

4" 3-WIRE HIGH THRUST MOTOR

OPTIONAL

STAINLESS STEEL
304

STAINLESS STEEL
316

FEATURES & BENEFITS

- NEMA mounting design
- Stainless steel splined shaft
- StatorShield™ - Franklin encapsulation system
- Factory filled with Franklin's FES93 motor fill solution
- Max. storage temperature -15°C - + 50°C
- Liquid lubricated radial bearings and High capacity Kingsbury type thrust bearing for 100 % maintenance free operation
- Field replaceable lead using Franklin's exclusive Water Bloc technology
- optional Franklin Electric 3-wire control boxes for maximum system performance, protection and warranty
- Pressure-equalizing diaphragm
- High efficiency electrical design for low operation costs
- Drinking water approvals
- Suitable for use in water with increased salinity (Brackish water version optional)

Pollution Recovery version:

- Fluorelastomere (Viton®) rubber parts
- Special Polyurethane (PUR) lead assemblies
- 304SS (316SS Stator) graded stainless steel as standard



SPECIFICATION

- Rating: 2,2 - 3,7 kW, 1~
- Voltage: 1~ - 220-230 V / 50 Hz, 230 V / 60 Hz
- Thrust load: 6,5 kN
- Nominal ambient temperature: 30 °C with 0.08 m/s cooling flow
- Voltage tolerance: -10 % / +6 % (50 Hz), ±10 % (60 Hz)
- Protection IP68 and insulation class B
- Frequency of starts: 20 starts/ hour (with min. 3 minutes resting time)
- motors with factory installed leads 2,5 m (optional)
- Installation orientation: Vertical / horizontal (shaft end heightened)
- Rotation counter clock wise facing shaft end (Rotation CW upon request)

OPTIONS

- Built in lightning arrestors
- Various cable lengths
- Motors with factory-installed lead in single packing
- Motor complete in 316SS with SiC seal
- Special voltages



Hydrodynamic liquid lubricated radial bearings

100 % maintenance free operation

StatorSHIELD™ - Franklin encapsulation system

Franklin Electric encapsulated motors are equipped with hermetically-sealed windings. The Anti track stator resin mechanically supports the winding and provides fast heat dissipation.

Kingsbury type thrust bearing

High capacity 4 kN Kingsbury type thrust bearing for 100 % maintenance free operation

Pressure-equalizing diaphragm



4" SUPER STAINLESS HIGH THRUST MOTOR - 3-WIRE DESIGN

MOTOR MODEL NUMBERS 50 HZ - 3-WIRE DESIGN

P _N [kW]	U _N [V]	Digit 1 - 6	Digit 7 - 10							
			304SS Standard		304SS Pollution Recovery		316SS Standard		316SS Pollution Recovery	
			Motors in single pack, with Lead)*	Motors in 40 motors packing unit	Motors in single pack, with Lead)*	Motors in 40 motors packing unit	Motors in single pack, with Lead)*	Motors in 40 motors packing unit	Motors in single pack, with Lead)*	Motors in 40 motors packing unit
2,2	220-230	224 752	3421L	3421	3422L	3422	3521L	3521L	3522L	3522
3,7	220-230	224 753	3421L	3421	3422L	3422	3521L	3521L	3522L	3522

* lead lengths motors: „L“ with 2.50 m pre-mounted cable

MOTOR MODEL NUMBERS 60 HZ - 3-WIRE DESIGN

P _N [kW]	P _{max.} [kW]	U _N [V]	Digit 1-6	Digit 7-10			
				304		316 SS	
				Motors in 40 motors packing unit	Motors in single pack, with Lead)*	Motors in 40 motors packing unit	Motors in single pack, with Lead)*
2,2	2,5	230	224 ---	3421	3421L	3521	3521L
3,7	4,2	230	224 703	3421	3421L	3521	3521L

