ShangHai HanThing pump Co.,ltd
Website: www.hanthing.com
Address: NO.566, Tongli road, songjiang district, Shanghai, China
Mobile: +86-021-56550238
Email: sales@hanthing.com

汉森
Hanthing

国家产品质量免检 | 中国著名品牌

ZW系列自吸式排污泵

WZ Series Self-prime Sewage Pump

Product Catalog 2006

目　录 CONTENTS

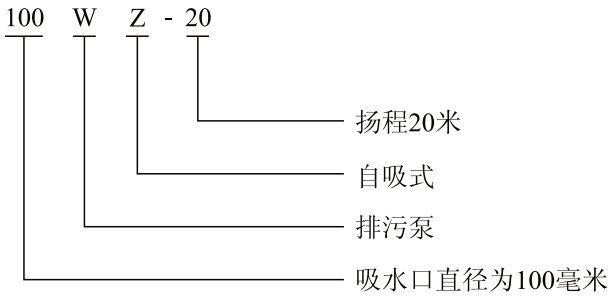
概　述

WZ型自吸排污泵(第三代)具有结构紧凑，启动性能及自吸能力好，不用底阀，不需要加引水，泵流道能通过12毫米固体物的特点。配用液位自动控制箱，就能按所需要水位实行自动启停，在无人值班的情况下能可靠运行，具有全自动控制的功能。是适用电站、城乡等排水的理想机具。

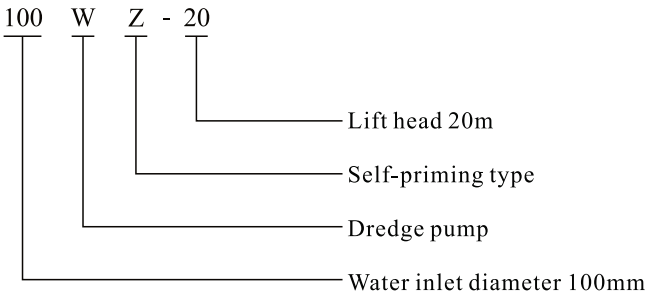
Overview

The WZ self-priming dredge pump (the third generation) is characterized by its compact structure, good capacity in starting and self-priming, no need for bottom valve and water diversion, and flow channel available for passing of 12mm solid substances. Working with an automatic liquid level control box, it can achieve automatic starting or stop as required by the water level, with unattended reliable operation and fully automatic control function. Therefore, it's an ideal machine applicable for water drainage in power stations, cities, rural areas and so on.

型号意义



Model Meaning



使用范围

1、环境温度≤50℃，介质温度≤80℃。

2、介质PH值铸铁为6-9，不锈钢为2-13。

3、介质重度不超过1250kg/m^3。

4、自吸高度不能超过规定值，吸入管长度为≤10m。

Application scope

1. Ambient temperature≤50℃; medium temperature≤80℃.

2. Medium PH: 6-9 for cast iron pump and 2-13 for stainless steel pump.

3. Medium unit density not exceeding 1,250kg/m^3.

4. Self-priming height not exceeding the set value, and suction pipe length≤10m.

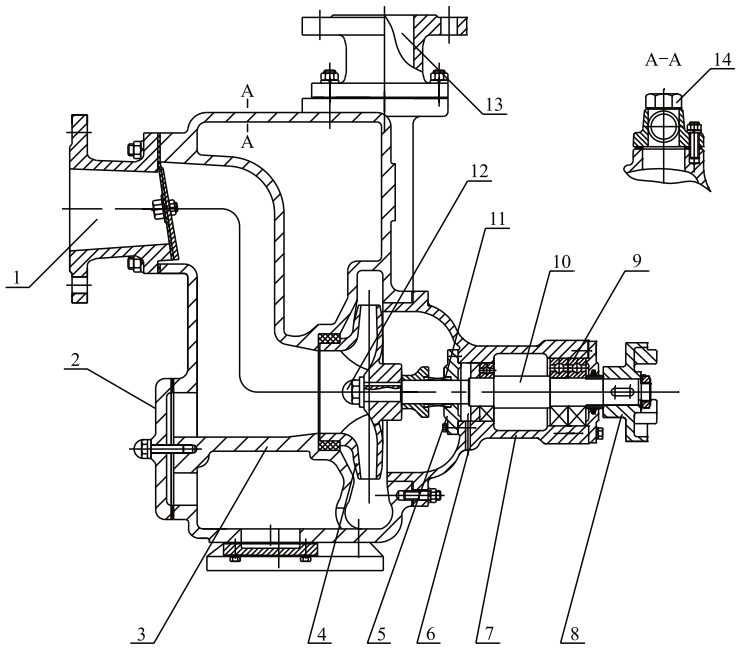
工作原理及结构

本泵采用外混式轴向回水泵体结构，泵体由吸水室、储水室、蜗壳、回水孔、气水分离室，逆止阀等部份组成。结构见图一。水泵启动后，在离心力的作用下，吸水室中的剩余水与进水管路中的水经回水孔返回泵内，叶轮再次将水与进水管中的空气搅拌……。经过多次循环，进水管道中的空气被排净，水即被抽上来。进水侧的逆止阀，可防止停机时的回水冲击叶轮，引起电机倒转。

