

12" REWINDABLE MOTOR

Rewindable motors with best class winding wires

**SAND
FIGHTER**

WATER WELL
WW
CI PC / 304SS

OPTIONAL
STAINLESS STEEL
316



FEATURES & BENEFITS

- 12" double flange mounting design
- Factory filled with Franklin's FES93 motor fill solution, FES93 for frost protection down to -15 °C storage temperature
- High capacity Kingsbury type liquid lubricated thrust bearing and radial bearings for 100 % maintenance free operation
- Pressure-equalizing diaphragm
- Stainless Steel keyed shaft
- SandFighter™ sealing system with SIC mechanical seal and sand slinger
- High efficiency electrical design for low operation costs
- Drinking water approvals

STANDARD SPECIFICATION

- Ratings: 185 - 400 kW
- Max. storage temperature - 15 °C to + 60 °C
- Nominal ambient temperature: 30 °C with 0.5 m/s cooling flow
- Standard Voltage:
380 - 415 V (50 Hz), 460 V (60 Hz), 500 V (50 Hz), 1000 V (50 Hz)
- Voltage Tolerance:
50 Hz: -10 % / +6 % U_N [380 - 415 V = (380 - 10 %) - (415 + 6 %)]
60 Hz: $\pm 10 \% U_N$
- Protection IP68
- Motor protection: DIN 61947-4-1
- Frequency of starts: 5 starts/ hour (with min. 3 minutes resting time), equally distributed
- DOL / Y - start (pos. of cables 90 °)
- Motor lead length: 6 m
- Vertical and horizontal operation, shaft upwards
- Rotation counter clock wise facing shaft end (rotation reversible)
- All motors with factory installed leads

OPTIONS

- Higher-graded materials: 316SS
- Special voltages
- Retrofittable PT 100 temperature sensor
- 80 kN Thrust load version
- Special lead lengths on request



12" Rewindable Motors - Model Numbers*

P _N [kW]	U _N [V] / [Hz]	Model Numbers Digit 1 – 6		Model Numbers Digit 7 – 10			
		DOL	YΔ	304	316SS	High Thrust	
						304	316SS
185	380 - 415 / 50 460 / 60	265 610	265 710	5011	6011	5111	6111
	500 / 50	265 620	265 790				
	1000 / 50	265 510					
220	380 - 415 / 50 460 / 60	265 611	265 711	5011	6011	5111	6111
	500 / 50	265 621	265 791				
	1000 / 50	265 511					
250	380 - 415 / 50 460 / 60	265 612	265 712	5011	6011	5111	6111
	500 / 50	265 622	265 792				
	1000 / 50	265 512					
300	380 - 415 / 50 460 / 60	265 614	265 714	5011	6011	5111	6111
	500 / 50	265 624	265 794				
	1000 / 50	265 514					
350	380 - 415 / 50 460 / 60		265 716	5011	6011	5111	6111
	500 / 50	265 626	265 796				
	1000 / 50	265 516					
400	380 - 415 / 50 460 / 60		265 717	5011	6011	5111	6111
	500 / 50	265 627	265 797				
	1000 / 50	265 517					

* VFD operation is only allowed up to 460V supply voltage, for higher voltages please consult Franklin Electric Europa GmbH