* lead lengths motors: „L“ with 2.50 m pre-mounted cable

MOTOR PERFORMANCE DATA 50 HZ - 3-WIRE DESIGN

P _N [kW]	Thrust F [N]	U _N [V]	n _N [min ⁻¹]	I _N [A]	I _A [A]	η (Eff.) [%] at % load			cos φ (Pf.) at % load			T _N [Nm]	T _A [Nm]
						50	75	100	50	75	100		
2,2	6500	220	2875	15,2	71,2	67	73	74	0,76	0,86	0,91	7,3	13,8
		230	2885	15,3	74,5	63	70	73	0,69	0,80	0,88	7,3	15,0
3,7	6500	220	2880	22,5	97	72	77	78	0,98	0,99	0,99	12,3	16,1
		230	2895	21,4	101	70	76	77	0,97	0,98	0,99	12,2	17,6

MOTOR PERFORMANCE DATA 60 HZ - 3-WIRE DESIGN

P _N [kW]	P _{max} [kW]	Thrust F [N]	U _N [V]	n _N [min ⁻¹]	I _N [A]	I _A [A]	η (Eff.) [%] at % load			cos φ (Pf.) at % load			T _N [Nm]	T _A [Nm]
							50	75	100	50	75	100		
2,2	2,5	6500	230	3440	15,1	68	66	73	75	0,98	0,98	0,98	7,0	11,7
3,7	4,2	6500	230	3450	24,5	102	70	76	77	0,98	0,99	0,99	11,7	16,1

WINDING RESISTANCE DATA 50 HZ 220-230V - 3-WIRE DESIGN

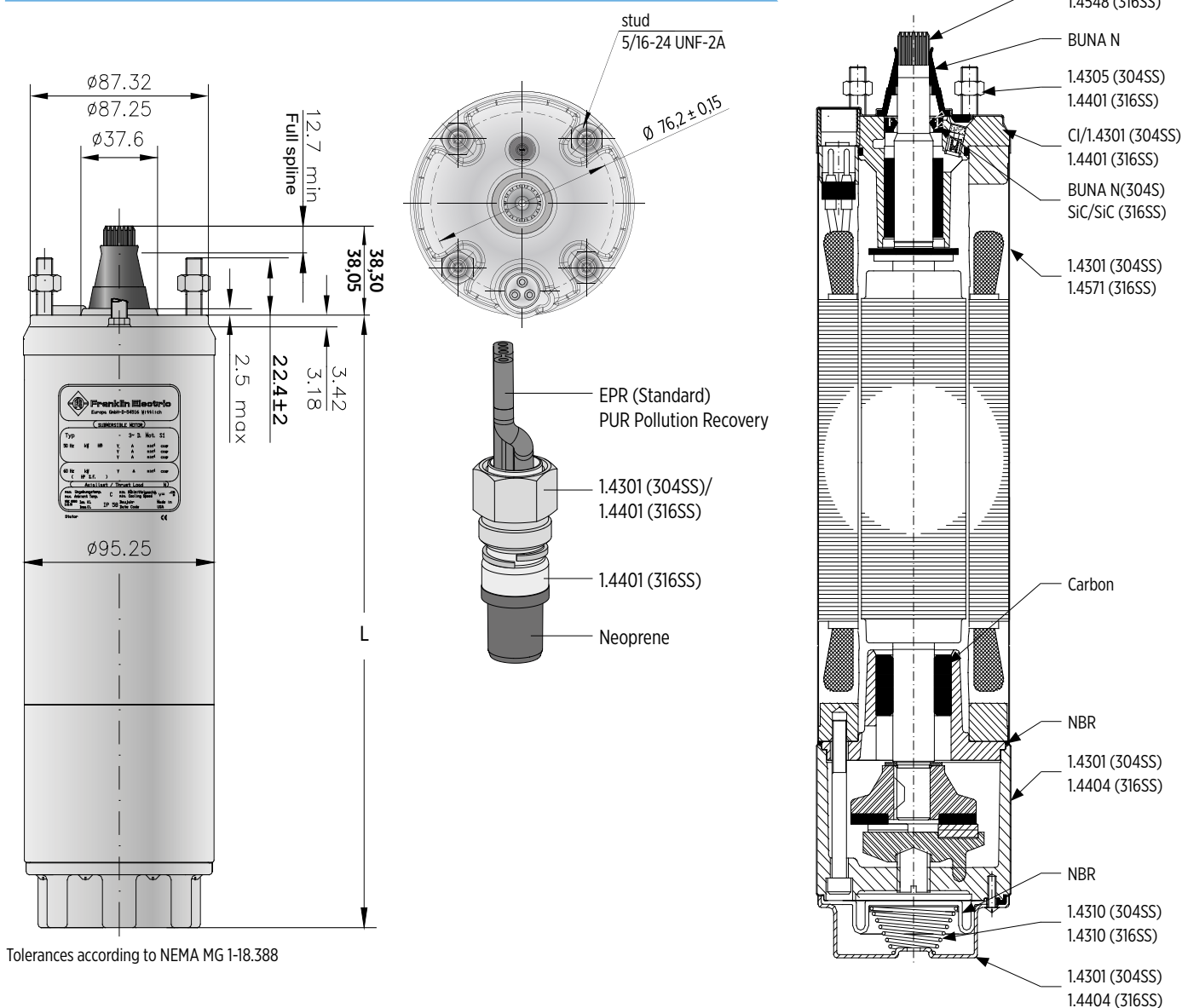
P _N [kW]	U _N [V]	Stator Ref.	Main phase [Ohm]	Start spphase[Ohm]
2.2	220 / 230	326 813 912	1,3 - 1,6	3,8 - 4,6
3,7	220 / 230	326 813 912	1,0 - 1,3	2,5 - 3,1

