

SUBMERSIBLE MOTORS

10 INCH MTSF

PRODUCT INFORMATION & SERVICE MANUAL



SHAKTI

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PRODUCT APPLICATION AND PRODUCT SPECIFICATION

GENERAL DATA

These 250 mm Rewindable motors, manufactured in ISO 9001:2015 certified facilities

Applications

This motor is built for dependable operation in 250 mm diameter or larger water wells. It is fitted with water lubricated radial and thrust bearings for a maintenance – free operations. The motor is filled with a special fluid, Providing frost protection down to -15°C storage temperature . A special diaphragm ensures pressure compensation inside the motor.

Product advantages

- High efficiency electrical design (low operation cost, cooler winding temperature).
- Design for retrofittable PT100 sensor.
- Motor With SiC Mechanical seal and sand slinger.
- Cable material in accordance with regulations for drinking water.
- Water lubricated radial and thrust bearing.
- All motors pre-filled and 100% tested.
- Non contaminating, water-filled design.
- Max. storage temperature -15°C to +60°C.

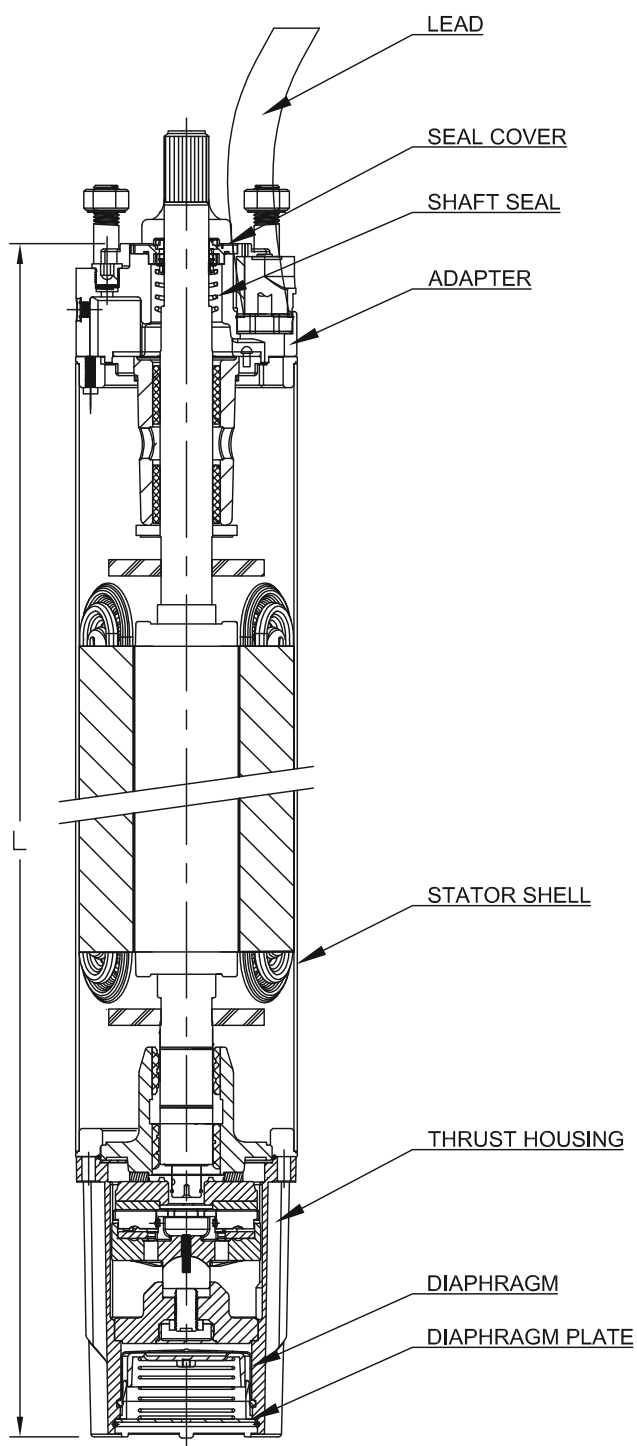
Technical specification

Power range	: 116 HP - 252 HP / 85 kW - 185 kW
Flange	: 250 mm
Degree of protection	: IP68
Ambient temperature	: 30°C
Cooling flow	: 116 HP - 252 HP / 85 kW - 185 kW - 0.5 m/s
Starts/hr :	10
Voltage tolerance	: +6% / -10% UN

Considering continuous product development the information/performance/specifications and illustrations disseminated in this catalogue are subject to change without notice.

