GEM Pump

(Green Engineering and Management Co.,Ltd)

CATALOGUE

Submersible Axial, Mixed Flow Propeller Pump

APPLICATION

For Handling Pure, Raw and Waste Water as well as Seawater in

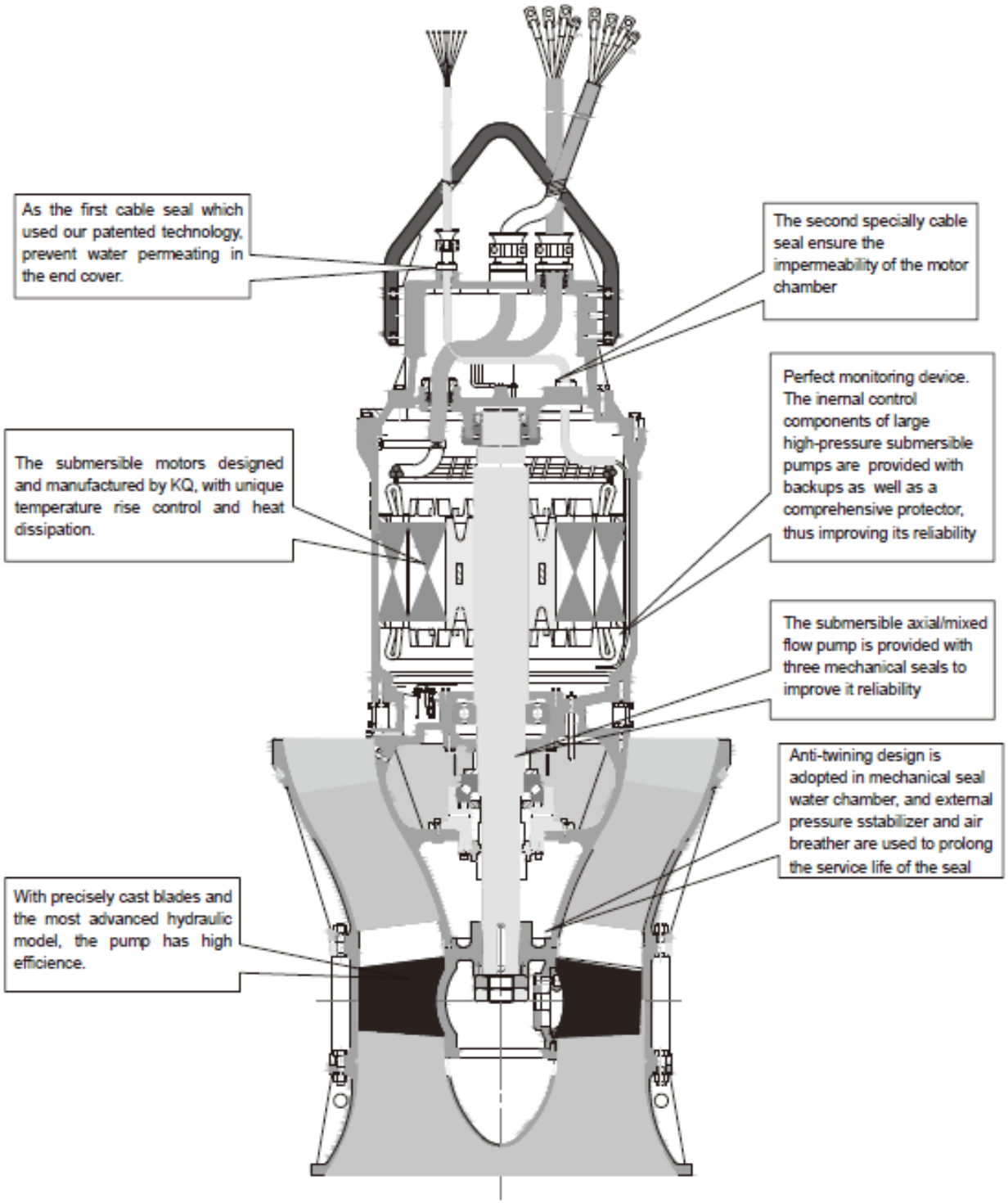
- Water Works
- Irrigation and Drainage
- Pumping Stations
- Power Stations
- Industrial Water Supply
- Fire Fighting Systems