WINDING RESISTANCE DATA 60 HZ 230V - 3-WIRE DESIGN

P _N [kW]	P _{max} [kW]	U _N [V]	Stator-Ref. #	Main phase [Ohm]	Start spphase[Ohm]
2,20	2,5	230	326 897	1,3 - 1,6	3,5 - 4,3
3,7	4,2	230	326 898	0,9 - 1,1	1,7 - 2,1

MOTORDESIGN AND DIMENSION

MOTORDESIGN 304SS 6500N 2,2 - 3,7 KW

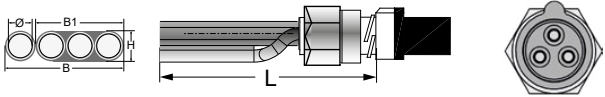


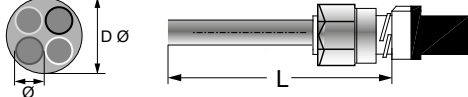
LENGTHS AND WEIGHTS - 3-WIRE DESIGN

P _N [kW]	P _{max} [kW]	304SS L [mm]	316SS L [mm]	304SS M [kg]	316SS M [kg]	motor with lead in single pack		
						[mm]	304SS [kg]	316SS [kg]
2,2	2,5	520,2	529,4	21,3	21,8	796 x 100 x 110	23,1	23,6
3,7	4,2	652,5	661,7	26,4	27,3	904 x 100 x 110	28,5	29,4

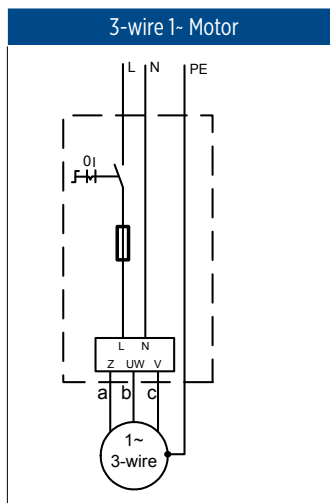
MOTOR LEADS

MOTOR LEADS 3-WIRE DESIGN

PSC / 3-wire / 3 Phase motor leads			
0.25 - 3.0 kW			
Ø [mm²]	B [mm]	B1 [mm]	H [mm]
3X1,5 + 1G1,5	16,8	10,7	5,0
			
L [m]	Model numbers 304SS	Model numbers 316SS	
1,5	310 113 401	310 113 501	
2,5	310 113 402	310 113 502	
5	310 113 405	310 113 505	
10	310 113 410	310 113 510	
15	310 113 415	310 113 515	
20	310 113 420	310 113 520	
30	310 113 430	310 113 530	
40	310 113 440	310 113 540	
50	310 113 450	310 113 550	

3-wire / 3-phase Pollution Recovery motor leads	
0.25 - 3.0 kW	
Ø [mm²]	D Ø [mm]
1,5	9,8
	
