



**FEATURES**

- Encapsulated, water-filled design
- Engineered, assembled and tested in the USA
- Leading motor efficiencies yield lower cost of ownership
- NSF/ANSI 61 certified for potable water
- Variable frequency drive capable\*
- Horizontal and vertical installation\*
- Class F rated insulation
- Stainless steel bolting and fasteners

\* See detail reported in the instruction manual

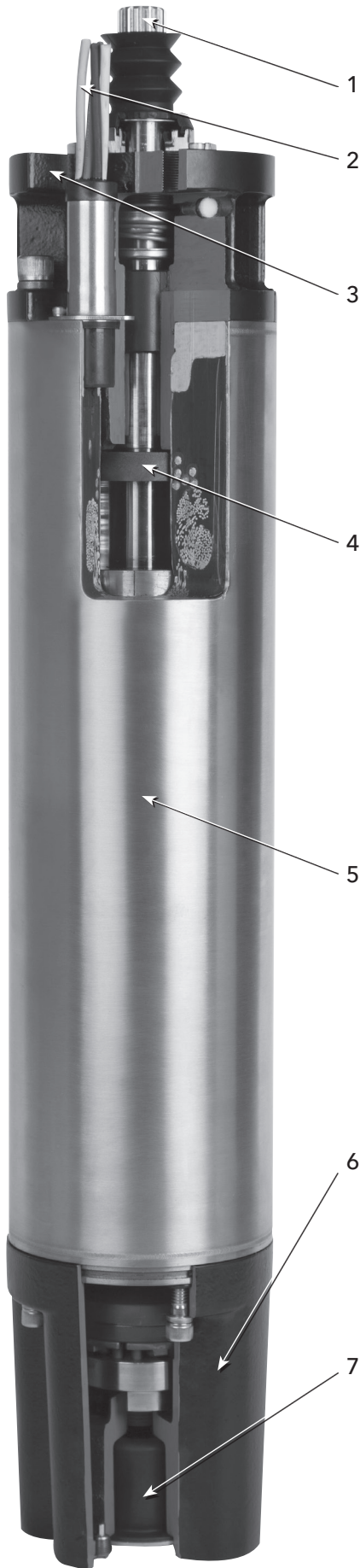


# FM Series Motors

6" - 8" MOTORS



6" - 8" Encapsulated Submersible Motors



## Industry Leading Designs

### Thrust Handling

The FM Series Kingsbury-type bi-directional thrust bearing can handle down-thrust values greater than other 6" submersible motors.

Up to 30 hp - 3600 lbs

40 hp to 50 hp - 6750 lbs

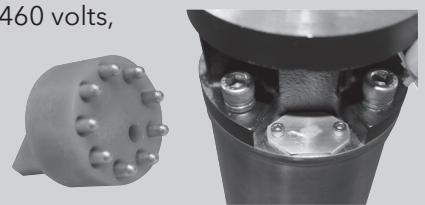
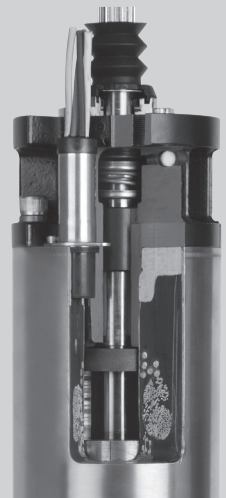
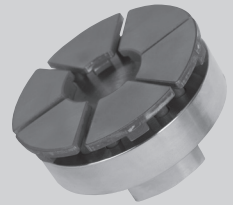
50 hp to 150 hp - 10000 lbs

### Sealing System

The most robust sealing system available on the market provides protection against sediment intrusion in the most difficult of applications. Sealing system includes specially designed rubber slinger, upgraded mechanical seal as standard with Silicon Carbide / Silicon Carbide material, and a lip seal.

### Voltage Change Device

All three-phase units, 5-30 hp, 230/460 volts, are supplied with a voltage change device to reduce volume of part numbers for stock.



1. 17-4 PH stainless steel shaft. Shaft extension and coupling dimensions per NEMA standards.
2. Fully replaceable XLPE lead wire 17 ft (5.18 m) lead length.
3. Dual-flange style upper bracket provides easier handling and faster assembly to the pump.
4. Upthrust ring prevents upthrust damage during start-up.
5. 300 series stainless steel casing.
6. Epoxy-coated upper and lower bracket, TNEMEC 140 standard, provides excellent resistance to water and corrosion.
7. Pressure equalizing diaphragm regulates internal pressure with static pressure and ensures motor is full of fluid.

