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The advertisement for Hanthing Water pumps features a blue and white color scheme. On the left is the Hanthing logo, a stylized blue 'S' shape above the word 'Hanthing' in blue. To the right of the logo is a collage of images showing various pump models and components. A large, diagonal yellow banner with the text 'Water pump' in blue runs across the center. To the right of the banner, four types of pumps are listed in white text on blue rectangular backgrounds: 'Inline', 'Split case', 'Multi stage', and 'End suction'. At the bottom, the website 'www.hanthing.com' is displayed in white text on a blue background.

Hanthing

Water pump

Inline
Split case
Multi stage
End suction

www.hanthing.com



The advertisement for Exthin Air Compressors features a black and yellow color scheme. On the left is the Exthin logo, which consists of a stylized yellow 'X' shape above the word 'Exthin' in yellow. To the right of the logo is a collage of images showing various compressor models and components. A large, diagonal yellow banner with the text 'Air Compressor' in black runs across the center. To the right of the banner, three types of compressors are listed in yellow text on black rectangular backgrounds: 'Portable', 'Screw', and 'Piston'. At the bottom right, there is a detailed image of a large industrial air compressor unit. At the bottom left, the website 'www.exthin.com' is displayed in white text on a black background.

Exthin

Air Compressor

Portable
Screw
Piston

www.exthin.com

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新建文sfef
本

BQS 矿用隔爆型潜水排沙泵

BQS Mining Flameproof Submerged Sand Pump



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安全警告标志：装制在电泵的电动机外壳上，请用户仔细阅读，按规定操作。

Safety warning sign: the sign is on the electric pump's motor casing. The user shall read it carefully and operate as required.



警 告
WARNING

- 1、使用前请详阅本产品说明书；
 - 2、为了安全，严格按使用前准备和检查、启动、运行、停机按规定操作；
 - 3、用户必须配置通过“安全标志”审查的隔爆型综合保护装置和隔爆型负荷开关；
 - 4、严禁无水试机、运转，严禁用力提拉电缆，应系绳索吊放；
 - 5、电泵运转时，工作面附近不得洗涤，下水，应做好隔离工作；
 - 6、维修或清理电泵前应首先切断电源。
 - 7、确定转向正确后，方可启动；
 - 8、电泵必须可靠接地；
 - 9、检查定子绕组对地电机壳的绝缘符合要求，方可安装。
 - 10、切勿将电泵电缆接线在未连接时潜入水中，以免水从电缆接头渗漏进电机内引起电机短路而损坏电泵。
1. Please read the User Manual in details before use;
 2. For safety, it's necessary to conform to required procedures strictly for preparation and check before use, starting, operation and stop;
 3. The user must provide flameproof integrated protectors and flameproof load switches both of which has passed the review of Safety Mark;
 4. It's strictly prohibited to run in and operate the pump without water or drag up the cable, and the pump shall be tied and hung with a rope, when hanging;
 5. When the electric pump is running, it's not allowed to wash or enter water near the working water surface and the quarantine action shall be taken;
 6. Power shall be cut off first before repairing or cleaning the electric pump;
 7. The pump shall not be started until the rotation direction is confirmed to be correct;
 8. The electric pump must be earthed reliably;
 9. Check that the insulation of the stator winding's earthing motor casing is conforming before installation.
 10. Never let cable connection of pump submerged into water when it is not connected, as this can result in water leaking into motor through the cable connection, which may cause short circuit in motor and damages to pump.

产品概述

(一) 产品特点

BQS 型矿用隔爆型潜水排沙泵(简称电泵)，是我公司在充分的市场调研基础上自行研制开发的具有防爆且高效节能的新产品。是为了解决低流量，高扬程泵不能排沙的难题，空气中含有甲烷或煤尘爆炸危险场所排水的需要的一种新型电泵。本产品执行标准MT/T671-2005《煤矿用隔爆型潜水排沙泵》，按隔爆标准设计制造，在电机部分采用严格的隔爆措施，电动机机壳采用铸钢件。机组能抽干工作面地表浅层水，也可长期潜入水中工作。电泵结构紧凑、轻小易移、无需引水、双面密封，经久耐用、安全可靠、适应性强等优点。

OVERVIEW

(I) Product Characteristics

BQS mining flameproof submerged sand pump (hereinafter referred to as pump) is a new flameproof and remarkably energy-saving product developed by our company on the base of sufficient market research. As a new type of pump, it is a solution to the sand discharging problem for low-flow and high-head pump, and to the water discharging in the explosive hazardous locations where there may be methane or coal dust contained in air. Designed and manufactured to the standard of MT/T671-2005 Flameproof Submerged sand Pump for Coal Mines, this product adopts rigorous flameproof measures for motor and uses cast steel for motor casing. This unit can be used to pump the shallow water on the surface of working ground, and can also be submerged into water for long time service. This pump is given the advantages of compact structure, light weight, easy movability, no need of priming water, double-faced seal, outstanding durability, security and suitability etc.

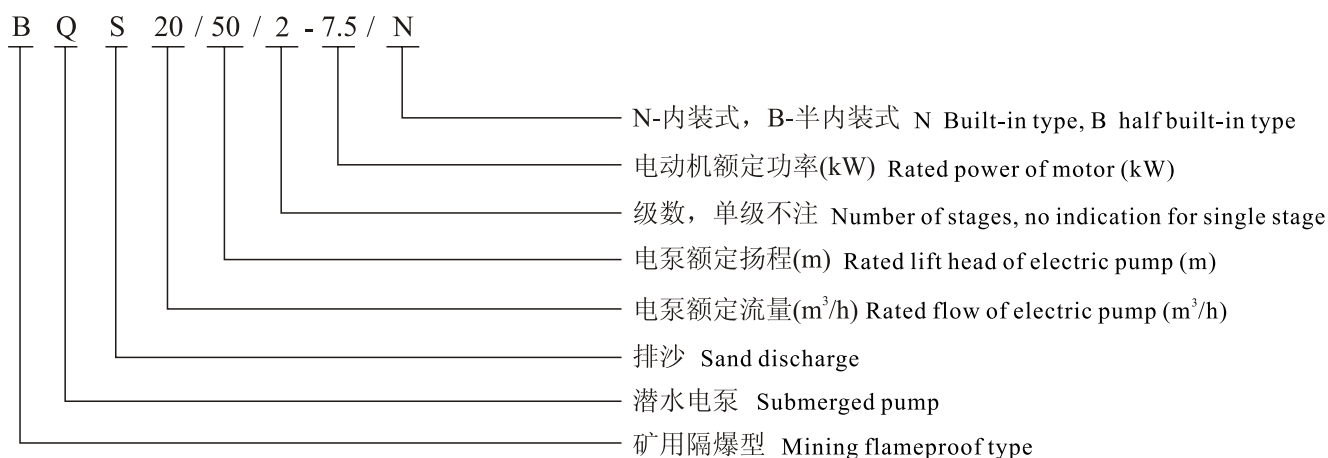
(二) 产品的主要用途及适用范围

在采掘工作面、巷道、井底水窝、局部积水水坑、选煤厂排水、工程排水等场合使用，是一种先进可靠的排水工具。适用于煤矿立井、斜井及井底散煤泥地。其他周围介质中含有甲烷或煤尘爆炸性气体混合物的环境中排放地下水及含有悬浮煤粉的煤水。也可输送各类城市污水，纤维物、粪便等不溶固体的混合液体。系统流量范围为10~500m³/h,扬程范围为10~450m。