12" Rewindable Motors - Performance Data 50Hz

P _N [kW]	Thrust F [N]	U _N [V]	n _N [min ⁻¹]	I _N [A]	I _A /I _N [A]	η (Eff.) [%] at % load			cos φ (PF) at % load			T _N [Nm]	T _A /T _N [Nm]
						50	75	100	50	75	100		
185	60 000	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
		415	2950	344	5,76	87	88	88	0,76	0,84	0,84	599	0,97
		500	2940	286	5,30	87	88	87	0,79	0,85	0,87	600	0,90
		1000	2945	141	5,30	87	88	87	0,79	0,85	0,86	600	0,90
220	60 000	380	2930	448	4,79	88	88	87	0,83	0,87	0,88	716	0,77
		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
		500	2940	334	5,40	88	89	88	0,80	0,86	0,88	714	0,84
		1000	2945	177	5,40	88	89	88	0,80	0,86	0,87	714	0,84
250	60 000	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
		415	2940	471	5,6	88	89	88	0,76	0,83	0,76	812	1,02
		500	2935	385	5,2	88	89	88	0,80	0,85	0,88	812	0,95
		1000	2930	193	5,2	88	89	88	0,80	0,85	0,85	812	0,95
300	60 000	380	2940	586	4,9	88	89	87	0,87	0,90	0,88	974	0,83
		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
		500	2945	435	5,6	88	89	88	0,85	0,89	0,88	971	0,94
		1000	2945	217	5,6	88	89	88	0,85	0,89	0,88	971	0,94
350	60 000	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
		500	2930	541	5,2	88	88	87	0,82	0,87	0,87	1137	0,90
		1000	2930	270	5,2	88	88	87	0,82	0,87	0,87	1137	0,90
400	60 000	380	2920	795	4,2	90	90	89	0,85	0,88	0,87	1306	0,73
		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
		500	2930	600	4,8	90	90	90	0,82	0,87	0,87	1301	0,84
		1000	2935	289	4,8	90	90	90	0,82	0,87	0,87	1301	0,84

12" Rewindable Motors - Performance Data 60Hz


P _N [kW]	P _{max} [kW]	Thrust F [N]	U _N [V]	n _N [min ⁻¹]	I _{max} [A]	I _A /I _N [A]	η (Eff.) [%] at % load			cos φ (PF) at % load			T _{max} [Nm]	T _A /T _N [Nm]
							50	75	100	50	75	100		
185	212	60 000	460	3540	339						0,87			
220	252	60 000	460	3530	425	5,44	90	91	91	0,81	0,84	0,86	776	0,95
250	287	60 000	460	3530	462	5,44	90	91	91	0,81	0,84	0,84	776	0,95
300	345	60 000	460	3530	533	5,85	90	91	91	0,85	0,89	0,89	928	0,94
350	402	60 000	460	3530	647	5,13	89	90	90	0,83	0,87	0,88	1085	0,90
400	460	60 000	460	3520	745	4,79	89	90	90	0,84	0,87	0,87	1243	0,84

12" Rewindable Motors - Motor Leads*

Lead	Ø [mm ²]	D [mm]	Lengths [m]	Motor [kW]			Qty.	Lead Kit (3 Single Leads)	Lead seal Kit.
				380 - 415V / 50Hz 460V / 60Hz	500V / 50Hz	1000V / 50Hz			
	1X70	20,7	6	185 - 300 DOL 300 - 400 YΔ**	185 - 400 DOL	-	DOL 1 YΔ 2	308 711 100	308 661 120
	1X35	15,3	6	185 - 250 YΔ**	185 - 400 YΔ**	185 - 400 DOL	DOL 1 YΔ 2	308 711 101	308 661 121

