



Motors

*ValueLine*TM

High Efficiency

Vertical Hollow Shaft WPI
High Thrust Motors
5-300 HP



Maximum Energy Savings

High Efficiency

Power costs for some remote agriculture pumping sites have exceeded 10 cents per kilowatt-hour. While there are no regulated efficiencies on high thrust vertical motors, the GE High Efficiency Value Line stock vertical motor was designed with the latest government efficiencies established for horizontal motors under the Federal Energy Policy Act. **Some ratings have a 20 percent improvement over standard industry designs.**

High Thrust Capacity

On all frame sizes the Value Line VHS motor is designed with an angular contact bearing system which provides additional loading capability without the associated cost.

Guide Bearing

The guide bearings on all motor frames 213 through 449 are supplied with grease lubricated ball bearings.

Inverter-Duty Insulation System

The GE insulation system has been designed to withstand a wide range of environmental conditions, thermal shock and voltage stress. The system contains Class F non-hygroscopic components which resists moisture. The entire system is IGBT drive compatible at 460 volts with a 4:1 variable torque speed range (min.20Hz). All motors are nameplate stamped for both 60 Hz and the equivalent 50 Hz de-rated horsepower.

Ball Coupling

Eliminating counter rotation when the power is shut off is a must in deep well pumping. The GE High Efficiency Value Line motor is supplied standard with a "convertible" coupling. The coupling is selected as a separate item and shipped with the motor in a non-reverse ratchet configuration that permits counter clockwise rotation only. The coupling can quickly be changed by the installer to a bolted configuration by removing the balls. The coupling is designed to keep the spherical balls in centrifugal suspension while the motor is operated on a variable frequency drive with speed ranges down to 4:1 (min.20Hz).

Head Shaft Clearance

Interchangeability of high thrust vertical motors is a potential issue when servicing existing wells. The replacement of an existing motor is particularly complicated if the new motor requires a head shaft clearance, (CD dimension) less than what the existing motor requires. This new motor was designed with that thought in mind. The CD dimensions are equal to those of other primary market competitors in 254-449 frames.

High Efficiency Vertical Hollow Shaft

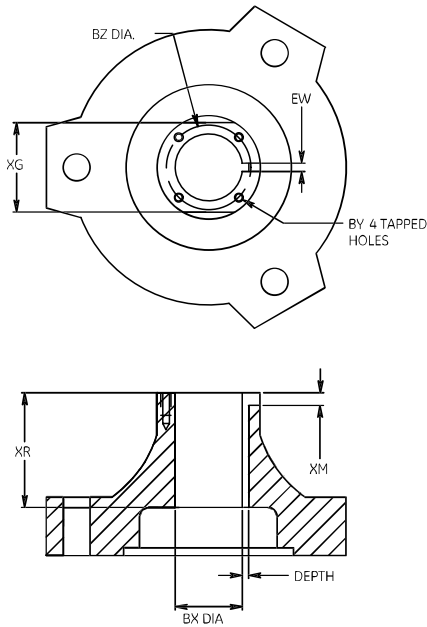
Motor Type	Three phase induction
Application	Deep well, high thrust load, turbine pumping
Design Standards	NEMA MG-1 as applicable
Agency Approvals	CSA and UL
High Efficiency	Energy Efficient Designs
Voltage	230/460 and 460 $\pm$ 10%
Frequency	60 Hz $\pm$ 5% (De-rated at 50 Hz and noted on the nameplate)
Horsepower Range	5 through 300
Enclosure	WPI, with improved rodent protection
RPM	3600, 1800, 1200 at 60 Hz (Designed to operate on a IGBT drive with a variable torque 4:1 speed range) (min.20Hz)
Lubrication	Lower Bearing Frames 213-449 grease Upper Bearing Frames 213-286 grease Upper Bearing Frames 324-449 oil
Time Duty	Continuous
Service Factor	1.15 at 3300 foot altitude
Balance	0.15 IPS
Frame Size	213-449
Mounting	Vertical P-base
Ambient	40°C at 3300 foot altitude
Frame Material	Cast iron
Endshield Material	Cast iron
Paint	Zinc primer, epoxy intermediate polyurethane finish
Top Hat	Steel
Bearings	See data sheet
Stator Insulation	Class B Rise @ 1.0 Service Factor Class F Non-Hygroscopic insulation system with random wound copper windings. Insulation system designed to meet MG1-31 at 460 volts for IGBT drive compatibility.
Rotor	Cast aluminum
Ground Terminal	Inside conduit box
Coupling	Ball coupling 213-449 frame Shipped in non-reverse configuration field convertible to bolted
Warranty	12 months from date of purchase 18 months from date of shipment

