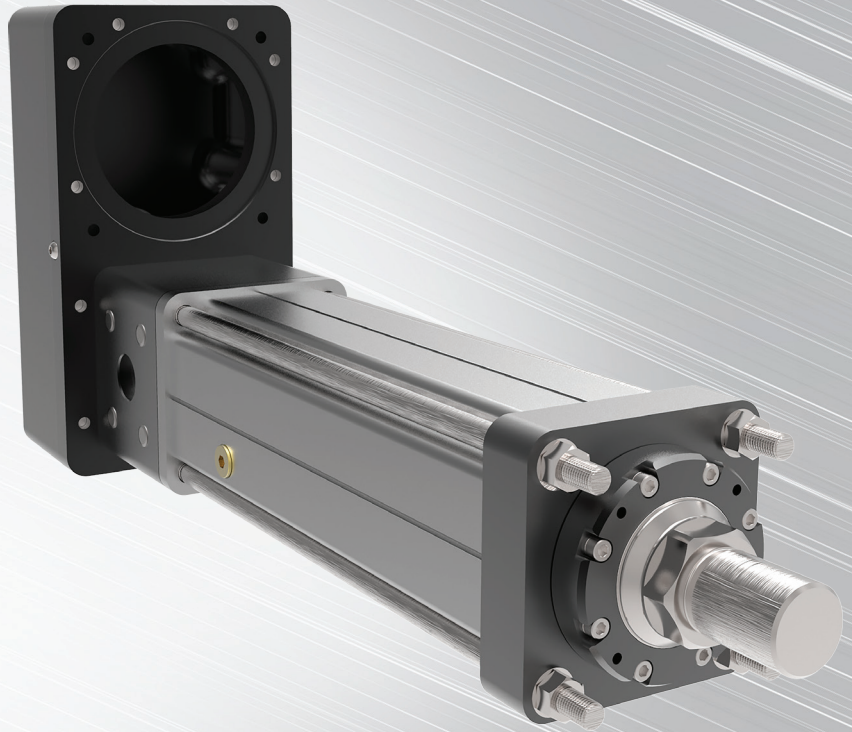


**CURTISS -
WRIGHT**

FTX Series Product Catalog



FTX Series

High Force Actuators

Hydraulic Cylinder Replacement

Hydraulic cylinders provide long life and high force in a small package size. The FTX Series high force electric actuators were designed specifically to allow migration from traditional hydraulic actuation to electric. Based on planetary roller screw technology, the FTX offers 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

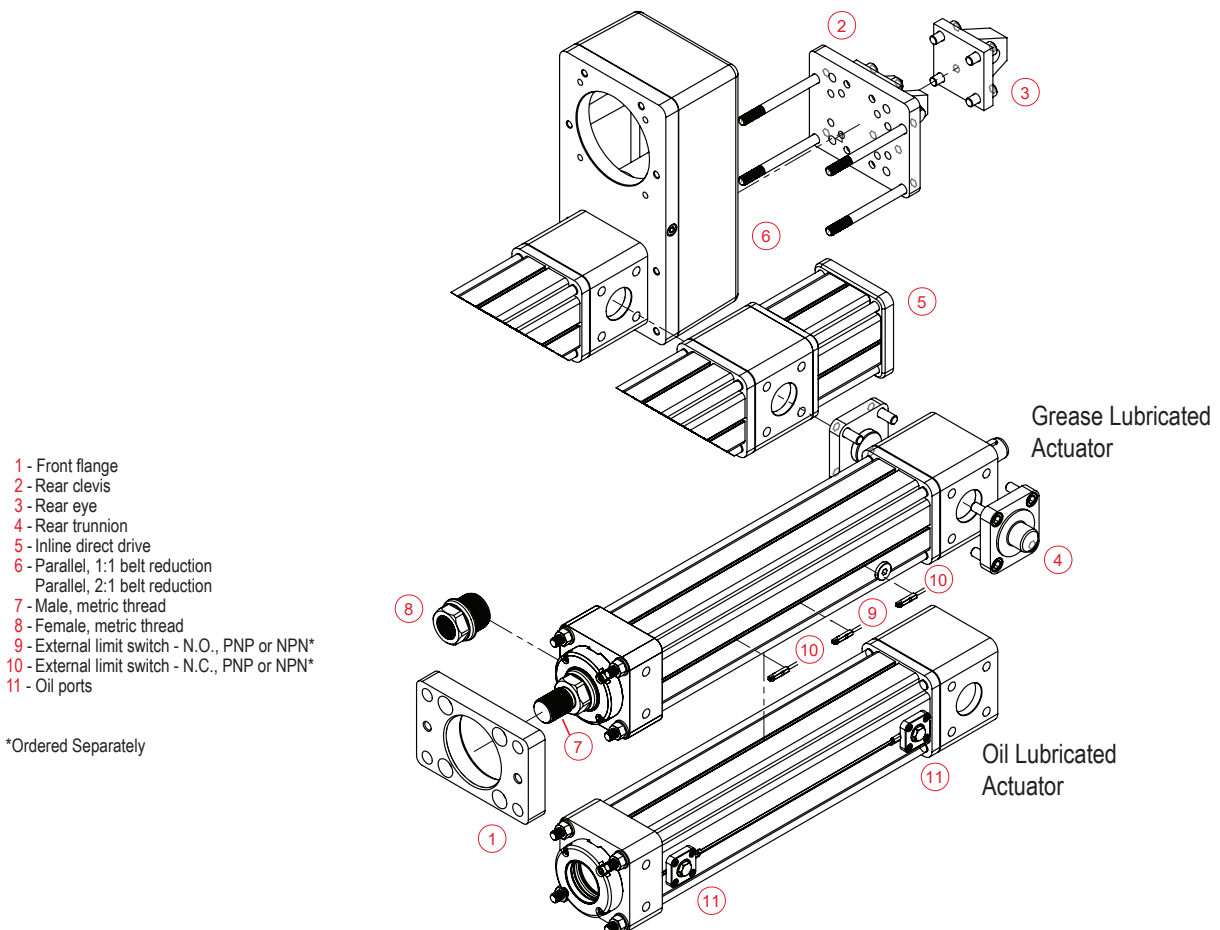
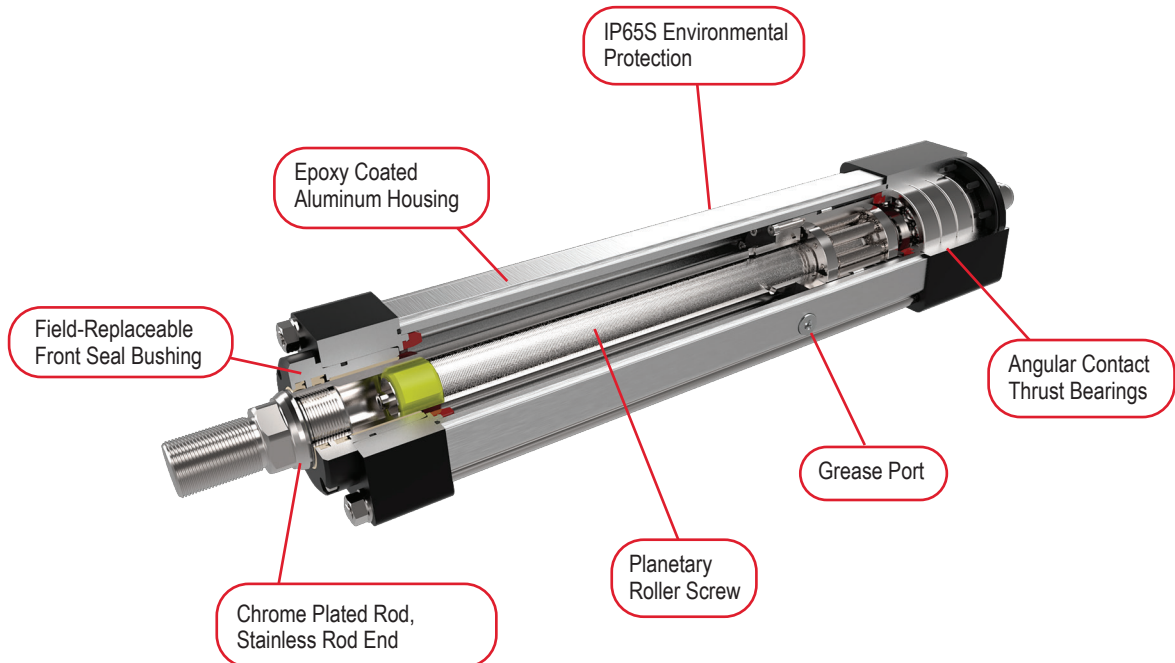
Hydraulic cylinders are commonly installed in harsh industrial settings. Therefore all FTX Series models are environmentally sealed to IP65S. In addition, its planetary roller screw mechanism withstands significantly higher shock loads than weaker ball screw alternatives. Migrate to electric with confidence knowing the FTX Series 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 Series 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