(II) Main Application and Application Scope of Product

It is an advanced and reliable water discharging device for excavation working face, laneway, sump, water-logged puddle, coal separating plants and engineering locations, and is suitable for scattered coal ground in vertical and inclined shaft in coal mines and at the bottom of mines, as well as for other locations containing explosive gas mixture like methane or coal dust to discharge underground water and coaly water with suspending coal dust, or to deliver various urban sewage and the mixed liquid with insoluble solids like fibre and faeces etc. Range of flow between 10~500m³/h, and range of head between 10~450m.

(三) 产品型号的组成及其代表意义 (III) Composition and Designation of Product Type



(四) 使用环境及工作条件

电泵在下列适用条件下能连续正常运行：

- 1、电源频率为50Hz，额定电压380V或660V或1140V(允许偏差±5%)的三相交流电。(用户订货时须标明电泵电压值)。
- 2、电泵浅水中和潜入水下深度不超过5m且水位不低于吸水网罩。
- 3、输送介质的温度不超过40℃。
- 4、被抽送液体的PH值为6.5~10。
- 5、水中含有固体杂质的体积浓度一般不超过2%,介质中固体最大粒径不大于泵流道过流断面最小尺寸的50%。
- 6、海拔高度不得超过1000米。
- 7、工作环境温度0~40℃。

(IV) Working Environment and Conditions

The electric pump is available for continuous normal work in the following applicable conditions:

1. Three-phase AC power with 50Hz mains frequency, 380V, 660V or 1,140V rated voltage (permissible deviation ± 5%). (Please specify the voltage value of pump when placing an order).
2. The depth submerged into water shall not exceed 5m, and water level shall not be lower than suction hood.
3. Temperature of media handled not exceeding 40℃.
4. PH value of liquid handled between 6.5~10.
5. The volumetric concentration of solid impurities in water normally not exceeding 2%, the maximum diameter of solid particles in media not exceeding the 50% of the minimum section of pump flow passage.
6. Height above sea level not exceeding 1,000m.
7. Operating ambient temperature between 0~40℃.

结构特点

BQS 型矿用隔爆型潜水排沙泵，实现了电机与水泵一体化的结构，电机与泵壳之间，设置了两道机械密封装置，以防止水进入电机内腔。

三相电源分别用三根单芯电缆，从电机下端分别是采用了“O”型密封圈与橡胶压套密封装置，防止水进入接线盒内。

电机壳外设置外罩，泵排出的水，全部通过电机壳体与外罩之间的夹层流出，实现了电机水冷的特点，外罩上端设置逆止阀，防止停泵时水回流给泵带来不良影响。

本系列排沙泵还设置独特的风冷结构，在水流不足造成泵空转时，此时可依靠自身特有的风冷结构散热，从而保证了水泵可以短时间内脱水运行，有水后能自动排水。

与清水泵相比，排沙泵叶轮相应增加了防沙环，可排含有固体颗粒的沙渣污水，不影响效率，本系列排沙泵与同类泵相比具有启动平衡稳，噪音低，安全可靠，使用寿命长等特点。

结构图 STRUCTURAL DRAWING

内装结构图1 Built-in Structural Drawing 1			
序号 No.	部件名称 Name	序号 No.	部件名称 Name
1	出水口 Water Outlet	15	电缆密封垫 Cable Gasket
2	止回阀座 Check Valve Seat	16	密封室盖 Sealing Chamber Cover
3	止回阀板 Check Valve Plate	17	导叶A Guide Vane A
4	外罩 Outer Housing	18	叶轮A Impeller A
5	上轴承座 Upper Bearing Seat	19	口环A Ring A
6	轴承 Bearing	20	进水节 Suction Casing
7	接地标志 Earthing Sign	21	导叶中间盘 Guide Vane Intermediate Disk
8	电缆 Cable	22	导叶B Guide Vane B
9	定子 Stator	23	叶轮B Impeller B
10	电机壳体 Motor Casing	24	口环B Ring B
11	轴承压盖 Bearing Cover	25	圆螺母 Round Nut
12	接线端子 Connecting Terminal	26	底座 Pedestal
13	下轴承座 Lower Bearing Seat	27	挡污罩 Sewage Protecting Cover
14	电缆压套 Cable Bushing		

STRUCTURAL FEATURES

BQS mining flameproof submerged sand pump takes an integral structure of motor and pump. Dual mechanical seal device is fitted between motor and pump casing to avoid water getting into the motor.

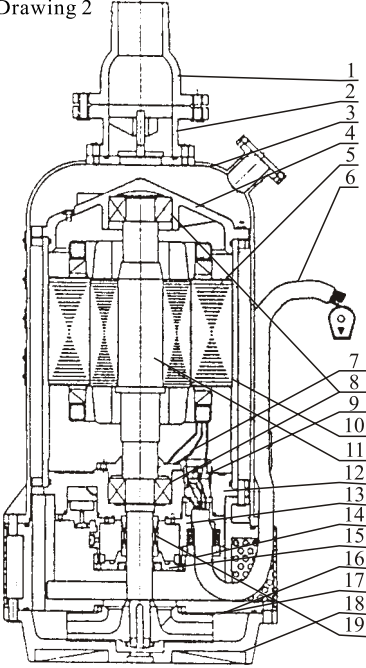
Three-phase power supply uses three single-core cables. The lower part of motor uses O-ring and rubber bushing seal to avoid water getting into the terminal box.

Motor casing is provided with an outer housing. The water discharged by pump all flows out through the interlayer between motor casing and outer housing, so that motor can be water cooled. Check valve is mounted at the upper part of outer housing to avoid undesirable impact on pump caused by water backflow upon pump stop.

