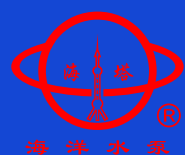
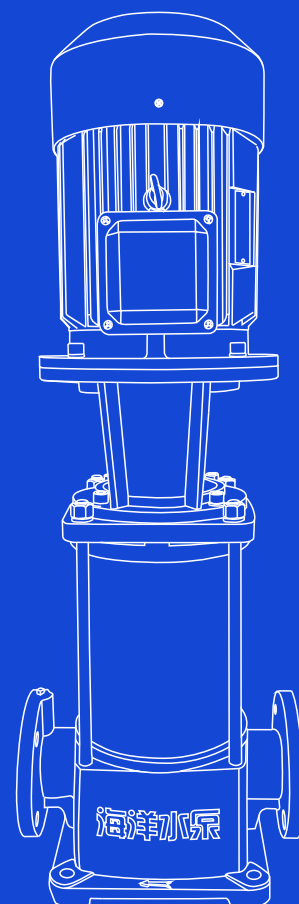


由于我们在不断努力改进产品，我们保留样本数据更改的权利，敬请谅解。

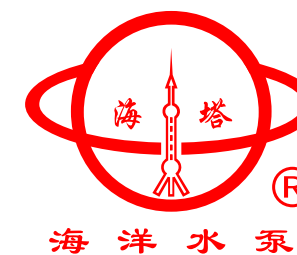


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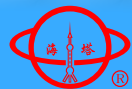


**GDL型
立式多级离心泵**

GDL vertical multistage centrifugal pump

SEAPUMP

上海海洋泵阀制造有限公司
SHANGHAI SEA PUMP & VALVE MFG CO., LTD



企业简介 + AOBUTS

上海海洋泵阀制造有限公司是专业从事水泵、生活消防设备及水泵智能控制开发、生产、销售为一体的股份制企业，本公司运用先进的软件开发、设计产品保证了向顾客提供更优质的产品。

“海洋水泵，泵的海洋”，海洋产品在全国各地设有分公司以及售后服务处，产品已应用于工矿企业、城市污水处理、城市供水、石油化工、农业灌溉等行业。本厂资金雄厚，生产设备先进，检测手段完善，并拥有一批高素质的专业人才队伍，同时ISO9001:2015国际质量管理体系的良好动作，为制造出优质、可靠的产品打下坚实基础。

本公司在“以人为本，科技兴业；以诚为用，质量立业；勇于开拓，锐意进取；追求卓越，走向未来”的方针指导下，不断开拓进取创新发展，在长期的实践中形成了一套完整的质量体系，并配备了一支安装调试维护的售后服务队伍。销售网点辐射全国各大城市，产品行销全国各省、市、自治区，并出口东南亚等国。并以一流的产品、一流的服务赢得了国内外广大用户的信赖和好评。本公司以“一切为了顾客的满意”为宗旨，继往开来，与时俱进。服务于人类建设美好家园。

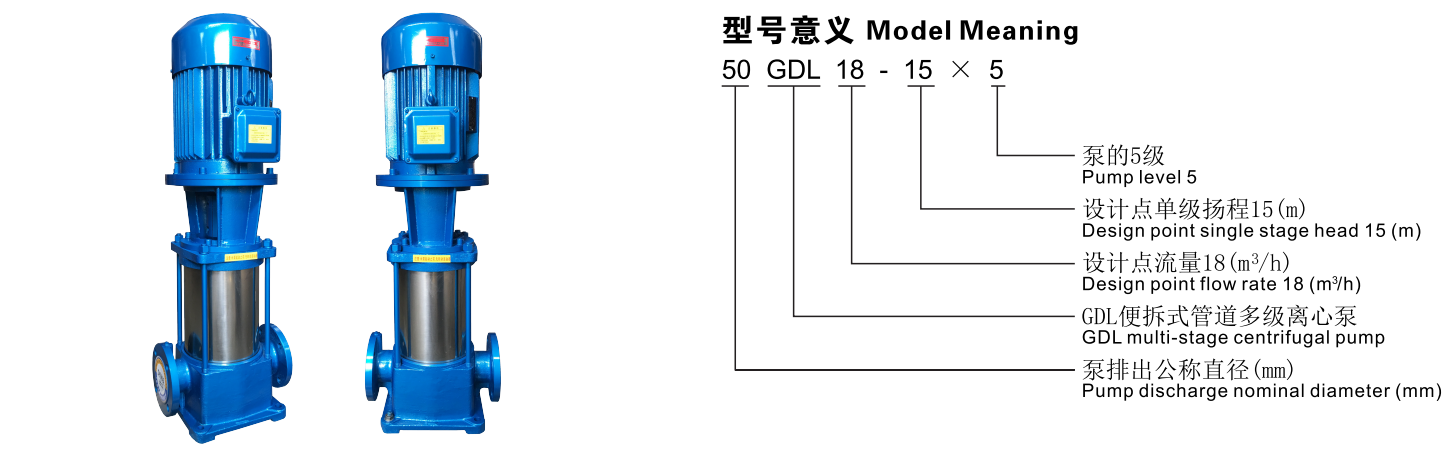
Shanghai HAIYANG pump & valve Co., Ltd. Is a joint-stock enterprises which specializes in the manufacture of water pumps, fire fighting equipment and pumps intelligent controlling production, sales in one. our company uses advanced software to develop and design products to ensure that customers provide better quality products.

" HAIYANG water pumps, pump of the sea", the HAIYANG products throughout the country with more than 30 branch offices as well as after-sales service, products have been used in industrial and mining enterprises, urban sewage treatment, urban water supply, petrochemicals, agriculture and irrigation sectors. Factory with a strong financial background, advanced production equipment and means of improving the detection and has a number of high-quality professional talent, while ISO9001: 2000 international quality management system of good moves, in order to create high-quality, reliable products to lay a solid foundation.

In this "people-oriented, Industrial Science and Technology; to use for Prudential, the quality of establishing themselves; to open up the courage to strive for progress; the pursuit of excellence, into the future" under the guidance of continuous innovation and development to forge ahead in long-term practice of the formation of a complete set of The quality system and is equipped with an installation of the maintenance of after-sales service team. Radiation sales outlets in major cities nationwide, product marketing provinces, municipalities and autonomous regions, and exports in countriessuch as South-East Asia. And first-class products, first-class service to win customers at home and abroad trust and praise. The Company take "everything for the customer satisfied" as the purpose, advance with the times, in the service of humanity home.

