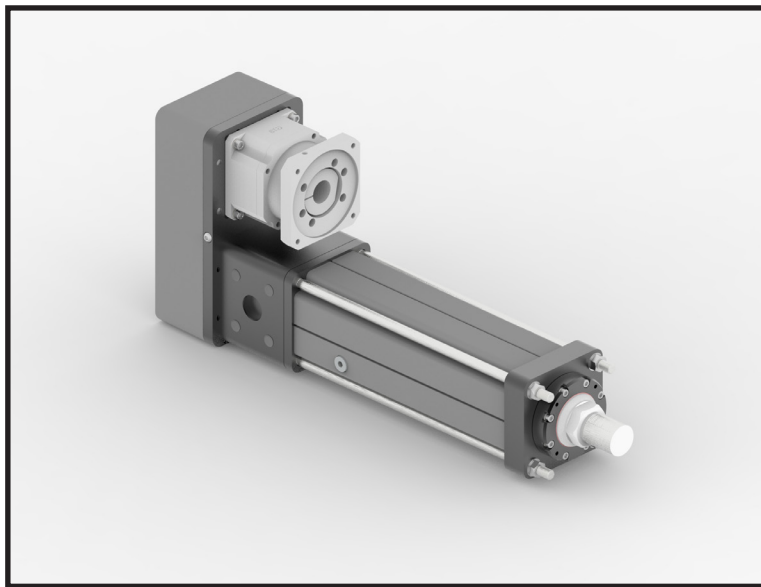


Product Feature Comparison: FT vs. FTX

The FTX Series actuators leverage more than a decade of experience successfully replacing hydraulics in high force, high duty cycle applications in harsh environments. Based on planetary roller screw technology, the FTX Series offers high robustness in a compact form factor, making it an ideal alternative to hydraulic cylinders. With force ratings up to 178 kN (40,000 lbf), speeds up to 875 mm/sec (34 in/sec) and stroke lengths from 150mm (6 inches) to 900mm (3 feet) the FTX Series can be applied across a wide range of linear motion applications.



The FTX, a next generation version of the current FT series, features the following key enhancements over the existing FT designs:

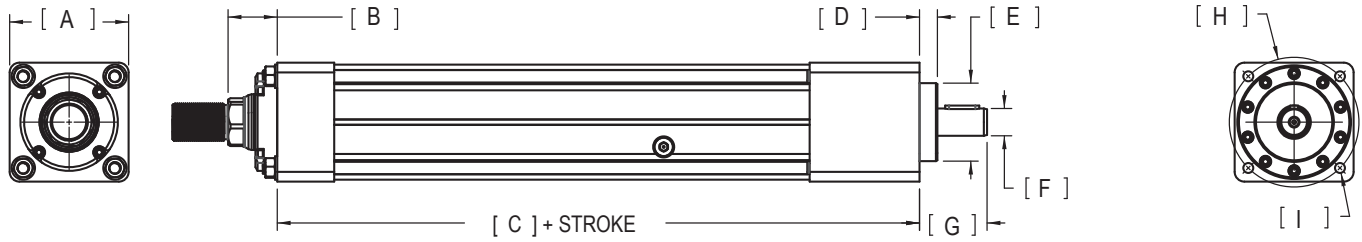
- Standard High capacity planetary roller screw offers up to 15X the life and significantly higher shock load resistance than a comparably sized ball screw.
- IP65 environmental protection across the entire unit.
- Standard oil lubrication option.
- Grease zerk fitting and removable front seal bushing greatly simplify maintenance and re-greasing of nut assembly to maximize actuator life.
- Idler pulley design greatly simplifies motor installation and belt tensioning / maintenance.
- Modular design with bolt-on mounting hardware allows mounting style reconfiguration in the field using commonly available tools.
- Improved roller screw bushing, impact bumpers, tie rods, and bearing nut, and FSB.
- Thicker / more robust mounting options.