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 _s (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-m ² (lbf-in-sec ²)]	Add per 25 mm [kg-m ² (lbf-in-sec ²)]
5 mm Lead		8.27 x 10 ⁻⁴ (7.32 x 10 ⁻³)	2.19 x 10 ⁻⁶ (1.94 x 10 ⁻⁵)
10 mm Lead		8.33 x 10 ⁻⁴ (7.37 x 10 ⁻³)	2.42 x 10 ⁻⁶ (2.14 x 10 ⁻⁵)
20 mm Lead		8.57 x 10 ⁻⁴ (7.58 x 10 ⁻³)	3.31 x 10 ⁻⁶ (2.93 x 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 x 10 ⁻⁴ (8.20 x 10 ⁻³)	1.09 x 10 ⁻³ (9.62 x 10 ⁻³)	2.19 x 10 ⁻⁶ (1.94 x 10 ⁻⁵)
10 mm Lead	9.33 x 10 ⁻⁴ (8.26 x 10 ⁻³)	1.09 x 10 ⁻³ (9.67 x 10 ⁻³)	2.42 x 10 ⁻⁶ (2.14 x 10 ⁻⁵)
20 mm Lead	9.57 x 10 ⁻⁴ (8.47 x 10 ⁻³)	1.12 x 10 ⁻³ (9.89 x 10 ⁻³)	3.31 x 10 ⁻⁶ (2.93 x 10 ⁻⁵)
Parallel Drive Inertia		1:1 Reduction	2:1 Reduction
5 mm Lead (zero stroke)		4.90 x 10 ⁻³ (4.34 x 10 ⁻²)	2.22 x 10 ⁻³ (1.97 x 10 ⁻²)
Add per 25 mm stroke		2.19 x 10 ⁻⁶ (1.94 x 10 ⁻⁵)	5.48 x 10 ⁻⁷ (4.85 x 10 ⁻⁶)
10 mm Lead (zero stroke)		4.91 x 10 ⁻³ (4.34 x 10 ⁻²)	2.23 x 10 ⁻³ (1.97 x 10 ⁻²)
Add per 25 mm stroke		2.42 x 10 ⁻⁶ (2.14 x 10 ⁻⁵)	6.04 x 10 ⁻⁷ (5.34 x 10 ⁻⁶)
20 mm Lead (zero stroke)		4.93 x 10 ⁻³ (4.37 x 10 ⁻²)	2.23 x 10 ⁻³ (1.98 x 10 ⁻²)
Add per 25 mm stroke		3.31 x 10 ⁻⁶ (2.93 x 10 ⁻⁵)	8.28 x 10 ⁻⁷ (7.33 x 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 900mm Stroke	kN	143.4	162.4
	lbf	32,240	36,500