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故障原因及排除方法	11	Fault causes and troubleshooting methods
管路损耗参考表	12	Pipeline Loss Reference Table



产品概述

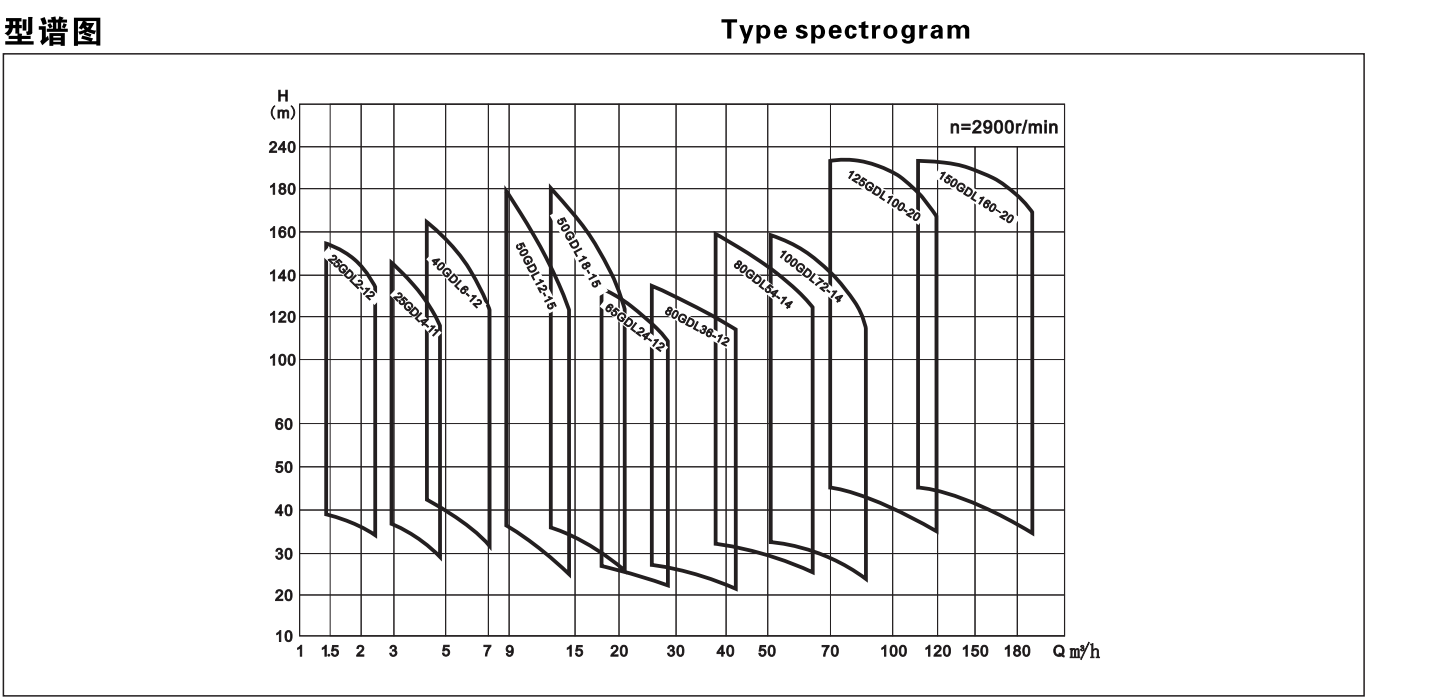
该泵为最新泵型，具有节能显著，占地面积小，安装方便、性能稳定等特点。外套采用不锈钢，轴封用耐磨机械密封，无泄漏，使用寿命长。以水力平衡解决轴向力，因而泵运转平稳，低噪音，可以简便安装于任一段水平管路中间。完全能满足高层建筑、深井矿等的给排水及消防设施需要，是广大冷热水行业或一般介质、理化性质类似水等液体输送的最佳泵型。

- 工作条件**
- 1、电机转速：2900r/min
 - 2、使用温度：≤120℃
 - 3、系统压力：≤2.0MPa
 - 4、环境温度：不高于+40℃，湿度不大于95%，海拔高度不超过1000米。

Overview

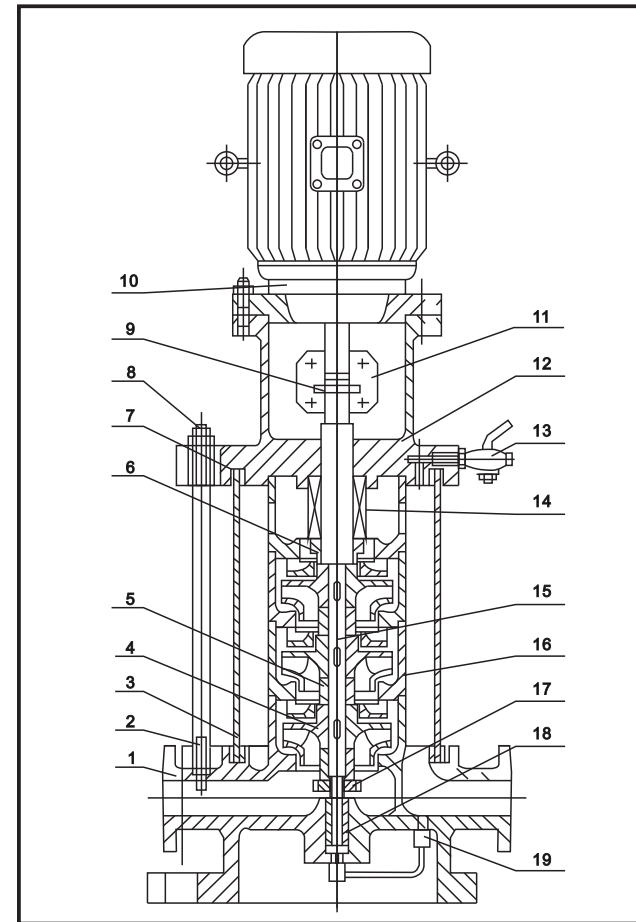
This pump is the latest pump type, with significant energy-saving, small footprint, convenient installation, and stable performance. The outer sleeve is made of stainless steel, and the shaft seal is sealed with wear-resistant mechanical seal, which is leak free and has a long service life. By using hydraulic balance to solve axial force, the pump operates smoothly and has low noise, making it easy to install in the middle of any horizontal pipeline. It can fully meet the needs of water supply, drainage, and fire protection facilities in high-rise buildings, deep mines, and other areas. It is the best pump type for the transportation of liquids in the cold and hot water industry or general media with physical and chemical properties similar to water.

- working conditions**
- 1. Motor speed: 2900r/min
 - 2. Operating temperature: ≤120℃
 - 3. System pressure: ≤2.0MPa
 - 4. Environmental temperature: not higher than +40℃, humidity not greater than 95%, and altitude not exceeding 1000 meters.