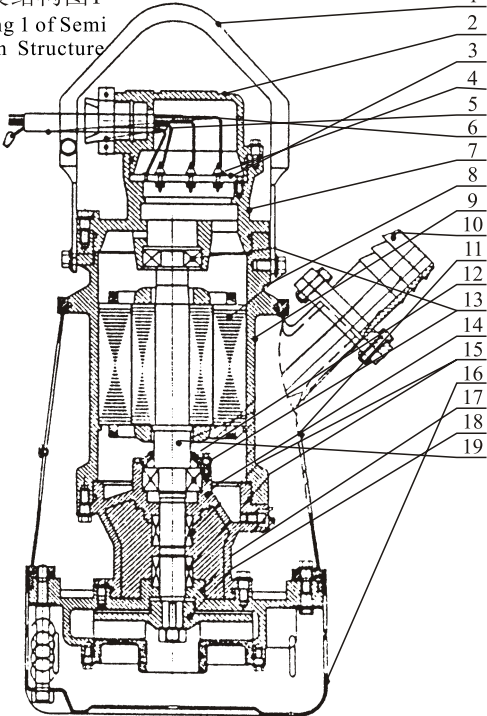
This series of sand pumps are provided with unique air cooling structure to bring out heat dissipation itself in case of idle running of pump under insufficient water flow, thus to ensure no-water running in a short time. When water resumes, it will proceed with water discharge automatically.

Compared with clean water pump, sand pump is added with a sand protecting ring on its impeller to allow it effectively discharging sandy sewage containing solid particles. Compared with their like products, this series of sand pumps are given the advantages of balanced start, little noise, reliable security and long life.

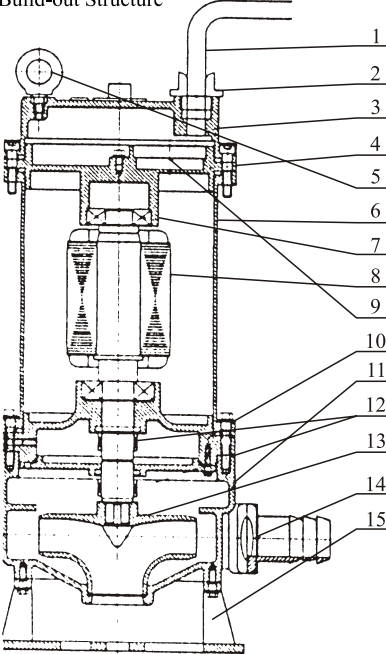
结构图 STRUCTURAL DRAWING

内装结构图2 Built-in Structural Drawing 2			
		序号 No.	部件名称 Name
1	出水口 Water Outlet	11	转子轴 Rotor Shaft
2	止回阀座 Check Valve Seat	12	下轴承座 Lower Bearing Seat
3	外罩 Outer Housing	13	密封室 Sealing Chamber
4	上轴承座 Upper Bearing Seat	14	电缆压套 Cable Bushing
5	转子 Rotor	15	密封室盖 Sealing Chamber Cover
6	电缆 Cable	16	进水节 Suction Casing
7	轴承压盖 Bearing Cover	17	叶轮 Impeller
8	轴承 Bearing	18	底座 Pedestal
9	接线端子 Connecting Terminal	19	机械密封 Mechanical Seal
10	电机壳体 Motor Casing		

结构图 STRUCTURAL DRAWING

半内装结构图1 Drawing 1 of Semi Built-in Structure			
		序号 No.	部件名称 Name
1	提把 Handle	11	外罩 Outer Housing
2	出线盒 Outlet Box	12	轴承压盖 Bearing Cover
3	接线板 Terminal Block	13	轴承 Bearing
4	接线柱 Terminal Post	14	下轴承座 Lower Bearing Seat
5	电缆压套 Cable Bushing	15	机械密封 Mechanical Seal
6	电缆 Cable	16	底座 Pedestal
7	上轴承座 Upper Bearing Seat	17	压水室 Pumping Chamber
8	转子 Rotor	18	叶轮 Impeller
9	电机壳体 Motor Casing	19	转子轴 Rotor Shaft
10	出水口 Water Outlet		

结构图 STRUCTURAL DRAWING

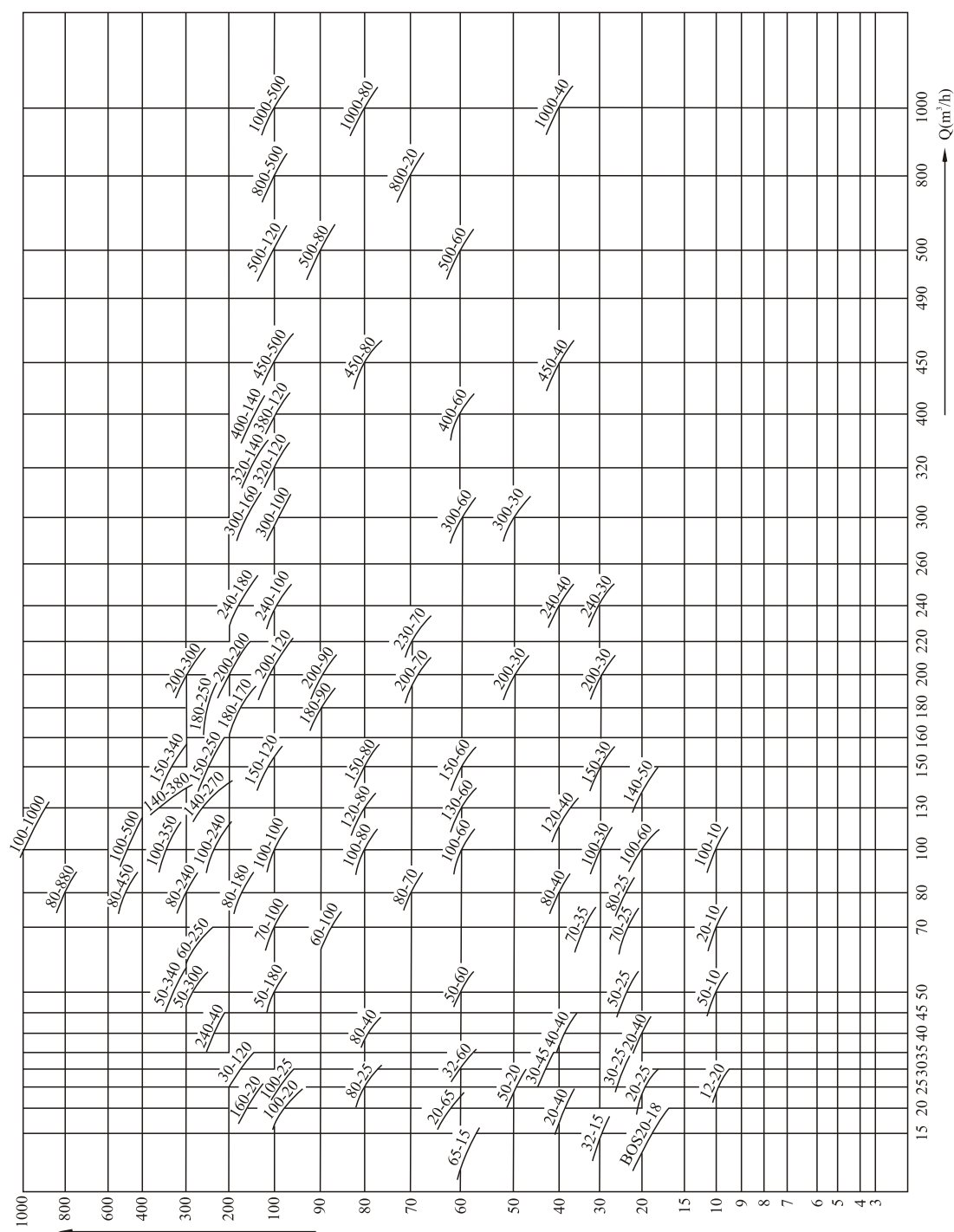
外装结构图1 Drawing 1 of Build-out Structure		序号 No.	部件名称 Name	序号 No.	部件名称 Name
		1	电缆 Cable	9	接线端子 Connecting Terminal
		2	电缆压套 Cable Bushing	10	下轴承座 Lower Bearing Seat
		3	出线盒 Outlet Box	11	涡壳 Volute
		4	上轴承座 Upper Bearing Seat	12	机械密封 Mechanical Seal
		5	吊环 Lift Ring	13	叶轮 Impeller
		6	电机壳体 Motor Casing	14	出水口 Water Outlet
		7	轴承 Bearing	15	底座 Pedestal
		8	定子 Stator		

