Exlar FTX Product Catalog

High-Force Electric Actuator

CURTISS-WRIGHT

EXLAR®

Specifications | Drawings | Ordering | And More...

FTX
High-Force Electric Actuator

Power | Precision | Proven

May 2024

Table of Contents

FTX
High Force Actuators

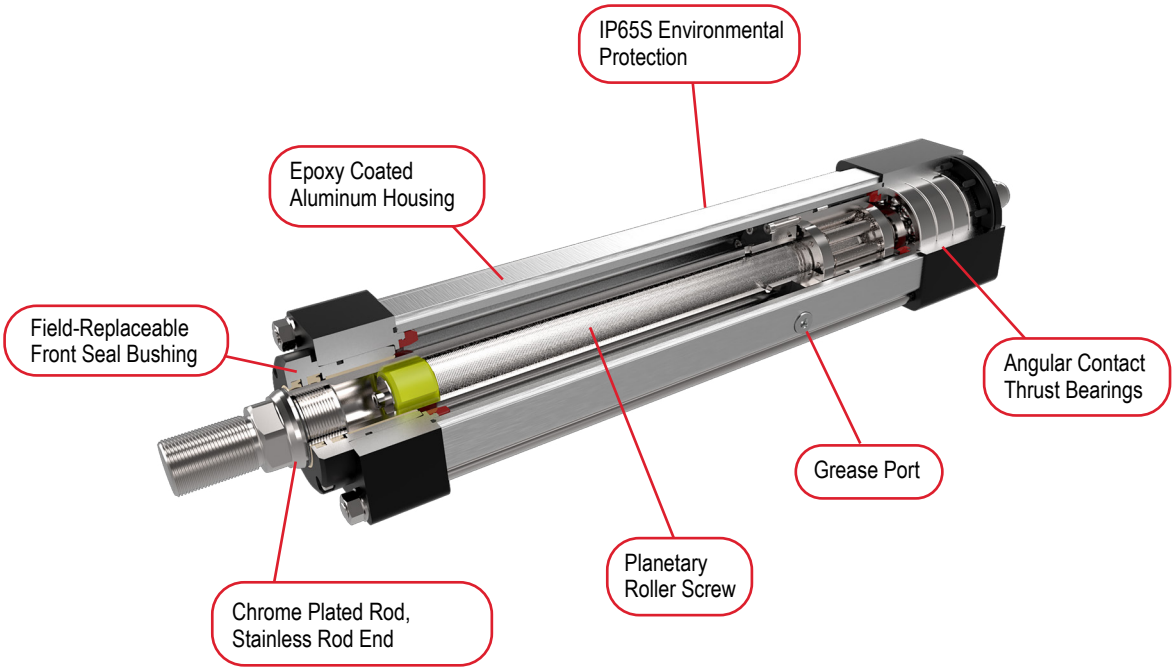
Hydraulic Cylinder Replacement
Hydraulic cylinders provide long life and high force in a small package size. The FTX high force electric actuators were designed specifically to allow migration from traditional hydraulic actuation to electric. Based on planetary roller screw technology, the FTXoffers life and force density not attainable with more common ball screw based electric actuators. With up to 15X the life and 2X the force density, the roller screw based FTX is the right choice when migrating from hydraulic to electric actuation.

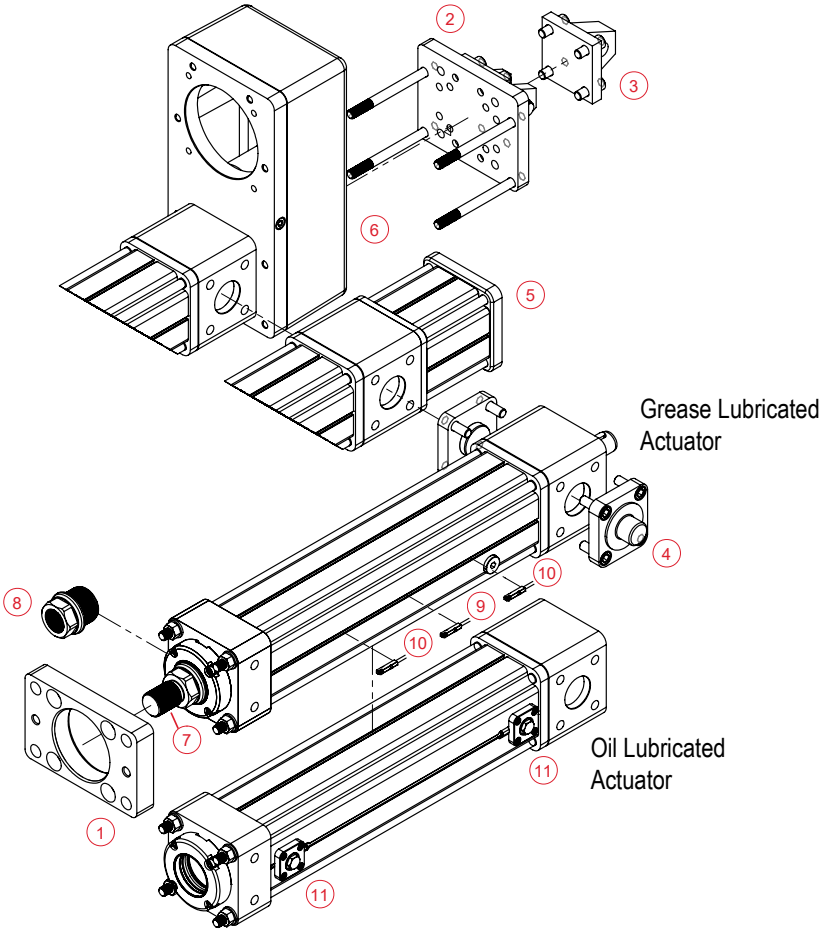
Rugged and Reliable
Hydraulic cylinders are commonly installed in harsh industrial settings. Therefore all FTX models are environmentally sealed to IP65S. In addition, its planetary roller screw mechanism withstands significantly higher shock loads than weaker ball screw alternatives. Migrate to electric with confidence knowing the FTX is every bit as rugged and reliable as the hydraulics they are designed to replace.

Minimal Maintenance
More and more machine builders are looking to eliminate the mess and downtime associated with hydraulic fluid leaks. Electric actuation not only eliminates the problems associated with fluid leaks, it offers significantly higher levels of performance and flexibility than is possible even with servo-hydraulic solutions. FTX roller screw actuators allow machine builders to meet the ever-increasing performance demands of their customers while minimizing or eliminating the maintenance issues associated with traditional hydraulic solutions.

Operating Conditions and Usage		
Accuracy:		
Screw Travel Variation	mm (in)	0.030 (0.0012)
Screw Lead Error	mm/300 mm (in/ft)	0.025 (0.001)
Screw Lead Backlash	mm (in)	0.06 (0.002)
Ambient Conditions:		
Standard Ambient Temperature	°C	0° to 85°
Low Temperature Grease Option		-40°
IP Rating		IP65S

Product Features





1 - Front flange

2 - Rear clevis
3 - Rear eye
4 - Rear trunnion
5 - Inline direct drive
6 - Parallel, 1:1 belt reduction
Parallel, 2:1 belt reduction
7 - Male, metric thread
8 - Female, metric thread
9 - External limit switch - N.O., PNP or NPN*
10 - External limit switch - N.C., PNP or NPN*
11 - Oil ports

*Ordered Separately

Mechanical Specifications

FTX095

		05	10	20
Screw Lead	mm	5	10	20
	in	0.197	0.394	0.787
Maximum Force	kN	22.2	22.2	22.2
	lbf	5,000	5,000	5,000
Life at Maximum Force	km	392	626	1440
	in x 10^6	15.4	24.6	56.7
C_a (Dynamic Load Rating)*	kN	95.2	88.3	92.5
	lbf	21,400	19,850	20,800
Maximum Input Torque	Nm	22.1	44.3	88.5
	lbf-in	196	392	783
Max Rated RPM @ Input Shaft	RPM	4,500	4,500	4,500
Maximum Linear Speed @ Maximum Rated RPM	mm/sec	373	750	1,500
	in/sec	14.7	29.5	59.3
Friction Torque (Typical)	Nm	1.12	1.12	1.12
	lbf-in	10	10	10

Weights kg (lbs)