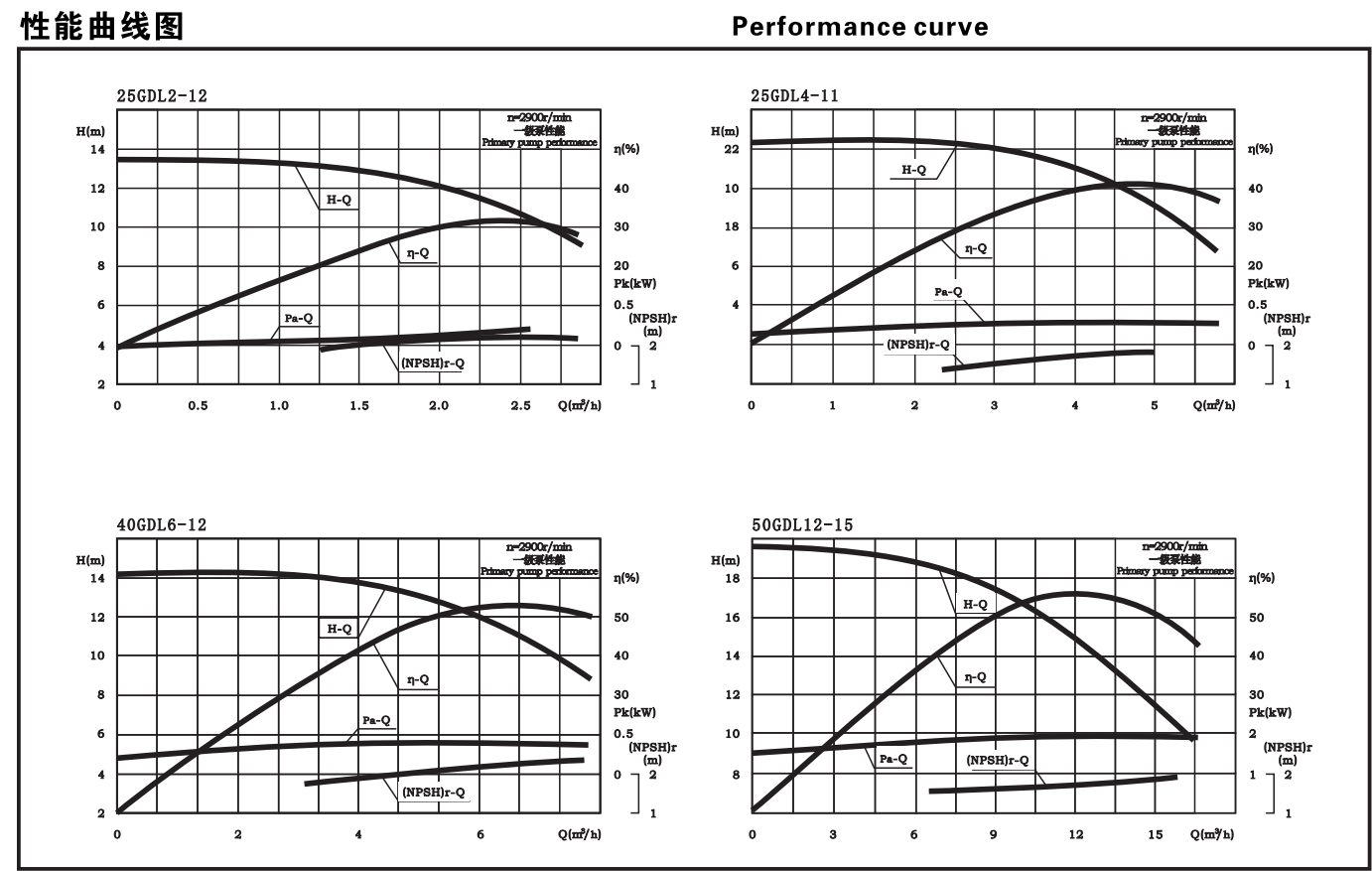


结构简图

Sstucture diagram



序号 serial NO.	名称 Name	Name
1	泵体	Pump casing
2	拉紧螺栓	Tensile bolt
3	外筒	Outer cylinder
4	叶轮	Impeller
5	叶轮挡套	Impeller baffle
6	轴套	Muff
7	密封垫	Seal-washer
8	螺母	Nut
9	销	Pin
10	电机	Motor
11	联轴器	Clutch
12	联接座	Linking seat
13	气嘴	Air nozzle
14	机械密封	Mechanical seal
15	轴	Shaft
16	中段	middle section
17	轴套螺母	Muff out
18	轴瓦	Miner
19	回水管部件	Return pipe patr



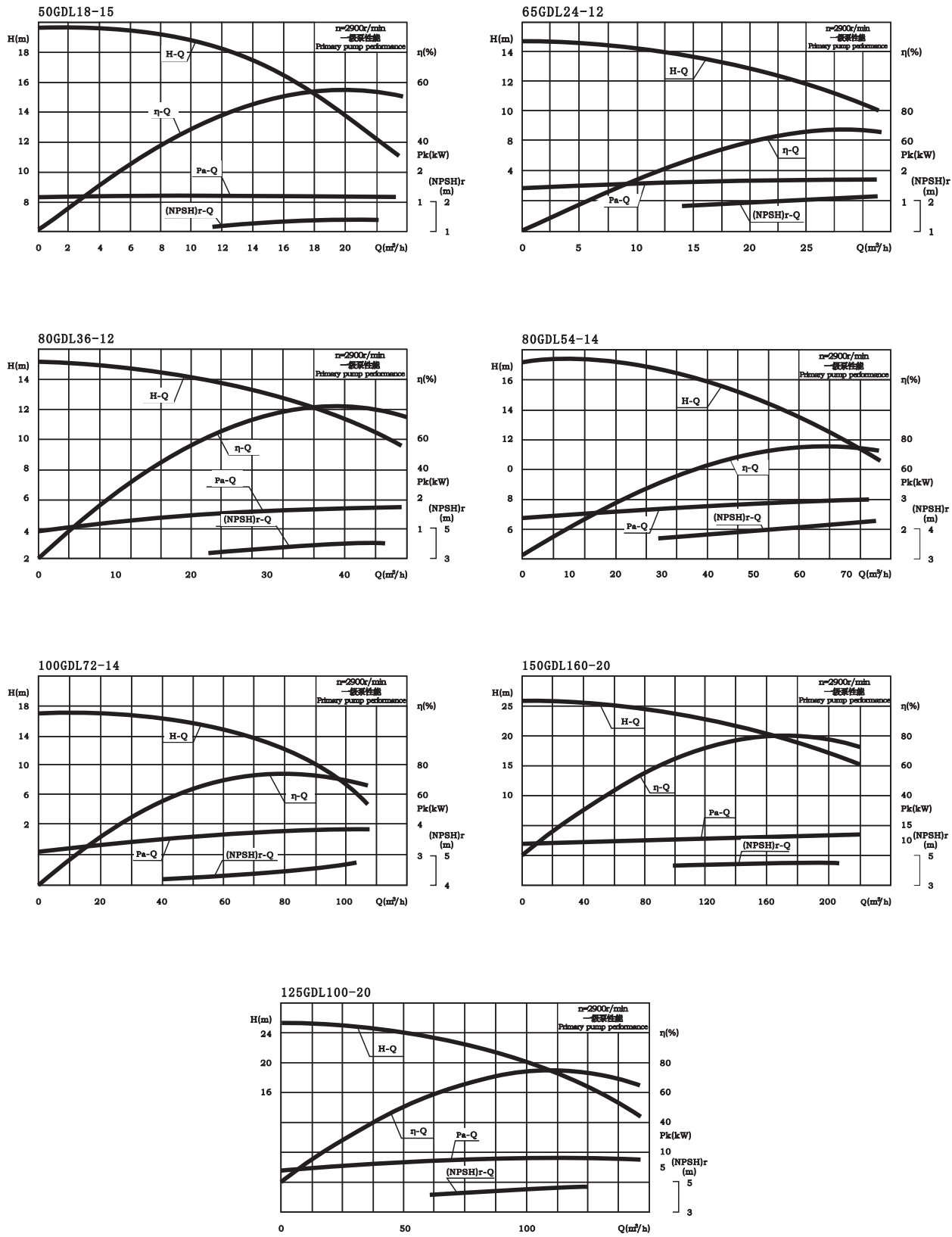
GDL型立式多级离心泵
GDL vertical multistage centrifugal pump