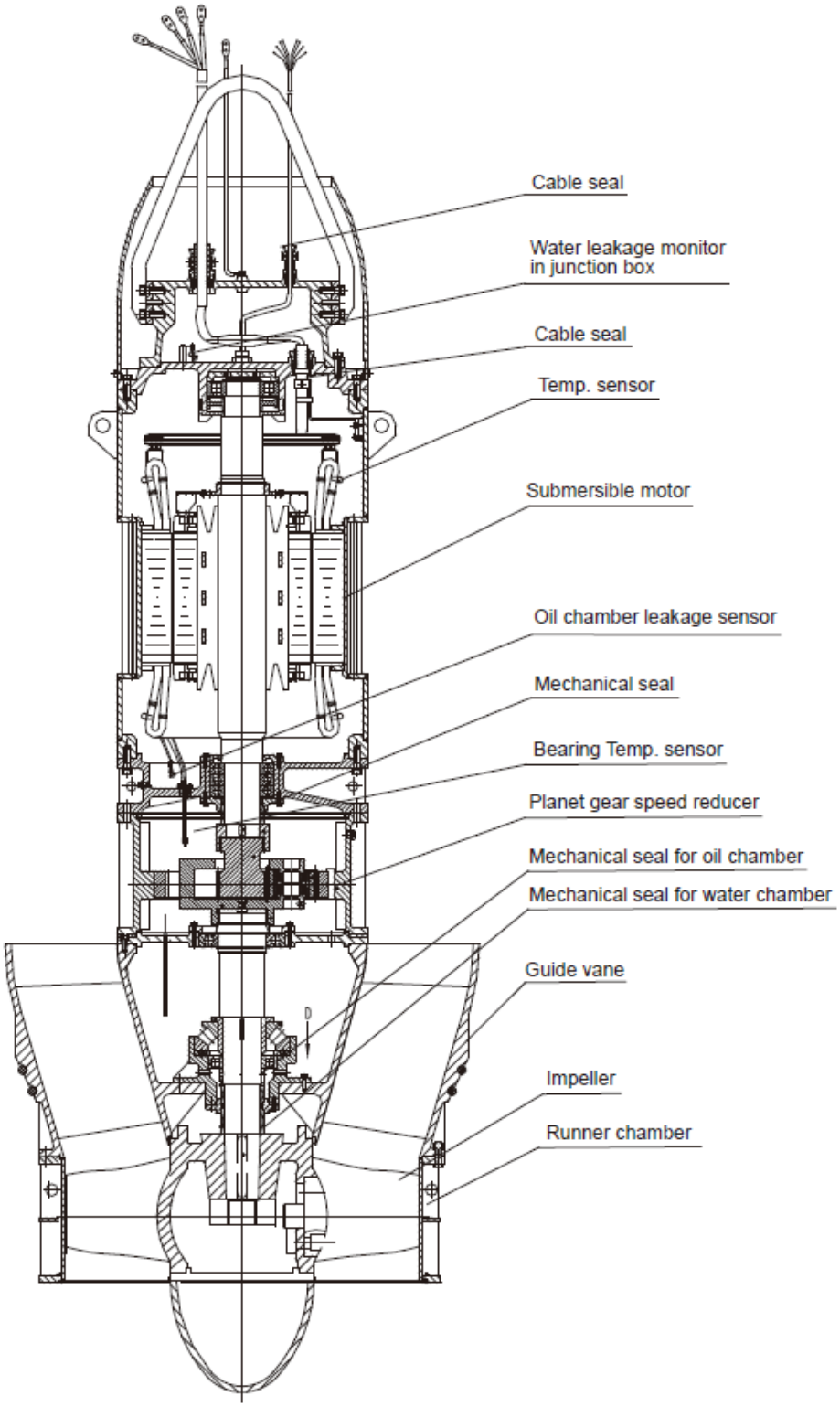


1. Impeller
   One piece axial-flow propeller with swept-back blades for low clogging performance, The pump housing are available, The propeller are machined to match the selected duty point. The wear ring between the pump housing and propeller is easily removable and can be adjusted to provide a high effciency.
2. Shaft seal
   Two or three sets of independent mechanical sealing devices ensure the motor not affected by the pump. For more reliability , installation use a tandem.
3. Oil chamber
   Oil lubrication can used as cooling the seal, and also prevent the medium to the motor. The inner room can relieve sharp rise of the internal pressure in the oil chamber.
4. Advanced cable seal
   The special proprietary technology forthe cable seal can prevent water or air from radially permeating into the inside of the cablethrough the cable shield. Water leakage between cable cores and capillary leakage can be avoided as well. It is convenient to dismantle or replace the cable.
5. Bearing
   Used rolling bearings, which can bear all the axial and radial loads and be isolated from pumped medium.
6. Pump/ motor shaft
   The pump shares the shaft with the motor. The structure is compact and the shaft extension is shortened as far as possible. The rigidity is strengthened in design, and the influence of deflection on the product's safety andreliability is reduced. The product produces slight vibration while runningand has long seal and bearing life.
7. Motor
   The high-performance squirrel cage induction motor, used in submersible pumps, is specially designed and made by GEM according to GB755 standard. Insulation grade: H; rated frequency: 50HZ; protection class: IP68. Three VPI processes are used to ensure reliable insulation. Various voltage classes including380V, 660V, 6kV, and 10kV are available for different power requirements. We can also design and manufacture products with special voltage classes according to customers' requirements.
8. Monitoring devices
   The submersible pump is equipped with multiple sensors, such as a leakage sensor, an over-temperature sensor, and a water intrusion sensor. These sensors are checked and controlled by a special protector installed in the electrical cabinet. Thus, the submersible pump is under effective protection in real time.