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

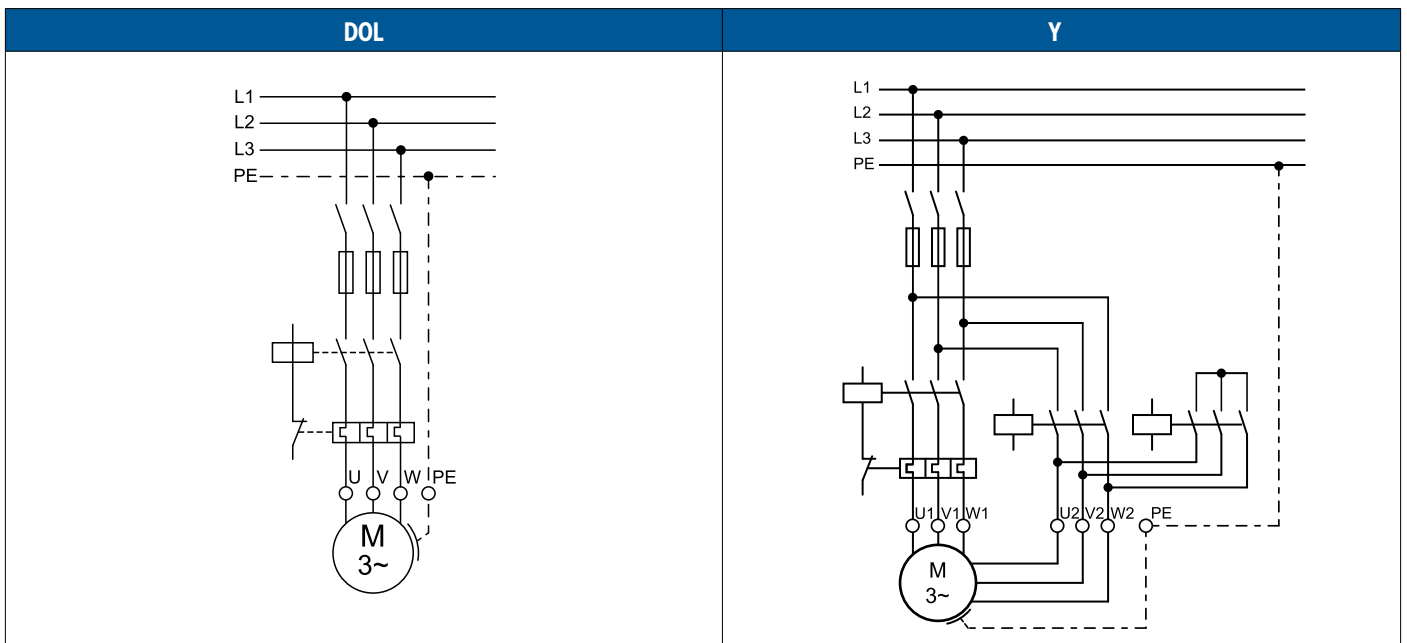
Ground lead* (optional)	Ø [mm ²]	D Ø [mm]	Lengths [m]	St.	Mod.-Nr.
	1G25	13,0	8	1	308 053 080
	1G35	15,3	6	1	308 056 060

*only for 304SS and 316SS

Lead opening seal kit	250 - 400 kW - DOL / YΔ	308 661 122
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Cables are designed for submerged operation. For air operation please consult Franklin Electric.