Base Unit Inertia		Zero Stroke [kg-m ² (lbf-in-sec ²)]	Add per 25 mm [kg-m ² (lbf-in-sec ²)]
5 mm Lead		2.55 x 10 ⁻³ (2.26 x 10 ⁻²)	4.62 x 10 ⁻⁵ (4.09 x 10 ⁻⁴)
10 mm Lead		2.56 x 10 ⁻³ (2.27 x 10 ⁻²)	4.65 x 10 ⁻⁵ (4.12 x 10 ⁻⁴)
Inline Drive Inertia	<32 mm Motor Shaft Diameter	>32 mm Motor Shaft Diameter	Add per 25 mm
5 mm Lead	2.81 x 10 ⁻³ (2.49 x 10 ⁻²)	3.35 x 10 ⁻³ (2.97 x 10 ⁻²)	4.62 x 10 ⁻⁵ (4.09 x 10 ⁻⁴)
10 mm Lead	2.82 x 10 ⁻³ (2.50 x 10 ⁻²)	3.36 x 10 ⁻³ (2.98 x 10 ⁻²)	4.65 x 10 ⁻⁵ (4.12 x 10 ⁻⁴)
Parallel Drive Inertia		1:1 Reduction	2:1 Reduction
5 mm Lead (zero stroke)		9.43 x 10 ⁻³ (8.34 x 10 ⁻²)	4.66 x 10 ⁻³ (4.12 x 10 ⁻²)
Add per 25 mm stroke		4.62 x 10 ⁻⁵ (4.09 x 10 ⁻⁴)	1.15 x 10 ⁻⁵ (1.02 x 10 ⁻⁴)
10 mm Lead (zero stroke)		9.44 x 10 ⁻³ (8.35 x 10 ⁻²)	4.66 x 10 ⁻³ (4.13 x 10 ⁻²)
Add per 25 mm stroke		4.65 x 10 ⁻⁵ (4.12 x 10 ⁻⁴)	1.16 x 10 ⁻⁵ (1.03 x 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 900mm Stroke	kN	223.6	261.2	233
	lbf	50,270	58,720	52,400

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

FTX215

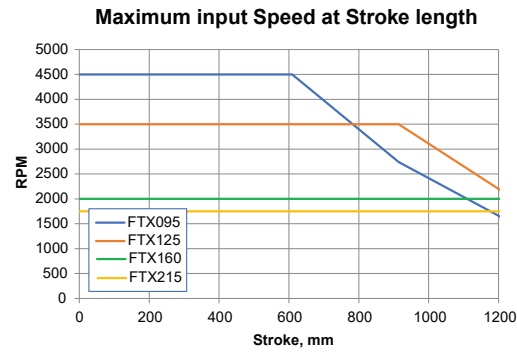
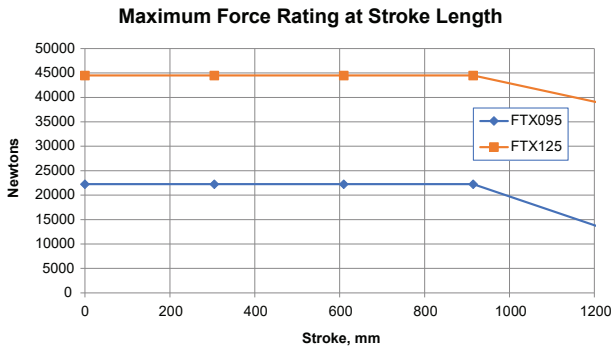
		06	12	30
Screw Lead	mm	6	12	30
	in	0.236	0.472	1.181
Maximum Force	kN	177.9	177.9	177.9
	lbf	40,000	40,000	40,000
Life at Maximum Force	km	78.7	161.8	414.3
	in x 10 ⁶	3.1	6.4	16.3
C _a (Dynamic Load Rating)*	kN	398	423	376
	lbf	89,500	95,200	84,700
Maximum Input Torque	Nm	243	425	976
	lbf-in	2,148	3,760	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)