Working Principle and Structure

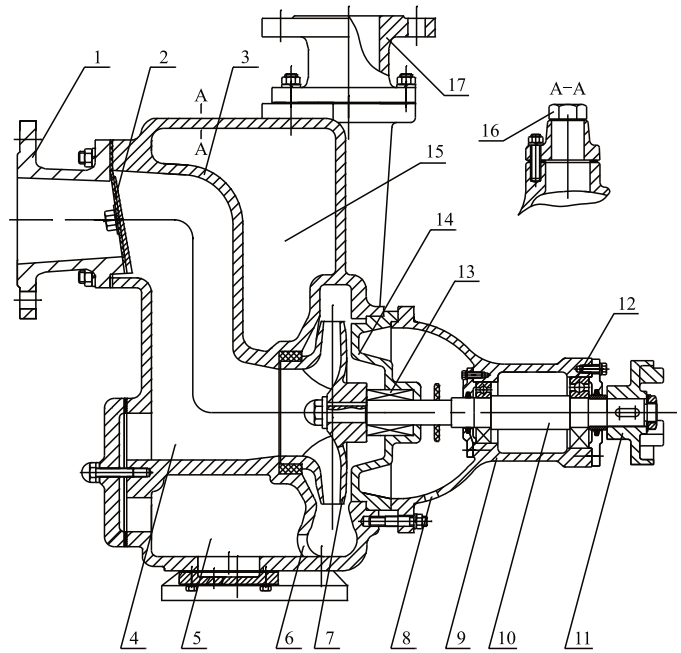
This pump adopts an external-mixing axial back water pump body structure. The body consists of such parts as water suction chamber, water storage chamber, volute casing, backwater hole, air-water separator and non-return valve. See Drawing 1 for its structure. After the water pump is started, surplus water inside the water suction chamber and water inside the suction pipeline, acted by centrifugal force, will return into the pump through the backwater hole. The impeller will mix water and air inside the suction pipeline again..... Through many times of circulation, air inside the suction pipeline will be exhausted and then water will be pumped up. The non-return valve on the suction side can prevent backwater, produced on stopping, from impacting the impeller and resulting in the motor's inversion.

水泵结构图(1) Water Pump Structural Diagram(one)



序号 No.	部件名称 Name
1	进水接座 Suction joint base
2	后盖板 Rear cover plate
3	泵体 Pump body
4	叶轮 Impeller
5	密封座 Sealing socket
6	漏水孔 Weep hole
7	轴承体 Bearing body
8	联轴器 Coupling
9	轴承 Bearing
10	轴 Shaft
11	密封件 Sealing element
12	叶轮螺母 Impeller nut
13	出水接座 Discharge joint base
14	加水螺塞 Water filling screw plug

水泵结构图(2) Water Pump Structural Diagram(two)

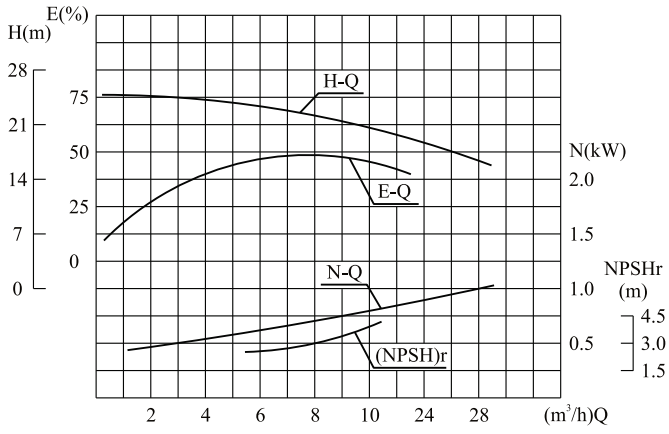


序号 No.	部件名称 Name
1	进水座 Suction base
2	逆水阀 Non-return valve
3	泵体 Pump body
4	吸水室 Water suction chamber
5	储水室 Water storage chamber
6	回水孔 Backwater hole
7	叶轮 Impeller
8	漏水孔 Weep hole
9	轴承体 Bearing body
10	轴 Shaft
11	联轴器 Coupling
12	轴承 Bearing
13	密封件 Sealing element
14	泵盖 Pump cover
15	气水分离室 Air-water separator
16	加水螺塞 Water filling screw plug
17	出水座 Discharge base

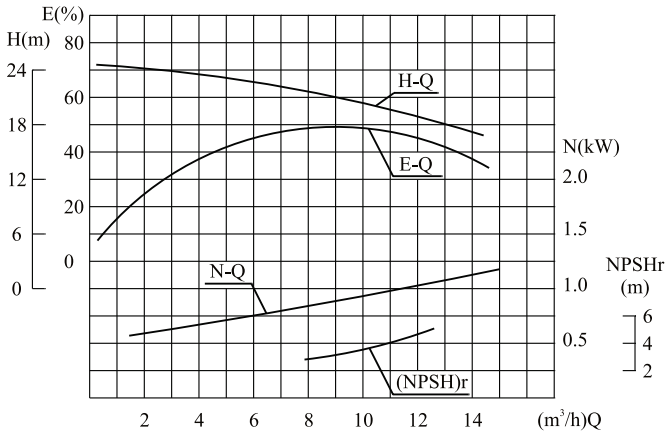
WZ型自吸排污泵性能参数 Performance parameters of WZ self–priming dredge pump

序号 No.	型　　号 Type	流量 Flow (m^3/h)	扬程 Head (m)	转速 Speed (r/min)	功率 Power (kW)	电机型号 Motor model	效率 Eff. (%)	气蚀余量 (NPSH)r (m)	自吸时间 Self-priming time min/5m	重量 Weight (kg)
1	32WZ-22	8	22	2900	1.5	Y90S-2	50	3.5	3	28
2	40WZ-20	10	20	2900	1.5	Y90S-2	52	3.5	3	28
3	50WZ-15	18	15	2900	1.5	Y90S-2	60	3.5	3	30
4	50WZ-20	20	20	2900	2.2	Y90L-2	60	3.5	3	34
5	50WZ-25	20	25	2900	3	Y100L-2	55	3.5	3	42
6	50WZ-35	15	35	2900	4	Y112M-2	50	3.5	3	50
7	65WZ-15	30	15	2900	2.2	Y90L-2	65	3.5	3	34.5
8	65WZ-40	25	40	2900	5.5	Y132S1-2	60	4	3	55
9	65WZ-45	28	45	2900	7.5	Y132S2-2	56	4	3	60
10	80WZ-14	45	14	2900	3	Y100L-2	65	4	3	43
11	80WZ-20	50	20	2900	5.5	Y132S1-2	71	2.8	3	57
12	80WZ-30	50	30	2900	7.5	Y132S2-2	66	3.2	3	62
13	80WZ-40	48	40	2900	11	Y160M1-2	62	3.2	3	95
14	100WZ-20	90	20	2900	7.5	Y132S2-2	73	4	3	73
15	100WZ-25	90	25	2900	11	Y160M1-2	70	4	3	98
16	100WZ-40	90	40	2900	15	Y160M2-2	67	4	3	105
17	150WZ-20	180	20	2900	15	Y160M2-2	75	4.5	3	112
18	150WZ-25	200	25	2900	18.5	Y160L-2	72	4.5	3	120
19	150WZ-30	150	30	2900	18.5	Y160L-2	72	4.5	3	120
20	150WZ-40	140	40	2900	22	Y180M-2	70	4.5	3	136

