

# MOTORS & CONTROL BOXES





## SUBMERSIBLE MOTORS & CONTROL BOXES

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# 4" SUBMERSIBLE MOTORS

These motors are built for dependable operation in 4" diameter or larger water wells.

## BASIC FEATURES

- Corrosion-resistant stainless steel exterior
- Stainless steel splined shaft
- Hermetically-sealed windings
- StatorShield™ resin system
- Filter check valve
- Water lubrication
- Kingsbury-type thrust bearing
- Pressure-equalizing diaphragm
- Built-in lightning arrestors (all single-phase; 200 & 300 V three-phase)
- Removable Water-Bloc™ lead
- Franklin-manufactured control boxes available for single-phase motors
- UL 778 recognized (North American voltages)
- CSA certified
- ANSI/NSF 61 certified
- Industry standard NEMA mounting dimensions



## SPECIAL FEATURES

- Flow inducer sleeve not required in water up to 86 °F (30 °C) for motors through 2 hp
- Two-wire motors are split-phase designs with integral starting components and do not require a control box; features Franklin's patented 2-wire BIAC starting switch, which provides reverse impact torque to aid starting in adverse environments and prevents extreme fast cycling (e.g. water-logged tank)
- Three-wire motors through 1 hp use Franklin's exclusive three-wire QD (Quick Disconnect) Control Box with the patented QD Relay. This relay provides the ultimate in operational life
- Single-phase motors can be used with Pumptec products to protect against dry-run and other installation conditions that can damage motors and/or pumps; see single-phase protection devices for details

## POLLUTION RECOVERY OPTION

- Pollution Recovery motors are equipped for use in monitoring and recovery wells in which hydrocarbons and other chemicals may be present
- Features nitrile rubber parts and other chemical-resistant materials as listed in the construction materials chart

## 4" SUBMERSIBLE MOTORS - SPECIFICATIONS AND MATERIALS

### MOTOR SPECIFICATIONS

Hz	Model	Phase	HP Range	kW Range	Poles	RPM	Max. Ambient Temp.	Duty Rating
50	Super Stainless	1	0.5 - 1.5	0.37 - 1.1	2	2875	86 °F / 30 °C	Continuous
		1	0.3 - 3	0.25 - 2.2				Continuous*
		3	0.5 - 3	0.37 - 2.2				Continuous*
	Pollution Recovery	1	0.5 - 1.5	0.37 - 1.1				Continuous
		1	0.3 - 2	0.25 - 1.5				Continuous*
		3	0.5 - 2	0.37 - 1.5				Continuous*
	High Thrust	1	1.5 - 5	1.1 - 3.7				Continuous*
		3	1.5 - 10	1.1 - 7.5				Continuous*
		1	0.3 - 1.5	0.25 - 1.1				Continuous
60	Super Stainless	1	0.3 - 3	0.25 - 2.2	2	3450	86 °F / 30 °C	Continuous*
		3	0.5 - 3	0.37 - 2.2				Continuous*
		1	0.3 - 1.5	0.25 - 1.1				Continuous
	Pollution Recovery	1	0.3 - 2	0.25 - 1.5				Continuous*
		3	0.5 - 2	0.37 - 1.5				Continuous*
		1	1.5 - 5	1.1 - 3.7				Continuous*
	High Thrust	3	1.5 - 10	1.1 - 7.5				Continuous*

\*3 hp motors require 0.25 ft/sec flow past motor

### CONSTRUCTION MATERIALS

Model No.	-	-	-8602G	-8802G	-3529G (not including 15HP)	-0630G	-8502G	-8702G	-8801G
Model Type	Super Stainless	Super Stainless	High Thrust	High Thrust	High Thrust	High Thrust	High Thrust	High Thrust	High Thrust
Component	Watwer Well	Pollution Recovery	Water Well	Sand Fighter®	CBM+	SERIES 600M	316 SS	Oil Stripper	ES
Top Castings	304 SS over Iron	304 SS over Iron	303 SS	303 SS	316 SS	303 SS	316 SS	316 SS	316 SS
Bottom Castings	Cast iron	Cast iron	304 SS over cast iron	304 SS over cast iron	316 SS	304 SS over cast iron	316 SS	316 SS	304 SS over cast iron
Stator Shell	301 SS	301SS	304 SS	304 SS	316 SS	316 SS	316 SS	316 SS	304 SS
Stator Ends	Low-carbon steel	Low-carbon steel	Low-carbon steel	Low-carbon steel	316 SS	Low-carbon steel	316 SS	316 SS	Low-carbon steel
Shaft Extension	17-4 SS	17-4 SS	17-4 SS	17-4 SS	17-4 SS	17-4 SS	17-4 SS	17-4 SS	17-4 SS
Fasteners	300 Series SS	316 SS	300 Series SS	300 Series SS	316 SS	300 Series SS	316 SS	316 SS	300 Series SS
Seal Cover	Acetal	Tefzel	Acetal	Sintered bronze	316 SS	Sintered bronze	316 SS	316 SS	Sintered bronze
Seal	Lip-Nitrile	Lip-FKM	Lip-Nitrile	Mech-Nitrile, SiC face	Mech-FKM, SiC face	Mech-FKM, SiC face	Mech-Nitrile, SiC face	Mech-FKM, SiC face	Mech-FKM, SiC face
Diaphragm	Nitrile	FKM	Nitrile	Nitrile	FKM	Nitrile	Nitrile	FKM	FKM
Diaphragm Cup	N/A	N/A	316 SS	316 SS	316 SS	316 SS	316 SS	316 SS	316 SS
Diaphragm Spring	N/A	N/A	316 SS	316 SS	316 SS	316 SS	316 SS	316 SS	316 SS
Diaphragm Cover	304 SS	304 SS	304 SS	304 SS	316 SS	316 SS	316 SS	316 SS	304 SS
Slinger	Nitrile	FKM	Nitrile	Nitrile	FKM	Nitrile	Nitrile	FKM	FKM
Lead Wire/Cable	XLPE or EPCV	sold separately	XLPE or EPCV	XLPE or EPCV	sold separately	XLPE or EPCV	XLPE or EPCV	Nitrile	Sold separately
Lead Potting	Epoxy	N/A	Epoxy	Epoxy	N/A	Epoxy	Epoxy	Epoxy	N/A
Lead Type	303 SS jam nut	304 SS jam nut	316 SS screws/clamp	316 SS screws/clamp	316 SS screw/clamp	316 SS screws/clamp	316 SS screws/clamp	316 SS screws/clamp	316 SS screw/clamp
Filter	Polyester	Polyester	Acetal/polyester	Acetal/polyester	316 SS plug	Acetal/polyester	316 SS plug	316 SS plug	316 SS plug
Max Temp Range	30C	30C	30C (1/4 ft/sec)	30C (1/4 ft/sec)	50C (1/4 ft/sec)	30C (1/4 ft/sec)	30C (1/4 ft/sec)	80C (1 ft/sec)	30C (1/4 ft/sec)
Thrust Rating	300 to 900	300 to 900	1500	1500	1500	300 to 1500	1500	1500	1500



## 4" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### 2-WIRE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust Rating	Wt. (Lbs)
1/3	Water Well	115	60	1.75	-	2445020117GS	300	16
		115	60	1.75	Yes	2445029004GS	300	16
		230	60	1.75	-	2445030117GS	300	16
	Pollution Recovery	230	60	1.75	Yes	2445039004GS	300	16
		115	60	1.75	-	2445020917GS	300	16
		230	60	1.75	-	2445030917GS	300	16
1/2	Water Well	115	60	1.6	-	2445040117GS	300	18
		115	60	1.6	Yes	2445049004GS	300	18
		220	50	1.0	-	2445550117GS	300	18
		230	60	1.6	-	2445050117GS	300	18
		230	60	1.6	Yes	2445059004GS	300	18
	Pollution Recovery	115	60	1.6	-	2445040917GS	300	18
		230	60	1.6	-	2445050917GS	300	18
		230	60	1.6	-	2445050917GS	300	18
3/4	Water Well	220	50	1.0	-	2445570117GS	300	21
		230	60	1.5	-	2445070117GS	300	21
		230	60	1.5	Yes	2445079004GS	300	21
	Pollution Recovery	230	60	1.5	-	2445070917GS	300	21
1	Water Well	220	50	1.0	-	2445581203GS	650	24
		230	60	1.4	-	2445081203GS	650	24
		230	60	1.4	Yes	2445089003GS	650	24
	Pollution Recovery	230	60	1.4	-	2445082303GS	650	24
1.5	Water Well	220	50	1.0	-	2443591217GS	650	31
		230	60	1.3	-	2443091217GS	650	31
		230	60	1.3	Yes	2443099004GS	650	31
	Pollution Recovery	230	60	1.3	-	2443092317GS	650	31

NOTE: All 3 hp motors are single-packed; pallet packs available but not shown; contact customer service for availability

## 4" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### 3-WIRE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust Rating	Wt. (Lbs)	
1/3	Water Well	115	60	1.75	Yes	2145029004GS	300	17	
		220	50	1.0	-	2145534116GS	300	17	
		230	60	1.75	-	2145034416GS	300	17	
	Pollution Recovery	230	60	1.75	Yes	2145039004GS	300	17	
		115	60	1.75	-	2145024916GS	300	17	
		230	60	1.75	-	2145034916GS	300	17	
1/2	Water Well	115	60	1.6	-	2145044416GS	300	19	
		115	60	1.6	Yes	2145049004GS	300	19	
		220	50	1.0	-	2145554116GS	300	19	
		220	50	1.0	Yes	2145559204GS	300	19	
		230	60	1.6	-	2145054416GS	300	19	
	Pollution Recovery	230	60	1.6	Yes	2145059004GS	300	19	
		115	60	1.6	-	2145044916GS	300	19	
		230	60	1.6	-	2145054916GS	300	19	
3/4	Water Well	220	50	1.0	-	2145574116GS	300	21	
		220	50	1.0	Yes	2145579204GS	300	21	
		230	60	1.5	-	2145074416GS	300	21	
	Pollution Recovery	230	60	1.5	Yes	2145079004GS	300	21	
		230	60	1.5	-	2145074916GS	300	21	
		Series 600M	230	60	1.5	Yes	2145070600GS	300	22
1	Water Well	220	50	1.0	-	2145581903GS	650	24	
		220	50	1.0	Yes	2145589203GS	650	24	
		230	60	1.4	-	2145081203GS	650	24	
	Pollution Recovery	230	60	1.4	Yes	2145089003GS	650	24	
		230	60	1.4	-	2145082303GS	650	24	
Series 600M	230	60	1.4	Yes	2145080610GS	650	25		
1.5	Water Well	220	50	1.0	-	2243501903GS	650	28	
		220	50	1.0	Yes	2243509203GS	650	28	
		230	60	1.3	-	2243001903GS	650	28	
		230	60	1.3	Yes	2243009203GS	650	28	
		230	60	1.3	Yes	2243008602G	1500	38	
	Pollution Recovery	230	60	1.3	-	2243002303GS	650	28	
		Series 600M	230	60	1.3	Yes	2243000610GS	650	25
		316 SS	230	60	1.3	Yes	2243008502G	1500	40

## 4" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### 3-WIRE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust Rating	Wt. (Lbs)
2	Water Well	220	50	1.0	-	2243511916GS	650	33
		220	50	1.0	Yes	2243519204GS	650	33
		220	50	1.0	Yes	2243518602G	1500	43
		230	60	1.25	-	2243011916GS	650	33
		230	60	1.25	Yes	2243019204GS	650	33
		230	60	1.25	-	2243018600G	1500	43
	Pollution Recovery	230	60	1.25	Yes	2243018602G	1500	43
		230	60	1.25	-	2243012316GS	650	33
		230	60	1.25	Yes	2243010610GS	650	29
		230	60	1.15	Yes	2243018802G	1500	43
Oil Stripper	230	60	1.25	Yes	2243018702G	1500	46	
	230	60	1.25	Yes	2243018502G	1500	45	
3	Water Well	220	50	1.0	-	2243522504G	900	41
		220	50	1.0	-	2247528600G	1500	56
		230	60	1.15	-	2247022504G	900	41
		230	60	1.15	Yes	2247022604G	900	41
		230	60	1.15	-	2247028600G	1500	56
		230	60	1.15	Yes	2243028602G	1500	56
	Series 600M	230	60	1.15	Yes	2247020620G	900	35
		230	60	1.15	Yes	2247020630G	1500	44
		230	60	1.15	Yes	2247028802G	1500	56
		230	60	1.15	Yes	2247028702G	1500	56
Oil Stripper	230	60	1.15	Yes	2247028502G	1500	56	
	230	60	1.15	Yes	2247028502G	1500	56	
5	Water Well	220	50	1.0	-	2243538600G	1500	71
		230	60	1.15	-	2247038600G	1500	71
		230	60	1.15	Yes	2247038602G	1500	71
	Series 600M	230	60	1.15	Yes	2243030630G	1500	56
		230	60	1.15	Yes	2247038802G	1500	71
	Oil Stripper	230	60	1.15	Yes	2247038702G	1500	71
		230	60	1.15	Yes	2247038502G	1500	71
	316 SS	230	60	1.15	Yes	2247038502G	1500	71
230		60	1.15	Yes	2247038502G	1500	71	

NOTE: All 3 hp motors are single-packed; pallet packs available but not shown; contact customer service for availability

## 4" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### THREE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust	Wt. (Lbs)
1/2	Water Well	48	60	1.5	Yes	2349049204GS	300	18
		200	60	1.6	-	2345014116GS	300	18
		200	60	1.6	Yes	2345019204GS	300	19
		220	50	1.0	-	2345514116GS	300	18
		230	60	1.6	-	2345114116GS	300	18
		230	60	1.6	Yes	2345119204GS	300	19
		380-415	50	1.0	-	2345613116GS	300	18
		460	60	1.6	-	2345213116GS	300	18
		460	60	1.6	Yes	2345219404GS	300	19
		575	60	1.6	Yes	2345319404GS	300	19
	Pollution Recovery	200	60	1.6	-	2345014916GS	300	18
		230	60	1.6	-	2345114916GS	300	18
		460	60	1.6	-	2345214916GS	300	18
		460	60	1.6	-	2345214916GS	300	18



## 4" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### THREE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust	Wt. (Lbs)	
3/4	Water Well	100	60	1.5	Yes	2349029204GS	300	21	
		200	60	1.5	-	2345024116GS	300	21	
		200	60	1.5	Yes	2345029204GS	300	22	
		220	50	1.0	-	2345524116GS	300	21	
		230	60	1.5	-	2345124116GS	300	21	
		230	60	1.5	Yes	2345129204GS	300	22	
		380-415	50	1.0	-	2345623116GS	300	21	
		460	60	1.5	-	2345223116GS	300	21	
		460	60	1.5	Yes	2345229404GS	300	22	
		575	60	1.5	Yes	2345329404GS	300	22	
	Pollution Recovery	200	60	1.5	-	2345024916GS	300	21	
		230	60	1.5	-	2345124916GS	300	21	
		460	60	1.5	-	2345224916GS	300	21	
		230	60	1.5	Yes	2345120600GS	300	22	
Series 600M	460	60	1.5	Yes	2345220600GS	300	22		
	200	60	1.4	-	2345031903GS	650	24		
1	Water Well	200	60	1.4	Yes	2345039203GS	650	25	
		220	50	1.0	-	2345534116GS	650	24	
		230	60	1.4	-	2345131903GS	650	24	
		230	60	1.4	Yes	2345139203GS	650	25	
		380-415	50	1.0	-	2345633116GS	650	24	
		460	60	1.4	-	2345231603GS	650	24	
		460	60	1.4	Yes	2345239403GS	650	25	
		575	60	1.4	Yes	2345339403GS	650	25	
		Pollution Recovery	200	60	1.4	-	2345032303GS	650	24
			230	60	1.4	-	2345132303GS	650	24
	460		60	1.4	-	2345232303GS	650	24	
	230		60	1.4	Yes	2345130610GS	650	25	
	Series 600M	460	60	1.4	Yes	2345230610GS	650	25	
		200	60	1.3	-	2345041903GS	650	28	
	1.5	Water Well	200	60	1.3	Yes	2345049203GS	650	29
			200	60	1.3	-	2345048600	1500	33
			220	50	1.3	Yes	2345549003GS	650	28
			230	60	1.3	-	2345141903GS	650	28
230			60	1.3	Yes	2345149203GS	650	29	
230			60	1.3	-	2345148600G	1500	33	
460/380			60/50	1.3/1.0	-	2345241603GS	650	28	
460/380			60/50	1.3/1.0	Yes	2345249403GS	650	28	
460/380			60/50	1.3/1.0	-	2345248600G	1500	28	
575			60	1.3	-	2345341603GS	650	28	
575			60	1.3	Yes	2345349403GS	650	29	
575			60	1.3	-	2345348600G	1500	33	
Pollution Recovery			200	60	1.3	-	2345042303GS	650	28
			230	60	1.3	-	2345142303GS	650	28
		460/380	60/50	1.3/1.0	-	2345242303GS	650	28	
		230	60	1.3	Yes	2345140610GS	650	25	
Series 600M		460/380	60/50	1.3/1.0	Yes	2345240610GS	650	25	
		200	60	1.3	Yes	2345048502G	1500	40	
316 SS		230	60	1.3	Yes	2345148502G	1500	40	
		460/380	60/50	1.3/1.0	Yes	2345248502G	1500	40	
		575	60	1.3	Yes	2345348502G	1500	40	



## 4" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### THREE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust	Wt. (Lbs)	
2	Water Well	200	60	1.25	-	2343051618GS	650	33	
		200	60	1.25	Yes	2343059204GS	650	34	
		200	60	1.25	-	2343058600G	1500	44	
		220	50	1.0	-	2343551916GS	650	33	
		230	60	1.25	-	2343151618GS	650	33	
		230	60	1.25	Yes	2343159204GS	650	34	
		230	60	1.25	-	2343158600G	1500	44	
		460/380	60/50	1.25/1.0	-	2343251618GS	650	33	
		460/380	60/50	1.25/1.0	Yes	2343259404GS	650	34	
		460/380	60/50	1.25/1.0	-	2343258600G	1500	44	
		460/380	60/50	1.25/1.0	Yes	2343258602G	1500	44	
		575	60	1.25	-	2343351618GS	650	33	
	575	60	1.25	Yes	2343359404GS	650	34		
	575	60	1.25	-	2343358600G	1500	44		
	200	60	1.25	-	2343052318GS	650	33		
	230	60	1.25	-	2343152318GS	650	33		
	460/380	60/50	1.25/1.0	-	2343252318GS	650	33		
	230	60	1.25	Yes	2343150610GS	650	29		
	460/380	60/50	1.25/1.0	Yes	2343250610GS	650	29		
	200	60	1.25	Yes	2343058502G	1500	44		
	230	60	1.25	Yes	2343158502G	1500	44		
	460/380	60/50	1.25/1.0	Yes	2343258502G	1500	44		
	575	60	1.25	Yes	2343358502G	1500	44		
	230	60	1.25	Yes	2343158702G	1500	44		
	460/380	60/50	1.25/1.0	Yes	2343258702G	1500	44		
	3	Water Well	200	60	1.15	-	2343062504G	900	41
			200	60	1.15	Yes	2343062604G	900	41
			200	60	1.15	-	2343068600G	1500	43
200			60	1.15	Yes	2343068602G	1500	44	
220			50	1.0	-	2343562504G	900	41	
220			50	1.0	-	2343568600G	1500	43	
230			60	1.15	-	2343162504G	900	41	
230			60	1.15	Yes	2343162604G	900	41	
230			60	1.15	-	2343168600G	1500	43	
230			60	1.15	Yes	2343168602G	1500	44	
380			60	1.15	-	2343462504G	900	41	
380			60	1.15	Yes	2343462604G	900	41	
380			60	1.15	-	2343468600G	1500	43	
380			60	1.15	Yes	2343468602G	1500	44	
460/380			60/50	1.15/1.0	-	2343262504G	900	41	
460/380			60/50	1.15/1.0	Yes	2343262604G	900	41	
460/380			60/50	1.15/1.0	-	2343268600G	1500	43	
460/380			60/50	1.15/1.0	Yes	2343268602G	1500	44	
575			60	1.15	-	2343362504G	900	41	
575			60	1.15	Yes	2343362604G	900	41	
575			60	1.15	-	2343368600G	1500	43	
575			60	1.15	Yes	2343368602G	1500	44	
230			60	1.15	Yes	2343160620G	900	35	
230			60	1.15	Yes	2343160630G	1500	44	
460/380		60/50	1.15	Yes	2343260620G	900	35		
460/380		60/50	1.15	Yes	2343260630G	1500	44		
200		60	1.15	Yes	2343068802G	1500	44		
230		60	1.15	Yes	2343168802G	1500	44		
380		60	1.15	Yes	2343468802G	1500	44		
460/380		60/50	1.15/1.0	Yes	2343268802G	1500	44		
575		60	1.15	Yes	2343368802G	1500	44		
200		60	1.15	Yes	2343068502G	1500	44		
230		60	1.15	Yes	2343168502G	1500	44		
460/380		60/50	1.15/1.0	Yes	2343268502G	1500	44		
575		60	1.15	Yes	2343368502G	1500	44		
230		60	1.15	Yes	2343168702G	1500	44		
460/380		60/50	1.15/1.0	Yes	2343268702G	1500	44		



## 4" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### THREE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust	Wt. (Lbs)	
4	Water Well	380	50	1.0	-	2343958600G	1500	49	
		380	50	1.0	Yes	2348068602G	1500	50	
5	Water Well	200	60	1.15	-	2343078600G	1500	55	
		200	60	1.15	Yes	2343078602G	1500	56	
		220	50	1.0	-	2347578600G	1500	55	
		230	60	1.15	-	2347178600G	1500	55	
		230	60	1.15	Yes	2347178602G	1500	56	
		380	60	1.15	-	2343478600G	1500	55	
		380	60	1.15	Yes	2347478602G	1500	56	
		460/380	60/50	1.15/1.0	-	2343278600G	1500	55	
		460/380	60/50	1.15/1.0	Yes	2347278602G	1500	56	
		575	60	1.15	-	2343378600G	1500	55	
	575	60	1.15	Yes	2347378602G	1500	56		
	230	60	1.15	Yes	2347170630G	1500	56		
	460/380	60/50	1.15	Yes	2347270630G	1500	56		
	Sand Fighter®	200	60	1.15	Yes	2343078802G	1500	56	
		230	60	1.15	Yes	2347178802G	1500	56	
		380	60	1.15	Yes	2343478802G	1500	56	
		460/380	60/50	1.15/1.0	Yes	2347278802G	1500	56	
		575	60	1.15	Yes	2347378802G	1500	56	
		575	60	1.15	Yes	2343078502G	1500	56	
	316 SS	230	60	1.15	Yes	2347178502G	1500	56	
460/380		60/50	1.15/1.0	Yes	2347278502G	1500	56		
575		60	1.15	Yes	2347378502G	1500	56		
Oil Stripper	230	60	1.15	Yes	2347178702G	1500	58		
	460/380	60/50	1.15/1.0	Yes	2347278702G	1500	58		
	460/380	60/50	1.15/1.0	-	2347278801G	1500	56		
ES	460/380	60/50	1.15/1.0	-	2347273529G	1500	59		
5.5	Water Well	460/380	60/50	1.0	-	2343978600G	1500	60	
		460/380	60/50	1.0	Yes	2347658602G	1500	61	
7.5	Water Well	200	60	1.15	-	2343088600G	1500	70	
		200	60	1.15	Yes	2343088602G	1500	71	
		220	50	1	-	2343588600G	1500	70	
		230	60	1.15	-	2343188600G	1500	70	
		230	60	1.15	Yes	2347188602G	1500	71	
		380	60	1.15	-	2343488600G	1500	70	
		380	60	1.15	Yes	2347488602G	1500	71	
		460/380	60/50	1.15/1.0	-	2343288600G	1500	70	
		460/380	60/50	1.15/1.0	Yes	2347288602G	1500	71	
		575	60	1.15	-	2343388600G	1500	70	
	575	60	1.15	Yes	2347388602G	1500	71		
	Sand Fighter®	200	60	1.15	Yes	2347088802G	1500	71	
		230	60	1.15	Yes	2347188802G	1500	71	
		380	60	1.15	Yes	2347488802G	1500	71	
		460/380	60/50	1.15/1.0	Yes	2347288802G	1500	71	
		575	60	1.15	Yes	2347388802G	1500	71	
		575	60	1.15	Yes	2343088502G	1500	71	
	316 SS	230	60	1.15	Yes	2347188502G	1500	71	
		460/380	60/50	1.15/1.0	Yes	2347288502G	1500	71	
		575	60	1.15	Yes	2343388502G	1500	71	
	Oil Stripper	230	60	1.15	Yes	2347188702G	1500	71	
		460/380	60/50	1.15/1.0	Yes	2343288702G	1500	71	
		460/380	60/50	1.15/1.0	-	2347288801G	1500	71	
	ES	460/380	60/50	1.15/1.0	-	2347283529G	1500	74	
	10	Water Well	380	60	1.15	Yes	2347498602G	1500	77
			460/380	60/50	1.15/1.0	Yes	2347298602G	1500	77
			575	60	1.15	Yes	2347398602G	1500	77
		Sand Fighter®	380	60	1.15	Yes	2347498802G	1500	77
460/380			60/50	1.15/1.0	Yes	2347298802G	1500	77	
575			60	1.15	Yes	2347398802G	1500	77	
316 SS		460/380	60/50	1.15	Yes	2347298502G	1500	77	
Oil Stripper		460/380	60/50	1.15	Yes	2347298702G	1500	77	
ES		460/380	60/50	1.15/1.0	-	2347298801G	1500	77	
CBM+		460/380	60/50	1.15/1.0	-	2347293529G	1500	80	
15	CBM+	460/380	60/50	1.15/1.0	-	2346268996	3500	115	