Base Actuator Weight (Zero Stroke)	kg	10
	lb	21
Actuator Weight Adder (Per 25 mm of stroke)	kg	0.39
	lb	0.87
Adder for Inline (excluding motor)	kg	2.9
	lb	6.5
Adder for Parallel Drive (excluding motor)	kg	13.1
	lb	28.9
Adder for Front Flange	kg	1.9
	lb	4.2
Adder for Rear Clevis	kg	5.3
	lb	11.7
Adder for Rear Eye	kg	5.1
	lb	11.3
Adder for Rear Trunnion	kg	1.9
	lb	4.3

Base Unit Inertia		**Zero Stroke [kg-m² (lbf-in-sec²)]**	**Add per 25 mm [kg-m² (lbf-in-sec²)]**
5 mm Lead		8.27×10^{-4} (7.32×10^{-3})	2.19×10^{-6} (1.94×10^{-5})
10 mm Lead		8.33×10^{-4} (7.37×10^{-3})	2.42×10^{-6} (2.14×10^{-5})
20 mm Lead		8.57×10^{-4} (7.58×10^{-3})	3.31×10^{-6} (2.93×10^{-5})
Inline Drive Inertia	**Inline Unit - w/Motor Coupling**	**Inline Unit - w/Motor Coupling For Gearbox Mount**	**Add per 25 mm**
5 mm Lead	9.27×10^{-4} (8.20×10^{-3})	1.09×10^{-3} (9.62×10^{-3})	2.19×10^{-6} (1.94×10^{-5})
10 mm Lead	9.33×10^{-4} (8.26×10^{-3})	1.09×10^{-3} (9.67×10^{-3})	2.42×10^{-6} (2.14×10^{-5})
20 mm Lead	9.57×10^{-4} (8.47×10^{-3})	1.12×10^{-3} (9.89×10^{-3})	3.31×10^{-6} (2.93×10^{-5})
Parallel Drive Inertia		**1:1 Reduction**	**2:1 Reduction**
5 mm Lead (zero stroke)		4.90×10^{-3} (4.34×10^{-2})	2.22×10^{-3} (1.97×10^{-2})
Add per 25 mm stroke		2.19×10^{-6} (1.94×10^{-5})	5.48×10^{-7} (4.85×10^{-6})
10 mm Lead (zero stroke)		4.91×10^{-3} (4.34×10^{-2})	2.23×10^{-3} (1.97×10^{-2})
Add per 25 mm stroke		2.42×10^{-6} (2.14×10^{-5})	6.04×10^{-7} (5.34×10^{-6})
20 mm Lead (zero stroke)		4.93×10^{-3} (4.37×10^{-2})	2.23×10^{-3} (1.98×10^{-2})
Add per 25 mm stroke		3.31×10^{-6} (2.93×10^{-5})	8.28×10^{-7} (7.33×10^{-6})

FTX125

		05	10
Screw Lead	mm	5	10
	in	0.197	0.394
Maximum Force	kN	44.5	44.5
	lbf	10,000	10,000
Life at Maximum Force	km	249.2	486.3
	in x 10^6	9.81	19.14
C_a (Dynamic Load Rating)*	kN	163.7	162.4
	lbf	36,800	36,500
Maximum Input Torque	Nm	46.5	82.3
	lbf-in	412	728
Max Rated RPM @ Input Shaft	RPM	3,500	3,500
Maximum Linear Speed @ Maximum Rated RPM	mm/sec	292	583
	in/sec	11.5	23
Friction Torque (Typical)	Nm	2.23	2.23
	lbf-in	20	20

Weights kg (lbs)

Base Actuator Weight (Zero Stroke)	kg	21
	lb	47
Actuator Weight Adder (Per 25 mm of stroke)	kg	0.84
	lb	1.85
Adder for Inline (excluding motor)	kg	6.8
	lb	15.0
Adder for Parallel Drive (excluding motor)	kg	25.6
	lb	56.5
Adder for Front Flange	kg	3.6
	lb	7.9
Adder for Rear Clevis	kg	6.5
	lb	14.3
Adder for Rear Eye	kg	6.3
	lb	13.8
Adder for Rear Trunnion	kg	3.1
	lb	6.8

C_a Derating			
FTX125		**05**	**10**
*C_a (Dynamic Load Rating) Greater than 900 mm Stroke	kN	143.4	162.4
	lbf	32,240	36,500

Base Unit Inertia		**Zero Stroke [kg-m² (lbf-in-sec²)]**	**Add per 25 mm [kg-m² (lbf-in-sec²)]**
5 mm Lead		2.55×10^{-3} (2.26×10^{-2})	4.62×10^{-5} (4.09×10^{-4})
10 mm Lead		2.56×10^{-3} (2.27×10^{-2})	4.65×10^{-5} (4.12×10^{-4})
Inline Drive Inertia	**<32 mm Motor Shaft Diameter**	**>32 mm Motor Shaft Diameter**	**Add per 25 mm**
5 mm Lead	2.81×10^{-3} (2.49×10^{-2})	3.35×10^{-3} (2.97×10^{-2})	4.62×10^{-5} (4.09×10^{-4})
10 mm Lead	2.82×10^{-3} (2.50×10^{-2})	3.36×10^{-3} (2.98×10^{-2})	4.65×10^{-5} (4.12×10^{-4})
Parallel Drive Inertia		**1:1 Reduction**	**2:1 Reduction**
5 mm Lead (zero stroke)		9.43×10^{-3} (8.34×10^{-2})	4.66×10^{-3} (4.12×10^{-2})
Add per 25 mm stroke		4.62×10^{-5} (4.09×10^{-4})	1.15×10^{-5} (1.02×10^{-4})
10 mm Lead (zero stroke)		9.44×10^{-3} (8.35×10^{-2})	4.66×10^{-3} (4.13×10^{-2})
Add per 25 mm stroke		4.65×10^{-5} (4.12×10^{-4})	1.16×10^{-5} (1.03×10^{-4})

FTX160

		06	12	30
Screw Lead	mm	6	12	30
	in	0.236	0.472	1.181
Maximum Force	kN	89.0	89.0	89.0
	lbf	20,000	20,000	20,000
Life at Maximum Force	km	154.9	416.6	358.9
	in x 10^6	6.1	16.4	21.2
C_a (Dynamic Load Rating)*	kN	263.7	290.0	233.0
	lbf	59,275	65,200	52,400
Maximum Input Torque	Nm	106	212	531
	lbf-in	940	1,880	4,699
Max Rated RPM @ Input Shaft	RPM	2,000	2,000	2,000
Maximum Linear Speed @ Maximum Rated RPM	mm/sec	201	401	1000
	in/sec	7.9	15.8	39.0
Friction Torque (Typical)	Nm	4.54	4.54	4.54
	lbf-in	40	40	40

Weights kg (lbs)

Base Actuator Weight (Zero Stroke)	kg	49
	lb	108
Actuator Weight Adder (Per 25 mm of stroke)	kg	1.62
	lb	3.6
Adder for Inline (excluding motor)	kg	14.2
	lb	31.5
Adder for Parallel Drive (excluding motor)	kg	53.1
	lb	117.8
Adder for Front Flange	kg	7.4
	lb	16.4
Adder for Rear Clevis	kg	21.2
	lb	48.8
Adder for Rear Eye	kg	22.4
	lb	49.7
Adder for Rear Trunnion	kg	10.9
	lb	24.2

C_a Derating				
FTX160		**06**	**12**	**30**
*C_a (Dynamic Load Rating) Greater than 900 mm Stroke	kN	223.6	261.2	233
	lbf	50,270	58,720	52,400

Base Unit Inertia		**Zero Stroke [kg-m² (lbf-in-sec²)]**	**Add per 25 mm [kg-m² (lbf-in-sec²)]**
6 mm Lead		1.35×10^{-2} (1.19×10^{-1})	2.57×10^{-4} (2.27×10^{-3})
12 mm Lead		1.35×10^{-2} (1.20×10^{-1})	2.58×10^{-4} (2.28×10^{-3})
30 mm Lead		1.38×10^{-2} (1.22×10^{-1})	2.66×10^{-4} (2.36×10^{-3})
Inline Drive Inertia	**<32 mm Motor Shaft Diameter**	**>32 mm Motor Shaft Diameter**	**Add per 25 mm**
6 mm Lead	1.47×10^{-2} (1.30×10^{-1})	1.67×10^{-2} (1.48×10^{-1})	$2.57x\ 10^{-4}$ (2.27×10^{-3})
12 mm Lead	1.47×10^{-2} (1.30×10^{-1})	1.68×10^{-2} (1.49×10^{-1})	2.58×10^{-4} (2.28×10^{-3})
30 mm Lead	1.50×10^{-2} (1.33×10^{-1})	1.71×10^{-2} (1.51×10^{-1})	2.66×10^{-4} (2.36×10^{-3})
Parallel Drive Inertia		**1:1 Reduction**	**2:1 Reduction**
6 mm Lead (zero stroke)		5.27×10^{-2} (4.67×10^{-1})	2.30×10^{-2} (2.04×10^{-1})
Add per 25 mm stroke		2.57×10^{-4} (2.27×10^{-3})	6.42×10^{-5} (5.68×10^{-4})
12 mm Lead (zero stroke)		5.28×10^{-2} (4.67×10^{-1})	2.30×10^{-2} (2.04×10^{-1})
Add per 25 mm stroke		2.58×10^{-4} (2.28×10^{-3})	6.45×10^{-5} (5.71×10^{-4})
30 mm Lead (zero stroke)		5.30×10^{-2} (4.69×10^{-1})	2.31×10^{-2} (2.05×10^{-1})
Add per 25 mm stroke		2.66×10^{-4} (2.36×10^{-3})	6.66×10^{-5} (5.89×10^{-4})