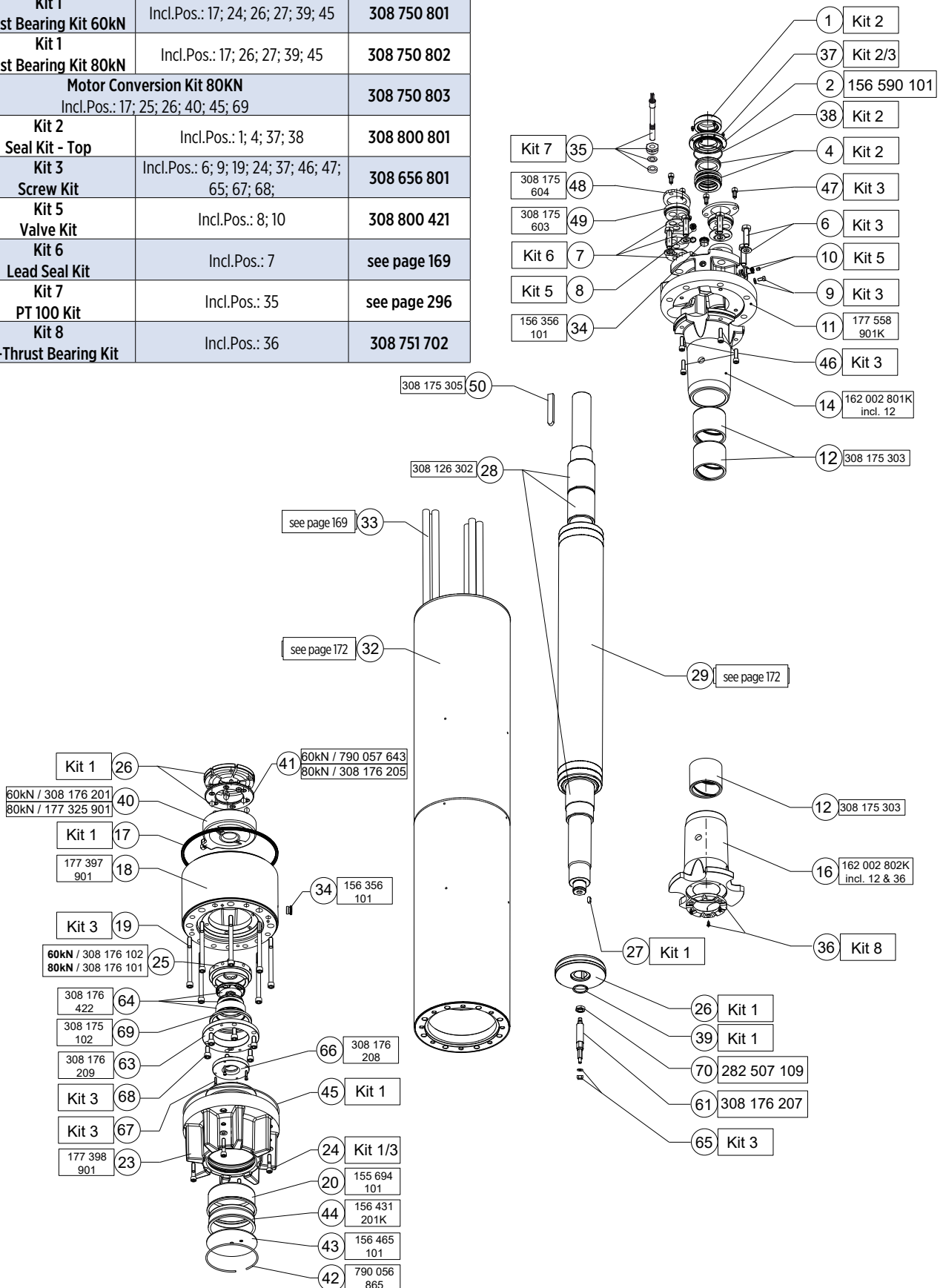
Electrical Connection



U	V	W	PE
brown	grey	black	yellow/green

12" Rewindable Spare Parts WW

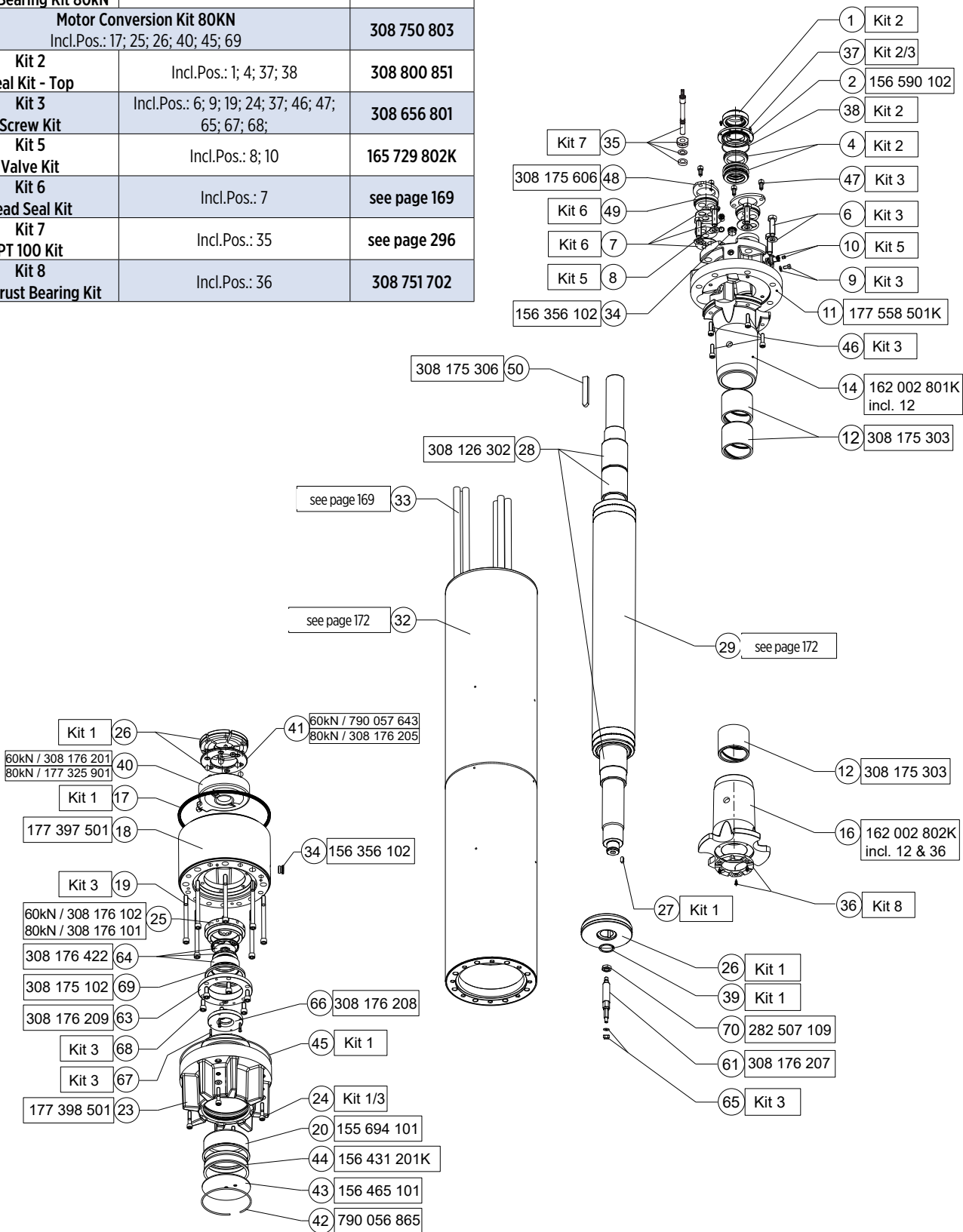
Kit 1 Thrust Bearing Kit 60kN	Incl.Pos.: 17; 24; 26; 27; 39; 45	308 750 801
Kit 1 Thrust Bearing Kit 80kN	Incl.Pos.: 17; 26; 27; 39; 45	308 750 802
Motor Conversion Kit 80kN Incl.Pos.: 17; 25; 26; 40; 45; 69		308 750 803
Kit 2 Seal Kit - Top	Incl.Pos.: 1; 4; 37; 38	308 800 801
Kit 3 Screw Kit	Incl.Pos.: 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	see page 169
Kit 7 PT 100 Kit	Incl.Pos.: 35	see page 296
Kit 8 Up-Thrust Bearing Kit	Incl.Pos.: 36	308 751 702





12" Rewindable Spare Parts 316SS

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	308 800 851
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	165 729 802K
Kit 6 Lead Seal Kit	Incl.Pos.: 7	see page 169
Kit 7 PT 100 Kit	Incl.Pos.: 35	see page 296
Kit 8 Up-Thrust Bearing Kit	Incl.Pos.: 36	308 751 702



WW/316SS Stator and Rotor Model Number (380 - 415 Volts / 50Hz)

P _N [kW]	U _N / f [V] / [Hz]	Stator (incl. Winding and 6 m motor lead)				Rotor
		DOL PVC	DOL PE2/PA	YΔ PVC	YΔ PE2/PA	
185	380 - 415 / 50 460 / 60		327 013 902K		326 013 952K	176 381 501K
220	380 - 415 / 50 460 / 60		326 639 902K		326 639 952K	176 381 501K
250	380 - 415 / 50 460 / 60		326 639 902K		326 639 952K	176 381 501K
300	380 - 415 / 50 460 / 60		326 640 902K		326 640 952K	176 381 502K
350	380 - 415 / 50 460 / 60				326 696 952K	176 381 504K
400	380 - 415 / 50 460 / 60				326 641 952K	176 381 503K