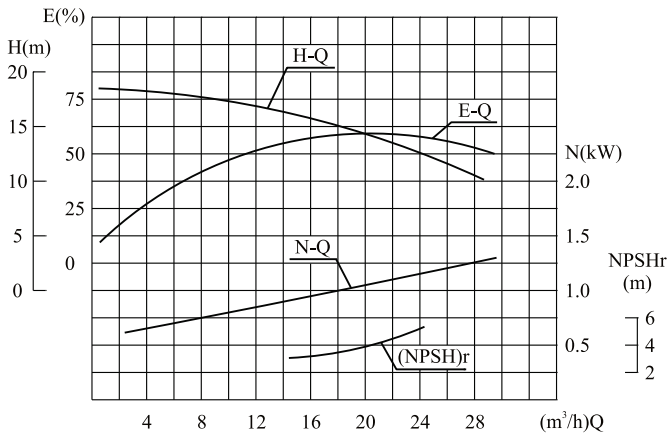
性能曲线图 Performance curve diagram



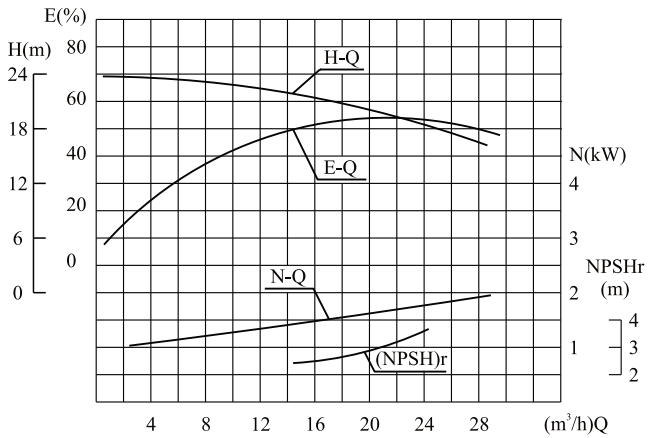
32WZ-22



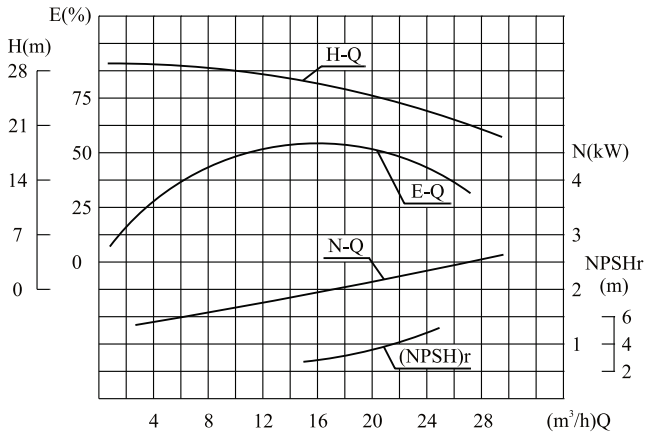
40WZ-20



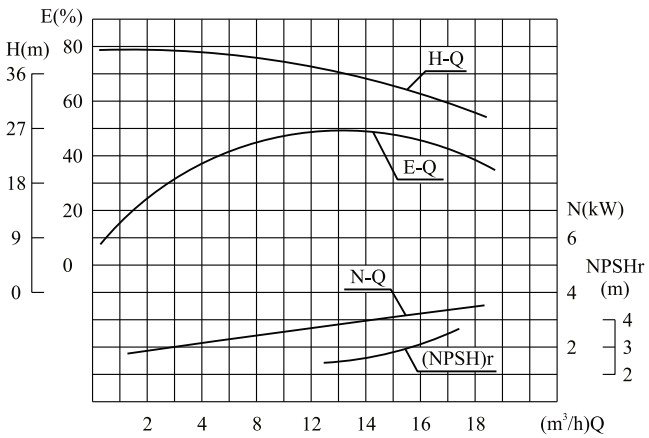
50WZ-15



50WZ-20

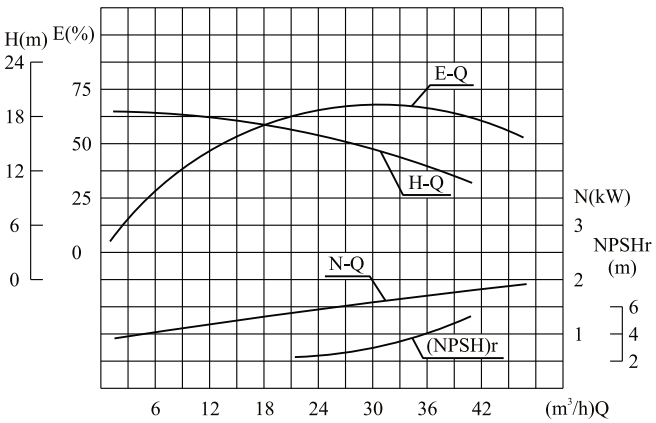


50WZ-25

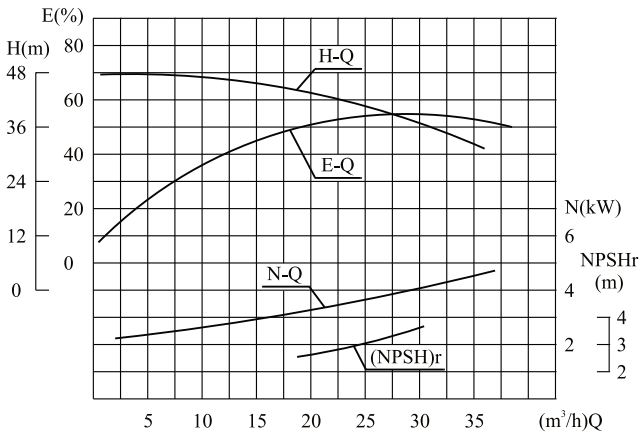


50WZ-35

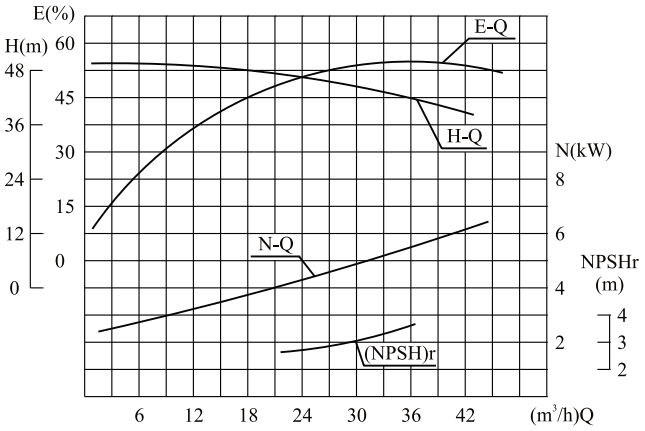
性能曲线图 Performance curve diagram



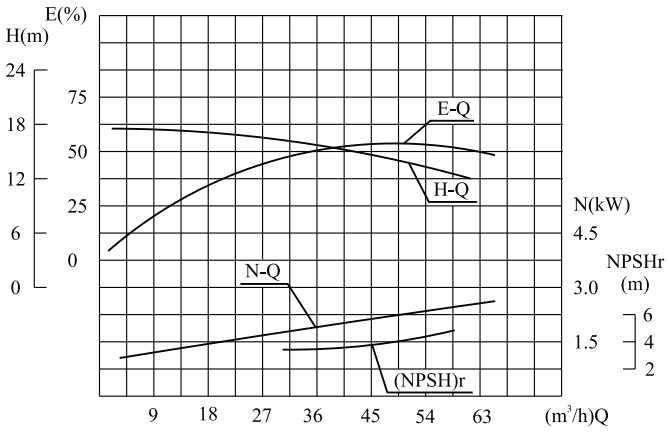
65WZ-15



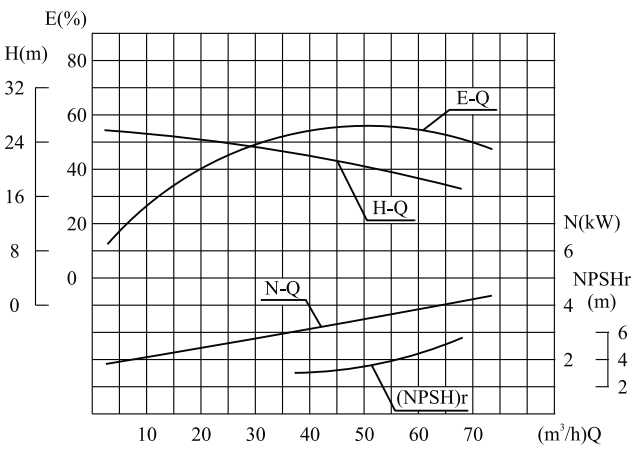
65WZ-40



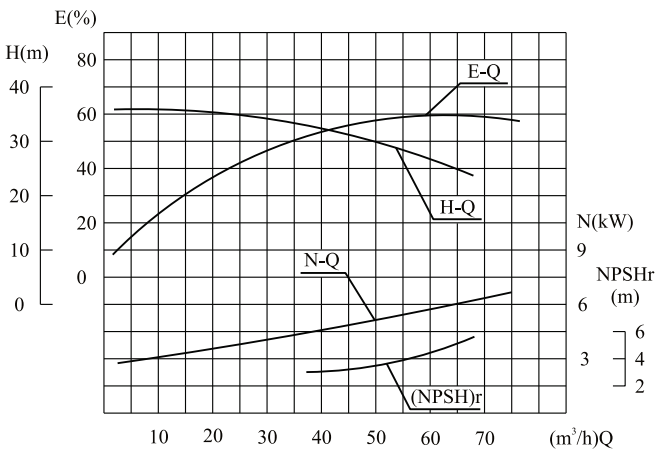
65WZ-45



80WZ-14

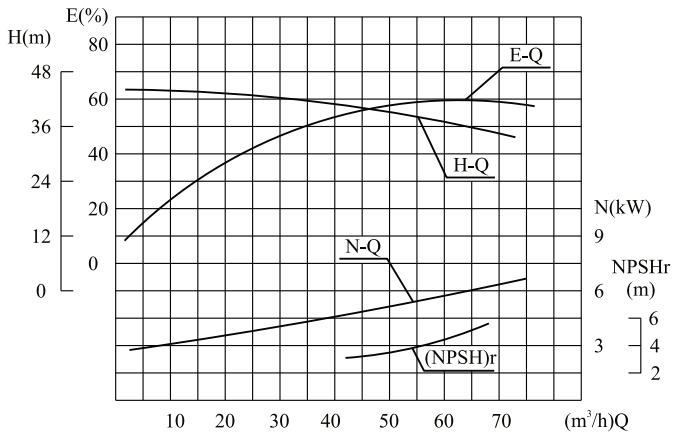


80WZ-20

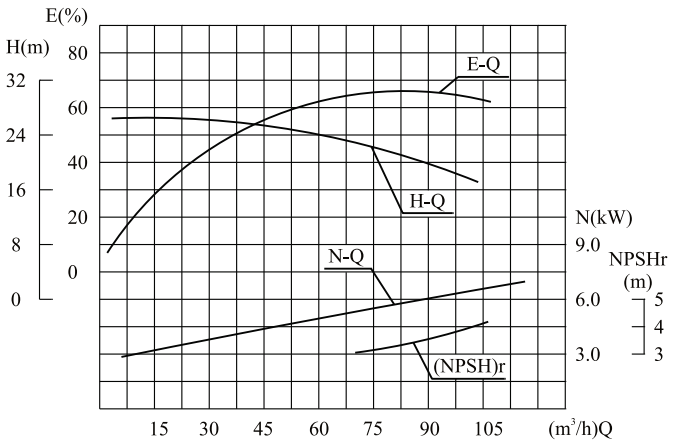


80WZ-30

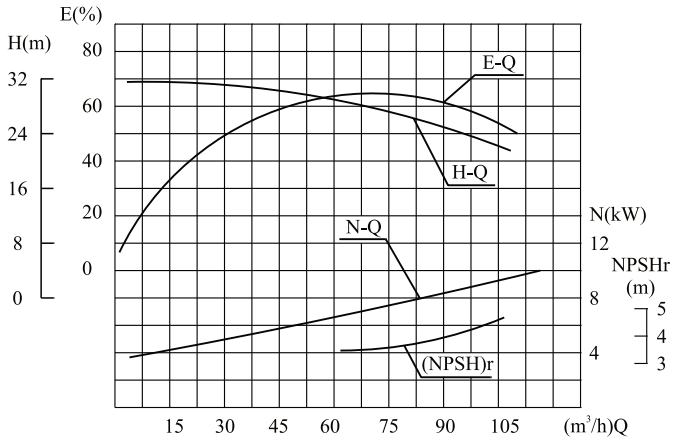
性能曲线图 Performance curve diagram



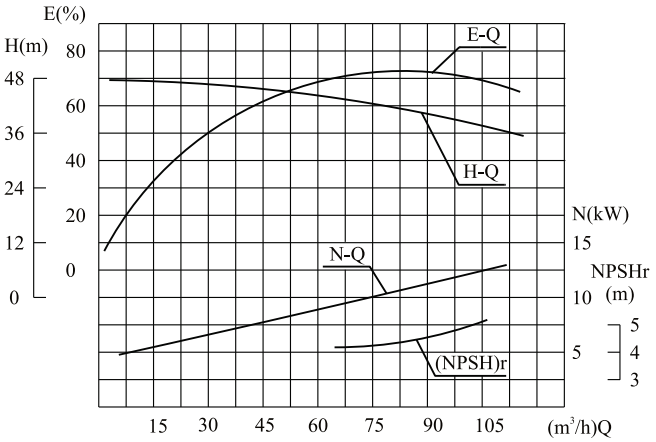
80WZ-40