易损件明细表 (II)Wearing Parts List

序号 No.	名 称 Name	材料 Material	备注 Remarks
1	叶轮 Impeller	QT600-3	
2	机封 Mechanical seal		
3	轴承 Bearing		
4	密封圈 Gasket ring	耐油橡胶 Oil-proof rubber	
5	骨架油封 Skeleton oil seal	耐油橡胶 Oil-proof rubber	

矿用隔爆型潜水排沙泵系列型谱

SPECTRUM OF MINING FLAMEPROOF SUBMERGED SAND PUMP SERIES



性能参数 PERFORMANCE PARAMETERS

序号 No.	型 号 Type	流量 Flow (m³/h)	扬程 Head (m)	功率 Power (kW)	转速 Speed (r/min)	效率 Eff. (%)	出水口径 Internal diameter of outlet(mm)	电流 Current (A)	通过颗粒最大直径 Maximum Diameter of Through Particle (mm)
1	BQS10/28-2.2/B	10	28	2.2	3000	39	40	5.17 2.98 1.72	6
2	BQS15/22-2.2/B	15	22	2.2	3000	43	40		8
3	BQS20/15-2.2/B	20	15	2.2	3000	44	50		8
4	BQS25/12-2.2/B	25	12	2.2	3000	48	50		10
5	BQS15/30-4/B	15	30	4	3000	43	40	8.8 5.1 2.9	6
6	BQS20/25-4/B	20	25	4	3000	44	50		8
7	BQS25/18-4/B	25	18	4	3000	48	50		8
8	BQS32/15-4/B	32	15	4	3000	49	50		10
9	BQS15/55/2-5.5/N	15	55	5.5	3000	42	40	11.7 6.7 3.9	6
10	BQS20/40/2-5.5/N	20	40	5.5	3000	44	40		6
11	BQS25/30/2-5.5/N	25	30	5.5	3000	48	50		8
12	BQS40/20/2-5.5/N	40	20	5.5	3000	51	50		10
13	BQS15/70/2-7.5/N	15	70	7.5	3000	43	40	15.87 9.1 5.29	8
14	BQS20/50/2-7.5/N	20	50	7.5	3000	44	40		8
15	BQS30/35/2-7.5/N	20	35	7.5	3000	50	50		10
16	BQS50/25/2-7.5/N	50	25	7.5	3000	53.52	50		10
17	BQS50/30/2-7.5/N	50	30	7.5	3000	44	50	23 13.3 7.7	10
18	BQS20/65/-11/N	20	65	11	3000	50	75		8
19	BQS30/45/-11/N	30	45	11	3000	51	75		10
20	BQS40/40/-11/N	40	40	11	3000	53	75		10
21	BQS50/30-11/N	50	30	11	3000	37	75	31.1 17.9 10.3	10
22	BQS32/60-15/N	32	60	15	3000	39	75		8
23	BQS40/50-15/N	40	50	15	3000	46	75		6
24	BQS60/30-15/N	60	30	15	3000	47	75		10
25	BQS80/25-15/N	80	25	15	3000	36	100	37.3 21.5 12.4	11
26	BQS20/100-18.5/N	20	100	18.5	3000	38	75		9
27	BQS30/80-18.5/N	30	80	18.5	3000	38	75		11
28	BQS35/70-18.5/N	35	70	18.5	3000	38	75		11
29	BQS30/100-22/N	30	100	22	3000	38	75	43.9 25.2 14.6	7
30	BQS40/80-22/N	40	80	22	3000	39	75		9
31	BQS60/60-22/N	60	60	22	3000	45	75		9
32	BQS50/60-22/N	50	60	22	3000	46	75		10
33	BQS80/40-22/N	80	40	22	3000	49	100	59.9 34.2 19.8	11
34	BQS30/130/2-30/N	30	130	30	3000	38	75		7
35	BQS50/100/2-30/N	50	100	30	3000	41	75		30
36	BQS80/55/2-30/N	80	55	30	3000	46	100		11
37	BQS120/40/2-30/N	120	40	30	3000	47	100	73 52 24.3	10
38	BQS30/150/2-37/N	30	150	37	3000	38	75		7
39	BQS50/120/2-37/N	50	120	37	3000	41	75		20
40	BQS60/100/2-37/N	60	100	37	3000	42	75		10
41	BQS80/70/2-37/N	80	70	37	3000	46	100		11
42	BQS80/80/2-37/N	80	70	37	3000	43	100		11
43	BQS100/60/2-37/N	100	60	37	3000	41	100		11