FTX215

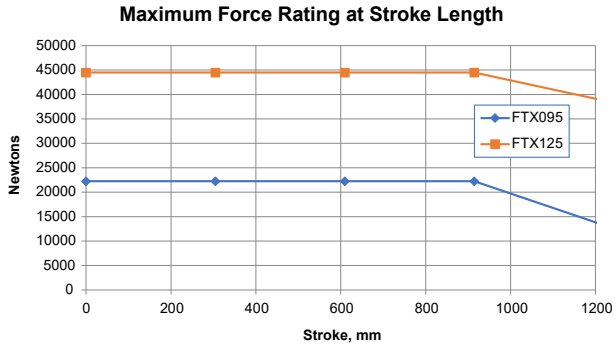
		06	12	30
Screw Lead	mm	6	12	30
	in	0.236	0.472	1.181
Maximum Force	kN	177.9	177.9	177.9
	lbf	40,000	40,000	40,000
Life at Maximum Force	km	78.7	161.8	414.3
	in x 10^6	3.1	6.4	16.3
C_a (Dynamic Load Rating)*	kN	398	423	376
	lbf	89,500	95,200	84,700
Maximum Input Torque	Nm	243	425	976
	lbf-in	2,148	3,760	8,642
Max Rated RPM @ Input Shaft	RPM	1,750	1,750	1,750
Maximum Linear Speed @ Maximum Rated RPM	mm/sec	175	351	875
	in/sec	6.9	13.8	34.4
Friction Torque (Typical)	Nm	5.65	5.65	5.65
	lbf-in	50	50	50

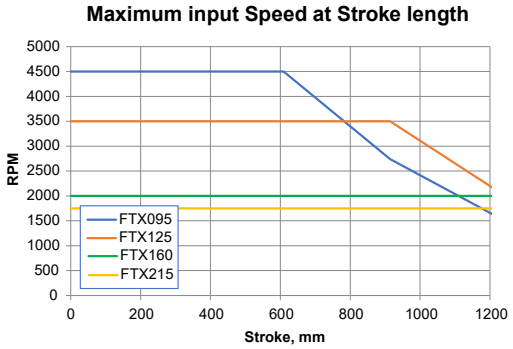
Weights kg (lbs)

Base Actuator Weight (Zero Stroke)	kg	103
	lb	227
Actuator Weight Adder (Per 25 mm of stroke)	kg	2.70
	lb	5.96
Adder for Inline (excluding motor)	kg	38.6
	lb	85.1
Adder for Parallel Drive (excluding motor)	kg	62.3
	lb	137.3
Adder for Front Flange	kg	26.7
	lb	58.8
Adder for Rear Clevis	kg	32.5
	lb	71.6
Adder for Rear Eye	kg	32.5
	lb	71.6
Adder for Rear Trunnion	kg	9.6
	lb	21.2

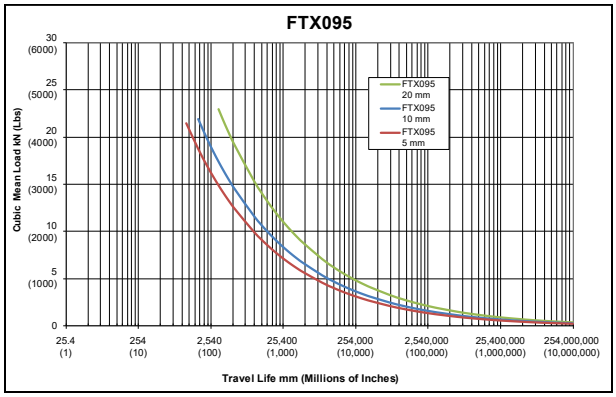
C_a Derating				
FTX215		**06**	**12**	**30**
*C_a (Dynamic Load Rating) Greater than 900 mm Stroke	kN	359.8	346.7	376
	lbf	80,900	77,950	84,700

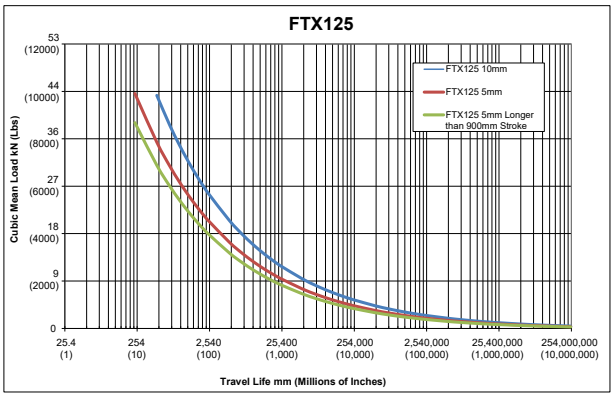
Base Unit Inertia		**Zero Stroke [kg-m² (lbf-in-sec²)]**	**Add per 25 mm [kg-m² (lbf-in-sec²)]**
6 mm Lead		4.25×10^{-2} (3.76×10^{-1})	8.00×10^{-4} (7.08×10^{-3})
12 mm Lead		4.26×10^{-2} (3.77×10^{-1})	8.02×10^{-4} (7.10×10^{-3})
30 mm Lead		4.31×10^{-2} (3.82×10^{-1})	8.15×10^{-4} (7.21×10^{-3})
Inline Drive Inertia	**<55 mm Motor Shaft Diameter**	**>55 mm Motor Shaft Diameter**	**Add per 25 mm**
6 mm Lead	4.43×10^{-2} (3.92×10^{-1})	6.15×10^{-2} (5.44×10^{-1})	8.00×10^{-4} (7.08×10^{-3})
12 mm Lead	4.44×10^{-2} (3.93×10^{-1})	6.16×10^{-2} (5.45×10^{-1})	8.02×10^{-4} (7.10×10^{-3})
30 mm Lead	4.49×10^{-2} (3.98×10^{-1})	6.21×10^{-2} (5.50×10^{-1})	8.15×10^{-4} (7.21×10^{-3})
Parallel Drive Inertia		**1:1 Reduction**	**2:1 Reduction**
6 mm Lead (zero stroke)		9.42×10^{-2} (8.34×10^{-1})	3.50×10^{-2} (3.10×10^{-1})
Add per 25 mm stroke		8.00×10^{-4} (7.08×10^{-3})	2.00×10^{-4} (1.77×10^{-3})
12 mm Lead (zero stroke)		9.43×10^{-2} (8.34×10^{-1})	3.50×10^{-2} (3.10×10^{-1})
Add per 25 mm stroke		8.02×10^{-4} (7.10×10^{-3})	2.01×10^{-4} (1.78×10^{-3})
30 mm Lead (zero stroke)		9.48×10^{-2} (8.39×10^{-1})	3.52×10^{-2} (3.11×10^{-1})
Add per 25 mm stroke		8.15×10^{-4} (7.21×10^{-3})	2.04×10^{-4} (1.80×10^{-3})

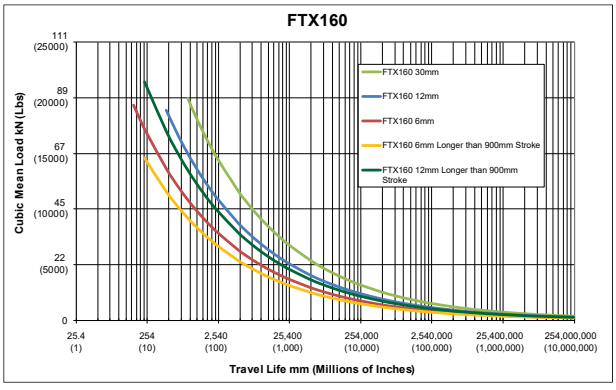


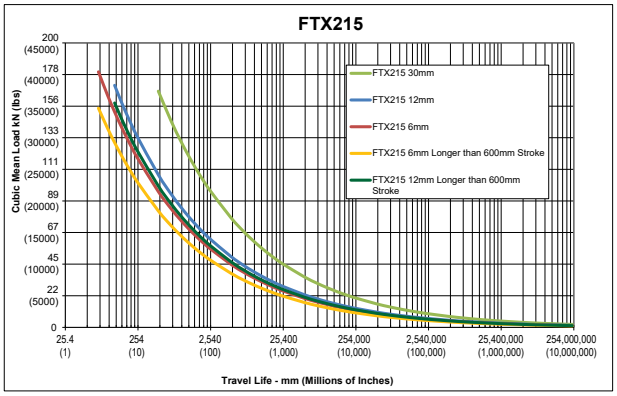


Estimated Service Life









The L_{10} expected life of a roller screw linear actuator is expressed as the linear travel distance that 90% of properly maintained roller screws manufactured are expected to meet or exceed. This is not a guarantee and these charts should be used for estimation purposes only.