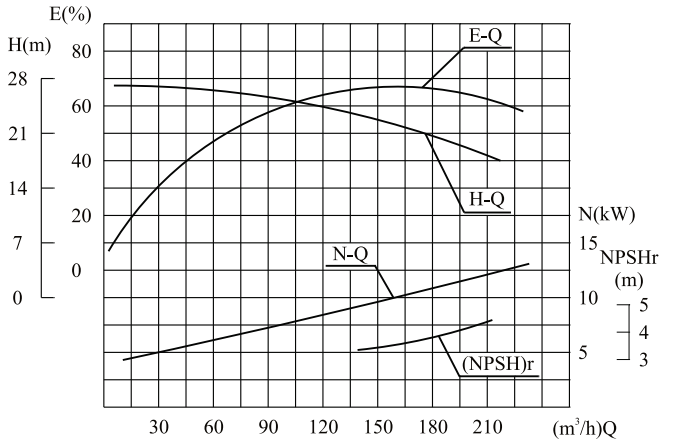
100WZ-20



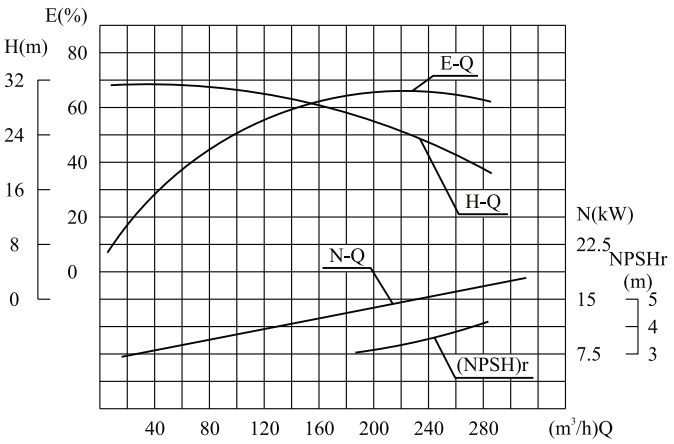
100WZ-25



100WZ-40

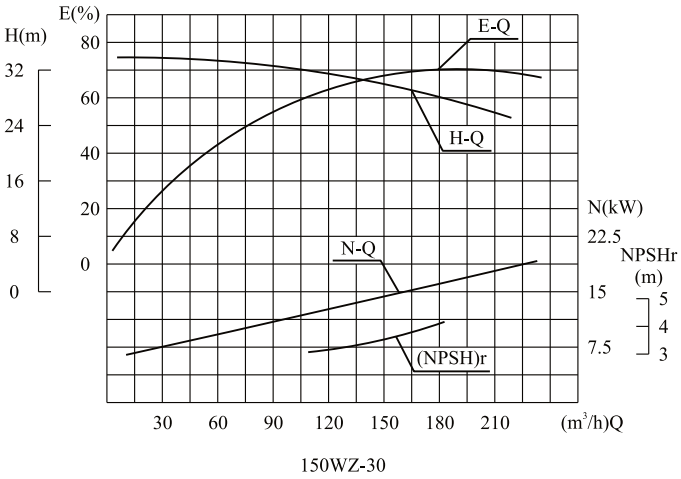


150WZ-20

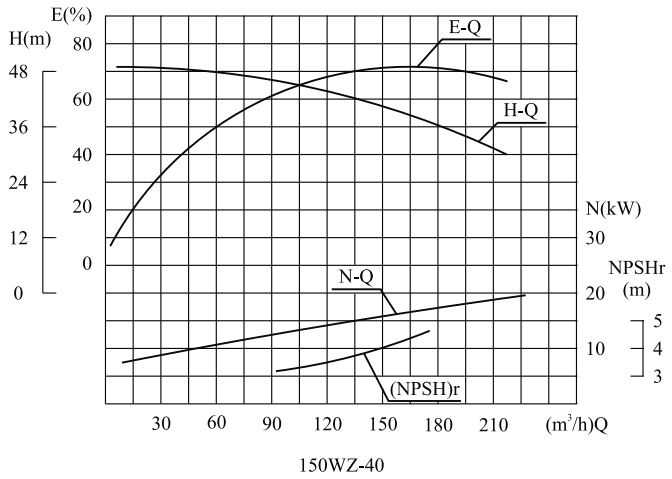


150WZ-25

性能曲线图 Performance curve diagram

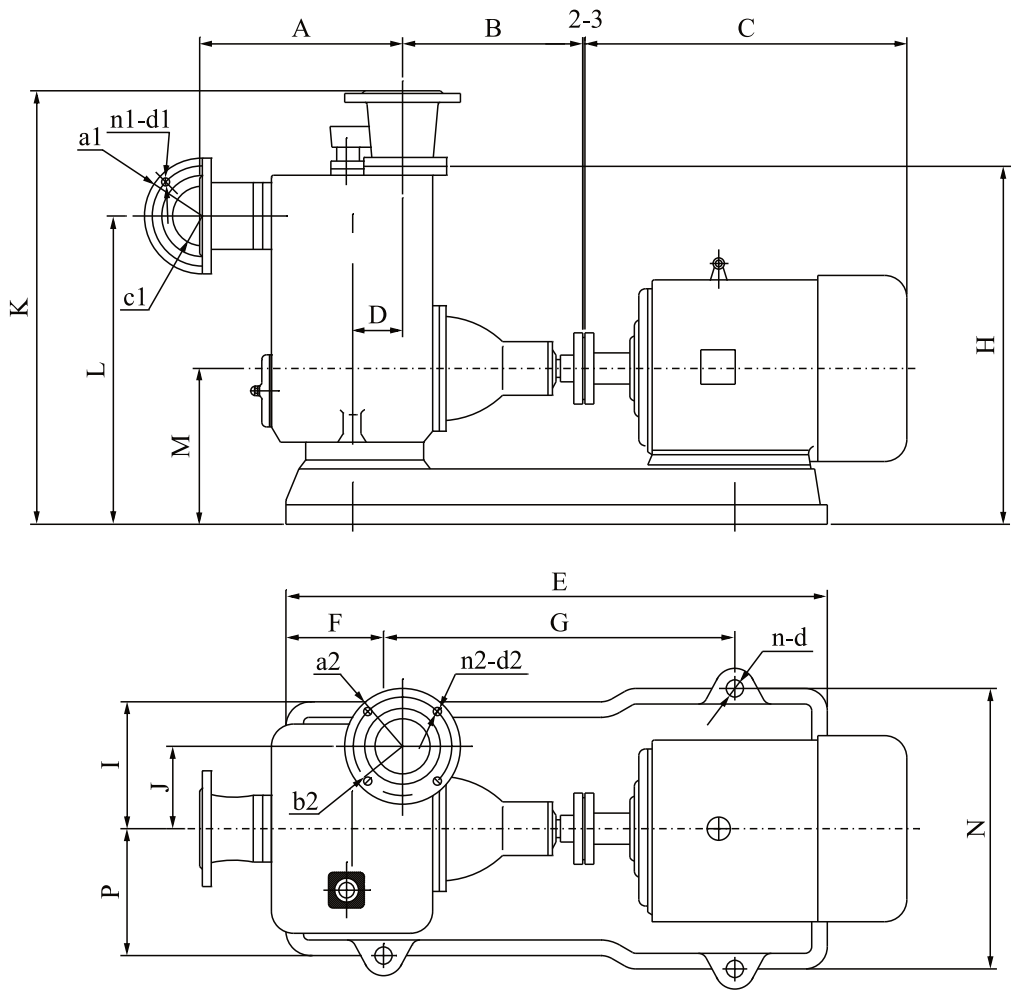


150WZ-30



150WZ-40

外型及机组安装尺寸 Overall dimensions and installing dimensions of pump set



WZ型泵外形及机组安装尺寸 Overall dimensions of WZ pump and installing dimension of pump set

序号 No.	型 号 Type	A	B	C	D	E	F	G	P	I	J	K	L	M	N	H	吸入口法兰 Suction port flange			吐出口法兰 Discharge port flange		
																	c1	a1	n1-d1	c2	a2	n2-d2
1	32WZ-22	185	220	319	30	620	85	400	115	125	76	426	287	160	235	350	32	90	4-14	32	90	4-14
2	40WZ-20	185	220	319	30	620	85	400	115	125	76	426	287	160	235	350	40	100	4-14	40	100	4-14