SUBMERSIBLE MOTORS			
Material	GG, Stainless Steel 304/316	Rating	85kW-185kW/116HP-252HP
Type	Rewindable	Thrust Rating	60000 N

10" Rewindable Sectional View



PART	MATERIAL		
	CI	AISI SS 304	AISI SS 316
ADAPTER	CAST IRON POWDER COATED	AISI SS 304	AISI SS 316
STATOR SHELL	AISI SS 304	AISI SS 304	AISI SS 316
SEALS	NBR	NBR	NBR
SEAL COVER	AISI SS 304	AISI SS 304	AISI SS 316
SHAFT SEAL	SIC	SIC	SIC
MOTOR BASE	CAST IRON POWDER COATED	AISI SS 304	AISI SS 316
DIAPHRAGM	EPDM	EPDM	EPDM
DIAPHRAGM COVER	AISI SS 304	AISI SS 304	AISI SS 316
LEAD	EPR	EPR	EPR

SUBMERSIBLE MOTORS

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10" Rewindable Motors Performance Data 50 Hz

MATERIAL CODE	kW	Thrust	Voltage	Speed	I _N	I _A	Efficiency at % Load			Power Factor at % Load			T _N	T _A
							50	75	100	50	75	100		
9000008521	85	60000	380	2890	179	783	84	85	86	0.75	0.76	0.79	284	282
			400	2900	174	828	84	85	86	0.73	0.74	0.78	283	319
			415	2910	171	863	84	85	86	0.71	0.72	0.76	281	344
9000008522	110	60000	380	2872	240	1118	85	86	86	0.76	0.79	0.82	366	424
			400	2888	229	1143	85	86	86	0.74	0.78	0.82	364	472
			415	2896	227	1175	85	86	86	0.72	0.76	0.80	363	511
9000008523	130	60000	380	2860	280	1338	85	86	85	0.80	0.84	0.85	434	433
			400	2876	270	1418	84	85	85	0.77	0.79	0.83	432	555
			415	2880	268	1471	84	88	88	0.74	0.78	0.81	431	601
9000008524	150	60000	380	2880	318	1556	87	87	87	0.77	0.78	0.83	498	573
			400	2896	308	1643	87	87	88	0.75	0.72	0.82	495	643
			415	2900	303	1694	87	87	88	0.75	0.72	0.80	494	696
9000013330	170	60000	380	2900	345	1688	87	87	87	0.86	0.84	0.86	560	645
			400	2904	330	1761	87	88	88	0.87	0.84	0.87	559	726
			415	2912	324	1812	85	87	87	0.87	0.84	0.84	558	786
9000008525	185	60000	380	2900	390	1983	87	88	87	0.85	0.84	0.85	609	914
			400	2920	384	2070	87	88	88	0.83	0.84	0.81	609	1030
			415	2920	389	2076	86	88	86	0.84	0.84	0.79	605	1109

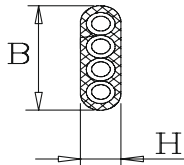
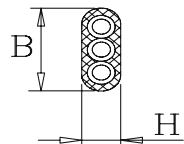
10" Rewindable Motors Performance Data 60 Hz

MATERIAL CODE	kW	Thrust	Voltage	Speed	I _N	I _A	Efficiency at % Load			Power Factor at % Load			T _N	T _A
							50	75	100	50	75	100		
9000008521	85	60000	460	3500	172	803	84	85	85	0.83	0.86	0.86	250	281
9000031722	110	60000	380	3492	237	1108	84	85	86	0.68	0.79	0.88	303	356
9000008522	110	60000	460	3480	230	1186	83	86	86	0.69	0.70	0.70	303	328
9000032272	130	60000	380	3492	280	1242	83	86	86	0.74	0.84	0.90	360	386
9000008523	130	60000	460	3452	269	1385	83	85	85	0.72	0.72	0.73	360	385
9000032273	150	60000	380	3500	318	1540	84	86	87	0.66	0.78	0.86	410	480
9000008524	150	60000	460	3476	303	1584	86	87	87	0.70	0.70	0.71	412	442
9000013330	170	60000	460	3500	285	1689	84	86	87	0.70	0.70	0.71	451	483
9000032274	185	60000	380	3500	389	1978	85	86	87	0.64	0.83	0.83	501	538
9000008525	185	60000	460	3510	377	1876	84	87	87	0.80	0.80	0.83	504	545
9000033264	220	60000	380	3508	441	1978	89	87	88	0.70	0.81	0.86	603	538

