阳光泵业
SUNSHINE PUMP

FYH氟塑料液下泵

FYH FLUORINE PLASTIC SUBMERGED PUMP

使用说明书
USER'S MANUAL



上海阳光泵业制造有限公司

Shanghai Sunshine Pump Manufature Co.，Ltd.

公司概况

上海阳光泵业制造有限公司座落于上海市金山工业园区，是国内一家著名的集研制、开发、生产、销售、服务于一体的大型多元化企业。主导产品包括：螺杆泵、隔膜泵、液下泵、磁力泵、排污泵、化工泵、多级泵、自吸泵、齿轮油泵、计量泵、卫生泵、真空泵、潜水泵、转子泵等类别。产品以优越的性能，精良的品质已获得各项专业认证证书及客户的认可。公司拥有多名水泵专家和各类中高级工程师，不断的开发制造，升级换代产品年年都有问世。

公司拥有国内高水准的水泵性能测试中心，产品全部采用 CAD 设计软件和 CFD 计算流体力学软件等先进设计手段，产品经过精密铸造、热锻压、焊接、热处理、精加工、装配等十多道工序。使用先进的数控加工中心、等离子焊接机、全自动气体保护、半自动真空熔焊机、超频真空热处理设备、高效加工专机、理化和探伤设备等各类高精密加工检测设备。齐全的加工检测设备，于同行业中处领先地位，更加充分保证了产品的质量。公司产品达二十大系列，一万多种规格。产品广泛应用于：工业生产，建筑城镇供水，环保污水处理，市政工程，食品制药，水利电力，石油船舶等多种领域。客户包括大庆油田、 胜利油田、中国水利水电、浦项集团等世界知名企业。

不仅如此，阳光泵业同时拥有完善的一体化服务体系：包括前期的专业技术人员快速解答各项技术咨询，应对您的需求，为您选择合适的产品，提供合理可靠的建议；对产品质量、供货周期等的承诺，提供具体货品方案及报价。售后包括：提供产品安装、使用、维护、排除故障等服务。欢迎广大新老客户光临指导，洽谈业务，我们将不断的努力，为您提供优质的产品和服务。



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⚠ 注意：

为了确保安全，在使用阳光牌 FYH 氟塑料液下泵前，请你认真阅读使用说明书

Notice:

In order to ensure safety, please read the instructions carefully before using the Sunshine brand FYH fluoroplastic submersible pump

产品概述 product description

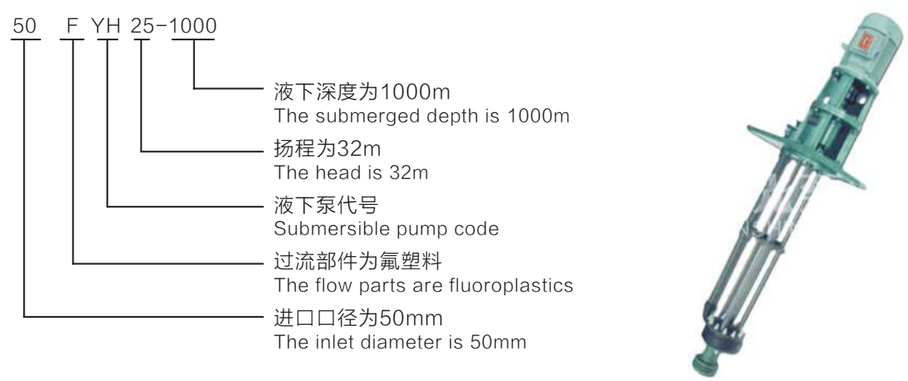
FYH 系列氟塑料清液液下泵是过流部件均采用氟塑料制作，既具有优异的耐腐性，又具有非常好的耐磨性和优良的抗冲击性。在输送磷酸、混酸、氢氟酸、氟硅酸、电解液、石灰水、污水等含颗粒的腐蚀性液体方面显示了优良的性能。上海阳光 FYH 系列液下泵适用于输送含有少量颗粒的腐蚀性料浆（料浆的重量浓度＜ 5%，固体颗粒直径＜ 0.5mm。液下泵的适用温度为 80℃，在介质和工况相同的条件下可替代价格昂贵的特种不锈钢和玻璃钢液下泵。 该系列料浆液下泵采用特殊的结构设计，采用自来水冷却，运转又非常平稳，特别是独创性地将压力继电器运用到冷却系统中，极大地提高了整个液下泵工作的可靠性。