3	50WZ-15	185	222	319	32	620	84	400	115	125	76	426	287	160	235	350	50	110	4-14	50	110	4-14
4	50WZ-20	185	222	344	32	620	85	440	155	155	76	426	287	160	310	350	50	110	4-14	50	110	4-14
5	50WZ-25	200	240	389	32	686	95	475	155	155	76	426	287	160	310	350	50	110	4-14	50	110	4-14
6	50WZ-35	200	240	405	32	720	95	500	155	155	76	426	287	160	310	350	50	110	4-14	50	110	4-14
7	65WZ-15	205	217	344	32	620	84	440	115	128	67	425	275	160	230	350	65	130	4-14	65	130	4-14
8	65WZ-40	205	220	480	32	810	95	570	185	185	67	450	300	180	370	350	65	130	4-14	50	110	4-14
9	65WZ-45	205	220	480	32	810	95	570	185	185	67	450	300	180	370	350	65	130	4-14	50	110	4-14
10	80WZ-14	225	221	389	45	686	95	475	135	155	82	285	320	180	270	410	80	150	4-18	80	150	4-18
11	80WZ-20	250	299	480	45	813	93	575	130	147	97	502	336	202	345	402	80	150	4-18	80	150	4-18
12	80WZ-30	250	300	480	45	813	95	600	185	185	97	550	380	202	370	402	80	150	4-18	65	130	4-14
13	80WZ-40	250	300	610	45	850	105	630	215	215	97	550	380	220	430	490	80	150	4-18	65	130	4-14
14	100WZ-20	280	299	480	50	828	103	600	158	180	113	592	399	220	335	492	100	170	4-18	100	170	4-18
15	100WZ-25	280	300	610	50	860	105	650	215	215	113	630	400	250	430	430	100	170	4-18	80	150	4-18
16	100WZ-40	275	315	600	55	960	140	705	180	180	115	590	425	255	390	477	100	170	4-18	80	150	4-18
17	150WZ-20	300	312	600	60	995	140	710	185	195	110	717	475	250	380	475	150	225	8-18	125	200	8-18
18	150WZ-25	300	310	655	80	1000	110	710	170	190	100	695	450	250	380	440	150	225	8-18	125	200	8-18
19	150WZ-30	300	310	655	80	1000	110	710	170	190	100	695	450	250	380	440	150	225	8-18	125	200	8-18
20	150WZ-40	300	310	665	80	1050	120	750	170	190	93	695	450	240	385	440	150	225	8-18	125	200	8-18