L [m]	Model numbers 316SS
1,5	310 313 501
2,5	310 313 502
10	310 313 510
20	310 313 520
30	310 313 530
40	310 313 540
50	310 313 550

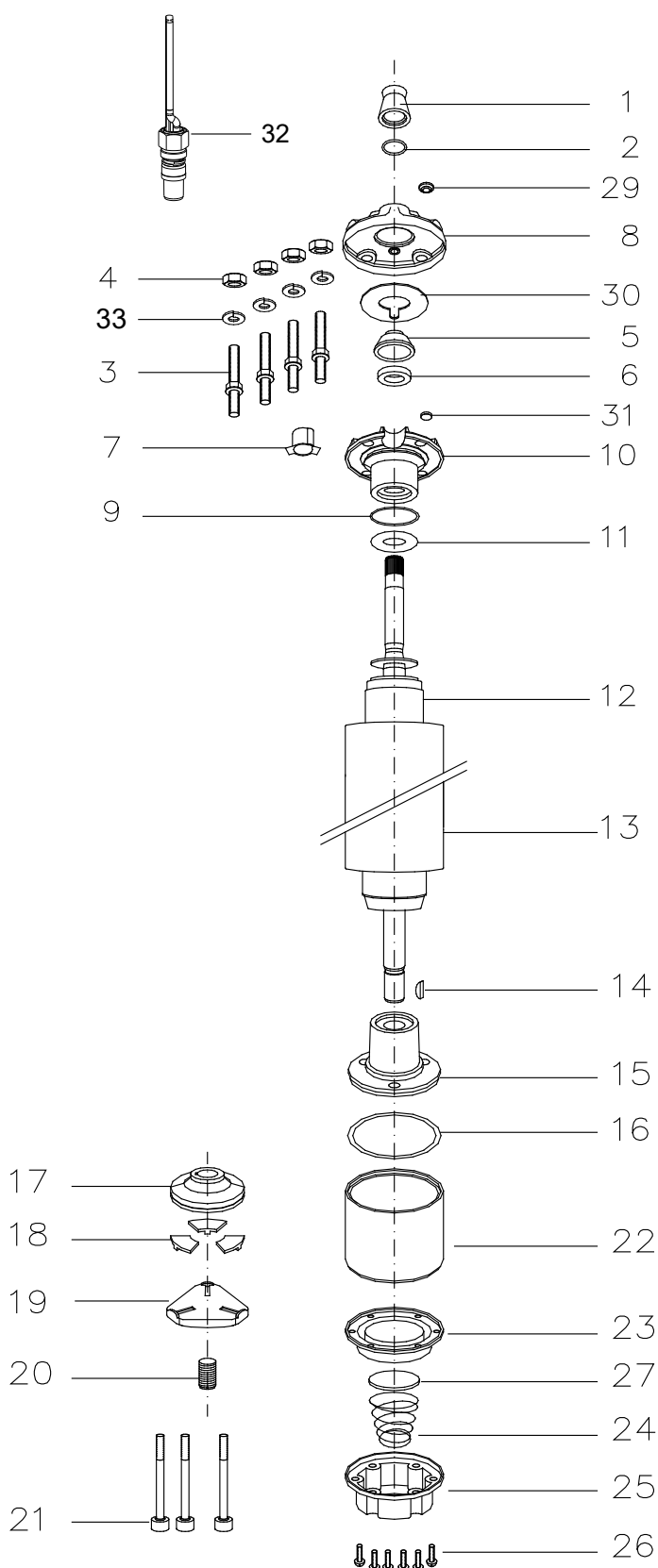
Cables are designed for submerged operation. For air operation, please consult Franklin Electric.



