概　　述

GHW改进型混流泵是在原国标基础上改进的卧式单级单吸蜗壳式混流泵。其结构简单、使用可靠、维修方便、而且效率高、体形小、重量轻。适用于输送清水或物理、化学性质类似于水的其它液体。被输送液体温度不宜高于50℃。广泛用于农田排灌、工业和城市给排水等多种场合。

性能范围

流量	140~9000m³/h
扬程	3.7～20m

传动方式

有直接传动和变速传动。常用动力机是电动机和柴油机。订货时应明确动力机的型号(功率、转数)，以便确定联轴器或皮带轮的规格。

水泵方向

向水泵进口看，叶轮一般为逆时针旋转(650GHW-5、650GHW-7、650GHW-10泵为顺时针旋转)。

型号说明

300GHW-8A	
300	泵进、出口直径300mm
GHW	改进型卧式蜗壳混流泵
8	设计扬程为8m
A	表示叶轮外径被切割

结构说明

1、GHW型泵主要由泵盖、叶轮、泵体、泵轴、 轴套及轴承体等主要零件构成。参看结构图

2、泵盖分别与泵体和进水管相接。 泵盖平面与叶轮平面之间应有适当间隙。间隙过小，会产生摩擦；间隙过大，会导致泵体内的压力水大量回流，使泵的效率降低。实际使用的适宜间隙为0.3～0.7mm(将泵轴推向泵的进口端)，间隙可用增减纸垫厚度来调整。

3、轴封装置由填料、填料压盖、填料环和泵体上的填料环组成。 其作用是防止空气吸入泵内和防止水从泵内过多地沿轴流出。

4、轴套用以保护泵轴。磨损后可及时更换。

5、泵轴用单列向心球轴承支承。轴承可用润滑油润滑——油量应控制在油标杆的标线间；也可用润滑脂润滑——可在装配水泵时加入。使用中通过拆装前盖和后盖来补充。

6、泵体上端的螺孔，用于加灌引水或联接真空泵抽气引水。

7、为扩大泵的使用范围，满足用户不同要求，可切割叶轮(泵型号加尾标字母表示).

8、150～350GHW型泵的附件有进、出口呆弯、活弯、底阀和皮带轮或联轴器；400～650GHW泵的附件有进、出口呆弯、逆止阀和皮带轮或联轴器等可供用户选用。650以上泵附件在订货时另议。

OVERVIEW

GHW improved mixed-flow pump is improved on the basis of national standards of the original horizontal single stage, single suction volute-type mixed flow pump.Its structure is simple, easy to use reliable ,easy to repair, small body, light weight.Suitable for transporting the branch water or physics and chemical properties similar to water and other liquids.Being sent liquid temperature should not be higher than 50 degrees centigrade.Widely used for irrigation, industrial and urban water supply and drainage, and other occasions.

PERFORMANCE RANGE

Capacity Q	140~9000m³/h
Head H	3.7～20m

DRIVE WAYS

Direct drive and variable speed drives. Power machine is a common motor and diesel engines. Power machine model order should be clear (power, rpm), in order to determine the specifications of the coupling or pulley.

PUMP DIRECTION

View from the pump entrance, the impeller is generally counter-clockwise (650GHW-5, 650GHW-7, 650GHW-10 pump is clockwise rotation).

MODEL DESCRIPTION

300GHW-8A	
300	Inlet and outlet diameter 300mm
GHW	Horizontal volute mixed flow pump
8	Head 8m
A	Impeller diameter is cut

STRUCTURE DESCRIPTION

1. GHW pump is made up of the pump cover, impeller, shaft, bushings and bearings and other major components. See chart
2. Pump cover connects to pump and inlet respectively. There should be adequate clearance between plane and the impeller pump cover. Gap is too small, will cause friction; gap is too large, will lead to a lot of pressure water pump body back, so that reduce the pump efficiency. Actual appropriate clearance is 0.3 ~ 0.7mm (the shaft into the pump inlet), the gap can be adjusted by changing the paper pad thickness.
3. Seal device consists of packing, packing gland, packing ring, and pump the fill ring. Its role is to prevent air suction pump and to prevent excessive water flow out from the pump along the axial.
4. Axis sleeve is to protect the shaft. Timely replacement after worn.
5. Shaft is beared by single row radial ball bearing. Lubricating oil can be used on bearings – oil should be controlled between the lines marking on the oil benchmark; also grease can be used – can be added in the pump assembly. Supplement it during removing front cover and back cover.
6. The screw hole on the top of the pump is used for irrigation water or added water through connection of vacuum pump.
7. To expand the use of pumps to meet different requirements of users, can cut impeller (pump model is indicated by addition suffix letter.)
8. 150 ~ 350GHW-type attachments are pump inlet and outlet to stay bent, live bending, foot valve and pulleys or couplings; 400 ~ 650GHW attachments are pump inlet and outlet stay bent, check valve and pulleys or couplings. Customer choice; negotiate seperately when ordering 650GHW.