### MATERIALS OF CONSTRUCTION

Component	Material
Castings	Gray Iron
Shell and Liner	300 Series Stainless Steel
Shaft Extension	17-4 Ph Stainless Steel
Fasteners	300 Series Stainless Steel
Seal	300 Series Stainless Steel
Mechanical Seal	SiC/SiC Faces
Elastomers	Nitrile Rubber
Diaphragm Cover	300 Series Stainless Steel
Lead Wire	XLPE
Lead Potting	Epoxy
Filter	Polyester
Paint	Epoxy
Rotor	Copper Bar
Insulation	Class F

6" - 8" Encapsulated Submersible Motors

MOTOR DATA

Part No.	HP	kW	Phase	Volts	Motor Dia. vs Flange Dia	Service Factor	Rated Input		Maximum Load (SF Load)		L. R. Amps			
							Amps	Watts	Amps	Watts				
6F051	5	3.7	1	230	6" x 6"	1.15	22.8	4975	26.0	5625	104			
6F071	7.5	5.5					35.2	7300	40.0	8300	162			
6F101	10	7.5					45.7	9700	52.4	11175	202			
6F151	15	11					62.4	13725	72.5	15825	296			
6F058	5	3.7	200-208	230/460	6" x 6"	1.15	16.1	4830	18.0	5490	96			
6F078	7.5	5.5					23.3	7000	26.8	8070	140			
6F108	10	7.5					31.5	9090	35.0	10400	187			
6F158	15	11					44.9	13440	50.8	15460	268			
6F208	20	15					59.0	17850	67.1	20630	354			
6F258	25	19					76.8	22110	86.5	25520	445			
6F308	30	22					91.7	26420	103.3	30450	530			
6F0524*	5	3.7					230/460	6" x 6"	1.15	14.4	4830	16.1	5490	87
6F0724*	7.5	5.5								21.5	7000	24.1	8070	127
6F1024*	10	7.5								28.0	9090	31.5	10400	164
6F1524*	15	11								40.9	13440	46.3	15460	237
6F2024*	20	15								53.2	17850	60.8	20630	312
6F2524*	25	19	66.7	22110	76.0	25520				387				
6F3024*	30	22	79.3	26420	90.2	30450				458				
6F0524*	5	3.7	460	6" x 6"	1.15	7.0				4830	8.0	5490	44	
6F0724*	7.5	5.5				10.0				7000	11.3	8070	62	
6F1024*	10	7.5				13.1				9090	14.8	10400	82	
6F1524*	15	11				20.4				13440	23.0	15460	117	
6F2024*	20	15				25.8				17850	29.4	20630	151	
6F2524*	25	19				32.8	22110	36.8	25520	187				
6F3024*	30	22				39.3	26420	44.6	30450	226				
6F404	40	30				51.3	35030	58.6	40500	302				
6F504	50	37				65.8	44350	75.1	51200	385				
6F055	5	3.7				575	6" x 6"	1.15	5.8	4830	6.5	5490	35	
6F075	7.5	5.5							8.2	7000	9.3	8070	51	
6F105	10	7.5							10.5	9090	11.8	10400	61	
6F155	15	11	15.0	13440	17.1				15460	88				
6F205	20	15	20.9	17850	23.7				20630	122				
6F255	25	19	26.2	22110	29.7				25520	153				
6F305	30	22	31.0	26420	35.0				30450	179				
6F405	40	30	41.5	35030	47.3				40500	247				
6F505	50	37	53.0	44350	61.0				51200	323				
86F504	50	37	460	8" x 6"	1.15				65	43675	74	49950	540	
86F604	60	45							78	52225	89	59825	645	
8F504	50	37							8" x 8"	65	43675	74	49950	540
8F604	60	45				78	52225	89		59825	645			
8F754	75	56				95	64850	109		74650	803			
8F1004	100	75				128	85075	146		98350	1080			
8F1254	125	93		165		110125	188	126825		1410				
8F1504	150	112		203		133025	228	151100		1643				
86F505	50	37		575		8" x 6"	52	43675	60	49950	439			
86F605	60	45					61	52225	70	59825	518			
8F505	50	37					52	43675	60	49950	439			
8F605	60	45				8" x 8"	61	52225	70	59825	518			
8F755	75	56	76		64850		88	74650	645					
8F1005	100	75	100		85075		115	98350	855					
8F1255	125	93	129	110125	148	126825	1133							
8F1505	150	112	159	133025	178	151100	1320							