a = black | b = brown | c = grey | PE = yellow/green

MOTOR PART DESCRIPTION

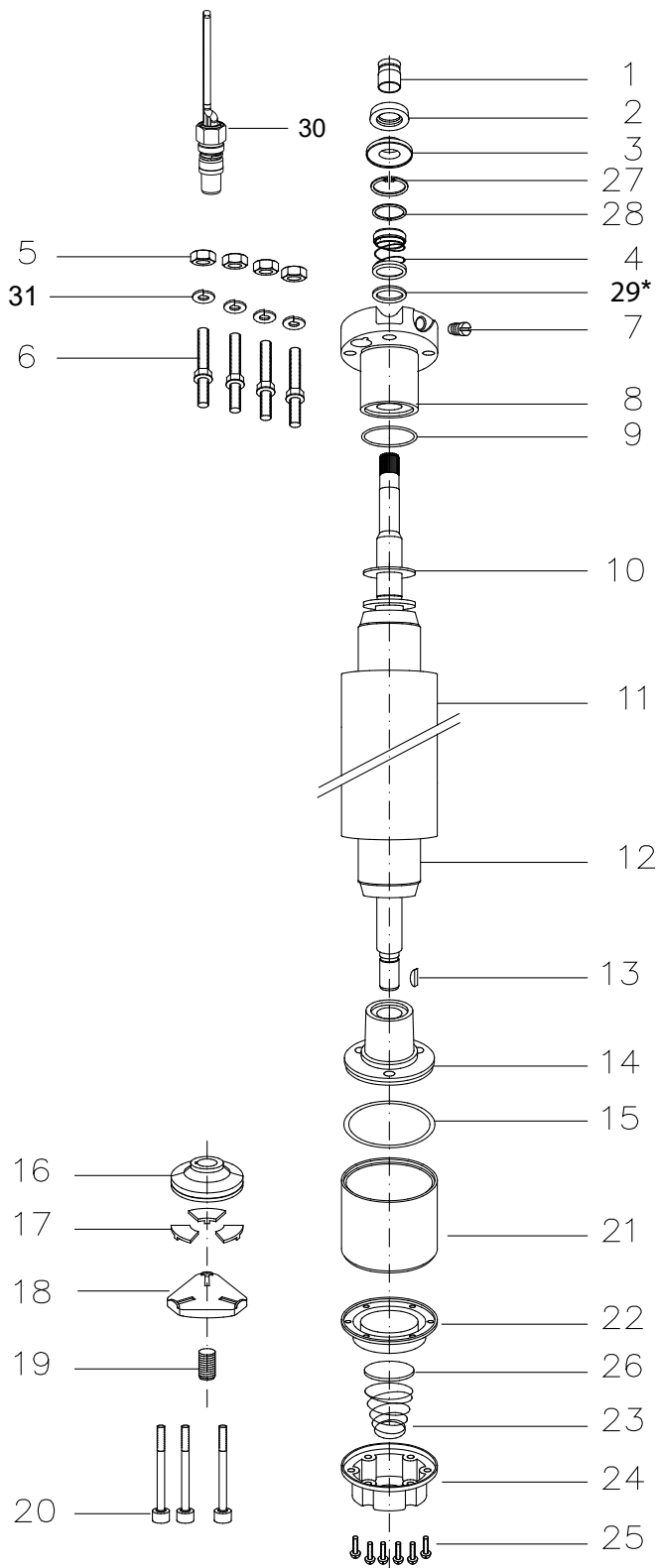
MOTOR DESIGN 304SS 2,2 - 3,7 KW - 304SS



Pos.	Part Description	Qty.	Part No.
1	Protector, Spline	1	Kit B
2	Washer	1	Kit B
3	Stud	4	Kit C
4	Nut	4	Kit C
5	Seal cover	1	Kit D
6	Shaft Seal	1	Kit B+D
7	Connector boss	1	Kit D
8	Top Endbell, Cover	1	Kit D
9	O-Ring	1	Kit B+D
10	Top Endbell	1	Kit D
11	Upthrust washer 2,2 kW	1	308 268 104
	Upthrust washer 3,7 kW		308 317 901
12	Rotor	1	see page 28
13	Stator	1	see page 28
14	Woodruff key	1	275 250 104
15	Bottom Endbell	1	Kit
16	O-Ring	1	Kit B
17	Thrust disc	1	Kit A
18	Segment	1	Kit A
19	Leveling disc	1	155 660 101
20	Screw, adj.	1	151 048 103
21	Screw	3	Kit C
22	Thrust housing	1	177 378 901
23	Diaphragm	1	Kit B
24	Spring	1	151 449 101
25	Cover, Diaphragm	1	164 100 50
26	Screw	6	Kit C
27	Cup spring, Diaphragm	1	151 448 201
29	Sealing stopper	1	Kit B+D
30	Seal	1	Kit D
31	Filter	1	Kit B+D
32	Motor lead	1	see page 25
33	Lock washer	4	Kit C