The underlying formula that defines this value is:
Travel life in millions of inches, where:

C_a = Dynamic load rating (lbf)
F_{cml} = Cubic mean applied load (lbf)
ℓ = Roller screw lead (inches)

$$L_{10} = \left(\frac{C_a}{F_{cml}}\right)^3 \times \ell$$

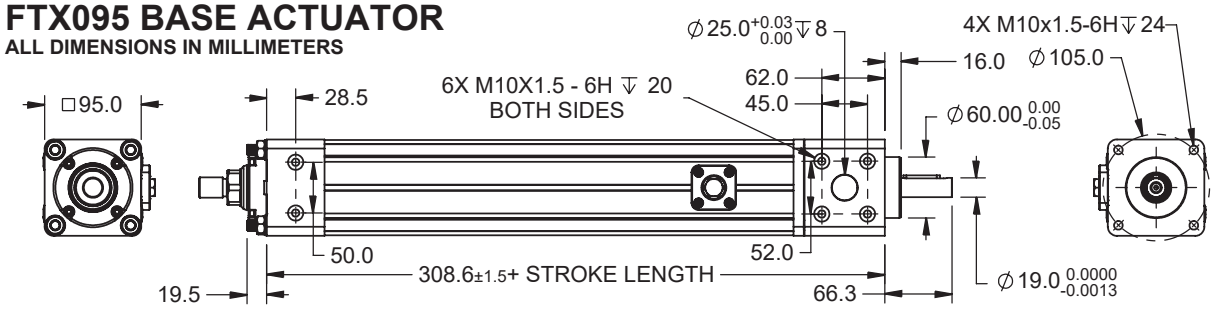
Service Life Estimate Assumptions:

- Sufficient quality and quantity of lubrication is maintained throughout service life
- Bearing and screw temperature between 20° C and 40° C
- No mechanical hard stops (external or internal) or impact loads
- No external side loads
- Does not apply to short stroke, high frequency applications such as fatigue testing or short stroke, high force applications such as pressing.

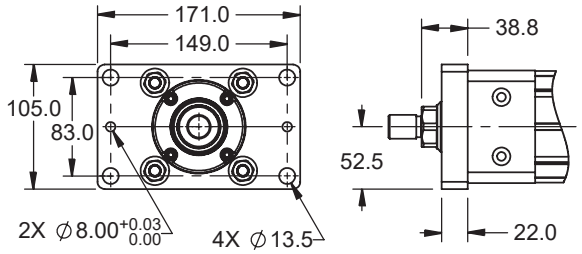
Dimensions

FTX095 BASE ACTUATOR

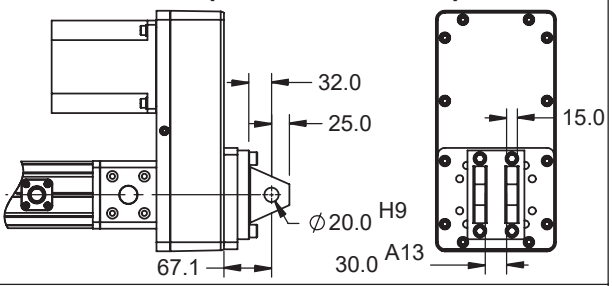
ALL DIMENSIONS IN MILLIMETERS



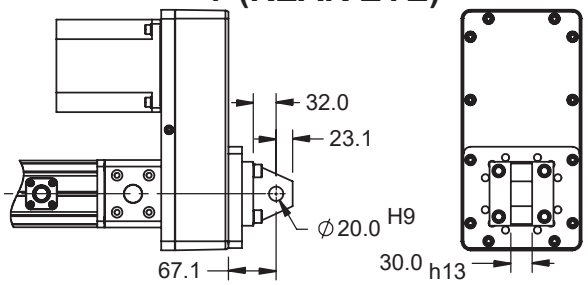
1 (FRONT FLANGE)



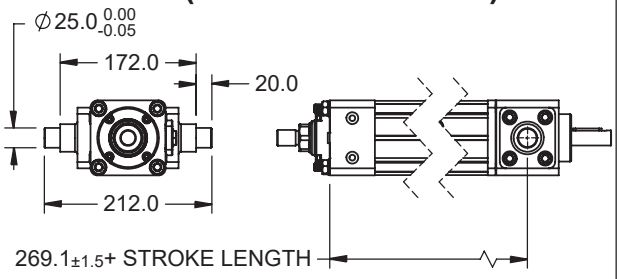
5 (REAR CLEVIS)



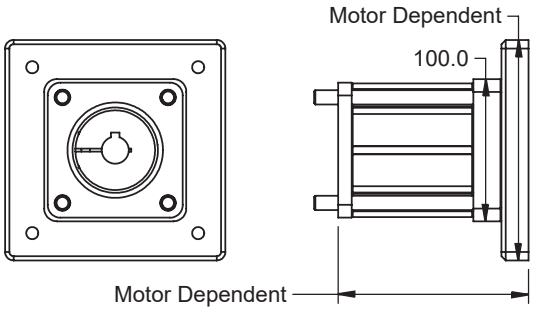
7 (REAR EYE)



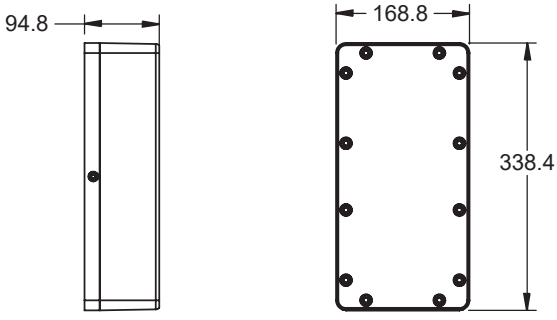
9 (REAR TRUNNION)



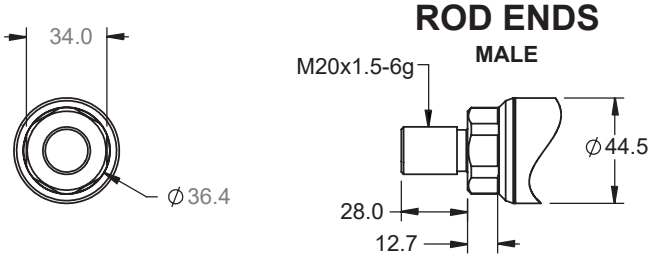
N10 (INLINE MOUNT)



P10/P20 (PARALLEL MOUNT)