清水泵系列 Clean water pump series



性能曲线图

Performance curve



GDL型立式多级离心泵
GDL vertical multistage centrifugal pump

清水泵系列 Clean water pump series



性能参数表

Performance parameter table

型号 Model number	级数 series	流量 Flow		扬程 Head m	转速 Speed r/min	轴功率 shaft power	配用功率 Allocated power	效率 Efficiency	必需汽蚀余量 Required cavitation allowance	总重 Total weight kg
		m³/h	L/s			kW	kW	η (%)	(NPSH)r(m)	
25GDL2-12	3	1.4 2 2.4	0.39 0.56 0.67	38 36 33	2900	0.63 0.65 0.67	1.1	23 30 32	2.2 2.9 4.3	58
	4	1.4 2 2.4	0.39 0.56 0.67	51 48 44		0.83 0.87 0.90	1.1	23 30 32	2.2 2.9 4.3	62
	5	1.4 2 2.4	0.39 0.56 0.67	63 60 55		1.04 1.09 1.12	1.5	23 30 32	2.2 2.9 4.3	68
	6	1.4 2 2.4	0.39 0.56 0.67	76 72 66		1.26 1.30 1.35	1.5	23 30 32	2.2 2.9 4.3	72
	7	1.4 2 2.4	0.39 0.56 0.67	88 84 77		1.46 1.52 1.57	2.2	23 30 32	2.2 2.9 4.3	78
	8	1.4 2 2.4	0.39 0.56 0.67	100 96 88		1.63 1.74 1.80	2.2	23 30 32	2.2 2.9 4.3	82
	9	1.4 2 2.4	0.39 0.56 0.67	114 108 100		1.89 1.96 2.02	2.2	23 30 32	2.2 2.9 4.3	86
	10	1.4 2 2.4	0.39 0.56 0.67	126 120 110		2.01 2.17 2.24	3	23 30 32	2.2 2.9 4.3	98
	11	1.4 2 2.4	0.39 0.56 0.67	138 132 121		2.31 2.39 2.47	3	23 30 32	2.2 2.9 4.3	102
25GDL4-11	3	2.8 4 4.8	0.78 1.11 1.33	36 33 28	2900	0.86 0.85 0.86	1.1	32 42 43	2.2 2.9 4.3	58
	4	2.8 4 4.8	0.78 1.11 1.33	48 44 38		1.11 1.14 1.16	1.5	32 42 43	2.2 2.9 4.3	65
	5	2.8 4 4.8	0.78 1.11 1.33	60 55 47		1.38 1.42 1.45	2.2	32 42 43	2.2 2.9 4.3	72
	6	2.8 4 4.8	0.78 1.11 1.33	72 66 57		1.68 1.72 1.75	2.2	32 42 43	2.2 2.9 4.3	76
	7	2.8 4 4.8	0.78 1.11 1.33	84 77 66		2.00 2.05 2.06	3	32 42 43	2.2 2.9 4.3	86
	8	2.8 4 4.8	0.78 1.11 1.33	96 88 76		2.26 2.28 2.32	3	32 42 43	2.2 2.9 4.3	90
	9	2.8 4 4.8	0.78 1.11 1.33	108 99 85		2.55 2.57 2.59	3	32 42 43	2.2 2.9 4.3	94
	10	2.8 4 4.8	0.78 1.11 1.33	120 110 95		2.81 2.86 2.89	4	32 42 43	2.2 2.9 4.3	110
	11	2.8 4 4.8	0.78 1.11 1.33	132 121 104		3.14 3.18 3.24	4	32 42 43	2.2 2.9 4.3	114
40GDL6-12	3	4.2 6 7.2	1.17 1.67 2.00	41 36 30	2900	1.09 1.13 1.15	1.5	43 52 50	2.2 2.9 4.3	72
	4	4.2 6 7.2	1.17 1.67 2.00	54 48 40		1.45 1.50 1.53	2.2	43 52 50	2.2 2.9 4.3	78
	5	4.2 6 7.2	1.17 1.67 2.00	68 60 51		1.81 1.88 1.92	2.2	43 52 50	2.2 2.9 4.3	82
	6	4.2 6 7.2	1.17 1.67 2.00	82 72 61		2.18 2.26 2.30	3	43 52 50	2.2 2.9 4.3	92
	7	4.2 6 7.2	1.17 1.67 2.00	95 84 71		2.54 2.64 2.69	3	43 52 50	2.2 2.9 4.3	96
	8	4.2 6 7.2	1.17 1.67 2.00	109 96 81		2.91 3.01 3.07	4	43 52 50	2.2 2.9 4.3	112
	9	4.2 6 7.2	1.17 1.67 2.00	123 108 91		3.27 3.39 3.45	4	43 52 50	2.2 2.9 4.3	116
	10	4.2 6 7.2	1.17 1.67 2.00	136 120 102		3.63 3.77 3.84	4	43 52 50	2.2 2.9 4.3	120
	11	4.2 6 7.2	1.17 1.67 2.00	150 132 112		4.00 4.15 4.22	5.5	43 52 50	2.2 2.9 4.3	140