\* Same motors with voltage change device

6" - 8" Encapsulated Submersible Motors

MOTOR DATA

Part No.	Rating		Phase	Volts	% Efficiency		KVA Code	Line-Line Resistance (Ohms)	Fuse Sizing Based on NEC			
	HP	kW			FL	SF			Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker	
6F058	5	3.7	3	200-208	77.5	78.5	H	.86 - 1.1	60	35	50	
6F078	7.5	5.5			80.0	80.0		.66 - .81	90	50	70	
6F108	10	7.5			82.5	82.5		.37 - .46	110	70	100	
6F158	15	11			83.5	83.5		.26 - .32	175	100	125	
6F208	20	15			83.0	83.0		.19 - .24	225	125	175	
6F258	25	19			84.0	84.0		.13 - .17	300	150	200	
6F308	30	22			84.5	84.5		.10 - .13	350	200	250	
6F0524*	5	3.7		230	460	77.5	78.5	G	1.1 - 1.4	60	35	45
6F0724*	7.5	5.5				80.0	80.0		.73 - .90	80	45	70
6F1024*	10	7.5				82.5	82.5		.50 - .62	100	60	90
6F1524*	15	11				83.5	83.5		.33 - .41	150	90	125
6F2024*	20	15				83.0	83.0		.25 - .31	200	110	175
6F2524*	25	19				84.0	84.0		.18 - .22	225	150	200
6F3024*	30	22				84.5	84.5		.15 - .19	300	175	225
6F0524*	5	3.7		460	575	77.5	78.5	H	4.4 - 5.4	30	15	25
6F0724*	7.5	5.5				80.0	80.0		2.9 - 3.6	40	25	35
6F1024*	10	7.5				82.5	82.5		1.9 - 2.4	50	30	40
6F1524*	15	11				83.5	83.5		1.1 - 1.4	70	45	60
6F2024*	20	15				83.0	83.0		.9 - 1.1	90	50	80
6F2524*	25	19				84.0	84.0		.69 - .85	110	70	100
6F3024*	30	22				84.5	84.5		.58 - .72	150	80	110
6F404	40	30		575	575	85.0	85.0	G	.45 - .56	175	100	150
6F504	50	37				84.0	84.0		.35 - .43	225	150	175
6F055	5	3.7				77.5	78.5		5.8 - 7.2	25	15	20
6F075	7.5	5.5				80.0	80.0		3.6 - 4.4	30	20	25
6F105	10	7.5				82.5	82.5		2.8 - 3.5	40	25	30
6F155	15	11				83.5	83.5		1.9 - 2.4	60	30	45
6F205	20	15				83.0	83.0		1.4 - 1.7	80	45	60
6F255	25	19		84.0	84.0	1.0 - 1.3	90	60	80			
6F305	30	22		84.5	84.5	.83 - 1.0	110	70	90			
6F405	40	30	85.0	85.0	.64 - .79	150	90	125				
6F505	50	37	84.0	84.0	.53 - .71	175	100	150				

\* Same motors with voltage change device

6" - 8" Encapsulated Submersible Motors

**MOTOR DATA**

Part No.	Rating		Phase	Volts	% Efficiency		KVA Code	Winding		Fuse Sizing Based on NEC		
	HP	kW			FL	SF		Main Resistance (BL-Y)	Start Resistance (R-Y)	Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker Size
6F051	5	3.7	1	230	74.5	75.5	E	.54-.67	1.7-2.1	80	50	70
6F071	7.5	5.5			77.0	77.5	F	.36-.44	.76-.94	125	80	110
6F101	10	7.5			76.5	76.5	E	.25-.31	.69-.85	175	90	125
6F151	15	11			81.5	81.5	E	.22-.28	.61-.75	225	150	200