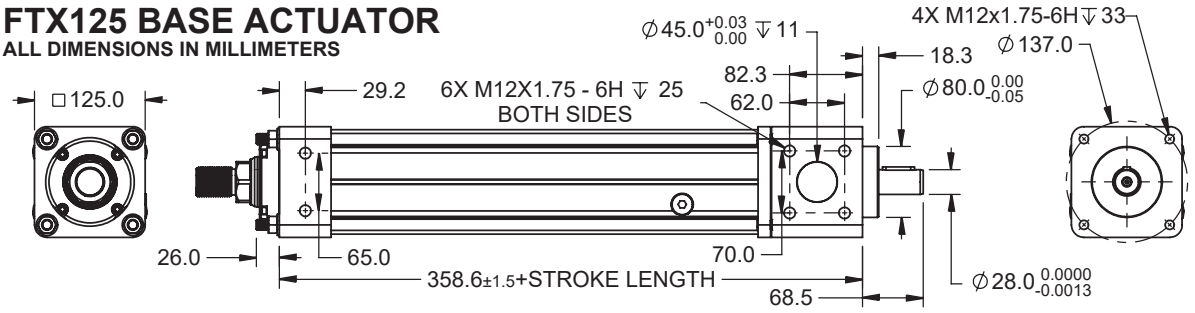


ROD ENDS

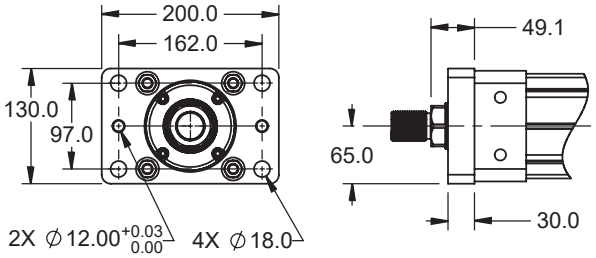


FTX125 BASE ACTUATOR

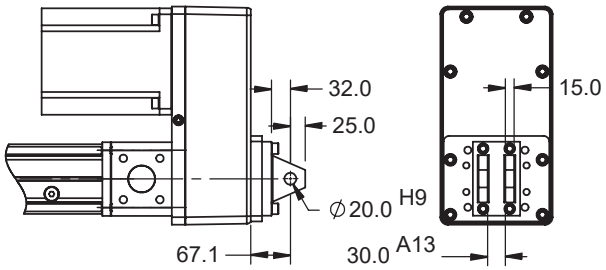
ALL DIMENSIONS IN MILLIMETERS



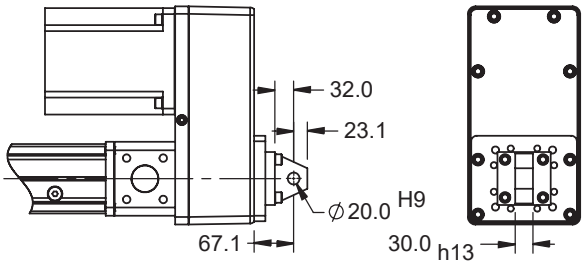
1 (FRONT FLANGE)



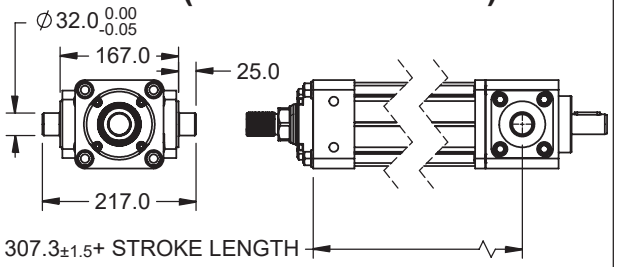
5 (REAR CLEVIS)



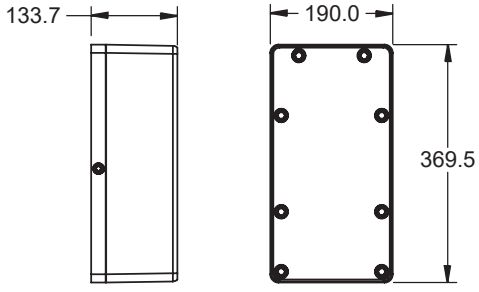
7 (REAR EYE)



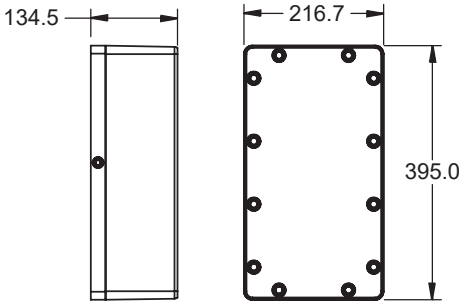
9 (REAR TRUNNION)



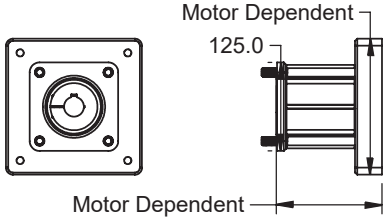
P10 (PARALLEL MOUNT)



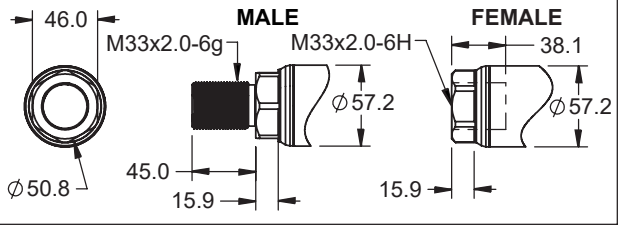
P20 (PARALLEL MOUNT)



N10 (INLINE MOUNT)

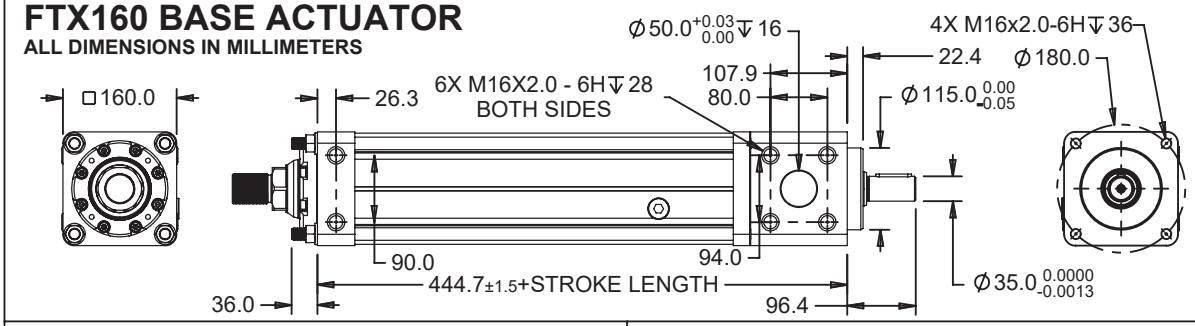


ROD ENDS

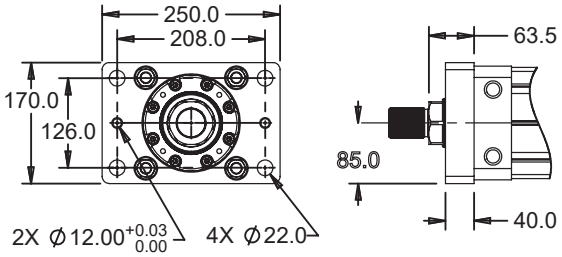


FTX160 BASE ACTUATOR

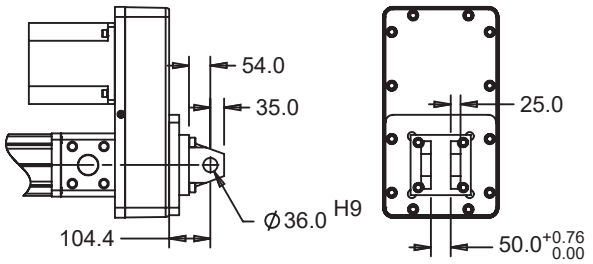
ALL DIMENSIONS IN MILLIMETERS



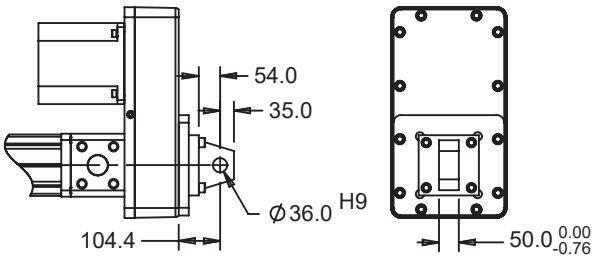
1 (FRONT FLANGE)



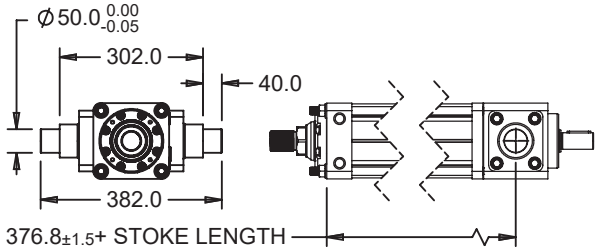
5 (REAR CLEVIS)