性能参数表

Performance parameter table

型号 Model number	级数 series	流量 Flow		扬程 Head m	转速 Speed r/min	轴功率 shaft power kW	配用功率 Allocated power kW	效率 Efficiency η (%)	必需汽蚀余量 Required cavitation allowance (NPSH)r(m)	总重 Total weight kg
		m³/h	L/s			kW	kW	η (%)	(NPSH)r(m)	
50GDL12-15	2	8.4 12.0 14.4	2.33 3.33 4.00	36 30 25	2900	1.68 1.71 1.72	2.2	49 57 55	2.5 3.5 4.0	113
	3	8.4 12.0 14.4	2.33 3.33 4.00	54 45 37		2.52 2.57 2.58	3	49 57 55	2.5 3.5 4.0	129
	4	8.4 12.0 14.4	2.33 3.33 4.00	72 60 50		3.36 3.43 3.44	4	49 57 55	2.5 3.5 4.0	149
	5	8.4 12.0 14.4	2.33 3.33 4.00	90 75 62		4.20 4.29 4.30	5.5	49 57 55	2.5 3.5 4.0	181
	6	8.4 12.0 14.4	2.33 3.33 4.00	108 90 75		5.04 5.15 5.16	5.5	49 57 55	2.5 3.5 4.0	190
	7	8.4 12.0 14.4	2.33 3.33 4.00	126 105 87		5.88 6.00 6.01	7.5	49 57 55	2.5 3.5 4.0	204
	8	8.4 12.0 14.4	2.33 3.33 4.00	144 120 100		6.72 6.86 6.87	7.5	49 57 55	2.5 3.5 4.0	212
	9	8.4 12.0 14.4	2.33 3.33 4.00	162 135 112		7.56 7.72 7.73	11	49 57 55	2.5 3.5 4.0	265
	10	8.4 12.0 14.4	2.33 3.33 4.00	180 150 125		8.40 8.59 8.60	11	49 57 55	2.5 3.5 4.0	273
50GDL18-15	2	12.6 18.0 21.6	3.5 5.0 6.0	36 30 25	2900	2.28 2.31 2.33	3	54 63 62	3.5 4.0 4.5	122
	3	12.6 18.0 21.6	3.5 5.0 6.0	54 45 37		3.42 3.47 3.50	4	54 63 62	3.5 4.0 4.5	142
	4	12.6 18.0 21.6	3.5 5.0 6.0	72 60 50		4.57 4.62 4.62	5.5	54 63 62	3.5 4.0 4.5	175
	5	12.6 18.0 21.6	3.5 5.0 6.0	90 75 62		5.71 5.78 5.93	7.5	54 63 62	3.5 4.0 4.5	189
	6	12.6 18.0 21.6	3.5 5.0 6.0	108 90 75		6.85 6.94 7.00	7.5	54 63 62	3.5 4.0 4.5	198
	7	12.6 18.0 21.6	3.5 5.0 6.0	126 105 87		8.00 8.10 8.16	11	54 63 62	3.5 4.0 4.5	252
	8	12.6 18.0 21.6	3.5 5.0 6.0	144 120 100		9.04 9.05 9.33	11	54 63 62	3.5 4.0 4.5	261
	9	12.6 18.0 21.6	3.5 5.0 6.0	162 135 112		10.2 10.4 10.5	15	54 63 62	3.5 4.0 4.5	280
	10	12.6 18.0 21.6	3.5 5.0 6.0	180 150 125		11.4 11.5 11.6	15	54 63 62	3.5 4.0 4.5	289
65GDL24-12	2	18.0 24.0 28.8	5.00 6.67 8.00	26 24 20	2900	2.21 2.34 2.35	3	54 63 62	3.5 4.0 4.5	122
	3	18.0 24.0 28.8	5.00 6.67 8.00	40 36 30		3.31 3.51 3.53	4	54 63 62	3.5 4.0 4.5	142
	4	18.0 24.0 28.8	5.00 6.67 8.00	52 48 40		4.41 4.68 4.71	5.5	54 63 62	3.5 4.0 4.5	175
	5	18.0 24.0 28.8	5.00 6.67 8.00	66 60 50		5.52 5.85 5.89	7.5	54 63 62	3.5 4.0 4.5	189
	6	18.0 24.0 28.8	5.00 6.67 8.00	78 72 60		6.62 7.02 7.07	7.5	54 63 62	3.5 4.0 4.5	198
	7	18.0 24.0 28.8	5.00 6.67 8.00	92 84 70		7.72 8.19 8.25	11	54 63 62	3.5 4.0 4.5	252
	8	18.0 24.0 28.8	5.00 6.67 8.00	106 96 80		8.83 9.36 9.43	11	54 63 62	3.5 4.0 4.5	261
	9	18.0 24.0 28.8	5.00 6.67 8.00	118 108 90		9.93 10.5 10.6	15	54 63 62	3.5 4.0 4.5	280
	10	18.0 24.0 28.8	5.00 6.67 8.00	132 120 100		11.0 11.7 11.8	15	54 63 62	3.5 4.0 4.5	289