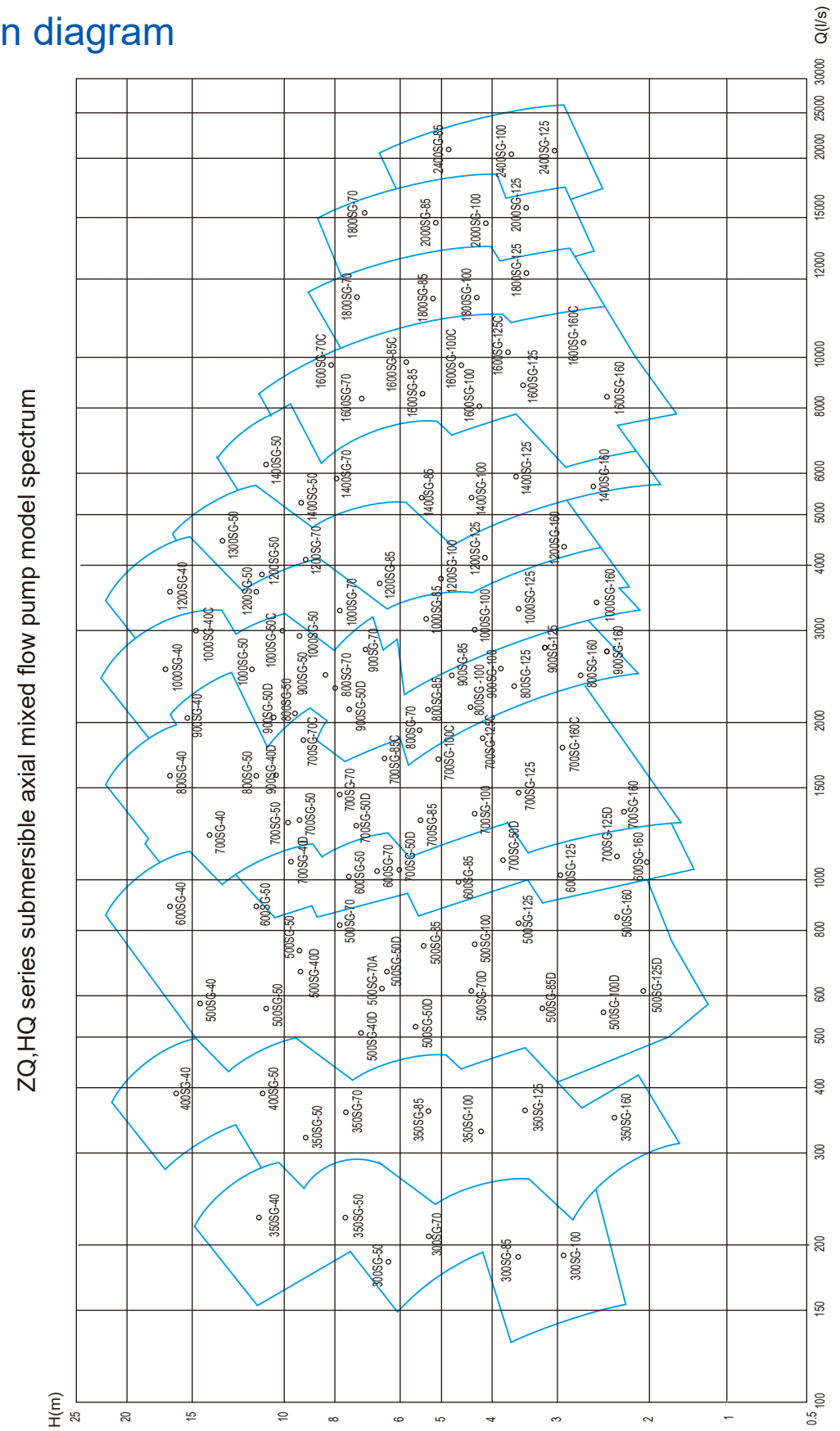
Structure Instruction



Structure Instruction



Selection diagram



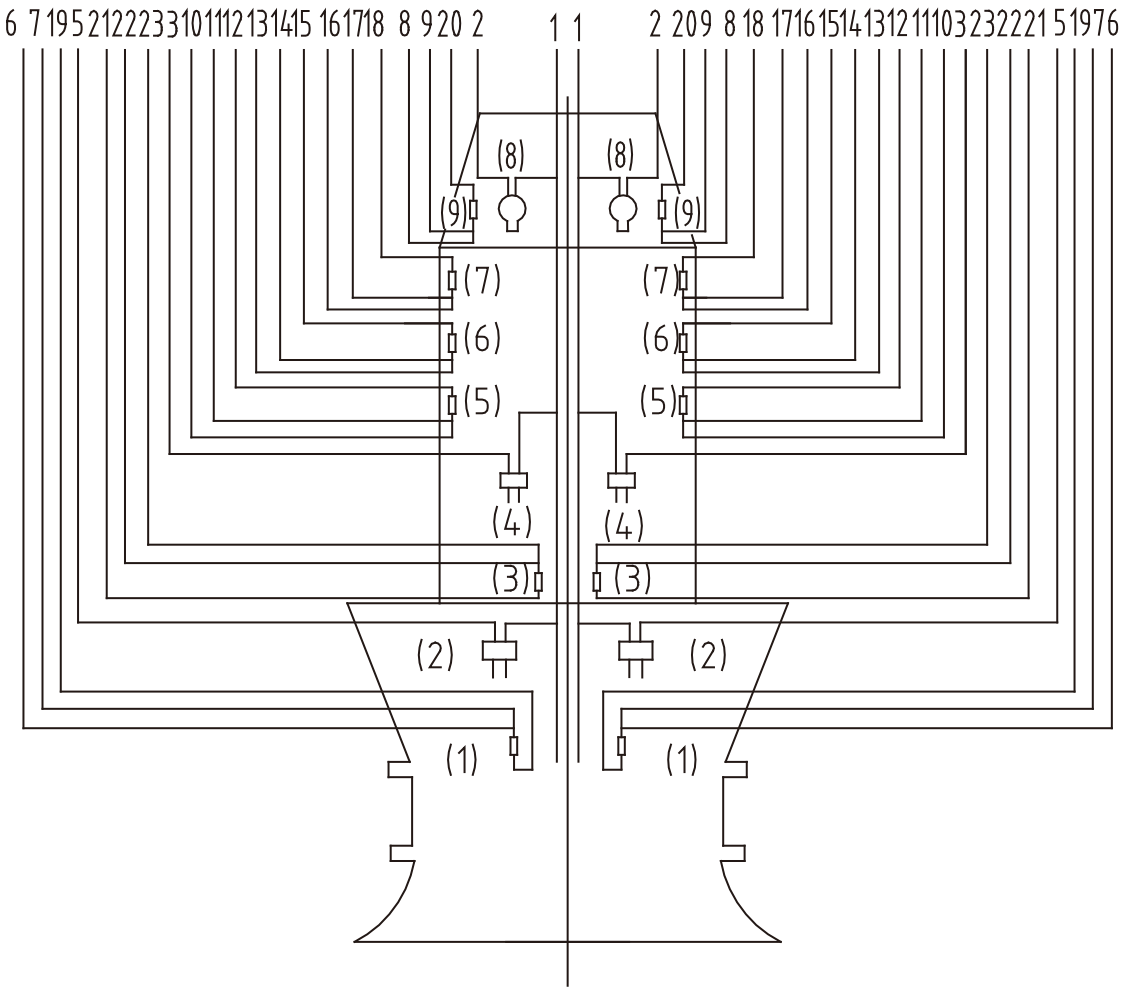
SG series submersible axial flow mixed flow pump weight table

Item	Model	Maximum weight (kg)	Maximum axial force(N)
1	300SG-50	500	4900
2	300SG-70	500	4400
3	300SG-85	500	3500
4	300SG-100	500	2500
5	350SG-50	600	10100
6	350SG-50D	600	4650
7	350SG-70	600	8950
8	350SG-70D	550	4100
9	350SG-85	550	7200
10	350SG-85D	400	3300
11	350SG-100	550	5150
12	350SG-100D	400	2400
13	350SG-125	550	4800
14	350SG-125D	400	2200
15	350SG-160	450	3350
16	500SG-50	990	23100
17	500SG-50D	750	12900
18	500SG-70	990	20450
19	500SG-70D	700	11400
20	500SG-85	860	16300
21	500SG-85D	700	9100
22	500SG-100	830	11700
23	500SG-100D	700	6550
24	500SG-125	830	10950
25	500SG-125D	700	6100
26	500SG-160	650	7600
27	500SG-160D	550	4250
28	600SG-50	900	28900