注意：禁止空运转。

FYH series fluoroplastic clear liquid submersible pumps are made of fluoroplastics with flow-through parts, which not only have excellent corrosion resistance, but also have very good wear resistance and excellent impact resistance. It shows excellent performance in transporting corrosive liquids containing particles such as phosphoric acid, mixed acid, hydrofluoric acid, fluorosilicic acid, electrolyte, lime water, and sewage. FYH series submersible pumps are suitable for conveying corrosive slurry containing a small amount of particles (the weight concentration of the slurry is less than 5%, the diameter of solid particles is less than 0.5mm. The applicable temperature of the submerged pump is 80℃ , and the medium and working conditions are the same. Under conditions, it can replace expensive special stainless steel and glass fiber reinforced plastic submersible pumps. This series of slurry submersible pumps adopts a special structural design, uses tap water to cool, and runs very smoothly, especially the original application of pressure relays in the cooling system. Greatly improve the reliability of the entire submerged pump.

Note: Dry running is prohibited.

型号说明 Model Description



性能参数 Performance parameter

规格型号 Model	流量 Flow (m^3/h)	扬程 Head (m)	液下深度 Submerged depth (M)	转速 Speed (r/min)	口径 caliber（mm）		功率 power (kw)
					进口 import	出口 exit	
25FYH-5-20	5	20	0.5-2	2900	25	25	1.1
25FYH-8-18	8	18	0.5-2	2900	25	25	1.5
25FYH-10-20	10	20	0.5-2	2900	25	25	2.2
32FYH-15-15	15	15	0.5-2	2900	32	32	2.2
32FYH-10-30	10	30	0.5-2	2900	32	32	3
40FYH-25-18	25	18	0.5-2	2900	40	40	4
40FYH-20-30	20	30	0.5-2	2900	40	40	5.5
50FYH-35-20	35	20	0.5-2	2900	50	50	5.5
50FYH-30-30	30	30	0.5-2	2900	50	50	7.5
65FYH-35-25	35	25	0.5-2	2900	65	65	7.5
65FYH-45-32	45	32	0.5-2	2900	65	65	11
65FYH-45-50	45	50	0.5-2	2900	65	65	15
80FYH-60-30	60	30	0.5-2	2900	80	80	18.5
80FYH-60-45	60	45	0.5-2	2900	80	80	22
80FYH-60-50	60	50	0.5-2	2900	80	80	15
100FYH-120-15	120	15	0.5-2	2900	100	100	18.5
100FYH-120-20	120	20	0.5-2	2900	100	100	22
100FYH-140-18	140	18	0.5-2	2900	100	100	37
100FYH-140-30	140	30	0.5-2	2900	100	100	37
125FYH-135-22	135	22	0.5-2	2900	125	125	30
125FYH-190-28	190	28	0.5-2	2900	125	125	37
150FYH-200-25	200	25	0.5-2	2900	150	150	37
150FYH-250-25	250	25	0.5-2	2900	150	150	45

规格型号 Model	流量 Flow (m^3/h)	扬程 Head (m)	液下深度 Submerged depth (M)	转速 Speed (r/min)	口径 caliber（mm）		功率 power (kw)
					进口 import	出口 exit	
25FYH-20	7	20	0.5-2	2900	25	25	3
25FYH-25	7.2	25	0.5-2	2900	25	25	3
50FYH-25	12.5	25	0.5-2	2900	50	50	5.5
65FYH-25	25	25	0.5-2	2900	65	65	5.5
80FYH-25	50	25	0.5-2	2900	80	80	7.5

