

8" Encapsulated HighTemp 75 SUBMERSIBLE MOTORS





Quality in the Well



8" Encapsulated Motors „HighTemp 75°C“

Standard: **SAND FIGHTER**

Submersible Motors

Quality in the Well

These 8" encapsulated motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 8" diameter or larger water wells with ambient temperature up to 75°C.

It is fitted with water lubricated radial and thrust bearings for maintenance-free operation. The motor is filled with a special FES92 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.



Product advantages:

- Up to 75°C ambient temperature
- Increase thrust capacity up to 30°C
- No cooling flow in larger wells (open reservoirs) up to 30°C ambient
- Hermetically sealed encapsulated stator
- Removable "Water Bloc" lead connector
- „Sand fighter®“ Motor with SiC-Mechanical Seal
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested. Max. storage temperature -15°C - + 60°C
- High temperature leads
- Non contaminating FES 92 filled design

Technical Specifications

- 30 ... 110 kW
- 8" NEMA double flange
- Protection: IP 68
- Starts per hour: 10
- Installation: vertical/horizontal
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: $\pm 10\%U_N$
- Motor protection: Select thermal overloads according to DIN 61947-4-1
- Insulation: Class F
- Rated ambient temperature: 75°C
- Cooling flow: min. 0,16 m/s
- Motor lead in 4m length

Options

- Other voltages
- YΔ - start (pos. of cables 90°)
- Motors complete in 316 SS
- Motor lead in 8m length

HighTemp 75°C Model numbers 50 Hz

P _N [kW]	P _N [Hp]	U _N [V]	Model Number Digit 1 – 6		Model Number Digit 7 - 11	
			DOL	YΔ	304	316SS
30	40	380 - 415	279 100	279 120	9004X	9204X
37	50	380 - 415	279 101	279 121	9004X	9204X
45	60	380 - 415	279 102	279 122	9004X	9204X
55	75	380 - 415	279 103	279 123	9004X	9204X
75	100	380 - 415	279 104	279 124	9004X	9204X
93	125	380 - 415	279 105	279 125	9004X	9204X
110	150	380 - 415	279 106	279 126	9004X	9204X

HighTemp 75°C Model numbers 60 Hz

P _N [kW]	P _{max.} [kW]	U _N [V]	Model Number Digit 1 – 6		Model Number Digit 7 - 11	
			DOL	YΔ	304	316SS
30	34,5	380	279 160	279 180	9004X	9204X
		460	279 100	279 120	9004X	9204X
		575	279 110	279 190	9004X	9204X
37	42,5	380	279 161	279 181	9004X	9204X
		460	279 101	279 121	9004X	9204X
		575	279 111	279 191	9004X	9204X
45	51,7	380	279 162	279 182	9004X	9204X
		460	279 102	279 122	9004X	9204X
		575	279 112	279 192	9004X	9204X
55	64	380	279 163	279 183	9004X	9204X
		460	279 103	279 123	9004X	9204X
		575	279 113	279 193	9004X	9204X
75	86,2	380	279 164	279 184	9004X	9204X
		460	279 104	279 124	9004X	9204X
		575	279 114	279 194	9004X	9204X
93	106,9	380	279 165	279 185	9004X	9204X
		460	279 105	279 125	9004X	9204X
		575	279 115	279 195	9004X	9204X
110	126,5	380	279 166	279 186	9004X	9204X
		460	279 106	279 126	9004X	9204X
		575	279 116	279 196	9004X	9204X