29	600SG-70	1400	25600
30	600SG-85	1500	20400
31	600SG-100	1800	14650
32	600SG-125	1850	13700

Item	Model	Maximum weight (kg)	Maximum axial force(N)
33	600SG-160	1300	9500
34	700SG-50	2500	41000
35	700SG-50D	2000	26500
36	700SG-70	2200	36200
37	700SG-70D	1900	23300
38	700SG-85	2200	28900
39	700SG-85D	1900	18600
40	700SG-100	2000	20700
41	700SG-100D	1800	14000
42	700SG-125	2200	19400
43	700SG-125D	1600	12500
44	700SG-160	1900	13400
45	700SG-160D	1500	8800
46	700SG-50C	3000	56500
47	700SG-70C	2900	49900
48	700SG-85C	2750	39900
49	700SG-100C	2500	28700
50	700SG-125C	2600	26700
51	700SG-160C	2500	18600
52	800SG-50	5500	64000
53	800SG-70	4900	56800
54	800SG-85	4200	45500
55	800SG-100	4000	32400
56	800SG-125	3800	30500
57	800SG-160	3500	21100
58	900SG-50	6000	72900
59	900SG-70	5500	64400
60	900SG-85	5500	51300
58	900SG-100	5000	36900
59	900SG-125	4000	34400
60	900SG-160	3600	23900

