



ZX系列自吸泵

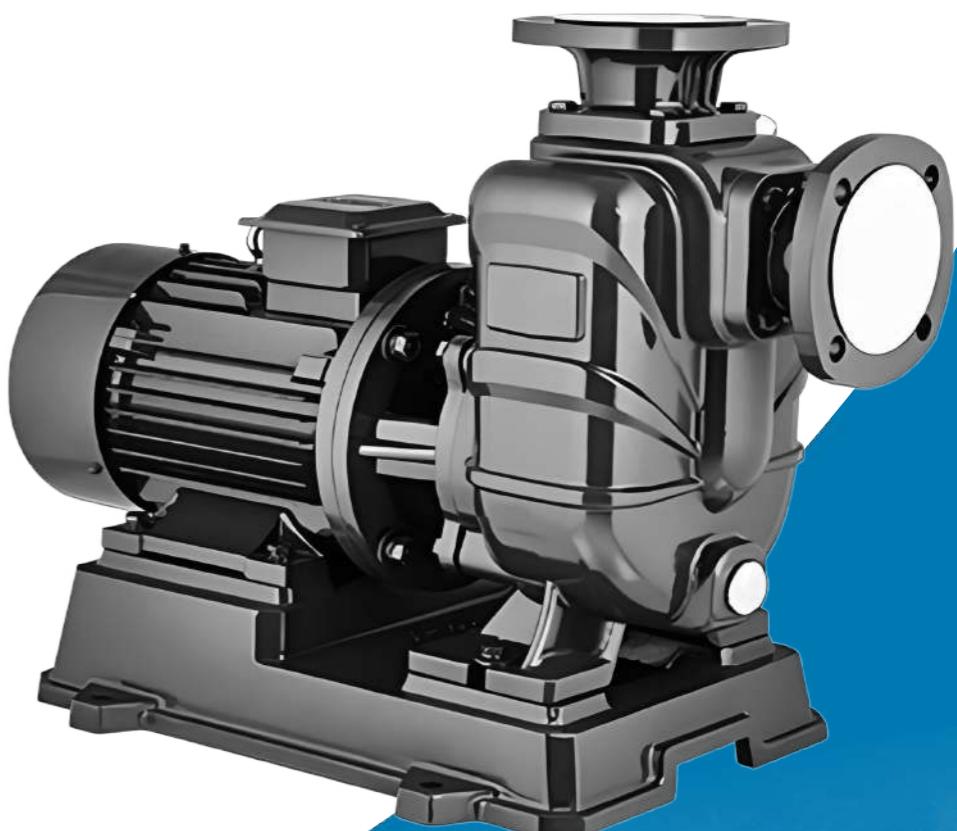
ZX SELF-PRIMING PUMP

诚信 创新
卓越 效率

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氿泰龙流体机械（江苏）有限公司
JuTyRone Fluid Machinery (Jiangsu) Co., Ltd.

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主要产品：本公司所生产的主要系列产品有离心泵、蜗壳泵、排污泵、自吸泵、隔膜泵、给水设备、螺杆泵等。并在建筑行业、石油化工行业、制药行业、环保事业、消防送水、城市给排水、国防领域等工程设施中得到了广泛的应用。
新明和流体机械江苏有限公司本着“诚信、创新卓越、效率”的企业精神，始终以客户满意为宗旨，严把质量关，积极开拓创新，与时俱进，不断地完善自己，提升市场竞争力，铸就“江苏龙”品牌！



产品概述

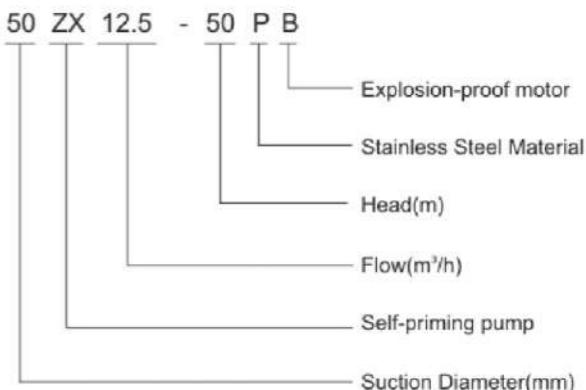
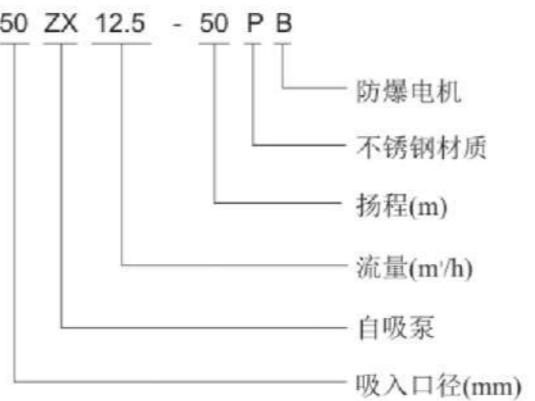
产品概述

本单位生产的ZX系列自吸泵是根据国内外有关技术资料经吸收、消化、改进后研制而成的节能泵类产品。该泵属自吸式离心泵，它具有结构紧凑、操作方便、运行平稳、维护容易、效率高、寿命长，并有较强的自吸能力等优点。管路中不需安装底阀，工作前只需保证泵体内储有定量引液即可。因此简化了管路系统，又改善了劳动条件。

Overview

ZX series self-priming pumps are energy-saving products through assimilation and improvement of the related technology at home and abroad. They are self-priming centrifugal pumps featured by compact structure, easy operation, smooth running, simple maintenance, high efficiency, long service life, robust self-priming capacity etc. There is in pump body, thus to simplify the pipeline system and improve working conditions.

型号意义 Model Meaning



主要用途

- 适用于城市环保、建筑、消防、化工、制药、染料、印染、酿造、电力、电镀、造纸、工矿冲洗、设备冷却等。
- 装上摇臂式喷头、双可将水冲到空中后，散成细小雨滴进行喷雾，是农场、苗圃、果园、茶园的良好机具。
- 适用于清水、海水及带有酸、碱度的化工介质液体和带有一般糊状的浆料(介质粘度≤100厘珀、含固量可达30%以下)。
- 可和任何型号、规格的压滤机配套使用，将浆料送给压滤机进行压滤的最理想配套泵种。