Select kits and base diameters available.
Contact your GE sales representative.

ValueLine™ High Efficiency Selection Guide

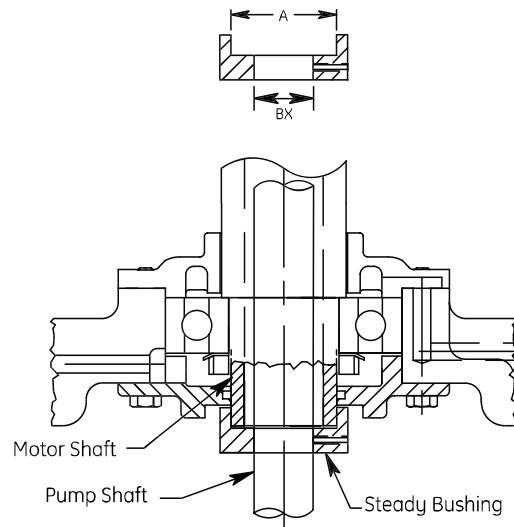
HP	RPM	Volts	Frame	FLA @ 460	NEMA Code	Thrust Down	LRA	Nom Eff	Cat No.	Wt (lbs)	CD Dim (in)	AG Dim (in)
5	3600	230/460	L213TP10	6.5	H	1900	44	85.5	V3109	220	20.25	24.29
5	1800	230/460	L213TP10	6.7	G	2400	38	87.5	V3116	220	20.25	24.29
7.5	3600	230/460	L213TP10	9.5	G	1900	61	87.5	V3108	220	20.25	24.29
7.5	1800	230/460	L213TP10	9.7	G	2400	59	88.5	V3115	220	20.25	24.29
10	3600	230/460	L213TP10	13.0	H	1900	89	88.5	V3107	220	20.25	24.29
10	1800	230/460	L215TP10	13.0	G	2350	76	89.5	V3141	220	20.25	24.29
10	1200	230/460	L256TP10	13.5	G	3750	80	90.2	V3177	370	23.38	27.85
10	1200	230/460	L256TP12	13.5	G	3750	80	90.2	V3178	370	23.38	27.85
15	3600	230/460	L215TP10	19.0	H	1850	125	89.5	V3139	220	20.25	24.29
15	1800	230/460	L254TP10	19.5	G	3250	117	91.0	V3158	340	23.38	30.60
15	1200	230/460	L284TP12	19.0	G	3700	116	90.2	V3191	507	24.75	29.25
20	3600	230/460	L254TP10	24.0	G	2600	151	90.2	V3157	340	23.38	27.85
20	1800	230/460	L256TP10	26.0	G	3250	157	91.0	V3173	370	23.38	27.85
20	1800	230/460	L256TP12	26.0	G	3250	157	91.0	V3174	370	23.38	27.85
25	3600	230/460	L256TP10	29.0	H	2600	205	91.0	V3170	370	23.38	27.85
25	3600	230/460	L256TP12	29.0	H	2600	205	91.0	V3171	370	23.38	27.85
25	1800	230/460	L284TP12	32.5	F	3200	156	91.7	V3189	507	24.75	29.25
25	1800	230/460	L284TP16	32.5	F	3200	156	91.7	V3190	507	24.75	29.25
30	3600	230/460	L284TP12	35.5	G	2600	228	91.0	V3188	507	24.75	29.25
30	1800	230/460	L286TP12	36.5	G	3150	222	92.4	V3198	507	24.75	29.25
30	1800	230/460	L286TP16	36.5	G	3150	222	92.4	V3199	507	24.75	29.25
30	1200	230/460	L326TP16	38.0	G	6550	215	92.4	V3423	855	28.22	32.53
40	3600	230/460	L286TP12	47.5	G	2500	290	91.7	V3197	507	24.75	29.45
40	1800	230/460	L324TP12	48.5	G	5700	282	93.0	V3411	760	28.22	32.53
40	1800	230/460	L324TP16	48.5	G	5700	282	93.0	V3409	760	28.22	32.53
40	1800	460 PWS	L324TP16	48.5	G	5700	282	93.0	V3410	760	28.22	32.53