8" HighTemp 75°C Performance Datas 50 Hz

P _N [kW]	Thrust F [N]	U _N [V]	Hz	n _N [min ⁻¹]	I _N [A]	I _A [A]	η (Eff.) [%] at % load			cosφ (Pf.) at % load			T _N [Nm]	T _A [Nm]
							50	75	100	50	75	100		
30	45000	380	50	2920	66,8	474	72	78	80	0,76	0,82	0,86	98,1	265
		400	50	2930	65,5	499	72	78	80	0,70	0,78	0,83	97,8	298
		415	50	2935	65,8	518	71	77	80	0,65	0,74	0,80	97,6	324
37	45000	380	50	2930	80,7	654	75	80	83	0,76	0,83	0,87	121	354
		400	50	2940	79,6	692	74	80	82	0,70	0,79	0,84	120	398
		415	50	2945	80,1	720	73	79	82	0,65	0,75	0,81	120	429
45	45000	380	50	2935	94,3	835	78	83	85	0,75	0,82	0,87	146	413
		400	50	2945	93,1	884	77	82	84	0,69	0,78	0,84	146	465
		415	50	2950	93,0	920	76	82	84	0,64	0,74	0,81	146	501
55	45000	380	50	2920	118	876	78	82	84	0,77	0,84	0,87	183	467
		400	50	2930	115	927	78	82	84	0,72	0,81	0,85	182	526
		415	50	2935	113	965	77	82	84	0,69	0,78	0,83	182	566
75	45000	380	50	2925	155	1185	81	84	85	0,76	0,83	0,87	244	617
		400	50	2935	151	1254	80	84	86	0,71	0,80	0,85	244	695
		415	50	2940	150	1306	80	84	85	0,66	0,76	0,82	243	748
93	45000	460	60	3525	131	1246	77	82	85	0,72	0,80	0,85	233	571
		380	50	2915	191	1404	81	85	86	0,78	0,85	0,88	304	843
		400	50	2925	186	1482	81	84	86	0,73	0,80	0,86	304	949
110	45000	415	50	2930	184	1544	80	84	86	0,69	0,76	0,84	303	1021
		380	50	2925	231	1596	81	84	85	0,77	0,84	0,88	359	890
		400	50	2935	224	1690	81	84	86	0,72	0,81	0,85	358	1002
		415	50	2940	222	1760	80	84	86	0,68	0,77	0,83	357	1078

8" HighTemp 75°C Performance Datas 60 Hz

P _N [kW]	P _{max} [kW]	Thrust [N]	U _N [V]	Hz	n _N [min ⁻¹]	I _{max} [A]	I _A [A]	η (Eff.) [%] at 100% load	Line to Line Resistance ohms
30	34,5	45000	380	60	3450	78.7	616	78	.11 - .14
			460	60	3450	65.0	509	78	.16 - .19
			575	60	3450	52.0	407	78	.25 - .31
37	42,5	45000	380	60	3450	95.4	832	80	.07 - .09
			460	60	3450	78.8	687	80	.11 - .14
			575	60	3450	63.0	550	80	.18 - .22
45	51,7	45000	380	60	3450	112	1081	82	.06 - .07
			460	60	3450	92.1	893	82	.09 - .11
			575	60	3450	73.7	715	82	.13 - .16
55	64	45000	380	60	3450	141	1175	82	.05 - .06
			460	60	3450	114	922	82	.07 - .09
			575	60	3450	92	738	82	.11 - .14
75	86,2	45000	380	60	3450	181	1508	85	.04 - .05
			460	60	3450	149	1246	85	.05 - .07
			575	60	3450	119	997	85	.08 - .10
93	106,9	45000	380	60	3450	223	1793	85	.03 - .04
			460	60	3450	184	1481	85	.04 - .06
			575	60	3450	148	1185	85	.07 - .09
110	126,5	45000	380	60	3450	269	2012	84	.02 - .03
			460	60	3450	222	1662	84	.03 - .05
			575	60	3450	178	1330	84	.05 - .07

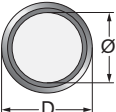
8" HighTemp 75°C DOL Motor leads* 304/316SS

(For YD motors please order 2 of them)

P _N [kW]	Jam Nut Material	L [m]	Ø	DØ [mm]	Part numbers
All Ratings	316SS	4	3 x (33,6mm ²)	max. 13,7	305 315 901
		8			305 315 902