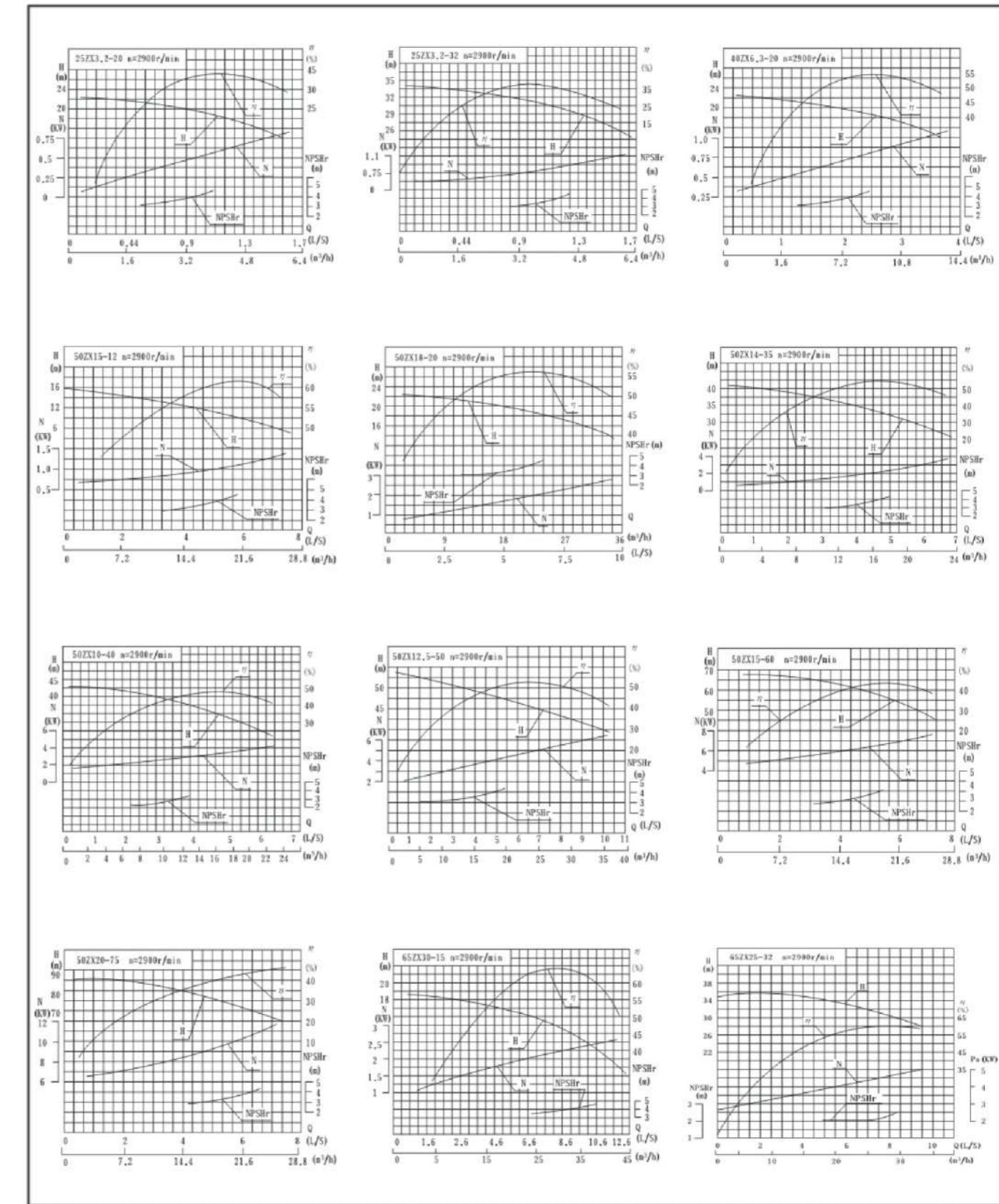
Main Application

- Suitable for urban environment protection, construction, fire control, chemical, pharmaceuticals, dyestuff, printing, brewing, electric power, electroplating, papermaking, mining cleaning, equipment cooling etc.
- Provided with a rocker type spray nozzle, it can drive water into air and then scattered into small drops, making it a good choice for farm, nursery, orchard and tea garden.
- Used to handle clean water, seawater, acidic or alkali chemical medium, and pasty slurry. (Viscosity of medium≤100 centipoise, and solid content below 30%).
- It can be matched with filter presses of various models and specifications, making it an optimal choice to deliver slurry into filter press