性能参数表

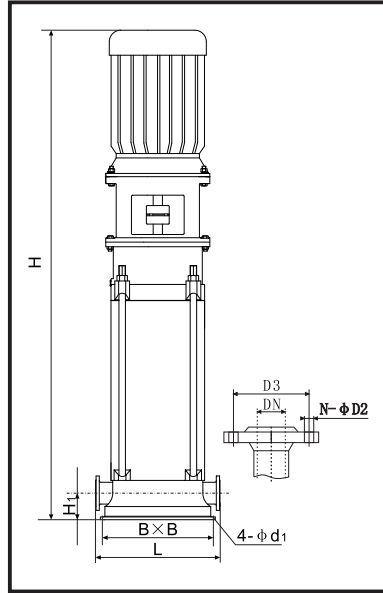
Performance parameter table

型号 Model number	级数 series	流量 Flow		扬程 Head m	转速 Speed r/min	轴功率 shaft power kW	配用功率 Allocated power kW	效率 Efficiency η (%)	必需汽蚀余量 Required cavitation allowance (NPSH)r(m)	总重 Total weight kg
		m³/h	L/s			kW	kW	η (%)	(NPSH)r(m)	
80GDL36-12	2	25.2 36.0 43.2	7 10 12	27 24 21	2900	3.14 3.31 3.45	4	59 71 70	3.5 4.2 4.6	193
	3	25.2 36.0 43.2	7 10 12	41 36 30		4.71 4.97 5.18	5.5	59 71 70	3.5 4.2 4.6	227
	4	25.2 36.0 43.2	7 10 12	54 48 40		6.29 6.62 6.90	7.5	59 71 70	3.5 4.2 4.6	244
	5	25.2 36.0 43.2	7 10 12	68 60 51		7.86 8.28 8.63	11	59 71 70	3.5 4.2 4.6	292
	6	25.2 36.0 43.2	7 10 12	82 72 61		9.43 9.93 10.3	11	59 71 70	3.5 4.2 4.6	302
	7	25.2 36.0 43.2	7 10 12	95 84 71		11.0 11.5 12.1	15	59 71 70	3.5 4.2 4.6	322
	8	25.2 36.0 43.2	7 10 12	109 96 81		12.6 13.2 13.8	15	59 71 70	3.5 4.2 4.6	332
	9	25.2 36.0 43.2	7 10 12	123 108 91		14.2 14.2 15.5	18.5	59 71 70	3.5 4.2 4.6	365
	10	25.2 36.0 43.2	7 10 12	136 120 102		15.7 16.5 17.2	18.5	59 71 70	3.5 4.2 4.6	375
80GDL54-14	2	36 54 65	10 15 18	32 28 25	2900	5.32 5.63 6.01	7.5	62 73 71	3.5 4.0 4.5	218
	3	36 54 65	10 15 18	48 42 36		7.97 8.45 9.01	11	62 73 71	3.5 4.0 4.5	267
	4	36 54 65	10 15 18	64 56 50		10.1 11.2 12.1	15	62 73 71	3.5 4.0 4.5	287
	5	36 54 65	10 15 18	80 70 62		13.3 14.1 15.0	18.5	62 73 71	3.5 4.0 4.5	320
	6	36 54 65	10 15 18	96 84 75		15.9 16.9 18.0	18.5	62 73 71	3.5 4.0 4.5	330
	7	36 54 65	10 15 18	112 98 86		18.6 19.7 21.0	22	62 73 71	3.5 4.0 4.5	373
	8	36 54 65	10 15 18	128 112 100		21.3 22.5 24.0	30	62 73 71	3.5 4.0 4.5	400
	9	36 54 65	10 15 18	144 126 112		23.9 25.3 27.0	30	62 73 71	3.5 4.0 4.5	421
	10	36 54 65	10 15 18	160 140 125		26.6 28.2 30.0	37	62 73 71	3.5 4.0 4.5	432
100GDL72-14	2	36 54 65	10 15 18	32 28 24	2900	6.87 7.53 7.74	11	64 73 71	4.2 4.5 4.7	276
	3	36 54 65	10 15 18	48 42 36		10.30 11.29 11.61	15	64 73 71	4.2 4.5 4.7	298
	4	36 54 65	10 15 18	64 56 48		13.70 15.05 15.48	18.5	64 73 71	4.2 4.5 4.7	336
	5	36 54 65	10 15 18	80 70 60		17.17 18.81 19.35	22	64 73 71	4.2 4.5 4.7	381
	6	36 54 65	10 15 18	96 84 72		20.60 22.57 23.22	30	64 73 71	4.2 4.5 4.7	453
	7	36 54 65	10 15 18	112 98 84		24.03 26.34 27.09	30	64 73 71	4.2 4.5 4.7	466
	8	36 54 65	10 15 18	128 112 96		27.4 30.1 31.0	37	64 73 71	4.2 4.5 4.7	493
	9	36 54 65	10 15 18	144 126 108		30.9 33.9 34.8	37	64 73 71	4.2 4.5 4.7	582
	10	36 54 65	10 15 18	160 140 120		34.3 37.6 38.7	45	64 73 71	4.2 4.5 4.7	595

性能参数表

型号 Model number	级数 series	流量 Flow		扬程 Head m	转速 Speed r/min	轴功率 shaft power kW	配用功率 Allocated power kW	效率 Efficiency η (%)	必需汽蚀余量 Required cavitation allowance (NPSH)r(m)	总重 Total weight kg
		m³/h	L/s							
125GDL100-20	2	75 108 130	21 30 36	46 40 34	2900	14.6 15.8 16.4	18.5	65 74 72	4.2 4.5 4.7	292
	3	75 108 130	21 30 36	69 60 51		21.9 23.8 24.6	30	65 74 72	4.2 4.5 4.7	430
	4	75 108 130	21 30 36	92 80 68		29.1 31.7 32.8	37	65 74 72	4.2 4.5 4.7	463
	5	75 108 130	21 30 36	115 100 85		36.4 39.6 41.0	45	65 74 72	4.2 4.5 4.7	555
	6	75 108 130	21 30 36	138 120 102		43.7 47.6 49.2	55	65 74 72	4.2 4.5 4.7	640
	7	75 108 130	21 30 36	161 140 119		49.0 55.6 57.4	75	65 74 72	4.2 4.5 4.7	840
	8	75 108 130	21 30 36	181 160 136		58.3 63.5 65.6	75	65 74 72	4.2 4.5 4.7	855
	9	75 108 130	21 30 36	207 180 153		65.6 71.4 73.8	90	65 74 72	4.2 4.5 4.7	870
	10	75 108 130	21 30 36	230 200 170		72.9 79.3 82.1	90	65 74 72	4.2 4.5 4.7	955
150GDL160-20	2	108 162 194	30 40 34	46 40 34	2900	20.5 22.5 23.3	30	69 78 77	4.4 4.5 4.7	422
	3	108 162 194	30 40 34	69 60 51		30.8 33.8 35.1	37	69 78 77	4.4 4.5 4.7	452
	4	108 162 194	30 40 34	92 80 68		41.0 45.1 46.7	55	69 78 77	4.4 4.5 4.7	613
	5	108 162 194	30 40 34	115 100 85		51.3 56.4 58.4	75	69 78 77	4.4 4.5 4.7	820
	6	108 162 194	30 40 34	138 120 102		61.6 67.6 70.1	75	69 78 77	4.4 4.5 4.7	836
	7	108 162 194	30 40 34	161 140 119		71.8 78.9 81.8	90	69 78 77	4.4 4.5 4.7	922
	8	108 162 194	30 40 34	181 160 136		82.1 90.2 93.5	110	69 78 77	4.4 4.5 4.7	1198
	9	108 162 194	30 40 34	207 180 153		92.4 101.5 105.2	110	69 78 77	4.4 4.5 4.7	1214
	10	108 162 194	30 40 34	230 200 170		102.7 112.8 116.9	132	69 78 77	4.4 4.5 4.7	1340

外形尺寸图

	型号 Model number	H ₁	L	B	4-φ d ₁	进出口法兰 Inlet and outlet flanges		
						DN	N-φ D ₂	φ D ₃
	25GDL	85	320	205	4-φ 18	25	4-φ 14	85
	40GDL	92	335	205	4-φ 18	40	4-φ 18	115
	50GDL	105	365	235	4-φ 18	50	4-φ 18	125
	65GDL	120	365	235	4-φ 18	65	4-φ 18	145
	80GDL	140	445	300	4-φ 18	80	8-φ 18	160
	100GDL	150	445	300	4-φ 18	100	8-φ 18	180
	125GDL	160	510	350	4-φ 18	125	8-φ 18	215
	150GDL	180	515	350	4-φ 18	150	8-φ 22	245

安装说明

1. 安装时管路重量不应承受在泵上, 否则易损坏水泵;
2. 泵与电机是整体结构, 出厂时已由厂家校正, 所以安装时无需调整, 因此安装时十分方便;
3. 安装时必须拧紧地脚螺栓, 且每间隔一定时段应