■GHW混流泵的使用现场



固定式使用　Stationary use

■GHW of mixed-flow pump

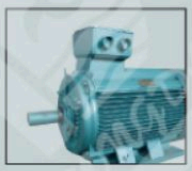


移动式使用　Mobile use

■GHW混流泵的动力选择

■GHW Mixed flow pump advantages





可配电动机

- 电力充足地区可选电动机
- 经济实惠

Can match electric motor

- Electricity enough area can select motor
- Economy affordable

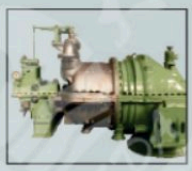


可配柴油机

- 移动方便
- 不受电力限制
- 随时随地可以抽水

Can match diesel engine

- Mobile convenient
- No power restriction
- Anytime and anywhere can be pumped



可配汽轮机

- 主要用于工业水循环
- 直接由蒸气驱动
- 不要油不要电，转换率高

Can match steam turbine

- Mainly For Industrial Water Cycle
- Directly By The Steam Driver
- No Need Oil And Electricity High Conversion Rate

■配带柴油机水泵的可选功能:

1、发动机水温报警显示，并短信发出报警
2、发动机油压报警显示，并短信发出报警
3、发动机缺油报警显示，并短信发出报警
4、水涨时自动开机，短信发出报警
5、水降自动停机，短信发出解除警报
6、电子调速自动调速
7、自动抗洪救灾

■Optional features:

1. Engine water temperature alarm display and text message alerts
2. Engine oil pressure alarm display and text message alerts
3. Engine oil shortage alarm display and text message alerts
4. Automatically turn on when the water rises, short note alarm
5. Water will stop automatically
6. Electronic variable-speed automatic speed
7. Automatic the flood-fighting disaster relief

150~350毫米口径泵的轴承和填料　150–350 Mm Pump Bearing, And Packing

水泵型号 Water Pump Model	轴承型号 Bearing Model	填料规格 Packing specifications 油浸石棉盘根 Oil–immersed asbestos braided square packing
150GHW–5、150GHW–8、150GHW–12	306	8×8×135
150GHW–6	307	10×10×157
200GHW–5、200GHW–8、200GHW–10、200GHW–12	308	10×10×188
250GHW–5、250GHW–7、250GHW–8、250GHW–11 250GHW–12 300GHW–5、300GHW–8、300GHW–8A、300GHW–12 350GHW–8	311	13×13×228