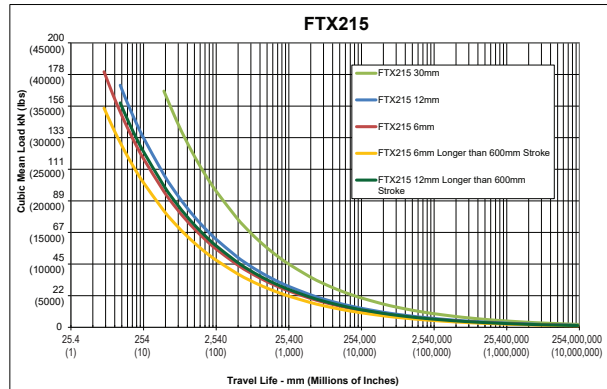
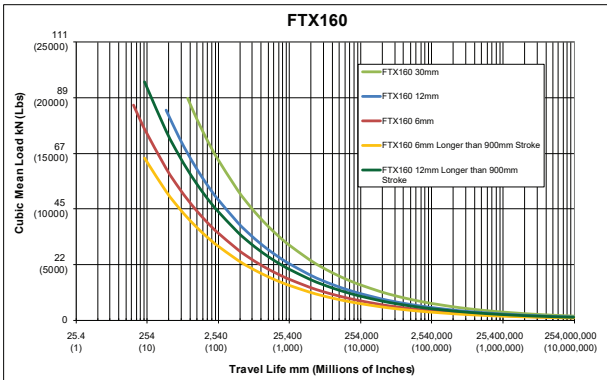
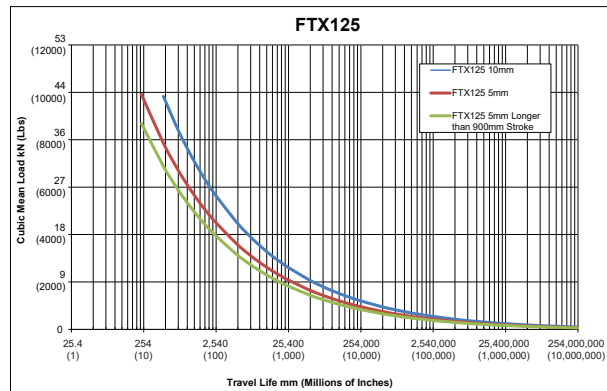
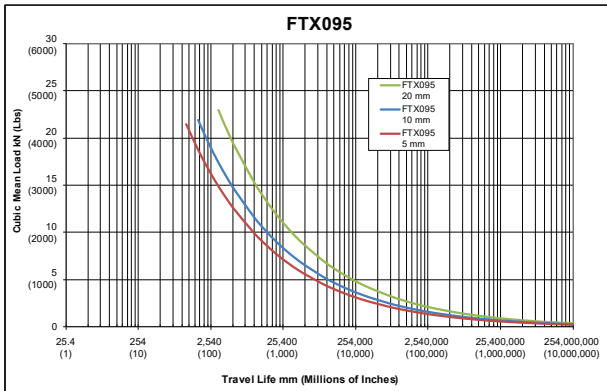
Base Actuator Weight (Zero Stroke)	kg	103
	lb	227
Actuator Weight Adder (Per 25 mm of stroke)	kg	2.70
	lb	5.96
Adder for Inline (excluding motor)	kg	38.6
	lb	85.1
Adder for Parallel Drive (excluding motor)	kg	62.3
	lb	137.3
Adder for Front Flange	kg	26.7
	lb	58.8
Adder for Rear Clevis	kg	32.5
	lb	71.6
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 900mm Stroke	kN	359.8	346.7	376
	lbf	80,900	77,950	84,700

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

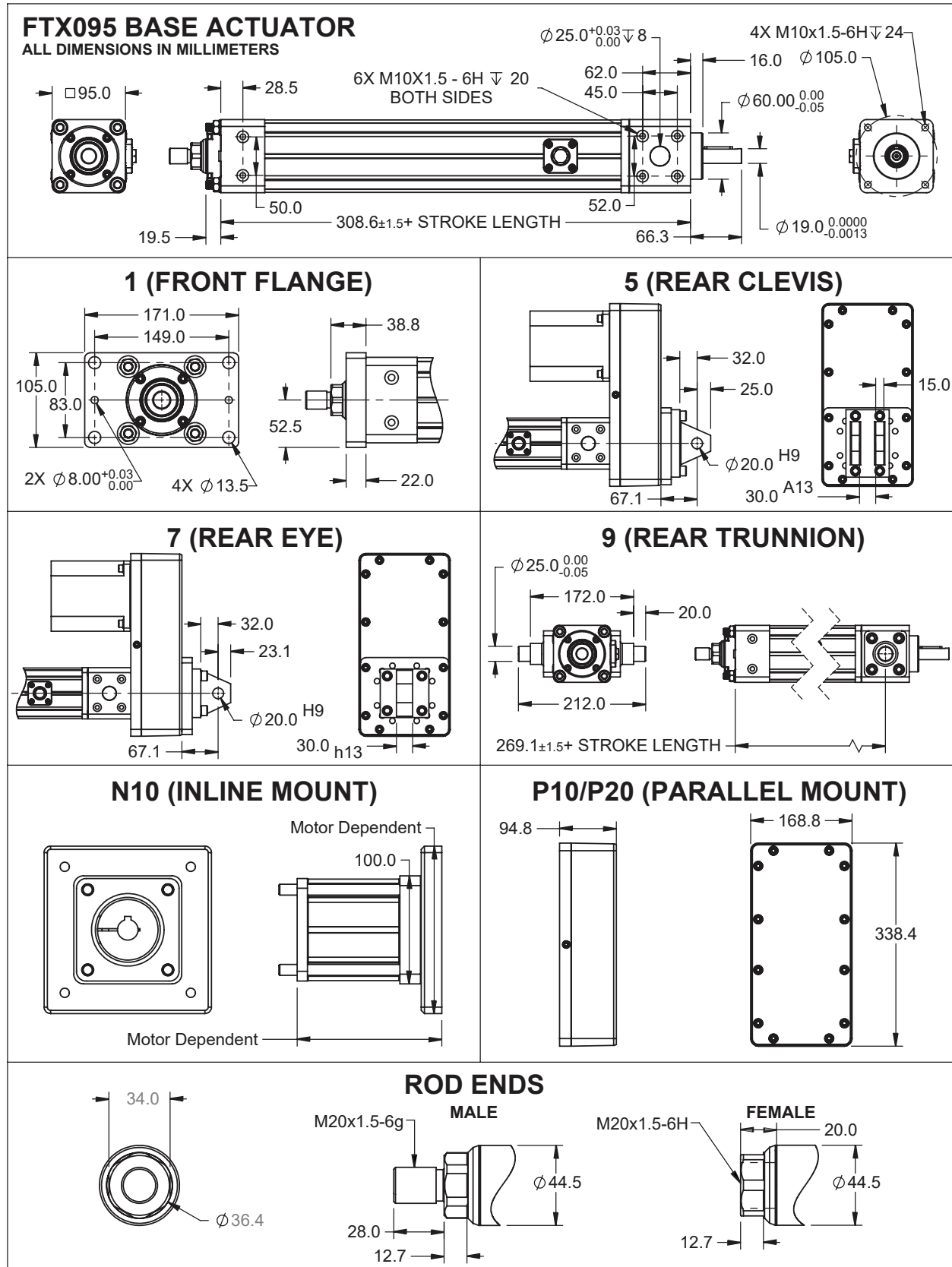
$$L_{10} = \left(\frac{C_a}{F_{cmf}} \right)^3 \times \ell$$

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

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.