SUBMERSIBLE MOTORS

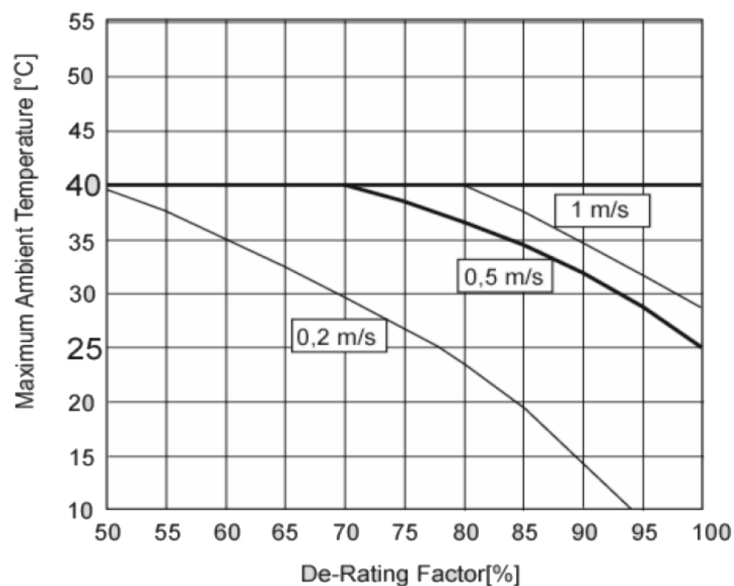
Material	GG, Stainless Steel 304/316	Rating	85kW-185kW/116HP-252HP
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10" Rewindable Motors Leads @ 400 V 50 Hz

Y Δ						
Lead	[kW]	Ø	B/H		Length	Qty.
		[mm2]	[mm]		[m]	
 	85	3x16	B	28.8	6	1
			H	12.2		
		4X16	B	38		1
			H	12.8		
	110-185	3X25	B	37.5	6	1
		3X25	H	16.0		1

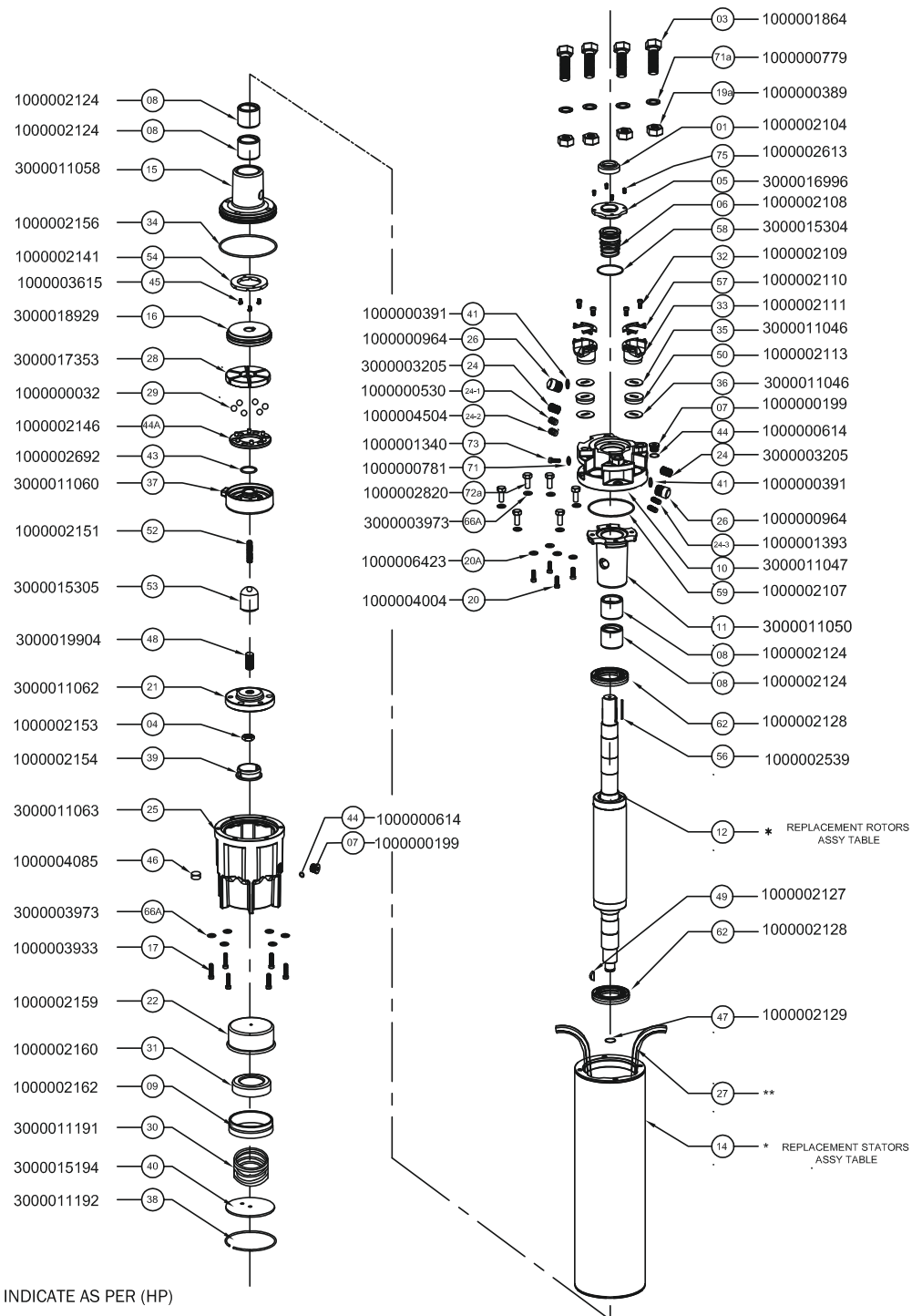
Ground lead	[kW]	Ø	D	Length	Qty.
		[mm ²]	[mm]	[m]	
	110-185	1X25	13	6	1