安装注意事项 Installation Precautions

1、泵组应水平安装并固定有稳定的基础上，且不受其它设备震动的影响；

2、泵组周围要预留有足够的空间，以便泵组的维护、检修；

3、基础的面积必需大于泵组底板面积；

4、泵组底板与基础之间应铺有可调的衬垫（用于调整泵组的水平）；

5、安装时应谨慎操作，严防工具和杂物落入泵腔内；

6、安装完毕应检查联轴器两部分（泵联器和电联器）有无错位，如有错位应调整对中，泵联器和电联器之间的间隙以 1 ~ 2 mm 为宜，调好后用手盘动联轴器，转动应轻松自如；

7、开机前应按泵组上的箭头指向调整泵转向，如果泵反向运转，将会导致泵组机件损坏。查看泵转向时不得长时间运转，防止泵组内因无液润滑而损坏机械密封。

1. The pump set should be installed horizontally and fixed on a stable foundation, and not be affected by the vibration of other equipment;

2. Sufficient space should be reserved around the pump set to facilitate the maintenance and repair of the pump set;

3. The area of the foundation must be larger than the area of the bottom plate of the pump set;

4. An adjustable liner should be laid between the bottom plate and the foundation of the pump unit (used to adjust the level of the pump unit);

5. Operate carefully during installation to prevent tools and sundries from falling into the pump cavity;

6. After installation, check whether the two parts of the coupling (pump coupling and electrical coupling) are misaligned. If there is any misalignment, adjust the alignment. The gap between the pump coupling and the electrical coupling should be 1~2 mm, After adjusting, turn the coupling by hand, and the rotation should be easy and free;

7. Before starting the machine, adjust the pump direction according to the arrow on the pump unit. If the pump runs in the reverse direction, it will cause damage to the pump unit. Do not run for a long time when checking the steering of the pump to prevent damage to the mechanical seal due to no liquid lubrication in the pump set.

管路安装 Pipeline installation

1、泵的进出口管道应有支架支撑，管道重量不得由泵来支承。且进出口管道口径应与泵的进出口口相统一；

2、为防止杂物进入泵内，建议在泵进口处安装过滤器，过滤面积应大于管路截面积的 3 ~ 4 倍；

3、必需保证泵的安装高度符合泵的汽蚀余量要求，并考虑管路损失及介质温度对汽蚀余量的影响；

4、管路中应尽量减少弯管的使用，并使用最短的线路铺设管道；

5、不要使用有凸起的管道及倒 U 型管，泵组的进口管应按 1/100 的坡度向上接入；

6、如果进口管径与泵的进口口径不同，应使用异心异径管联接，并使上部水平，如接反，管道内的气体可能无法排除，这将影响泵组的性能，并可能导致泵的损坏；

7、管路必需正确联接。注意法兰之间的密封垫不能错位，如法兰密封面漏气，泵组将不能正常工作，并可能导致泵的损坏；

8、出口管路如果太长，阻力将大大增加，泵组的整体性能将受到影响，泵选型时应予以考虑；

9、为精确达到工况流量要求，出口管上应安装有控制阀门。扬程高的泵在出口管路上还应该安装止回阀，以防突然停机的水锤破坏。正确的安装位置是：泵出口止回阀控制阀。

1. The inlet and outlet pipes of the pump should be supported by brackets, and the weight of the pipes should not be supported by the pump. And the diameter of the inlet and outlet pipes should be consistent with the inlet and outlet of the pump;

2. In order to prevent debris from entering the pump, it is recommended to install a filter at the inlet of the pump. The filter area should be 3 to 4 times larger than the cross-sectional area of the pipeline;

3. It is necessary to ensure that the installation height of the pump meets the cavitation margin requirements of the pump, and consider the influence of pipeline loss and medium temperature on the cavitation margin;

4. Minimize the use of elbows in the pipeline, and use the shortest line to lay the pipeline;

5. Do not use raised pipes and inverted U-shaped pipes. The inlet pipe of the pump set should be connected upward at a slope of 1/100;