400~800毫米口径泵的轴承和填料　400–800 mm pump bearing,and packing

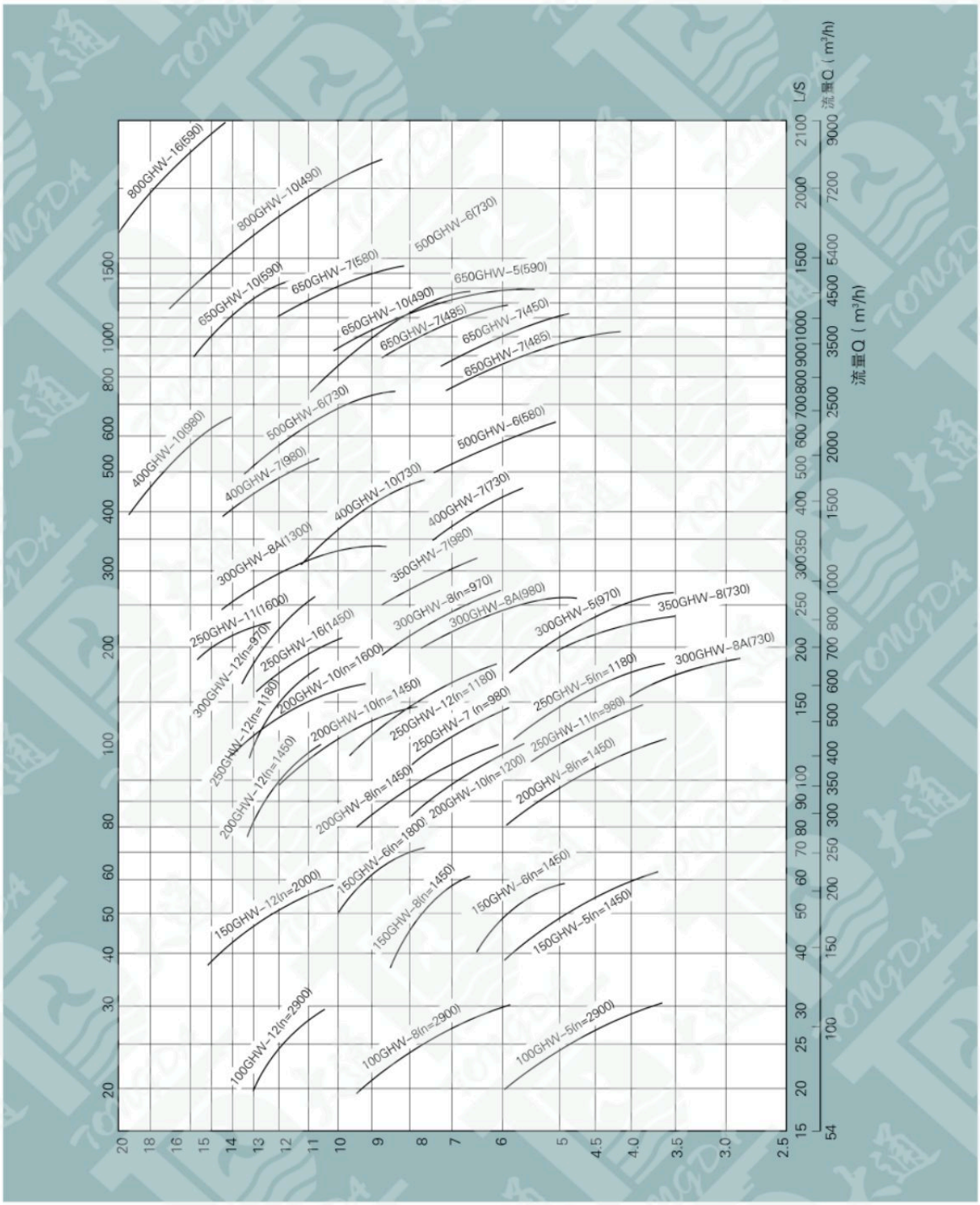
水泵型号 Water Pump Model	轴承型号 Bearing Model	填料规格 Packing specifications 油浸石棉盘根 Oil–immersed asbestos braided square packing
400GHW–5、400GHW–7、400GHW–8、400GHW–12	312	13×13×261
500GHW–6、500GHW–7、500GHW–11	314	15×15×299
650GHW–5、650GHW–7、650GHW–10 700GHW–7、700GHW–11	46322	19×19×437
800GHW–10、800GHW–16	7324	19×19×437