使用和维护保养

为了使水泵能正常运转，延长使用寿命，减少故障，必须正确地安装、使用、维护和保养。

1、在设计安装时，必须正确校对铭牌上的各项性能数据的范围内。

2、泵轴与电机轴中心线是否一致，可用薄垫片调整使其同心。保持电机联轴器与泵联轴器的轴向间隙为2毫米左右，上下、左右的差别不得超过0.1毫米。

3、第一次启动前，必须预先向泵体内灌水，直至淹没叶轮。

4、试转一下电机，检查泵轴旋转方向是否和泵指示方向一致，转动是否均匀，不能有卡住、异声等不正常现象。

5、进水管路要仔细检查，不得漏气，滤网应完全浸没在水中，防止堵塞和漏气。

6、按所需水位接好水位信号线。

7、水泵在运转过程中轴承温升不超过环境温度40℃，最高温度不超过80℃。

8、定期检查口环磨损情况，间隙在直径方向大于1.5毫米时应更换。

9、在环境温度低于零度时，要放尽泵内存水，防止水泵冻裂。

10、当长时间停止使用时，将泵拆开，再将零件上的水擦干，涂上防锈漆，涂油装配后停放在干燥，洁净的地方。

11、允许有少量水经轴承体底面的漏水孔滴出。

12、发现有不正常的噪音，应立即停机检查。

13、要定期修理、及时更换易损件和润滑脂。

装配和拆卸

泵在装配前应首先检查零件有无影响装配的缺陷，并擦洗干净，方可进行装配。

1、在热油中加热轴承至80℃，取出装在轴肩处。

2、在两轴承间装上优质润滑脂(二硫化钼)压入轴承体内。然后再在两轴承面上装上优质润滑脂。

3、把装好纸垫及毡圈的两端盖，分别装在轴承体两侧，并用螺栓紧固。注意轴承和两端盖的间隙(轴在轴承体内串动量)在0.2毫米内，用纸垫调整，然后用手转动轴应灵活、均匀。

Operation and maintenance

For the water pump's normal operation, longer service life and less failure, it's necessary to install, use and maintain it properly.

1. To design and install the pump, it's necessary to calibrate it accurately to conform to performance data ranges on the nameplate.

2. Check whether the pump and motor shafts are concentric; if not, adjust it with shims to make them concentric. Keep the motor coupling away from the pump coupling with an axial clearance about 2mm, and the differences between up and down and between left and right shall not exceed 0.1mm.

3. Before the first starting, it's necessary to fill water into the pump in advance until the impeller is submerged.

4. Trial-run the motor to check whether the pump shaft's rotation direction is the same as that indicated on the pump, and whether the rotation is uniform without abnormalities like seizure or abnormal noise.

5. The suction pipeline shall be checked carefully without any air leak, and the sieve shall be fully submerged in water to avoid jamming and air leak.

6. Connect the water level signal wire as required by the water level.

7. During the water pump's operation, the bearing temperature rise shall not be 40℃ higher than ambient temperature and the maximum temperature shall not exceed 80℃.

8. Check the worn condition of the wear ring on a regular basis. When the clearance in the diameter direction is more than 1.5mm, the ring shall be replaced.

9. When ambient temperature is below 0, remaining water inside the pump shall be drained to avoid the pump's frost crack.

10. When the pump is to be idle for long, it's necessary to disassemble it, dry up water on parts, apply anti-rust paint and oil, reassemble it and then put it in a dry and clean place.

11. Slight water is allowed to drip out of the weep hole on the bearing body's bottom.

12. In case of abnormal noise, it's necessary to stop the pump at once to check.

13. It's essential to repair the pump on a regular basis to replace wearing part and lubrication grease in time.

Assembly and Disassembly

Before assembling the pump, first it's necessary to check whether parts have any defects affecting assembly, and also clean the pump.

1. Heat the bearing in hot oil to 80℃ and then take it out to mount it on the shaft shoulder.

2. Put high-quality lubrication grease (molybdenum disulphide) between two bearings and press it inside the bearing body. Then apply high-quality lubrication grease on the two bearings' surfaces.

3. Mount two end covers, which are provided with paper gaskets and felt rings, on both sides of the bearing body respectively, and then fasten with bolts. Note that the clearance (the play of shaft inside the bearing body) between the bearing and the two end covers shall be within 0.2mm. Adjust with paper gaskets. Then rotate the shaft by hand, which shall be flexible and uniform.

