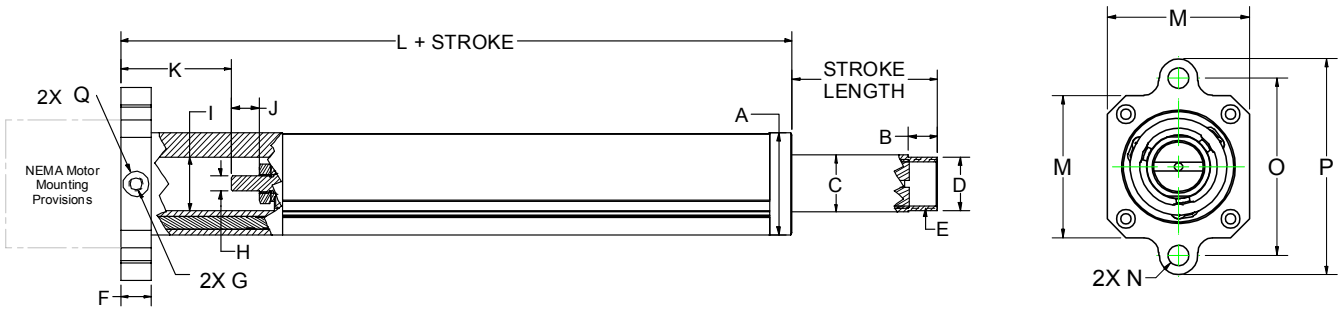
- Special extrusion, screw, motor, or mounting configurations (drawing required)
- Higher accuracy lead screw, custom limit switch or feedback devices

Dimensional Data

Series	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Motor
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	Thread	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	NEMA* Size
APx6000	1.33 (33.66)	.38 (9.65)	.74 (18.85)	.69 (17.53)	5/8-18 UNF 2B .375 DP	.25 (6.35)	1.50 (38.10)	3.57 (90.68)	2.00 (50.80)	1.65 (41.98)	1.17 (29.72)	3.66 (92.86)	3.58 (90.93)	1.65 (41.91)	.210 (5.33)	17
APx8000	1.78 (45.09)	.38 (9.65)	.99 (25.20)	.87 (22.05)	3/4-16 UNF 2B .500 DP	.38 (9.53)	2.00 (50.80)	4.60 (116.84)	2.49 (63.25)	2.22 (56.39)	1.60 (40.64)	4.80 (121.87)	4.60 (116.84)	2.22 (56.39)	.275 (6.99)	23



Series	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	Motor
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	Thread	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	NEMA* Size
AIx6000	1.33 (33.66)	.38 (9.65)	.74 (18.85)	1.33 (33.78)	.69 (17.53)	.40 (10.16)	10-32 UNF 2B .250 DP	.197 (5.00)	.71 (18.03)	.36 (9.09)	1.45 (36.70)	4.74 (120.37)	1.66 (42.06)	.250 (6.35)	2.06 (52.40)	2.52 (63.93)	.350 (8.89) .030 DP	17
AIx8000	1.78 (45.09)	.38 (9.65)	.99 (25.20)	1.79 (45.47)	.87 (22.05)	.40 (10.16)	1/4-28 UNF 2B .310 DP	.250 (6.35)	1.00 (25.40)	.40 (10.08)	1.45 (36.70)	5.82 (147.85)	2.23 (56.59)	.323 (8.20)	2.75 (69.75)	3.29 (83.67)	.360 (9.14) .030 DP	23



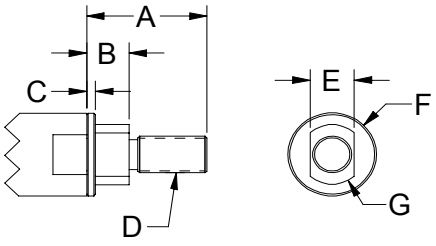
Dimensional Data– Mounting Options

Series	A	B	C	D	E	F	G
	in. (mm)	in. (mm)	in. (mm)	Thread	in. (mm)	in. (mm)	in. (mm)
Axx6000	1.225 (31.12)	.475 (12.07)	.100 (2.54)	5/16-24 UNF 1A	.438 (11.13)	.742 (18.85)	.500 (12.70)
Axx8000	1.350 (34.29)	.475 (12.07)	.100 (2.54)	7/16-20 UNF 1A	.495 (12.57)	.992 (25.20)	.719 (18.26)