40	1200	230/460	L364TP16	50.0	G	9450	300	93.0	V3435	1,102	31.16	35.70
50	3600	230/460	L324TP12	59.5	H	4550	405	92.4	V3407	790	28.22	32.53
50	3600	230/460	L324TP16	59.5	H	4550	405	92.4	V3450	760	28.22	32.53
50	1800	230/460	L326TP12	61.0	G	5650	360	93.0	V3422	760	28.22	32.53
50	1800	230/460	L326TP16	61.0	G	5650	360	93.0	V3420	760	28.22	32.53
50	1800	460 PWS	L326TP16	61.0	G	5650	360	93.0	V3421	760	28.22	32.53
60	3600	460 PWS	L326TP16	75.0	H	4500	530	92.4	V3551	760	28.22	32.53
60	1800	230/460	L364TP12	76.0	G	8200	450	93.6	V3552	1,102	31.16	35.70
60	1800	460 PWS	L364TP12	76.0	G	8200	450	93.6	V3431	1,102	31.16	35.70
60	1800	230/460	L364TP16	76.0	G	8200	450	93.6	V3429	1,102	31.16	35.70
60	1800	460 PWS	L364TP16	76.0	G	8200	450	93.6	V3430	1,102	31.16	35.70
60	1200	460 PWS	L404TP16	74.5	G	13850	443	93.6	V3553	1,590	36.94	41.96
75	3600	460 PWS	L364TP16	90.0	H	6500	645	93.0	V3428	1,102	31.16	35.70
75	1800	230/460	L365TP12	93.0	G	8100	563	94.1	V3554	1,102	31.16	35.70
75	1800	460 PWS	L365TP12	93.0	G	8100	563	94.1	V3442	1,102	31.16	35.70
75	1800	230/460	L365TP16	93.0	G	8100	563	94.1	V3440	1,102	31.16	35.70
75	1800	460 PWS	L365TP16	93.0	G	8100	563	94.1	V3441	1,102	31.16	35.70
75	1200	460 PWS	L405TP16	93.0	G	13750	570	93.6	V3555	1,590	36.94	41.96
100	1800	230/460	L404TP16	128.0	G	11900	560	94.1	V3451	1,590	36.94	41.96
100	1800	460 PWS	L404TP16	128.0	G	11900	560	94.1	V3453	1,590	36.94	41.96
100	1200	230/460	L444TP16	123.0	G	13600	735	94.1	V3556	2,075	44.78	50.11
100	1200	460 PWS	L444TP16	123.0	G	13600	735	94.1	V3468	2,075	44.78	50.11
125	1800	460 PWS	L405TP16	162.0	G	11700	930	94.5	V3456	1,590	36.94	41.96
150	1800	460 PWS	L444TP16	173.0	G	11700	1065	95.0	V3464	2,075	44.78	50.11
150	1800	460 PWS	L444TP20	173.0	G	11700	1065	95.0	V3466	2,075	44.78	50.11
200	1800	460 PWS	L445TP16	232.0	G	11500	1495	95.0	V3470	2,260	44.78	50.11
200	1800	460 PWS	L445TP20	232.0	G	11500	1495	95.0	V3483	2,260	44.78	50.11
250	1800	460 PWS	L447TP20	297.0	G	14100	2050	95.4	V3278	3,000	44.78	50.00
300	1800	460 PWS	L449TP20	362.0	G	13800	2760	95.4	V3279	3,500	49.78	55.00