性能参数 PERFORMANCE PARAMETERS

序号 No.	型 号 Type	流量 Flow (m³/h)	扬程 Head (m)	功率 Power (kW)	转速 Speed (r/min)	效率 Eff. (%)	出水口径 Internal diameter of outlet mm	电流 Current (A)	通过颗粒最大直径 Maximum Diameter of Through Particle (mm)
44	BQS30/170/2-45/N	30	170	45	3000	38	75	94 49.7 32.9	7
45	BQS50/150/2-45/N	50	150	45	3000	41	100		8
46	BQS70/100/2-45/N	70	100	45	3000	43	100		8
47	BQS100/70/2-45/N	100	70	45	3000	45	100		10
48	BQS80/70/2-45/N	80	70	45	3000	46	100		12
49	BQS130/60/2-45/N	130	60	45	3000	49	100		20
50	BQS200/30/2-45/N	200	30	45	3000	52	200		25
51	BQS50/170/2-55/N	50	170	55	3000	55	100	103 82 54	15
52	BQS85/100/2-55/N	85	100	55	3000	55	100		15
53	BQS120/80/2-55/N	120	80	55	3000	41	100		7
54	BQS150/60/2-55/N	150	60	55	3000	44	150		8
55	BQS240/30/2-55/N	240	30	55	3000	46	200		10
56	BQS200/50/2-55/N	200	50	55	3000	47	200		10
57	BQS50/200/3-75/N	50	200	75	3000	41	100	139 82 54	8
58	BQS70/150/3-75/N	70	150	75	3000	43	100		8
59	BQS100/100/3-75/N	100	100	75	3000	45	100		10
60	BQS150/80/3-75/N	150	80	75	3000	47	150		12
61	BQS200/70/3-75/N	200	70	75	3000	49	200		20
62	BQS240/40/3-75/N	240	40	75	3000	51	200		20
63	BQS80/180/4-90/N	80	180	90	3000	39	100	165 99 65	8
64	BQS100/150/4-90/N	100	150	90	3000	44	100		8
65	BQS180/90/4-90/N	180	90	90	3000	45	150		10
66	BQS40/240/4-90/N	40	240	90	3000	47	200		12
67	BQS220/70/4-90/N	220	70	90	3000	50	200		20
68	BQS300/50/4-90/N	300	50	90	3000	58	200		25
69	BQS100/180/4-110/N	100	180	110	3000	54	100	220 112 80	20
70	BQS60/250/4-110/N	60	250	110	3000	41	100		8
71	BQS80/200/4-110/N	80	200	110	3000	44	100		8
72	BQS150/120/4-110/N	150	120	110	3000	47	150		12
73	BQS200/90/4-110/N	200	90	110	3000	49	150		12
74	BQS200/100/4-110/N	200	100	110	3000	54	150		20
75	BQS300/60/4-110/N	300	60	110	3000	50	200		20
76	BQS50/300/4-132/N	50	300	132	3000	44	100	237 146 96	8
77	BQS80/240/4-132/N	80	240	132	3000	51	100		15
78	BQS100/200/4-132/N	100	200	132	3000	45	100		10
79	BQS150/150/4-132/N	150	150	132	3000	47	150		10
80	BQS200/120/4-132/N	200	120	132	3000	49	200		12
81	BQS240/100/4-132/N	240	100	132	3000	51	200		15
82	BQS50/340/4-160/N	50	340	160	3000	45	100	286 177 101	10
83	BQS180/170/4-160/N	180	170	160	3000	44	100		8
84	BQS80/300/4-160/N	80	300	160	3000	45	100		10

性能参数 PERFORMANCE PARAMETERS

序号 No.	型 号 Type	流量 Flow (m³/h)	扬程 Head (m)	功率 Power (kW)	转速 Speed (r/min)	效率 Eff. (%)	出水口径 Internal diameter of outlet mm	电流 Current (A)	通过颗粒最大直径 Maximum Diameter of Through Particle (mm)
85	BQS30/320/4-160/N	30	320	160	3000	47	100	286 177 101	12
86	BQS100/240/4-160/N	100	240	160	3000	41	150		8
87	BQS150/200/4-160/N	150	200	160	3000	53	150		20
88	BQS280/100/4-160/N	280	100	160	3000	48	200		20
89	BQS80/350/4-185/N	80	350	185	3000	44	100	348 200 116	8
90	BQS100/280/4-185/N	100	280	185	3000	45	100		8
91	BQS160/200/4-185/N	160	200	185	3000	47	150		10
92	BQS180/180/4-185/N	180	180	185	3000	48	150		15
93	BQS240/140/4-185/N	240	140	185	3000	51	150		20
94	BQS300/100/4-185/N	300	100	185	3000	54	200		20
95	BQS80/400/4-200/N	80	400	200	3000	43	100	377 217 125	8
96	BQS100/320/4-200/N	100	320	200	3000	45	150		10
97	BQS150/250/4-200/N	150	250	200	3000	47	200		12
98	BQS200/200/4-200/N	200	200	200	3000	48	200		15
99	BQS240/160/4-200/N	240	160	200	3000	51	200		20
100	BQS320/120/4-200/N	320	120	200	3000	55	200		20
101	BQS80/450/4-220/N	80	450	220	3000	41	100	419 241 139	8
102	BQS100/350/4-220/N	100	350	220	3000	45	100		10
103	BQS140/270/4-220/N	140	270	220	3000	46	150		10
104	BQS180/220/4-220/N	180	220	220	3000	48	150		15
105	BQS240/180/4-220/N	240	180	220	3000	51	200		20
106	BQS320/140/4-220/N	320	140	220	3000	53	200		20
107	BQS100/400/4-250N	100	400	250	3000	45	100	474 273 158	10
108	BQS150/300/4-250N	150	300	250	3000	47	100		12
109	BQS180/250/4-250N	180	250	250	3000	48	150		15
110	BQS300/160/4-250N	300	160	250	3000	51	200		20
111	BQS380/120/4-250N	380	120	250	3000	56	200		25
112	BQS450/100/4-250N	450	100	250	3000	58	300		30
113	BQS100/450/4-280N	100	450	280	3000	45	100	528 304 176	10
114	BQS150/340/4-280N	150	340	280	3000	47	150		12
115	BQS200/270/4-280N	200	270	280	3000	48	200		15
116	BQS260/200/4-280N	260	200	280	3000	51	200		20
117	BQS320/170/4-280N	320	170	280	3000	52	200		25
118	BQS400/140/4-280N	400	140	280	3000	58	300		30
119	BQS100/500/4-315/N	100	500	315	3000	45	100	619 388 197	10
120	BQS140/380/4-315/N	140	380	315	3000	46	150		12
121	BQS200/300/4-315/N	200	300	315	3000	48	150		15
122	BQS260/240/4-315/N	260	240	315	3000	52	200		20
123	BQS340/180/4-315/N	340	180	315	3000	55	200		25
124	BQS500/120/4-315/N	500	150	315	3000	58	300		30

注：1、型号规格中，N表示内装式，出口在顶部；B表示半内装式，出口在上侧部。

2、表中电流值是对应额定电压380V、660V和1140V下的数值。

Notes: 1. In the type specification, N stands for the built-in type whose outlet is on the top; while B stands for the semi built-in type whose outlet is on the upside.