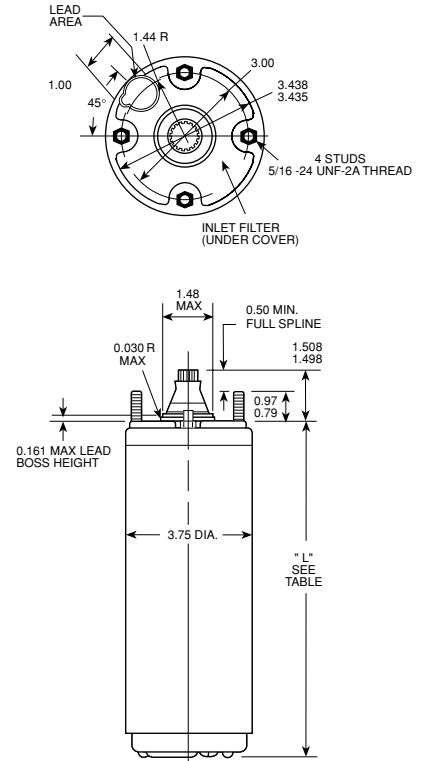
8 NOTE: All 3 hp motors are single-packed; pallet packs available but not shown; contact customer service for availability

## 4" SUBMERSIBLE MOTORS - DIMENSIONS AND WEIGHTS

### SUPER STAINLESS

HP / kW	Phase	L (in)	Motor Carton Size (in)			Shipping Wt.	
			W	H	L	lbs	kg
0.333 / 0.25	1	8.76	4.25	4.38	16.00	16	7.3
	1	8.76	4.25	4.38	16.00	17	7.7
0.5 / 0.37	1	9.51	4.25	4.38	16.00	18	8.2
	3	9.51	4.25	4.38	16.00	19	8.6
0.75 / 0.55	1	10.64	4.25	4.38	19.00	21	9.5
	3	10.64	4.25	4.38	19.00	21	9.5
1 / 0.75	1	11.73	4.25	4.38	19.00	24	10.9
	3	11.73	4.25	4.38	19.00	24	10.9
1.5 / 1.1	1	15.1	4.25	4.38	21.25	31	14.1
	3	11.73	4.25	4.38	19.00	24	10.9
2 / 1.5	1	15.1	4.25	4.38	21.25	33	15
	3	13.6	4.25	4.38	21.25	28	12.7
3 / 2.2	1	18.34	6.50	6.25	24.75	39	18
	3	15.29	6.50	6.25	21.75	35	16

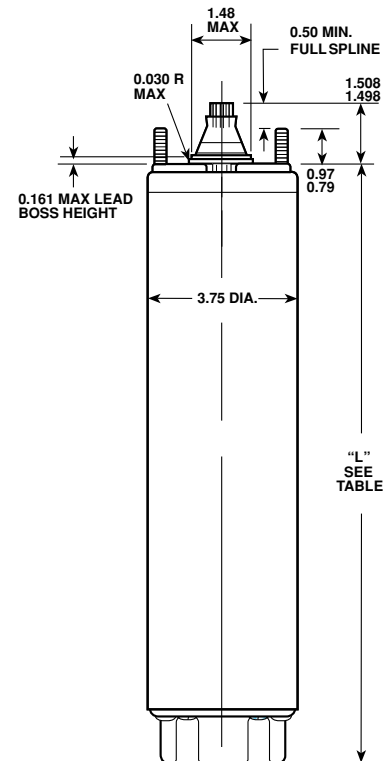
NOTE: All dimensions listed above are for models supplied with lead; consult factory for other models



### HIGH THRUST

HP / kW	Model	Phase	L (in)	Motor Carton Size (in)			Shipping Wt.	
				W	H	L	lbs	kg
1.5 / 1.1	Standard, Sand Fighter®	1	19.1	6.50	6.25	21.50	35	15.9
	Standard, Sand Fighter®	3	17.98	6.50	6.25	21.50	37	16.8
2 / 1.5	Standard, Sand Fighter®	1	20.6	6.50	6.25	24.25	43	19.5
	Oil Stripper	1	22.85	6.50	6.25	25.75	46	20.9
3 / 2.2	Standard, Sand Fighter®	3	19.1	6.50	6.25	24.25	44	20
	Oil Stripper	3	21.35	6.50	6.25	25.75	42	19.1
5 / 3.7	Standard, Sand Fighter®	1	22.49	6.50	6.25	27.75	47	21
	Oil Stripper	1	22.98	6.50	6.25	27.75	48	22
7.5 / 5.5	Standard, Sand Fighter®	3	19.44	6.50	6.25	24.75	41	19
	Oil Stripper	3	19.93	6.50	6.25	26.25	42	19
10 / 7.5	Standard, Sand Fighter®	1	27.41	6.50	6.25	33.75	64	29
	Oil Stripper	1	27.90	6.50	6.25	33.75	65	30
15 / 11	Standard, Sand Fighter®	3	22.49	6.50	6.25	27.75	50	23
	Oil Stripper	3	22.98	6.50	6.25	27.75	51	23
5.5 / 4	CBM+	3	23.45	6.50	6.25	27.75	52	24
	Standard, Sand Fighter®	3	23.39	6.50	6.25	27.75	52	24
7.5 / 5.5	Standard, Sand Fighter®	3	27.41	6.50	6.25	33.75	64	29
	Oil Stripper	3	27.90	6.50	6.25	33.75	65	30
10 / 7.5	CBM+	3	28.37	6.50	6.25	33.75	66	30
	Standard, Sand Fighter®	3	30.48	6.50	6.25	35.25	72	33
15 / 11	Oil Stripper	3	30.97	6.50	6.25	35.25	73	33
	CBM+	3	31.44	8.88	8	39.5	74	34

NOTE: Consult factory for 316 SS weights and dimensions



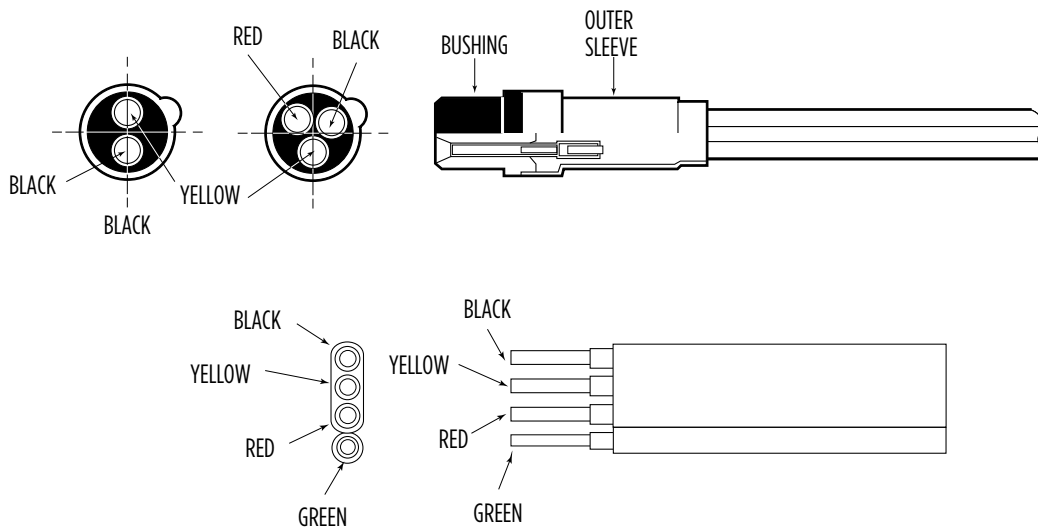


## 4" SUBMERSIBLE MOTORS - LEADS AND ACCESSORIES

### MOTOR LEADS AND CABLES

HP	Wire	Description	Wire AWG	Model No.	Wt. (lbs)	
All	2	Lead, Individual XLPE, 303 SS, 48 in, Ground	14	152552905	1	
		Lead, Individual XLPE, 303 SS, 100 in, Ground		152552906	1	
		Lead, Individual Nitrile, 316 SS, 48 in, No Ground		152328905*	1	
		Lead, Individual Nitrile, 316 SS, 100 in, No Ground		152328906*	1	
		Lead, Individual XLPE, 303 SS, 48 in, Ground		152553905	<1	
	3 (Jam-Nut Style)	Lead, Individual XLPE, 303 SS, 100 in, Ground		152553906	<1	
		Lead, Individual Nitrile, 316 SS, 48 in, No Ground *		152255901	<1	
		Lead, Individual Nitrile, 316 SS, 100 in, No Ground *		152255902	<1	
		Lead, Individual Nitrile, 316 SS, 160 in, No Ground *		152255904	<1	
		Lead, Individual Nitrile, 316 SS, 30 ft, No Ground *		152255906	5	
		Lead, Individual Nitrile, 316 SS, 50 ft, No Ground *		152255907	5	
		Lead, Individual Nitrile, 316 SS, 100 ft, No Ground *		152255910	9	
		Lead, Individual Nitrile, 316 SS, 150 ft, No Ground *		152255912	14	
		3 (Clamp Style)		Lead, Individual XLPE, 316 SS, 48 in, Ground	152735911	<1
				Lead, Individual XLPE, 316 SS, 100 in, Ground	152735941	1
	Lead, Individual Nitrile, 316 SS, 100 in, No Ground *			152744902	<1	
	Lead, Individual Nitrile, 316 SS, 160 in, No Ground *			152744904	<1	
	Lead, Individual Nitrile, 316 SS, 50 ft, No Ground *			152744907	5	
	Lead, Individual Nitrile, 316 SS, 100 ft, No Ground *	152744910		9		

NOTE: Refer to Franklin Application Installation Maintenance (AIM) Manual for accurate cable sizing; MOTOR WARRANTY IS VOID if Franklin-supplied leads are not used  
 \*Nitrile not for use in potable water



### MOTOR ACCESSORIES

HP	Description	Model No.	Wt. (lbs)
All	Coupling, 4-inch, #416 SS, 3/4 Shaft DIA., 3/16x1/8x13/8 KEY	151551911	1
1/3 - 3	4" SS	308250912	1.4
1.5 - 10	4" HS	308250913	1.4

## 6" SUBMERSIBLE MOTORS

These motors are built for dependable operation in 6" diameter or larger water wells.

### BASIC FEATURES

- Double flanged NEMA mounting design
- Stainless steel splined shaft
- StatorShield™, Franklin's six-feature encapsulation system
- High-capacity, Kingsbury-type, water-lubricated thrust bearing
- Factory-filled with Franklin's non-toxic water soluble fill solution
- Field replaceable lead using Franklin's exclusive Water-Bloc™ technology
- Full 3,450 rpm 60 Hz design point
- External sand slinger on shaft
- Mechanical face seal at shaft exit
- Copper bar rotor
- All models variable frequency drive (VFD) compatible
- Single-phase models must be used with a Franklin Electric control box

### SPECIAL FEATURES

- **316 Stainless Steel:** Special construction option for acid, low pH, and seawater applications. All 316 SS motors include a SubTrol™ heat sensor.
- **Sand Fighter®** models include SubTrol™ heat sensor on 40, 50, and 60 hp models.
- Consult factory for other voltage, hertz, and horsepower ratings not listed in this catalog
- Specifications are subject to change without notice; contact Franklin Electric if current materials are required for bid specifications
- Overmolded motor leads on all 10 GA leads





## 6" SUBMERSIBLE MOTORS - SPECIFICATIONS AND MATERIALS

### MOTOR SPECIFICATIONS

Hz	Model	Phase	HP Range	kW Range	Poles	RPM	Max. Ambient Temp.	Duty Rating
50	Standard*	1	5 - 15	3.7 - 11	2	2875	86 °F / 30 °C	Continuous
		3	5 - 40	3.7 - 45			86 °F / 30 °C	
		3	50 - 60	37 - 45			122 °F / 50 °C	
	Sand Fighter**	3	5 - 40	3.7 - 45			86 °F / 30 °C	
		3	50 - 60	37 - 45			86 °F / 30 °C	
		3	5 - 40	3.7 - 30			195 °F / 90 °C	
60	Standard*	1	5 - 15	3.7 - 11		3450	86 °F / 30 °C	
		3	5 - 40	3.7 - 30			86 °F / 30 °C	
		3	50 - 60	37 - 45			122 °F / 50 °C	
	Sand Fighter**	3	5 - 40	3.7 - 30			86 °F / 30 °C	
		3	50 - 60	37 - 45			86 °F / 30 °C	
		3	5 - 40	3.7 - 30			195 °F / 90 °C	
	High-Temp 90° C**	3	5 - 40	3.7 - 30	195 °F / 90 °C			

\*At 0.5 ft/sec flow past motor, motors are rated for continuous duty up to 86 °F (30 °C) water temperature.

\*\*At 0.5 ft/sec flow past motor, motors are rated for continuous duty up to 195 °F (90 °C) water temperature and up to 86 °F (30 °C) water temperature with NO FLOW in lakes or in wells 12 inches or larger in diameter.

### CONSTRUCTION MATERIALS

Component	Construction Type			
	Sand Fighter®	Corrosion Resistant (316 SS)	Hi-Temp 90 °C (300 SS Shell)	Hi-Temp 90 °C (316 SS)
UL Insulation Class Rating	Class F	Class F	Class F	Class F
Motor Ambient Temp. Rating	86 °F / 30 °C	86 °F / 30 °C	194 °F / 90 °C (5-40 hp)	194 °F / 90 °C (5-40 hp)
Stator Resin Type	Standard (5-40 hp) / Hi-Temp (50-60 hp)	Standard (5-40 hp) / Hi-Temp (50-60 hp)	FE Hi-Temp	FE Hi-Temp
Motor Fill Solution (Water Soluble/Non-Toxic)	FES91	FES91	FES92	FES92
Top End Bell & Thrust Housing	Epoxy-coated gray iron	316 SS	Epoxy-coated gray iron	316 SS
On Winding SubTrol™ heat sensor	No (5-30 hp) / Yes (40-60 hp)	Yes	Not Available	Not Available
Stator Shell	300 series SS	316 SS	300 series SS	316 SS
Stator Ends	Carbon steel		Carbon steel	316 SS
Shaft Extension	300 Series SS (5-30 hp) / 17-4 SS (40-60 hp)	17-4 SS	300 SS (5-20 hp), 17-4 SS (25-40 hp)	17-4 SS
Bushing	316 SS	316 SS	316 SS	316 SS
Bushing Retainer	300 series SS		300 series SS	316 SS
Shaft Mechanical Seal	Sand Fighter™ Seal System	Sand Fighter™ Seal System	Sand Fighter™ Seal System	Sand Fighter™ Seal System
Mechanical Seal / Rubber Components	Nitrile (5-40 hp) / FKM (50-60 hp)	Nitrile (5-40 hp) / FKM (50-60 hp)	FKM	FKM
Diaphragm Material	Nitrile (5-40 hp) / FKM (50-60 hp)	Nitrile (5-40 hp) / FKM (50-60 hp)	FKM	FKM
Diaphragm Plate	300 series SS	316 SS	300 series SS	316 SS
Diaphragm Spring	300 series SS	25-6 MO SS	300 series SS	25-6 MO SS
Shaft Slinger	Nitrile (5-40 hp) / FKM (50-60 hp)	Nitrile	FKM	FKM
Lead Wire	Jacketed (10 AWG) Individual (8 AWG)	Jacketed (10 AWG) Individual (8 AWG)	Individual Hi-Temp XLPO	Individual Hi-Temp XLPO
Lead Construction	Overmolded (10 AWG) Potted (8 AWG)	Overmolded (10 AWG) Potted (8 AWG)	Potted	Potted
Lead Jam Nut	Brass	316 SS	Brass	316 SS
Thrust Bearing Rating (86 °F / 30 °C)	3500 lbs (5-30 hp) 6000 lbs (40-60 hp)	3500 lbs (5-30 hp) 6000 lbs (40-60 hp)	Standard 5-20 hp • 4,500 lbs Standard 25-40 hp • 7,500 lbs	Standard 5-20 hp • 4,500 lbs Standard 25-40 hp • 7,500 lbs
Method Of Connecting System Ground To Motor	Ground wire in power lead connector	Ground wire in power lead connector	Ground wire in power lead connector	Ground wire in power lead connector

NOTE: Specifications subject to change without notice; contact Franklin Electric if current material types are required for bid specifications

## 6" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### SINGLE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust Rating	Wt. (lbs)
5	Sand Fighter®	230	60	1.15	DOL (3)	2261108020	3500	110
7.5	Sand Fighter®	230	60	1.15	DOL (3)	2261118020	3500	123
10	Sand Fighter®	230	60	1.15	DOL (3)	2261128020	3500	141
15	Sand Fighter®	230	60	1.15	DOL (3)	2261138020	3500	154

### THREE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust Rating	Wt. (lbs)
5	Sand Fighter®	200	60	1.15	DOL (3)	2366508120	3500	101
		230	60	1.15	DOL (3)	2366008120	3500	101
		460/380	60/50	1.15/1.0	DOL (3)	2366108120	3500	101
		575	60	1.15	DOL (3)	2366208120	3500	101
	316 SS w/SubTrol™	460/380	60/50	1.15/1.0	DOL (3)	2366104020	3500	101
		575	60	1.15	DOL (3)	2366204020	3500	101
		Hi-Temp 90 °C	460/380	60/50	1.15/1.0	Y-Δ (6)	2767100003	4500
	Hi-Temp 90 °C - 316 SS	230	60	1.15	DOL (3)	2766003003	4500	116
		460/380	60/50	1.15/1.0	DOL (3)	2766103003	4500	116

## 6" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### THREE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust Rating	Wt. (lbs)
7.5	Sand Fighter®	200	60	1.15	DOL (3)	2366518120	3500	108
		230	60	1.15	DOL (3)	2366018120	3500	108
		460/380	60/50	1.15/1.0	DOL (3)	2366118120	3500	108
		575	60	1.15	DOL (3)	2366218120	3500	108
	316 SS w/SubTrol™	460/380	60/50	1.15/1.0	DOL (3)	2366114020	3500	108
		575	60	1.15	DOL (3)	2366214020	3500	108
	Hi-Temp 90 °C	460/380	60/50	1.15/1.0	DOL (3)	2766110003	4500	129
	Hi-Temp 90 °C - 316 SS	230	60	1.15	DOL (3)	2766013003	4500	129
		460/380	60/50	1.15/1.0	DOL (3)	2766113003	4500	129
	10	Sand Fighter®	200	60	1.15	DOL (3)	2366528120	3500
230			60	1.15	DOL (3)	2366028120	3500	116
460/380			60/50	1.15/1.0	DOL (3)	2366128120	3500	116
575			60	1.15	DOL (3)	2366228120	3500	116
316 SS w/SubTrol™		230	60	1.15	DOL (3)	2366024020	3500	116
		460/380	60/50	1.15/1.0	DOL (3)	2366124020	3500	116
575		60	1.15	DOL (3)	2366224020	3500	116	
Hi-Temp 90 °C		460/380	60/50	1.15/1.0	DOL (3)	2766120003	4500	145
Hi-Temp 90 °C - 316 SS		230	60	1.15	DOL (3)	2766023003	4500	145
		460/380	60/50	1.15/1.0	DOL (3)	2766123003	4500	145
15	Sand Fighter®	200	60	1.15	DOL (3)	2366538120	3500	129
		230	60	1.15	DOL (3)	2366038120	3500	129
		460/380	60/50	1.15/1.0	DOL (3)	2366138120	3500	129
		575	60	1.15	DOL (3)	2366238120	3500	129
	316 SS w/SubTrol™	230	60	1.15	DOL (3)	2366034020	3500	129
		460/380	60/50	1.15/1.0	DOL (3)	2366134020	3500	129
	575	60	1.15	DOL (3)	2366234020	3500	129	
	Hi-Temp 90 °C	460/380	60/50	1.15/1.0	DOL (3)	2766130003	4500	156
	Hi-Temp 90 °C - 316 SS	230	60	1.15	DOL (3)	2766033003	4500	156
		460/380	60/50	1.15/1.0	DOL (3)	2766133003	4500	156



## 6" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### THREE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust Rating	Wt. (lbs)
20	Sand Fighter®	200	60	1.15	DOL (3)	2366548120	3500	145
		230	60	1.15	DOL (3)	2366048120	3500	145
		460/380	60/50	1.15/1.0	DOL (3)	2366148120	3500	145
		575	60	1.15	DOL (3)	2366248120	3500	145
	316 SS w/SubTrol™	230	60	1.15	DOL (3)	2366044020	3500	145
		460/380	60/50	1.15/1.0	DOL (3)	2366144020	3500	145
		575	60	1.15	DOL (3)	2366244020	3500	145
	Hi-Temp 90 °C	460/380	60/50	1.15/1.0	DOL (3)	2766140003	4500	174
	Hi-Temp 90 °C - 316 SS	230	60	1.15	DOL (3)	2766043003	4500	174
		460/380	60/50	1.15/1.0	DOL (3)	2766143003	4500	174
25	Sand Fighter®	200	60	1.15	DOL (3)	2366558120	3500	156
		230	60	1.15	DOL (3)	2366058120	3500	156
		460/380	60/50	1.15/1.0	DOL (3)	2366158120	3500	156
		575	60	1.15	DOL (3)	2366258120	3500	156
	316 SS w/SubTrol™	230	60	1.15	DOL (3)	2366054020	3500	156
		460/380	60/50	1.15/1.0	DOL (3)	2366154020	3500	156
		575	60	1.15	DOL (3)	2366254020	3500	156
	Hi-Temp 90 °C	460/380	60/50	1.15/1.0	DOL (3)	2766150103	7500	202
	Hi-Temp 90 °C - 316 SS	230	60	1.15	DOL (3)	2766053103	7500	202
		460/380	60/50	1.15/1.0	DOL (3)	2766153103	7500	202
30	Sand Fighter®	200	60	1.15	DOL (3)	2366568120	3500	174
		230	60	1.15	DOL (3)	2366068120	3500	174
		460/380	60/50	1.15/1.0	DOL (3)	2366168120	3500	174
		575	60	1.15	DOL (3)	2366268120	3500	174
	316 SS w/SubTrol™	230	60	1.15	DOL (3)	2366064020	3500	174
		460/380	60/50	1.15/1.0	DOL (3)	2366164020	3500	174
		575	60	1.15	DOL (3)	2366264020	3500	174
	Hi-Temp 90 °C	460/380	60/50	1.15/1.0	DOL (3)	2766160103	7500	300
	Hi-Temp 90 °C - 316 SS	230	60	1.15	DOL (3)	2766063103	7500	300
		460/380	60/50	1.15/1.0	DOL (3)	2766163103	7500	300
40	Sand Fighter® w/SubTrol™	460/380	60/50	1.15/1.0	DOL (3)	2366178125	6000	202
		575	60	1.15	DOL (3)	2366278125	6000	202
	316 SS w/SubTrol™	460/380	60/50	1.15/1.0	DOL (3)	2366174025	6000	202
		575	60	1.15	DOL (3)	2366274025	6000	202
	Hi-Temp 90 °C	460/380	60/50	1.15/1.0	DOL (3)	2766170103	10000	330
	Hi-Temp 90 °C - 316 SS	460/380	60/50	1.15/1.0	DOL (3)	2766173103	10000	330
50	Sand Fighter® w/SubTrol™	460/380	60/50	1.15/1.0	DOL (3)	2366188125	6000	300
		575	60	1.15	DOL (3)	2366288125	6000	300
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2366184025	6000	300
		575	60	1.15	DOL (3)	2366284025	6000	300
60	Sand Fighter® w/SubTrol™	460/380	60/50	1.15/1.0	DOL (3)	2366198125	6000	330
		575	60	1.15	DOL (3)	2366298125	6000	330
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2366194025	6000	330
		575	60	1.15	DOL (3)	2366294025	6000	330