PARTS DESCRIPTION

MOTOR DESIGN 316SS 2,2 - 3,7 kW - 316SS



Pos.	Part Description	Qty.	Part No.
1	Protector, Spline	1	Kit C
2	Slinger	1	Kit C
3	Seal cover	1	Kit B + C
4	Shaft Seal	1	Kit B
5	Stud	4	Kit D
6	Nut	4	Kit D
7	Sealing Screw	1	308 279 903
8	Top Endbell	1	Kit
9	O-Ring	1	Kit B
10	Upthrust washer 2,2 kW	1	308 268 104
	Upthrust washer 3,7 kW		308 317 901
11	Stator	1	see page 28
12	Rotor	1	see page 28
13	Woodruff key	1	275 250 104
14	Bottom Endbell	1	Kit
15	O-Ring	1	Kit B
16	Thrust disc	1	Kit A
17	Segments	1	Kit A
18	Leveling disc	1	155 660 101
19	Screw, adj.	1	151 048 103
20	Screw	3	Kit D
21	Thrust housing	1	177 378 951
22	Diaphragm	1	Kit B
23	Spring	1	151 449 101
24	Cover, Diaphragm	1	364 100 50
25	Screw	6	Kit C
26	Cup spring, Diaphragm	1	151 448 201
27	Ring	1	Kit B
28	Retain Ring	1	Kit B
29*	Washer	1	308 747 201
30	Motor lead	1	see page 275
31	Lock washer	4	Kit C

* only for 2,2 - 3kW

MOTOR SPARE PARTS

SPARE PARTS KITS

P_N [kW]	2,2 / 3,7 kW		
2,2kW	End bell, upper 304SS	inkl. Pos. 5, 6, 7, 8, 9, 10, 29,30, 31	308 462 902
	End bell, upper 316SS	Pos. 8	177 390 955
3,7kW	End bell, upper 304SS	inkl. Pos. 5, 6, 7, 8, 9, 10, 29,30, 31	308 434 501
	End bell, upper 316SS	Pos. 8	177 390 955
Kit A	Thrust Bearing Kit 6500N	inkl. Pos.17. 18	308 700 301
Kit B	Seal Kit 304SS	inkl. Pos.: 1, 2, 6, 9, 16, 23,29, 31	308 900 351
	Seal Kit 316SS	inkl. Pos.: 4, 9, 15, 22, 27, 28	308 900 302
Kit B1	Seal Kit Pollution Recovery 304SS	inkl. Pos.: 1, 2, 6, 9, 16, 23,29, 31	308 900 401
Kit B2	Sand slinger Kit 316SS Motoren	inkl. Pos.: 1, 2, 3	308 825 201
Kit C	Screw Kit 304SS	inkl. Pos.: 3, 4, 21, 26, 33	308 658 351
	Screw Kit 316SS	inkl. Pos.: 5, 6, 20, 25, 31	308 658 301

SPARE PARTS - STATOR AND ROTOR 304SS - 3-WIRE DESIGN 50HZ

P_N [kW]	U_N [V]	Model nb. Stator 304SS	Model nb. Rotor 304SS
2,2	220 / 230	305 491 181	178 126 903K
3,7	220 / 230	305 491 182	178 133 903K

SPARE PARTS - STATOR AND ROTOR 316SS- 3-WIRE DESIGN 50HZ

P_N [kW]	U_N [V]	Model nb. Stator 316SS	Model nb. Rotor 316SS
2,2	220 / 230	305 491 541	178 126 913K
3,7	220 / 230	305 491 542	178 133 913K

SPARE PARTS - STATOR AND ROTOR 316SS- 3-WIRE DESIGN 60HZ

P_N [kW]	P_{max} [kW]	U_N [V]	Stator 60Hz	Rotor 60Hz
2,2	2,5	230	326 897 ***	178 126 903K
3,7	4,2	230	326 898 ***	178 135 903K