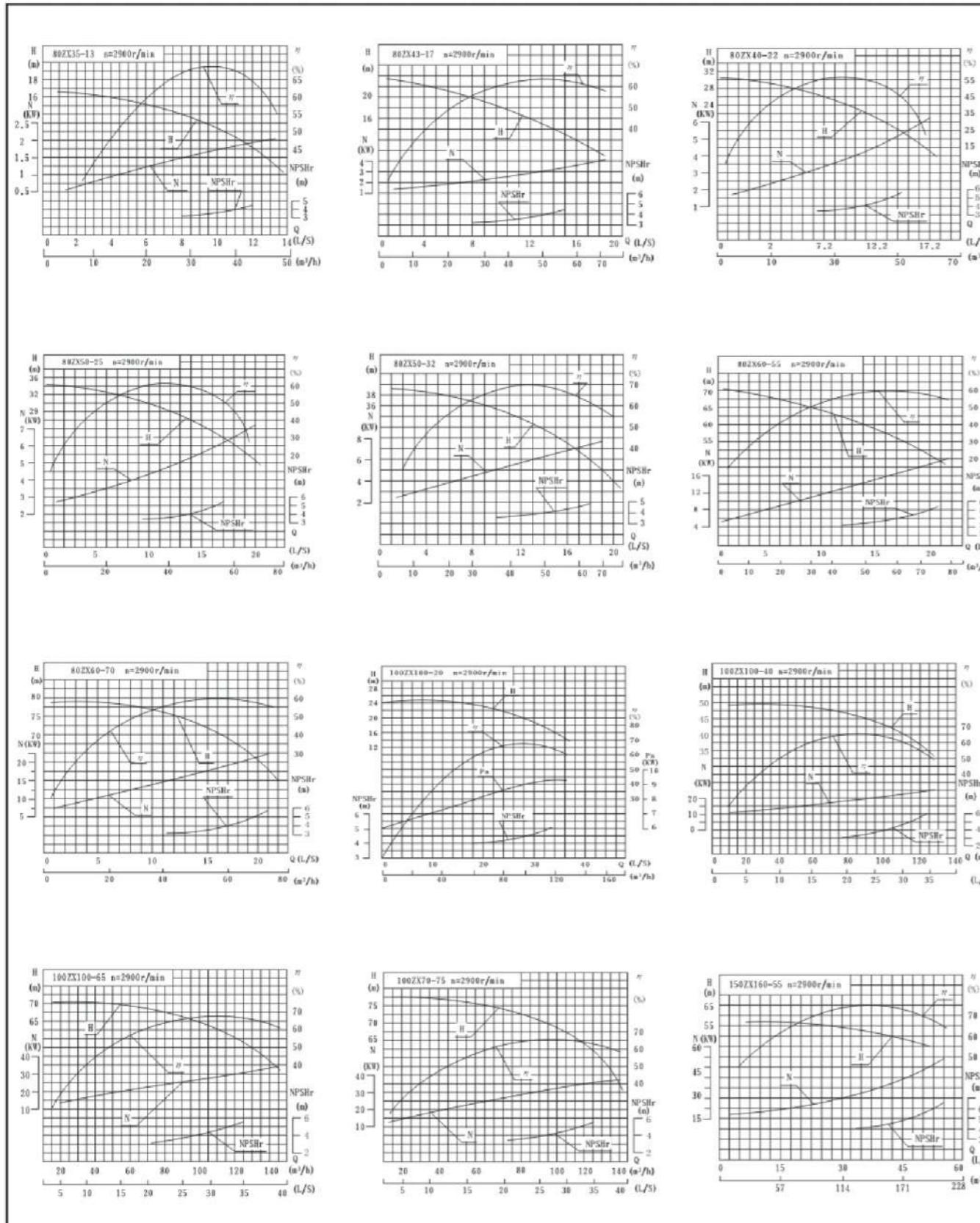
性能参数表 Performance Parameters

序号 No.	型号 Type	口径 Caliber	流量 Flow	扬程 Head	功率 Power	转速 Speed	自吸高度 Self-priming Height
		(mm)	(m³/h)	(m)	(kW)	(r/min)	(m)
1	25ZX3.2-20	25	3.2	20	1.1	2900	6.5
2	25ZX3.2-32	25	3.2	32	1.5	2900	6.5
3	32ZX3.2-20	32	3.2	20	1.1	2900	6.5
4	32ZX3.2-32	32	3.2	32	1.5	2900	6.5
5	32ZX3.2-50	32	3.2	50	3	2900	6.5
6	40ZX6.3-20	40	6.3	20	1.5	2900	6.5
7	40ZX6.3-32	40	6.3	32	2.2	2900	6.5
8	40ZX10-40	40	10	40	4	2900	6.5
9	40ZX6.3-50	40	6.3	50	4	2900	6.5
10	50ZX15-12	50	15	12	1.5	2900	6.5
11	50ZX18-20	50	18	20	2.2	2900	6.5
12	50ZX12.5-32	50	12.5	32	3	2900	6.5
13	50ZX12.5-40	50	12.5	40	4	2900	6.5
14	50ZX12.5-50	50	12.5	50	5.5	2900	6.5
15	50ZX20-30	50	20	30	4	2900	6.5
16	50ZX14-35	50	14	35	4	2900	6.5
17	50ZX10-40	50	10	40	4	2900	6.5
18	50ZX15-60	50	15	60	7.5	2900	6.5
19	50ZX20-75	50	20	75	11	2900	6.5
20	65ZX30-15	65	30	15	3	2900	6.5
21	65ZX25-32	65	25	32	5.5	2900	6
22	65ZX25-50	65	25	50	7.5	2900	6
23	65ZX25-70	65	25	70	15	2900	6
24	80ZX35-13	80	35	13	3	2900	6
25	80ZX43-17	80	43	17	4	2900	6
26	80ZX40-22	80	40	22	5.5	2900	6

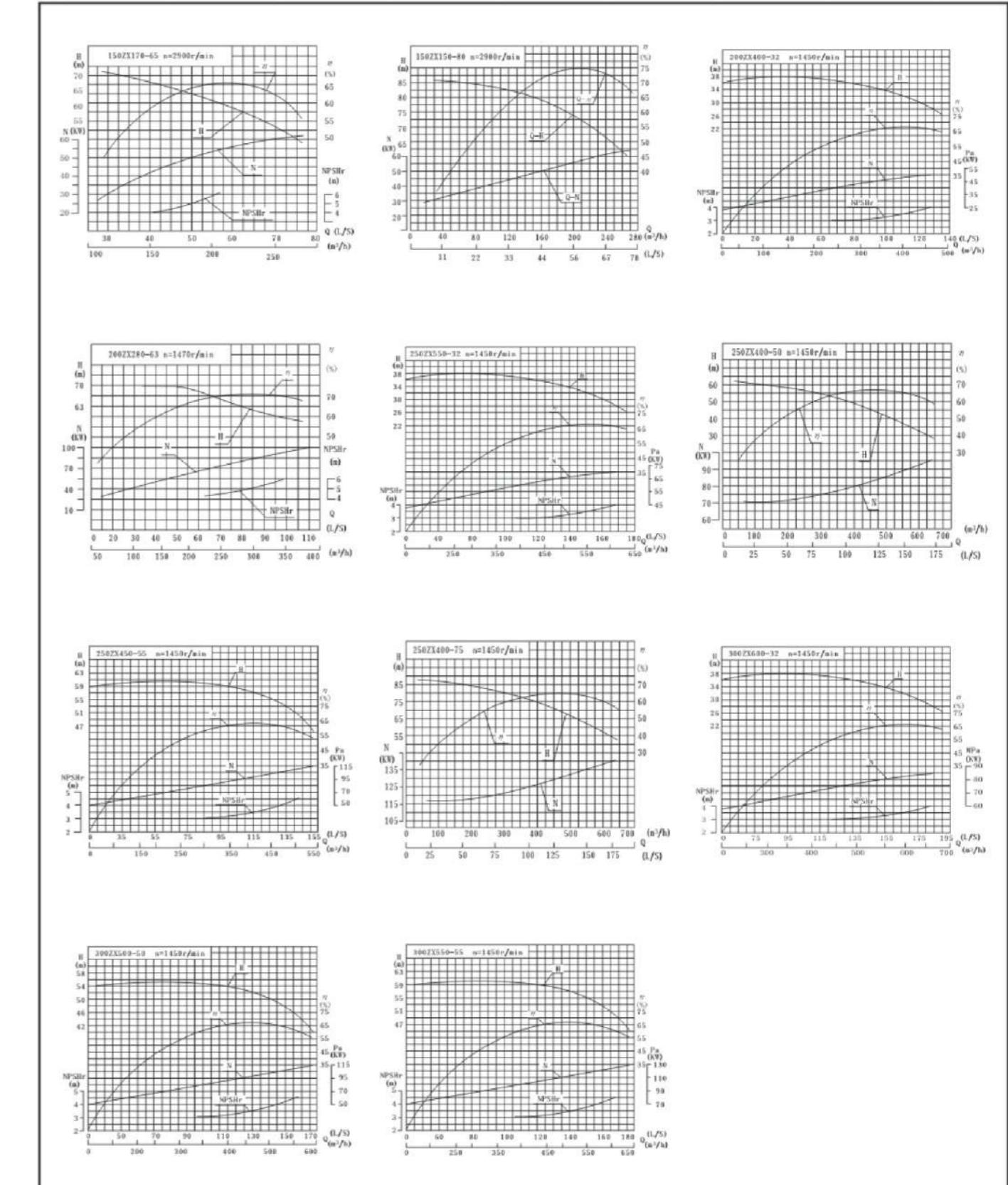
性能曲线图 Performance Curve Diagram



性能曲线图 Performance Curve Diagram



性能曲线图 Performance Curve Diagram



工作原理与结构说明

该泵均采用轴向回液的泵体结构。泵体由吸入室、储液室、涡卷室、回液孔、气液分离室等组成，泵正常起动后，叶轮将吸入室所有的液体及吸入管路中的空气吸入，并在叶轮内得以完全混合，在离心力的作用下，液体夹带着气体向涡卷室外缘流动，在叶轮的外缘上形成有一定厚度的白色泡沫带及高速旋转液环。气液混合体通过扩散管进入气液分离室。此时，由于流速突然降低，较轻的气体从混合气液中被分离出来，气体通过泵体吐出口继续上升排出。脱气后的液体回到储液室，并由回流孔再次进入叶轮，与叶轮内部从吸入管路中吸入的气体再次混合，在高速旋转的叶轮作用下，又流向叶轮外缘……。随着这个过程周而复始地进行下去，吸入管路中的空气不断减少，直到吸尽气体，完成自吸过程，泵便投入正常作业。