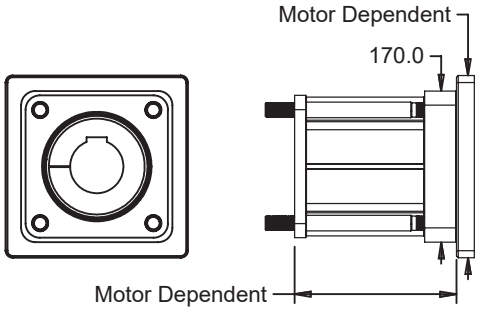
7 (REAR EYE)



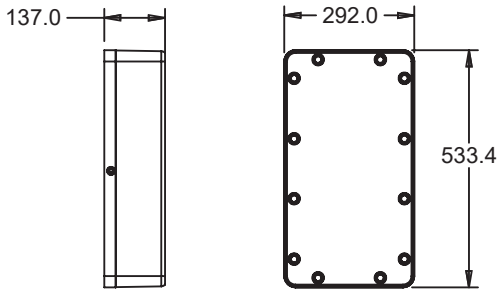
9 (REAR TRUNNION)



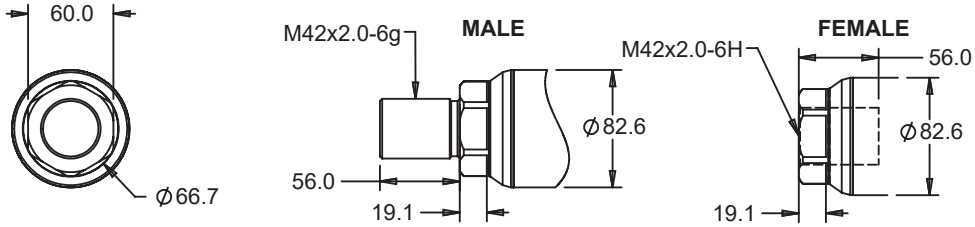
N10 (INLINE MOUNT)



P10/P20 (PARALLEL MOUNT)

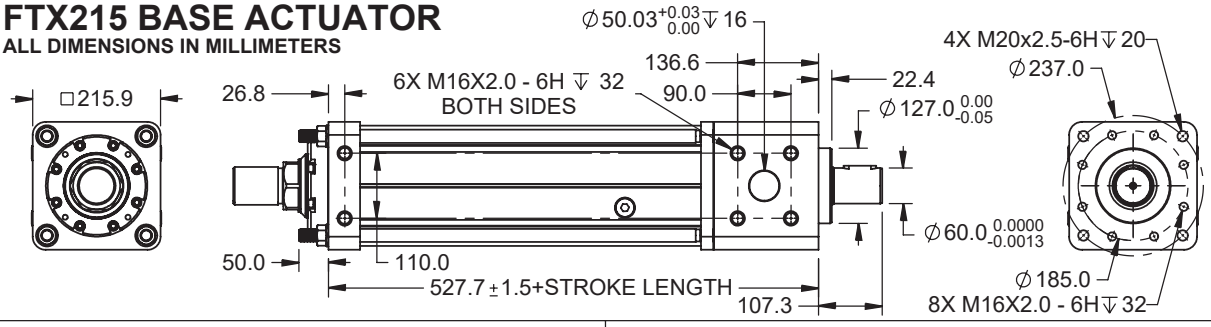


ROD ENDS

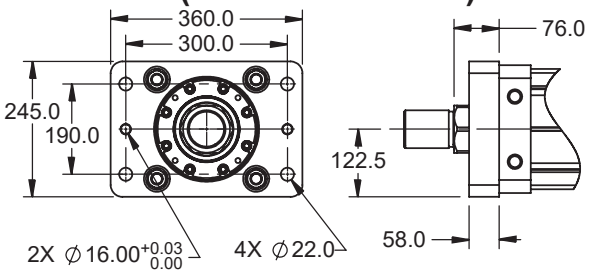


FTX215 BASE ACTUATOR

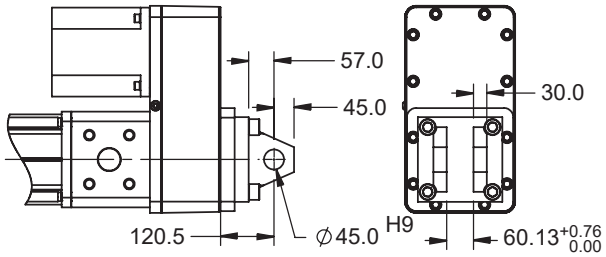
ALL DIMENSIONS IN MILLIMETERS



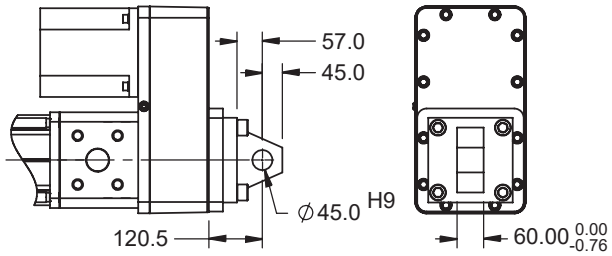
1 (FRONT FLANGE)



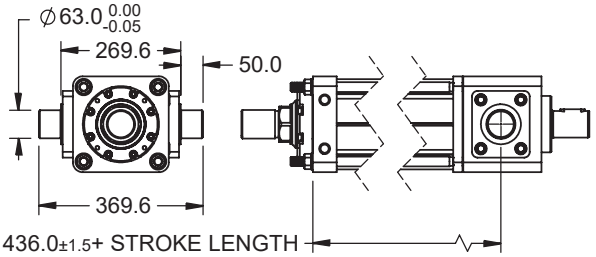
5 (REAR CLEVIS)



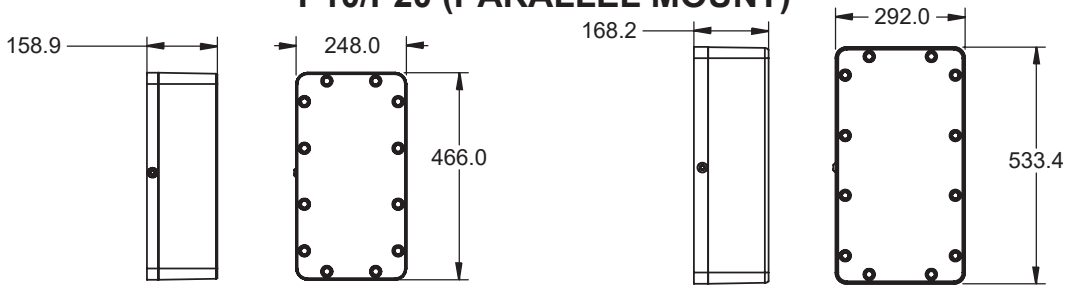
7 (REAR EYE)



9 (REAR TRUNNION)

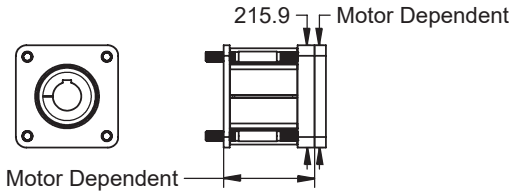


P10/P20 (PARALLEL MOUNT)

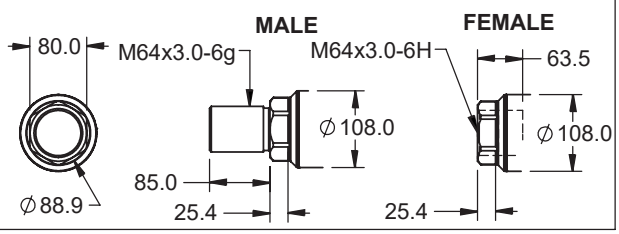


NOTE: 248mm WIDE HOUSING USED FOR MOTORS WITH 215mm MOUNTING B.C AND SMALLER, 1:1
292mm WIDE HOUSING USED FOR ALL 2:1 DRIVE MOTORS

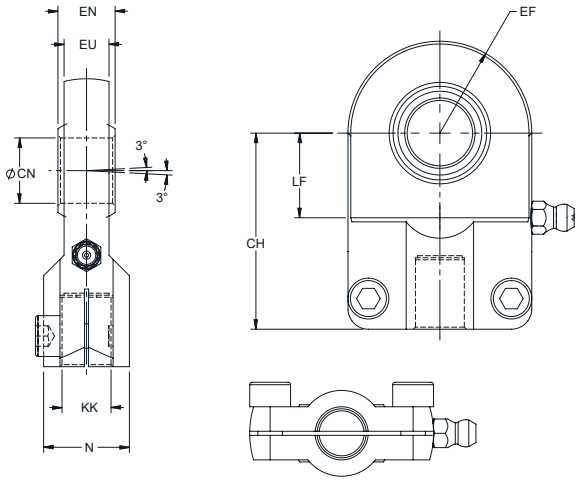
N10 (INLINE MOUNT)