8" HighTemp 75°C Ground leads* 304/316SS

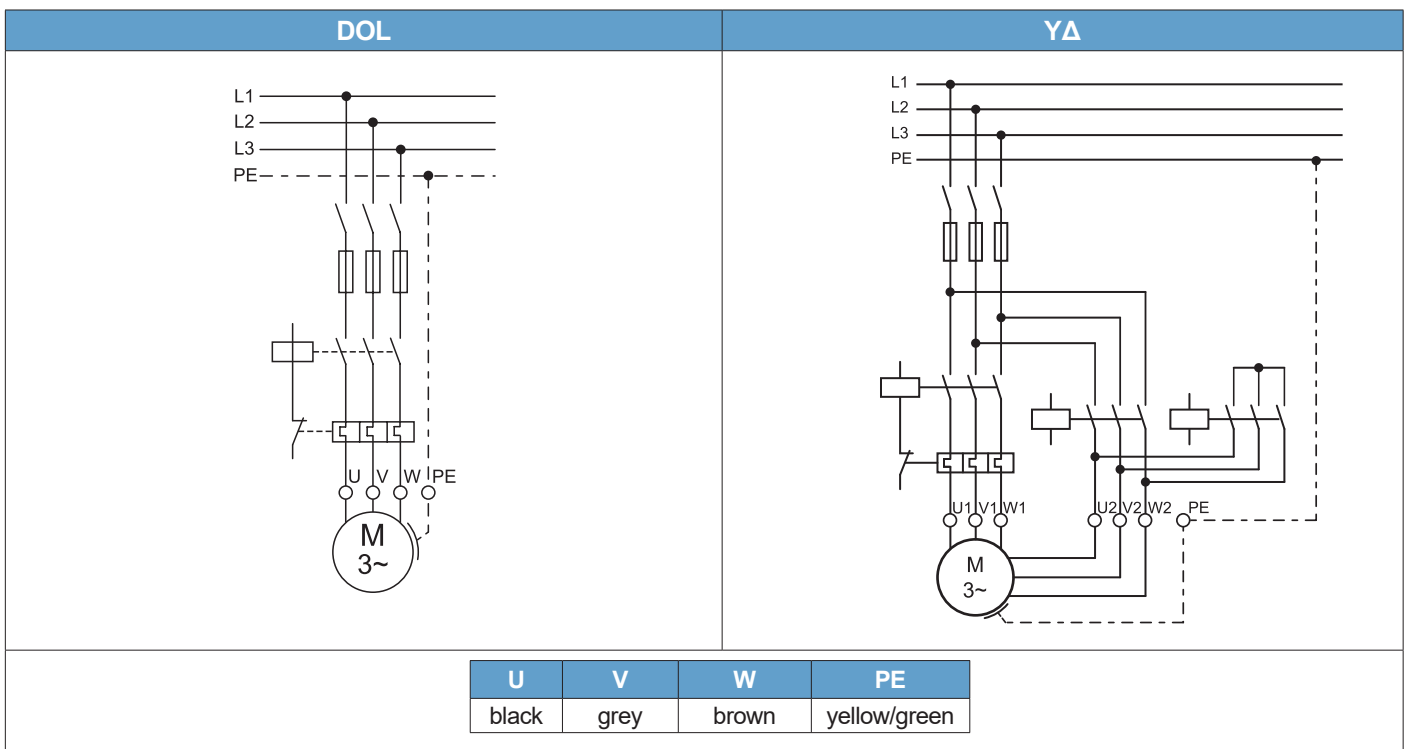
	P _N [kW]	L [m]	Ø	D [mm]	Part numbers
	All Ratings	8	1G25 mm ²	13	308 053 080

* Cables are designed for submerged operation. For air operation please consult Franklin Electric

8" HighTemp 75°C Winding Resistance 3~ 50 Hz (20°C)

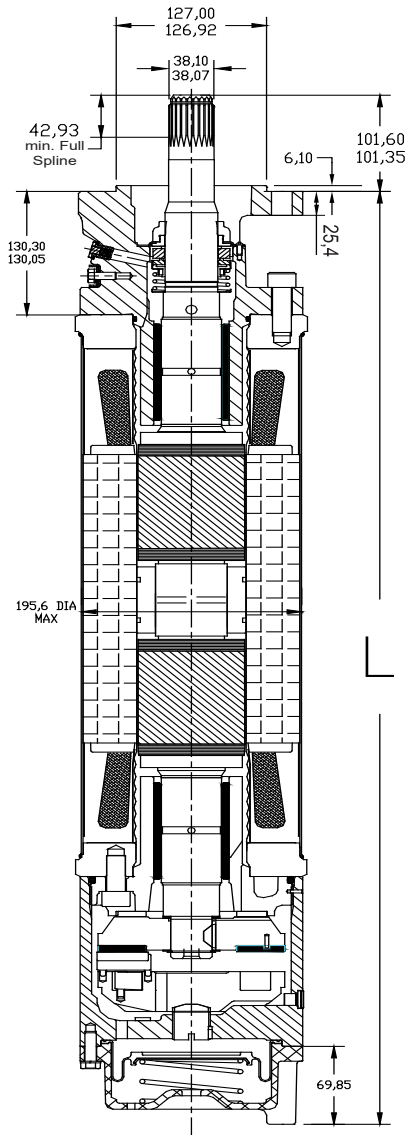
P_N kW	U_N [V]	Stator Ref.	Line to Line Resistance [Ohm]
30	380 - 415	331 659 ...	0,25 - 0,27
	500		
37	380 - 415	331 677 ...	0,17 - 0,19
	500	326 558 ...	0,09 - 0,01
45	380 - 415	331 678 ...	0,13 - 0,15
	500	326 687 ...	0,20 - 0,22
55	380 - 415	331 679 ...	0,11 - 0,12
	500		
75	380 - 415	331 680 ...	0,08 - 0,09
	500	326 512 ...	0,12 - 0,14
93	380 - 415	331 681 ...	0,14 - 0,15
	500	326 683 ...	0,10 - 0,12
110	380 - 415	331 660 ...	0,05 - 0,06
	500	326 598 ...	0,09 - 0,10