材质与用途　Material and Application

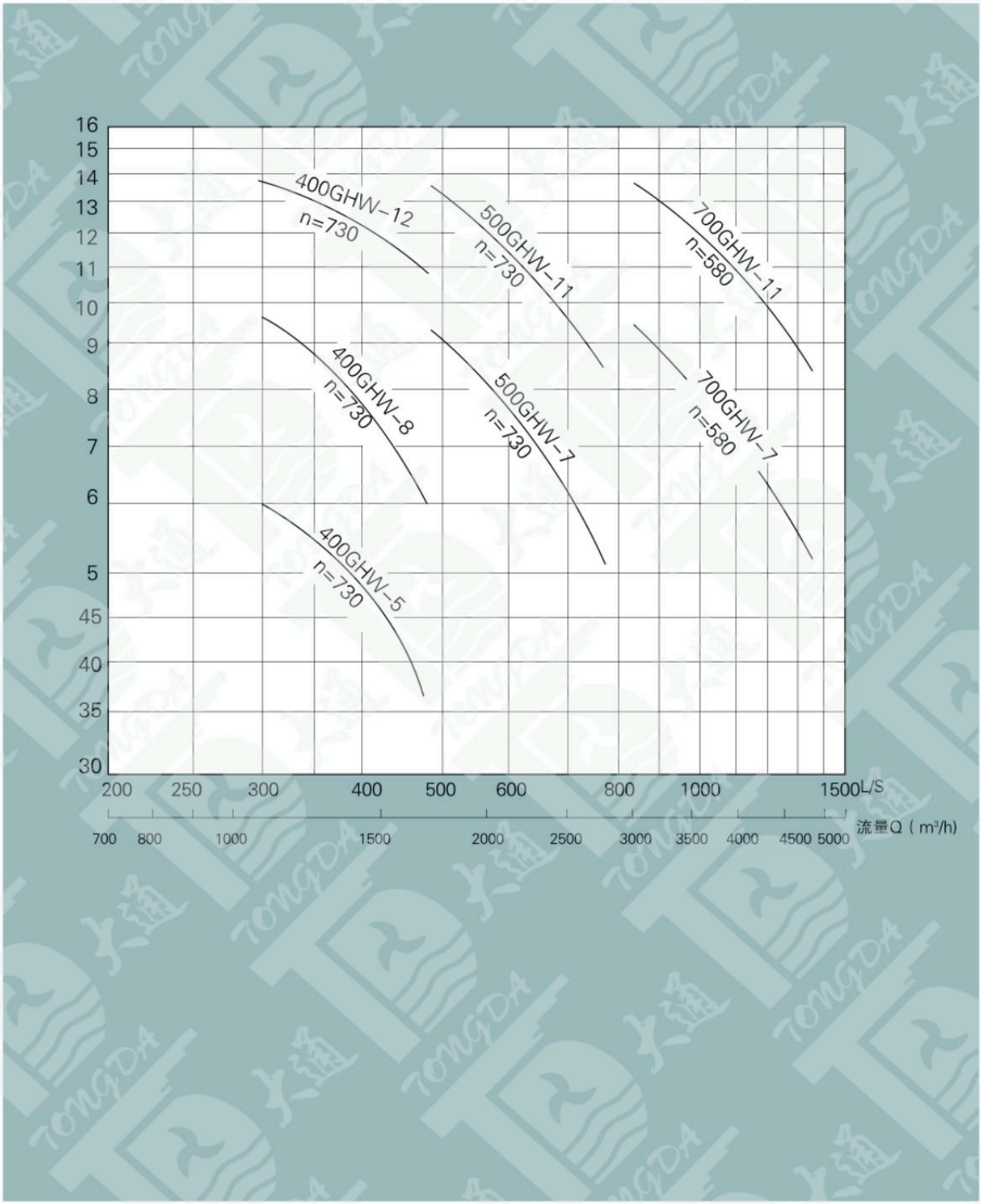
零部件名称	抗洪排涝	污　水	化工污水	酸　碱	海　水
泵体	HT200	铸钢	不锈钢304	不锈钢316	不锈钢316L
前盖	HT200	铸钢	不锈钢304	不锈钢316	不锈钢316L
后盖	HT200	铸钢	不锈钢304	不锈钢316	不锈钢316L
叶轮	HT200	HT250	不锈钢304	不锈钢316	不锈钢316L
轴套	HT200	HT200	不锈钢304	不锈钢316	不锈钢316L
轴	45#	45#	不锈钢2cr13	不锈钢2cr13	不锈钢2cr13
密封	填料	填料	机械密封	机械密封	机械密封

Parts Name	Draining Flood Fighting	Sewage	Chemical Sewage	Acid And Alkali	Seawater
Pump Body	Ht200	Cast Steel	Stainless Steel304	Stainless Steel316	Stainless Steel316L
The Front Cover	Ht200	Cast Steel	Stainless Steel304	Stainless Steel316	Stainless Steel316L
Back Cover	Ht200	Cast Steel	Stainless Steel304	Stainless Steel316	Stainless Steel316L
Impeller	Ht200	Ht250	Stainless Steel304	Stainless Steel316	Stainless Steel316L
Collar	Ht200	Ht200	Stainless Steel304	Stainless Steel316	Stainless Steel316L
Shaft	45#	45#	Stainless Steel2Cr13	Stainless Steel2Cr13	Stainless Steel2Cr13
Seal	Padding	Padding	Mechanical Seal	Mechanical Seal	Mechanical Seal