在一些泵的轴承体底部还设有冷却室。当轴承发热引起轴承体温升超过70℃时，可在冷却室处通过任意只冷却液管接头，注入冷却液循环冷却。泵内部防止液体由高压区向低压区泄漏的密封机构是前后密封环，前密封环装在泵体上，后密封环装在轴承体上，当泵经长期运转密封环磨损到一定程度，并影响到泵的效率和自吸性能时，应给予更换。

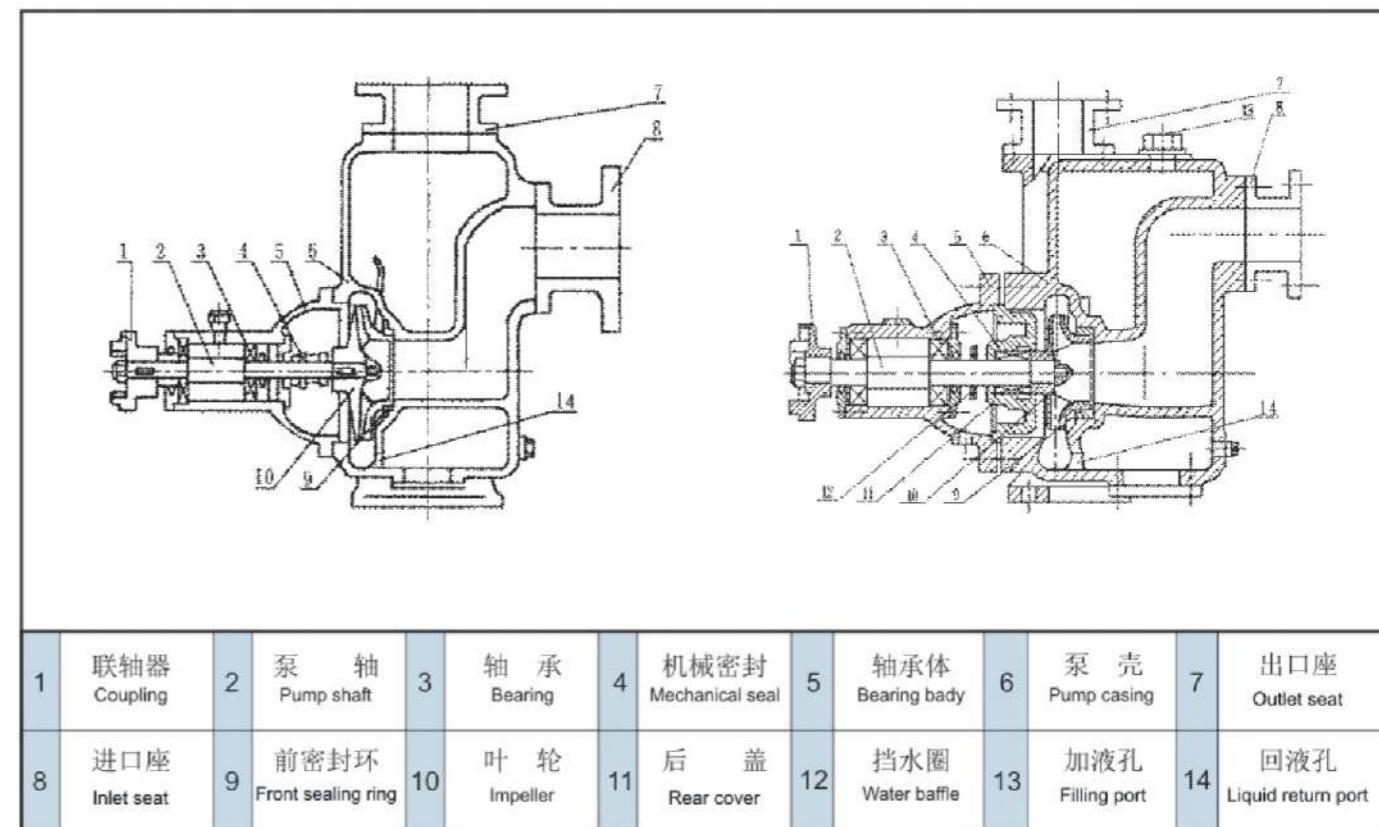
Working Principle and Structural Specifications

This pump adopts a body structure with an axial liquid return. The body consists of such parts as suction chamber, liquid storage chamber, volute chamber, liquid return port and gas-liquid separation chamber. After the pump starts normally, the impeller will suck the liquid in the suction chamber and the air in the suction pipeline so that the both can mix fully in the impeller. Due to the centrifugal force, the liquid along with the gas flows towards the outer edge of the volute chamber and then a belt of white foam with a certain thickness and a liquid ring with high-speed rotation come into being on the outer edge of the impeller. The gas-liquid mixture enters the gas-liquid separation chamber through the diffusion tube. Here the lighter gas will be separated from the mixture and continue to rise up and be discharged out of the discharge nozzle on the pump body as the flow speed reduces suddenly. The liquid separated from the gas will return to the liquid storage chamber and enter the impeller again through the return port to mix again with the gas in the impeller sucked from the suction pipeline. It then flows towards the outer edge of the impeller due to the high-speed rotation of the impeller..

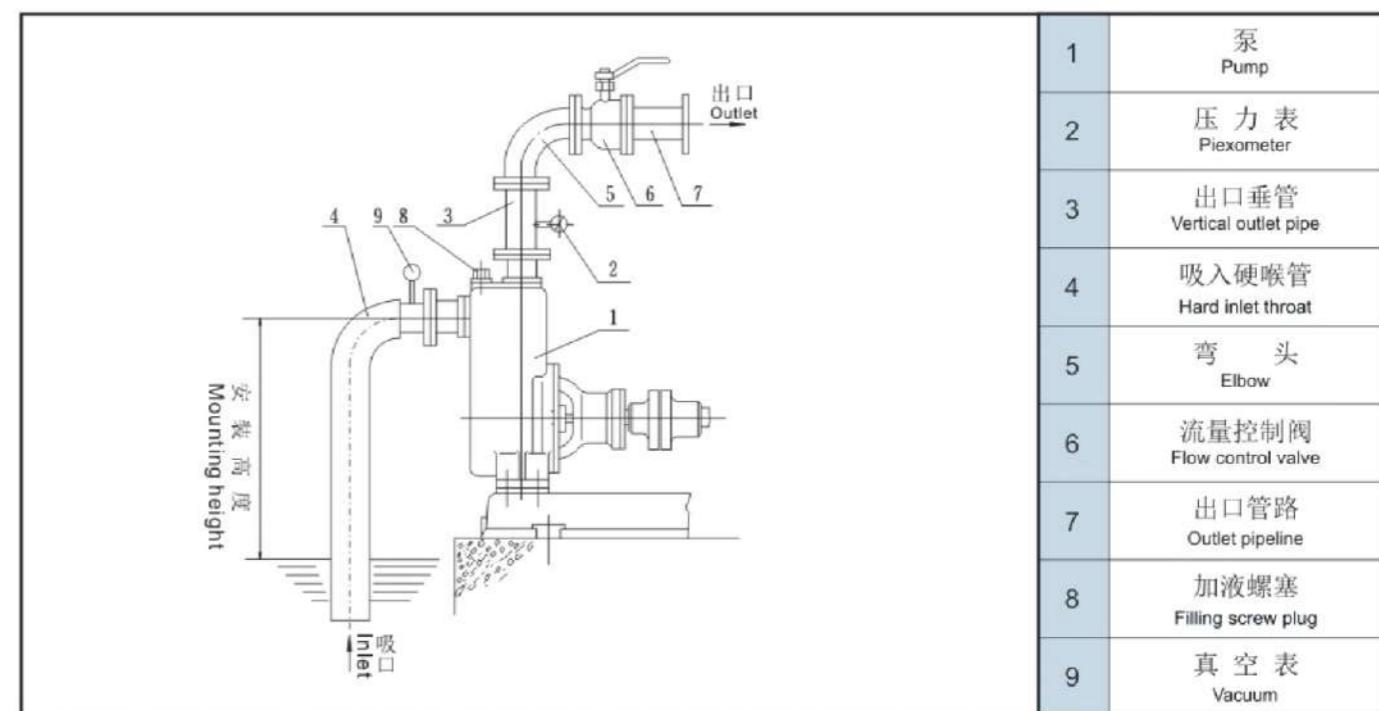
As this process goes round and round, the air in the suction pipeline will reduce constantly until the gas is suctioned out and the self-priming is completed. Then the pump will begin to work normally.