De-Rating of 10" Rewindable Motors with PVC Insulation

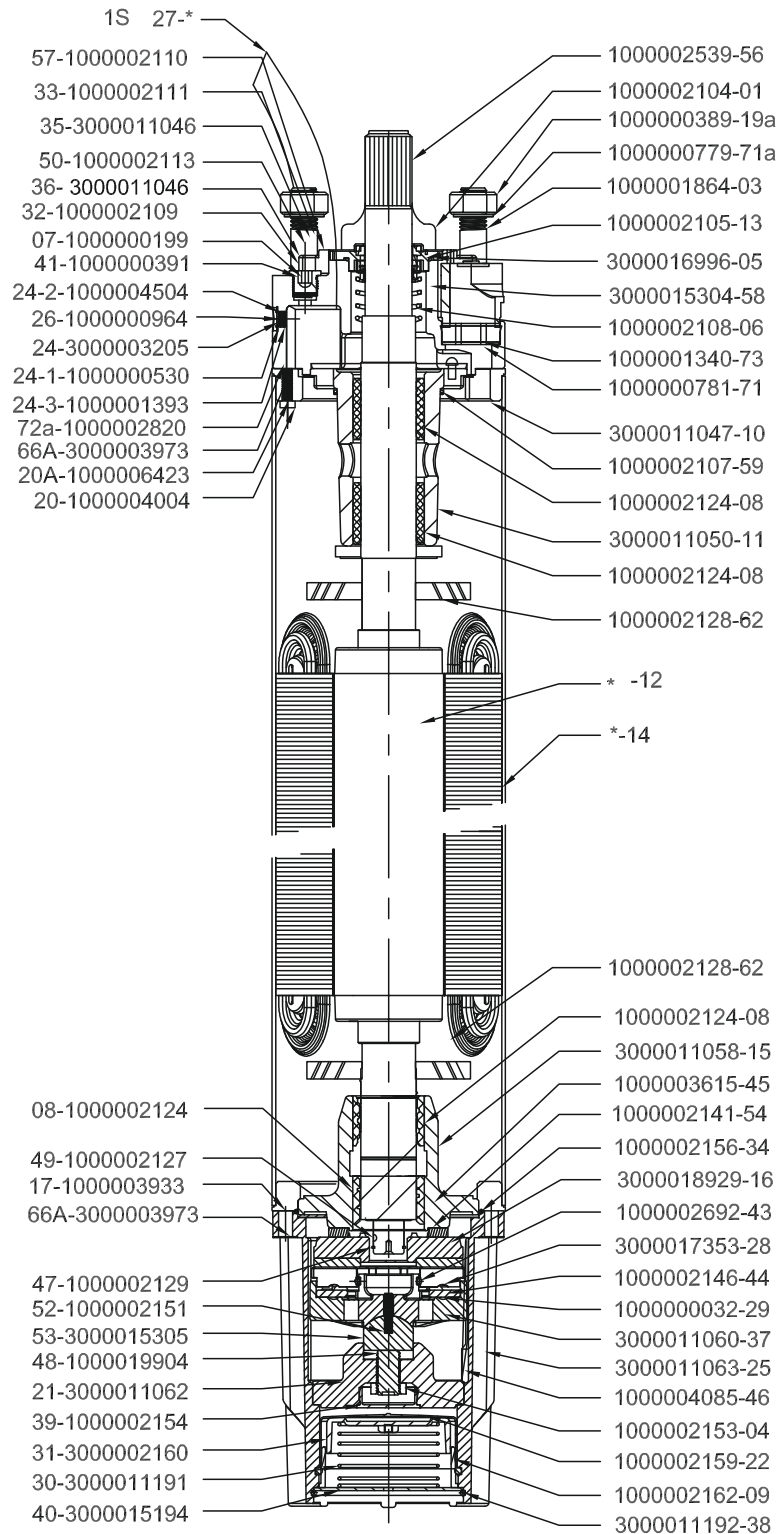


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EXPLODED VIEW



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NOTE:- * INDICATE AS PER (HP)

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Material	GG, Stainless Steel 304/316	Rating	85kW-185kW/116HP-252HP
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POS	MATERIAL CODE	PART DISCRIPTION	QTY	MATERIAL
3	1000001864	HH BOLT M16XX60SS	4	SS AISI-304
71a	1000000779	SPRING WASHER M16	4	SS AISI-304
19a	1000000389	NUT M16	4	SS AISI-304
1	1000002104	SAND SLINGER	1	NBR
75	1000002613	ALLEN BOLT M5X10	4	SS AISI-316
5	3000016996	DUST COVER	1	SS AISI-304
6	1000002108	MECHANICAL SEAL	1	N/A
58	3000015304	SEAL SUPPORT	1	EN-8
32	1000002109	ALLEN BOLT M8X16	4	SS AISI-304
57	1000002110	GLAND COVER	2	SS AISI-304
33	1000002111	GLAND	2	PPS
35	3000011046	LEAD SEAL	2	SS AISI-304
50	1000002113	GROMATE	2	NBR
36	3000011046	LEAD SEAL	2	NITRAL RUBBER
7	1000000199	DRAIN PLUG	1	BRASS