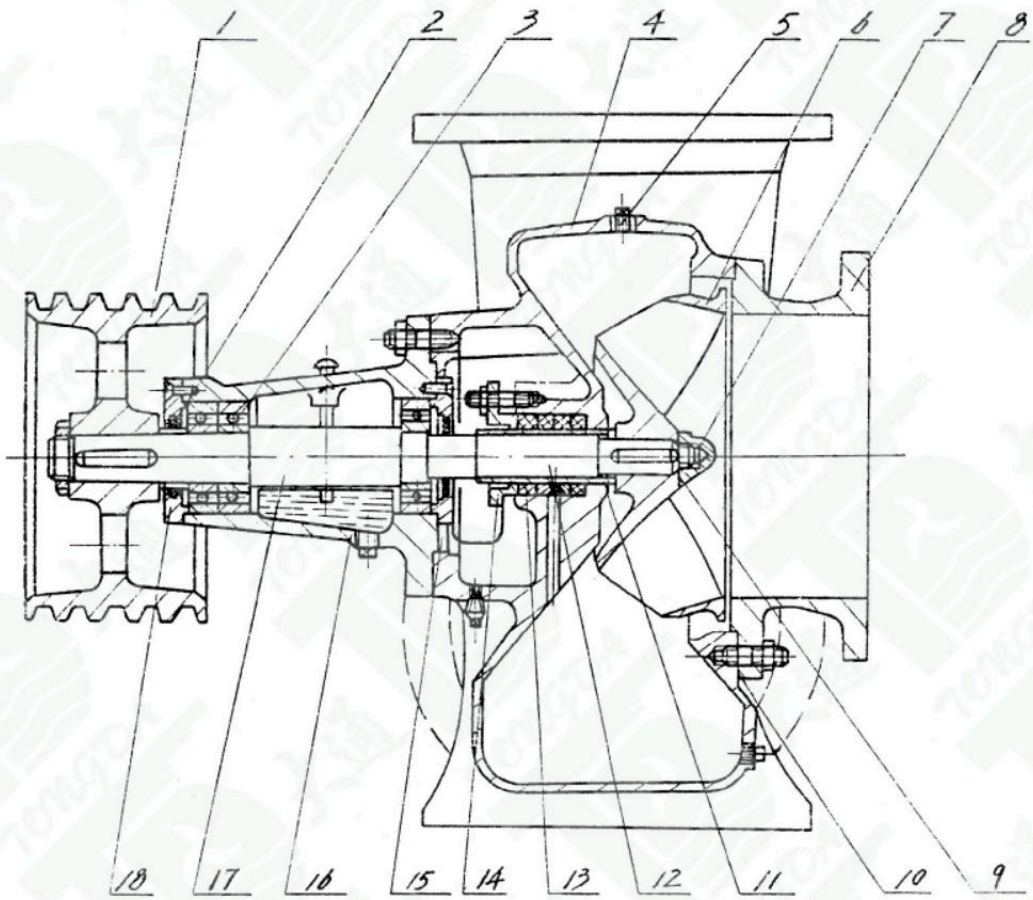
GHW型谱图1 GHW Performance Charts1



GHW型谱图2 GHW Performance Charts 2



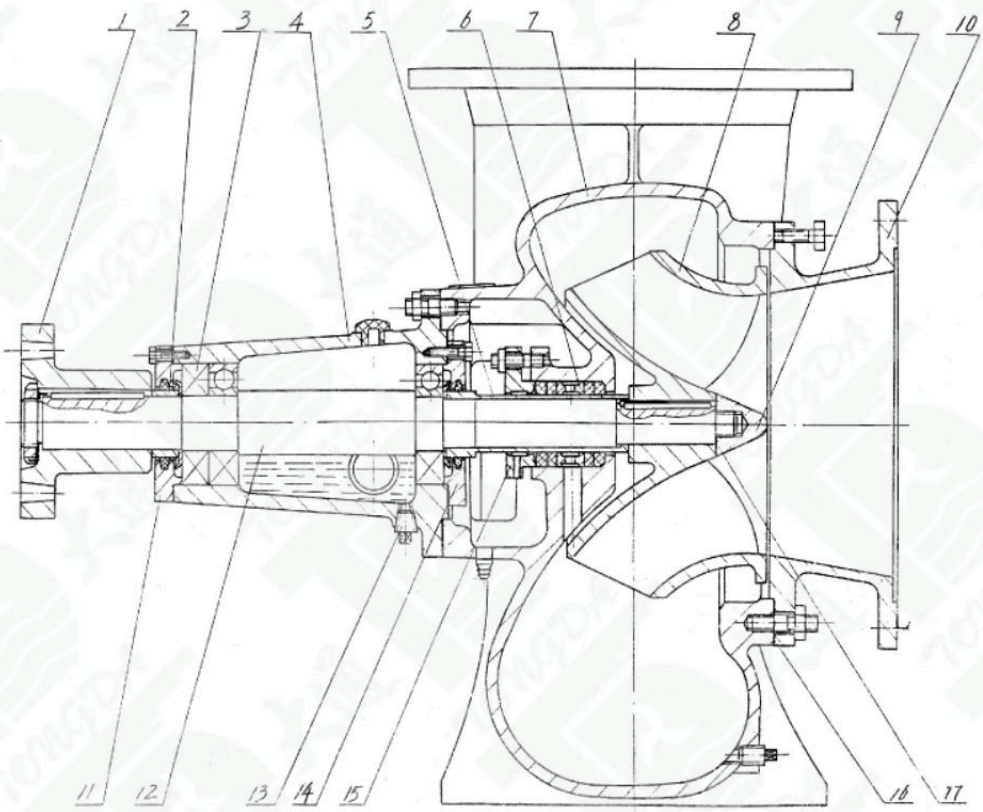
GHW结构图1　GHW Structure Diagram



1、皮带轮	10、纸垫
2、挡套	11、轴套
3、轴承	12、填料环
4、泵体	13、填料
5、螺塞	14、填料压盖
6、叶轮	15、后盖
7、叶轮螺母	16、轴承体
8、前盖	17、泵轴
9、垫	18、轴承压盖

1 pulley	10. paper pad
2. block sets	11. sleeve
3. bearings	12. packing ring
4. pump	13. filler
5. plug	14. the packing gland
6. the impeller	15. back cover
7. the impeller nut	16. bearing body
8. the front cover	17. shaft
9. pad	18. bearings cover

GHW结构图2 GHW Structure Diagram



1、联轴器
2、档圈
3、轴承
4、轴承座
5、轴套
6、填料环
7、泵体
8、叶轮
9、叶轮螺母
10、泵盖
11、后轴承盖
12、主轴
13、螺塞
14、前轴承盖
15、填料压盖
16、垫片
17、垫片

1. Coupling
2. The stalls circle
3. Bearings
4. Bearing
5. Sleeve
6. Packing ring
7. Pump
8. The impeller
9. The impeller nut
10. Pump cover
11. Back the bearing cap
12. The spindle
13 Plug
14. Front bearing cover
15. The packing gland
16. Gasket
17. Gasket

泵 性 能 表 Performance Date

参数 Parameter / 型号 Type	流量 Capacity Q		扬程 Head H	转速 Speed n	轴功率 Shaft power Pa	效率 Eff. η	配带电动机 Motor		必需汽蚀余量 (NPSH)r	泵重 Weight	取代泵旧型号
							功率 Power	型号 Type			
	m^3/h	L/s	m	r/min	kW	%	kW		m	kg	