6. If the diameter of the inlet pipe is different from that of the pump, it should be connected with a different-diameter pipe and the upper part should be horizontal. If the connection is reversed, the gas in the pipeline may not be able to be removed, which will affect the performance of the pump unit and may cause the pump Damage;

7. The pipeline must be connected correctly. Note that the gaskets between the flanges cannot be misaligned. If the flange sealing surface leaks, the pump set will not work normally and may cause damage to the pump;

8. If the outlet pipeline is too long, the resistance will be greatly increased, and the overall performance of the pump set will be affected, so it should be considered when selecting the pump;

9. In order to accurately meet the flow requirements of working conditions, a control valve should be installed on the outlet pipe. Pumps with high lift heads should also be equipped with check valves on the outlet pipes to prevent water hammer damage due to sudden shutdowns. The correct installation position is: pump outlet check valve control valve.

启动与运行 Up and running

1、开机前应将泵内灌满须输送的液体或水，关闭出口阀门，接好电源；

2、接通电源，检查泵的转向是否正确；

3、缓慢开启出口阀门，调整到所需的性能点，机组试运转 5 ~ 10 分钟，如无异常现象可投入正常运行；

4、停机时，应先关闭泵的出口阀门，然后再切断电源；

5、如果泵组在运行过程中发生汽蚀，必需在 1 分钟内停机检查；

6、如果泵组在运行时突然停电，必需立即关闭电源开关，并关闭出口阀门；

7、泵组运行过程中，应经常检查泵和电机，发现异常的噪音和升温应立即停机检修；

8、介质粘度对泵的性能有一定影响，当液体粘度发生变化时，泵性能也有所变化，使用过程中应当注意。

1. Before starting the pump, fill the pump with the liquid or water to be transported, close the outlet valve, and connect the power supply;

2. Turn on the power supply and check whether the rotation direction of the pump is correct;

3. Slowly open the outlet valve, adjust to the required performance point, and test run the unit for 5-10 minutes. If there is no abnormal phenomenon, it can be put into normal operation;

4. When shutting down, the outlet valve of the pump should be closed first, and then the power supply should be cut off;

5. If cavitation occurs during the operation of the pump unit, it must be shut down for inspection within 1 minute;

6. If the pump unit suddenly loses power during operation, it is necessary to immediately turn off the power switch and close the outlet valve;

7. During the operation of the pump unit, the pump and motor should be checked frequently, and abnormal noise and temperature rise should be shut down immediately for maintenance;

8. The viscosity of the medium has a certain influence on the performance of the pump. When the viscosity of the liquid changes, the performance of the pump will also change. Pay attention to it during use.

工作原理 working principle

离心泵的主要过流部件有吸水室、叶轮和压水室。吸水室位于叶轮的进水口前面，起到把液体引向叶轮的作用；压水室主要有螺旋形压水室（蜗壳式）、导叶和空间导叶三种形式；叶轮是泵的最重要的工作元件，是过流部件的心脏，叶轮由盖板和中间的叶片组成。离心泵工作前，先将泵内充满液体，然后启动离心泵，叶轮快速转动，叶轮的叶片驱使液体转动，液体转动时依靠惯性向叶轮外缘流去，同时叶轮从吸入室吸进液体，在这一过程中，叶轮中的液体绕流叶片，在绕流运动中液体作用一升力于叶片，反过来叶片以一个与此升力大小相等、方向相反的力作用于液体，这个力对液体做功，使液体得到能量而流出叶轮，这时液体的动能与压能均增大。

The main flow parts of centrifugal pumps are suction chamber, impeller and pressurized water chamber. The suction chamber is located in front of the water inlet of the impeller and plays the role of guiding the liquid to the impeller; the pressurized water chamber mainly has three forms of spiral pressurized water chamber (volute type), guide vane and space guide vane; the impeller is the most important part of the pump. The important working element is the heart of the flow part. The impeller consists of a cover plate and a middle blade. Before the centrifugal pump works, first fill the pump with liquid, and then start the centrifugal pump. The impeller rotates quickly. The blades of the impeller drive the liquid to rotate. When the liquid rotates, it flows to the outer edge of the impeller by inertia. At the same time, the impeller sucks in the liquid from the suction chamber. In this process, the liquid in the impeller flows around the blades. During the circumfluence, the liquid acts on the blades. In turn, the blades act on the liquid with a force equal to the lift and in the opposite direction. This force does work on the liquid. Make the liquid get energy and flow out of the impeller, at this time the kinetic energy and pressure energy of the liquid both increase.