44	1000000614	"RUBBER GASKETWASHER"	1	NBR
41	1000000391	O-RING 10X2.1MM	1	NBR
24	3000003205	PRESSUR RELIEF VALVE	1	N/A
24-3	1000001393	FILTER	1	STANDARD
10	3000011047	ADAPTER UP:HSG	1	CI FG-260
59	1000002107	O-RING(75X2.5)	1	NBR
11	3000011050	BRG BODY UPPER	1	CI FG-260
8	1000002124	BUSH CARBON	2	REGIN IMPREGNATED
56	1000002539	KEY	1	SS AISI-302
62	1000002128	AUXILARY IMPELLER	1	PP
12	*	ROTOR SUB ASSLY	1	N/A
62	1000002128	AUXILARY IMPELLER	1	PP
49	1000002127	KEY	1	SS AISI-304
47	1000002129	EXT.CIRCLIP	1	SS AISI-420
27	**	CABLE	1	RUBBER
14	*	STATOR SUB ASSLY	1	N/A
26	1000000964	THRD.PLUG VALVE	2	SS AISI-304
24	3000003205	PRESSUR RELIEF VALVE ASSLY.	1	N/A
24-3	1000001393	FILTER	1	STANDARD
24-1	1000000530	PVC CAP(WHITE)	1	PP
24-2	1000004504	PVC CAP(GREEN)	1	PP
73	1000001340	ALLEN BOLT M8X12	1	SS AISI-304
71	1000000781	SPRING WASHER (M8)	1	SS AISI-304
72a	1000002820	H H BOLT M12X40	6	SS AISI-304
66A	3000003973	SS WASHER ID-13xOD- 22xTH-2	6	SS AISI-304
20A	1000006423	SS WASHER ID-11xOD- 22xTH-2	4	SS AISI-304