The FTX Series is a next-generation high force actuator designed to replace the current FT Series. The FTX is as reliable as the FT with upgrades to many features improving on its strength, maintenance, and flexibility,

Description	FT	FTX	FTX Benefit
Main rod diameter			
FT35 vs FTX095	44.45 mm (1.75 in)	44.45 mm (1.75 in)	
FT45 vs FTX125	57.15 mm (2.25 in)	57.15 mm (2.25 in)	
FT60 vs FTX160	76.2 mm (3.00 in)	82.55 mm (3.25 in)	Stronger/ Stiffer
FT80 vs FTX215	101.6 mm (4.00 in)	107.95 mm (4.25 in)	Stronger/ Stiffer
Roller screw bushing material	Bronze	Composite	Longer life, higher side load
Tie rods			
FT35 vs FTX095	3/8 - 16 UNC - 2A (9.53 mm)	M10 x 1.5 - 6H	Stronger / Stiffer
FT45 vs FTX125	M12 x 1.75 - 6H	M12 x 1.75 - 6H	
FT60 vs FTX160	9/16 - 12 UNC - 2A (14.29 mm)	M16 x 2.0 - 6H	Stronger / Stiffer
FT80 vs FTX215	3/4 - 10 UNC - 2A (19.05 mm)	M20 x 2.5 - 6H	Stronger / Stiffer
Actuator mounting features	Permanent	Modular	Field-replaceable
Impact bumper material	Rubber	Urethane	More robust. Absorbs more energy
Roller screw nut assembly	Standard	Extended length	Longer life
Sealing	IP65 (front only)	IP65 (entire unit)	Entire actuator rated IP65 as standard
Front seal bushing (FSB)	One grease seal, One oil seal	All-in-one seal	Improved sealing, longer life
Low Temperature Grease	5 piece minimum quantity	No minimum quantity	Rated for -40° C
Grease zerk	No	Yes	Easy maintenance
Rear clevis	N/A	Available	
Rear trunnions	N/A	Available	
Screw capacity	Standard or high capacity	High capacity only	High capacity life at standard capacity price
Anti-rotate	Standard	Standard	Enhanced design improves main rod support
Limit switches	One side only	All four sides	Greater flexibility
Stainless steel rod ends	Optional	Standard	
Oil sight gauge	Optional	Standard (on oil units)	Viewing window simplifies maintenance
Front flange thickness			
FT35 vs FTX095	16.0 mm (0.63 in)	22 mm (0.87 in)	Stronger / Stiffer
FT45 vs FTX125	25.4 mm (1.0 in)	30 mm (1.18 in)	Stronger / Stiffer
FT60 vs FTX160	25.4 mm (1.0 in)	40 mm (1.57 in)	Stronger / Stiffer
FT80 vs FTX215	31.8 mm (1.25 in)	58.0 mm (2.28 in)	Stronger / Stiffer
Faceplate thickness			
FT35 vs FTX095	15.88 mm (0.625 in)	56.90 mm (2.24 in)	Stronger / Stiffer
FT45 vs FTX125	58.42 mm (2.30 in)	58.42 mm (2.30 in)	
FT60 vs FTX160	25.4 mm (1.0 in)	52.58 mm (2.07 in)	Stronger / Stiffer
FT80 vs FTX215	38.1 mm (1.5 in)	54.86 mm (2.16 in)	Stronger / Stiffer

FT and FTX product line comparisons

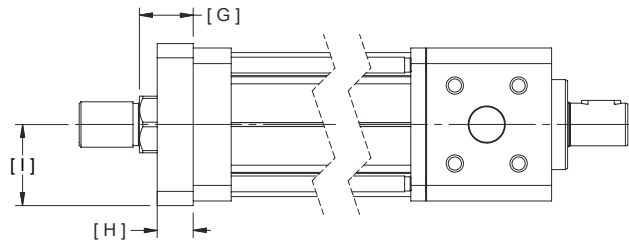
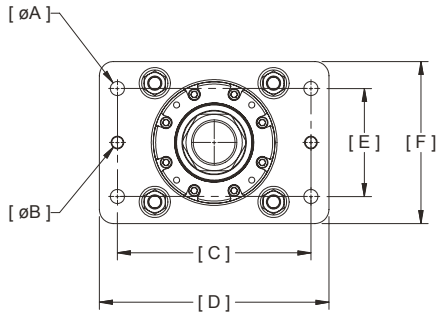
Base Actuator