For some pumps, a cooling chamber will additionally be mounted on the bottom of the bearing body. When the bearing heats up and its body temperature exceeds 70℃, the coolant can be injected through any coolant pipe coupling of the cooling chamber for the circulating cooling. A front-back seal ring mechanism is adopted in the pump to prevent the liquid from leaking from the high-pressure area to the low-pressure area. The front seal ring is mounted on the pump body while the back one mounted on the bearing body. They should be changed when they are so worn-out that they have an impact on the efficiency and self-priming performance of the pump after long-term operation.

主要构件名称 Main Part Name



泵的安装 Pump and Installation



安装说明

- 1、在泵与电动机直联传动时，应注意泵轴与电动机输出的同轴度；泵安装的准确与否对泵的运行平稳性和使用寿命有较大的影响，因此必须仔细认真地安装和校正。
- 2、泵联轴器必须用螺母紧固好，并锁紧螺母，谨防螺母松动，否则易引起叶轮窜动，造成机械故障。
- 3、为使泵体内能够保持一定的储存液，以达到较好的自吸能力和防止机械密封的干摩擦，必须使泵的进口高于泵轴中心线。
- 4、吸入管路的安装应注意：
 - A、吸入口的安装高度不能超过5米，在条件许可时，吸入口的安装高度应尽可能地低于水池最低的储水平面，并尽量缩短吸入管的长度，少装弯头，这样有利于缩短自吸时间，提高自吸功能。
 - B、吸入管路中的阀门、法兰等应严防漏气或渗漏液体，即吸入管路不允许有漏气现象存在。
 - C、应防止泵体内吸入固体等杂物，为此吸入管路上应设置过滤器。过滤器的有效过流面积应为吸入管截面的2-3倍，过滤器应定期检查。
 - D、吸入管路和吐出管路应有自己的支架，泵体本身不允许承受管路的负荷。
- 5、泵在安装时，应使泵及管路的静电接地电阻达到其规定要求。
- 6、安装时应严格检查泵壳及管路中有无石块，铁砂等杂物。
- 7、校正泵联轴器及电动机联轴器的安装间隙及同轴度，其不同轴度允许偏差为0.1毫米。泵轴和电动机轴的高度差可在底脚上垫铜皮或铁皮调整。
- 8、在机组实际运转3-4小时后，作最后检查，如无不良现象，则认为安装已妥，在试运转中应检查轴承的温度，轴承体的温度不宜超过70℃。
- 9、该泵轴承体凡设有冷却室装置的冷却水接头供配内孔为Φ12的胶管或塑料管之用，其螺纹尺寸为M12×1.75。
- 10、在泵的出口管路上如装有单向阀而在自吸过程中不能使泵顺利地排出气体时，应在泵的出口处加接排气小管及阀。

Installation Instructions

1. The output coaxiality between the pump shaft and the motor shall be noted for the monoblock drive of the pump and the motor; the pump's installing accuracy has a big impact on its operational stability and service life, so it must be installed and calibrated carefully.
2. The pump coupling must be fastened with nuts while nuts must be locked to avoid loosening; otherwise it will lead to the impeller's play and further to a mechanical failure.
3. The pump inlet must be higher than the pump shaft's central line so that a certain amount of storage liquid can be maintained inside the pump body to achieve a strong self-priming capacity and avoid the mechanical seal's dry friction.
4. The following shall be noted for the installation of the suction pipeline :
 - A. The suction nozzle's mounting height shall try to be not more than 5m, but lower than the minimum of the pond if conditional. The suction pipe shall be as short as possible and elbows shall be mounted as few as possible. That will be useful to shorten the self-priming time and improve the stripping function.
 - B. Such parts in the suction pipeline, like valves and flanges, shall be protected from air or liquid leaks, that is, no air leaks shall be allowed in the suction pipeline.
 - C. To avoid the pump body from sucking impurities like solid, a filter shall be mounted on the suction pipeline. The filter's effective flow-through area shall be 2-3 times of the suction pipe's section. Also the filter shall be checked regularly.
 - D. The suction and discharge pipelines shall be provided with their own supports while the pump body itself is not allowed to bear the pipelines' load.
5. To install the pump, the electrostatic grounding resistance of the pump and the pipelines shall meet the stated requirements.
6. To install the pump, a close check is required to see whether there are impurities like stones and iron sand in the pump casing and pipelines.
7. To calibrate the mounting clearance and coaxiality of the pump and motor driving couplings, the allowable deviation of different coaxiality values is 0.1mm. The height difference between the pump and motor shafts can be adjusted by means of padding a copper or iron sheet on the footing.
8. Carry out a final check after 3-4 hours of actual operation of the unit. If no defects are found, the installation can be regarded proper. During the trial run, check the bearing's temperature which shall not exceed 70°C.
9. As for those pumps whose bearing body is provided with a cooling chamber, the coolant pipe coupling is for a rubber or plastic pipe with an inner bore of dp 12 and the thread size is M12×1.75.
10. A vent tube with a valve shall be additionally mounted at the pump's outlet if a non-return valve is mounted on the pump's outlet pipeline while the pump has difficulty in venting the gas during the self-priming.