NOTE: Models designated above as Sand Fighter® are water well construction; all 316 SS and Ni-Resist models are equipped with Sand Fighter® sealing system; all models listed above include factory-installed leads (13 ft)



## 6" SUBMERSIBLE MOTORS - DIMENSIONS AND WEIGHTS

### STANDARD

HP / kW	Construction	"L" (in)	Motor Carton Size (in)			Shipping Wt.	
			W	H	L	lbs	kg
5 / 3.7	304 SS 3-Lead	22.9	7.50	10.75	34.50	101	46
	316 SS 3-Lead	22.5	7.50	10.75	34.50	101	46
7.5 / 5.5	304 SS 3-Lead	24.2	7.50	10.75	34.50	108	49
	316 SS 3-Lead	23.8	7.50	10.75	34.50	108	49
10 / 7.5	304 SS 3-Lead	25.4	7.50	10.75	34.50	116	53
	316 SS 3-Lead	25.0	7.50	10.75	34.50	116	53
15 / 11	304 SS 3-Lead	28.0	7.50	10.75	34.50	129	59
	316 SS 3-Lead	27.6	7.50	10.75	34.50	129	59
20 / 15	304 SS 3-Lead	30.6	7.50	10.75	37.00	145	66
	316 SS 3-Lead	30.2	7.50	10.75	37.00	145	66
25 / 18.5	304 SS 3-Lead	33.1	7.50	10.75	42.25	156	71
	316 SS 3-Lead	32.7	7.50	10.75	42.25	156	71
30 / 22	304 SS 3-Lead	35.7	7.50	10.75	42.25	174	79
	316 SS 3-Lead	35.3	7.50	10.75	42.25	174	79
40 / 30	304 SS 3-Lead	40.8	7.50	10.75	47.25	202	92
	316 SS 3-Lead	40.4	7.50	10.75	47.25	202	92
50 / 37	304 SS 3-Lead	55.3	8.75	10.50	71.75	300	136
	316 SS 3-Lead	54.9	8.75	10.50	71.75	300	136
60 - 45	304 SS 3-Lead	61.3	8.75	10.50	71.75	330	150
	316 SS 3-Lead	60.9	8.75	10.50	71.75	330	150

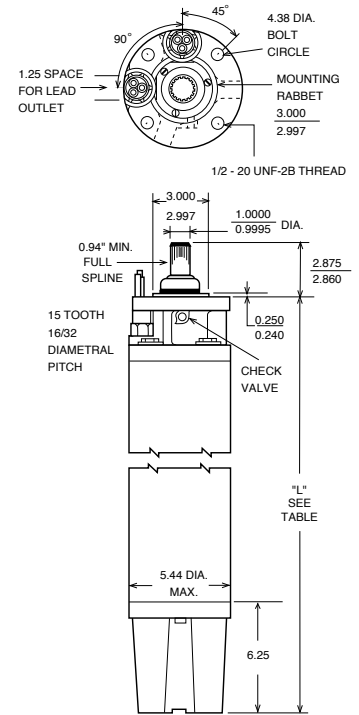
NOTE: 6-Lead Y-Δ models available (add 5 lbs to shipping weight)

### HIGH-TEMP 90

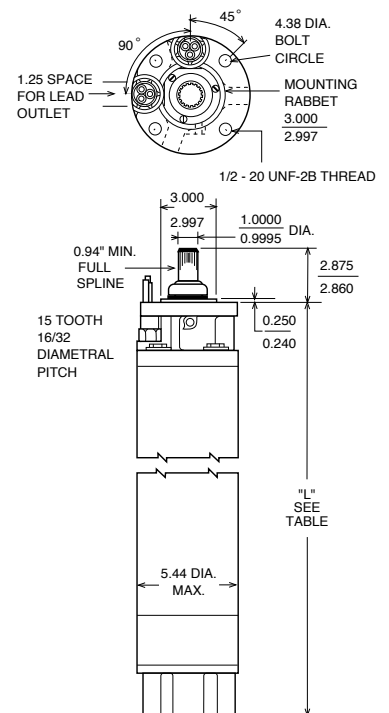
HP / kW	Construction	L (in)	Motor Carton Size (in)			Shipping Wt.	
			W	H	L	lbs	kg
5 / 3.7	304 SS 3-Lead	26.4	9	11	35	116	53
	316 SS 3-Lead	26.4	9	11	35	116	53
7.5 / 5.5	304 SS 3-Lead	28.96	9	11	37	129	59
	316 SS 3-Lead	28.96	9	11	37	129	59
10 / 7.5	304 SS 3-Lead	31.52	9	11	42	145	66
	316 SS 3-Lead	31.52	9	11	42	145	66
15 / 11	304 SS 3-Lead	34.09	9	11	42	156	71
	316 SS 3-Lead	34.09	9	11	42	156	71
20 / 15	304 SS 3-Lead	36.65	9	11	51	174	79
	316 SS 3-Lead	36.65	9	11	51	174	79
25 / 18.5	304 SS 3-Lead	41.77	9	11	51	202	92
	316 SS 3-Lead	41.77	9	11	51	202	92
30 / 22	304 SS 3-Lead	58.14	9	11	72	300	136
	316 SS 3-Lead	58.14	9	11	72	300	136
40 / 30	304 SS 3-Lead	64.14	9	11	72	330	150
	316 SS 3-Lead	64.14	9	11	72	330	150

NOTE: 6-Lead Y-Δ models available (add 5 lbs to shipping weight)

### Standard Water Well



### 316 Stainless





## 6" SUBMERSIBLE MOTORS - LEADS AND ACCESSORIES

### MOTOR LEADS AND CABLES

HP	Model	Description	Wire AWG	Model No.	Wt. (lbs)	
All	Standard	Lead, XLPE, Brass, 13 ft, w/Ground	8	305517901	4	
		Lead, XLPE, Brass, 26 ft, w/Ground	8	305517902	9	
		Lead, XLPE, 316 SS, 13 ft, w/Ground	8	305517951	4	
		Lead, XLPE, 316 SS, 26 ft, w/Ground	10	305518952	9	
		Lead, XLPE, 316 SS, 26 ft, w/Ground	8	305517952	9	
5-30		Lead, XLPE, 316 SS, 50 ft, w/Ground	10	305518955	11	
		Lead, XLPE, 316 SS, 50 ft, w/Ground	8	305517955	16	
		Lead, XLPE, 316 SS, 75 ft, w/Ground	10	305518957	16	
		Lead, XLPE, 316 SS, 75 ft, w/Ground	8	305517957	24	
		Lead, XLPE, 316 SS, 100 ft, w/Ground	10	305518960	21	
		Lead, XLPE, 316 SS, 100 ft, w/Ground	8	305517960	32	
		Lead, XLPE, 316 SS, 150 ft, w/Ground	10	305518965	32	
		Lead, XLPE, 316 SS, 150 ft, w/Ground	8	305517965	48	
All		Hi-Temp	Lead, XLPO, 316 SS, 13 ft, w/Ground	8	305519951	4
5-30			Lead, XLPO, 316 SS, 26 ft, w/Ground	8	305519952	9
	Lead, XLPO, 316 SS, 75 ft, w/Ground		8	305519957	24	
		Lead, XLPO, 316 SS, 150 ft, w/Ground	8	305519965	48	

NOTE: Refer to Franklin Application Installation Maintenance (AIM) Manual for accurate cable sizing; MOTOR WARRANTY IS VOID if Franklin-supplied leads are not used

### MOTOR ACCESSORIES

HP	Description	Model No.	Wt. (lbs)
All	Coupling, 6-inch, #416 SS, 3/4" Pump Shaft, 3/16 x 1/8 x 1-3/4 Key	151935902	2
	Coupling, 6-inch, #416 SS, 7/8" Pump Shaft, 1/4 x 3/16 x 1-3/4 Key	151935901	2
	Coupling, 6-inch, #416 SS, 1" Pump Shaft, 1/4 x 3/16 x 1-3/4 Key	151935909	2
	Coupling, 6-inch, #316 SS, 3/4" Pump Shaft, 3/16 x 1/8 x 1-3/4 Key	151935922	2
	Coupling, 6-inch, #316 SS, 7/8" Pump Shaft, 1/4 x 3/16 x 1-3/4 Key	151935921	2
	Coupling, 6-inch, #316 SS, 1" Pump Shaft, 1/4 x 3/16 x 1-3/4 Key	151935929	2
	Surge Arrestor - Three-Phase - Up to 650 V to Ground	155440902	2
	PT 100 Sensor - 6-inch (1/2-13 Threads)	305327903	< 2

# 6" MAGFORCE™ HIGH EFFICIENCY SYSTEM

THREE-PHASE 7.5-60 HP, 460 V 60 HZ

Each MagForce High Efficiency System is powered with a permanent magnet motor that operates at a fraction of the energy consumption when compared to traditional induction systems. Plus, each system is paired with an innovative Franklin Electric engineered drive for intuitive startup and reliable protection for submersible pumping application.

## FEATURES

- **GROUNDBREAKING EFFICIENCY:** Powered by MagForce High Efficiency Motor with 90% efficiency rating that is 10-12% greater than standard induction motor construction. Typical duty rate systems can have a payback\* of 1 to 2 years.
- **SIMPLIFIED INVENTORY MANAGEMENT:** Three motor sizes cover pump horsepower ranging from 7.5 to 60. Fewer SKUs simplify your inventory.
- **SLASH ELECTRICITY CONSUMPTION:** Since the motor has rare earth magnets, there is less electrical energy loss, which translates into greater power output per dollar spent on power input. This saves operational costs every time the motor is run; the more it is used, the more can be saved.
- **SMALLER FOOTPRINT:** Lighter and easier to handle than standard induction motors and, like all submersible motor systems, provides a smaller above ground footprint when compared to other pumping solutions.
- **BUILT TOGETHER TO WORK TOGETHER:** All components come from a single source for the ultimate in operational compatibility and optimized operation.
- **INTUITIVE STARTUP:** Each system is controlled by a Franklin Electric variable frequency drive with application-specific firmware that pre-programs settings for quick, easy startups and reliable protection for any project.
- **FULLY SUPPORTED:** Comes fully supported by the industry's leading Technical Support professionals and Field Service Engineers.

\*Field trial data.

## APPLICATIONS

Ideal for long-run applications such as:

- Groundwater remediation
- Drainage water level control
- Municipal/Utility water supply
- Construction site dewatering
- Well supply geothermal HVAC system
- High volume and industrial livestock operations
- Mine site dewatering and tank level control



## MAGFORCE HIGH EFFICIENCY MOTOR

### FEATURES

- Sand Fighter® models are equipped with Franklin's robust Sand Fighter sealing system for durability against sand or other abrasives.
- Max 3600 rpm (4 pole, 120 Hz); Nominal 3450 rpm (4 pole, 115 Hz) Maximum temperature winding wire NEMA class 200
- Hermetically sealed windings
- Double-flange design
- Over-molded lead for cable resilience
- Stainless steel shell
- Kingsbury-type, water lubricated, thrust bearing
- Pressure-equalizing diaphragm
- Sand slinger
- NSF/ANSI 61 Certified

### SPECIFICATIONS

MagForce High Efficiency Motor (Three-Phase)									
HP	kW	S.F. Max Amps	Max HP	"L" Dimension		"L" Dimension (316 SS)		Shipping Wt.	
				in	cm	in	cm	lbs	kg
7.5-15	5.5-11	20.5	17.25	25.0	63.5	24.6	62.5	117	53
20-30	15-22	41.0	34.5	31.2	79.4	30.8	78.2	150	68
40-60	30-45	80.0	66.0	39.8	101	39.8	101	165	75

Model	Hz	Phase	HP Range	kW Range	Poles	RPM	Max Ambient Temp.	Duty Rating
Sand Fighter	120	3	7.5-60	4.3-45	4	3600	86 °F/30 °C	Continuous

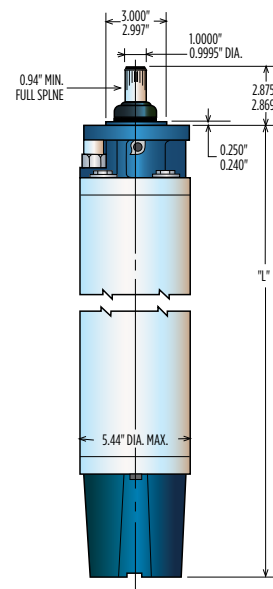
### MOTOR COMPARISON

Feature	Induction Motor	MagForce High Efficiency Motor
Input Voltage	230, 460, 575	460
Minimum Frequency	30	60
Maximum Frequency	60	120
Voltage Variance	±10%	±10%
Construction	Sand Fighter	Sand Fighter (Permanent Magnet)
Speed (rpm)	3450	3600

### CONSTRUCTION MATERIALS

Component	Construction Type
	Sand Fighter
Motor Ambient Temp. Rating	86 °F/30 °C
Stator Resin Type	Standard
Motor Fill Solution (Water Soluble/Non-Toxic)	FES91
Top End Bell and Thrust Housing	Epoxy-coated Gray Iron
Stator Shell	300 Series SS
Stator Ends	Carbon Steel
Shaft Extension	EN 1.4462
Bushing	Bronze
Bushing Retainer	300 Series SS
Shaft Mechanical Seal	Sand Fighter Seal System
Mechanical Seal/Rubber Components	Nitrile
Diaphragm Material	Nitrile
Diaphragm Plate	300 Series SS
Diaphragm Spring	300 Series SS
Shaft Slinger	Nitrile
Lead Jam Nut	Brass
Thrust Bearing Rating (86°F/30°C)	3500 lbs (7.5-30 hp)
	6000 lbs (40-60 hp)
Method Of Connecting System Ground to Motor	Ground wire in power lead connector

NOTE: Specifications subject to change without notice; contact Franklin Electric if current material types are required for bid specifications



## MAGFORCE HIGH EFFICIENCY SYSTEM: ORDER INFORMATION

### SYSTEM WITH SUBDRIVE CONNECT PLUS

The system includes: MagForce High Efficiency Motor with lead and a compatible SubDrive Connect Plus variable frequency drive with pressure transducer and built-in dv/dt filter. Its easy-to-install platform helps you save time during installation and servicing using an array of setup, monitoring, and troubleshooting solutions.

HP	Drive Input Voltage	Kit Order No.	Description	MagForce High Efficiency Motor					SubDrive Connect Plus*					Output Filter Options**
				Motor Only	Max Amps at HP Load	Volts/Hz	S.F.	Motor Lead	Model No.	Max Amps	Height (in)	Width (in)	Depth (in)	Sine Wave Filter
														NEMA 1/3R
7.5	460	305612911	SubDrive Connect Plus MagForce 7.5/10HP	2360809566E	11.6	460/120	1.15	DOL (3)	SDCP-SUB1043	18	27.2	10.7	9.4	MSD0023A300
10	460			2360809566E	14.2				SDCP-SUB1043	18	27.2	10.7	9.4	MSD0023A300
15	460	305612912	SubDrive Connect Plus MagForce 15HP	2360809566E	20.5				SDCP-SUB1543	26	27.2	10.7	9.4	MSD0030A300
20	460	305612913	SubDrive Connect Plus MagForce 20HP	2360849566E	28.9				SDCP-SUB2043	31	27.2	10.7	9.4	MSD0035A300
25	460	305612914	SubDrive Connect Plus MagForce 25HP	2360849566E	34.6				SDCP-SUB2543	39	34.3	13.8	10.0	MSD0045A300
30	460	305612915	SubDrive Connect Plus MagForce 30HP	2360849566E	41				SDCP-SUB3043	46	34.3	13.8	10.0	MSD0065A300

\*NOTE: Firmware version 1.7.0 or newer is required for permanent magnet motor (or MagForce) functionality.

\*\*Sine wave filters are required when using a SubDrive Connect Plus with a permanent magnet motor with lead lengths greater than 1,000'.

### SYSTEM WITH CERUS X-DRIVE

The system includes: MagForce High Efficiency Motor with lead and Cerus X-Drive in NEMA 3R panel configurations or as a standalone NEMA drive. The Cerus® X-Drive Variable Frequency Drive (VFD) is Franklin Electric's all-inclusive drive solution for a variety of markets.

HP	Drive Input Voltage	MagForce High Efficiency Motor					Cerus X-Drive*							
		Motor Only	Max Amps at HP Load	Volts/Hz	S.F.	Motor Lead	NEMA 3R Panel***				NEMA 1 Drive Only			
							Model No.	Height (in)	Width (in)	Depth (in)	Model No.	Height (in)	Width (in)	Depth (in)
7.5	460	2360809566E	11.6	460/120	1.15	DOL (3)	XS4BH007-3A	36.5	26	16.4	CXD-013A-4V	5.1	9.8	6.7
10	460	2360809566E	14.2				XS4BH010-3A	36.5	26	16.4	CXD-018A-4V	5.1	9.8	6.7
15	460	2360809566E	20.5				XS4BH015-3A	36.5	26	16.4	CXD-024A-4V	7.5	12.6	7.5
20	460	2360849566E	28.9				XS4BH020-3A	36.5	26	16.4	CXD-032A-4V	7.5	12.6	7.5
25	460	2360849566E	34.6				XS4BH025-3A	41.5	29	16.4	CXD-038A-4V	7.5	12.6	7.3
30	460	2360849566E	41				XS4BH030-3A	41.5	29	16.4	CXD-045A-4V	9.8	15.8	8.3
40	460	2360862166E	56.5				XS4BH040-3A	41.5	29	16.4	CXD-060A-4V	9.8	15.8	8.3
50	460	2360862166E	69.2				XS4BH050-3A	41.5	29	16.4	CXD-073A-4V	9.8	15.8	8.3
60	460	2360862166E	80				XS4BH060-3A	46.5	29	16.4	CXD-091A-4V	11.0	19.7	10.0
7.5	575	2360809566E	11.6				XS6BH007-3A	36.5	26	16.4	CXD-012A-6V	7.5	12.6	7.5
10	575	2360809566E	14.2				XS6BH010-3A	36.5	26	16.4	CXD-018A-6V	7.5	12.6	7.5
15	575	2360809566E	20.5				XS6BH015-3A	36.5	26	16.4	CXD-024A-6V	9.8	15.8	8.3
20	575	2360849566E	28.9				XS6BH020-3A	41.5	29	16.4	CXD-030A-6V	9.8	15.8	8.3
25	575	2360849566E	34.6				XS6BH025-3A	41.5	29	16.4	CXD-036A-6V	9.8	15.8	8.3
30	575	2360849566E	41				XS6BH030-3A	51.5	34	20.5	CXD-045A-6V	7.5	12.6	7.5
40	575	2360862166E	56.5				XS6BH040-3A	51.5	34	20.5	CXD-067A-6V	13.0	21.7	10.8
50	575	2360862166E	69.2				XS6BH050-3A	51.5	34	20.5	CXD-086A-6V	14.6	23.2	11.8
60	575	2360862166E	80				XS6BH060-3A	51.5	34	20.5	CXD-086A-6V	14.6	23.2	11.8

\*NOTE: Firmware version 1.1 or newer is required for permanent magnet motor (or MagForce) functionality.

\*\*Output filters are required when using an X-Drive with a permanent magnet motor. dV/dt filters cover motor lead lengths up to 800'. A sine wave filter is required for lead lengths greater than 800'.

\*\*\*NEMA 3R panels include door-mounted keypad with HOA functionality, a circuit breaker, dV/dt filter, and line reactor or integrated DC Choke



## ACCESSORIES

Accessories	Detail	Used With	Part Number	
PT-100 Sensors	15HP System (UL and non)	SubDrive Connect Plus & Cerus X-Drive models	305327903	
	30HP (UL and non)		305327903	
	60HP (UL)	Cerus X-Drive models	305327903	
	60HP (non)		305327903	
Pressure Transducer	Pressure Transducer, 100PSIG, 4-20mA	Cerus X-Drive models	PSIG-100-20FT	
	Pressure Transducer, 200PSIG, 4-20mA		PSIG-200-20FT	
	Pressure Transducer, 300PSIG, 4-20mA		PSIG-300-20FT	
Optional Cards & Other	Modbus TCP/IP Communication Card		Cerus X-Drive models	CMC-EIP01
	I/O Card - Additional 4 digital inputs and 2 transistor outputs			EMC-D42A
	I/O Card - Additional 6 digital inputs			EMC-D611A
	I/O Card - Additional 6 relay outputs	EMC-R6AA		

## 8" SUBMERSIBLE MOTORS

These motors are built for dependable operation in vertical 8" diameter or larger water wells.