8" HighTemp 75°C Electrical Connection

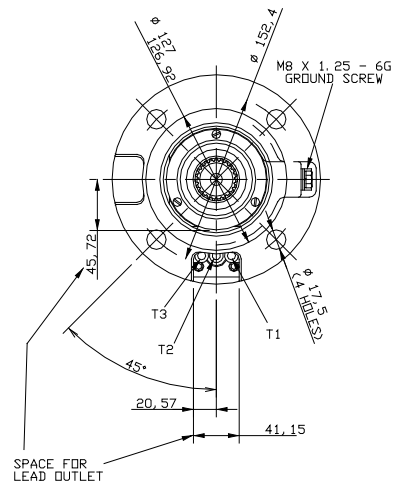




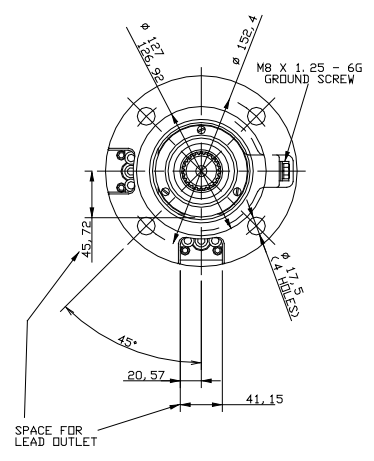
8" HighTemp 75°C 304 / 316 Design



DOL



YΔ



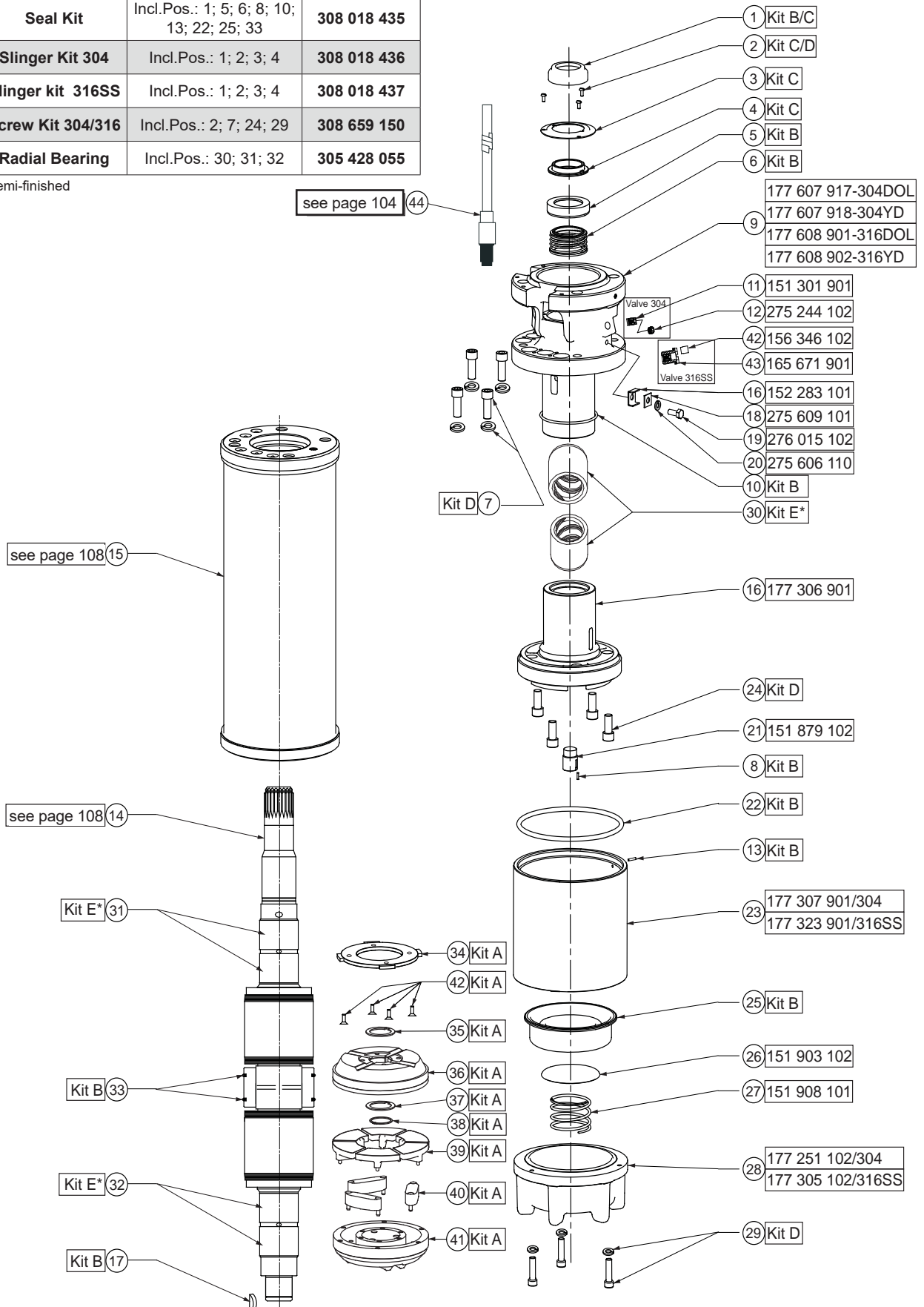
Material DIN / AISI		
	304	316 SS
Castings	Gray Iron	316 SS
Stator Shell	304 SS	316 SS
Stator Ends	Low Carbon Steel	316 SS
Shaft Extensions	17-4 SS	17-4 SS
Fasteners	300 & 400 Series SS	316 SS
Seal Cover	304SS & Sintered Bronze	316 SS
Seal	Sand Fighter™ Sealing System	Sand Fighter™ Sealing System
Diaphragm Spring	302 SS	316 SS & 25-6 MO SS
Slinger	Viton	Viton
Lead Wire (or Cable)	XLPO	XLPO
Lead Potting	Epoxy	Epoxy
Pipe Plug	316 SS	316 SS
Thrust Bearing	Carbon	Carbon

Sizes			
P _N [kW]	“L” [mm]	Shipping Weight [KG]	Motor Shipping Size [mm]
30	1138	182	228 x 430 x 1632
37	1265	207	228 x 430 x 1632
45	1455	252	228 x 447 x 1981
55	1748	318	228 x 447 x 1981
75	1976	382	228 x 447 x 2438
93	2179	421	228 x 447 x 2438
110	2408	473	228 x 447 x 2438

8" Spare parts 304/316SS HighTemp. 75°C

Kit A	Thrust Bearing	Incl.Pos.: 34; 35; 36; 37; 38; 39; 40; 41; 42	305 428 020
Kit B	Seal Kit	Incl.Pos.: 1; 5; 6; 8; 10; 13; 22; 25; 33	308 018 435
Kit C1	Slinger Kit 304	Incl.Pos.: 1; 2; 3; 4	308 018 436
Kit C2	Slinger kit 316SS	Incl.Pos.: 1; 2; 3; 4	308 018 437
Kit D	Screw Kit 304/316	Incl.Pos.: 2; 7; 24; 29	308 659 150
Kit E*	Radial Bearing	Incl.Pos.: 30; 31; 32	305 428 055