Item	Model	Maximum weight (kg)	Maximum axial force(N)
61	1000SG-50	6800	91300
62	1000SG-50	6800	91300
63	1000SG-70	6500	80700
64	1000SG-85	6000	64500
65	1000SG-100	6000	46100
66	1000SG-125	5500	43200
67	1000SG-160	5000	29900
68	1200SG-50	12000	117000
69	1200SG-70	10100	101500
70	1200SG-85	9800	72500
71	1200SG-100	9500	58700
72	1200SG-125	8800	51000
73	1200SG-160	8000	37500
74	1400SG-50	18000	155750
75	1400SG-70	16300	135000
76	1400SG-85	14000	96500
77	1400SG-100	13200	78200
78	1400SG-125	12700	67700
79	1600SG-70	15000	187100
80	1600SG-85	14000	130500
81	1600SG-100	15800	106000
82	1600SG-125	15000	91700
83	1600SG-70C	18500	231700
84	1600SG-85C	17900	165650
85	1600SG-100C	17000	134200
86	1600SG-125C	16500	116350
87	1800SG-70	20000	260150
88	1800SG-85	19000	185850
89	1800SG-100	18000	150500
90	1800SG-125	17000	130600
91	2000SG-70	23000	350000
92	2000SG-85	22000	250000
93	2000SG-100	21000	201900
94	2000SG-125	20000	175300

