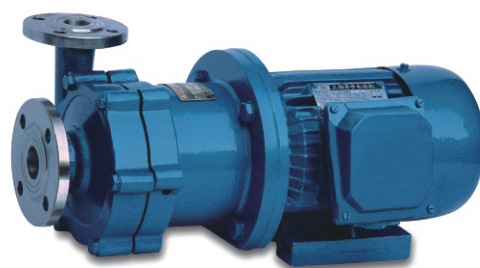


CQ型磁力驱动泵

MODEL CQ MAGNETIC ACTUATED PUMP

使用说明书

Operation installation



安装、使用产品前，请仔细阅读使用说明书

Please carefully read the operation instructions before use of the product.

上海一益泵机有限公司

SHANGHAI YIYI PUMP&MACHINE. CO., LTD

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概述 GENERAL

CQ型磁力驱动泵(简称磁力泵)是将永磁联轴器的的工作原理应用于离心泵的新产品,该泵设计合理、工艺先进、具有全密封、无泄漏、耐腐蚀的特点,其性能达到国外同类产品的先进水平。

磁力泵以静密封取代动密封,使泵的过流部件处于完全密封状态,彻底解决了其它泵机械密封无法避免的跑、冒、滴之弊病。磁力泵选用耐腐蚀,高强度的工程塑料、刚玉陶瓷、不锈钢等作为制造材料,因此它具有良好的抗腐蚀性能,并可以使被输送介质免受污染。

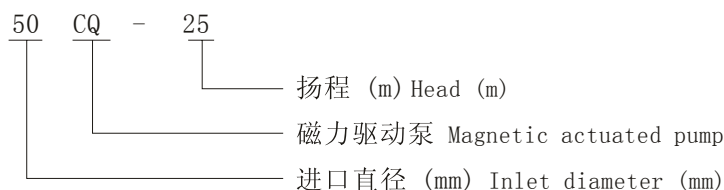
磁力泵结构紧凑,外形美观,体积小,噪音低,运行可靠,使用维修方便。可广泛应用于化工、制药、石油、电镀、食品、电影照相洗印、科研机构、国防工业等单位抽送酸、碱液、油类、稀有贵重液、毒液、挥发性液体、以及循环水设备配套、过滤机配套。特别是易漏、易燃液体的抽送,选用此泵则更为理想。

Model CQ magnetic actuated pump (magnetic pump for short thereafter) is a new product with the working principle of a permanently magnetic clutch applied on a centrifugal pump and features a reasonable design, advanced technologies, full-seal, non-leak and anti-corrosion, with the performance up to the advanced level of the same products both at home and abroad.

It uses a static seal instead of a dynamic one so as to have the flow-passing parts in a fully sealed state, completely settling the problems of run-away, pop-up and drop unable to avoid with the mechanical seals of other pumps. As being made of anti-corrosive and highly strong engineering plastic, rigid ceramic and stainless steel, it holds a good anti-corrosion performance and can have the medium being transported free of pollution.

The magnetic pump features a compact structure, nice outlook, small volume, low noise, reliable run and easy use and maintenance and can be used to pump acids, alkali, oils, rare and noble liquids, toxic liquids, volatile liquids and for completing with cycling water equipments and filters in chemical industry, pharmacy, petroleum, electric plating, food, movie and photograph development, scientific research organ, national defense industry etc. trades, especially for pumping the easily leaking, combustible and explosive liquids, it is more ideal to use this pump.

型号意义 MODEL MEANING



磁力泵材质种类 MATERIALS FOR THE MAGNETIC PUMP

、工程塑料泵(增强聚丙烯)型号有:

8CQ-2 10CQ-3 14CQ-5 16CQ-8 20CQ-12
32CQ-15、32CQ-25、40CQ-20 50CQ-25 50CQ-32。

、不锈钢泵(1Cr18Ni9Ti)型号有:

16CQ-8 20CQ-12 32CQ-15 32CQ-25 40CQ-20
40CQ-32、50CQ-25、50CQ-40 50CQ-50 65CQ-25、
65CQ-35、80CQ-35、80CQ-50。

1. Available models with the engineering plastic pump (reinforced polypropylene):

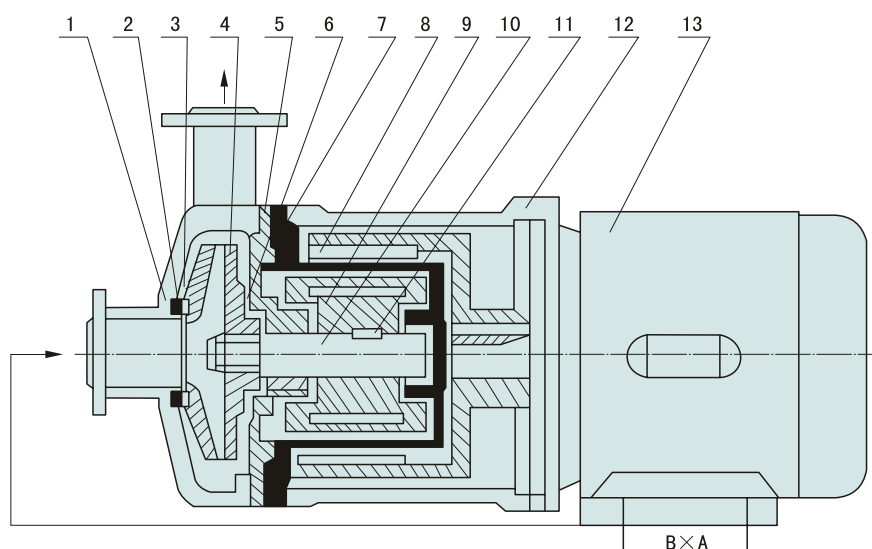
8CQ-2, 10CQ-3, 14CQ-5, 16CQ-8, 20CQ-12, 32CQ-15, 32CQ-25, 40CQ-20, 50CQ-25, 50CQ-32.

2. Available models with the stainless steel pump (1Cr18Ni9Ti):

16CQ-8, 20CQ-12, 32CQ-15, 32CQ-25, 40CQ-20, 40CQ-32, 50CQ-25, 50CQ-40, 50CQ-50, 65CQ-25, 50CQ-25, 65-35, 80-35, 80CQ-50.