### BASIC FEATURES

- Double flanged NEMA mounting design
- Stainless steel splined shaft
- StatorShield™ six feature encapsulation system
- High-capacity, Kingsbury-type, water lubricated thrust bearing
- Factory filled with Franklin's non-toxic water soluble fill solution
- Field replaceable lead using Franklin's exclusive Water-Bloc™ technology
- Full 3,525 rpm 60 Hz design point
- External sand slinger on shaft
- Mechanical face seal at shaft exit
- Copper bar rotor
- All models are variable frequency drive (VFD) compatible
- Franklin's Exclusive on-winding SubTrol™ heat sensor for use with SubMonitor Connect™

### SPECIAL FEATURES

- Sand Fighter® and 316 stainless steel models are equipped with Franklin's exclusive Sand Fighter® sealing system for sand or other abrasives
- Consult factory for other voltage, hertz and horsepower ratings not listed in this catalog; specifications are subject to change without notice; contact Franklin Electric if current materials are required for bid specifications*





## 8" SUBMERSIBLE MOTORS - SPECIFICATIONS AND MATERIALS

### THREE-PHASE MOTOR SPECIFICATIONS

Hz	Model	Phase	HP Range	kW Range	Poles	RPM	Max. Ambient Temp.	Duty Rating
50	Standard	3	40 - 200	30 - 150	2	2900	86 °F / 30 °C	Continuous*
	Hi-Temp 75		40 - 150	30 - 110			167 °F / 75 °C	
60	Standard		40 - 200	30 - 150		3525	86 °F / 30 °C	
	Hi-Temp 75		40 - 150	30 - 110			167 °F / 75 °C	

\* At 0.5 ft/sec flow past motor; Motors are also rated for continuous duty up to 86 °F (30 °C) water temperature with NO FLOW in lakes or in wells 12 inches or larger in diameter; Higher temperature ambient motors are available in the 8" Hi-Temp motor line

### CONSTRUCTION MATERIALS

Component	Sand Fighter® (300 SS Shell)	Corrosion Resistant (316 SS)	Hi-Temp 75 (300 SS Shell)	Hi-Temp 75 (316 SS)
	UL Insulation Class Rating	Class F	Class F	Class F
Motor Ambient Temp. Rating	86 °F / 30 °C	86 °F / 30 °C	167 °F / 75 °C	167 °F / 75 °C
Stator Resin Type	FE Standard	FE Standard	FE Hi-Temp	FE Hi-Temp
Motor Fill Solution (Water Soluble/Non-Toxic)	FES91	FES91	FES92	FES92
Top End Bell & Thrust Housing	Epoxy-coated gray iron	316 SS	Epoxy-coated gray iron	316 SS
SubTrol™ heat sensor (Mounted On Winding)	Yes	Yes	No	No
Stator Shell	300 series SS	316 SS	300 series SS	316 SS
Stator Ends	Carbon Steel	316 SS	Carbon Steel	316 SS
Shaft Extension	17-4 SS	Per standard water well	17-4 SS	17-4 SS
Bushing	Bronze	316 SS	Bronze	316 SS
Bushing Retainer	300 series SS	316 SS	300 series SS	316 SS
Shaft Mechanical Seal	Sand Fighter® Seal System	Sand Fighter® Seal System	Sand Fighter® Seal System	Sand Fighter® Seal System
Mechanical Seal / Rubber Components	Nitrile	Nitrile	FKM	FKM
Diaphragm Material	Nitrile	Nitrile	FKM	FKM
Diaphragm Plate	300 SS	316 SS	316 SS	316 SS
Diaphragm Spring	300 SS	316 SS	316 SS	316 SS
Shaft Slinger	Nitrile	Nitrile	FKM	FKM
Lead Wire	XLPE (#8 AWG) / EPCV (#4 & #2 AWG)	XLPE (#8 AWG) / EPCV (#4 & #2 AWG)	XLPO	XLPO
Lead Potting	Epoxy	Epoxy	Epoxy	Epoxy
Lead Jam Nut or Compression Plate	Brass jam nut (40-125 hp) 316 SS plate (150-200 hp)	316 SS jam nut (40-125 hp) 316 SS plate (150-200 hp)	316 SS plate (150-200 hp)	316 SS plate (150-200 hp)
Thrust Bearing Rating (86 °F / 30 °C)	10,000 lbs	10,000 lbs	12,500 lbs (86 °F / 30 °C) 10,000 lbs (167 °F / 75 °C)	12,500 lbs (86 °F / 30 °C) 10,000 lbs (167 °F / 75 °C)
Method Of Connecting System Ground To Motor	Ground lug on top end bell	Ground lug on top end bell	Ground lug on top end bell	Ground lug on top end bell

NOTE: Specifications subject to change without notice; Contact Franklin Electric if current material types are required for bid specifications



## 8" SUBMERSIBLE MOTORS - ORDERING INFORMATION

### THREE-PHASE MODELS

HP	Description	Volts	Hz	S.F.	Motor Lead	Model No.	Thrust Rating	Wt. (lbs)
40	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2396008521	10000	320
		575	60	1.15	DOL (3)	2396108521	10000	320
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2396006221	10000	320
	Hi-Temp 75 °C	460/380	60/50	1.15/1.0	DOL (3)	2791009004	12500	400
50	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2396018521	10000	345
		575	60	1.15	DOL (3)	2396118521	10000	345
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2396016221	10000	345
60	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2396028521	10000	375
		575	60	1.15	DOL (3)	2396128521	10000	375
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2396026221	10000	375
	Hi-Temp 75 °C	460/380	60/50	1.15/1.0	DOL (3)	2791029004	12500	555
		575	60	1.15	DOL (3)	2791129004	12500	555
Hi-Temp 75 °C - 316 SS	460/380	60/50	1.15/1.0	DOL (3)	2791029204	12500	455	
75	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2396038541	10000	430
		575	60	1.15	DOL (3)	2396138541	10000	430
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2396036241	10000	430
		575	60	1.15	DOL (3)	2396136241	10000	430
	Hi-Temp 75 °C	460/380	60/50	1.15/1.0	DOL (3)	2791039004	12500	700
		575	60	1.15	DOL (3)	2791139004	12500	700
Hi-Temp 75 °C - 316 SS	460/380	60/50	1.15/1.0	DOL (3)	2791039204	12500	700	
100	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2396048541	10000	530
		460/380	60/50	1.15/1.0	Y-Δ (6)	2396248641	10000	535
		575	60	1.15	DOL (3)	2396148541	10000	530
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2396046241	10000	530
		575	60	1.15	DOL (3)	2396146241	10000	530
	Hi-Temp 75 °C	460/380	60/50	1.15/1.0	DOL (3)	2791049004	12500	840
	Hi-Temp 75 °C - 316 SS	460/380	60/50	1.15/1.0	DOL (3)	2791049204	12500	840
125	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2391058504	10000	700
		575	60	1.15	DOL (3)	2391158504	10000	700
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2391056204	10000	700
		575	60	1.15	DOL (3)	2391156204	10000	700
	Hi-Temp 75 °C	460/380	60/50	1.15/1.0	DOL (3)	2791059004	12500	945
Hi-Temp 75 °C - 316 SS	460/380	60/50	1.15/1.0	DOL (3)	2791059204	12500	945	
150	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2391068504	10000	840
		460/380	60/50	1.15/1.0	Y-Δ (6)	2391268604	10000	845
		575	60	1.15	DOL (3)	2391168504	10000	840
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2391066204	10000	840
		575	60	1.15	DOL (3)	2391166204	10000	840
	Hi-Temp 75 °C	460/380	60/50	1.15/1.0	DOL (3)	2791069004	12500	1040
Hi-Temp 75 °C - 316 SS	460/380	60/50	1.15/1.0	DOL (3)	2791069204	12500	1040	
175	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2391078504	10000	945
		575	60	1.15	DOL (3)	2391178504	10000	945
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2391076204	10000	945
200	Sand Fighter®	460/380	60/50	1.15/1.0	DOL (3)	2391088504	10000	1040
		575	60	1.15	DOL (3)	2391188504	10000	1040
	316 SS	460/380	60/50	1.15/1.0	DOL (3)	2391086204	10000	1040

NOTE: Models designated above as Sand Fighter® are water well construction; all 316 SS models are equipped with Sand Fighter® sealing system; all models listed above include factory installed leads (13 ft); motor leads do not include ground



# 8" SUBMERSIBLE MOTORS - DIMENSIONS AND WEIGHTS

## STANDARD

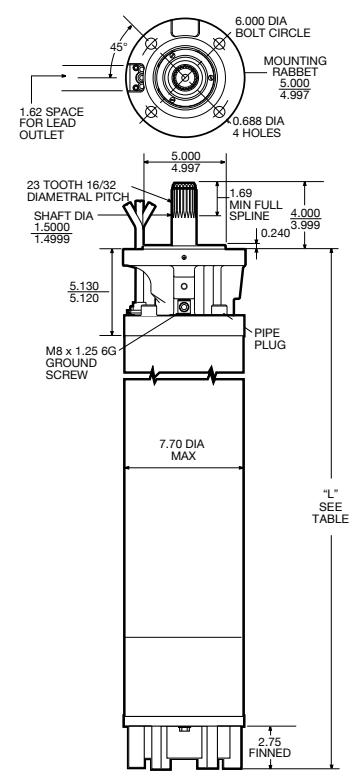
HP / kW	Phase	L (in)	Motor Carton Size (in)			Shipping Wt.	
			W	H	L	lbs	kg
40 / 30	3 (3-Lead)	36.4	9	17	51	320	146
50 / 37		39.4	9	17	51	345	157
60 / 45		42.4	9	17	51	375	171
75 / 55		47.4	9	17	64	430	196
100 / 75		54.9	9	17	64	530	241
125 / 93		68.8	9	17	79	700	318
150 - 110		77.8	9	17	96	840	382
175 - 130		85.8	9	17	96	945	430
200 / 150		94.8	9	17	108	1040	473

NOTE: 6-Lead Y-Δ models available (add 5 lbs to shipping weight)

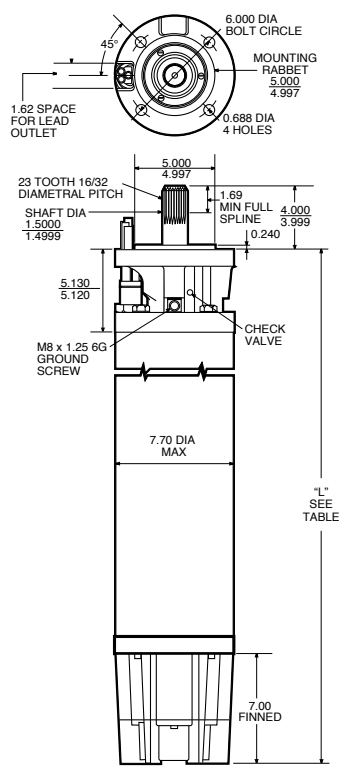
## HI-TEMP 75

HP / kW	Phase	L (in)	Motor Carton Size (in)			Shipping Wt.	
			W	H	L	lbs	kg
40 / 30	3	44.8	9	17	64	400	181
50 / 37		49.8	9	17	64	455	206
60 / 45		57.3	9	17	79	555	252
75 / 55		68.8	9	17	79	700	318
100 / 75		77.8	9	17	96	840	382
125 / 93		85.8	9	17	96	945	430
150 - 110		94.8	9	17	108	1040	473

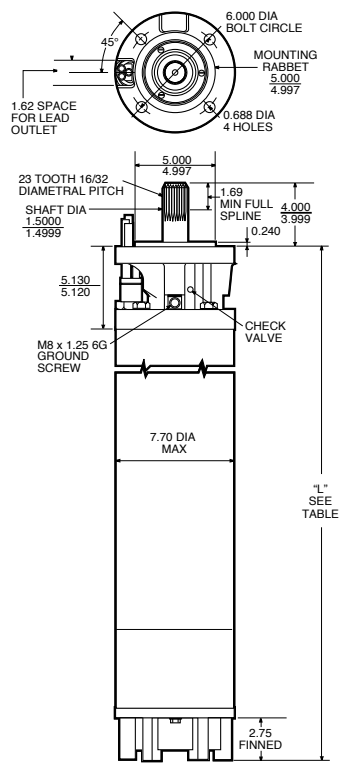
Type 1.0 (40-150 hp)



Type 2.1 (40-100 hp)



Type 1.0 (125-200 hp)



## 8" SUBMERSIBLE MOTORS - LEADS AND ACCESSORIES

### MOTOR LEADS AND CABLES

HP	Model	Description	Wire AWG	Model No.	Wt. (lbs)
40 - 60	Standard	Lead, Brass, 13 ft, No Ground	8	305516901	4
		Lead, Brass, 26 ft, No Ground	8	305516902	9
		Lead, 316 SS, 13 ft, No Ground	8	305516950	4
		Lead, 316 SS, 26 ft, No Ground	8	305516951	9
75-125 DOL / 75-200 Y-D		Lead, Brass, 26 ft, No Ground	6	305310903	9
		Lead, Brass, 13 ft, No Ground	6	305310901	17
		Lead, 316 SS, 26 ft, No Ground	6	305310953	9
75-200 Y-D Only			Lead, 316 SS, 13 ft, No Ground	6	305310951
150-200 DOL Only	All Hi-Temp	Lead, XLPO, 316 SS, 13 ft, No Ground	2	305315901	12
		Lead, XLPO, 316 SS, 26 ft, No Ground	2	305315902	23

NOTE: Refer to Franklin Application Installation Maintenance (AIM) Manual for accurate cable sizing; MOTOR WARRANTY IS VOID if Franklin-supplied leads are not used

### MOTOR ACCESSORIES

HP	Description	Model No.	Wt. (lbs)
All	Coupling, 8-inch, #416 SS, 1" Pump Shaft, 1/4 x 1/4 x 2 Key	156563901	5
	Coupling, 8-inch, #416 SS, 1-3/16" Pump Shaft, 1/4 x 1/4 x 2 Key	156563906	5
	Coupling, 8-inch, #416 SS, 1-3/16" Pump Shaft, 5/16 x 5/16 x 2 Key	156563902	5
	Coupling, 8-inch, #416 SS, 1-1/4" Pump Shaft, 5/16 x 5/16 x 2 Key	156563903	5
	Coupling, 8-inch, #416 SS, 1-1/2" Pump Shaft, 3/8 x 3/8 x 2 Key	156563904	5
	Surge Arrestor - Three-Phase - Up to 650 V to Ground	155440902	2
	PT 100 Sensor, 8-inch 40 - 60 HP **	305326902	< 1
	PT 100 Sensor, 8-inch	305326901	< 1

\*\* For use on motors with 20H date code and older only



# 8" MAGFORCE HIGH EFFICIENCY MOTOR - MOTOR SPECIFICATIONS & PERFORMANCE DATA

REWINDABLE THREE-PHASE 75-175 HP, 460/575 V 120 HZ

## STANDARD SPECIFICATIONS

- Sand Fighter® models are equipped with Franklin's robust Sand Fighter sealing system for durability against sand or other abrasives.
- Max 3600 rpm (4 pole, 120 Hz); Nominal 3450 rpm (4 pole, 115 Hz) Maximum temperature winding wire NEMA class 200
- Standard rewindable motor with PE2/PA winding insulation
- 8" double flange NEMA mounting design
- All motors with factory installed leads, motor lead length: 19 ft
- Stainless steel shell
- Liquid lubricated radial bearings and high capacity Kingsbury type 10000 lb thrust bearing for 100% maintenance free operation
- Pressure-equalizing diaphragm, spring pre-loaded
- Sand slinger
- Nominal ambient temperature: 86°F with 1.5 ft/s cooling flow
- Stainless steel splined shaft
- Max. storage temperature: 5°F to 140°F
- System Supply Voltage: 460/575 V (120 Hz)
- Voltage Tolerance: ± 10 % UN
- Frequency of starts: 10 starts/hour (with min. 3 minutes resting time), equally distributed
- Motor ingress protection IP68
- NSF/ANSI 61 Certified
- Motor installation orientation: Vertical / horizontal (shaft end heightened)
- Rotation counter clockwise facing shaft end (rotation reversible)

## MOTOR PERFORMANCE DATA 460 V / 120 HZ

Motor Model No.	P <sub>N</sub> [HP/kW]	P <sub>MAX</sub> [HP/kW]	n <sub>N</sub> [rpm]	I <sub>MAX</sub> [A]	I <sub>A</sub> /I <sub>MAX</sub> * [A]	n [%]	cos phi	T <sub>A</sub> /T <sub>N</sub> * [lb-in]
2630145331	75 / 55	86 / 63	3600	91	1	93.3	0.95	1
2630145331	100 / 75	115 / 86	3600	124	1	92.5	0.95	1
2630165331	125 / 93	143 / 107	3600	160	1	93.0	0.95	1
2630185331	150 / 112	172 / 128	3600	182	1	93.3	0.95	1
2630185331	175 / 130	201 / 149	3600	216	1	92.6	0.95	1

Performance data are based on measurements with Franklin Electric original equipment.  
 \*Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

## MOTOR PERFORMANCE DATA 575 V / 120 HZ

Motor Model No.	P <sub>N</sub> [HP/kW]	P <sub>MAX</sub> [HP/kW]	n <sub>N</sub> [rpm]	I <sub>MAX</sub> [A]	I <sub>A</sub> /I <sub>MAX</sub> * [A]	n [%]	cos phi	T <sub>A</sub> /T <sub>N</sub> * [lb-in]
2630245331	75 / 55	86 / 63	3600	79	1	93.3	0.95	1
2630245331	100 / 75	115 / 86	3600	99	1	92.5	0.95	1
2630265331	125 / 93	143 / 107	3600	128	1	93.0	0.95	1
2630285331	150 / 112	172 / 128	3600	146	1	93.3	0.95	1
2630285331	175 / 130	201 / 149	3600	173	1	92.6	0.95	1

Performance data are based on measurements with Franklin Electric original equipment.  
 \*Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

## MOTOR COMPARISON

Feature	Induction Motor	MagForce High Efficiency Motor
Input Voltage [V]	230, 460, 575	460/575
Minimum Frequency [Hz]	30	60
Maximum Frequency [Hz]	60	120
Voltage Frequency	±10%	±10%
Construction	Sand Fighter	Sand Fighter (Permanent Magnet)
Speed [rpm]	3450	3600
Max Efficiency Range [%]	85-86	92-93
VFD Requirement	No	Yes
Weight Example (125 HP) [lbs]	700	373
Length Example (125HP) [in]	69	52



# 8" MAGFORCE HIGH EFFICIENCY MOTOR - ORDER INFORMATION

## SYSTEM WITH CERUS X-DRIVE

The system includes: MagForce High Efficiency Motor with lead and Cerus X-Drive in NEMA 3R panel configurations or as a standalone NEMA drive. The Cerus® X-Drive Variable Frequency Drive (VFD) is Franklin Electric's all-inclusive drive solution for a variety of markets.

HP	Drive Input Voltage	MagForce High Efficiency Motor					Cerus X-Drive*									
		Motor Only	Max Amps at HP Load	Volts/Hz	S.F.	Motor Lead	"L" Dimension		NEMA 3R Panel***			NEMA 1 Drive Only				
							in	mm	Model No.	Height (in)	Width (in)	Depth (in)	Model No.	Height (in)	Width (in)	Depth (in)
75	460	2630145331	91	460/120	1.15	(3)	47.4	1205	XS4BH075-3A	48	30	16	CXD-091A-4V	19.69	11.02	10.04
100		2630145331	124				47.4	1205	XS4BH100-3A	48	30	16	CXD-150A-4V	21.65	12.99	10.83
125		2630165331	160				51.8	1316	XS4BH125-3A	53	35	16	CXD-180A-4V	21.65	12.99	10.83
150		2630185331	182				58.3	1482	XS4BH150-3A	53	35	16	CXD-220A-4V	23.19	14.57	11.81
175		2630185331	216				58.3	1482	XS4BH175-3A	53	35	16	CXD-220A-4V	23.19	14.57	11.81
75	575	2630245331	79	575/120	1.15	(3)	47.4	1205	XS6BH075-3A	48	30	16	CXD-104A-6V	23.19	14.57	11.81
100		2630245331	99				47.4	1205	XS6BH100-3A	48	30	16	CXD-150A-6V	23.19	14.57	11.81
125		2630265331	128				51.8	1316	XS6BH125-3A	53	35	16	CXD-180A-6V	31.50	16.54	11.81
150		2630285331	146				58.3	1482	XS6BH150-3A	53	35	16	CXD-220A-6V	31.50	16.54	11.81
175		2630285331	173				58.3	1482	XS6BH175-3A	53	35	16	CXD-220A-6V	31.50	16.54	11.81

The system includes: MagForce High Efficiency Motor with lead and Cerus X-Drive in NEMA 3R panel configurations or as a standalone NEMA drive.

The Cerus® X-Drive Variable Frequency Drive (VFD) is Franklin Electric's all-inclusive drive solution for a variety of markets.

\*NOTE: Firmware version 1.1 or newer is required for permanent magnet motor (or MagForce) functionality.

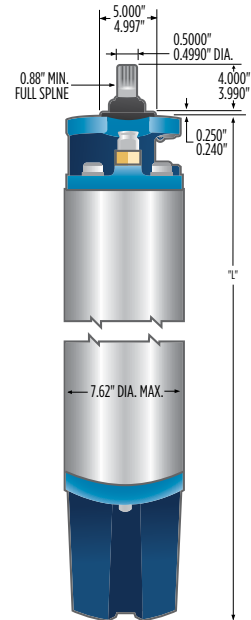
\*\*Output filters are required when using an X-Drive with a permanent magnet motor. dV/dt filters cover motor lead lengths up to 800'. A sine wave filter is required for lead lengths greater than 800'.

\*\*\*NEMA 3R panels include door-mounted keypad with HOA functionality, a circuit breaker, dV/dt filter, and line reactor or integrated DC Choke

## MOTOR LEADS

Lead	HP	Ø [mm2]	Dim. [in]	Length [ft]
	75-100	4G16	B 1.50 H 0.50	19
	125	4G25	D 1.26	19
	150-175	3RD 1x35 + Ground lead 1x35	D 0.60	19

Leads are designed for submerged operation. For air operation please consult Franklin Electric. Leads are factory installed, consult Franklin Electric prior to removal.



## ACCESSORIES & KITS

Accessories	Detail	Used With	Part Number
Fill Solution	FES92 concentrated solution	8 & 10" MagForce High Efficiency Motors	151300907*
Fill Solution Tool Kit	Syringe & Test Pin		308018263
PT-100 Sensor	6-12" Rewindable & PM Motors - 32ft lead length		308016401**
Pressure Transducer	Pressure Transducer, 100PSIG, 4-20mA	Cerus X-Drive models	PSIG-100-20FT
	Pressure Transducer, 200PSIG, 4-20mA		PSIG-200-20FT
	Pressure Transducer, 300PSIG, 4-20mA		PSIG-300-20FT
Optional Cards & Other	Modbus TCP/IP Communication Card		CMC-EIP01
	I/O Card - Additional 4 digital inputs and 2 transistor outputs		EMC-D42A
	I/O Card - Additional 6 digital inputs		EMC-D611A
	I/O Card - Additional 6 relay outputs	EMC-R6AA	

\*Mix 1 part FES92 with 2 parts deionized water, shake concentrate prior to using

\*\*Reference installation guide for appropriate sensor depth



## 10" REWINDABLE MOTORS - SPECIFICATIONS AND MATERIALS

These 10" rewindable motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 10" diameter or larger water wells. It is fitted with water lubricated radial and thrust bearings for maintenance-free operation. The motor is filled with a special FES93 fluid, providing frost protection down to -15 °C storage temperature. A special diaphragm ensures pressure compensation inside the motor. The Sand Fighter® SiC seal system is standard. For applications in aggressive media, motors made of 316 SS and 904 L are available.