泵的使用

(一) 起动前的准备及检查工作

- 1、本系列自吸泵，根据泵的工作运转状况，分别采用优质钙基黄油和10号机油进行润滑，如果采用黄油润滑的泵应定期向轴承箱内加注黄油，采用机油润滑的泵，如果油位不足，则加足之。
- 2、检查泵壳内的储液是否高于叶轮的上边缘，如若不足，可以从泵壳上的加液口处直接向泵体内注入储液，不应在储液不足的情况下启动运转，否则泵不能正常工作，且易损坏机械密封。
- 3、检查泵的转动部件是否有卡住磕碰现象。
- 4、检查泵体底脚及各联结处螺母有无松动现象。
- 5、检查泵轴与电动机主轴的同轴度和平行度。
- 6、检查进口管路是否漏气，如有漏气，必须设法排除。
- 7、打开吸入管路的阀门，稍开(不要全开)用出口控制阀。

(二) 起动及操作：

- 1、点动自吸泵，注意泵轴的转向是否正确。
- 2、注意转动时有无不正常的声响和振动。
- 3、注意压力表及真空表读数，起动后当压力及真空表的读数经过一段时间的波动而指稳定后，说明泵内已经上液，进入常输液作业。

Pump Use

- I.Preparations and check before starting 1.This series self-priming pump adopts the high-quality calcium soap grease or 10# engine oil for the lubrication in accordance with its running situation. To use the grease lubrication, the grease shall be filled into the pump's bearing box regularly; and to use the engine oil lubrication, oil shall be filled if the oil level is below the standard.
 - 2.Check whether the storage liquid in the pump casing is higher than the impeller's upper edge; if not, fill the storage liquid into the pump body directly from the filling opening on the pump casing. No starting and running are allowed when the storage liquid is short, otherwise the pump will not work normally and the mechanical seal will be vulnerable to being damaged.
 - 3.Check whether the pump's rotary parts are seized or knocked.
 - 4.Check whether the pump body's footings and all couplings nuts are loose.
 - 5.Check the coaxiality or parallelism between the pump shaft and the motor spindle.
 - 6.Check whether the inlet pipeline has air leaks; if so, try to troubleshoot it.
 - 7.Open the suction pipeline, s valve and slightly open(not fully)the outlet control valve.
- ### II.Starting and operation
1. Jog the self-priming pump and check whether the pump shaft's rotation is correct.
 2. Check whether there is abnormal noise and vibrations during rotations.
 3. Check the readings of the pressure and vacuum gauges. When those readings go through some time of fluctuations and then become stable after starting, it means the liquid has been fed into the pump and the oil pump is available for the normal liquid delivery.

泵的使用

- 4、在泵进入正常输液作业前即自吸过程中，应特别注意泵内水温升高情况，如果这个过程过长，泵内水温过高，则停泵检查其原因。
- 5、如果泵内液体温度过高而引起自吸困难，那么可以暂时停机，利用吐出管路中的液体倒流回泵内或向泵体上的加储液口处直接向泵内补充液体，使泵内液体降温，然后起动即可。
- 6、泵在工作过程中如发生强烈振动和噪声，有可能是泵发生汽蚀所致，汽蚀产生的原因有两种：一是进口管流速过大，二是吸程过高。流速过大时可调节出口控制阀，升高压力表读数，在进口管路有堵塞时则应及时排除：吸程太高时可适当降低泵的安装高度。
- 7、泵在工作过程中因故停泵，需再起动时，出口控制阀应稍开(不要全闭)，这样既有利于自吸过程中气体从吐出口排出，又能保证泵在较轻的负荷下启动。
- 8、注意检查管路系统有无渗漏现象。

(三)、停泵：

- 1、首先必须关闭叶出管路上的闸阀。
- 2、使泵停止转动。
- 3、在寒冷季节，应将泵体内的储液和轴承体冷却室内的水放空，以防冻裂机件。

Pump Use

- 4.Before the pump's normal liquid delivery, namely, during the self-priming process, special attention shall be paid to the water temperature rise in the pump; if this process is too long and the water temperature in the pump is too high, stop the pump to check reasons.
- 5.If the temperature of liquid in the pump is so high that there is difficulty in self-priming, stop the pump temporarily and reduce the temperature by means of the liquid in the discharge pipeline flowing back into the pump or directly making up the liquid into the pump through the filling opening on the pump body. Then start again.
- 6.Violent vibrations and noise during the pump's running may be caused by its cavitation. There are two reasons for cavitation:the first is the excessive flow velocity of the inlet pipe and the second is the too high suction lift For the first case adjust the outlet control valve, increase the pressure gauge's reading and remove the jamming of the inlet pipeline in time if necessary;and for the second, reduce the pump's installation height properly.
- 7.To restart the pump after stopping during running for failure, the outlet control valve shall be opened slightly (not fully closed) so that the gas can be vented from the discharge nozzle during self-priming and also the pump can be started under a lighter load.
8. Check whether the pipeline system has any leaks.

Stop pump

- 1.First close the gate valve on the discharge pipeline.
- 2.Stop the pump from running.
3. In cold seasons it's necessary to vent out the storage liquid in the pump body and the water in the bearing body's cooling chamber to avoid the pump parts from frost cracks.

维护和拆装

该泵的特点是结构简单可靠，经久耐用。在泵正常情况下，一般不需要经常拆开保养。当发现故障后随时给予排除即可。

1、维护该泵时应注意几个主要部位。

A、滚动轴承：当泵长期运行后，轴承磨损到一定程度时，须进行更换。

B、前密封环、后密封环：当密封环磨损到一定程度时，须进行更换。

C、机械密封：机械密封在不漏液的情况下，般不应拆开检查。若轴承体下端泄漏口处产生严重泄漏时，则应对机械密封进行拆检。装拆机械密封时，必须轻取轻放，注意配合面的清洁，保护好静环和动环的镜面，严禁敲击碰撞，因机械密封而产生泄漏的原因主要是摩擦付镜面拉毛所至，其修复办法，可对磨擦付端面进行研磨使恢复镜面。机械密封产生泄漏的另一原因是“0”形橡胶密封圈(或缓冲垫)安装不当、或者变形老所至，此时则需调整或更换“0”形密封圈进行重新装配。

2、泵拆装顺序：

A、拆下电动机或脱出联轴器、

B、拆出轴承体总成，检查叶轮和前口环的径向间隙。检查叶轮螺母有无松动。

C、拆下叶轮螺母，拉出叶轮，检查叶轮和后密封环的径向间隙。

D、松出机械密封的紧定螺钉，拉出机械密封的动环部分，检查动、静环端面的贴合情况，检查0”形密封圈(或缓冲垫)的密封情况。

E、旋出联轴器的紧定螺母，拉出联轴器。

F、下轴承端盖，拆出泵轴和轴承。

G、安装时以相反顺序进行装配即可。

Maintenance Disassembly and Assembly

This pump is characterized by a simple and reliable structure, thus being lasting and durable. On the condition that the pump is normal, generally it's not necessary to disassemble it and do the maintenance often but remove faults once found.

I.The following major parts shall be noticed when maintenance is done for the pump.

A.Rolling bearing:the bearing shall be replaced when it's worn-out to a certain extent after the pump's long-time running.

B.Front and back sealing rings:the seal rings shall be replaced when they're worn-out to a certain extent.

C.Mechanical seal:generally the mechanical seal shall not be overhauled in case of no liquid leaks. If the leak on the bottom of the bearing body is serious, it's necessary to overhaul the mechanical seal. In that case, it's necessary to take and put it gently, keep the fitting surface clean, protect the static and rotary rings mirror surfaces and prohibit it from being knocked. One main reason why the mechanical seal leads to leaks is that the friction pairs mirror surface gets rough. It can be trimmed by means of grinding the friction pair's end face. Another reason for that is the improper mounting or deformation and ageing of the rubber O-ring(or buffer). In that case, it's necessary to adjust or replace the O-ring and reassemble.