2. The current values in the table are those corresponding to the rated voltage values 380V, 660V and 1140V.

使用方法及注意事项

正确使用电泵：在使用前，应仔细阅读说明书及注意事项。在使用过程中应定期检查，仔细维护电泵，才能使电泵经久耐用，否则会使电泵很快损坏，无法继续运转。

1、各种不同规格的潜水泵不同的使用范围，视具体情况选择不同的流量、扬程的电泵，避免造成超负荷运行、浪费电力甚至烧坏电机。

2、潜水电泵应有可靠的接地措施，电机的电缆芯线中红、白、蓝三色分别接到三相电源上，另一根黑色(或黄绿色)芯线必须接到地线上。

3、检查电泵叶轮及进水节周围有无杂物堵塞，如有必须清除，并用拦污装置罩住电泵，以免堵塞叶轮。

4、检查电缆有无破裂、折断等现象。如有必须调换新电缆，以免漏电。造成不应有的损失和人身安全。

5、检查电源是否与铭牌上数据相同。

6、如果电源和电泵使用距离较远时，接线电缆的截径每项应适应加粗，否则会使电压下降。

7、电泵应与隔爆开关配合使用，使电泵能得到过载和断相保护，应特别注意。

8、在运转前检查电机定子绕组对地的绝缘电阻。最低值不得少于50兆欧。

9、使用前配适当的出水管，内应符合规定要求，内径尺寸不符或长度过长都会影响流量，降低效率，浪费电力，甚至烧坏电机。

10、电泵潜水深度一般为0.5-5米，但最深不得超过6米，并不得陷入泥沙中。

11、当发现电泵在运转中突然停机时，应立即切断电源，以便损坏电泵，要进行分析，找出故障原因，待排除后才能继续使用。

12、严禁将电缆作提把使用，否则水会从电缆处进入电机内，损坏电泵或危及人身安全。

13、电泵突然不转，水量突然显著减少等，运转不正常时，或需检查时，或搬运拆装前，一定要先切断电源，以保证安全。

14、潜水电泵“开”、“停”不宜过于频繁。

15、扬程高于150米的水泵，管路上应配逆止阀，以免出现水锤现象，造成电泵轴承损坏和危及人身安全。

17、电泵正常运行水池中禁止人畜入内(洗手饮用)。

USE METHODS AND ATTENTION NOTES

Proper use of pump: before use, read the specifications and attention notes carefully. During the process of use, regular checkup and careful maintenance shall be carried out to ensure longtime durability. Otherwise, pump can be damaged and fail to work soon.

1. Submerged pumps of different specifications are used for different areas. Please choose different flow and head according to specific conditions, thus to avoid overload operation, waste of power and burnout of motor.

2. Submerged pump should have reliable earthing measures. The red, white and blue cores in the cable of motor shall be respectively connected to three-phase power supply, while another black (or yellow green) core shall be connected to earth wire.

3. Check whether there is any sundries blocked around impeller and suction casing, and clear it away if there is any. Use a sewage protecting device to cover the pump to avoid impeller blockage.

4. Check whether there is any breakage on cable, and have it replaced by a new cable if there is, so as to avoid unexpected loss and personal security caused by electric leakage.

5. Check whether power supply is in accordance with the data on the nameplate.

6. In case that it is a long distance between power supply and pump, the sectional diameter of connection cable shall be broadened accordingly, otherwise, voltage can be lowered.

7. Pump shall be used in match with flameproof switch to achieve overload and open-phase protection. Take this point serious.

8. Before operation, check the insulating resistance between motor stator winding and earth, the lowest value shall not be less than $50 M^{\circ} \Omega$.

9. Before use, it shall be fitted with an appropriate discharging pipe. Its inner diameter shall conform to the specified requirements. Nonconforming inner diameter or over length may cause flow affected, efficiency lowered, power wasted and motor burnt out.

10. The depth of pump submerged into water is normally between 0.5~5m, no more than 6m, and pump should not get into the sediment.

11. In case that pump stops suddenly in operation, cut off power supply immediately to avoid damage to pump. Try to find out the cause to the failure and take correct solutions to it before continuing operation.

12. Cable can never be used as a handle, as this may result in water getting into the motor through the cable, and may cause damage to pump or produce threat to personal security as a result.

13. For the sake of safety, do remember to cut off power supply in case of sudden stop of pump, sudden obvious decrease of water discharge, abnormal running, or before checkup, removal or disassembly.

14. Submerged pump shall not be started or stopped too often.

15. For pump head above 150m, check valve shall be fitted on pipeline to avoid production of water hammer that may cause damage to pump bearing and threat to personal security.

17. In the process of normal operation, no persons or animals is allowed to get into the pool (to wash hand or drink water).

泵的选购

当您准备购买上海太平洋的排沙泵时，也许您不知道如何选择流量和扬程都符合施工现场要求的型号。在此我们做一简单介绍：

水泵铭牌上或规格表中所列的扬程叫作“额定扬程”，此时所对应的流量称“额定流量”。对一台水泵而言，扬程并不是一个常数，当泵转速不变时，扬程一般随水泵流量的增大而减少，而水泵的轴功率及电动机电流则随着水泵流量的增大而增大，如果超过额定电流的1.2倍，则容易烧坏电机。

流量是泵在单位时间内输出去的液体量(体积或质量)，而扬程是泵所抽送的单位重量流体从泵进口处(泵进口法兰)到泵出口处(泵出口法兰)能量的增值。其单位是 $N \cdot m/N=m$ ，即泵抽送液体的液柱高度。这一点大部分人都不容易理解，对用户来说，正确的选择水泵的扬程对水泵的寿命和支出费用至关重要。