### FEATURES & BENEFITS

- Easy to assemble with double flange
- Cable material according to drinking water regulations (VDE/ACS/KTW approved)
- Sand Fighter® SiC seal system for high performance in sand
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested
- Maximum storage temperature 5 °F (-15 °C) to 140 °F (60 °C)
- Design for retrofitable PT100 sensor
- Non contaminating FES 93 filled design
- NSF/ANSI 61 Certified

### OPTIONS

- Other voltages
- YΔ - start (pos. of cables 90°)
- Motors in complete 316 SS and 904 L
- PT 100 temperature sensor (sold separately)
- Lead in different lengths up to 165 ft. (50 m)

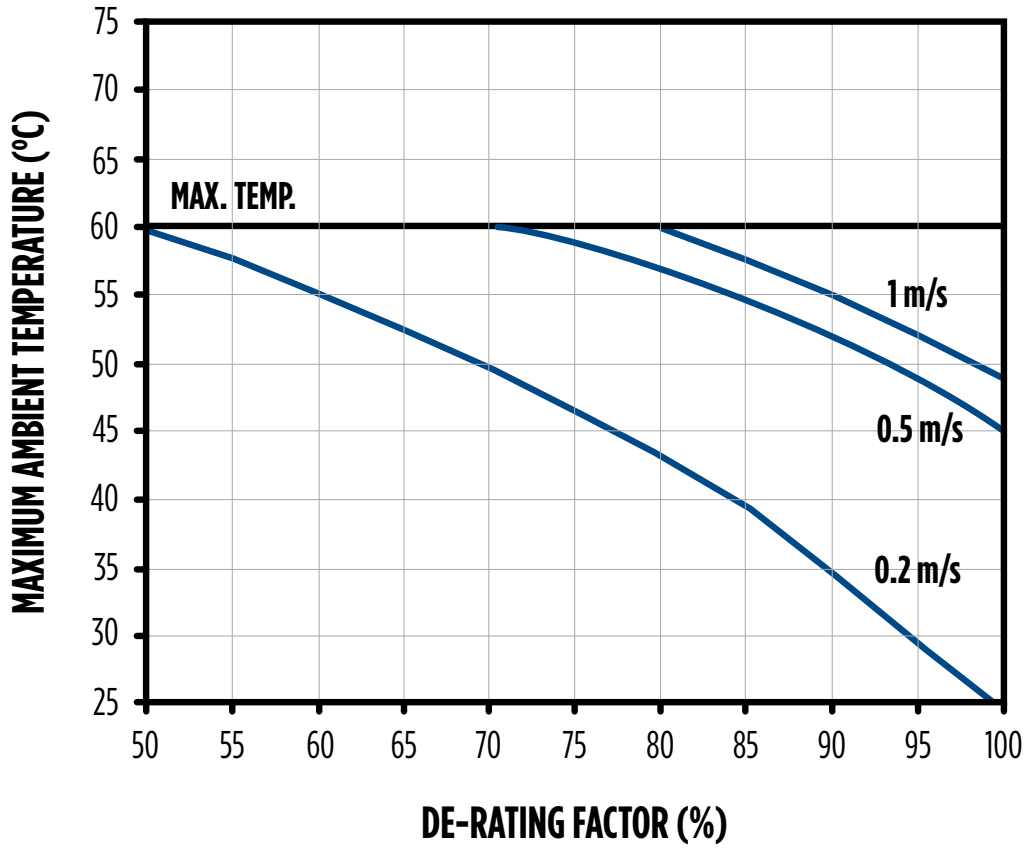
### TECHNICAL SPECIFICATIONS

- 10" three-phase motors, 2-pole, 3600 RPM
- 130-185 kW / 175-250 hp
- 10" flange
- IP 68 protection
- 10 maximum starts per hour
- Vertical and horizontal installation (excluding 185 kW / 250 hp motors)
- Motor Lead in 20 ft. (6 m) length
- 380-415 V/50 Hz, 460 V/60 Hz, and 575 V/60 Hz standard voltages
- Voltage tolerance (50 Hz): -10% / +6% U<sub>N</sub> [380-415 V = (380-10%) – (415+6%)]
- Voltage tolerance (60 Hz): ±10% U<sub>N</sub>
- PE2/PA winding insulation for maximum ambient temperature of 113 °F (45 °C) at the same cooling conditions as standard



### 10" REWINDABLE MOTORS - SPECIFICATIONS AND MATERIALS

#### DE-RATING CURVE (PE2/PA)





## 10" REWINDABLE MOTORS - SPECIFICATIONS AND MATERIALS

### TECHNICAL DATA

Stator and Rotor (50/60 Hz)							
P <sub>N</sub> (kW/HP)	Stator (incl. winding and 6 m motor lead)						Rotor
	U <sub>N</sub> / f		304/316	904 L	304/316	904 L	
	V	Hz	DOL PE2/PA	DOL PE2/PA	YΔ PE2/PA	YΔ PE2/PA	
130/175	460/380	60/50	326314931	326314921	326314981	326314971	176 379 803K
	575	60	326317931	326317921	326317981	326317971	
150/200	460/380	60/50	326325931	326325921	326325981	326325971	176 379 804K
	575	60	326327931	326327921	326327981	326327971	
185/250	460/380	60/50	326448931	326448921	326448981	326448971	176 379 805K
	575	60	327534931	327534921	327534981	327534971	

PE2/PA Insulation Standard Windings (575 V / 60 Hz)									
P <sub>N</sub> (kW/HP)	Model No. Winding Kits	Turns Per Coil	Wire Dia. (mm)	Isolation Type	Group Connection	Total Wire Length (m)	Resistance Coil (Ω)	Resistance YΔ (U1-U2) (Ω)	Resistance DOL (U1-V1) (Ω)
130/175	326317999	9+10+9+10	1.8/2.8 DR.II	PE2/PA	Parallel	1067	0.2987	0.1494	0.0996
150/200	326327999	8+8+8+8	2.7/4.1			495	0.2454	0.1227	0.0818
185/250	327534999	6+7+6+7	2.1/3.3 2DR.II			904	0.1834	0.0917	0.0611

PE2/PA Insulation Standard Windings (380-415 V/50 Hz / 460 V/60 Hz)									
P <sub>N</sub> (kW/HP)	Model No. Winding Kits	Turns Per Coil	Wire Dia. (mm)	Isolation Type	Group Connection	Total Wire Length (m)	Resistance Coil (Ω)	Resistance YΔ (U1-U2) (Ω)	Resistance DOL (U1-V1) (Ω)
130/175	326314999	7+8+7+8	2.0/3.1 2DR.II	PE2/PA	Parallel	850	0.1910	0.0955	0.0636
150/200	326325999	6+7+6+7	2.1/3.3 2DR.II			810	0.1647	0.0823	0.0549
185/250	326448999	5+5+6+5	2.3/3.5 2DR.II			735	0.1240	0.0620	0.0413

Insulation resistant ( 20 °C / 500 VDC)									
New Motor w/o Drop Cable				400 >				MΩ	
Used Motor w/o Drop Cable				20 >					
New Motor w/ Drop Cable				4 >					
Used Motor w/ Drop Cable				1					



## 10" REWINDABLE MOTORS - ORDERING INFORMATION

### ORDERING INFORMATION

P <sub>N</sub> (kW/HP)	U <sub>N</sub> / f		Model No. Digit 1 – 6		Model No. Digit 7 – 10		
	V	Hz	DOL	YΔ	PE2/PA21		
					304	316 SS	904 L
130/175	460/380	60/50	264 134	264 234	5321	6321	7321
	575	60	264 564	264 864			
150/200	460/380	60/50	264 135	264 235			
	575	60	264 565	264 865			
185/250	460/380	60/50	264 136	264 236			
	575	60	264 566	264 866			
	380-415	50	264 136	264 236			
	460/380	60/50	264 136	264 236			
	380	60	-	264 766			

### PERFORMANCE (60 HZ)

P <sub>N</sub> (kW/HP)	P <sub>max</sub> (kW/HP)	Thrust Rating (N/lbf)	U <sub>N</sub> (V)	n <sub>N</sub> (min-1)	I <sub>max</sub> (A)	I <sub>A</sub> (A)	η (Eff.) % at % load			cos φ PF at % load			T <sub>max</sub> (Nm)	T <sub>A</sub> (Nm)
							50	75	100	50	75	100		
130/175	149/200	60000/13500	460	3510	254	1308	86	87	87	0.77	0.84	0.87	408	437
150/200	173/232				294	1557	85	87	87	0.77	0.84	0.87	469	508
185/250	213/285				377	2130	85	87	87	0.70	0.79	0.84	585	858
130/175	149/200				204	1047	86	87	87	0.77	0.84	0.87	408	437
150/200	173/232				236	1246	85	87	87	0.77	0.84	0.87	469	508
185/250	213/285				302	1704	85	87	87	0.70	0.79	0.84	585	858

### PERFORMANCE (50 HZ)

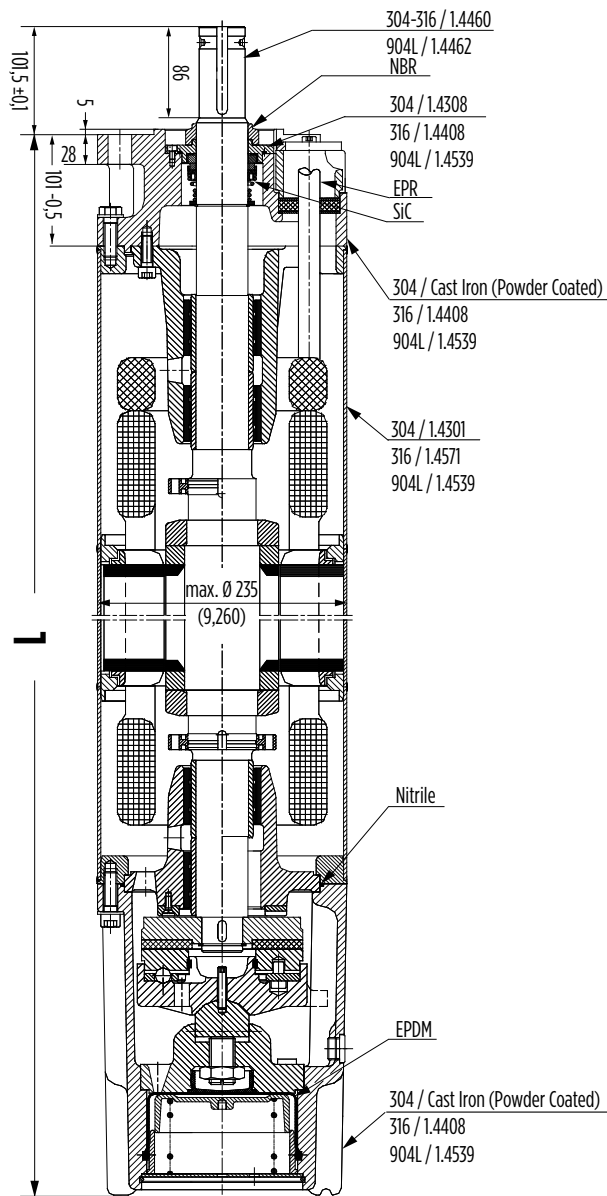
P <sub>N</sub> (kW/HP)	Thrust Rating (N/lbf)	U <sub>N</sub> (V)	n <sub>N</sub> (min-1)	I <sub>N</sub> (A)	I <sub>A</sub> (A)	η (Eff.) % at % load			cos φ PF at % load			T <sub>N</sub> (Nm)	T <sub>A</sub> (Nm)
						50	75	100	50	75	100		
130/175	60000/13500	380	2900	266	1271	88	88	87	0.79	0.85	0.87	428	487
		400	2920	256	1344	87	88	88	0.74	0.82	0.86	425	546
		415	2920	255	1400	87	88	87	0.69	0.78	0.83	425	592
150/200	60000/13500	380	2910	307	1502	87	87	86	0.79	0.85	0.88	492	568
		400	2920	298	1590	86	88	87	0.73	0.81	0.85	491	635
		415	2930	296	1655	86	87	87	0.67	0.77	0.83	489	689
		500	2910	233	1142	87	87	86	0.79	0.85	0.88	492	568
		525	2920	227	1211	86	87	87	0.73	0.81	0.85	491	635
		1000	2920	117	636	86	88	87	0.73	0.81	0.85	491	635
185/250	60000/13500	380	2900	390	2030	87	88	87	0.72	0.81	0.85	609	913
		400	2920	384	2148	86	88	88	0.64	0.75	0.81	605	1022
		415	2920	389	2237	84	86	86	0.57	0.70	0.79	605	1109
		500	2900	294	1500	87	88	87	0.72	0.81	0.85	610	888
		525	2910	289	1580	86	87	87	0.65	0.76	0.82	607	988
		1000	2900	148	859	87	88	87	0.72	0.81	0.85	609	913



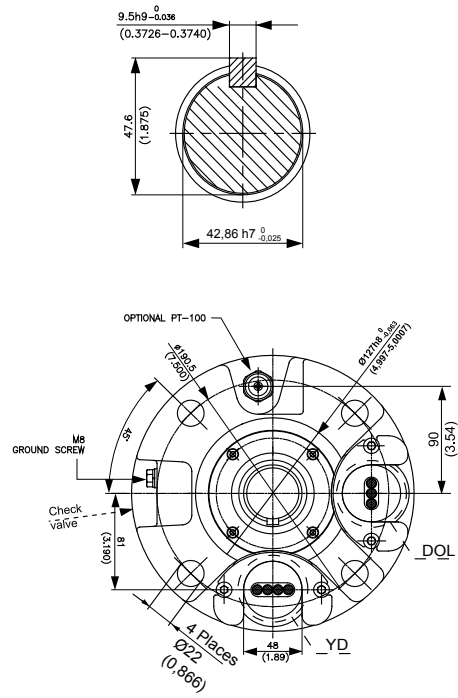
# 10" REWINDABLE MOTORS - DIMENSIONS AND WEIGHTS

## MOTOR DESIGN

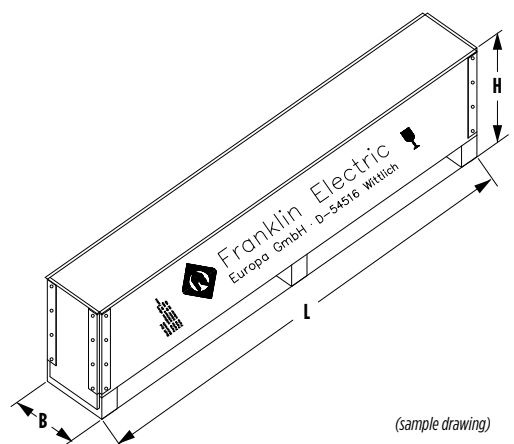
Motor - 304/316SS/904L



End Bell



Motor Box



PN (kW/HP)	Motor Lengths (in/mm)	Motor Weights (lb/kg)		Motor Shipping Size (in/mm)		
		Motor	Incl. Pack	B	H	L
130/175	65.3/1659	798/362	908/412	13.4/341	27.1/562	90.4/2296
150/200	69.6/1769	910/413	1021/463			
185/250	75.5/1919	990/449	1100/499			

## 10" REWINDABLE MOTORS - LEADS AND ACCESSORIES

### MOTOR LEADS

DOL								
$P_N$ (kW/HP)	$\varnothing$ (mm <sup>2</sup> )	B / H (mm/in)		Lengths (m/ft)	Qty.	Lead Mod.- Nr.	Lead seal Kit 304/316 Mod.- Nr.	Lead seal Kit 904 L Mod.- Nr.
130/175	4G35	B	48.5/1.91	6/20	1	308 710 117	308 660 721	308 660 725
		H	16.5/.65					
110-150/150-200 (PE2/PA)	3X50	B	46.5/1.83	6/20	1	308 710 113	308 660 712	308 660 726
		H	19.5/0.77					
185/250**	1X70	D	20.7/0.82	6/20	3	308 711 000	308 660 732	308 660 733

For PE2/PA engines additionally the special Tape 700 541 688 is absolutely necessary

$Y\Delta$								
$P_N$ (kW/HP)	$\varnothing$ (mm <sup>2</sup> )	B / H (mm/in)		Lengths (m/ft)	Qty.	Lead Mod.- Nr.	Lead seal Kit 304/316 Mod.- Nr.	Lead seal Kit 904 L Mod.- Nr.
10-150/150-200	3X25	B	37.5/1.48	6/20	1	308 710 114	308 660 713	308 660 728
		H	6/0.63					
	4G25	B	44.3/1.74		1			
		H	14.5/0.57					
185/250	4G35	B	48.5/1.91	6/20	1	308 710 121	308 660 723	308 660 729
		H	6.5/0.65					
	3X35	B	38.5/1.52		1			
		H	16.5/0.65					

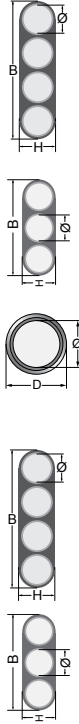
For PE2/PA engines additionally the special Tape 700 541 688 is absolutely necessary

Ground lead* (optional)	$\varnothing$ (mm <sup>2</sup> )	D $\varnothing$ (mm/in)	Lengths (m/ft)	St.	Mod.-Nr.
	1G25	13.0/0.5	8/26	1	308 053 080
	1G35	15.3/0.60	6/20	1	308 056 060

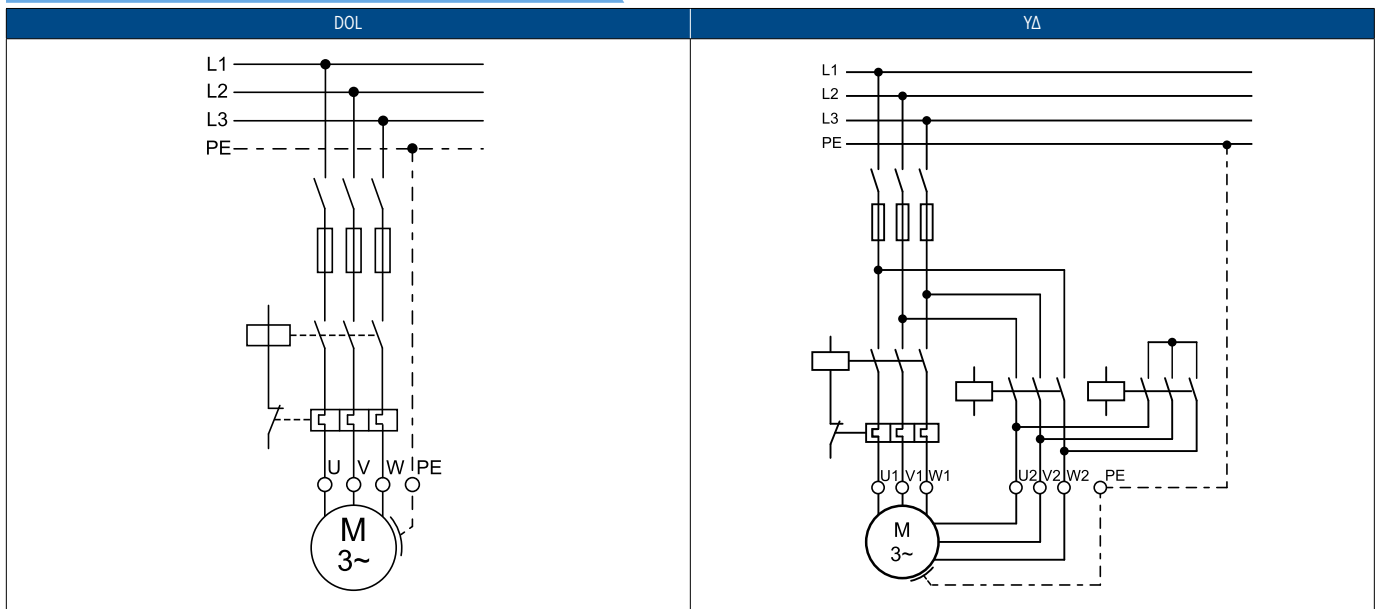
\* Only for 304SS and 316SS

Lead Opening Seal Kit		
85 – 185 kW DOL / $Y\Delta$	304 / 316	308 660 715
	904L	308 660 730

NOTE: Cables are designed for submerged operation; For air operation please consult Franklin Electric



### ELECTRICAL CONNECTION



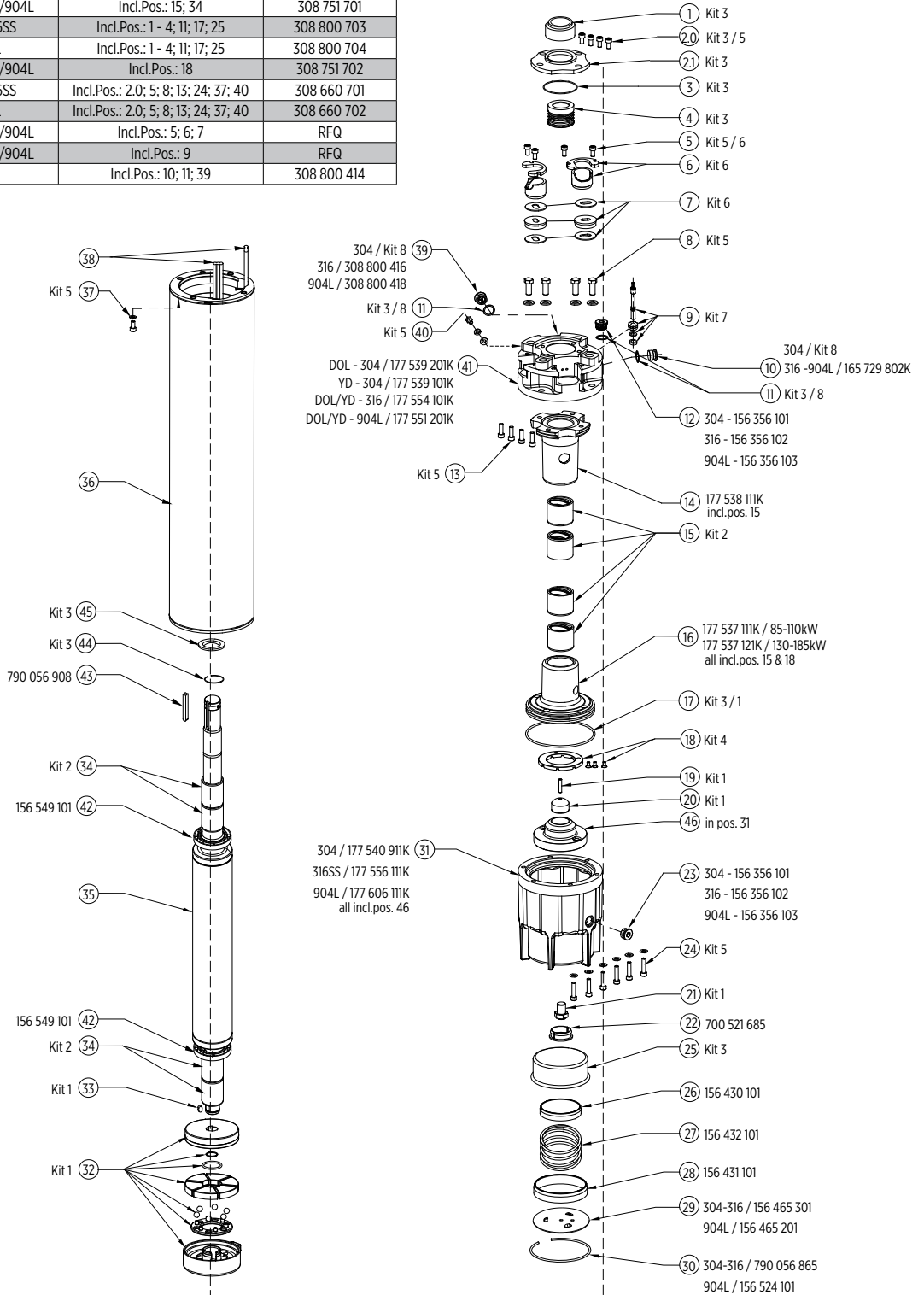
U	V	W	PE
Brown	Grey	Black	Yellow/Green



## 10" REWINDABLE MOTORS - LEADS AND ACCESSORIES

### SPARE PARTS

Description	Material	Fig. No.	Order No.
Kit 1 Thrust Bearing Kit	304/316SS/904L	Incl.Pos.: 17; 19; 20; 21; 32; 33	308 750 701
Kit 2 Radial Bearing Kit	304/316SS/904L	Incl.Pos.: 15; 34	308 751 701
Kit 3 Seal Kit	304/316SS	Incl.Pos.: 1 - 4; 11; 17; 25	308 800 703
	904L	Incl.Pos.: 1 - 4; 11; 17; 25	308 800 704
Kit 4 Up-Thrust Kit	304/316SS/904L	Incl.Pos.: 18	308 751 702
Kit 5 Screw Kit	304/316SS	Incl.Pos.: 2.0; 5; 8; 13; 24; 37; 40	308 660 701
	904L	Incl.Pos.: 2.0; 5; 8; 13; 24; 37; 40	308 660 702
Kit 6 Lead Seal Kit	304/316SS/904L	Incl.Pos.: 5; 6; 7	RFQ
Kit 7 PT100 Kit	304/316SS/904L	Incl.Pos.: 9	RFQ
Kit 8 Valve Kit	304	Incl.Pos.: 10; 11; 39	308 800 414



# 10" MAGFORCE HIGH EFFICIENCY MOTOR - MOTOR SPECIFICATIONS & PERFORMANCE DATA

REWINDABLE THREE-PHASE 250-300 HP, 460/575 V, 120 HZ

## STANDARD SPECIFICATIONS

- Sand Fighter® models are equipped with Franklin's robust Sand Fighter sealing system for durability against sand or other abrasives.
- Max 3600 rpm (4 pole, 120 Hz); Nominal 3450 rpm (4 pole, 115 Hz) Maximum temperature winding wire NEMA class 200
- Standard rewindable motor with PE2/PA winding insulation
- 10" double flange mounting design
- All motors with factory installed leads, motor lead length: 19 ft
- Stainless steel shell
- Liquid lubricated radial bearings and high capacity Kingsbury type 13500 lb thrust bearing for 100% maintenance free operation
- Pressure-equalizing diaphragm, spring pre-loaded
- Sand slinger
- Nominal ambient temperature: 86°F with 1.5 ft/s cooling flow
- Stainless steel splined shaft
- Max. storage temperature: 5°F to 140°F
- System Supply Voltage: 460/575 V (120 Hz)
- Voltage Tolerance: ± 10 % UN
- Frequency of starts: 10 starts/hour (with min. 3 minutes resting time), equally distributed
- Motor ingress protection IP68
- NSF/ANSI 61 Certified
- Motor installation orientation: Vertical / horizontal (shaft end heightened)
- Rotation counter clockwise facing shaft end (rotation reversible)

## MOTOR PERFORMANCE DATA 460 V / 120 HZ

Motor Model No.	P <sub>N</sub> [HP/kW]	P <sub>MAX</sub> [HP/kW]	n <sub>N</sub> [rpm]	I <sub>MAX</sub> [A]	I <sub>A</sub> /I <sub>MAX</sub> * [A]	n [%]	cos phi	T <sub>A</sub> /T <sub>N</sub> * [lb-in]
2640285331	250 / 185	288 / 214	3600	354	1	93.6	0.95	1
2640295331	300 / 220	345 / 258	3600	423	1	94.2	0.95	1

Performance data are based on measurements with Franklin Electric original equipment.  
 \*Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

## MOTOR PERFORMANCE DATA 575 V / 120 HZ

Motor Model No.	P <sub>N</sub> [HP/kW]	P <sub>MAX</sub> [HP/kW]	n <sub>N</sub> [rpm]	I <sub>MAX</sub> [A]	I <sub>A</sub> /I <sub>MAX</sub> * [A]	n [%]	cos phi	T <sub>A</sub> /T <sub>N</sub> * [lb-in]
2640385331	250 / 185	288 / 214	3600	17	1	93.6	0.95	1
2640395331	300 / 220	345 / 258	3600	20	1	94.2	0.95	1

Performance data are based on measurements with Franklin Electric original equipment.  
 \*Since this is an integrated system (motor plus electronics) these figures relate to VFD input.