II. The steps to disassemble and assemble the pump are:

A.Unload the motor or uncouple the coupling.

B.Unload the bearing body assembly to check the radial clearance between the impeller and the front wear ring and also check whether the impeller nut is loose or not.

C.Unload the impeller nut to pull out the impeller and check the radial clearance between the impeller and the back seal ring.

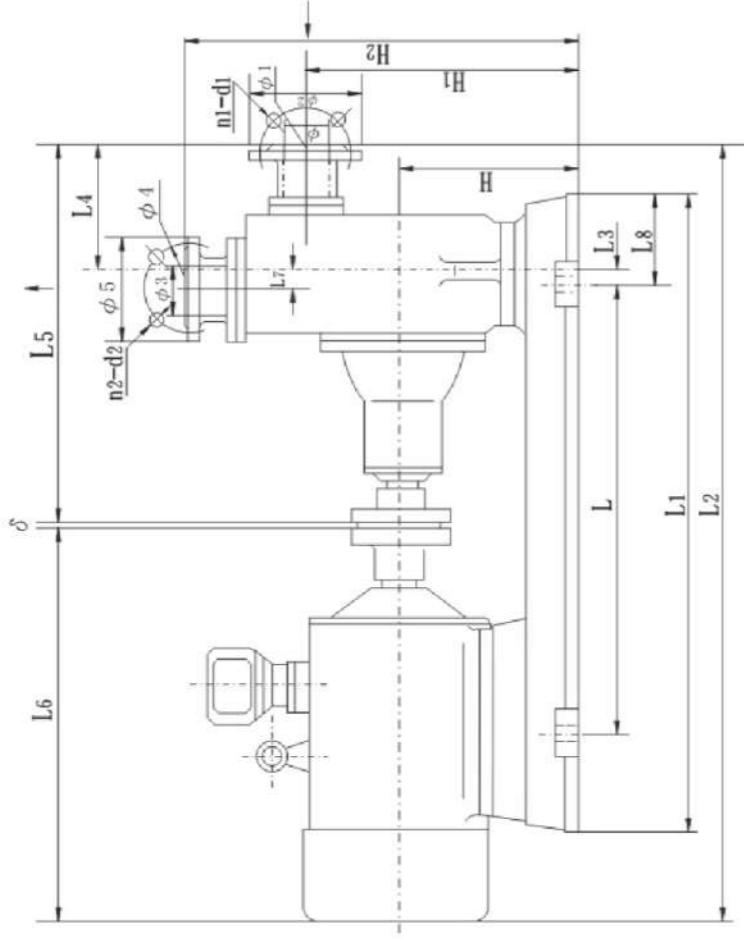
D.Release the mechanical seal's set screw to pull out its rotary ring part and check the fitting between the rotary and static rings end surfaces as well as the sealing state of the Oring(or buffer).

E.Screw out the coupling's set nut to pull it out.

F.Unload the bearing end cover to take out the pump shaft and the bearing.

G.The assembly follows the reverse order of the above.

外形及安装尺寸图 Diagram Installation Dimensions Overall



外形及安装尺寸表 Table of Mounting Dimensions and Overall

型 号 Type	电 动 机 Motor		功率 kW Type	L	L1	L2	L3	L4	L5	L6	L7	L8	δ	H	H1	H2	H3	B	B1	B2	B3	Φ	Φ1	Φ2	Φ3	Φ4	Φ5	n·d	n·d2	n·d3
	型 号 Type	功 率 kW																												
80ZX50-20	Y132S1-2	5.5	480	870	999	61	152	476	520	重合	195	3	220	370	530	30	360	404	240	12	80	150	185	65	130	160	4·18	4·14	4·14	
80ZX50-25	Y132S2-2	7.5	480	870	1080	70.5	270	557	520	70	195	3	225	406	595	30	360	404	240	重合	80	160	195	80	160	195	4·18	4·18	4·18	
80ZX50-32	Y132S2-2	7.5	480	870	1080	70.5	270	557	520	70	195	3	225	406	595	30	360	404	240	重合	80	160	195	80	160	195	4·18	4·18	4·18	
80ZX50-40	Y160M1-2	11	560	950	1140	70.5	270	557	520	70	195	3	225	406	595	30	360	404	240	重合	80	160	195	80	160	195	4·18	4·18	4·18	
80ZX60-55	Y160L-2	18.5	600	1025	1269	95	200	558	708	重合	200	3	280	450	655	25	415	445	240	10	80	160	195	80	160	195	4·18	4·18	4·18	
80ZX60-70	Y180M-2	22	730	1170	1404	38	211	656	745	重合	195	3	300	490	705	30	460	510	240	10	80	160	195	80	160	195	4·18	4·18	4·18	
100ZX80-20	Y132S2-2	7.5	600	940	1140	87.5	202	575	668	重合	200	3	260	420	590	30	415	445	240	重合	100	170	210	100	170	250	4·18	4·18	4·18	
100ZX100-20	Y160M1-2	11	600	1000	1246	87.5	202	575	668	重合	200	3	260	420	590	30	415	445	240	重合	100	170	210	100	170	250	4·18	4·18	4·18	
100ZX100-32	Y160M2-2	15	600	1100	1350	87.5	202	575	668	重合	200	3	260	420	590	30	415	445	240	重合	100	170	210	100	170	250	4·18	4·18	4·18	
100ZX100-40	Y180M-2	22	660	1060	1392	115	215	647	743	重合	200	2	320	490	710	25	460	510	240	12	100	170	210	100	170	250	4·18	4·18	4·18	
100ZX100-50	Y180M-2	22	660	1060	1392	115	215	647	743	重合	200	2	320	490	710	25	460	510	240	12	100	170	210	100	170	250	4·18	4·18	4·18	
100ZX100-65	Y200L1-2	30	780	1320	1566	116	230	743	820	重合	270	3	335	555	785	30	546	596	290	14	100	180	215	100	180	215	8·18	8·18	8·18	
100ZX70-75	Y200L1-2	30	780	1320	1566	116	230	743	820	重合	270	3	335	555	785	30	546	596	290	14	100	180	215	100	180	215	8·18	8·18	8·18	
150ZX180-28	Y200L1-2	30	780	1310	1550	130	230	950	830	70	320	3	350	650	960	30	580	630	290	30	150	240	285	150	240	285	8·22	8·22	8·22	
150ZX170-55	Y225M-2	45	780	1420	1650	150	250	950	830	70	320	3	350	650	960	30	580	630	290	30	150	240	285	150	240	285	8·22	8·22	8·22	
150ZX170-65	Y250M-2	55	905	1500	1780	150	250	950	830	70	320	3	350	650	960	30	580	630	290	30	150	240	285	150	240	285	8·22	8·22	8·22	
150ZX160-80	Y250M-2	55	905	1500	1780	150	250	950	830	70	320	3	350	650	960	30	580	630	290	30	150	240	285	150	240	285	8·22	8·22	8·22	
200ZX400-32	Y250M-2	55	905	1620	2083	165	470	1127	953	重合	360	3	440	800	1170	30	710	770	290	30	200	280	315	200	280	315	8·18	8·18	8·18	
200ZX280-63	Y280M-4	90	1000	1860	2242	210	430	1180	1060	重合	430	2	500	900	1220	40	760	840	330	22	200	295	335	150	240	280	8·23	8·23	8·23	
200ZX350-65	Y315S4	110	1000	1860	2452	230	430	1180	1270	重合	430	2	535	935	1255	40	760	840	330	22	200	295	335	150	240	280	8·23	8·23	8·23	
250ZX550-32	Y280S4	75	1000	1860	2628	195	875	1604	1031	重合	430	3	470	1110	1290	30	760	840	330	35	250	335	370	250	335	370	12·18	12·18	4·25	
250ZX400-50	Y280M-4	90	1000	1860	2604	240	792	1542	1060	重合	430	2	500	1100	1300	40	760	840	330	25	250	350	390	250	350	390	12·23	12·23	4·25	
250ZX450-55	Y315S4	110	1200	2000	2814	210	792	1542	1270	重合	400	2	500	1100	1300	40	900	980	400	25	250	350	390	250	350	390	12·23	12·23	4·25	
300ZX600-32	Y280M-4	90	1000	1860	2808	195	995	1724	1081	重合	430	3	470	1230	1330	30	760	840	330	35	300	395	435	300	395	435	12·23	12·23	4·25	
300ZX500-50	Y315S4	110	1200	2000	2962	170	890	1690	1270	重合	400	2	550	1210	1440	40	900	980	400	30	300	440	300	440	300	440	300	440	300	440
300ZX550-55	Y315M4	132	1200	2000	3042	70	890	1690	1270	重合	400	2	550	1210	1440	40	900	980	400	30	300	440	300	440	300	440	300	440	300	440