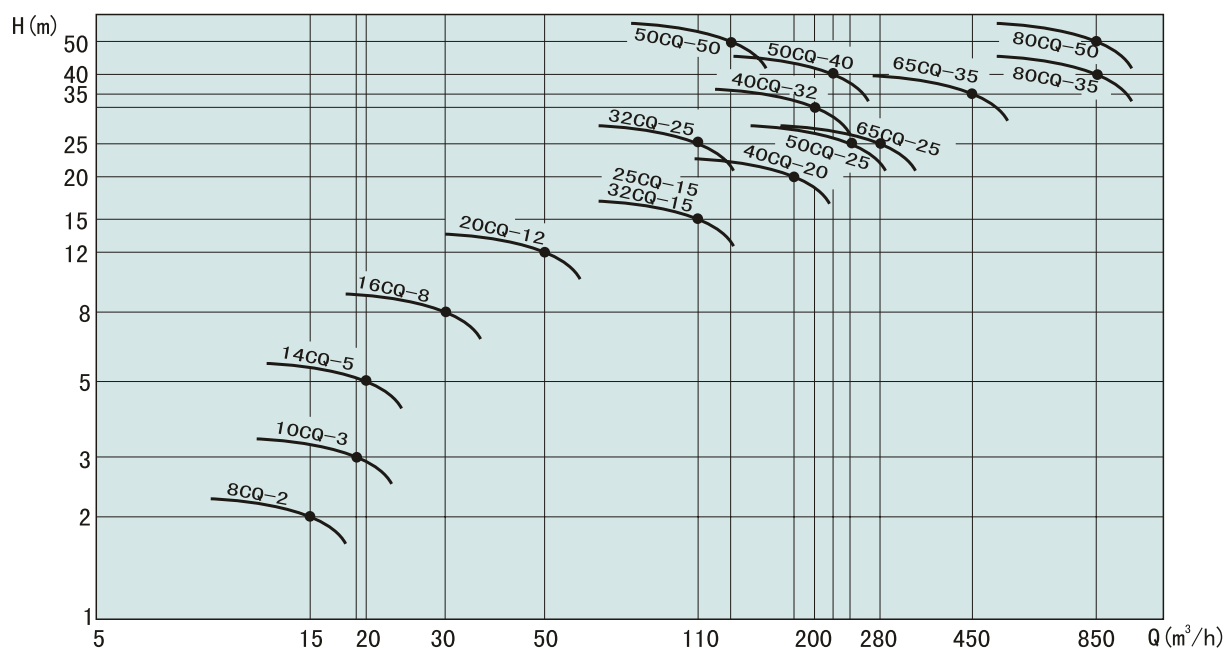
CQ磁力驱动泵

结构简图 STRUCTURAL DRAWING

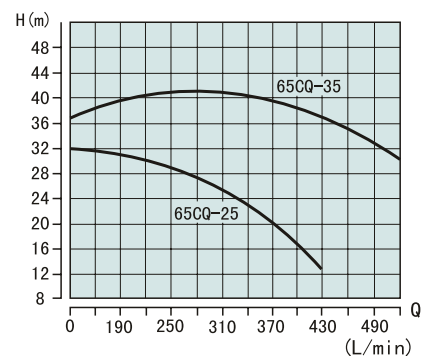
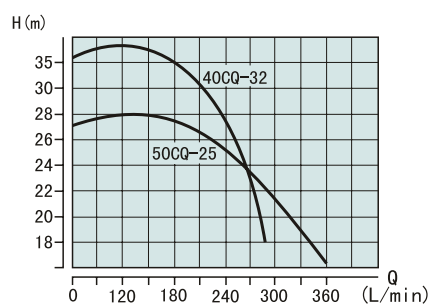
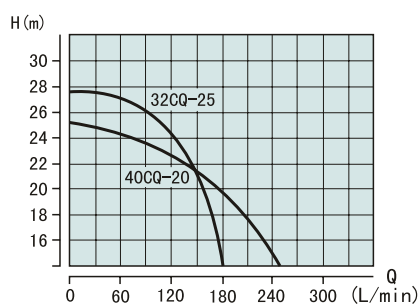
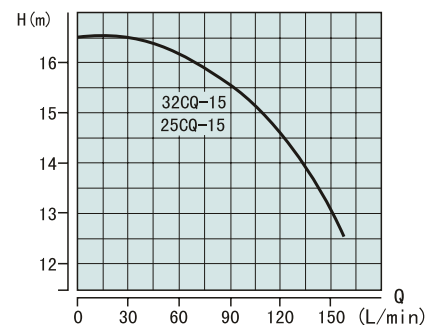
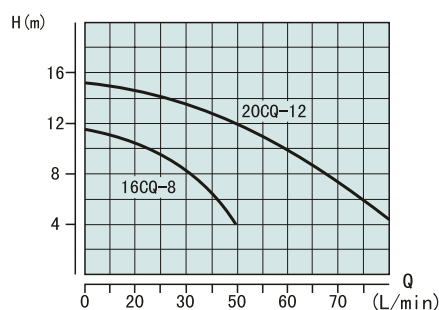
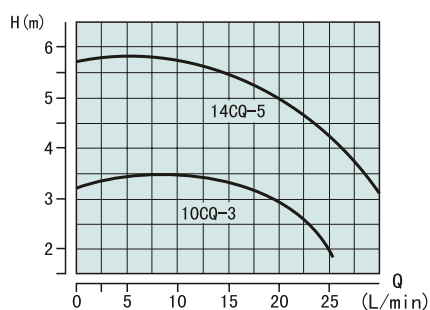


- 1、泵壳 Pump casing
- 2、静环 Static ring
- 3、动环 Dynamic ring
- 4、叶轮 Impeller
- 5、密封圈 Seal ring
- 6、隔板 Baffle plate
- 7、隔离套 Isolation sleeve
- 8、外磁钢总成 Outer magnetic steel assembly
- 9、内磁钢总成 Inner magnetic steel assembly
- 10、泵轴 Pump shaft
- 11、轴套 Muff
- 12、联接架 Linking stand
- 13、电机 Motor