Insulation Standard Windings (380 – 415 Volts 50 Hz)

P_N [kW]	Mod.-No. Winding- kits	Turns per coil	Wire diameter [mm]	Type of Isolation	Group connection	Total Wire length [m]	Resistance coil [Ω]	Resistance Y_{Δ} (U1-U2) [Ω]	Resistance DoI (U1-V1) [Ω]
185	327 013 999	6+6+6+6	2,6 / 3,9 (2GrII)	PE2/PA	Parallel Delta	794	0,1061		
220	326 639 999	5+6+5+6	2,7 / 4,1 (2GrII)	PE2/PA	Parallel Delta	770	0,0235		
250	326 639 999	5+6+5+6	2,7 / 4,1 (2GrII)	PE2/PA	Parallel Delta	770	0,0235		
300	326 640 999	4+5+4+5	3,0 / 4,5 (2GrII)	PE2/PA	Parallel Delta	720	0,0178		
350	326 696 999	4+4+4+5	3,0 / 4,5 (2GrII)	PE2/PA	Parallel Delta	706	0,0175		
400	326 641 999	4+4+4+4	3,4 / 5,0 (2GrII)	PE2/PA	Parallel Delta	700	0,0133		

Insulation Standard Windings (500 Volts 50 Hz)

P_N [kW]	Mod.-No. Winding- kits	Turns per coil	Wire diameter [mm]	Type of Isolation	Group connection	Total Wire length [m]	Resistance coil [Ω]	Resistance Y_{Δ} (U1-U2) [Ω]	Resistance DoI (U1-V1) [Ω]
185	326 *** 999								
220	326 701 999	7+7+7+7	2,5 / 3,8 (2GrII)	PE2/PA	Parallel Delta	889	0,0244		
250	326 702 999	6+7+7+7	2,5 / 3,8 (2GrII)	PE2/PA	Parallel Delta	924	0,0331		
300	326 703 999	5+6+5+6	2,7 / 4,1 (2GrII)	PE2/PA	Parallel Delta	861	0,0265		
350	326 697 999	5+5+5+6	2,7 / 4,1 (2GrII)	PE2/PA	Parallel Delta	856	0,0263		
400	326 704 999	5+5+5+5	3,0 / 4,5 (2GrII)	PE2/PA	Parallel Delta	848	0,0221		