Part No.	Rating		Volts	% Efficiency		KVA Code	Line-Line Resistance (Ohms)	Fuse Sizing Based on NEC		
	HP	kW		FL	SF			Standard Fuse	Dual Element Time Delay Fuse	Circuit Breaker
86F504	50	37	460	85.5	86.0	K	.19-.24	250	175	225
86F604	60	45		85.5	86.0		.17-.21	350	200	250
8F504	50	37		85.5	86.0		.19-.24	250	175	225
8F604	60	45		85.5	86.0		.17-.21	350	200	250
8F754	75	56		86.5	86.5		.12-.15	400	225	350
8F1004	100	75		87.5	87.5		.08-.11	500	300	450
8F1254	125	93		84.5	85.0		.06-.08	700	400	600
8F1504	150	112		84.5	85.0		.04-.06	800	450	700
86F505	50	37	575	85.5	86.0	K	.32-.39	225	125	175
86F605	60	45		85.5	86.0		.26-.32	250	150	200
8F505	50	37		85.5	86.0		.32-.39	225	125	175
8F605	60	45		85.5	86.0		.26-.32	250	150	200
8F755	75	56		86.5	86.5		.20-.25	350	200	250
8F1005	100	75		87.5	87.5		.16-.20	400	250	350
8F1255	125	93		84.5	85.0		.10-.13	600	350	450
8F1505	150	112		84.5	85.0		.08-.10	700	400	500

\* Maximum water temperature 35°C / 95°F

**MOTOR LEAD LENGTH**

**6" Motor Leads**

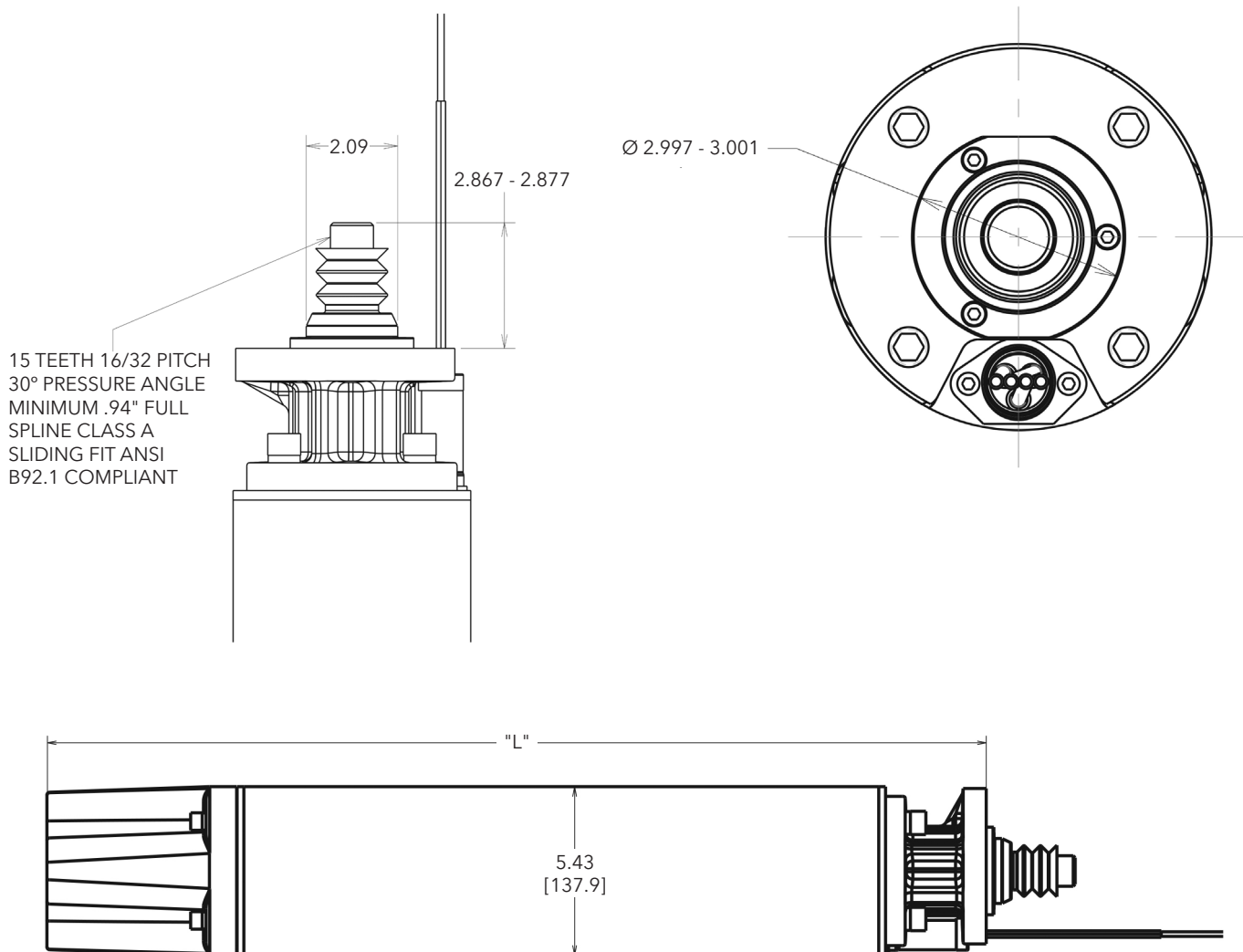
HP	Phase	Gage	Length
5-15	1	10	17'
5-25	3	10	
30-50	3	8	