Actual performance data for particular ratings can be found through using EliteNet™



Coupling

Frame Size	Cat. No.	Dimensions in inches								
		BX	Depth	EW	XG	BY	BZ	XM	XR	
210TP	Y8250	0.751	0.109	0.188	1.75	10-32 UNF	1.375	0.39	1.65	
	Y8251	0.876	0.109	0.188						
	Y8253	0.938	0.140	0.250						
	Y8254	1.001	0.140	0.250						
250TP	Y8255	0.751	0.109	0.188	1.75	10-32 UNF	1.375	0.39	1.65	
	Y8256	0.876	0.109	0.188						
	Y8257	1.001	0.140	0.250		1/4 -20 UNC				
	Y8258	1.188	0.140	0.250						
	Y8259	1.251	0.104	0.250						
280TP	Y8260	0.751	0.109	0.188	1.75	10-32 UNF	1.375	0.39	1.85	
	Y8261	0.876	0.109	0.188						
	Y8262	1.001	0.140	0.250		1/4 -20 UNC				
	Y8263	1.188	0.140	0.250						
	Y8264	1.251	0.140	0.250						
320TP 360TP	Y8320	1.001	0.140	0.250	N/A	10-32 UNF	1.375	0.47	1.61	
	Y8321	1.188	0.140	0.250		1/4 -20 UNC	1.750			
	Y8322	1.251	0.140	0.250						
	Y8323	1.251	0.140	0.375						2.120
	Y8324	1.438	0.140	0.375						
	Y8325	1.501	0.140	0.375						
400TP	Y8327	1.188	0.140	0.250	N/A	1/4 -20 UNC	1.750	0.62	2.43	
	Y8328	1.251	0.140	0.375			2.120			
	Y8329	1.438	0.140	0.375						
	Y8330	1.501	0.140	0.375						
	Y8331	1.688	0.203	0.375						2.500
	Y8332	1.751	0.203	0.375						
440TP	Y8334	1.188	0.140	0.250	N/A	1/4 -20 UNC	1.750	0.62	2.22	
	Y8335	1.251	0.140	0.375			2.120			
	Y8336	1.438	0.140	0.375						
	Y8337	1.501	0.140	0.375						
	Y8338	1.688	0.203	0.375						2.500
	Y8339	1.751	0.203	0.375						
447TP 449TP	Y8340	1.938	0.203	0.375	N/A	1/4-20 UNC	2.125	0.547	2.2	
	Y8362	1.438	0.168	0.375			2.500			
	Y8363	1.501		0.375						
	Y8364	1.688		0.375						
	Y8365	1.751		0.375						
	Y8366	1.938	0.222	0.500		3/8-16 UNC	3.250	0.673		
	Y8367	2.001		0.500						
	Y8368	2.063		0.500						
	Y8369	2.126	0.500							
	Y8370	2.188	0.226	0.500						
	Y8371	2.251		0.500						
	Y8372	2.376		0.500						
	Y8373	2.438	0.277	0.625		0.797				
	Y8374	2.501		0.625						