ROD ENDS

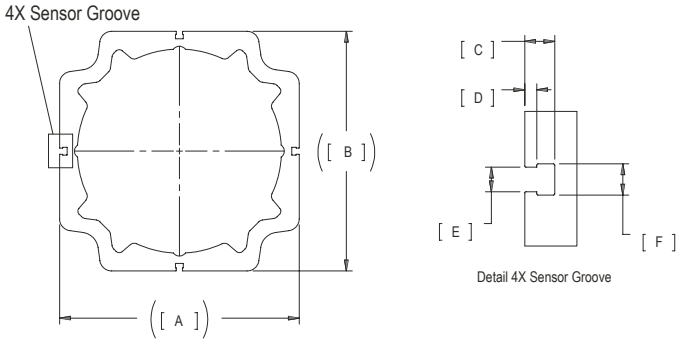


Rod Eye, Spherical



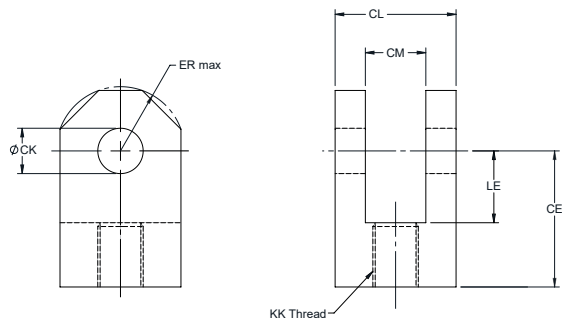
		FTX095	FTX125	FTX160	FTX215
AV	mm	29.0	46.0	55.0	86.0
	in	1.14	1.81	2.17	3.39
CH	mm	85.0	130.0	150.0	240.0
	in	3.35	5.12	5.91	9.45
CN	mm	30.0	50.0	60.0	100.0
	in	1.18	1.97	2.36	3.94
EF (max)	mm	41.0	61.0	80.0	120.0
	in	1.61	2.40	3.15	4.72
EN	mm	22.0	35.0	44.0	70.0
	in	0.87	1.38	1.73	2.76
EU (max)	mm	20.0	31.0	39.0	57.0
	in	0.79	1.22	1.54	2.24
KK		M20X1.5 6H	M33X2.0 6H	M42X2.0 6H	M64X3.0 6H
LF (min)	mm	35.0	58.0	68.0	116.0
	in	1.38	2.28	2.68	4.57
N (max)	mm	37.0	57.0	69.0	110.0
	in	1.46	2.24	2.72	4.33

Case Dimensions



		FTX095	FTX125	FTX160	FTX215
A	mm	94	118	156	203
	in	3.7	4.6	6.1	8.0
B	mm	94	118	156	203
	in	3.7	4.6	6.1	8.0
C	mm	4.9	5.6	5.5	6.4
	in	0.19	0.22	0.22	0.25
D	mm	1.1	1.8	1.7	2.5
	in	0.4	0.07	0.07	0.10
E	mm	5.2	5.2	5.3	5.2
	in	0.21	0.21	0.21	0.21
F	mm	6.6	6.6	6.6	6.6
	in	0.26	0.26	0.26	0.26

Rod Clevis



		FTX095	FTX125	FTX160	FTX215
CE	mm	60.0	99.0	113.0	168.0
	in	2.36	3.90	4.45	6.61
Ø CK	mm	20.0 h9	36.0 h9	45.0 h9	70.0 h9
	in	0.79	1.42	1.77	2.76
CL	mm	62.0	103.0	123.0	163.0
	in	2.44	4.06	4.84	6.42
CM	mm	30.0	50.0	60.0	80.0
	in	1.18	1.97	2.36	3.15
Ø ER (max)	mm	29.0	50.0	53.0	78.0
	in	1.14	1.97	2.09	3.07
LE (min)	mm	32.0	54.0	57.0	83.0
	in	1.26	2.13	2.24	3.27
KK		M20X1.5 6H	M33X2.0 6H	M42X2.0 6H	M64X3.0 6H

Standard Motor/Gearbox Mount Codes for the FTX

FTX095 Motor / Gearbox Mounts													
None		**Inline**				**Parallel 1:1**				**Parallel 2:1**			
				Dimension in mm				Dimension in mm				Dimension in mm	
Motor Flange Code		**Motor Flange Code**		Bolt Circle	Pilot Diam.	**Motor Flange Code**		Bolt Circle	Pilot Diam.	**Motor Flange Code**		Bolt Circle	Pilot Diam.
NMT-	00	N10-	02	68	60	P10-	02	68	60	P20-	02	68	60
		N10-	04	75	60	P10-	04	75	60	P20-	04	75	60
		N10-	05	85	70	P10-	05	85	70	P20-	05	85	70
		N10-	10	100	80	P10-	10	100	80	P20-	10	100	80
		N10-	11	115	95	P10-	11	115	95	P20-	11	115	95
		N10-	12	130	110	P10-	12	130	110	P20-	12	130	110
		N10-	13	130	95	P10-	13	130	95	P20-	13	130	95
		N10-	14	145	110	P10-	14	145	110	P20-	14	145	110
		N10-	19	165	130	P10-	19	165	130	P20-	19	165	130
Motor Shaft Code		**Motor Shaft Code**		Shaft Diam.	Key Width*	**Motor Shaft Code**		Shaft Diam.	Key Width*	**Motor Shaft Code**		Shaft Diam.	Key Width*
00		AA		24	8	AA		24	8	AA		24	8
		BA		22	6	BA		22	6	BA		22	6
		CA		22	8	CA		22	8	CA		22	8
		DA		20	6	DA		20	6	DA		20	6
		EA		19	6	EA		19	6	EA		19	6
		FA		16	5	FA		16	5	FA		16	5
		GA		14	5	GA		14	5	GA		14	5
		LA		28	8	LA		28	8	LA		28	8
		MA		32	10	MA		32	10				
Shaft Length		**Shaft Length**				**Shaft Length**				**Shaft Length**			
000		030, 032, 040, 048, 050, 055, 058, 060, 063, 065, 070, 080		Pick closest shaft length within 2 mm if your exact length is not listed		038-084		Allowable shaft length range in 1 mm increments		038-084		Allowable shaft length range in 1 mm increments	

*Key not required for operation

FTX125 Motor / Gearbox Mounts

None		Inline				Parallel 1:1				Parallel 2:1			
				Dimension in mm				Dimension in mm				Dimension in mm	
Motor Flange Code		**Motor Flange Code**		Bolt Circle	Pilot Diam.	**Motor Flange Code**		Bolt Circle	Pilot Diam.	**Motor Flange Code**		Bolt Circle	Pilot Diam.
NMT-	00	N10-	05	85	70	P10-	05	85	70	P20-	05	85	70
		N10-	10	100	80	P10-	10	100	80	P20-	10	100	80
		N10-	12	130	110	P10-	12	130	110	P20-	12	130	110
		N10-	14	145	110	P10-	14	145	110	P20-	14	145	110
		N10-	18	120	90	P10-	18	120	90	P20-	19	165	130
		N10-	19	165	130	P10-	19	165	130	P20-	20	200	114.3
		N10-	20	200	114.3	P10-	20	200	114.3	P20-	21	215	130
		N10-	21	215	130	P10-	21	215	130	P20-	23	215	180
		N10-	23	215	180	P10-	23	215	180				

Motor Shaft	**Motor Shaft Code**	Shaft Diam.	Key Width*	**Motor Shaft code**	Shaft Diam.	Key Width*	**Motor Shaft Code**	Shaft Diam.	Key Width*
00	AA	24	8	AA	24	8	AA	24	8
	AB	28	10	AB	28	10	AB	28	10
	BA	22	6	BA	22	6	BA	22	6
	DA	20	6	DA	20	6	DA	20	6
	EA	19	6	EA	19	6	EA	19	6
	LA	28	8	LA	28	8	LA	28	8
	MA	32	10	MA	32	10	MA	32	10
	NA	35	10	NA	35	10	NA	35	10
	PA	38	10	PA	38	10	YA	24	10
	RA	42	12	RA	42	12			
	SA	42	10	SA	42	10			
	YA	24	10	YA	24	10			