## MOTOR COMPARISON

Feature	Induction Motor	MagForce High Efficiency Motor
Input Voltage	460,575	460/575
Minimum Frequency	30	60
Maximum Frequency	60	120
Voltage Frequency	±10%	±10%
Construction	Sand Fighter	Sand Fighter (Permanent Magnet)
Speed (rpm)	3450	3600
10" 200 HP Weight (lbs)	990	659
10" 200 HP Length (in)	76	65





# 10" MAGFORCE HIGH EFFICIENCY MOTOR - ORDER INFORMATION

## SYSTEM WITH CERUS X-DRIVE

The system includes: MagForce High Efficiency Motor with lead and Cerus X-Drive in NEMA 3R panel configurations or as a standalone NEMA drive. The Cerus® X-Drive Variable Frequency Drive (VFD) is Franklin Electric's all-inclusive drive solution for a variety of markets.

HP	Drive Input Voltage	MagForce High Efficiency Motor						Cerus X-Drive*								
		Motor Only	Max Amps at HP Load	Volts/Hz	S.F.	Motor Lead	"L" Dimension		NEMA 3R Panel***				NEMA 1 Drive Only			
							in	mm	Model No.	Height (in)	Width (in)	Depth (in)	Model No.	Height (in)	Width (in)	Depth (in)
250	460	2640285331	354	460/120	1.15	(3)	65.3	1659	XS4BH250-3A	75"	68"	29"	CXD-370A-4V	31.50	16.54	11.81
300		2640295331	423						XS4BH300-3A				CXD-460A-4V	39.37	19.69	15.63
250	575	2640385331	284	575/120	1.15	(3)	69.6	1769	XS6BH250-3A	75"	68"	29"	CXD-350A-6V	39.37	19.69	15.63
300		2640395331	339						XS6BH300-3A				CXD-430A-6V	56.50	27.56	15.91

The system includes: MagForce High Efficiency Motor with lead and Cerus X-Drive in NEMA 3R panel configurations or as a standalone NEMA drive.

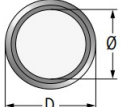
The Cerus® X-Drive Variable Frequency Drive (VFD) is Franklin Electric's all-inclusive drive solution for a variety of markets.

\*NOTE: Firmware version 1.1 or newer is required for permanent magnet motor (or MagForce) functionality.

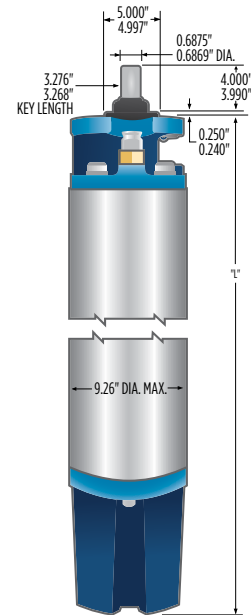
\*\*Output filters are required when using an X-Drive with a permanent magnet motor. dV/dt filters cover motor lead lengths up to 800'. A sine wave filter is required for lead lengths greater than 800'

\*\*\*NEMA 3R panels include door-mounted keypad with HOA functionality, a circuit breaker, dV/dt filter, and line reactor or integrated DC Choke

## MOTOR LEADS

Lead	HP	Wire Type	Ø [mm2]	D [in]	Length [ft]
	all ratings	Power	3RD 1x70	0.81	19
		Ground (optional)	1RDx35	0.60	19

Leads are designed for submerged operation. For air operation please consult Franklin Electric. Leads are factory installed, consult Franklin Electric prior to removal.



## ACCESSORIES & KITS

Accessories	Detail	Used With	Part Number
Fill Solution	FES92 concentrated solution	8 & 0" MagForce High Efficiency Motors	151300907*
Fill Solution Tool Kit	Syringe & Test Pin		308018263
PT-100 Sensor	6-12" Rewindable & PM Motors - 32ft lead length	Cerus X-Drive models	308016401**
Pressure Transducer	Pressure Transducer, 100PSIG, 4-20mA		PSIG-100-20FT
	Pressure Transducer, 200PSIG, 4-20mA		PSIG-200-20FT
	Pressure Transducer, 300PSIG, 4-20mA		PSIG-300-20FT
Optional Cards & Other	Modbus TCP/IP Communication Card		CMC-EIP01
	I/O Card - Additional 4 digital inputs and 2 transistor outputs		EMC-D42A
	I/O Card - Additional 6 digital inputs		EMC-D611A
	I/O Card - Additional 6 relay outputs		EMC-R6AA

\*Mix 1 part FES92 with 2 parts deionized water, shake concentrate prior to using

\*\*Reference installation guide for appropriate sensor depth

## 12" REWINDABLE MOTORS - SPECIFICATIONS AND MATERIALS

These 12" rewindable motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 12" diameter or larger water wells. It is fitted with water lubricated radial and thrust bearings for maintenance-free operation. The motor is filled with a special FES93 fluid, providing frost protection down to -15 °C storage temperature. A special diaphragm ensures pressure compensation inside the motor.

### FEATURES & BENEFITS

- Easy to assemble with double flange
- Cable material according to drinking water regulations (VDE/ACS/KTW approved)
- Sand Fighter® SiC seal system for high performance in sand
- High efficiency electrical design for low operation cost
- All motors pre-filled and 100% tested
- Max. storage temperature 5 °F (-15 °C) to 140 °F (60 °C)
- Design for retrofitable PT100 sensor
- Non contaminating FES 93 filled design
- NSF/ANSI 61 Certified

### OPTIONS

- 80 kN thrust load
- Other voltages
- YΔ - start (pos. of cables 90°)
- PT 100 temperature sensor (sold separately)
- Special lead lengths available upon request
- 316 SS construction

### TECHNICAL SPECIFICATIONS

- 12" three-phase motors, 2-Pole (3600 RPM) & 4-Pole (1800 RPM)
- 185-400 kW / 150-250 hp
- 12" flange
- IP 68 protection
- 5 maximum starts per hour
- Vertical and horizontal installation
- Motor Lead in 20 ft. (6 m) length
- 460 V/60 Hz, 575 V/60 Hz, and 380 V/50 Hz standard voltages
- Voltage tolerance (50 Hz): -10% / +6% UN [380-415 V = (380-10%) – (415+6%)]
- Voltage tolerance (60 Hz): ±10% UN
- 30 °C ambient temperature with a minimum cooling flow:  $v = 0.5 \text{ m/s}$





## 12" REWINDABLE MOTORS - SPECIFICATIONS AND ACCESSORIES

### TECHNICAL DATA

304/316 SS Stator and Rotor											
Pole	P <sub>N</sub> (kW/HP)	Stator (incl. winding and 6 m motor lead)									
		U <sub>N</sub> / f		DOL PVC	DOL PE2/PA	YΔ PVC	YΔ PE2/PA	Rotor			
		V	Hz								
2-Pole	185/250	380-415	50	-	327 013 902K	-	326 013 952K	176 381 500K			
		460/380	60/50								
	220/300	380-415	50						326 639 902K	326 639 952K	176 381 501K
		460/380	60/50								
	250/340	380-415	50						326 639 902K	326 639 952K	176 381 501K
		460/380	60/50								
	300/400	380-415	50						326 640 902K	326 640 952K	176 381 502K
		460/380	60/50								
	350/470	380-415	50						-	326 696 952K	176 381 504K
		460/380	60/50								
	400/536	380-415	50						-	326 641 952K	176 381 503K
		460/380	60/50								

304 SS Stator and Rotor						
Pole	P <sub>N</sub> (kW/HP)	Stator (incl. winding and 6 m motor lead)				
		U <sub>N</sub> / f		DOL PVC	Rotor	
		V	Hz			
4-Pole	110/150	460	60	-	327633902K	176381701K
	132/175				327406902K	176381702K
	160/200				327471902K	176381704K
	200/250				327407902K	176381703K

Insulation Standard Windings (460 V/60 Hz)										
Pole	P <sub>N</sub> (kW/HP)	Model No. Winding Kits	Turns Per Coil	Wire Dia. (mm)	Isolation Type	Group Connection	Total Wire Length (m)	Resistance Coil (Ω)	Resistance YΔ (U1-U2) (Ω)	Resistance DOL (U1-V1) (Ω)
2-Pole	185/250	327013999	6+6+6+6	2.6/3.9 (2Grill)	PE2/PA	Parallel Delta	794	0.1061	-	-
	220/300	326639999	5+6+5+6	2.7/4.1 (2Grill)			770	0.0901		
	250/340	326639999	5+6+5+6	2.7/4.1 (2Grill)			770	0.0901		
	300/400	326640999	4+5+4+5	3.0/4.5 (2Grill)			720	0.0677		
	350/470	326696999	4+4+4+5	3.0/4.5 (2Grill)			706	0.0664		
	400/536	326641999	4+4+4+4	3.3/4.8 (2Grill)			700	0.0536		

Insulation Standard Windings (460 V/60 Hz)										
Pole	P <sub>N</sub> (kW/HP)	Model No. Winding Kits	Turns Per Coil	Wire Dia. (mm)	Isolation Type	Group Connection	Total Wire Length (m)	Resistance Coil (Ω)	Resistance YΔ (U1-U2) (Ω)	Resistance DOL (U1-V1) (Ω)
4-Pole	110/150	327633999	17-17	2.9/4.0/4.3	PE2PA	Parallel Delta	618	0.1109	0.1109	0.0739
	132/175	327406999	15-15	3.0/4.2/4.5			600	0.1005	0.1005	0.0670
	160/200	327471999	14-14	3.2/4.4/4.7			590	0.0888	0.0888	0.0592
	200/250	327407999	12-12	3.4/4.7/5.0			530	0.0705	0.0705	0.0470

Insulation Standard Windings (575 V / 60 Hz)										
Pole	P <sub>N</sub> (kW/HP)	Model No. Winding Kits	Turns Per Coil	Wire Dia. (mm)	Isolation Type	Group Connection	Total Wire Length (m)	Resistance Coil (Ω)	Resistance YΔ (U1-U2) (Ω)	Resistance DOL (U1-V1) (Ω)
2-Pole	185/250	327535999	7+8+7+8	2.3/3.5 (2Grill)	PE2/PA	Parallel Delta	1075	0.1694	-	-
	220/300	326701999	7+7+7+7	2.5/3.8 (2Grill)			1000	0.1338		
	250/340	326702999	6+7+7+7	2.5/3.8 (2Grill)			924	0.1290		
	300/400	326703999	5+6+5+6	2.7/4.1 (2Grill)			861	0.1021		
	350/470	326697999	5+5+5+6	2.7/4.1 (2Grill)			856	0.1012		
	400/536	326704999	5+5+5+5	2.9/4.3 (2Grill)			848	0.0867		

Insulation resistant ( 20 °C/500 VDC)										
New Motor w/o Drop Cable							400 >	MΩ		
Used Motor w/o Drop Cable							20 >			
New Motor w/ Drop Cable							4 >			
Used Motor w/ Drop Cable							1			



## 12" REWINDABLE MOTORS - ORDERING INFORMATION

### ORDERING INFORMATION

Pole	P <sub>N</sub> (kW/HP)	U <sub>N</sub> / f		Model No. Digit 1 – 6		Model No. Digit 7 – 10		
		V	Hz	DOL	YΔ	PE2/PA21		
						304	316 SS	904 L
2-Pole	185/250	460/380	60/50	265 610	265 710	5021	6021	-
		575	60	265 690	265 760			
	220/300	460/380	60/50	265 611	265 711			
		575	60	265 691	265 761			
	250/340	460/380	60/50	265 612	265 712			
		575	60	265 692	265 762			
	300/400	460/380	60/50	265 614	265 714			
		575	60	265 694	265 764			
	350/470	460/380	60/50	-	265 716			
		575	60	265 696	265 766			
	400/536	460/380	60/50	-	265 717			
		575	60	265 697	265 767			

Pole	P <sub>N</sub> (kW/HP)	U <sub>N</sub> / f		Model No. Digit 1 – 6		Model No. Digit 7 – 10		
		V	Hz	DOL	YΔ	PE2/PA21		
						304	316 SS	904 L
4-Pole	110/150	400	50	265 682	-	5021	-	-
		460	60					
	132/175	400	50	265 684				
		460	60					
	160/200	400	50	265 686				
		460	60					
	200/250	400	50	265 687				
		460	60					

### PERFORMANCE (60 HZ)

Pole	P <sub>N</sub> (kW/HP)	P <sub>max</sub> (kW/HP)	Thrust Rating ((N/lbf)	U (V)	n <sub>N</sub> (min-1)	I <sub>max</sub> (A)	I <sub>A</sub> / I <sub>N</sub> (A)	η <sub>max</sub> (Eff.) % at % load			cos φ (PF) at % load			T <sub>max</sub> (Nm)	T <sub>A</sub> / T <sub>N</sub> (Nm)	
								50	75	100	50	75	100			
								2-Pole	185/250	212/284	60000/13500	460	3540			339
575	3540	272	5.59	83	86	86	0.84					0.87	0.87	723	0.83	
220/300	252/338	460	3530	425	5.44	90	91		91			0.81	0.84	0.86	776	0.95
		575	3530	340	5.44	90	91		91			0.81	0.84	0.86	776	0.95
250/340	287/385	460	3530	462	5.44	90	91		91			0.81	0.84	0.84	776	0.95
		575	3530	370	5.44	90	91		91			0.81	0.84	0.84	776	0.95
300/400	345/463	460	3530	533	5.85	90	91		91			0.85	0.89	0.89	928	0.94
		575	3530	427	5.85	90	91		91			0.85	0.89	0.89	928	0.94
350/470	402/539	460	3530	647	5.13	89	90		90			0.83	0.87	0.88	1085	0.90
		575	3530	518	5.13	89	90		90			0.83	0.87	0.88	1085	0.90
400/536	460/617	460	3520	745	4.79	89	90		90			0.84	0.87	0.87	1243	0.84
		575	3520	596	4.79	89	90		90			0.84	0.87	0.87	1243	0.84

Pole	P <sub>N</sub> (kW/HP)	P <sub>max</sub> (kW/HP)	Thrust Rating ((N/lbf)	U (V)	n <sub>N</sub> (min-1)	I <sub>max</sub> (A)	I <sub>A</sub> / I <sub>N</sub> (A)	η <sub>max</sub> (Eff.) % at % load			cos φ (PF) at % load			T <sub>max</sub> (Nm)	T <sub>A</sub> / T <sub>N</sub> (Nm)
								50	75	100	50	75	100		
								4-Pole	110/150	-	45000/10100	460	1760		
132/175	86	87.5	88	0.78	0.82	0.83	713								
160/200	86.5	88	88.5	0.81	0.84	0.84	865								
200/250	86.5	88	88.5	0.76	0.82	0.84	1081								



## 12" REWINDABLE MOTORS - ORDERING INFORMATION

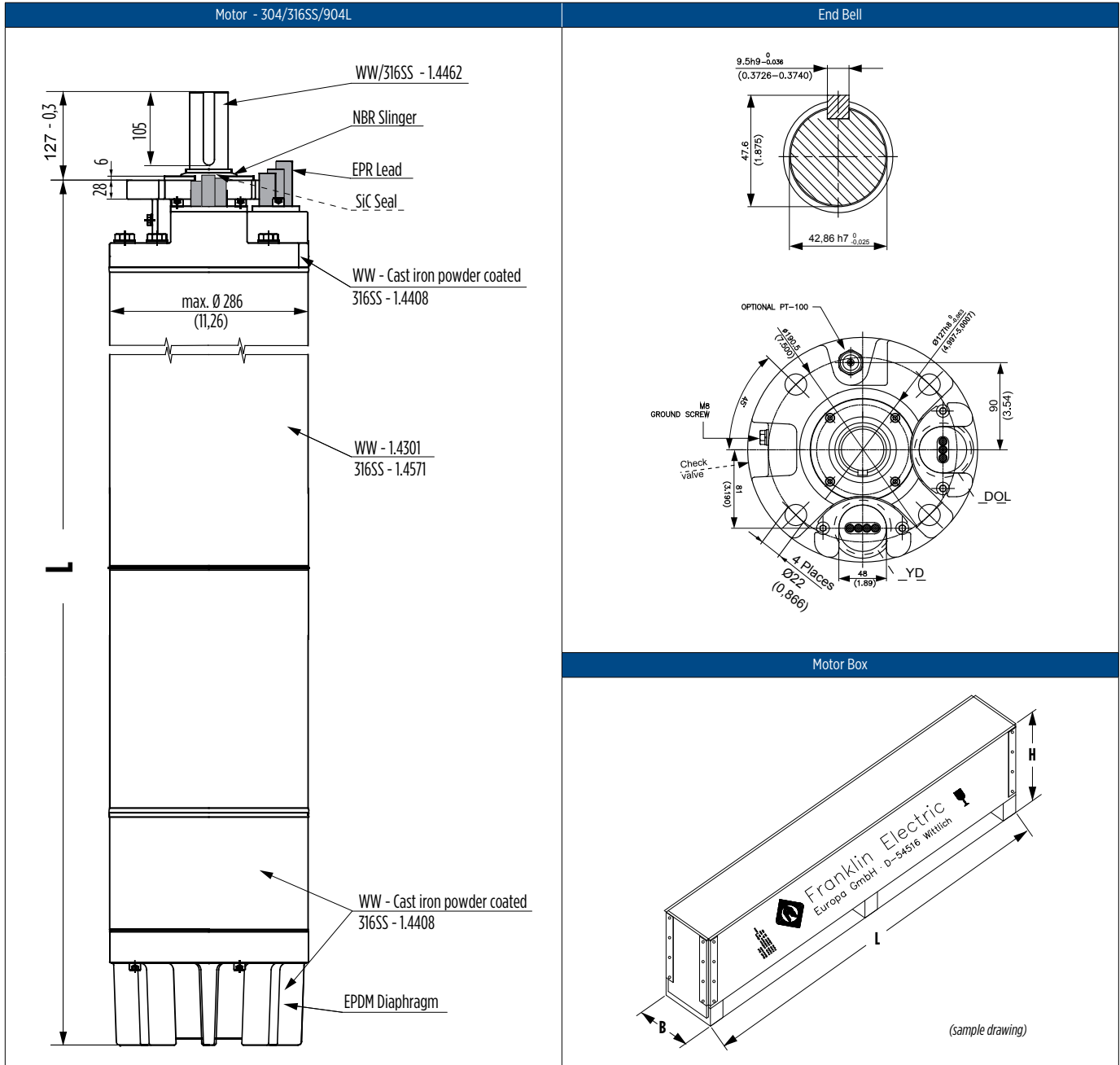
### PERFORMANCE (50 HZ)

Pole	P <sub>N</sub> (kW/HP)	Thrust Rating (N/lbf)	U <sub>N</sub> (V)	n <sub>N</sub> (min-1)	I <sub>N</sub> (A)	I <sub>A</sub> / I <sub>N</sub> (A)	η <sub>max</sub> (Eff.) % at % load			cos φ (PF) at % load			T <sub>N</sub> (Nm)	T <sub>A</sub> / T <sub>N</sub> (Nm)
							50	75	100	50	75	100		
2-Pole	185/250	60000/13500	380	2940	368	4.70	88	88	87	0.82	0.87	0.88	602	0.81
			400	2945	351	5.30	87	88	87	0.79	0.85	0.86	600	0.90
	220/300		415	2950	344	5.76	87	88	88	0.76	0.84	0.84	599	0.97
			380	2930	448	4.79	88	88	87	0.83	0.87	0.88	716	0.77
	250/340		400	2935	430	5.40	88	89	88	0.80	0.86	0.87	714	0.84
			415	2940	427	5.85	88	89	88	0.77	0.85	0.84	712	0.94
	300/400		380	2930	507	4.7	87	87	86	0.85	0.88	0.85	815	0.85
			400	2935	481	5.2	88	89	88	0.80	0.85	0.80	812	0.95
	350/470		415	2940	471	5.6	88	89	88	0.76	0.83	0.76	812	1.02
			380	2940	586	4.9	88	89	87	0.87	0.90	0.88	974	0.83
	400/536		400	2945	551	5.6	88	89	88	0.85	0.89	0.88	971	0.94
			415	2950	532	6.0	88	89	88	0.83	0.88	0.89	970	1.03
	350		380	2920	720	4.7	88	88	86	0.85	0.88	0.87	1140	0.80
			400	2930	676	5.2	88	88	87	0.82	0.87	0.88	1137	0.90
			415	2935	652	5.4	87	88	87	0.79	0.86	0.87	1135	0.95
			380	2920	795	4.2	90	90	89	0.85	0.88	0.87	1306	0.73
400	400	2930	750	4.8	90	90	90	0.82	0.87	0.87	1301	0.84		
	415	2940	719	5.2	89	90	90	0.80	0.85	0.87	1299	0.92		

Pole	P <sub>N</sub> (kW/HP)	Thrust Rating (N/lbf)	U <sub>N</sub> (V)	n <sub>N</sub> (min-1)	I <sub>N</sub> (A)	I <sub>A</sub> / I <sub>N</sub> (A)	η <sub>max</sub> (Eff.) % at % load			cos φ (PF) at % load			T <sub>N</sub> (Nm)	T <sub>A</sub> / T <sub>N</sub> (Nm)
							50	75	100	50	75	100		
4-Pole	110/150	45000/101000	400	1460	230	5.30	86	87	87.5	0.76	0.80	0.81	720	0.90
	132/175				88		88.5	88	0.77	0.82	0.84	864		
	160/200				87		88	87	0.78	0.83	0.84	1050		
	200/250				88.5		89	88.5	0.78	0.83	0.84	1309		