在选择水泵扬程时，必须清楚净扬程($H_{\text{净}}$)和所需要扬程($H_{\text{需}}$)的概念，以及它们与水泵额定扬程(H)的关系。净扬程是指进水池水面到出水池水面的垂直距离(对自由流出指的是水管出口中心的距离)，即通常所说的实际扬程高度。

维护保养

1、电泵不用时，不宜长期浸泡在水中，应把它放在干燥通风的室内，使电机定子绕组不易受潮。

2、搬运时要注意，不要磨破电缆或损伤机件，以免造成设备事故，影响使用。

3、定期检查。

(1)电泵使用半年后应进行维修检查，易损件(如橡胶油封)已损坏，要及时进行更换。

(2)机械密封是电泵的关键件，它直接影响电机安全运行，因此要对它作经常的检查，在运转至1000-1500小时时应把油腔内的油放出更换，同时测量油里的水分，如发现严重漏水时，需要更换密封，重新灌满15#或20#机油。

PUMP SELECTION

If you are planning to buy a sand pump from Shanghai Pacific, you may not know how to choose its flow and head that can best fit the requirements on working site. Here is a brief introduction to this.

The head marked on nameplate or in specification table is called 'rated head', here the corresponding flow is called 'rated flow'. For a pump, head is not a constant. When pump speed remains unchanged, head will decrease along with the increase of flow, while shaft power and motor current will increase along with the increase of flow. If it exceeds the 1.2 times of rated current, motor may be likely burnt out.

Flow is the quantity (volume or quality) of liquid delivered per unit time, while head is the added value of energy of unit weight fluid delivered by pump from pump inlet (pump suction flange) to pump outlet (pump discharge flange) indicated in $N \cdot m/N=m$, namely the height of fluid column delivered by pump. This point is not easy to be understood by the majority of people. For users, correct selection of pump head is critically important for pump service life and expenditures.

When selecting pump head, be clearly understood the concept of net head (H_{Net}) and required head (H_{Required}), as well as their connection with pump rated head (H). Net head is the vertical distance between the water surface of suction and discharge pools (for free discharge, it is the distance from the center of pipe discharge), which is commonly known as actual head height.

MAINTENANCE

1. When pump is not in service, do not leave it in water for long time, but should be placed in dry and ventilated room to keep motor stator winding away from damp.

2. Upon transportation, try not to damage the cable or other parts, so as to avoid equipment accident and subnormal operation.

3. Regular checkup.

(1) Pump shall be checked and serviced after half-a-year's service to see whether there are any wearing parts (like rubber oil seal) damaged, and have them replaced if needed.

(2) Mechanical seal is an important part of pump, which may have direct influence on the safe operation of motor, so it should be checked often. After 1,000~1,500 hours of service, let out the oil inside for replacement. Meanwhile, check the water content in the oil. If there is found to have serious water leakage, it is needed to have the seal replaced, and then refill in 15# or 20# motor oil.

维护保养

(3)用500V或1000V的兆欧表测量冷态下电机定子绕组对地的绝缘电阻，一般在100兆欧以上，方可使用。如果发现绝缘电阻逐步下降或接近“0”的时候，则反应出机械密封已严重磨损，而导致至水进入电机内，这时需要更换新的机械密封，同时必须要更换新的机油。关于电机定子绕组驱除潮气或水分的干燥办法和一般电机相同。

(4)电泵的修理：损坏的电泵应送交持有国家防爆安全许可证的生产厂家，也可回本厂维修。

(5)需更换的易损件可向本公司采购，易损件密封圈结构见图。

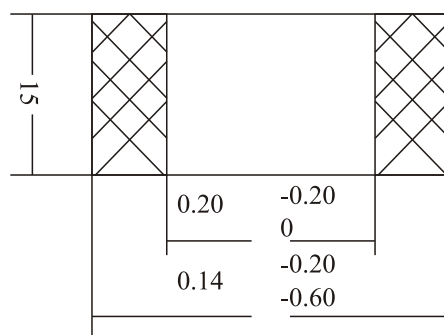


图1

4、维修时注意事项

(1)轴承必须选用名牌厂家的产品或到我公司购买，安装时应将轴承及其它部件清洗干净，并加黄油以免损坏轴承。

(2)机械密封应轻拿轻放，严禁磕碰，磨擦副表面以及轴、密封端盖必须清洗干净，橡胶软管和轴接部位应抹上黄油。

(3)叶轮拆卸时，应均匀受力，避将撬弯。

(4)电泵止口部位有O型密封圈，安装时不应扭曲，以免受挤影响密封。

(5)紧固螺栓时，应对称均匀用力。

(6)注油时以淹没上端封为限，以免电机发热时将密封壳涨裂，注油螺栓缠绕聚四氟乙烯密封带并拧紧。

MAINTENANCE

(3) Use a 500V or 1,000V megohmmeter to check the insulating resistance between motor stator winding and earth under cool state. Normally, it shall be higher than 100M'Ω for operation. In case that insulating resistance is found decreasing gradually or approaching '0', that means mechanical seal has been damaged seriously and water has entered into the motor. Here, a new mechanical seal shall be put on. Besides, new motor oil shall be filled in. The dewetting or drying methods of motor stator winding is different from conventional motors.

(4) Servicing of pump: damaged pump shall be serviced by manufacturers holding national flameproof safe production permit, or returned to our factory for servicing.

(5) Wearing parts be replaced can be purchased from our company, the structure of sealing ring may be referred to the drawing.

4. Attention Notes for Servicing

(1) Use bearings from prestigious manufacturers or from our company. Upon installation, have bearing and other parts cleaned, and add in grease to avoid damage to bearing.

(2) Mechanical seal shall be handled carefully without any collisions. Friction pair surface, shaft and end cover of seal shall be cleaned, rubber pipe and shaft connection should be provided with grease.

(3) Upon disassembling, impeller should be evenly stressed to avoid bending.

(4) The O-ring at the end part of pump should not be twisted during installation to avoid subnormal sealing as a result of compression.

(5) Bolts shall be fastened under symmetrical and even stress.

(6) Oil should be filled not to exceed the upper end seal to avoid breakage of sealing shell as a result of motor heating. Oiling bolt should be wound with PTFE sealing strip and fastened.