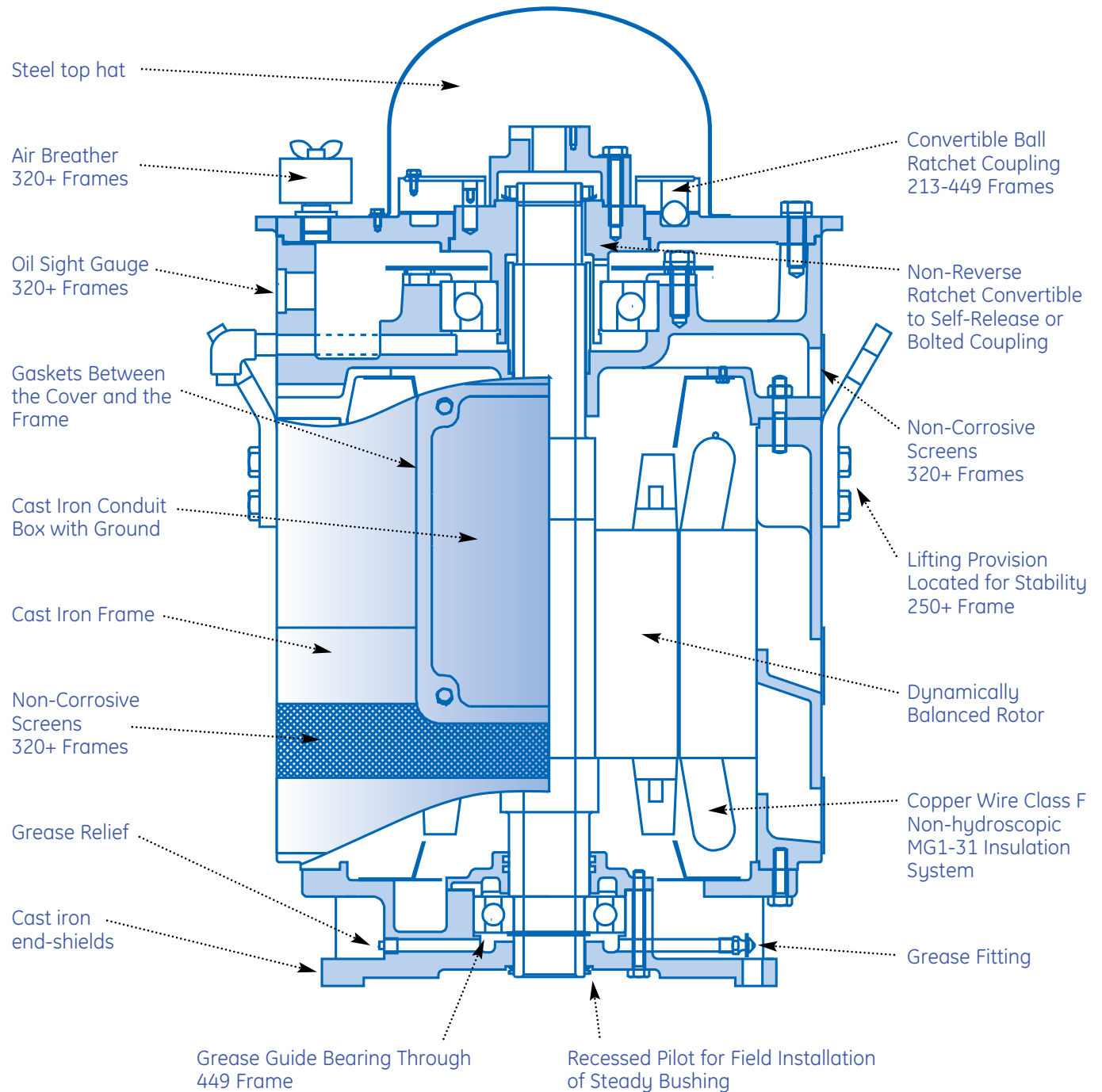


Optional Stabilizer Steady Bushing

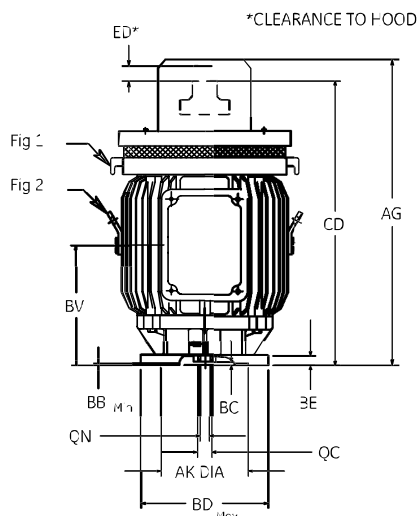
Frame Size	Cat. No.	Dim. in inches	
		A	BX
210TP/ 250TP	Y8284	1.76	1.000
	Y8285	1.76	0.937
	Y8286	1.76	0.875
	Y8287	1.76	0.750
250TP	Y8288	1.76	1.250
	Y8289	1.76	1.187
280TP	Y8290	2.17	1.250
	Y8291	2.17	1.187
	Y8292	2.17	1.000
	Y8293	2.17	0.875
	Y8294	2.17	0.750
320TP	Y8295	2.36	1.500
	Y8296	2.36	1.437
	Y8297	2.36	1.250
	Y8298	2.36	1.187
	Y8299	2.36	1.126
	Y8301	2.36	1.000
360TP	Y8302	2.56	1.500
	Y8303	2.56	1.437
	Y8304	2.56	1.250
	Y8305	2.56	1.187
	Y8306	2.56	1.126