# 12" REWINDABLE MOTORS - DIMENSIONS AND WEIGHTS

## MOTOR DESIGN - 2-POLE

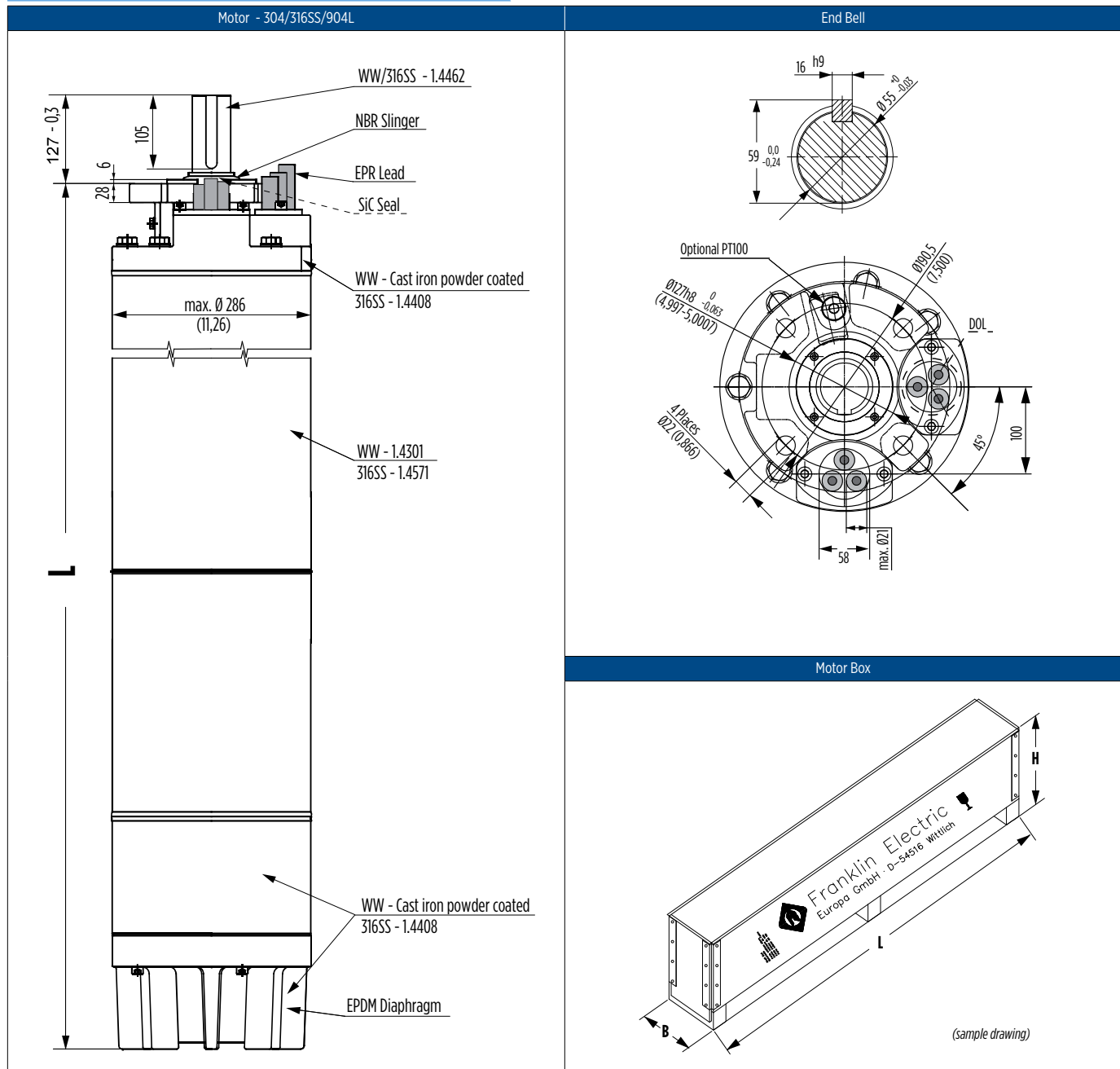


PN (kW/HP)	Motor Lengths (in/mm)	Motor Weights (lb/kg)		Motor Shipping Size (in/mm)		
		Motor	Incl. Pack	B	H	L
220/300	74.5/1893	1461/663	1638/743	15.6/396	22.5/572	90.4/2296
250/340	74.5/1893	1461/663	1638/743			
300/400	80.4/2043	1600/726	1776/806			
350/470	84.4/2143	1695/769	1871/849	15.6/396	22.5/572	90.4/2596
400/536	86.3/2193	1750/794	1926/874			



## 12" REWINDABLE MOTORS - DIMENSIONS AND WEIGHTS

### MOTOR DESIGN - 4-POLE



P <sub>n</sub> (kW/HP)	Motor Lengths (in/mm)	Motor Weights (lb/kg)		Motor Shipping Size (in/mm)		
		Motor	Incl. Pack	B	H	L
110/150	74.5/1893	1461/663	1638/743	15.6/396	22.5/572	90.4/2296
132/175	80.4/2043	1600/726	1776/806			102.2/2596
160/200	84.4/2143	1695/769	1871/849			
200/250	86.3/2193	1750/794	1926/874			

## 12" REWINDABLE MOTORS - LEADS AND ACCESSORIES

### MOTOR LEADS - 2-POLE

Lead	Ø (mm²)	D (mm/in)	Lengths (m/ft)	Motor (kW/HP)			Qty.	Lead Kit (3 Single Leads)	Lead Seal Kit.
				380-415 V / 50 Hz 460 V / 60 Hz	500 V / 50 Hz	1000 V / 50 Hz			
	1X70	20.7/0.82	6/20	185-300/250-400 DOL 300-400/400-536 YΔ**	185-400/250-536 DOL	-	DOL 1 YΔ 2	308 711 100	308 661 120
	1X35	15.3/0.60	6/20	185-250/250-340 YΔ**	185-400/250-536 YΔ**	185-400/250-536 DOL	DOL 1 YΔ 2	308 711 101	308 661 121

NOTE: For this standard PE2/PA motors must additionally ordered the special Tape 700 541 688, is absolutely necessary.

\*\*For YΔ motors please order two Lead (sealing) kits

Ground Lead* (opt.)	Ø (mm²)	D Ø (mm/in)	Lengths (m/ft)	St.	Mod.-Nr.
	1G25	13.0/0.51	8/26	1	308 053 080
	1G35	15.3/0.60	6/20		308 056 060

\* Only for 304 SS and 316 SS

Lead Opening Seal Kit	
Motor (kW/HP)	Part No.
250-400/340-536 DOL/YΔ	308 661 122

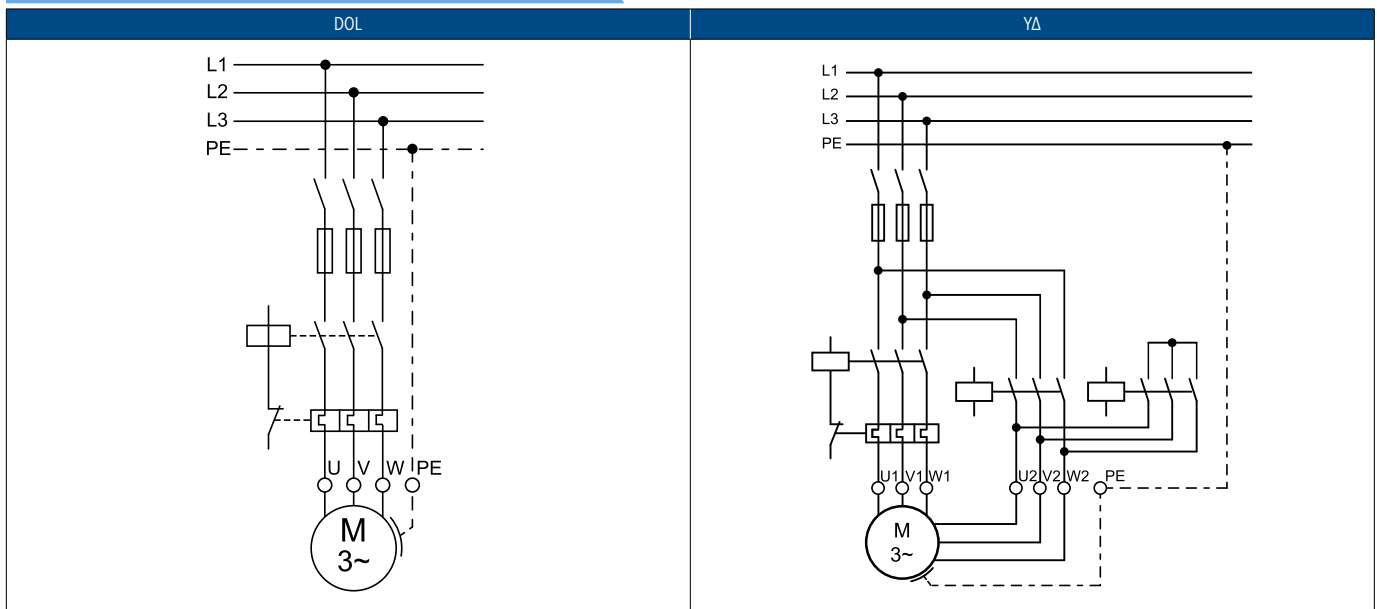
NOTE: Cables are designed for submerged operation; for air operation please consult Franklin Electric

### MOTOR LEADS - 4-POLE

Lead	Ø (mm²)	D (mm/in)	Lengths (m/ft)	Motor (kW/HP)	Qty.	Lead Kit (3 Single Leads)	Lead Seal Kit.
				400 V / 50 Hz			
	1X70	20.7/0.82	6/20	110/150, 132/175, 160/200, 200/250	DOL 1	308 711 100	308 661 120
	Groundlead						
	1G35	15.3/0.60	6/20	110/150, 132/175, 160/200, 200/250	DOL 1	308 056 060	
Lead Opening Seal Kit			All Ratings		DOL 1	308 661 122	

NOTE: For this standard PE2/PA motors must additionally ordered the special Tape 700 541 688, is absolutely necessary; cables are designed for submerged operation; for air operation, please consult Franklin Electric

### ELECTRICAL CONNECTION



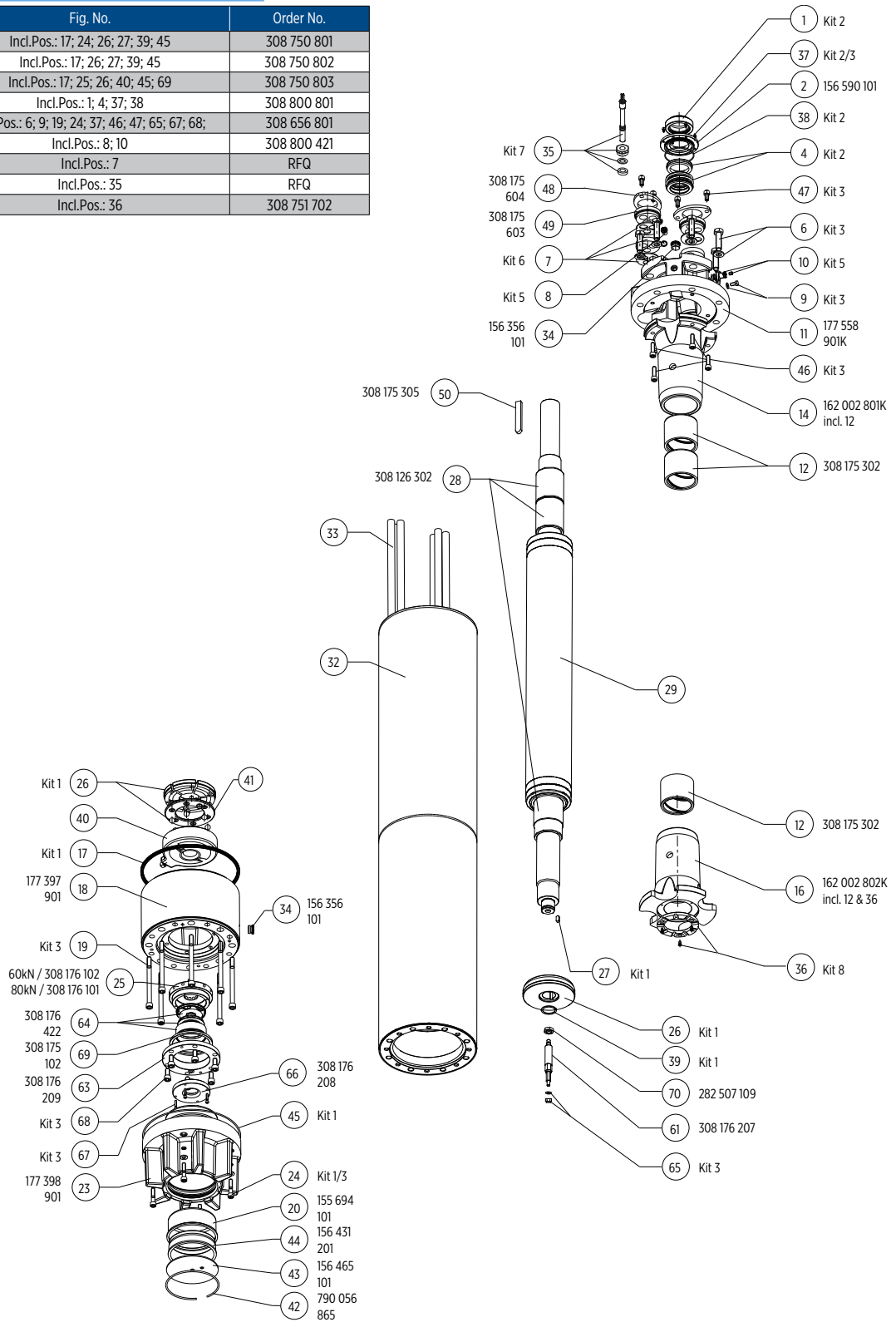
U	V	W	PE
Brown	Grey	Black	Yellow/Green



## 12" REWINDABLE MOTORS - LEADS AND ACCESSORIES

### SPARE PARTS

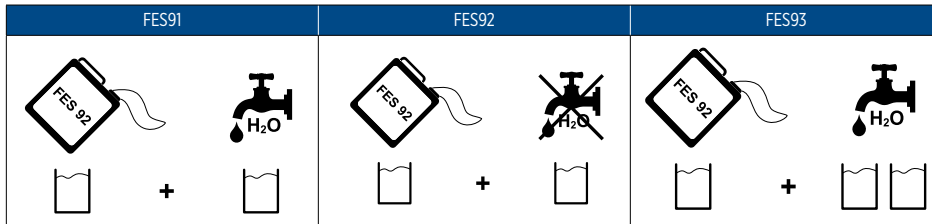
Description	Fig. No.	Order No.
Kit 1 Thrust Bearing Kit 60kN	Incl.Pos.: 17; 24; 26; 27; 39; 45	308 750 801
Kit 1 Thrust Bearing Kit 80kN	Incl.Pos.: 17; 26; 27; 39; 45	308 750 802
Motor Conversion Kit 80KN	Incl.Pos.: 17; 25; 26; 40; 45; 69	308 750 803
Kit 2 Seal Kit - Top	Incl.Pos.: 1; 4; 37; 38	308 800 801
Kit 3 Screw Kit	Incl.Pos.: 6; 9; 19; 24; 37; 46; 47; 65; 67; 68;	308 656 801
Kit 5 Valve Kit	Incl.Pos.: 8; 10	308 800 421
Kit 6 Lead Seal Kit	Incl.Pos.: 7	RFQ
Kit 7 PT 100 Kit	Incl.Pos.: 35	RFQ
Kit 8 Up-Thrust Bearing Kit	Incl.Pos.: 36	308 751 702



# MOTOR ACCESSORIES

## MOTOR FILLING LIQUID

Filling Liquid (5 L FES92)		
Description	Liquid	Part No.
4" Encapsulated	FES93	308353941
6" Encapsulated Standard	FES91	
6" Encapsulated HighTemp 90	FES92	
8" Encapsulated Standard	FES91	
8" Encapsulated HighTemp 75	FES92	
6" / 8" / 10" / 12" Rewindable Motors 6" / 8" Rewindable PM Motors	FES93	



## MOTOR FILLING KIT

Motor Filling Kit	
Description	Part No.
This kit contains all necessary tools to check and replenish Franklin Electric submersible motors with FES 91, 92 or 93 filling liquid (fill solution/concentrate must be ordered separately)	308726103

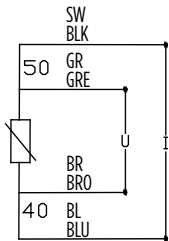
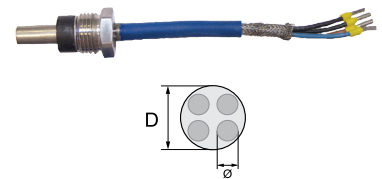


## PT100 REWINDABLE MOTORS

- Fitted into the upper end bell flange, all end bells 6", 8", 10" and 12" rewindable are prepare for installation PT100
- Measures the temperature of the filling liquid
- Conductor with a resistance proportional to the temperature
- Allows monitoring the temperature continuously

The above-ground equipment is not available from Franklin Electric and is typically part of a custom panel or data acquisition system. PT100 sensor retrofit kits from Franklin Electric come with complete instructions and allow for easy field installation.

Dimensions			6" Rew Redesign starting 08.2012		6" (Cast Iron/304SS) / 8" / 10" / 12"	
Ø (mm2)	D (mm)	Lead L (m)	304/316	904L	304/316	904L
4x0.5	8	10	308016501	308016522	308016401	308016422
		20	308016502	-	308016402	-
		30	308016503	-	308016403	-
		50	308016505	308016526	308016405	308016426



Trip points:  
PVC = 55°C  
PEZ/PA = 75°C



## CONTROL BOXES

The Quick Disconnect (QD) and Capacitor Run Control (CRC) control boxes are designed for use with Franklin 3-wire, single-phase submersible motors through 1 hp. The Standard and Deluxe control boxes are designed for use with Franklin 3-wire, single-phase submersible motors from 1 through 15 hp, and are recommended for water systems that use pressure switches, level switches, or other pilot devices. Deluxe boxes contain magnetic line contactors carefully matched to the motor rating, eliminating the need for external line connectors.

### FEATURES: ALL

- Suitable for outdoor mounting
- Capacitor start/run design (except QD boxes)
- UL Listed for US and Canada (60 Hz models)

### FEATURES: STANDARD & DELUXE

- Heavy-duty, box-type terminals accept up to AWG #2 wire
- External access to overload resets
- Multiple-size knockouts
- User-friendly connection diagrams
- Easy access to grounding lugs



### SINGLE-PHASE SPECIFICATIONS

Box Type	Hz	HP Range	kW Range	Enclosure	Terminal Block		Mag Contactor	Agency Approvals
					Terminals	Max Wire		
Quick Disconnect (QD)	60	1/3 - 1	0.25 - 0.75	NEMA 3R, IP23	5	AWG 10	No	UL listed for US and Canada
Quick Disconnect (QD)	50	1/3 - 1	0.25 - 0.75	NEMA 3R, IP23	5	AWG 10	No	CSA Certified
Capacitor Run Control (CRC)	60	1/2 - 1	0.37 - 0.75	NEMA 3R, IP23	5	AWG 10	No	UL listed for US and Canada
Standard (S)	60	1 - 10	0.75 - 7.5	NEMA 3R, IP23	5	AWG 2	No	UL listed for US and Canada
Standard (S)	50	1.5 - 5	1.1 - 3.7	NEMA 3R, IP23	5	AWG 2	No	CSA Certified
Deluxe (D)	60	1 - 15	0.75 - 11	NEMA 3R, IP23	6	AWG 2	Yes	UL listed for US and Canada
Extra Large Deluxe (D-XL)	60	15	11	NEMA 3R, IP23	5	AWG 00	Yes	UL listed for US and Canada



## CONTROL BOXES

### ORDERING INFORMATION

HP (kW)	Description				Model No.
	Phase	Volts	Hz	Type	
1/3 / 0.25	1	115	60	Q	2801024915
		220	50	Q	2803532115
		230	60	Q	2801034915
1/2 / 0.37		115	60	Q	2801044915
		220	50	Q	2803552115
		230	60	Q	2801054915
3/4 / 0.55		230	60	CRC	2824055015
		220	50	Q	2803572115
		230	60	Q	2801074915
1 / 0.75		230	60	CRC	2824075015
		220	50	Q	2803582115
		230	60	Q	2801084915
1.5 / 1.1		230	60	CRC	2824085015
		230	60	S	2823008110
		230	60	D	2823008310
2 / 1.5	220	50	S	2823508110	
	230	60	S	2823008110	
	230	60	D	2823008310	
3 / 2.2	220	50	S	2823518110	
	230	60	S	2823018110	
	230	60	D	2823018310	
5 / 3.7	220	50	S	2823528110	
	230	60	S	2823028110	
	230	60	D	2823028310	
7.5 / 5.5	220	50	S	2822539010	
	230	60	S	2821138110	
	230	60	D	2821139310	
10 / 7.5	230	60	S	2822019210	
	230	60	D	2822019310	
	230	60	S	2822029230	
15 / 11	230	60	D	2822029330	
	230	60	D	2822039330	

NOTE: Q = Quick Disconnect Control Box; CRC = Capacitor Run Control Box; S = Standard Control Box; D = Deluxe Control Box; D-XL = Extra Large Deluxe Control Box



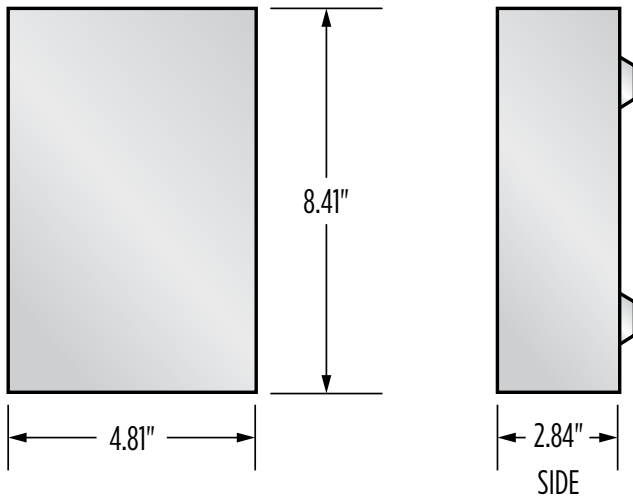
## CONTROL BOXES - QUICK DISCONNECT (QD) & CAPACITOR RUN CONTROL (CRC)

### SPECIFICATIONS

- Bottom Knockout: Two 0.88" knockouts and one 1.31" knockout
- Side Knockout: One 0.88" knockout and one 1.31" knockout on each side
- Terminal Block: Five terminals provided for wiring up to AWG #10 wire

### DIMENSIONS

Box Type	HP / kW	Enclosure Size	Motor Carton Size (in)			Shipping Wt.	
			W	H	L	lbs	kg
Quick Disconnect (QD)	1/3 / 0.25	QD	5.5	3.25	9	4	1.8
	1/2 / 0.37						
	3/4 / 0.55						
	1 / 0.75						
Capacitor Run Control (CRC)	1/2 / 0.37	QD	5.5	3.25	9	5	2.3
	3/4 / 0.55						
	1 / 0.75						



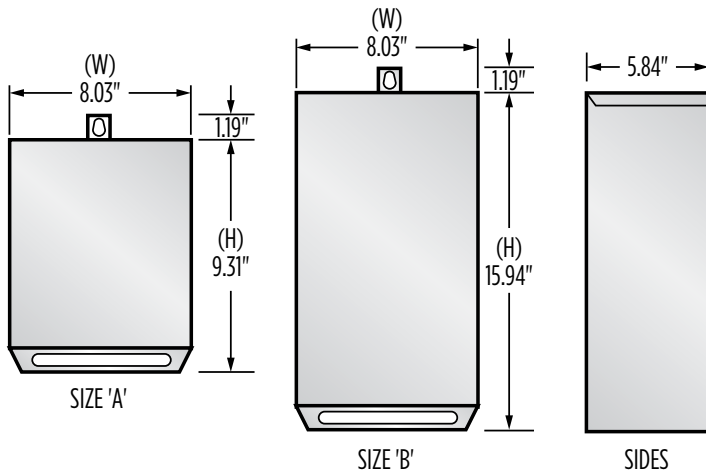
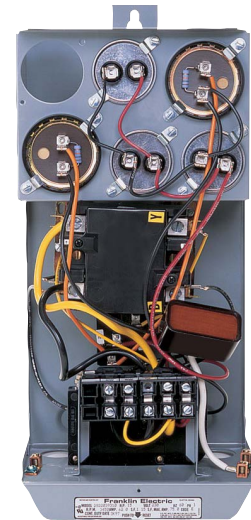
## CONTROL BOXES - STANDARD & DELUXE