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故障原因及排除方法 Causes of failures and troubleshooting methods

故障现象 Failure phenomenon	原因分析 Cause Analysis	排除方法 elimination method
打不出液 No fluid	1. 吸入管内有空气 2. 吸入管漏气 3. 泵内灌注液体不足 4. 吸入管路有杂物堵塞 5. 泵反转 6. 泵吸上高度太高 1. There is air in the suction pipe 2. Air leakage in the suction pipe 3. Insufficient liquid filling in the pump 4. The suction pipe is blocked by debris 5. The pump reverses 6. The pump suction height is too high	1. 重新灌注液体或排空气体 2. 检查吸入管路 3. 重新灌注液体 4. 清除堵塞物 5. 调整转向 6. 降低安装高度 1. Refill the liquid or vent the air 2. Check the suction line 3. Refill the liquid 4. Remove blockages 5. Adjust steering 6. Lower the installation height
流量不足 Insufficient flow	1. 叶轮损坏 2. 转速不够 3. 管路内有杂物堵塞 1. Impeller damage 2. The speed is not enough 3. There is debris in the pipeline	1. 更换叶轮 2. 检查电机和供电线路 3. 清除堵塞物 1. Replace the impeller 2. Check the motor and power supply circuit 3. Remove the blockage
功率过大 Too much power	1. 输送介质比重过大 2. 泵轴线与电机轴线误差过大 3. 有机械磨擦 1. The specific gravity of the conveying medium is too large 2. The error between the pump axis and the motor axis is too large 3. There is mechanical friction	1. 降低粘度或增加灌注压力 2. 重新调整 3. 检查何处磨损，进行检修 1. Reduce viscosity or increase perfusion pressure 2. Readjust 3. Check where is worn and repaired
扬程不足 Insufficient head	1. 输送介质内有空气 2. 叶轮损坏 3. 转速不够 4. 输送介质比重过大 1. There is air in the conveying medium 2. Impeller damage 3. Not enough speed 4. The specific gravity of the conveying medium is too large	1. 重新灌注液体或排空气体 2. 更换叶轮 3. 检查电机和供电线路 4. 降低粘度或增加灌注压力 1. Refill the liquid or vent the air 2. Replace the impeller 3. Check the motor and power supply circuit 4. Reduce viscosity or increase perfusion pressure
泵组振动 Pump unit vibration	1. 泵轴线与电机轴线误差过大 2. 吸上高度大，产生气蚀 3. 有机械磨擦 1. The error between the pump axis and the motor axis is too large 2. The suction height is large, causing cavitation 3. There is mechanical friction	1. 重新调整 2. 降低安装高度 3. 检查何处磨损，进行检修 1. Readjust 2. Lower the installation height 3. Check where is worn and repaired
轴端渗漏及密封渗漏 Shaft end leakage and seal leakage	1. 轴端卡环间隙过大，卡环松 2. 吸上高度太大，产生气蚀 3. 机械密封动 静环磨损，弹簧压力小 4. 机械密封动 静环吻合不好 1. The clearance of the retaining ring at the shaft end is too large and the retaining ring is loose 2. The suction height is too large, causing cavitation 3. The dynamic and static rings of the mechanical seal are worn, and the spring pressure is small 4. The mechanical seal does not fit well between the dynamic and static rings	1. 调整卡环螺丝 2. 降低安装高度 3. 更换磨损材料，调整弹簧 4. 调整动 静环 1. Adjust the snap ring screw 2. Lower the installation height 3. Replace wear materials and adjust springs 4. Adjust the dynamic and static rings

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