		FT35	FTX095	FT45	FTX125	FT60	FTX160	FT80	FTX215
A	in	□ 3.63	□ 3.74	□ 4.80	□ 4.92	□ 6.38	□ 6.30	□ 8.50	□ 8.50
	mm	□ 92.1	□ 95.0	□ 122.0	□ 25.0	□ 161.9	□ 160.0	□ 215.9	□ 215.9
B	in	1.69	1.53	1.99	1.98	2.25	2.50	3.03	2.99
	mm	42.9	38.8	50.5	49.1	57.1	63.5	77.0	76.0
C	in	9.1	12.15 ± 0.06	13.9	14.12 ± 0.06	15.3	17.51 ± 0.06	19.8	20.59 ± 0.06
	mm	232*	308.6 ± 1.5	354	358.6 ± 1.5	389	444.7 ± 1.5	503	523.0 ± 1.5
D	in	0.05	0.63	0.72	0.72	0.10	0.88	0.10	0.88
	mm	1.3	16.0	18.3	18.0	2.50	22.4	2.50	22.4
E	in	Ø3.00	Ø2.36	Ø3.15	Ø3.15	Ø5.00	Ø 4.53	Ø6.75	Ø5.00
	mm	Ø76.2	Ø60.0	Ø80.0	Ø80.0	Ø127.0	Ø115.0	Ø171.5	Ø127.0
F	in	Ø0.748 +0.00/-0.0005	Ø0.748 +0.00/-0.0005	Ø1.102 +0.00/-0.0005	Ø1.102 +0.00/-0.0005	Ø1.378 +0.00/-0.0006	Ø 1.378 +0.00/-0.0005	Ø2.362 +0.00/-0.0005	Ø2.362 +0.00/-0.0005
	mm	Ø19.0 +0.00/-0.013	Ø19.0 +0.00/-0.0013	Ø28.0 +0.00/-0.013	Ø28.0 +0.00/-0.0013	Ø35.0 +0.00/-0.016	Ø35.0 +0.0000/-0.0013	Ø 60.0 +0.00/-0.013	Ø60.0 +0.00/-0.0013
G	in	1.45	2.61	2.73	3.15	1.60	3.79	1.48	4.23
	mm	36.8	66.3	69.3	80.0	40.5	96.4	37.5	107.3
H	in	Ø3.860 BC	Ø4.13 BC	Ø5.236 BC	Ø5.39 BC	Ø6.79 BC	Ø7.09	Ø9.33 BC	Ø9.33 BC
	mm	Ø98.0	Ø105.0	Ø133.0	Ø137.0	Ø172.4	Ø180.0	Ø237.0	Ø237.0
I	mm		4X M10x1.5 - 6H ↓ 24 mm	4X M12x1.75 - 6H ↓ 25.4	4X M12x1.75 - 6H ↓ 33 mm		4X M16x2.0-6H ↓36 mm		4X M20x2.5 - 6H ↓ 20 mm

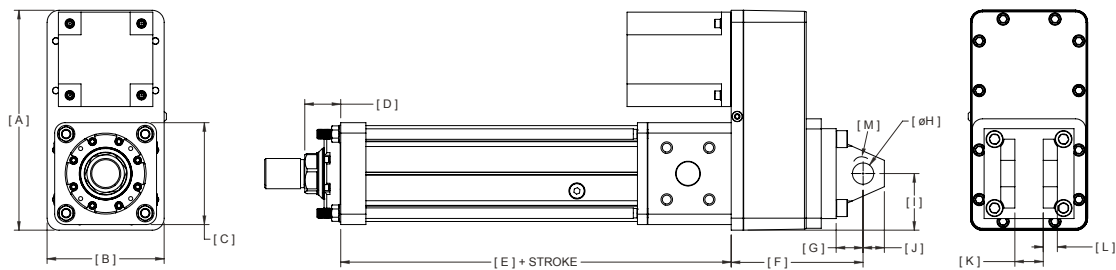
*Add 20 mm if choosing high capacity option for the FT35