* Parts are semi-finished





8" HighTemp 75°C Replacement Stators and Rotors 50/60Hz DOL

P_N		[V] / [Hz]	Motor 304SS	Stator 304SS	Motor 316SS	Stator 316SS	Rotor
[kW]	[HP]						
30	40	380-415 / 50	2791009004X	331659902	2791009204X	331659903	575 122 919
		460 / 60					
		380 / 60					
37	50	380-415 / 50	2791019004X	331677902	2791019204X	331677903	575 122 920
		460 / 60					
		380 / 60					
45	60	380-415 / 50	2791029004X	331678902	2791029204X	331678903	575 122 921
		460 / 60					
		380 / 60					
55	75	380-415 / 50	2791039004X	331679902	2791039204X	331679903	575 122 922
		460 / 60					
		380 / 60					
75	100	380-415 / 50	2791049004X	331680902	2791049204X	331680903	575 122 923
		460 / 60					
		380 / 60					
93	125	380-415 / 50	2791059004X	331681902	2791059204X	331681903	575 122 924
		460 / 60					
		380 / 60					
110	150	380-415 / 50	2791069004X	331660902	2791069204X	331660903	575 122 918
		460 / 60					
		380 / 60					

8" HighTemp 75°C Replacement Stators and Rotors 50/60Hz YΔ


P_N		[V] / [Hz]	Motor 304SS	Stator 304SS	Motor 316SS	Stator 316SS	Rotor
[kW]	[HP]						
30	34,5	380-415 / 50	2791209004X	331659905	2791209204X	331659906	575 122 919
		460 / 60					
		380 / 60					
37	42,5	380-415 / 50	2791219004X	331677905	2791219204X	331677906	575 122 920
		460 / 60					
		380 / 60					
45	51,7	380-415 / 50	2791229004X	331678905	2791229204X	331678906	575 122 921
		460 / 60					
		380 / 60					
55	64	380-415 / 50	2791239004X	331679905	2791239204X	331679906	575 122 922
		460 / 60					
		380 / 60					
75	86,2	380-415 / 50	2791249004X	331680905	2791249204X	331680906	575 122 923
		460 / 60					
		380 / 60					
93	106,9	380-415 / 50	2791259004X	331681905	2791259204X	331681906	575 122 924
		460 / 60					
		380 / 60					
110	126,5	380-415 / 50	2791269004X	331660905	2791269204X	331660906	575 122 918
		460 / 60					
		380 / 60					

Motor Filling Liquid

Filling liquid 5 L FES92					
4" Encapsulated	→	FES93	8" Encapsulated Standard	→	FES91
6" Encapsulated Standard	→	FES91	8" Encapsulated HighTemp75	→	FES92
6" Encapsulated HighTemp90	→	FES92	6" / 8" / 10" / 12" Rew Motors 6" / 8" Rew PM Motors		FES93



**Part number:
308 353 941**

FES91	FES92	FES93
		

Motor Filling Kit

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).