引出电缆的接线方法 CONNECTION METHODS OF OUTGOING CABLE



1、电动机出线端引出电缆标志如下表

1. The outgoing cable of motor outlet terminal is marked as the table below.

定子绕组 Stator winding	始端 Beginning end	末端 Terminal End
第一相 1 st phase	U ₁	U ₂
第二相 2 nd phase	V ₁	V ₂
第三相 3 rd phase	W ₁	W ₂

2、根据电动机接法出线端应按下表接线

2. According to the connection method of motor, the outlet terminal shall be connected as per the table below.

Y	U ₁ V ₁ W ₁  U ₂ V ₂ W ₂
△	U ₁ V ₁ W ₁  U ₂ V ₂ W ₂

运输、贮存及开箱检查

用户购买了本公司的电泵，应采取必要的措施防止在运输或搬运过程中碰撞或剧烈振动。

如果电泵长期不用，应放在通风、防雨、防晒的仓库中，存放期超过半年时，应对电泵进行必要的外观和机械检查，并进行必要的试验。

每台水泵开箱后有下列随机文件。

- 1、装箱单
- 2、产品合格证
- 3、使用说明书
- 4、保修卡

保修条件

保修期内请正确参照说明书内容使用、存放保管电泵，可保证电泵在20000小时的使用期内良好的运行。潜水电泵保修、保换期为一年(超过说明书规定条件下使用不在此限)。若在此规定的时间内，电泵因制造质量不良而发生损坏或不能正常工作时，本厂将为用户提供三包服务。易损件的正常磨损(水流部分零部件)不在此限。

TRANSPORTATION STORAGE AND UNPACKING CHECK

After buying our electric pump, the user shall take necessary actions to avoid knocking or violent vibration during transportation or moving.

If the electric pump is to be idle for long, it shall be placed in a ventilating, rainproof and sun-resistant warehouse. If the storage period exceeds half a year, necessary appearance and mechanical checks plus necessary tests shall be carried out for the electric pump.

Each water pump is included with the following documents when unpacked.

- 1.Packing List
- 2.Product Certificate of Conformity
- 3.User Manual
- 4.Guarantee Card

GUARANTEE CONDITIONS

During the guarantee period, please refer to the manual for proper use and storage of the electric pump, and that will guarantee a service life 20,000 hours of the pump's good operation. The guarantee period for the electric submersible pump's repair and replacement is one year (excluding use beyond specified conditions in the Manual). If the electric pump is damaged or fails to work normally due to defective manufacturing quality within the above period, our factory will provide "3-R guarantees"(guaranteed repair, replacement and refund) service for the user. This guarantee doesn't cover the normal wear of wearing parts (parts for the flow part).

故障分析及排除方法

故障现象	原因分析	排除方法	备 注
电泵不出水 间歇出水 或少出水	1、电机反转 2、动水位低于泵吸入口 3、输水管漏水严重或水管脱开 4、转子或轴松开 5、叶轮松动 6、管路堵塞	1、调换电源接线头 2、将泵浸入水中 3、更换输水管或输水管重接 4、更换转子 5、拧紧叶轮螺母 6、清除堵塞	
流量降低	1、密封环严重磨损 2、滤网、导流壳、叶轮流道堵塞 3、电源、电压过低 4、动水位下降超过水泵额定扬程	1、更换密封环 2、清除堵塞 3、停机待电压到规定值后再启动 4、更换高扬程泵	
电泵剧烈振动或电流表指针摆动大	1、电机轴弯曲 2、电机轴承部位磨损过大 3、水泵低扬程大流量电机超载 4、井水涌水量不够，间歇出水 5、抽送的介质比重太大	1、更换电机轴 2、更换轴承 3、加闸阀控制流量在工况点运行 4、加闸阀控制出水量 5、用水冲稀或更换大功率泵	
电机不能启动有嗡嗡声	1、电机缺相 2、电压过低 3、轴承咬合抱轴 4、电机绕组烧坏 5、热保护器损坏 6、叶轮卡住	1、检修线路及电缆 2、检修线路及电缆 3、修理轴承及更换轴承 4、更换绕组 5、更换热保护器 6、拆下泵体清除垃圾	
绝缘电阻突然下降	1、电泵电缆接头进水 2、电缆破损 3、电机定子绝缘破坏 4、水泵陷入泥沙中	1、修理接头 2、包扎或调换电缆 3、包扎或调换绕组 4、按使用要求安装水泵	

FAULT ANALYSIS AND REMOVAL METHODS

Symptom	Reason Analysis	Removal Methods	Remarks
No output, intermittent output or little output of water from electric pump	<ol style="list-style-type: none"> 1. The motor reverses 2. The dynamic water level is lower than the pump inlet 3. The water pipe leaks seriously or is uncoupled. 4. The rotor or shaft is loose 5. The impeller is loose 6. The pipeline is jammed 	<ol style="list-style-type: none"> 1. Exchange the power supply terminals 2. Soak the pump in water 3. Replace or reconnect the water pipe 4. Replace the rotor 5. Screw down the impeller nut 6. Remove the jamming 	
Flow reduction	<ol style="list-style-type: none"> 1. The gasket ring is seriously worn out 2. The filter screen, the diversion casing and the impeller channel are jammed. 3. The power supply is undervoltage 4. The dynamic water level drops beyond the water pump's rated head. 	<ol style="list-style-type: none"> 1. Replace the gasket ring 2. Remove the jamming 3. Stop until the voltage reaches the set value and then restart. 4. Replace the high lift head pump 	
Violent vibration of electric pump or violent oscillation of amperemeter pointer	<ol style="list-style-type: none"> 1. The motor shaft is bent 2. The motor bearing part is too worn out 3. The motor is overload due to the water pump's low lift head and high output 4. The well water inflow is insufficient causing the intermittent water output. 5. The pumped medium's specific gravity is too big 	<ol style="list-style-type: none"> 1. Change the motor shaft 2. Replace the bearing 3. Mount a gate valve to control the flow to operate at the working point. 4. Mount a gate valve to control the water output. 5. Dilute with water or replace it with a high-power pump 	
Motor failing to start and humming	<ol style="list-style-type: none"> 1. The motor is open-phase 2. The voltage is too low 3. The bearing is clutched and seized 4. The motor's winding is burnt out 5. The thermal protector is damaged 6. The impeller is seized 	<ol style="list-style-type: none"> 1. Overhaul the line and cable 2. Overhaul the line and cable 3. Repair or replace the bearing 4. Replace the winding 5. Replace the thermal protector 6. Disassemble the pump body and remove the trash 	
Sudden reduction of insulation resistance	<ol style="list-style-type: none"> 1. Water goes into the electric pump's cable joint 2. The cable is damaged 3. The motor stator's insulation is damaged 4. The water pump is in the silt 	<ol style="list-style-type: none"> 1. Repair the joint 2. Wrap or exchange the cable 3. Wrap or exchange the winding 4. Install the water pump in accordance with operating requirements 	