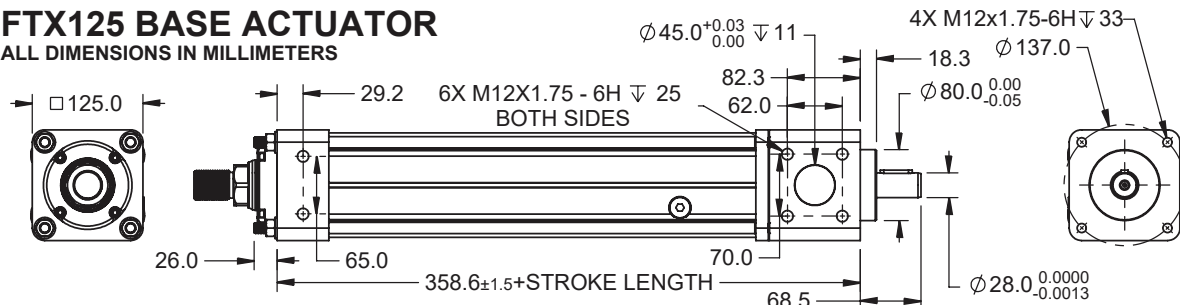
Dimensions



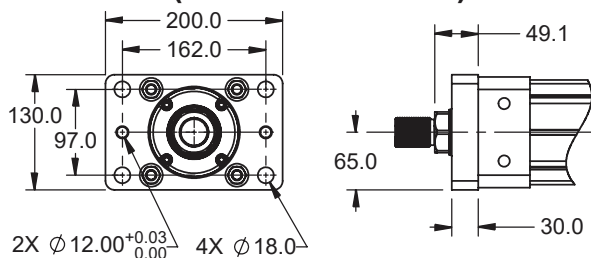
Pre-sale drawings and models are representative and are subject to change.

FTX125 BASE ACTUATOR

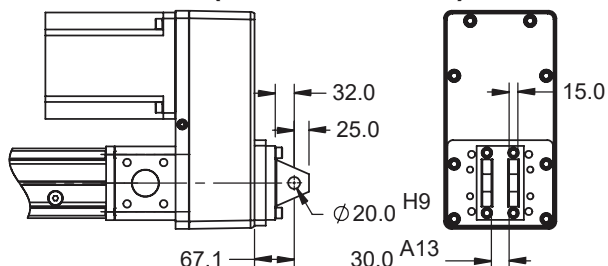
ALL DIMENSIONS IN MILLIMETERS



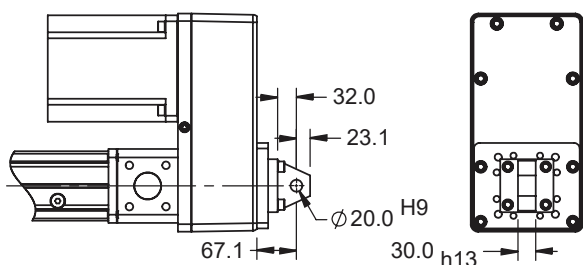
1 (FRONT FLANGE)



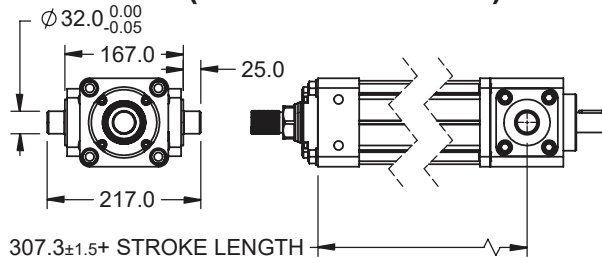
5 (REAR CLEVIS)



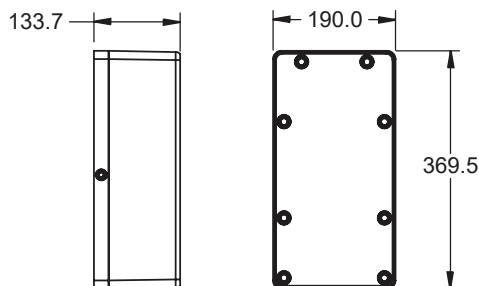
7 (REAR EYE)



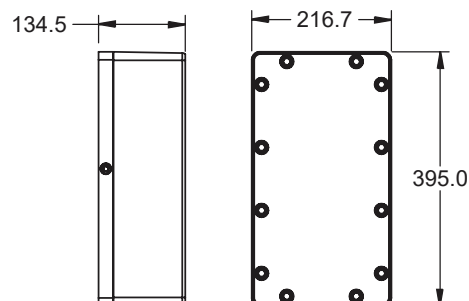
9 (REAR TRUNNION)



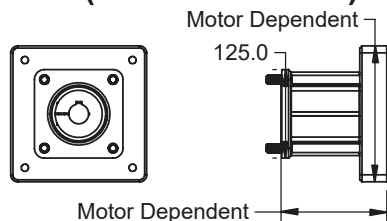
P10 (PARALLEL MOUNT)



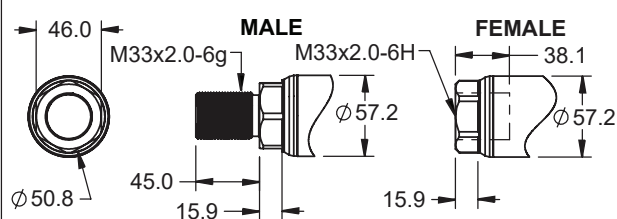
P20 (PARALLEL MOUNT)



N10 (INLINE MOUNT)