### SPECIFICATIONS

- Knockouts: Two 1.31" diameter holes for 1" conduit connection; One 1.75" knockout for 1.25" conduit; One 0.88" knockout for 0.5" conduit connection
- Terminal Block: Six terminals provided for wiring up to AWG 2 wire

### DIMENSIONS

Box Type	HP / kW	Enclosure Size	Motor Carton Size (in)			Shipping Wt.	
			W	H	L	lbs	kg
Standard	1 / 0.75	A	8.125	6.25	11.25	7	3.2
	1.5 / 1.1	A	8.125	6.25	11.25	7	3.2
	2 / 1.5	A	8.125	6.25	11.25	7	3.2
	3 / 2.2	A	8.125	6.25	11.25	7	3.2
	5 (60 Hz) / 3.7	A	8.125	6.25	11.25	8	3.6
	5 (50 Hz) / 3.7	B	8.125	6.25	18	8	3.6
	7.5 / 5.5	B	8.125	6.25	18	12	5.5
Deluxe	10 / 7.5	B	8.125	6.25	18	14	6.4
	1 / 0.75	A	8.125	6.25	11.25	7	3.2
	1.5 / 1.1	A	8.125	6.25	11.25	7	3.2
	2 / 1.5	A	8.125	6.25	11.25	7.0	3.2
	3 / 2.2	A	8.125	6.25	11.25	7.3	3.3
	5 / 3.7	B	8.125	6.25	18	11.2	5.1
	7.5 / 5.5	B	8.125	6.25	18	13.1	6.0
	10 / 7.5	B	8.125	6.25	18	14.7	6.7
	15 / 11	B	8.125	6.25	18	16.5	7.5
15 (XL) / 11	C	16	7.125	19	28.0	12.7	



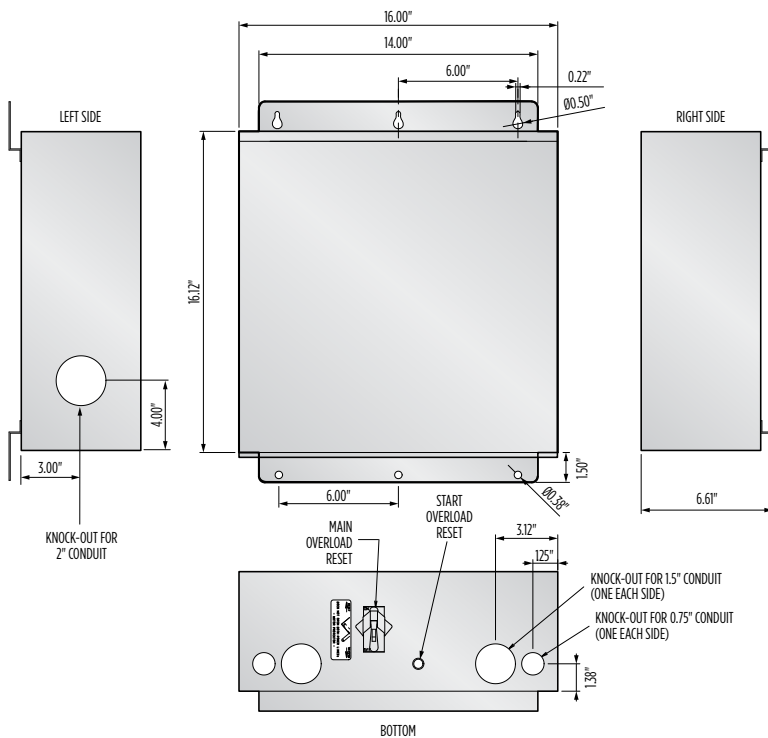


## CONTROL BOXES - EXTRA LARGE DELUXE (D-XL)

### SPECIFICATIONS

- Bottom Knockouts: Two knockouts for 0.75" conduit, and two for 1.5" conduit
- Side Knockouts: One knockout for 2" conduit
- Terminal Block: Two terminals provided for incoming power and three terminals provided for drop cable for conductors from AWG 14 to 00
- Control Switch Terminal Block: Accepts conductors from AWG 20 to 6

### DIMENSIONS



## CONTROL BOXES - PARTS

### QD 60 HZ

HP / Voltage	Model No.	Rating	No. Req.	Component Part No.	Kit Order No.
1/3 / 115	280 102 4915	Start Capacitor 159-191 MFD, 110 V	1	275 464 125	305 207 925
		QD Relay		223 415 905	305 101 905
1/3 / 230	280 103 4915	Start Capacitor 43-53 MFD, 220 V		275 464 126	305 207 926
		QD Relay		223 415 901	305 101 901
1/2 / 115	280 104 4915	Start Capacitor 250-300 MFD, 125 V		275 464 201	305 207 951
		QD Relay		223 415 906	305 101 906
1/2 / 230	280 105 4915	Start Capacitor 59-71 MFD, 220 V		275 464 105	305 207 905
		QD Relay		223 415 902	305 101 902
3/4 / 230	280 107 4915	Start Capacitor 86-103 MFD, 220 V		275 464 118	305 207 918
		QD Relay		223 415 903	305 101 903
1 / 230	280 108 4915	Start Capacitor 105-126 MFD, 220 V		275 464 113	305 207 913
		QD Relay		223 415 904	305 101 904
1/2 / 230	CRC 282 405 5015	Start Capacitor 43-53 MFD, 220 V		275 464 126	305 207 926
		Run Capacitor 15 MFD, 370 V		156 362 101	305 203 907
		QD Relay		223 415 912	305 105 901
3/4 / 230	CRC 282 407 5015	Start Capacitor 59-71 MFD, 220 V		275 464 105	305 207 905
		Run Capacitor 23 MFD, 370 V		156 362 102	305 203 908
		QD Relay		223 415 913	305 105 902
1 / 230	CRC 282 408 5015	Start Capacitor 86-103 MFD, 220 V		275 464 118	305 207 918
		Run Capacitor 23 MFD, 370 V		156 362 102	305 203 908
		QD Relay	223 415 914	305 105 903	

### QD 50 HZ

HP / Voltage	Model No.	Rating	No. Req.	Component Part No.	Kit Order No.
1/2 / 220	280 355 2115	Start Capacitor 43-53 MFD, 220 V	1	275 461 123	305 205 923
		Capacitor Overload Assembly		151 033 990	305 218 990
		QD Relay		223 415 915	305 105 904
3/4 / 220	280 357 2115	Start Capacitor 59-71 MFD, 220 V		275 461 108	305 205 908
		Capacitor Overload Assembly		151 033 989	305 218 989
		QD Relay		223 415 916	305 105 905
1 / 220	280 358 2115	Start Capacitor 86-103 MFD, 220 V		275 461 106	305 205 906
		Capacitor Overload Assembly		151 033 988	305 218 988
		QD Relay		233 451 917	305 105 906

NOTE: Some Franklin motors, controls, and parts are non-stock items and may need to be special ordered



## CONTROL BOXES - PARTS

### STANDARD 60 HZ

HP	Model No.	Rating	No. Req.	Component Part No.	Kit Order No.
1/1.5 - 4"	282 300 8110	Start Capacitor 105-126 MFD, 220 V	1	275 464 113	305 207 913
		Run Capacitor 15 MFD, 370 V		155 328 101	305 204 901
		Start Overload		275 411 114	305 215 914
		Run Overload		275 411 113	305 215 913
		Relay - 230 V*		155 031 102	305 213 902
2 - 4"	282 301 8110	Start Capacitor 105-126 MFD, 220 V	1	275 464 113	305 207 913
		Run Capacitor 20 MFD, 370 V		155 328 103	305 204 903
		Start Overload		275 411 117	305 215 917
		Run Overload		275 411 113	305 215 913
		Relay - 230 V*		155 031 102	305 213 902
3 - 4"	2823028110	Start Capacitor 208-250 MFD, 220 V	1	275 463 123	305 206 923
		Run Capacitor 45 MFD, 370 V		155 327 109	305 203 909
		Start Overload		275 411 118	305 215 918
		Run Overload		275 411 115	305 215 915
		Relay - 230 V*		155 031 102	305 213 902
5 - 4" & 6"	282 113 8110	Start Capacitor 216-259 MFD, 330 V	2	275 468 118	305 208 918
		Run Capacitor 40 MFD, 370 V		155 327 114	305 203 914
		Start Overload		275 411 119	305 215 919
		Run Overload		275 406 102	305 214 902
		Relay - 230 V*		155 031 601	305 213 961
7.5 - 6"	282 201 9210	Start Capacitor 270-324 MFD, 330 V	1	275 468 119	305 208 919
		Start Capacitor 130-154 MFD, 330 V		275 468 117	305 208 917
		Run Capacitor 45 MFD, 370 V		155 327 109	305 203 909
		Start Overload		275 411 102	305 215 902
		Run Overload		275 406 122	305 214 922
		Relay - 230 V*		155 031 601	305 213 961
10 - 6"	282 202 9230	Start Capacitor 270-324 MFD, 330 V	2	275 468 119	305 208 919
		Run Capacitor 35 MFD, 370 V		155 327 102	305 203 902
		Start Overload		275 406 103	305 214 903
		Run Overload		155 409 101	155 409 101
		Relay - 230 V*		155 031 601	305 213 961
All	All	Lightning Arrestor	1	150 814 902	150 814 902
208 V Relay *	208 V Relay *	Relay 1.5-3 hp (replaces 155031102)	1	155 031 103	305 213 903
		Relay 5-15 hp (replaces 155031601)		155 031 602	305 213 962

### STANDARD 50 HZ

HP / Voltage	Model No.	Rating	No. Req.	Component Part No.	Kit Order No.
1.5 / 220	282 350 8110	Start Capacitor 105-126 MFD, 220 V	1	275 464 113	305 207 913
		Run Capacitor 10 MFD, 370 V		155 328 102	305 204 902
		Overload Assembly - Run		275 411 114	305 215 914
		Relay 220 V		155 031 112	305 213 912
2 / 220	282 351 8110	Start Capacitor 189-227 MFD, 220 V	1	275 468 115	305 208 915
		Run Capacitor 20 MFD, 370 V		155 328 103	305 204 903
		Overload Assembly - Run		275 411 102	305 215 902
		Overload Assembly - Start		275 411 106	305 215 906
		Relay 220 V		155 031 112	305 213 912
3 / 220	282 352 8110	Start Capacitor 270-324 MFD, 220 V	1	275 468 119	305 208 919
		Run Capacitor 35 MFD, 370 V		155 327 102	305 203 902
		Overload Assembly - Run		275 406 107	305 214 907
		Overload Assembly - Start		275 411 117	305 215 907
		Relay 220 V		155 031 112	305 213 912
5 / 220	282 253 9010	Start Capacitor 189-227 MFD, 220 V	2	275 468 115	305 208 915
		Run Capacitor 30 MFD, 220 V		155 327 101	305 203 901
		Run Capacitor 45 MFD, 220 V		155 327 109	305 203 909
		Overload Assembly - Run	1	275 406 102	305 214 902
		Overload Assembly - Start		275 411 102	305 215 902
		Relay 220 V		155 031 112	305 213 912

NOTE: Some Franklin motors, controls, and parts are not stock items and may need to be special ordered  
 \*For 208 V systems or where line voltage is between 200 V and 210 V, a low voltage relay and larger cable are required: Use relay part number 305 213 903 in place of 305 213 902 on 1.5 through 3 hp applications; Use relay 305213962 for 5-15 hp applications; use the next size larger cable than is specified in the 230 V table; boost transformers are an alternative to special relay and cable.

## CONTROL BOXES - PARTS

### DELUXE

HP Size / Model No.	Model No.	Rating	No. Req.	Component Part No.	Kit Order No.
1/1.5 - 4"	282 300 8310	Start Capacitor 105-126 MFD, 220 V	1	275 464 113	305 207 913
		Run Capacitor 15 MFD, 370 V		155 328 101	305 204 901
		Start Overload		275 411 114	305 215 914
		Run Overload		275 411 113	305 215 913
		Contactactor		155 325 102	305 226 902
		Relay - 230 V*		155 031 102	305 213 902
2 - 4"	282 301 8310	Start Capacitor 105-126 MFD, 220 V	1	275 464 113	305 207 913
		Run Capacitor 20 MFD, 370 V		155 328 103	305 204 903
		Start Overload		275 411 117	305 215 917
		Run Overload		275 411 113	305 215 913
		Contactactor		155 325 102	305 226 902
		Relay - 230 V*		155 031 102	305 213 923
3 - 4"	282 302 8310	Start Capacitor 208-250 MFD, 220 V	1	275 463 123	305 206 911
		Run Capacitor 45 MFD, 370 V		155 327 109	305 203 909
		Start Overload		275 411 118	305 215 918
		Run Overload		275 411 115	305 215 915
		Contactactor		155 325 102	305 226 902
		Relay - 230 V*		155 031 102	305 213 902
5 - 4" & 6"	282 113 9310	Start Capacitor 216-259 MFD, 330 V	2	275 468 118	305 208 918
		Run Capacitor 40 MFD, 370 V		155 327 114	305 203 914
		Start Overload		275 411 119	305 215 919
		Run Overload		275 406 102	305 214 902
		Contactactor		155 326 101	305 347 903
		Relay - 230 V*		155 031 601	305 213 961
7.5 - 6"	282 201 9310	Start Capacitor 130-154 MFD, 330 V	1	275 468 117	305 208 917
		Start Capacitor 270-324 MFD, 330 V		275 468 119	305 208 919
		Run Capacitor 45 MFD, 370 V		155 327 109	305 203 909
		Start Overload		275 411 102	305 215 902
		Run Overload		275 406 121	305 214 921
		Contactactor		155 326 102	305 347 902
10 - 6"	282 202 9330	Start Capacitor 270-324 MFD, 330 V	2	275 468 119	305 208 919
		Run Capacitor 35 MFD, 370 V		155 327 102	305 203 902
		Start Overload	1	275 406 103	305 214 903
		Run Overload		155 409 101	-
		Contactactor		155 326 102	305 347 902
		Relay - 230 V*		155 031 601	305 213 961
15 - 6"	282 203 9330	Start Capacitor 270-324 MFD, 330 V	2	275 468 119	305 208 919
		Run Capacitor 45 MFD, 370 V	3	155 327 109	305 203 909
		Start Overload	1	275 406 103	305 214 903
		Run Overload		155 409 102	-
		Contactactor		155 429 101	305 347 901
		Relay - 230 V*		155 031 601	305 213 961
15 - 6"	282 203 9621 (X-Large Enclosure)	Start Capacitor 270-324 MFD, 330 V	2	275 468 119	305 208 919
		Run Capacitor 45 MFD, 370 V	3	155 327 109	305 203 909
		Start Overload	1	275 406 103	305 214 903
		Run Overload		155 409 102	-
		Contactactor	2	155 429 101	305 347 901
		Relay - 230 V*		155 031 601	305 213 961
All	All	Lightning Arrestor		150 814 902	150 814 902
208 V Relay*	208 V Relay*	Relay 1.5-3 hp (replaces 155 031 102)	1	155 031 103	305 213 903
		Relay 5-15 hp (replaces 155 031 601)		155 031 602	305 213 962

NOTE: Some Franklin motors, controls & parts are not stock items and may need to be special ordered

\* For 208 V systems or where line voltage is between 200 V and 210 V, a low voltage relay and larger cable are required. Use relay part number 305 213 903 in place of 305 213 902 on 1.5 through 3 hp applications; Use relay 305213962 for 5-15 hp applications; use the next size larger cable than is specified in the 230 V table; boost transformers are an alternative to special relay and cable.



## ACCESSORIES & SERVICES - COUPLINGS

Franklin Electric offers this line of motor-to-pump couplings for maximum customer convenience in matching the Franklin motor to a variety of pump shafts. Couplings are designed to transmit the pump thrust to the motor in order to provide maximum benefits from Franklin's internal thrust bearing construction.

Hardened stainless steel spacer discs in the 4" and 6" couplings assure positive bearing between motor and pump shafts, and assure full support for downward thrust created by the pump.

8" couplings DO NOT contain hardened spacer discs since the motor shaft itself is hardened.

All couplings include Allen head 300 series stainless steel set screws with key included.

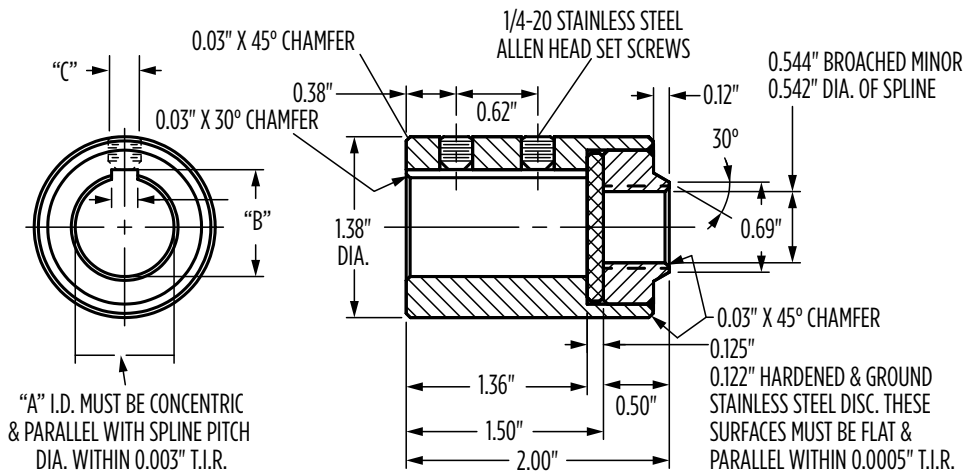
### SPECIFICATIONS

Motor Size (in)	Construction	Pump Shaft Dia.	Dimensions (in)			Part No.
			W	D	L	
4	416 SS	3/4	3/16	1/8	1 3/8	151 551 911
	316 SS	3/4	3/16	1/8	1 3/8	151 551 931
6	416 SS	3/4	3/16	1/8	1 3/4	151 935 902
		7/8	1/4	3/16	1 3/4	151 935 901
		1	1/4	3/16	1 3/4	151 935 909
	316 SS	3/4	3/16	1/8	1 3/4	151 935 922
		7/8	1/4	3/16	1 3/4	151 935 921
		1	1/4	3/16	1 3/4	151 935 929
8	416 SS	1	1/4	1/4	2	156 563 901
		1 3/16	1/4	1/4	2	156 563 906
		1 3/16	5/16	5/16	2	156 563 902
		1 1/4	5/16	5/16	2	156 563 903
		1 1/2	3/8	3/8	2	156 563 904
	316 SS	1 3/16	1/4	1/4	2	151 922 926
		1 1/4	5/16	5/16	2	151 922 923
		1 1/2	3/8	3/8	2	151 922 924
		1 11/16	3/8	3/8	2	151 922 929

NOTE: 316 SS couplings are normally used with corrosion-resistant motors



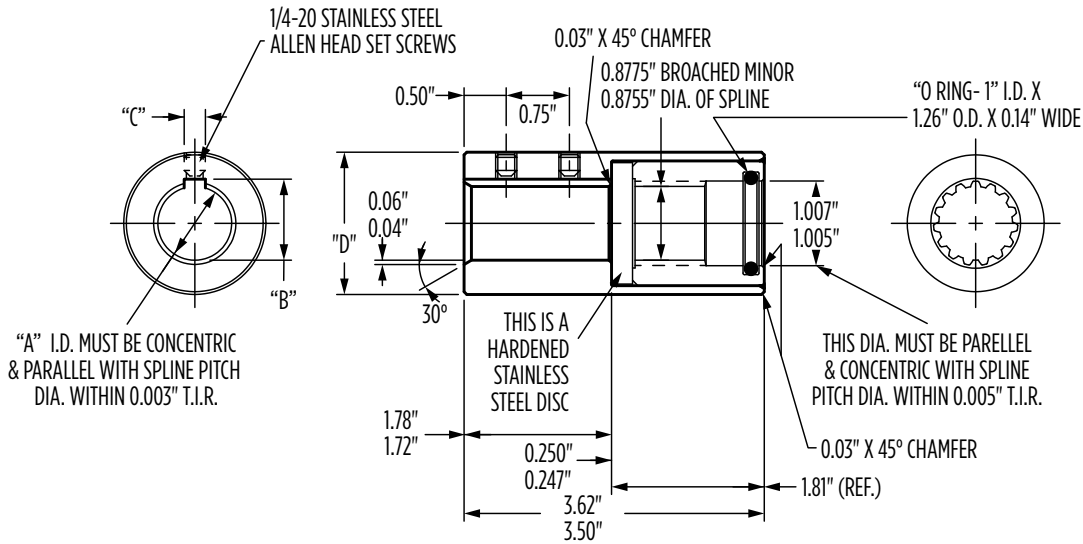
### 4" DIMENSIONS



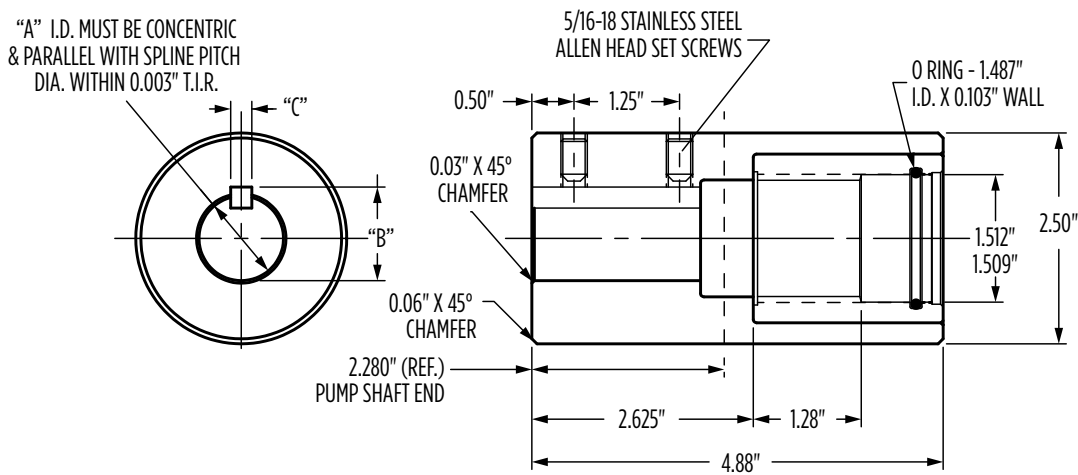


## ACCESSORIES & SERVICES - COUPLINGS

### 6" DIMENSIONS



### 8" DIMENSIONS





## ACCESSORIES & SERVICES - QD SERVICE BOX & SPECIAL SERVICES

### QD SERVICE BOX

- Franklin Electric's QD service box is a service tool that provides capability to measure motor amps and line voltage with the motor running
- Fits between the base and cover of an installed QD control box
- Compatible with any Franklin Electric QD or CRC control box
- Meter jacks for measuring voltage while the motor is running
- Clamp-on ammeter access to all three motor leads for installations with jacketed cable or conduit
- Easy to use



Compatible With	Part No.
All QD & CRC Control Box Ratings	305 510 901

### SPECIAL SERVICES

Special testing services are available for motors purchased from Franklin Electric. These services must be specified at the time of order and will result in additional lead time.

Calibrated Motor Performance Test	
HP	Motor Diameter
1/3-3	4"
5-10	4"
5-60	6"
40-200	8"

Submergence Performance Test	
HP	Motor Diameter
1/3-2	4" @ 1000 psi (2W = 500 psi)
3-10	4" @ 1000 psi
5-30	6" @ 1000 psi
40-60	6" @ 1000 psi
	8" @ 1000 psi