NOTE - * SEE THE PART LIST

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Material	GG, Stainless Steel 304/316	Rating	85kW-185kW/116HP-252HP
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POS	MATERIAL CODE	PART DISCRIPTION	QTY	MATERIAL
20	1000004004	ALLEN BOLT M10X35	4	SS AISI-304
8	1000002124	BUSH CARBON	2	REGIN IMPREGNATED CARBON
15	3000011058	BRG BODY LOWER	1	CI FG-260
34	1000002156	O-RING(183X3)	1	NBR
45	1000003615	COUNTER SHANK SCREW M6X12	3	SS AISI-304
54	1000002141	UP THRUST BRG	1	PPS / NYLON
16	3000018929	REVOLVING PLATE ASSLY	1	N/A
28	3000017353	THRUST BER SEGMENT	6	SS AISI-420
29	1000000032	BALL 15	6	SS AISI-304
44A	1000002146	THRUST BALL RETAINER	1	LTB-2
43	1000002692	O-RING(57.3X5)	1	NBR
37	3000011060	BERING SEG CARRIER	1	CI FG-260
52	1000002151	GRUB SCREW	1	SS AISI-304
53	3000015305	BEARING SUPPORT MOTOR	1	SS AISI-420
48	3000019904	ADJUSTING STUD	1	SS AISI-420
21	3000011062	THRUST SUPPORT	1	CI FG-260
4	1000002153	HEX NUT M24	1	SS AISI-304
39	1000002154	PROTECTION PLUG	1	NYLON GLASS FILD 20P
25	3000011063	MOTOR BASE	1	CI FG-260
41	1000000391	O-RING 10X2.1MM	1	NBR
44	1000000614	RUBBER GASKET WASHER	1	NBR
7	1000000199	DRAIN PLUG	1	BRASS
46	1000004085	MAGNET	1	MAGNET
66A	3000003973	SS WASHER ID-13xOD- 22xTH-2	6	SS AISI-304
17	100003933	H.H BOLT M12X45	6	SS AISI-304
22	1000002159	DIAPHRAM	1	EPDM
31	1000002160	SPRING BASE CUP	1	ABS
9	1000002162	SUPPoring RING	1	PPS
30	3000011191	SPRING DIAPHRAM	1	SS AISI-304
40	3000015194	COVER PLATE DIAPHRAM	1	SS AISI-304
38	3000011192	WIRE CIRCLIP	1	SS AISI-304

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Replacement Rotor & Sleeve Assembly

POS	P _N	P _N	UPPER SLEEVE	LOWER SLEEVE	MODEL NO	
	[HP]	[kW]			ROTOR SPLINE TYPE	ROTOR KEY TYPE
12.01	116	85	3000015056 (2 NOS USE)	3000015056 (1 NOS USE)	3000011065	3000017289
12.02	150	110			3000011066	3000017987
12.03	177	130			3000011067	3000017291
12.04	204	150			3000011068	3000017916
12.05	252	185			3000011069	3000017293

Replacement Stator Assly

POS	P _N	P _N	STATOR ASSEMBLY	STATOR MODEL NO.
	[HP]	[kW]		
14.01	116	85	STATOR ASSEMBLY	3000011090
14.02	150	110		3000011091
14.03	177	130		3000011092
14.04	204	150		3000011093
14.05	252	185		3000011094

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PVC Insulation Standard Winding 380-415V 50 Hz / 460 V 60 Hz

[kW]	Turns per Coil	Wire diameter [mm]	Group Connection	Total Wire length [M]	Resistance YΔ (U1-U2) [Ω]	Resistance DOL (U1-V1) [Ω]
85	11+11+11+11	2.5x2	SD	441	0.120	0.080
110	8+9+8+9	2.1x4	SD	771	0.101	0.067
130	7+8+7+8	2.1x2/2.2x2	SD	774	0.090	0.060
150	6+7+6+7	2.2x4	SD	739	0.090	0.060
170	5+6+5+6	2.2x5	SD	881	0.060	0.040
185	5+6+5+6	2.2x5	SD	881	0.060	0.040