	Y8307	2.56	1.000
	Y8308	2.64	1.750
400TP/ 440TP	Y8309	2.64	1.687
	Y8310	2.64	1.500
	Y8311	2.64	1.437
	Y8312	2.64	1.250
	Y8360	2.64	1.187
447TP/ 449TP	Y8361	2.64	1.000
	Y8383	3.43	1.438
	Y8384	3.43	1.501
	Y8385	3.43	1.688
	Y8386	3.43	1.751
	Y8387	3.43	1.938
	Y8388	3.43	2.001
	Y8389	3.43	2.063
	Y8390	3.43	2.126
	Y8391	3.43	2.188
	Y8392	3.43	2.251
	Y8393	3.43	2.376
	Y8394	3.43	2.438
	Y8395	3.43	2.501

Construction

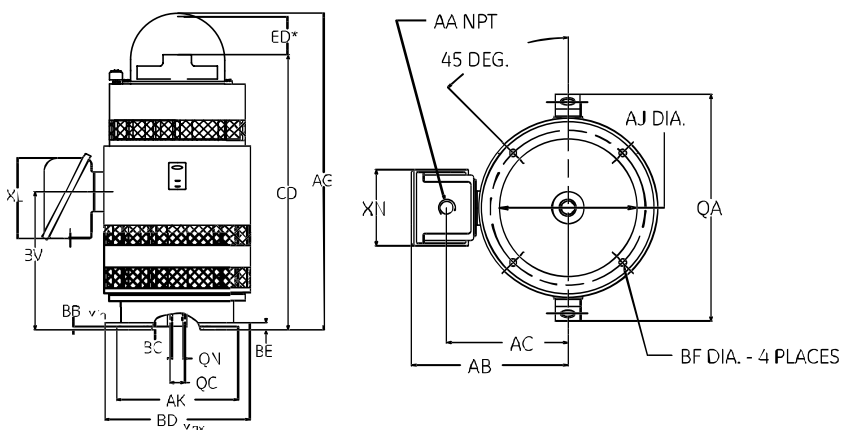
Vertical Hollow Shaft WPI Stock Construction



Frame 210 (Figure 1)



Frames 250-449 (Figure 2)



Motor Dimensions

(Dimensions in Inches)