**8" Motor Leads**

HP	Phase	Gage	Length
50	3	8	17'
60		6	
75		6	
100		6	
125		4	
150		2	

6" - 8" Encapsulated Submersible Motors

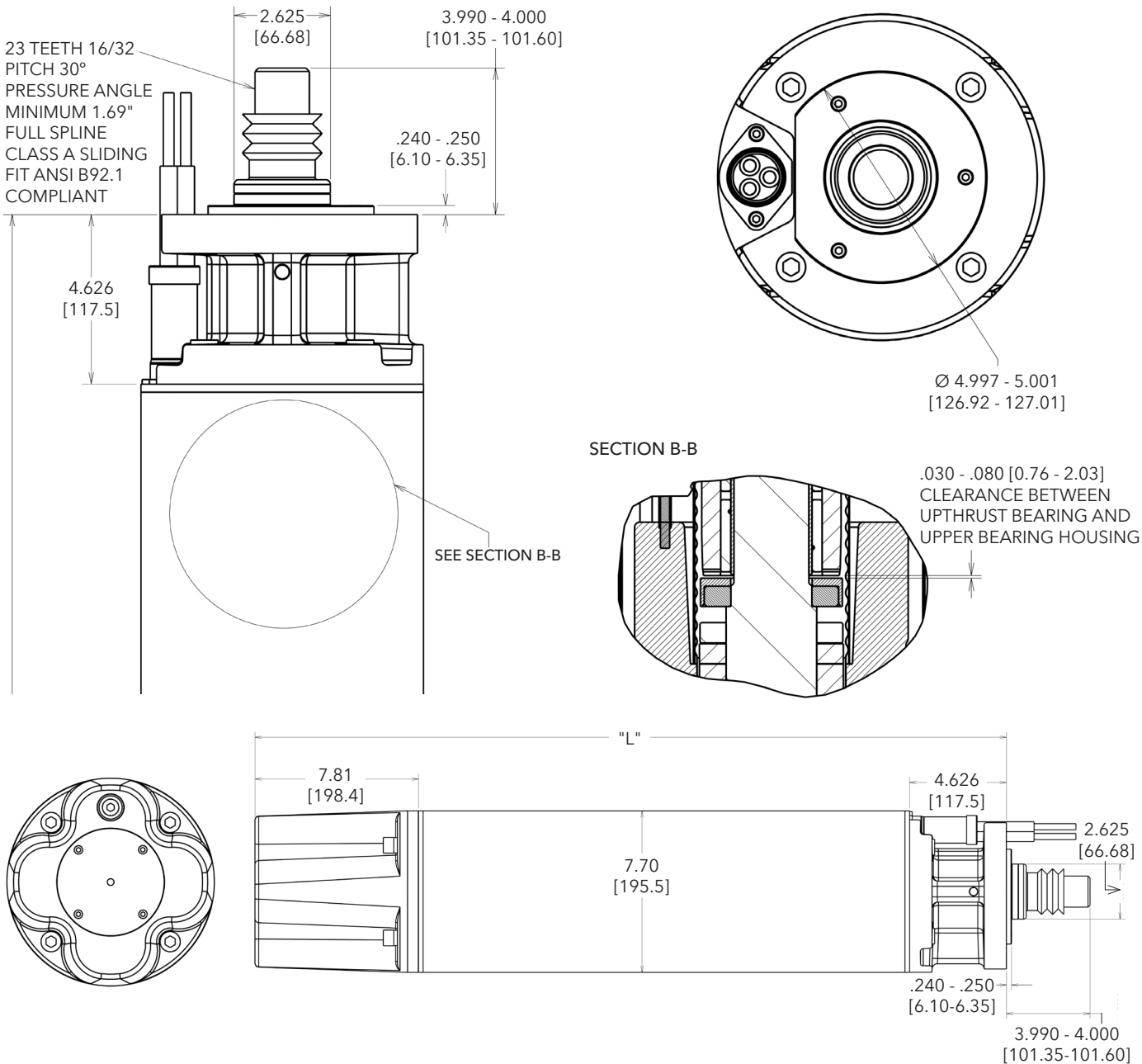
6" MOTOR DIMENSIONS AND WEIGHTS



HP	Phase	Length		Motor Weight		Ship Weight	
		Inches	mm	Lb	Kg	Lb	Kg
5	1	25.6	650	104	47.2	134	61
7.5		28.1	714	117	53.1	151	68
10		30.3	770	132	59.9	166	75
15		32.8	833	144	65.3	180	82
5	3	23	584	87	39	115	52
7.5		24.3	617	97	44	127	58
10		25.6	650	104	47	134	61
15		28.1	714	117	53	151	68
20		30.3	770	132	60	166	75
25		32.8	833	144	65	180	82
30		35.6	904	165	75	207	94
40		39.3	998	187	85	229	104
50		54.1	1374	265	120	319	145

6" - 8" Encapsulated Submersible Motors

8" MOTOR DIMENSIONS AND WEIGHTS