型谱图 MODEL SPECTRUM DRAWING

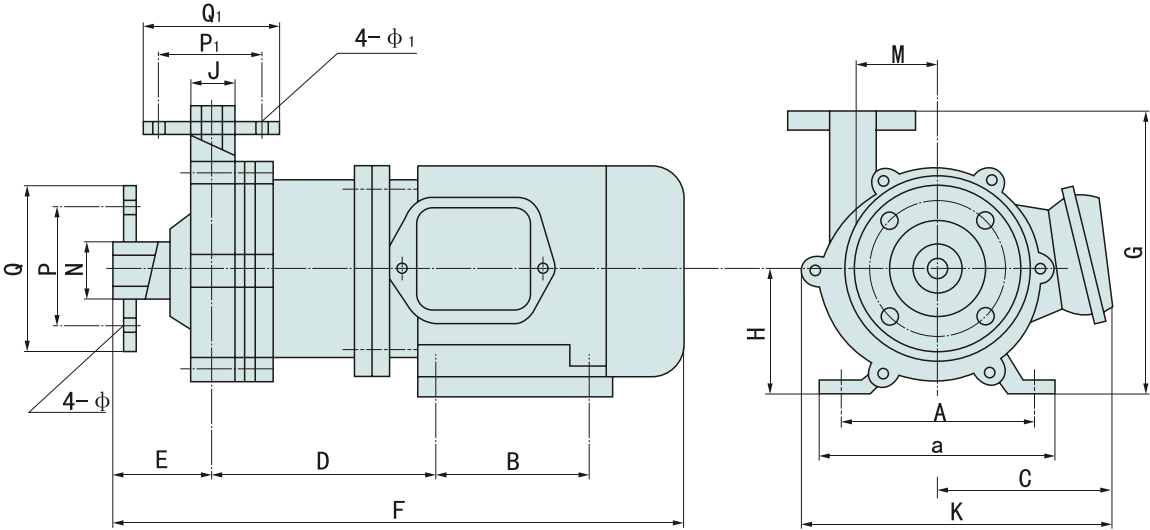


性能曲线图及性能参数表 PERFORMANCE CURVE DIAGRAM AND PERFORMANCE PARAMETER TABLE



型号 Model	口径 Aperture (mm)		流量 Flow (L/min)	扬程 Head (m)	吸程 Suction stroke (m)	转速 Speed (r/min)	轴功率 Power (kW)	电压 Voltage (V)
	进口 Inlet	出口 Outlet						
8CQ-2	8	6	15	2	2	2800	0.025	220
10CQ-3	10	10	19	3	2.5	2800	0.025	220
14CQ-5	14	10	20	5	3	2800	0.12	220/380
16CQ-8	16	12	30	8	3	2800	0.18	220/380
20CQ-12	20	12	50	12	4	2800	0.37	220/380
25CQ-15	25	20	110	15	4	2800	1.10	380
32CQ-15	32	25	110	15	4	2800	1.10	380
32CQ-25	32	25	110	25	4	2800	1.10	380
40CQ-20	40	32	180	20	7.5	2800	2.2	380
40CQ-32	40	32	200	32	8	2800	4	380
50CQ-25	50	40	240	25	8.3	2800	4	380
50CQ-40	50	40	220	40	7	2800	4	380
50CQ-50	50	32	130	50	8	2800	5.5	380
65CQ-25	65	50	280	25	7	2800	5.5	380
65CQ-35	65	50	450	35	6	2800	7.5	380
80CQ-35	80	65	850	35	7	2800	11	380
80CQ-50	80	65	850	50	7	2800	15	380

安装尺寸图及尺寸表 INSTALLATION DIMENSION DIAGRAM AND TABLE



型号 Model	A	B	C	D	E	F	G	H	J	A	K	M	N	机座螺孔 Screw hole on the foundation	P	P ₁	Q	Q ₁	Φ	Φ ₁	管子 连接 Pipe link
8CQ-2	63	48	45	55	38	200	105	45	15	84	80	24	16	Φ 6							
10CQ-3	63	48	45	55	38	200	105	45	15	84	80	24	16	Φ 6							
14CQ-5	90	71	95	107	53	270	120	56	16	130	130	37	18	Φ 7							
16CQ-8	90	70	80	125	55	320	160	65	18	115	140	40	22	Φ 11							
20CQ-12	100	80	105	130	59.5	340	160	73	18	130	160	65	26	Φ 12							法兰 连接 Fl- ange link
25CQ-15	125	100	140	189.5	67.5	460	205	90		160	240	71.5		Φ 12	75	65	100	90	12	10	
32CQ-15	125	100	140	189.5	67.5	460	205	90		160	240	71.5		Φ 12	90	75	120	100	12	10	
32CQ-25	125	100	140	189.5	67.5	460	230	90		160	260	85		Φ 12	90	75	120	100	12	10	
40CQ-20	140	120	155	235	75	545	220	100		180	290	78.5		Φ 12	100	90	130	120	14	14	
40CQ-32	190	140	190	271	80	620	260	112		245	336	91		Φ 12	100	90	130	120	14	14	
50CQ-25	190	140	190	271	80	620	260	112		245	336	91		Φ 12	110	100	140	130	14	14	
50CQ-40	190	140	190	271	80	620	260	112		245	336	91		Φ 12	110	100	140	130	14	14	
65CQ-25	216	140	200	305	90	695	300	132		280	350	91		Φ 12	130	110	160	140	14	14	
65CQ-35	216	140	200	360	76	720	292	120		280	350	90		Φ 12	130	110	160	140	14	14	
80CQ-35	254	210				890		160						Φ 12					14	14	
80CQ-50	254	210				890		160						Φ 12					14	14	