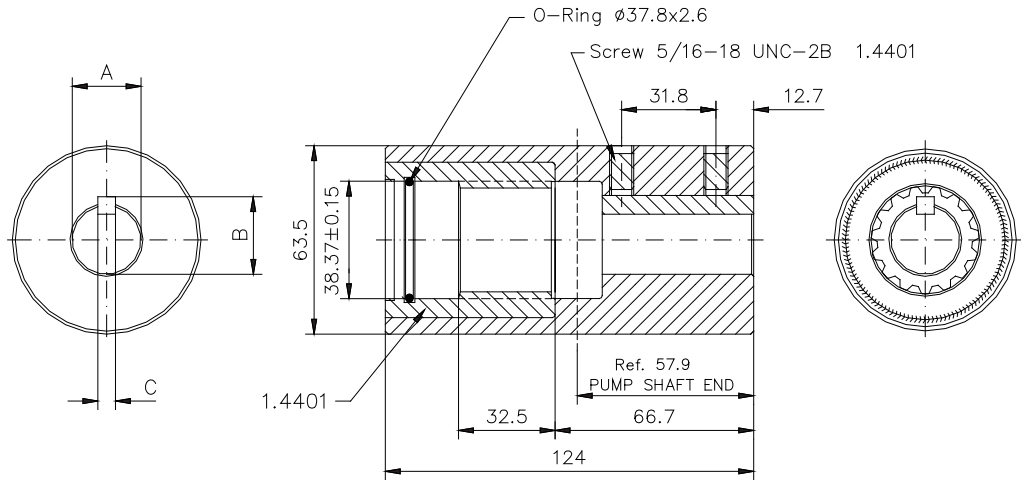
Part number: 308 726 103





8" Motor-Pump Couplings

**Outline
Drawing:**



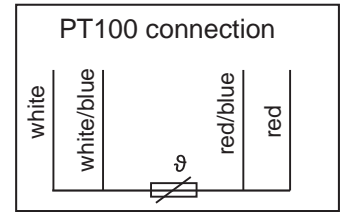
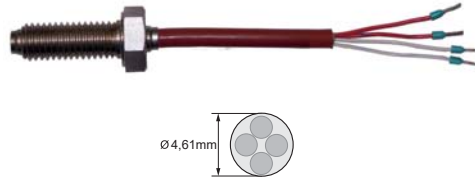
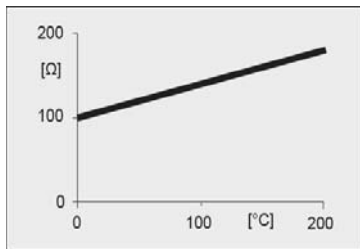
**Ordering
information**

Part No.	Coupling Material DIN / AISI	Dimension A (mm) Max. / Min.	Dimension B (mm) Max. / Min.	Dimension C (mm) Max. / Min.
156 563 901	1.4005 (304)	25,425 / 25,413	28,27 / 28,17	6,38 / 6,32
156 563 921	1,4404 (316SS)			
156 563 902	1.4005 (304)	30,188 / 30,175	33,73 / 33,63	7,96 / 7,91
156 563 922	1,4404 (316SS)			
156 563 903	1.4005 (304)	31,775 / 31,763	35,36 / 35,26	7,96 / 7,91
156 563 923	1,4404 (316SS)	38,125 / 38,113		
156 563 904	1.4005 (304)	38,125 / 38,113	42,37 / 42,27	9,55 / 9,50
156 563 924	1,4404 (316SS)	38,125 / 38,113		
156 563 905	1.4005 (304)	19,085 / 19,063	20,70 / 20,52	4,84 / 4,79
156 563 906	1.4005 (304)	30,188 / 30,175	33,02 / 32,92	6,38 / 6,32
156 563 926	1,4404 (316SS)	30,188 / 30,175	33,02 / 32,92	6,38 / 6,32
156 563 907	1.4005 (304)	22,250 / 22,238	24,54 / 24,36	6,43 / 6,38
156 563 908	1.4005 (304)	22,024 / 22,011	25,53 / 25,32	8,03 / 7,98
156 563 931	1,4404 (316SS)			
156 563 929	1,4404 (316SS)	42,888 / 42,850	47,12 / 47,04	9,55 / 9,50
156 563 909	1.4005 (304)	25,024 / 25,011	28,70 / 28,30	8,03 / 7,98
156 563 932	1,4404 (316SS)			



6" / 8" Encapsulated PT100 HighTemp

Its ohmic resistance is proportional to the sensed temperature. The FE field replaceable PT100 is potted into a screw holding the upper end bell. Because of his remote position relative to the windings, the sensing relay should be adjusted according to the below table.



To install the PT100 sensor bolt, remove the top end bell bolt that is opposite of the lead and replace it with the PT100 screw. Tighten the sensor bolt to the torque values shown below.

6" PT100 - 4kW- 30kW 54- 61 Nm
 8" PT100 - 30kW- 110kW 115 - 122 Nm

Franklin Electric does not offer the required sensing device, it is available from speciality dealers.

Conditions	Temp. of the water without motor operation	Max. Trip temp. / Resistance Setting
Motor operating at nameplate output with 0.16 m/sec flow past the motor	50°C	60°C
	60°C	70°C
	70°C	80°C
	75°C	85°C
	80°C	90°C
	90°C	100°C

6" PT100 HighTemp90

Kit Number	Motor Type	Wire Insul.	max. Medium Temp.	Lead (mm ²)	Lead length (m)
156 098 111K	4 - 30kW	Silicon	90°C	4X0,35	10
156 098 112K		Silicon	90°C	4X0,35	130

8" PT100 HighTemp75

Kit Number	Motor Type	Wire Insul.	max. Medium Temp.	Lead (mm ²)	Lead length (m)
156 098 116K	30 - 110kW (Type 1)	Silicon	90°C	4X0,35	10
156 098 117K		Silicon	90°C	4X0,35	130

Notes

A large grid area for taking notes, consisting of approximately 25 columns and 35 rows of small squares.



Franklin Electric

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