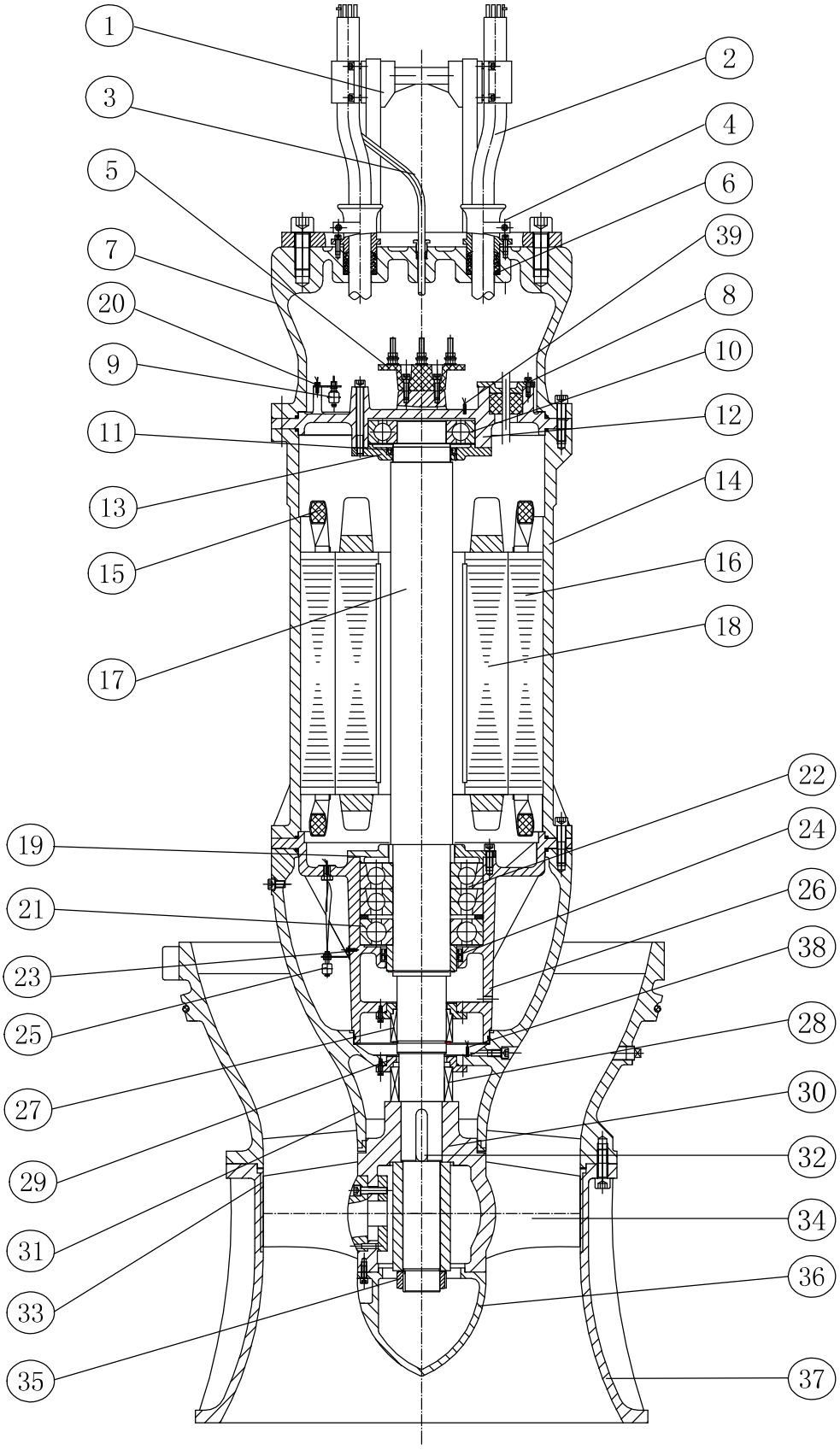
Item	Model	Maximum weight (kg)	Maximum axial force(N)
95	2400SG-85	25000	320000
96	2400SG-100	23500	185150
97	2400SG-125	22000	160650
98	350SG-40	500	6800
99	350SG-50	600	9700
100	400SG-40	1000	20000
101	400SG-50	800	13900
102	500SG-40	1700	31600
103	500SG-40D	1400	17800
104	500SG-50	1600	22000
105	500SG-50D	1400	12400
106	600SG-40	2000	45700
107	600SG-40D	1700	25700
108	600SG-50	1900	31800
109	600SG-50D	1500	17900
110	700SG-40	3900	57100
111	700SG-40D	2800	36800
112	700SG-50	3200	39700
113	700SG-50D	2600	25600
114	800SG-40	4300	80800
115	800SG-40D	3700	52100
116	800SG-50	4400	56200
117	800SG-50D	3500	36200
118	900SG-40	4800	96200
119	900SG-40D	4400	66300
120	900SG-50	4600	66900
121	900SG-50D	4200	46100
122	1000SG-40	7300	101000
123	1000SG-50	6500	88000
124	1000SG-35C	7800	113450
125	1000SG-50C	7300	82150
126	1200SG-40	12000	142450
127	1200SG-50	12600	103250
128	1400SG-50	13000	156200



Monitoring and Protective Sensors (with backups)