Front Flange



		FT35	FTX095	FT45	FTX125	FT60	FTX160	FT80	FTX215
A	in	Ø0.53	Ø0.53	Ø0.69	Ø0.71	Ø0.66	Ø0.87	Ø0.78	Ø0.87
	mm	Ø13.5	Ø13.5	Ø17.5	Ø18.0	Ø16.7	Ø22	Ø19.8	Ø22.0
B	in	Ø0.375 +0.001 / -0.000	Ø0.315 +0.001/-0.000	Ø0.500 +0.001/-0.000	Ø0.472 +0.001/-0.000	Ø0.501 +0.001/-0.000	Ø0.472 +0.001/-0.000	Ø0.625 +0.001/-0.000	Ø0.630 +0.001/-0.000
	mm	Ø9.53 +0.03 / 0.00	Ø8.00 +0.03/-0.00	Ø12.70 +0.03/0.00	Ø12.00 +0.03/-0.00	Ø12.70 +0.03/0.00	Ø12.00 +0.03/-0.00	Ø15.9 +0.025/0.000	Ø16.00 +0.03/-0.00
C	in	4.75	5.87	6.38	6.38	8.32	8.19	10.75	11.81
	mm	120.70	149.0	161.90	162.0	211.2	208.0	273.10	300.0
D	in	5.80	6.73	7.63	7.87	10.00	9.84	12.75	14.17
	mm	146	171.0	193.70	200.0	254.0	2.50	323.90	360.0
E	in	2.50	3.27	3.82	3.82	4.57	4.96	6.00	7.48
	mm	63.50	83.0	97.0	97.0	116.20	126.0	152.40	190.0
F	in	3.63	4.13	5.00	5.12	6.38	6.69	8.50	9.65
	mm	92.10	105.0	127.0	130.0	161.90	170.0	215.90	245.0
G	in	1.69	1.53	1.99	1.93	2.25	2.50	3.03	2.99
	mm	42.90	38.80	50.50	49.10	57.10	63.50	77.0	76.0
H	in	0.63	0.87	1.00	1.18	1.00	1.57	1.25	2.28
	mm	15.90	22.0	25.40	30.0	25.40	40.0	31.8	58.0
I	in	1.96	2.07	3.05	2.56	3.19	3.35	4.40	4.82
	mm	49.80	52.50	77.50	65.0	81.0	85.0	111.8	122.50

Rear Clevis Mount



		FTX095		FT45		FTX125		FT60	FTX160
		FT35	169 mm wide housing	(Option C)	(Option G)	190 mm wide housing	217 mm wide housing		
A	in	9.60	13.32	14.55	14.55	14.55	15.55	15.55	21
	mm	243.8	338.4	369.5	369.5	369.5	395.0	395.0	533.4
B	in	5.18	6.65	7.48	7.48	7.48	8.53	8.53	11.5
	mm	131.6	168.8	190.0	190.0	190.0	216.7	216.7	292
C	in	□ 3.63	□ 3.74	□ 4.80	□ 4.80	□ 4.92	□ 4.92	□ 6.38	□ 6.30
	mm	□ 92.1	□ 95.0	□ 122.0	□ 122.0	□ 125.0	□ 125.0	□ 161.9	□ 160
D	in	1.69	1.53	1.99	1.99	1.93	1.93	2.25	2.50
	mm	42.9	38.8	50.5	50.0	49.1	49.1	57.1	63.50
E	in	9.1*	12.15 ± 0.06	13.9	13.9	14.12 ± 0.06	14.12 ± 0.06	15.3	17.51 ± 0.06
	mm	232*	308.6 ± 1.5	354	354	358.6 ± 1.5	358.6 ± 1.5	368	444.7 ± 1.5
F	in	6.3	6.37 ± 0.04	9.0	7.9	7.90 ± 0.04	7.93 ± 0.04	9.0	9.51 ± 0.04
	mm	159	161.8 ± 1.0	229	201	200.7 ± 1.0	201.6 ± 1.0	229	241.4 ± 1.0
G	in	1.50	1.26	2.12	1.26	1.26	1.26	2.5	2.3
	mm	38.1	32.0	53.8	32.0	32.0	32.0	63.5	54
H	in	Ø1.000** +0.002 / -0.001	Ø0.79 H9	Ø1.378 ±0.001	Ø0.787 H9	Ø0.79 H9	Ø0.79 H9	Ø1.750*** +0.002/-0.001	Ø1.42 H9
	mm	Ø25.4 +0.05 / -0.03	Ø20.0 H9	Ø35.0 ±0.03	Ø20.00 H9	Ø20.0 H9	Ø20.0 H9	Ø44.45 +0.05/-0.03	Ø36 H9
I	in	2.0	3.13 ± 0.07	3.1	3.1	3.07 ± 0.07	3.75 ± 0.07	3.43	5.25 ± 0.07
	mm	50	79.4 ± 1.8	78	78	77.9 ± 1.8	95.3 ± 1.8	87.1	133.4 ± 1.8
J	in	1.00	N/A	1.4	0.6	N/A	N/A	2.13	1.378
	mm	25.4	N/A	35	15	N/A	N/A	54.0	35
K	in	0.74	1.18	1.0	0.6	1.18	1.18	2.51	1.97
	mm	19	30.0	25	15	30.0	30.0	63.9	50 +0.76/-0.00
L	in	1.52	0.59	2.03	1.18	0.59	0.59	1.25	0.98
	mm	38.5	15.0	51.6	30.0	15.0	15.0	31.8	25
M	in		1.14			1.14	1.14		1.97
	mm		29.0			29.0	29.0		50

*Add 20 mm if choosing high capacity option for the FT35.