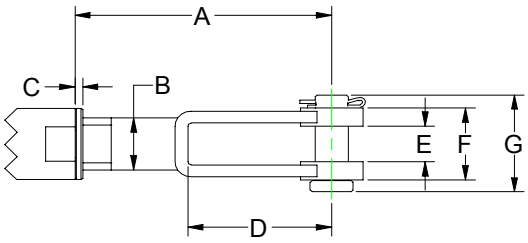
A	B	C	D	E	F	G
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
2.725 (69.22)	.500 (12.70)	.100 (2.54)	1.438 (36.53)	.344 (8.74)	.750 (19.05)	1.031 (26.19)
3.350 (85.09)	.719 (18.26)	.100 (2.54)	1.875 (47.63)	.500 (12.70)	1.000 (25.40)	1.344 (34.14)

A	B	C	D	E
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
1.850 (46.99)	.500 (12.70)	.100 (2.54)	.875 (22.23)	.313 (7.95)
2.288 (58.12)	.750 (19.05)	.100 (2.54)	1.125 (28.58)	.438 (11.13)

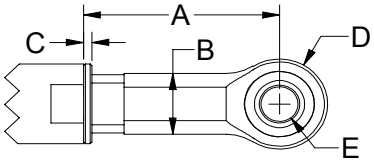
MT — Male Thread



CL — Clevis

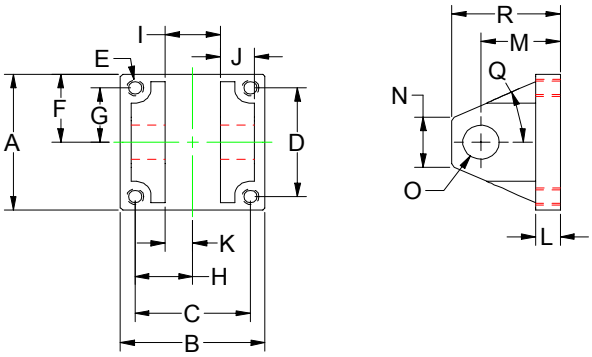


BJ — Ball Joint



Series	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Q	R
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	Thread	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	deg.	in. (mm)
Axx6000	1.50 (38.10)	1.50 (38.10)	1.17 (29.72)	1.17 (29.72)	10-32 UNF 2B	.750 (19.05)	.585 (14.86)	.585 (14.86)	.500 (12.70)	.375 (9.53)	.250 (6.35)	.250 (6.35)	.750 (19.05)	.506 (12.85)	.375 (9.53)	25	1.13 (28.58)
Axx8000	2.00 (50.80)	2.00 (50.80)	1.60 (40.64)	1.60 (40.64)	1/4-20 UNC 2B	1.00 (25.40)	.800 (20.32)	.800 (20.32)	.762 (19.35)	.469 (11.91)	.381 (9.68)	.343 (8.71)	1.095 (27.81)	.771 (19.58)	.500 (12.70)	25	1.50 (38.10)