Sensor No.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cable No.	6, 7, 19	1, 5	21, 22, 23	1, 3	10, 11, 12	13, 14, 15	16, 17, 18	1, 2	8, 9, 20
Sensor	PT 100 temperature sensor	Electrode	PT 100 temperature sensor	Electrode	PT 100 temperature sensor	PT 100 temperature sensor	PT 100 temperature sensor	Electrode	PT 100 temperature sensor
Function	Monitor thrust bearing temperature	Monitor oil chamber temperature	Monitor lower bearing temperature	Protect motor, prevent water intrusion in motor	Monitor phase-A temperature, and protect motor	Monitor phase-B temperature, and protect motor	Monitor phase-C temperature, and protect motor	Alarm against water intrusion in junction box	Monitor upper bearing temperature
Resistance in normal state	~100Ω at 0℃	≥ 30kΩ	~100Ω at 0℃	≥ 120kΩ	~100Ω at 0℃	~100Ω at 0℃	~100Ω at 0℃	≥ 120kΩ	~100Ω at 0℃
Resistance in fault state	~136Ω at 95℃	<30kΩ when relative humidity ≥ 95%	~136Ω at 95℃	<120kΩ	~151Ω at 135℃	~151Ω at 135℃	~151Ω at 135℃	<120kΩ	~136Ω at 95℃