Frame Size	AG	AJ	AK	BB	BC	BD	BE	BF	BV	CD	ED	QA	QC	QN
L213TP10/L215TP10	24.29	9.13	8.25	0.22	0.25	10.00	0.75	0.44	8.14	20.25	4.01	14.17	1.125	1.000
L213TP12/L215TP12	24.29	9.13	8.25	0.22	0.12	12.00	0.75	0.44	8.14	20.25	4.01	14.17	1.375	1.250
L254TP10/L256TP10	27.85	9.13	8.25	0.22	0.12	10.00	0.98	0.44	9.41	23.38	4.50	17.72	1.375	1.250
L254TP12/L256TP12	27.85	9.13	8.25	0.22	0.12	12.00	0.98	0.44	9.41	23.38	4.50	17.72	1.375	1.250
L254TP16/L256TP16	27.85	14.75	13.50	0.22	0.12	16.00	0.98	0.44	9.41	23.38	4.50	17.72	1.375	1.250
L284TP10/L286TP10	29.25	9.13	8.25	0.22	0.31	10.00	0.98	0.44	10.19	24.75	4.50	20.71	1.375	1.250
L284TP12/L286TP12	29.25	9.13	8.25	0.22	0.31	12.00	0.98	0.44	10.19	24.75	4.50	20.71	1.375	1.250
L284TP16/L286TP16	29.25	9.13	13.50	0.22	0.31	16.50	0.98	0.69	10.19	24.75	4.50	20.71	1.375	1.250
L324TP12/L326TP12	32.53	9.13	8.25	0.28	0.25	12.00	0.98	0.44	13.44	28.22	4.21	22.36	1.875	1.750
L324TP16/L326TP16	32.53	14.75	13.50	0.28	0.25	16.50	0.98	0.69	13.40	28.22	4.21	22.36	1.875	1.750
L364TP12/L365TP12	35.70	9.13	8.25	0.28	0.25	12.00	0.98	0.44	16.12	31.16	4.52	24.80	1.875	1.750
L364TP16/L365TP16	35.70	14.75	13.50	0.28	0.25	16.50	0.98	0.69	16.12	31.16	4.52	24.80	1.875	1.750
L404TP16/L405TP16	41.96	14.75	13.50	0.28	0.25	16.50	0.98	0.69	15.68	36.94	5.00	27.87	2.000	1.938
L404TP20/L405TP20	41.96	14.75	13.50	0.28	0.25	20.00	0.98	0.69	15.68	36.94	5.00	27.87	2.000	1.938
L444TP16/L445TP16	50.11	14.75	13.50	0.28	0.28	16.50	1.16	0.69	21.83	44.78	5.00	31.40	2.000	1.938
L444TP20/L445TP20	50.11	14.75	13.50	0.28	0.28	20.50	1.16	0.69	21.83	44.78	5.00	31.40	2.000	1.938
L444TP24/L445TP24	50.11	14.75	13.50	0.28	0.28	24.00	1.16	0.69	21.83	44.78	5.00	31.40	2.000	1.938
L447TP20	50.00	14.75	13.50	0.28	0.28	20.00	1.16	0.69	27.80	44.78	5.14	31.40	2.625	2.501
L449TP20	55.00	14.75	13.50	0.28	0.28	20.00	1.16	0.69	27.80	49.75	5.14	31.40	2.625	2.501

Conduit Box Dimensions

(Dimensions in Inches)

Frame Size	AA	AB	AC	XL	XN
L213TP10/L215TP10	1.00	9.30	7.20	6.80	2.60
L254TP10/L256TP10	1.50	10.97	8.46	7.76	5.67
L254TP12/L256TP12	1.50	10.97	8.46	7.76	5.67
L284TP12/L286TP12	1.50	14.60	10.83	9.20	8.11
L284TP16/L286TP16	1.50	14.60	10.83	9.20	8.11
L324TP12/L326TP12	1.50	14.68	11.85	8.38	8.11
L324TP16/L326TP16	1.50	14.68	11.85	8.38	8.11
L364TP12/L365TP12	2.50	15.78	12.91	8.38	8.11
L364TP16/L365TP16	2.50	15.78	12.91	8.38	8.11
L404TP16/L405TP16	2.50	20.90	16.06	15.75	10.55
L444TP16/L445TP16	2.50	21.65	16.81	16.62	11.26
L444TP20/L445TP20	2.50	21.65	16.81	16.62	11.26
L447TP20	3.50	21.65	16.81	16.62	11.26
L449TP20	3.50	21.65	16.81	16.62	11.26

Weights and dimensions are for estimating only.



imagination at work

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