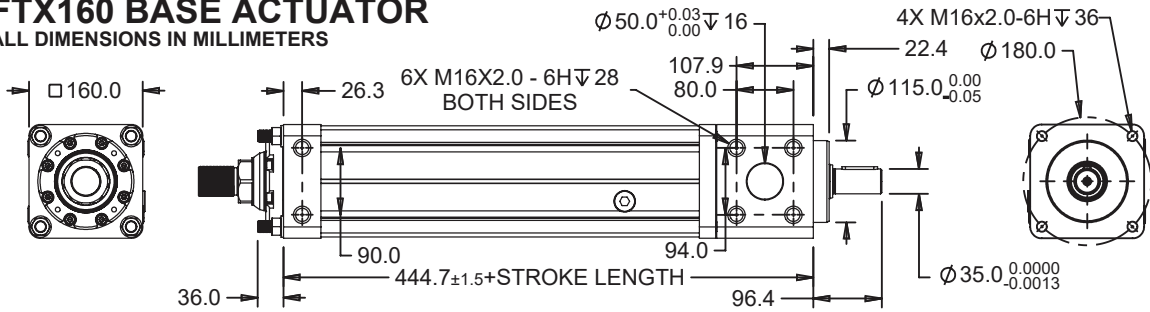
ROD ENDS



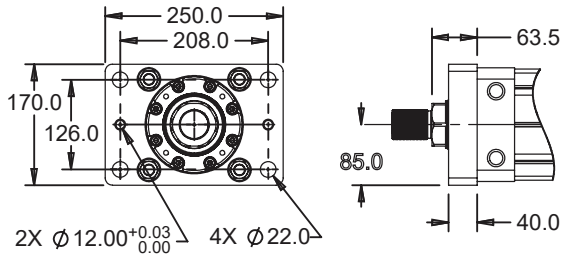
Pre-sale drawings and models are representative and are subject to change.

FTX160 BASE ACTUATOR

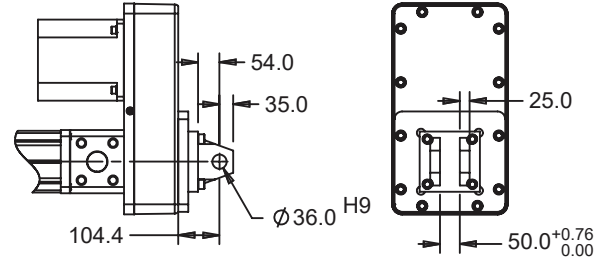
ALL DIMENSIONS IN MILLIMETERS



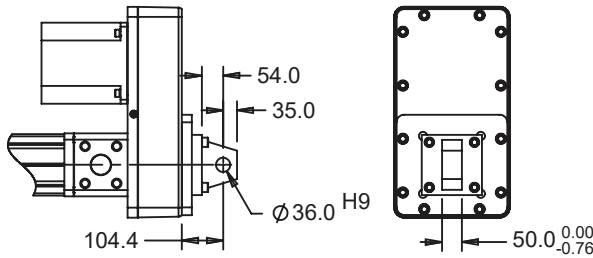
1 (FRONT FLANGE)



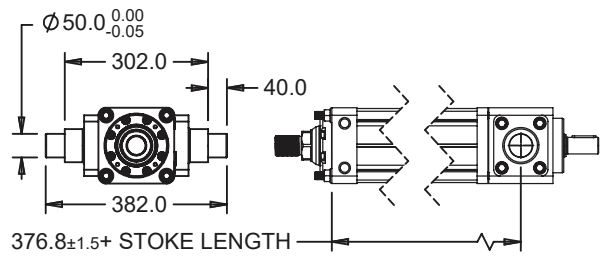
5 (REAR CLEVIS)



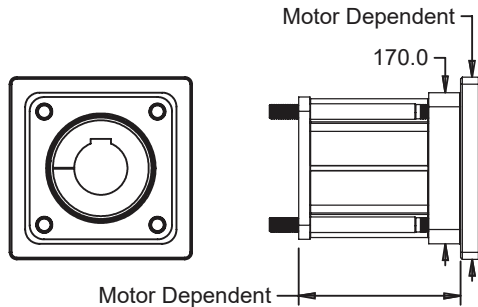
7 (REAR EYE)



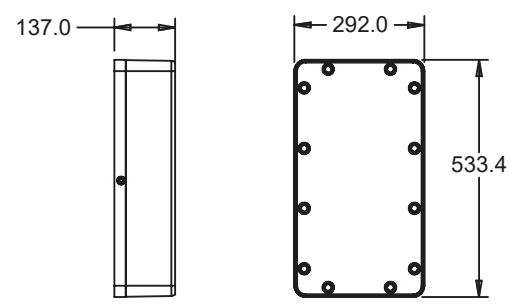
9 (REAR TRUNNION)



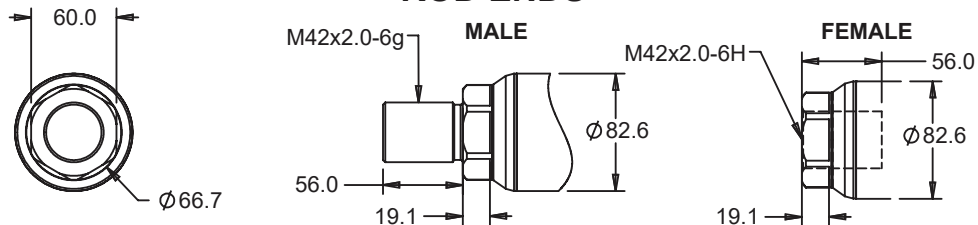
N10 (INLINE MOUNT)



P10/P20 (PARALLEL MOUNT)