** If "G" metric clevis option, Ø 27 mm + 0.00 / - 0.06

*** If "G" metric clevis option, Ø 45 mm + 0.00 / - 0.08

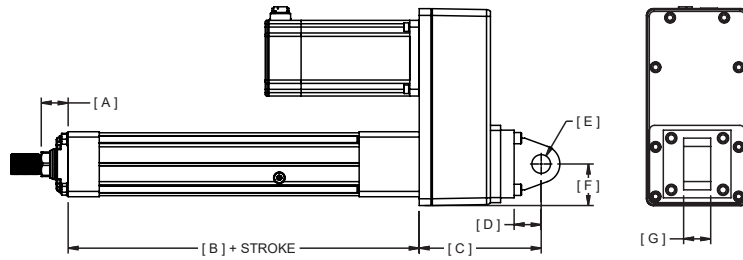
FT80 does not have a standard clevis mount option

		FTX215	
		248 mm wide housing	292 mm wide housing
A	in	18.35	21.00
	mm	466.0	533.4
B	in	9.76	11.50
	mm	248.0	292.1
C	in	□ 8.50	□ 8.50
	mm	□ 215.9	□ 215.9
D	in	2.99	2.99
	mm	76.0	76.0
E	in	20.59 ± 0.06	20.59 ± 0.06
	mm	523.0 ± 1.5	523.0 ± 1.5

		FTX215	
		248 mm wide housing	292 mm wide housing
F	in	11.00 ± 0.04	11.37 ± 0.04
	mm	279.4 ± 1.0	288.7 ± 1.0
G	in	2.24	2.24
	mm	57.0	57.0
H	in	Ø1.77 H9	Ø1.77 H9
	mm	Ø45.0 H9	Ø45.0 H9
I	in	4.72 ± 0.07	5.25 ± 0.07
	mm	120.0 ± 1.18	133.4 ± 1.8
J	in	1.77	1.77
	mm	45.0	45.0

		FTX215	
		248 mm wide housing	292 mm wide housing
K	in	2.367 +0.030/-0.000	2.367 +0.030/-0.000
	mm	60.13 +0.76/-0.00	60.13 +0.76/-0.00
L	in	1.18	1.18
	mm	30.0	30.0
M	in	2.09	2.09
	mm	53.0	53.0

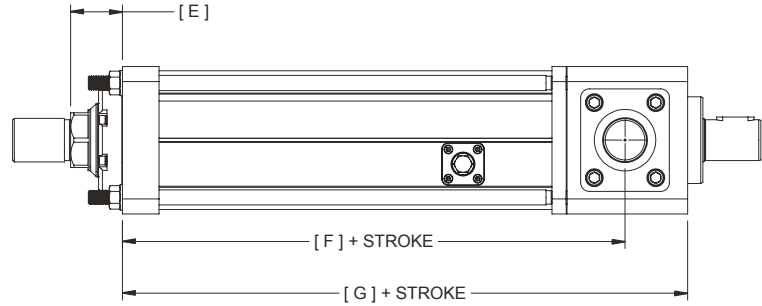
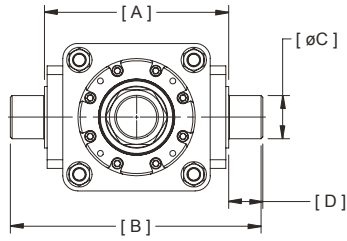
Rear Eye Mount