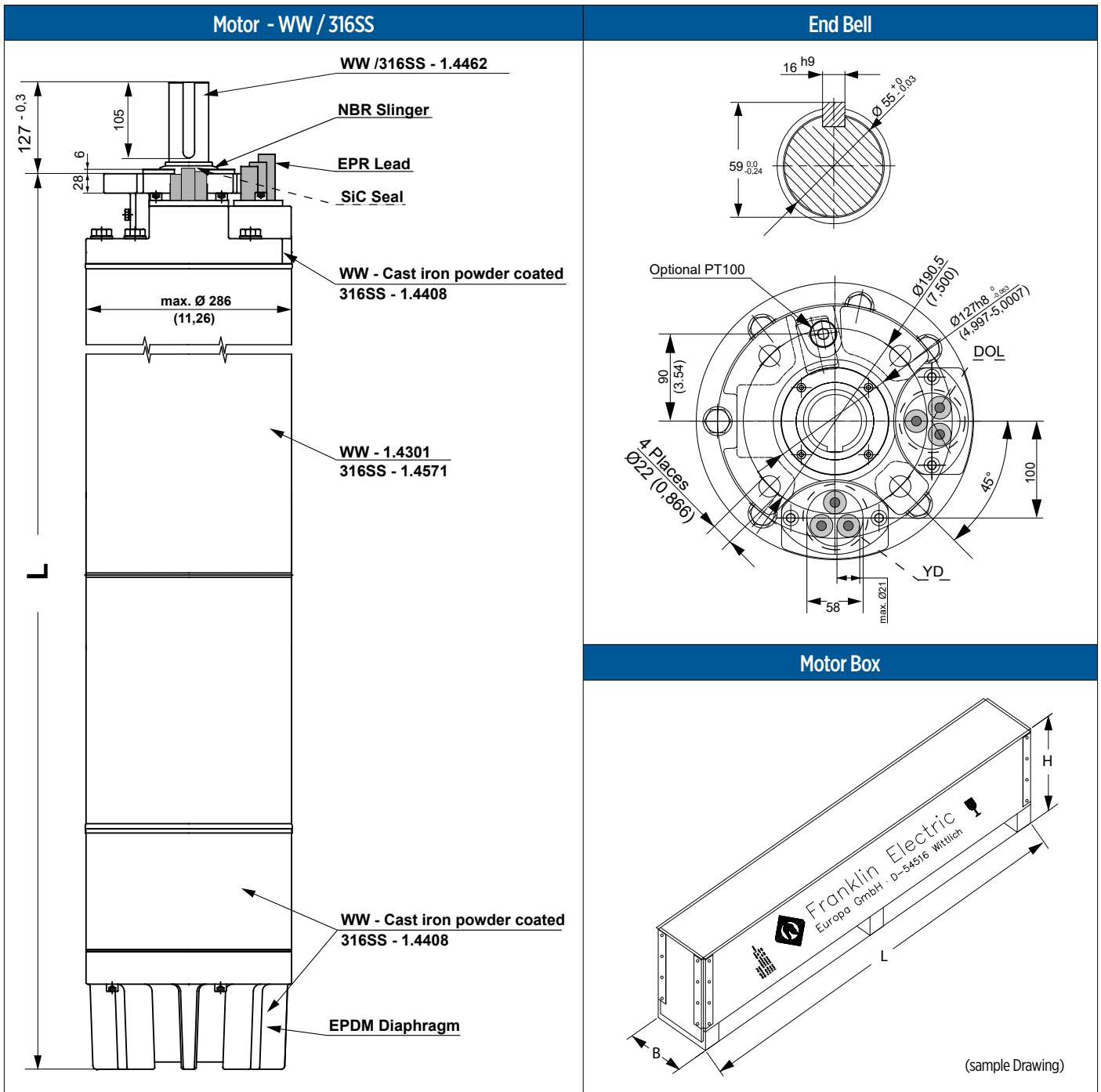
Insulation Standard Windings (1000 Volts 50 Hz)

P_N [kW]	Mod.-No. Winding- kits	Turns per coil	Wire diameter [mm]	Type of Isolation	Group connection	Total Wire length [m]	Resistance coil [Ω]	Resistance Y_{Δ} (U1-U2) [Ω]	Resistance DoI (U1-V1) [Ω]
185	327 016 999	15+15+15+15	2,3 / 3,5	PE2/PA	Parallel Delta	1138	0,7836		0,221
220	326 928 999	14+14+14+14	2,5 / 3,8	PE2/PA	Parallel Delta	902	0,5251		0,177
250	326 699 999	13+14+13+14	2,5 / 3,8	PE2/PA	Parallel Delta	888	0,1290		0,165
300	326 700 999	11+11+11+11	2,7 / 4,1	PE2/PA	Parallel Delta	825	0,1024		0,135
350	326 698 999	10+11+10+11	2,7 / 4,1	PE2/PA	Parallel Delta	820	0,1017		0,136
400	326 674 999	10+10+10+10	3,0 / 4,5	PE2/PA	Parallel Delta	812	0,0815		0,106

Insulation resistant (20°C / 500 VDC)

New motor without drop cable	400 > M Ω
Used motor without drop cable	20 > M Ω
New motor with drop cable	4 > M Ω
Used motor with drop cable	1 M Ω

12" Motor Design 304 / 316SS



P _N [kW]	Motor Lengths	Motor Weights		Motor Shipping Size [mm]		
	L [mm]	Motor [kg]	incl. Pack [kg]	B	H	L
185	1893	663	743	396	572	2296
220	1893	663	743			
250	1893	663	743			
300	2043	726	806	396	572	2596
350	2143	769	849			
400	2193	794	874			