Motor Dia. vs Flange Dia.	HP	Length		Motor Weight		Ship Weight	
		Inches	mm	Lb	Kg	Lb	Kg
8" X 6"	50	38.9	987	330	150	407	185
	60	41.6	1057	371	168	448	203
8" X 8"	50	38.9	987	344	156	421	191
	60	41.6	1057	385	175	462	210
	75	46.6	1184	444	201	521	236
	100	58.6	1488	525	238	602	273
	125	66.9	1699	819	371	917	416
	150	75.1	1908	932	423	1030	467

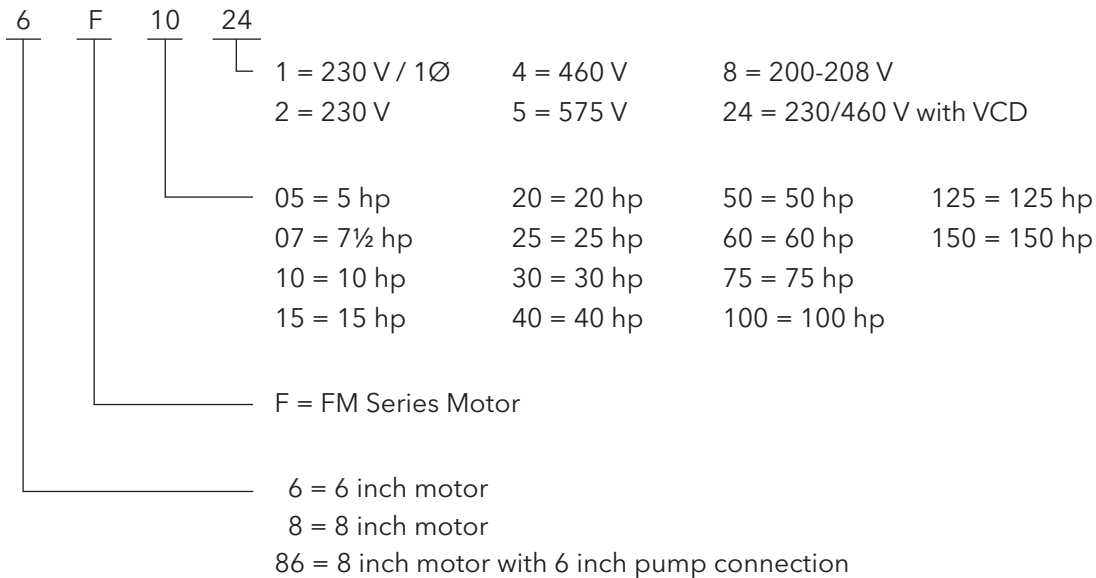
## MINIMUM FLOW RATES FOR PROPER MOTOR COOLING

Well or Sleeve Diameter (inches)	FM = 5.43" Dia. 6" FM Motor	FM = 7.70" Dia. 8" FM Motor
	GPM Required	
6	9	–
7	25	–
8	45	10
10	90	55
12	140	110
14	200	170
16	280	245

Multiply gpm by .2271 for m<sup>3</sup>/Hr.

Multiply gpm by 3.785 for l/min.

## MOTOR NOMENCLATURE



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