Shaft Length	**Shaft Length**		**Shaft Length**		**Shaft Length**	
000	040, 046, 049, 050, 055, 058, 060, 063, 065, 068, 072, 080, 082, 088, 097, 100, 102, 105, 112, 113	Pick closest shaft length within 2 mm if your exact length is not listed	040-099	Allowable shaft length range in 1 mm increments	048-099	Allowable shaft length range in 1 mm increments

*Key not required for operation

FTX160 Motor / Gearbox Mounts

None		Inline				Parallel 1:1				Parallel 2:1			
				Dimension in mm				Dimension in mm				Dimension in mm	
Motor Flange Code		**Motor Flange Code**		Bolt Circle	Pilot Diam.	**Motor Flange Code**		Bolt Circle	Pilot Diam.	**Motor Flange Code**		Bolt Circle	Pilot Diam.
NMT-	00	N10-	10	100	80	P10-	10	100	80	P20-	10	100	80
		N10-	12	130	110	P10-	12	130	110	P20-	12	130	110
		N10-	18	120	90	P10-	18	120	90	P20-	18	120	90
		N10-	19	165	130	P10-	19	165	130	P20-	19	165	130
		N10-	20	200	114.3	P10-	20	200	114.3	P20-	20	200	114.3
		N10-	21	215	130	P10-	21	215	130	P20-	21	215	130
		N10-	22	215	160	P10-	22	215	160	P20-	23	215	180
		N10-	23	215	180	P10-	23	215	180	P20-	24	235	200
		N10-	24	235	200	P10-	24	235	200	P20-	25	265	230
		N10-	25	265	230	P10-	25	265	230				

Motor Shaft Code	**Motor Shaft Code**	Shaft Diam.	Key Width*	**Motor Shaft Code**	Shaft Diam.	Key Width*	**Motor Shaft Code**	Shaft Diam.	Key Width*
00	AA	24	8	AA	24	8	AA	24	8
	BA	22	6	BA	22	6	BA	22	6
	LA	28	8	LA	28	8	LA	28	8
	MA	32	10	MA	32	10	MA	32	10
	NA	35	10	NA	35	10	NA	35	10
	PA	38	10	PA	38	10	PA	38	10
	QA	40	12	QA	40	12	QA	40	12
	RA	42	12	RA	42	12	RA	42	12
	SA	42	10	SA	42	10	SA	42	10
	UA	55	16	UA	55	16	ZA	25	8
	ZA	25	8	ZA	25	8			

Shaft Length	**Shaft Length**		**Shaft Length**		**Shaft Length**	
000	040, 048, 050, 055, 058, 060, 065, 070, 072, 080, 082, 085, 088, 097, 100, 105, 110, 112, 113, 116	Pick closest shaft length within 2 mm if your exact length is not listed	060-124	Allowable shaft length range in 1 mm increments	060-124	Allowable shaft length range in 1 mm increments

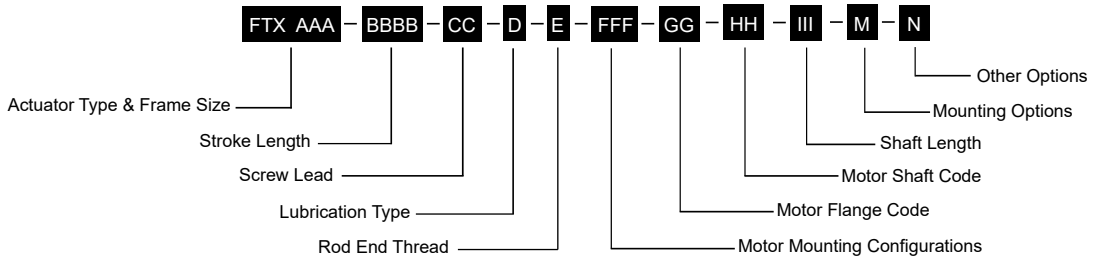
*Key not required for operation

FTX215 Motor / Gearbox Mounts

None		Inline				Parallel 1:1				Parallel 2:1			
				Dimension in mm				Dimension in mm				Dimension in mm	
Motor Flange Code		**Motor Flange Code**		Bolt Circle	Pilot Diam.	**Motor Flange Code**		Bolt Circle	Pilot Diam.	**Motor Flange Code**		Bolt Circle	Pilot Diam.
NMT-	00	N10-	19	165	130	P10-	19	165	130	P20-	19	165	130
		N10-	22	215	160	P10-	22	215	160	P20-	23	215	180
		N10-	23	215	180	P10-	23	215	180	P20-	25	265	230
		N10-	24	235	200	P10-	24	235	200	P20-	26	300	250
		N10-	25	265	230	P10-	25	265	230				
		N10-	26	300	250	P10-	26	300	250				
Motor Shaft Code		**Motor Shaft Code**		Shaft Diam.	Key Width*	**Motor Shaft Code**		Shaft Diam.	Key Width*	**Motor Shaft Code**		Shaft Diam.	Key Width*
00		PA		38	10	PA		38	10	PA		38	10
		QA		40	12	QA		40	12	QA		40	12
		RA		42	12	RA		42	12	RA		42	12
		TA		48	14	TA		48	14	TA		48	14
		UA		55	16	UA		55	16				
		VA		60	18	VA		60	18				
		WA		65	18	WA		65	18				
Shaft Length		**Shaft Length**				**Shaft Length**				**Shaft Length**			
000		080, 082, 085, 097, 100, 102, 105, 110, 112, 116, 140		Pick closest shaft length within 2 mm if your exact length is not listed		070-155		Allowable shaft length range in 1 mm increments		070-155		Allowable shaft length range in 1 mm increments	

*Key not required for operation

Ordering Information



AAA = Frame Size
095 = 95 mm
125 = 125 mm
160 = 160 mm
215 = 215 mm

BBBB = Stroke Length
0150 = 150 mm
0300 = 300 mm
0600 = 600 mm
0900 = 900 mm
1200 = 1200 mm

CC = Screw Lead
05 = 5 mm (FTX095, FTX125)
06 = 6 mm (FTX160, FTX215)
10 = 10 mm (FTX095, FTX125)
12 = 12 mm (FTX160, FTX215)
20 = 20 mm (FTX095)
30 = 30 mm (FTX160, FTX215)

D = Lubrication Type
1 = Grease
2 = Oil
3 = Low Temperature Grease (to -40° C)

E = Rod End Thread
A = Male, Metric
B = Female, Metric
M = Male, English[3]
F = Female, English[3]

FFF = Motor Mounting Configurations[1]
NMT = None, base unit only
N10 = Inline, includes shaft coupling
P10 = Parallel, 1:1 belt reduction
P20 = Parallel, 2:1 belt reduction

GG = Motor/Gearbox Flange Code
See standard motor/gearbox mounting code dimension sheet

HH = Motor Shaft Code
See standard motor/gearbox mounting code dimension sheet

III = Shaft Length
See standard motor/gearbox mounting code dimension sheet

M = Mounting Options
N = None
1 = Front Flange, Metric
5 = Rear Clevis, Metric[2]
7 = Rear Eye, Metric[2]
9 = Rear Trunnion, Metric
F = Front Flange, English[3]
C = Rear Clevis, English[3] - FT Equivalent
(Not available on FTX215)
G = Rear Clevis, Metric[3] - FT Equivalent
(Not available on FTX125 or FTX215)

N = Other Options
N = None

For options or specials not listed above, please contact Exlar

NOTES:
1. Always discuss your motor selection with your local sales representative.
2. Not available with inline or NMT motor mount, contact your local sales representative.
3. Available option. May add lead time

FTX Accessories

Exlar Part Number	Switches Type
43403	Normally Open PNP Limit Switch (10-30 VDC, 1m. 3 wire embedded cable)
43404	Normally Closed PNP Limit Switch (10-30 VDC, 1m. 3 wire embedded cable)
67634	Normally Open NPN Limit Switch (10-30 VDC, 1m. 3 wire embedded cable)
67635	Normally Closed NPN Limit Switch (10-30 VDC, 1m. 3 wire embedded cable)

Warranty and Limitations of Liability

WARRANTY AND LIMITATION OF LIABILITY: Please see our warranty on our website here: *https://www.cw-actuation.com/en-gb/about/terms-conditions* for details.

Exlar
Curtiss-Wright
18400 West 77th Street
Chanhassen, MN 55317
Phone: 855-620-6200 (US & Canada)
Fax: 952-368-4877

www.Exlar.com

Exlar® and Tritex® are brands Curtiss-Wright