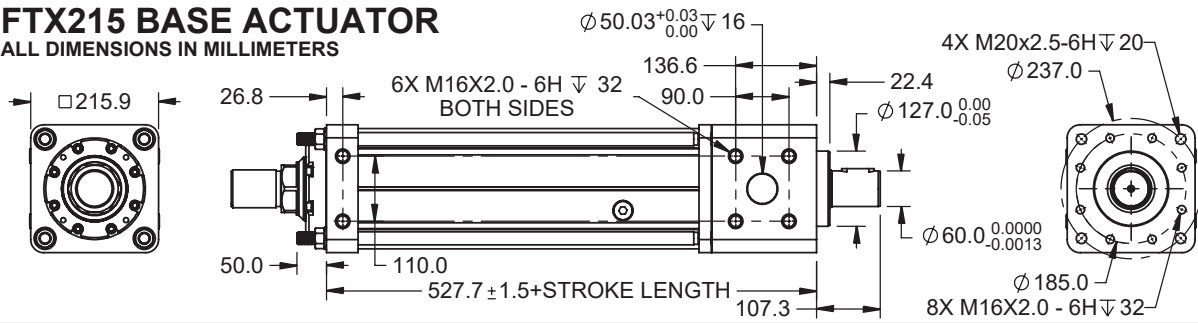
ROD ENDS



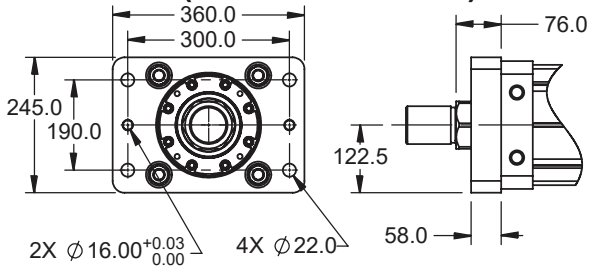
Pre-sale drawings and models are representative and are subject to change.

FTX215 BASE ACTUATOR

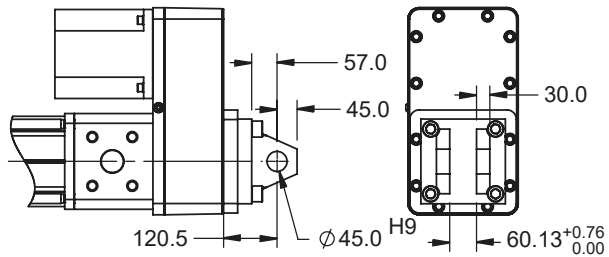
ALL DIMENSIONS IN MILLIMETERS



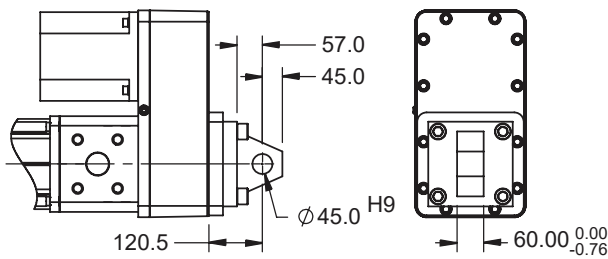
1 (FRONT FLANGE)



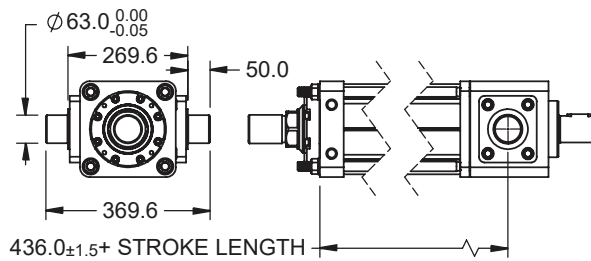
5 (REAR CLEVIS)



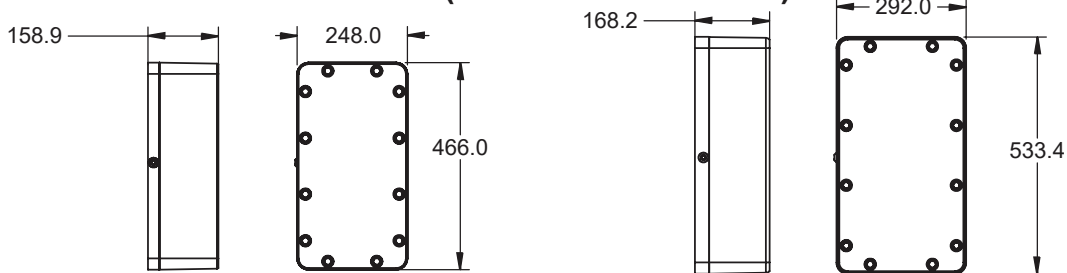
7 (REAR EYE)



9 (REAR TRUNNION)

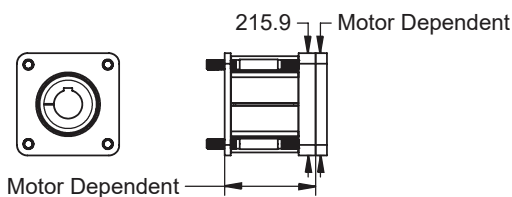


P10/P20 (PARALLEL MOUNT)

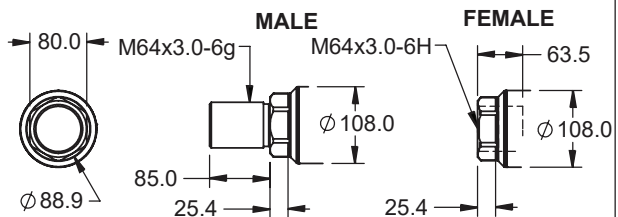


NOTE: 248mm WIDE HOUSING USED FOR MOTORS WITH 215mm MOUNTING B.C AND SMALLER, 1:1
292mm WIDE HOUSING USED FOR ALL 2:1 DRIVE MOTORS

N10 (INLINE MOUNT)