装配和拆卸

4、装上轴用弹性挡圈、联轴器键、联轴器、止动垫圈、用螺母紧固，顺六角将止动垫圈的外露部份折弯，以防螺母松动。

5、装上挡水圈与端盖应保持一定距离。

6、把机械密封的静环压入泵盖内，轴承体装上纸垫，然后把泵盖装在轴上，注意和轴承体的方向。

7、把机械密封的动环、叶轮键、叶轮、防松垫片依次装在轴上，紧固叶轮螺母，再折弯防松垫片的露出部分，以防螺母松动。机械密封装配时切勿敲击，以免碎裂，两环端面擦净涂少量油，不准沾有尘土和砂粒。

8、在泵体底部装上纸垫、盖板、用六角螺栓紧固。

9、在泵体的清理窗口处，装上橡胶垫、压盖、双头螺栓、用盖形螺母紧固。

10、把重块、橡胶垫、垫圈、用六角螺栓紧固，装在泵体的进水口处，装上进水阀座、双头螺柱、用螺母紧固。

11、在泵体的加水口上，装上橡胶垫、球、球阀座、双头螺柱、用螺母拧紧。

12、在泵体的出水口上，装上橡胶垫、出水接座、双头螺柱、用螺母拧紧。

13、在泵体内压入口环，把纸垫套在泵盖上，然后把完整的转子部件装入泵体上。用双头螺柱、螺母拧紧。

14、用手转动联轴器应均匀、灵活、不得有忽松忽紧或有异声存在。

泵的拆卸顺序基本上可按装配顺序反向进行。

Assembly and Disassembly

4. Mount the shaft elastic collar, coupling key, coupling and stop washer; fasten with nuts; fold the exposed part of stop washer in a hexagonal direction to prevent nuts from loosening.

5. Mount the water fender and keep a distance away from the end cover.

6. Press the mechanical seal's stationary ring into the pump cover; mount paper gaskets on the bearing body; and then mount the pump cover on the shaft, noting the direction with the bearing body.

7. Mount the mechanical seal's rotary ring, impeller key, impeller and check washer on the shaft in sequence; fasten impeller nuts; and then fold the check washer's exposed part to prevent nuts from loosening. Never knock the mechanical seal during assembly to avoid breakage. Clean end faces of two rings and apply slight oil with no dust or sand grains attached on them.

8. Mount paper gaskets and the cover plate on the pump body bottom, and fasten with hexagonal bolts.

9. Mount the rubber gasket, gland and studs on the pump body's cleaning window, and fasten with cap nuts.

10. Fasten the weight, rubber gasket and gasket with hexagonal bolts to mount them on the pump body's inlet; mount the inlet valve seat and studs; and fasten with nuts.

11. Mount the rubber gasket, ball, ball valve seat and studs on the pump body's water filling port, and fasten with nuts.

12. Mount the rubber gasket, discharge joint base and studs on the pump body's discharge port, and fasten with nuts.

13. Press the wear ring into the pump body, fit the paper gasket over the pump cover and mount the integrated rotor assembly on the pump body. Fasten with studs and nuts.

14. Rotate the coupling by hand, which shall be uniform and flexible without loosening or tightness from time to time or abnormal noise.

The pump's disassembly order is basically the other way around of its assembly order

安装和校正

1、消除底座上油腻和污垢，把底座放在地基上。

2、用水平仪检查底座的水平度，允许用楔铁找平。

3、用水泥浇灌底座和地脚螺栓孔眼。待水泥干固后，紧固地脚螺栓。重新检查水平度。

4、清理底座的支持平面，水泵脚及电机脚的平面，并把水泵和电机安装到底座上去。

5、检查水泵轴和电机轴中心是否一致，请参照使用和维护保养中的第2点。

6、安装进出水管前，将进出水口的防护罩去掉。

Installation and Calibration

1. Remove greasiness and filth on the base and put it on the foundation.

2. Check the base's horizontality with a leveler and it's allowed to align with a drill key.

3. Pour the base and anchor bolt holes with cement. After cement dries, fasten anchor bolts. Recheck the horizontality.

4. Clean the base's support plane and the planes of water pump and motor feet; and mount the water pump and motor on the base.

5. Check whether water pump and motor shafts are concentric. Please refer to 2 in Operation and Maintenance.

6. Before installing the suction and discharge pipes, remove the protective hoods of suction and discharge ports.

常见故障及排除方法 Fault Reasons and Removal Methods

故　障 Symptom	产 生 原 因 Possible Reasons	排 除 方 法 Removal Methods
泵不出水 或出水量不足 No or deficient water out of pump	1、旋转方向相反 2、泵内储水不够 3、进水管路漏气或轴封漏气 4、吸程过高 5、滤网、叶轮流道堵塞 6、叶轮磨损严重 7、转速太低 8、滤网进水不够深 1. The rotation direction is opposite 2. Water stored in the pump is insufficient 3. The suction pipeline or shaft seal leaks 4. The suction lift is too high 5. The sieve or impeller channel is jammed 6. The impeller is seriously worn out 7. The rotation speed is too low 8. The sieve is not deep enough in water	1、调整 2、增加储水(见使用须知第三条) 3、检修、调整或更换 4、调整 5、清除堵塞物 6、更换 7、调整转速 8、滤网一点不能露出水面 1. Adjust it 2. Fill water (see 3 in Notes for Use) 3. Overhaul, adjust or replace it 4. Adjust it 5. Remove the jamming 6. Replace it 7. Adjust the rotation speed 8. None of the sieve shall be exposed out of water
水泵杂音 及振动较大 Violent noise and vibration of water pump	1、超过规定使用范围 2、底脚不稳 3、轴弯曲 4、泵轴与电机轴不同心 5、水泵内掉进杂物 6、轴承磨损严重 7、泵内进入大量气体 1. It's beyond the specified application scope 2. The foot is not stable 3. The shaft is bent 4. The pump and motor shafts are not concentric 5. Foreign matters drop into the water pump 6. The bearing is seriously worn out 7. A lot of gas goes into the pump	1、调整 2、加固 3、校正或更换 4、重新调整、安装 5、清除杂物 6、更换新轴承 7、检修进水管路 1. Adjust it 2. Fasten it 3. Calibrate or replace it 4. Readjust and install it 5. Remove foreign matters 6. Replace it with a new bearing 7. Overhaul the suction pipeline
轴承过热 Overheated bearing	1、润滑脂过多或过少 2、水泵轴电机轴同轴度不好 3、轴承已坏 1. Lubrication grease is either too much or too less 2. The water pump and motor shafts are not coaxial 3. The bearing is damaged	1、检查增减(规定轴承体内腔装50%左右MoS_2复合钙基润滑脂4号或锂基润滑脂3号) 2、重新安装、调整 3、调整或更换 1. Check to increase or decrease (it's specified that the bearing body's inner chamber shall be provided with about 50% MoS complex calcium grease #4 or lithium base grease #3) 2. Remount and adjust it 3. Adjust or replace it