泵主要材料、耐腐蚀性能(供参考) Anti-corrosion performance of the main materials with the pump(for reference)

介质名称 Medium	浓度 Concentration (%)	聚丙烯 Polypropylene		浓度 Concentration (%)	ABC	
		25℃	50℃		20℃	60℃
硫酸 Sulfuric acid	60	√	√	<30	√	×
硝酸 Nitric acid	25	√	√	20	√	○
盐酸 Chlorhydric acid	<36	√	√	<38	√	√
氢氟酸 Hydrofluoric acid	35	√	√	40	√	×
醋酸 Acetic acid	<80	√	√	<20	√	○
氢氧化钠 Sodium hydroxide	100	√	√		√	√
重铬酸钾 Heavy potassium chromate	25	√	√		√	√
溴水 Bromine water		×	×		○	×
乙醇 Alcohol		√	○	<50	√	√
丙酮 Acetone		√	○	10	○	
四氯乙烷 Tetrachloroethane		○			○	×
氟利昂22 Freon-22		√	√		○	○
漂白液 Bleaching powder	CL13%	√	√	CL12.5%	○	○
电镀液 Electric plating liquid		√	√		○	×
照相液 Photographic liquid		√	√		√	√

介质名称 Medium	浓度 Concentration (%)	不锈钢 Stainless steel		浓度 Concentration (%)	陶瓷 Ceramic	
		25℃	50℃		25℃	80℃
硫酸 Sulfuric acid	<5	√	×		≡	≡
硝酸 Nitric acid	70	≡	√		≡	≡
盐酸 Chlorhydric acid		×			≡	≡
氢氟酸 Hydrofluoric acid		×		0~100	×	
醋酸 Acetic acid	<20	√	√		≡	≡
氢氧化钠 Sodium hydroxide	70	√	√		○	×
重铬酸钾 Heavy potassium chromate	40~60	≡	≡	10~20	≡	≡
溴水 Bromine water		○			≡	≡
乙醇 Alcohol		≡	√		≡	≡
丙酮 Acetone		≡	≡		≡	
四氯乙烷 Tetrachloroethane	50	≡	≡		≡	≡
氟利昂22 Freon-22		≡			≡	≡
漂白液 Bleaching powder	CL12%	×			≡	≡
电镀液 Electric plating liquid					≡	≡
照相液 Photographic liquid		≡			≡	≡

符号说明: ≡-优良, √-良好, ○-可用, 但腐蚀明显。×-腐蚀严重, 不适用。

About the symbols: ≡-excellent, √-good, ○-usable while notable corrosion. ×-serious corrosion, unsuitable.

安装与调试 INSTALLATION AND ADJUSTMENT

、磁力泵应水平安装，不宜竖立，塑料泵体不得承受管路重量，对于特殊要求垂直安装の場合，电机务必朝上。

、当抽吸液面高于泵轴心线时，起动前打开吸入管道阀门即可，若抽吸液面低于泵轴心线时，管道需配备底阀。

、泵使用前应进行检查，电机风叶转动要灵活，无卡住及异常声响，各紧固件要紧固。

、检查电机旋转方向是否与磁力泵转向标记一致，严禁倒转。

、电机启动后，缓慢打开排出阀，待泵进入正常工作状态后，再将排出阀调到所需开度。

、泵停止工作前，应先关闭排出阀门，然后关闭吸入管阀门。

1. Mount the pump horizontally and do not let the plastic pump casing bearing the pipeline weight, for the occasion specially requiring vertical installation, the motor has to be up-faced.

2. In case the surface of the liquid to be pumped is higher than the pump axis, open the suck-in pipeline valve before starting and, in case lower, fit a foot valve with the pipeline.

3. Before use, check if the blade of the motor moves flexibly, is jammed or has any abnormal sound and tighten every fastener.

4. Check if the rotating direction of the motor is identical to the mark on the pump and it is prohibited to have it back rotating.

5. After starting the motor, slowly open the discharge valve and then adjust it to the required opening when the pump gets into the normal working state.