对泵进行检查防止其松动, 以免水泵启动时发生

剧烈振动而影响泵的性能;
4. 安装水泵前应仔细检查泵流道内有无影响水泵运

行的硬质物(如石块、铁砂等)以免水泵运行时损

坏过流部件;
5. 为了维修方便和使用安全, 在泵的进出口管路上

安装一只调节阀及在泵进出口附近安装一只压力

表对于高扬程泵, 为防止水锤, 还应在出口闸阀

前安装一只正回我以应付突然断电等失去动力事

故, 从而确保水泵在最佳工况下运行, 增长水泵

的使用寿命;
6. 对于液面低于泵进口及没有真空泵的工况下, 需

根据安装图的按装方法, 先把泵进口外灌满后才

能开机运转同时进口管路不应有过多弯道, 不得

有漏水、漏气现象, 以免影响水泵的吸入性能。
7. 为不使杂质进入泵内而堵塞流道影响性能, 应在

泵进口前面安装过滤器;
8. 安装管路前转动水泵的转子部件, 应无磨擦声或

卡死现象, 否则应将泵拆开检查原因。

Installation instructions

1. The weight of the pipeline should not be borne on the pump during installation, otherwise it may damage the water pump;
2. The pump and motor are integral structures and have been calibrated by the manufacturer before leaving the factory, so there is no need to adjust during installation, making it very convenient to install;
3. During installation, the foundation bolts must be tightened, and the pump should be inspected at regular intervals to prevent it from loosening, in order to prevent severe vibration during pump startup and affect pump performance;
4. Before installing the water pump, it is necessary to carefully check whether there are any hard objects (such as stones, iron sand, etc.) in the pump flow channel that affect the operation of the water pump to avoid damaging the overflow components during the operation of the water pump;
5. For the convenience of maintenance and safety of use, a regulating valve should be installed on the inlet and outlet pipelines of the pump, and a pressure gauge should be installed near the inlet and outlet of the pump. For high lift pumps, to prevent water hammer, a positive return valve should also be installed in front of the outlet gate valve to cope with sudden power outages and other power losses, so as to ensure that the pump operates under optimal conditions and increase its service life;
6. When the dry liquid level is low at the inlet of the dry pump and there is no vacuum pump, it is necessary to fill the outside of the pump inlet according to the installation drawing before starting and running. The inlet pipeline should not have too many bends, and there should be no water or air leakage to avoid affecting the suction performance of the water pump.
7. To prevent impurities from entering the pump and blocking the flow channel, which may affect performance, a filter should be installed in front of the pump inlet;
8. Before installing the pipeline, rotate the rotor components of the water pump to ensure there is no friction or jamming. Otherwise, disassemble the pump to check the cause.

启动与停车

(一)启动前准备

- 1、用手拨转泵轴或泵联轴器，叶轮应无卡磨现象，转动灵活。
- 2、打开进口阀门，打开排气阀使液体充满整个泵腔，然后关闭排气阀。
- 3、用手盘动泵轴以使润滑液进入机械密封端面。
- 4、点动电机，确定转向是否正确。

(二)启动与运行

- 1、全开进口阀门，关闭吐出管路阀门。
- 2、接通电源，当泵达到正常转速后，再逐渐打开吐出管路上代门，并调节到所需工况。
- 3、注意观察仪表读数，检查轴封泄漏情况，正常时机械密封泄漏量≤3滴/分，检查电机、轴承外温升≤70℃如果发现异常情况，应及时处理。

(三)停车

- 1、逐渐关闭吐出管路阀门，切断电源。
- 2、关闭进口阀门。
- 3、环境温度低于0℃,应将泵内液体放尽,以免冻裂。
- 4、如长期停用，应将泵拆卸清洗，包装保管。

Starting and stopping

(1)Preparation before starting

1. Rotate the pump shaft or pump coupling by hand, and the impeller should be free of jamming and flexible in rotation.
2. Open the inlet valve, open the exhaust valve to fill the entire pump chamber with liquid, and then close the exhaust valve.
3. Rotate the pump shaft by hand to allow lubricant to enter the mechanical seal face.
4. Inch the motor to determine if the steering is correct.

(2)Starting and Running

1. Fully open the inlet valve and close the discharge pipeline valve.
2. Connect the power supply, and when the pump reaches normal speed, gradually open the upper valve of the discharge pipeline and adjust it to the required working condition.
3. Pay attention to the reading of the instrument and check the leakage of the shaft seal. Under normal circumstances, the leakage rate of the mechanical seal is ≤ 3 drops/minute. Check that the external temperature rise of the motor and bearing is≤70℃. If any abnormalities are found, they should be dealt with in a timely manner.

(3) Parking

1. Gradually close the discharge pipeline valve and cut off the power supply.
2. Close the inlet valve.
3. If the ambient temperature is below 0℃,the liquid inside the pump should be drained to avoid freezing and cracking.
4. If the pump is not used for a long time, it should be disassembled, cleaned, packaged, and stored.

GDL型立式多级离心泵

GDL vertical multistage centrifugal pump

清水泵系列 Clean water pump series

维护与保养

(一)运行中的维护与保养

- 1、进水管路必须高度密封。
- 2、禁止泵在汽蚀状态下长期运行。
- 3、禁止泵在大流量运行时，电机超电流长期运行。
- 4、定时检查泵运行时电流值不得超过电机额定电流。
- 5、泵在运行过程中应有专人看管，以免发生意外。
- 6、泵每运行500小时应对轴承进行加油。电机功率大于11KW配有加油装置，可用高压油枪直接注入，以保证轴承润滑优良。
- 7、泵进行长期运行后，由于机械磨损，使机组噪声及振动增大时，应停车检查，必要时可更换易损零件及轴承，机组大修期一般为一年。

(二)机械密封维护与保养

- 1 机械密封润滑应清洁无固体颗粒。
- 2 严禁机械密封在干磨情况下工作。
- 3 起动前应盘动泵(电机)几圈，以免突然起动造成密封环断裂损坏。

Maintenance

(1)Maintenance and upkeep during operation

1. The inlet pipeline must be highly sealed.
2. It is prohibited to operate the pump for a long time under cavitation conditions.
3. It is prohibited to operate the pump for a long time with excessive motor current during high flow operation.
4. Regularly check that the current value during pump operation should not exceed the rated current of the motor.
5. The pump should be supervised by a dedicated person during operation to avoid accidents.
6. The bearings should be lubricated every 500 hours of pump operation. The motor with a power greater than 11KW is equipped with a refueling device, which can be directly injected with a high-pressure oil gun to ensure excellent bearing lubrication.
7. After long-term operation of the pump, if the noise and vibration of the unit increase due to dry mechanical wear, it should be stopped for inspection. If necessary, vulnerable parts and bearings can be replaced. The overhaul period of the unit is generally one year.

(2)Maintenance and upkeep of mechanical seals

- 1.The lubrication of mechanical seals should be clean and free of solid particles.
2. It is strictly prohibited for mechanical seals to work under dry grinding conditions.
- 3.Before starting, the pump (motor) should be turned a few times to prevent sudden starting from causing damage to the sealing ring.