故障及排除方法 Failure Causes and Solutions

故障 Failure	产生原因 Possible causes	排除方法 Solutions
水泵不出水 No water out of pump	1.泵壳内未加储液或储液不足 2.吸入管路漏气 3.转速太低 4.吸程太高或吸入管路过长 5.机械密封泄漏量过大 6.吸入管路气体不能从出口排出	1.加足储液 2.检查并排除漏气现象 3.调整转速 4.降低吸程或缩短吸入管路 5.修复或更换 6.使之排出
	1.No or inadequate storage liquid in pump casing 2.Air leak of suction pipeline 3.Rotation speed too low 4.Suction lift too high or suction pipeline too long 5.Excessive leak of mechanical seal 6.Gas in suction pipeline failing to be vented from outlet	1.Feed liquid to make it adequate 2.Check and remove the air leak 3.Adjust the rotation speed 4.Reduce the suction lift or shorten the suction pipeline 5.Repair or replace it 6.Discharge it
杂音和振动较大 Noise and vibration	1.底脚不稳 2.泵轴弯曲 3.汽蚀现象 4.轴承磨损严重 5.进口管路内有杂物 6.泵与电动机两者主轴不同心 1.Footing instable 2.Pump shaft bent 3.Cavitation 4.Bearing seriously worn-out 5.Impurities in inlet pipeline 6.No coaxiality between spindles of pump and motor	1.加固 2.更换或校正 3.调整工况 4.更换 5.清除杂物 6.调整同轴度 1.Reinforce it 2.Replace or correct it 3.Adjust working conditions 4.Replace the bearing 5.Remove impurities 6.Adjust the coaxiality
出水量不足 Unenough flow with pump	1.叶轮流道与吸入管被堵塞 2.叶轮或叶轮密封磨损严重 3.功率不足或转速太低 1.Jamming of impeller channel and suction pipe 2.Impeller or impeller seal seriously worn-out 3.Underpower or rotation speed too low	1.排除堵塞物 2.更换口环 3.加足功率、调至额定转速 1.Remove stemming 2.Replace the wear ring 3.Increase the power and adjust the rotation speed to the rating
轴功率消耗过大 Excessive power consumption of shaft	1.流量过大 2.转速太高 3.泵轴弯曲或叶轮卡碰 4.泵内流道堵塞或被卡住 1.Excessive flow 2.Rotation speed too high 3.Pump shaft bent or impeller seized or knocked 4.Flow channel inside pump jammed or seized	1.升高出口压力 2.适当降低 3.更换或校正 4.排除堵塞物 1.Rise the outlet pressure 2.Reduce the speed properly 3.Replace or calibrate it 4.Remove stemming

管径 Pipe Diameter (mm)	流 量 Flow Rate (L/s)				
	1	2	4	6	8
25	3.27	13.0			
38	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
100	0.4	0.8	1.3	2.1	6.8
125		0.23	0.4	0.63	1.3
150			0.16	0.26	0.58
175				0.11	0.27
200					0.13
250					0.07
300					0.07

直管摩擦损失简表(供估计用)管100m直管损失米数以新铸铁管为标准, 直管加倍
pipe take new cast iron pipe as standard. For old pipes, it should be doubled.

阀及弯管折合直管长度(每个)

Length of Valve and Elbow Converted into Straight Pipe (Each)

种 类 Type	折合直管直径倍数 Converted into Straight Pipe Multiple of Diameter	备注 Remark
全开闸阀 Full Open Gate Valve	12	未隔开加倍 Doubling for Incompletely Opened
标准弯管 Standard Elbow Pipe	25	
逆止阀 Non-return Valve	100	
底阀 Foot Valve	100	部分堵塞加倍 Doubling for Partially Jammed

注: 例如100mm直管, 底阀折100倍直径等于 $100 \times 100 = 10000\text{mm} = 10\text{m}$ 直径长度, 假定流量为8L/s查上表, 直管每100m损件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0.13m。

Note: taking a pipe with a diameter of 100mm as an example, foot valve doubled by 100 times, the table above, every 100m straight pipe will have a loss of 1.3m, so, every 10m will have a loss of 0.13m. That is to say, for a 100m foot valve, when flow rate is 8L/s, the loss of delivery head shall be

一定管路直径之最大流量限制

Maximum Flow Limit of Certain Pipe Diameter

管路直径 Pipe Diameter (mm)	最大流量 Maximum Flow Rate (L/s)	最大流速 Maximum Flow Velocity (m/s)	管路直径 Pipe Diameter (mm)	最大流量 Maximum Flow Rate (L/s)	最大流速 Maximum Flow Velocity (m/s)
25	1	2.04	125	30.0	2.44
38	2.5	1.69	150	43.0	2.45
50	4.17	2.12	175	60.0	2.49
65	6.67	2.01	200	83.3	2.69
75	10.0	2.26	250	133.3	2.72
100	18.4	2.33	300	192.0	2.71

超过此限使管路损失显著增加。
If beyond this limit, pipeline loss will increase remarkably.



重要

操作人员在使用本产品前, 请务必仔细查阅产品说明书, 以确保操作安全。

IMPORTANT

Please ensure that these instructions are read and understood by machine operators before using the product

请详阅手册内容并善加保存

Please read and save this manual