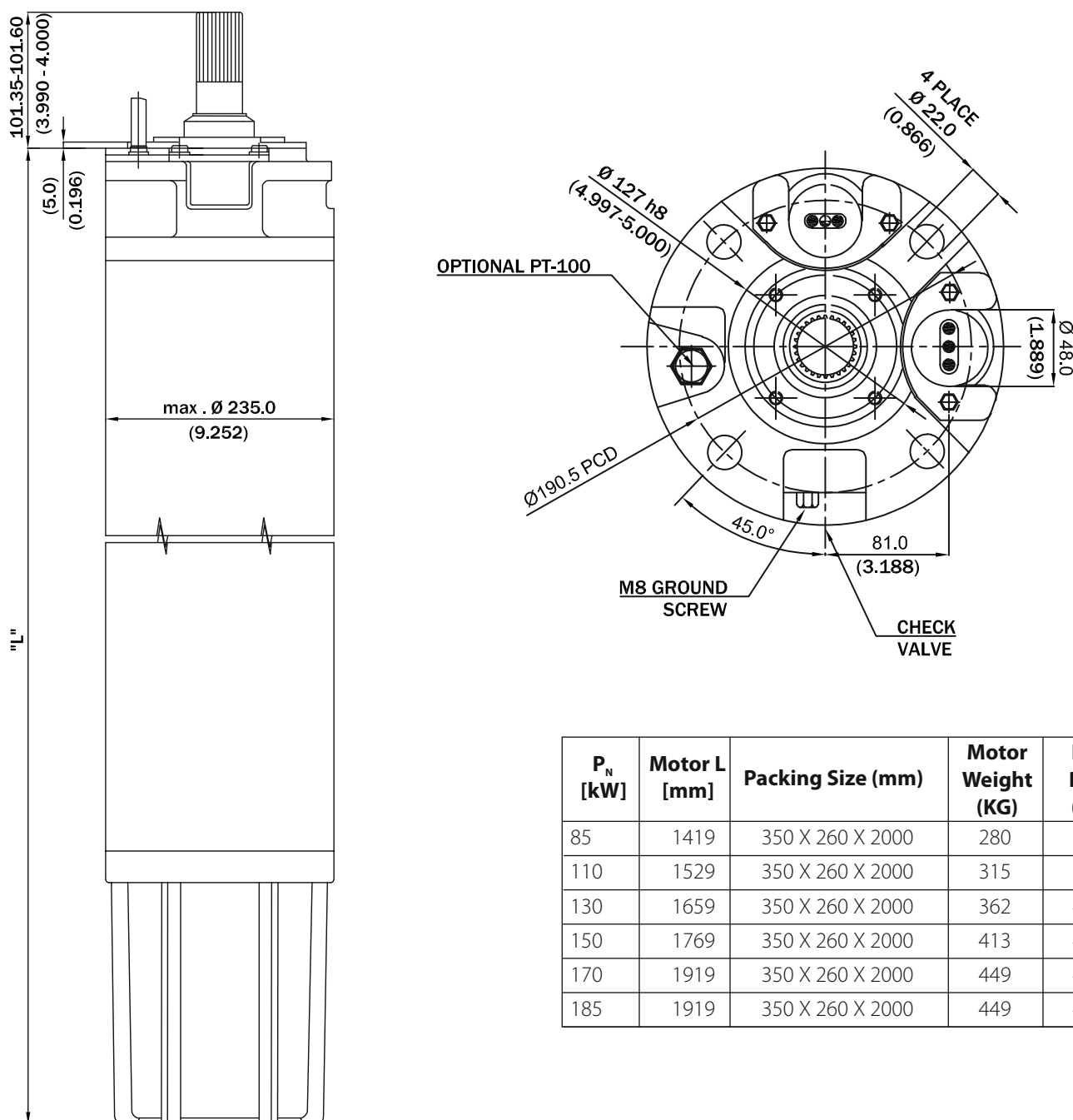
Note : SD - Star Delta

Insulation resistant (20°C / 500 VDC)

New motor without drop cable	200 > MΩ
Used motor without drop cable	20 > MΩ
New motor with drop cable	4 > MΩ
Used motor with drop cable	1 > MΩ

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Outline Drawings



P _N [kW]	Motor L [mm]	Packing Size (mm)	Motor Weight (KG)	Incl. Pack (KG)
85	1419	350 X 260 X 2000	280	336
110	1529	350 X 260 X 2000	315	370
130	1659	350 X 260 X 2000	362	412
150	1769	350 X 260 X 2000	413	437
170	1919	350 X 260 X 2000	449	480
185	1919	350 X 260 X 2000	449	480