故障和解决方法

Faults and solutions

故障 failure	原因 Cause	解决方法 resolvent
水泵不出水 The water pump does not discharge water	a. 进出口阀门未打开，进出管路阻塞，叶轮流道阻塞。 b. 电机运行方向不对，电机缺相。 c. 吸入管漏气。 d. 泵没灌满液体，泵腔内有空气。 e. 进口供水不足，吸程过高，底阀漏水。 f. 管路阻力过大。 a. The inlet and outlet valves are not open, the inlet and outlet pipelines are blocked, and the impeller flow passage is blocked. b. The motor is running in the wrong direction and is out of phase. c. Air leakage in the suction pipe. d. The pump is not filled with liquid and there is air in the pump chamber. e. The imported water supply is insufficient, the suction head is too high, and the bottom valve is leaking. f. Excessive pipeline resistance.	a. 检查，去除阻塞物。 b. 调整电机方向，紧固电机接线。 c. 拧紧各密封面，排除空气。 d. 打开泵上盖或打开排气阀，排尽空气。 e. 停机检查、调整(并网自来水管和带吸程使用易出现此现象)。 f. 减少管路弯道，重新选泵。 a. Check and remove blockages. b. Adjust the motor direction and tighten the motor wiring. c. Tighten each sealing surface to remove air. d. Open the pump cover or open the exhaust valve to exhaust all air e. Shutdown inspection and adjustment (this phenomenon is easy to occur when using grid connected water pipes and suction pipes). f. Reduce pipeline bends and reselect pumps.
流量不够 Insufficient flow	a. 先按1. 原因检查。 b. 管道、叶轮流道部分阻塞，水垢沉积、阀门开度不足。 c. 电压偏低，转速不符合要求。 d. 叶轮磨损。 a. First, check the cause according to 1. b. The pipeline and impeller flow channels are partially blocked, with scale deposition and insufficient valve opening. c. The voltage is low and the speed does not meet the requirements. d. Impeller wear.	a. 先按1. 排除。 b. 去除阻塞物，重新调整阀门开度。 c. 稳压。 d. 更换叶轮。 a. First, press 1. Exclude. b. Remove the obstruction and readjust the valve opening. c. Stable voltage. d. Replace the impeller.
功率过大 Excessive power	a. 超过额定流量使用。 b. 吸程过高。 c. 泵轴承磨损。 d. 泵选型不当。 a. Exceeding the rated flow rate for use. b. The suction head is too high. c. The pump bearings are worn. d. Improper pump selection.	a. 调节流量关小出口阀门。 b. 降低吸程。 c. 更换轴承。 d. 重新选泵。 a. Adjust the flow rate and turn down the outlet valve. b. Reduce suction head. c. Replace the bearings. d. Select a new pump.
杂音振动 Noise vibration	a. 管路支撑不稳。 b. 液体混有气体。 c. 产生汽蚀。 d. 轴承损坏。 e. 电机超载发热运行。 a. The pipeline support is unstable. b. Liquid mixed with gas. c. Produce cavitation. d. Bearing damage. e. The motor operates under overload and heat generation.	a. 稳固管路。 b. 提高吸入压力、排气。 c. 降低真空度。 d. 更换轴承。 e. 调整按5。 a. Secure the pipeline. b. Increase suction pressure and exhaust. c. Reduce the vacuum level. d. Replace the bearings. e. Adjust by pressing 5.
电机发热 Motor heating	a. 流量过大，超载运行。 b. 碰擦。 c. 电机轴承损坏。 d. 电压偏低。 a. Excessive flow and overload operation. b. Rubbing. c. The motor bearing is damaged. d. The voltage is low.	a. 关小出口阀。 b. 检查排除。 c. 更换轴承。 d. 稳压。 a. Turn down the outlet valve. b. Check and eliminate. c. Replace the bearings. d. Stable voltage.
水泵漏水 Water pump leakage	a. 机械密封磨损。 b. 泵体有砂孔或破裂。 c. 密封面不平整。 d. 安装螺栓松懈。 a. Mechanical seal wear. b. The pump body has sand holes or cracks. c. The sealing surface is uneven. d. The installation bolts are loose.	a. 更换。 b. 焊补或更换。 c. 修整。 d. 紧固。 a. Replace. b. Weld repair or replacement. c. Trimming. d. Tighten.

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海洋泵阀

SEA PUMP & VALVE

管路损耗参考表 Pipeline friction loss table

管径 pipe diameter (mm)		流量 Flow (L/s)																							
1	2	4	6	8	10	15		20	25	30	40	50	60	70	80	90	100	110	120	130	140	160	180	200	
25	3.27	13.0																							
40	3.5	14	15																						
50	0.8	3.1	13	29																					
65		0.8	3.2	7.1	13	20																			
75		0.4	1.6	3.3	5.9	9.6	21.6																		
100			0.4	0.8	1.3	2.1	6.8	8.6	13	19.4															
125				0.23	0.4	0.63	1.3	2.7	4.1	5.9	10.7														
150					0.16	0.26	0.58	1.1	1.6	2.3	4.2	6.4	9.4												
175						0.11	0.27	0.5	0.74	1.05	1.9	2.9	4.3	5.8	7.7	9.6									
200							0.13	0.26	0.37	0.53	0.93	1.5	2.1	2.9	3.7	4.7	6.1	7.2	8.5						
250								0.07	0.12	0.18	0.30	0.48	0.68	0.93	1.2	1.5	1.9	2.3	2.8	3.3	3.7	4.9	5.2		
300										0.07	0.12	0.19	0.27	0.37	0.49	0.6	0.76	0.9	1.1	1.3	1.5	2.0	2.4	3.0	

阀及弯管折合直管长度(每个)

Length of straight pipe converted from valve and elbow (each)

种类 type	折合直管直径倍数 Multiple of converted straight pipe diameter	备注 remarks
全开闸阀 Fully open gate valve	12	未畅开加倍 Not open double
全开弯管 Full opening elbow	25	
逆止阀 Check valve	100	
底阀 Bottom valve	100	部分堵塞加倍 Partial blockage doubling

注：例如100mm直径管，底阀折100倍直径等于100×100=10000mm=10m直径长度，假定流量为8L/s上表，直管每100m损失1.3m，则10m损失0.13m，即一个100m底阀，流量为8L/s时，则损失扬程0.13米。

Note: for example, for 100mm diameter pipe, 100 times the diameter of the bottom valve is equal to 100 × 100 = 10000mm = 10m diameter length, assuming that the flow is 8L / s. according to the above table, if the loss of straight pipe is 1.3m per 100m, the loss of 10m is 0.13M, that is, a 100m bottom valve. When the flow is 8L / s, the loss head is 0.13M.

一定管路直径之最大流量限制

Maximum flow limit of a certain pipeline diameter

管路直径 Pipe diameter (mm)	最大流量 Maximum flow (L/s)	最大流速 Maximum velocity (m/s)
25	1	2.04
38	2.5	1.69
50	4.17	2.12
65	6.67	2.01
75	10.0	2.26
100	18.4	2.33

管路直径 Pipe diameter (mm)	最大流量 Maximum flow (L/s)	最大流速 Maximum velocity (m/s)
125	30.0	2.44
150	43.0	2.45
175	60.0	2.49
200	83.3	2.69
250	133.3	2.72
300	192.0	2.71

超过此限使管路损失显著增加。
Exceeding this limit will significantly increase the pipeline loss