Section Drawing



Part List

NO.	DESCRIPTION	Qt.
1	Lifting Ring	1
2	Power Cable	10 m.
3	Control Cable	10 m.
4	Cable Grand	2
5	Binding Post	1 set
6	Main Cable Sealing	2
7	Motor Cover	1
8	Seal Grand	2
9	Up Leakage Detector	1
10	Ball Bearing	1
11	Oil Seal Ring	1
12	Junction Connector	1
13	Upper Bearing Cover	1
14	Motor Frame	1
15	Motor Thermal Dectector	3
16	Stator	1
17	Shaft	1
18	Rotor	1
19	Down Bearing Cover	1
20	Moisture Dectector	1
21	Ball Bearing	1
22	Trust Bearing	2
23	Thermal Protector	1
24	Framwork Oil Seal	1
25	Down Leakage Detector	1
26	Bearing House	1
27	Mechanical Seal	2
28	Mechanical Seal	1

NO.	DESCRIPTION	Qt.
29	Seal Shamber	2
30	Propeller Hub	1
31	Diffuser	1
32	Sunk key	1
33	Wearing Ring	1
34	Propeller Fan	1
35	Propeller Nut	2
36	Propeller Cap	1
37	Suction Bell	1
38	Oil Water Detector	1
39	Up Thermal Protection	1
	Oring, Packing	N/A
	Bolt & Nut	N/A

Material

Part	Material	Standards		
		ASTM	DIN	JISS
Pump bowl and Diffusion vane	Gray iron casing	A-Gr 30	GG 20	FC 200
		A-Gr 35	GG 25	FC 250
		A-Gr 40,45	GG 30	FC 300
		A-Gr 50	GG 35	FC 350
		A-Gr 55,60	GG 40	
Propeller	Stainless steel	A-TYPE 329	1.4460	SUS 304
		A-TYPE 410	1.4006	SUS 316
		A-TYPE 420	1.4021	SUS 329
		A-TYPE 431	1.4028	SUS 410
		A-TYPE CF8	1.4308	SUS 420
		A-TYPE CF8M	1.4408	SUS 431
			1.4409	SCS 13
				SCS 14
	Bronze	B 61 Alloy 4A	2.1050.01/G CuSN10	H5111 Gr BC2
		B 62 Alloy 4A	2.1052.01/G CuSn12	H5120 CAC406
		B 584-90500	2.1086.01/G CuSn10Zn	
Pump shaft	Stainless steel	A-TYPE 316	1.4401	SUS 304
		A-TYPE 329	1.4460	SUS 316
		A-TYPE 403	1.4000	SUS 329
		A-TYPE 410	1.4006	SUS 410
		A-TYPE 416	1.4005	SUS 420
		A-TYPE 420	1.4021	SUS 431
		A-TYPE 431	1.4028	SCS 13
			1.4057	SCS 14
Casing wear ring/Liner	Stainless steel	A-TYPE 316	1.4401	SUS 304
		A-TYPE 329	1.4460	SUS 316
		A-TYPE 403	1.4000	SUS 329
		A-TYPE 410	1.4006	SUS 410
		A-TYPE 416	1.4005	SUS 420
		A-TYPE 420	1.4021	SUS 431
		A-TYPE 431	1.4028	SCS 13
		A-TYPE CF8	1.4308	SCS 14
		A-TYPE CF8M	1.4408	

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