6. First close the discharge valve when to stop the pump and then the suck-in pipeline valve.

使用注意事项 CAUTION AT USE

、因磁力泵轴承的冷却和润滑是靠被输送的介质，所以绝对禁止空运转。同时避免在工作中途停电后再启动时所造成空载运转。

、被输送介质中，若含有固体颗粒，泵入口要加过滤网；如含有铁磁质微粒，需加磁性过滤器。

3、泵在使用中环境温度应小于40℃，电机温升不得超过75℃。

、被输送的介质及其温度应在泵材允许范围内。工程塑料泵的使用温度<60℃，金属泵的使用温度<100℃，输送吸入压力不大于0.2MPa，最大工作压力1.6MPa、密度不大于1600kg/m³，粒度不大于30×10⁻⁶m的不含硬颗粒和纤维的液体

、对于输送液为易沉淀结晶的介质，使用后应及时清洗、排净泵内积液。

、磁力泵运行500h后，应拆检轴承和端面动环的磨损情况。若轴承和轴套的间隙大于0.5~1mm，叶轮轴向窜动1.5~2mm时，应更换轴承和轴向动环。

1. Idle running is absolutely prohibited and that caused after being restarted when the power is off in a mid-way of work should also be avoided because the cooling and lubricating of the bearings on the pump is made by the medium being transported.

2. Place a filtering screen at the pump inlet in case the medium to be transported contains solid grains; or a magnetic filter in case it contains ferromagnetic microns.

3. The ambient temperature when the pump is used should be below 40℃ and the temperature rise with the motor should not be over 75℃.

4. The medium and the temperature of it should be within the allowed range of the pump materials. The temperature at use should be below 60℃ for the engineering plastic pump and below 100℃ for the metal one. Suitable for transporting the liquid containing no hard grains and fiber and with the suck-in pressure not more than 0.2MPa, the maximum working pressure 1.6MPa, the density not more than 1600Kg/m³ and the graininess not bigger than 30 μm.

5. Make cleaning in time after transporting the medium easily deposited and crystallized and drain out the accumulated liquid inside of the pump completely.

6. Check the worn-out condition of both bearing and end-face dynamic ring after 500h running of the pump and replace them if the interval between the bearing and the muff is found bigger than 0.5~1mm and the impeller axially runs about by 1.5~2mm.

故障原因及排除方法 FAILURES CAUSES AND TROUBLESHOOTING

故障 Failure	原因 Cause	解决方法 Troubleshooting
1、泵不出水 No water out of the pump	a.水泵反转 Reversed movement of the pump b.进水管道漏气 Air leaks from the water inlet pipeline c.泵腔蓄水不足 Insufficient water accumulated inside of the pump cavity d.电压太高，启动时联轴器打滑 Too high voltage makes the clutch sliding at starting e.吸程太高 Too high suction stroke f.阀门没有打开 Valve not opened	a.改变电机接线 Change the wiring b.杜绝漏气 Get rid of air leak c.增加蓄水量 Increase water d.调正电压 Adjust the voltage e.降低泵安装位置 Lower the installation position of the pump f.校正或更改阀门 Correct or modify the valve
2、流量不足 Insufficient flow	a.吸入管径太小或淤塞 Too small diameter or block-up of the suck-in pipe b.叶轮流道阻塞 Impeller's geat blocked up c.扬程过高 Too high head d.转速不够 Insufficient speed	a.调换或清洗进水管 Change or clean the pipe b.清洗叶轮 Clean the impeller c.开大出水阀 Open the water outlet valve a little bit bigger d.恢复额定转速 Recover the rated speed
3、扬程过低 Too low head	a.流量过大 Too big flow b.转速太低 Too slow speed	a.关小出水阀 Close the outlet valve a little bit smaller b.恢复额定转速 Recover the rated speed
4、噪音太大 Too big noise	a.泵轴严重磨损 Pump shaft seriously worn out b.轴承严重磨损 Muff seriously worn out c.外磁钢或内磁钢与隔离套接触 Actuating magnetic steel cup is contacted with isolation sleeve d.密封环与叶轮研磨 Grinding between seal ring and impeller	a.更换泵轴 Replace it b.更换轴承 Replace it c.拆除泵头重新组装 Remove the pump head to reassemble d.更换止推环、密封环 Replace both thrust and seal rings
5、漏液 Liquid leaks	O形密封圈损坏 O-seal ring damaged	更换O形密封圈 Replace it