PT — Pivot



Performance Specifications—General Purpose B Nut

Part Number	Nom. Screw Diameter	Travel per Revolution	Max Axial Thrust Load **	Design Load ***	Life @ 1/4 Design Load	Torque To Move Load	Typical Drag Torque
	in. (mm)	in. (mm)	lb. (kg)	lb. (kg)	in. (cm)	oz. in./lb. (Nm/kg)	oz. in. (Nm)
AxB6010	.375 (9.5)	.100 (2.54)	150 (68)	50 (23)	100,000,000 (2,540,000)	1.0 (.016)	6.0 (.045)
AxB6020	.375 (9.5)	.200 (5.08)	150 (68)	50 (23)	100,000,000 (2,540,000)	1.5 (.023)	6.5 (.047)
AxB6050	.375 (9.5)	.500 (12.70)	150 (68)	50 (23)	100,000,000 (2,540,000)	2.5 (.039)	7.0 (.050)
AxB6100	.375 (9.5)	1.000 (25.40)	150 (68)	50 (23)	100,000,000 (2,540,000)	4.5 (.070)	7.5 (.053)
AxB8010	.500 (12.5)	.100 (2.54)	300 (136)	110 (50)	100,000,000 (2,540,000)	1.0 (.016)	8.0 (.057)
AxB8020	.500 (12.5)	.200 (5.08)	300 (136)	110 (50)	100,000,000 (2,540,000)	1.5 (.023)	8.5 (.060)
AxB8050	.500 (12.5)	.500 (12.70)	300 (136)	110 (50)	100,000,000 (2,540,000)	2.5 (.039)	9.0 (.064)
AxB8100	.500 (12.5)	1.000 (25.40)	300 (136)	110 (50)	100,000,000 (2,540,000)	4.5 (.070)	9.5 (.067)

Performance Specifications—Anti-backlash Z Nut

Part Number	Nom. Screw Diameter	Travel per Revolution	Max Axial Thrust Load **	Design Load ***	Life @ 1/4 Design Load	Torque To Move Load	Typical Drag Torque
	in. (mm)	in. (mm)	lb. (kg)	lb. (kg)	in. (cm)	oz. in./lb. (Nm/kg)	oz. in. (Nm)
AxZ6010	.375 (9.5)	.100 (2.54)	75 (34)	25 (11)	25,000,000 (635,000)	1.0 (.016)	6.0 (.045)
AxZ6020	.375 (9.5)	.200 (5.08)	75 (34)	25 (11)	25,000,000 (635,000)	1.5 (.023)	6.5 (.047)
AxZ6050	.375 (9.5)	.500 (12.70)	75 (34)	25 (11)	25,000,000 (635,000)	2.5 (.039)	7.0 (.050)
AxZ6100	.375 (9.5)	1.000 (25.40)	75 (34)	25 (11)	25,000,000 (635,000)	4.5 (.070)	7.5 (.053)
AxZ8010	.500 (12.5)	.100 (2.54)	150 (68)	55 (25)	25,000,000 (635,000)	1.0 (.016)	8.0 (.057)
AxZ8020	.500 (12.5)	.200 (5.08)	150 (68)	55 (25)	25,000,000 (635,000)	1.5 (.023)	8.5 (.060)
AxZ8050	.500 (12.5)	.500 (12.70)	150 (68)	55 (25)	25,000,000 (635,000)	2.5 (.039)	9.0 (.064)
AxZ8100	.500 (12.5)	1.000 (25.40)	150 (68)	55 (25)	25,000,000 (635,000)	4.5 (.070)	9.5 (.067)

Other Specifications

Positioning accuracy of screw:	.0006” per inch
Repeatability:	
- Anti-backlash nut (AxZ)	+/- .0005”
Backlash:	
- Basic nut (AxB)	.003” to .010”
- Anti-backlash nut (AxZ)	Zero
Operating temperature range:	32° to 200° F (0° to 93° C)
Construction:	Aluminum housing, 303 SS screw, Kerkite © drive nut, 1:1 belt drive (parallel mount), flexible coupling (inline mount)
Custom Designs:	Please consult Kerk engineering for special applications concerning extraordinary loads, different motor input configurations, temperature ranges, and environmental conditions.

* Assumed NEMA motor shaft dimensions (contact factory for quotation on other configurations):

Size 17	.197” diameter	.94” max length
Size 23	.250” diameter	.81 max length
Size 34	.375” diameter	1.25” max length

** Unidirectional load rating for actuator extending moves

*** Bidirectional thrust load rating