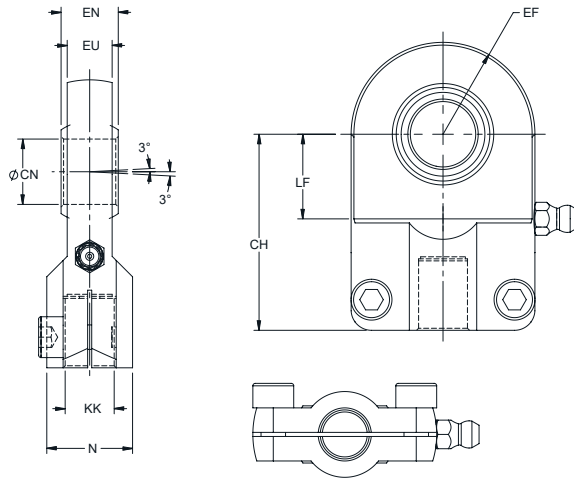


ROD ENDS



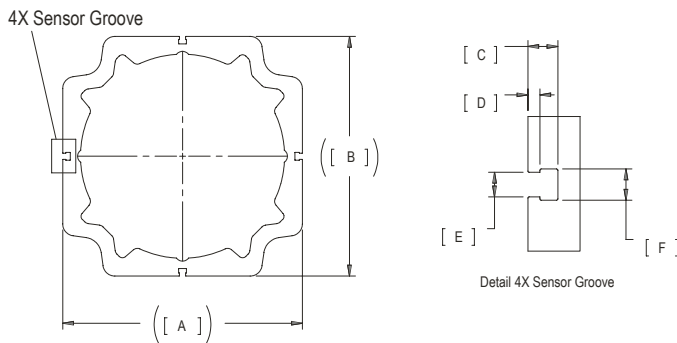
Pre-sale drawings and models are representative and are subject to change.

Rod Eye, Spherical



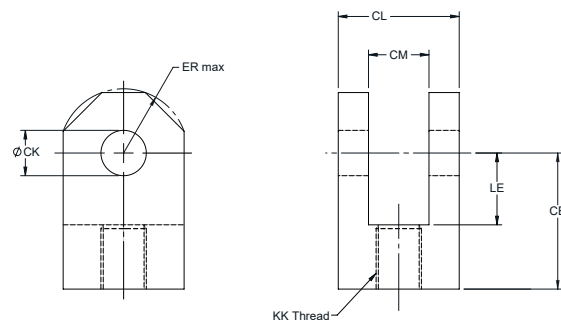
		FTX095	FTX125	FTX160	FTX215
AV	mm	29.0	46.0	55.0	86.0
	in	1.14	1.81	2.17	3.39
CH	mm	85.0	130.0	150.0	240.0
	in	3.35	5.12	5.91	9.45
CN	mm	30.0	50.0	60.0	100.0
	in	1.18	1.97	2.36	3.94
EF (max)	mm	41.0	61.0	80.0	120.0
	in	1.61	2.40	3.15	4.72
EN	mm	22.0	35.0	44.0	70.0
	in	0.87	1.38	1.73	2.76
EU (max)	mm	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			
		Motor Flange Code		Dimension in mm		Motor Flange Code		Dimension in mm		Motor Flange Code		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.	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 2mm 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 2mm 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

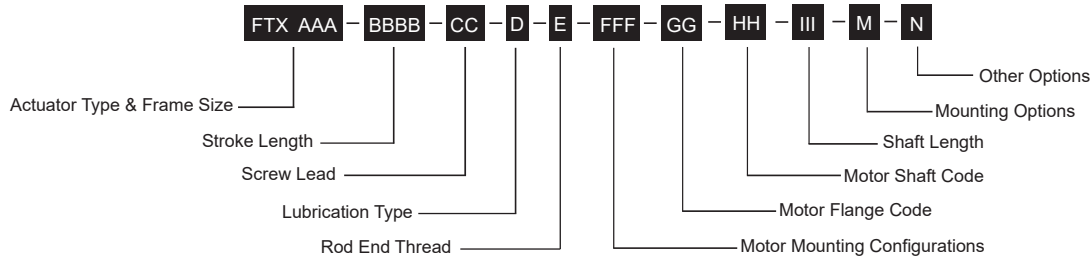
FTX160 Motor / Gearbox Mounts

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.	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, 070, 072, 080, 082, 085, 088, 097, 100, 105, 110, 112, 113, 116	Pick closest shaft length within 2mm 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			
		Motor Flange Code		Dimension in mm		Motor Flange Code		Dimension in mm		Motor Flange Code		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.	Motor Flange Code	Bolt Circle	Pilot Diam.	Motor Flange Code
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*	Motor Shaft Code	Shaft Diam.	Key Width*	Motor Shaft Code
00	PA	38	10	PA	38	10	PA	38	10	PA	38	10	PA
	QA	40	12	QA	40	12	QA	40	12	QA	40	12	QA
	RA	42	12	RA	42	12	RA	42	12	RA	42	12	RA
	TA	48	14	TA	48	14	TA	48	14	TA	48	14	TA
	UA	55	16	UA	55	16	UA	55	16	UA	55	16	UA
	VA	60	18	VA	60	18	VA	60	18	VA	60	18	VA
	WA	65	18	WA	65	18	WA	65	18	WA	65	18	WA
Shaft Length	Shaft Length			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 2mm 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		070-155	Allowable shaft length range in 1 mm increments		070-155

*Key not required for operation



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, English³
- F = Female, English³

FFF = Motor Mounting Configurations¹

- 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, Metric²
- 7 = Rear Eye, Metric²
- 9 = Rear Trunnion, Metric
- F = Front Flange, English³
- C = Rear Clevis, English³ - FT Equivalent (Not available on FTX215)
- G = Rear Clevis, Metric³ - 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 Series 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: [Division Policies | About | Actuation Division | Curtiss-Wright Actuation Group \(cw-actuation.com\)](#) for details.

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