FT35, FT60, and FT80 do not have standard rear eye mount options

		FTX095	FT45		FTX125		FTX160	FTX215	
		169 mm wide housing	(Option Y)	(Option W)	190 mm wide housing	217 mm wide housing	292 mm wide housing	248 mm wide housing	292 mm wide housing
A	in	1.53	1.99	1.99	1.93	1.93	2.50	2.99	2.99
	mm	38.8	50.5	50.5	49.1	49.1	63.50	76.0	76.0
B	in	12.15 ± 0.06	13.9	13.9	14.12 ± 0.06	14.12 ± 0.06	17.51 ± 0.06	20.59 ± 0.06	20.59 ± 0.06
	mm	308.6 ± 1.5	354	354	358.6 ± 1.5	358.6 ± 1.5	444.7 ± 1.5	523.0 ± 1.5	523.0 ± 1.5
C	in	6.37 ± 0.04	9.01	7.90	7.90 ± 0.04	7.93 ± 0.04	9.51 ± 0.04	11.00 ± 0.04	11.37 ± 0.04
	mm	161.8 ± 1.0	228.9	200.7	200.7 ± 1.0	201.6 ± 1.0	241.4 ± 1.0	279.4 ± 1.0	288.7 ± 1.0
D	in	1.26	2.00	1.26	1.26	1.26	2.13	2.24	2.24
	mm	32.0	50.8	32.0	32.0	32.0	54.00	57.0	57.0
E	in	Ø0.79 H9	Ø1.378 ±0.001	Ø0.787 H9	Ø0.79 H9	Ø0.79 H9	Ø1.42 H9	Ø1.77 H9	Ø1.77 H9
	mm	Ø20.0 H9	Ø35.0 ±0.03	Ø20.00 H9	Ø20.0 H9	Ø20.0 H9	Ø36.0 H9	Ø45.0 H9	Ø45.0 H9
F	in	3.13 ± 1.07	3.07	3.07	3.07 ± 0.07	3.75 ± 0.07	5.25 ± 0.07	4.72 ± 0.07	5.25 ± 0.07
	mm	79.4 ± 1.8	77.9	77.9	77.9 ± 1.18	95.3 ± 1.18	133.4 ± 1.8	120.0 ± 1.8	133.4 ± 1.8
G	in	2.362 +0.000/-0.030	2.00	1.18	2.362 +0.000/-0.030	2.362 +0.000/-0.030	1.970 +0.00/- 0.030	2.362 +0.000/-0.030	2.362 +0.000/-0.030
	mm	60.00 +0.00/-0.76	50.8	30.0	60.00 +0.00/-0.76	60.00 +0.00/-0.76	50.0 +0.00/- 0.76	60.00 +0.00/-0.76	60.00 +0.00/-0.76

Trunnion Mount



FT80 does not have a standard Trunnion mount option

		FT35	FTX095	FT45	FTX125	FT60	FTX160	FTX215
A	in	5.12	6.77 ± 0.025	4.80	6.57 ± 0.025	8.13	11.89 ± 0.025	10.62 ± 0.025
	mm	130.1	172.0 ± 0.64	122.0	167.0 ± 0.64	206.4	302 ± 0.64	269.6 ± 0.64
B	in	7.12	8.35 ± 0.015	8.30	8.54 ± 0.015	12.13	15.04 ± 0.15	14.45 ± 0.015
	mm	180.9	212.0 ± 0.38	210.9	217.0 ± .038	308.0	382 ± 0.38	367.0 ± 0.38
C	in	Ø3.63	Ø0.984 +0.000/-0.002	Ø1.750 +0.000/-0.002	Ø1.26 +0.000/-0.002	Ø6.38	Ø 1.969 +0.000/-0.002	Ø2.480 +0.000/-0.002
	mm	Ø92.1	Ø25.00 +0.00/-0.05	Ø44.45 +0.00/-0.05	Ø32.00 +0.00/-0.05	Ø161.9	Ø 50 +0.00/-0.05	Ø63.00 +0.00/-0.05
D	in	1.00	0.787 ± 0.005	1.75	0.984 ± 0.005	2.00	1.575	1.970 ± 0.005
	mm	25.4	20.00 ± 0.13	44.5	25.00 ± 0.13	50.8	40 ± 0.13	50.00 ± 0.13
E	in	1.69	1.53	1.99	1.93	2.25	2.50	2.99
	mm	42.9	38.8	50.5	49.1	57.1	63.50	76.0
F	in		10.59 ± 0.06		12.10 ± 0.06		14.83 ± 0.06	16.98 ± 0.06
	mm		269.1 ± 1.5		307.3 ± 1.5		376.8 ± 1.50	431.3 ± 1.5
G	in	9.1	12.15 ± 0.06	13.9	14.12 ± 0.06	15.3	17.51 ± 0.06	20.59 ± 0.06
	mm	232	308.6 ± 1.5	354	358.6 ± 1.5	388	444.7 ± 1.5	523.0 ± 1.5