150GHW-5	137	38	6.1	1450	3.03	75	/4	Y112M-4	2.0	60	6HB-35
	180	50	5.0		2.90	82					
	216	60	3.7		2.94	74					
150GHW-6	140	38.8	6.6	1450	3.36	75	7/5.5	Y132S-4	3.0	68	6HB-25
	180	50	6.0		3.59	82					
	200	55.5	5.0		3.52	78					
150GHW-6	174	48.3	10.1	1800	6.46	75	12/7.5	S195	4.0	68	6HB-35
	223	62	9.2		7.07	82					
	248	68.8	7.7		6.72	78					
150GHW-8	137	38	8.7	1450	4.78	82	/5.5	Y132S-4	2.7	60	6HB-35
	180	50	8.0								
	216	60	6.8								
150GHW-12	137	38	15.3	2900	7.60	75	/11	Y160M-2	6.0	55	
	180	50	12.5		7.47	82					
	216	60	9.7		7.71	74					
200GHW-5	360	100	5.0	1450	6.01	81.5	/7.5	Y132M-4	4.0	105	
200GHW-8	270	75	9.6	1450	9.29	76	/11	Y160M-4	4.0	130	8HB-35
	360	100	8.0		9.39	83.5					
	432	120	6.0		9.41	75					
200GHW-10	300	83.3	8.0	1200	8.45	77	15/11	——	4.0	130	8HB-35
	360	100	7.0		8.22	83.5					
	450	125	5.1		8.12	70					
200GHW-10	360	100	12.0	1450	15.27	77	30/18.5	Y180M-4	5.0	130	8HB-35
	450	125	10.0		14.68	83.5					
	540	150	7.5		14.32	77					
200GHW-10	400	111	14.5	1600	20.49	77	40/30	——	5.5	130	8HB-35
	500	138.8	12.5		19.91	83.5					
	600	166.6	9.5		20.20	77					
200GHW-12	270	75	13.5	1450	14.68	83.5	/18.5	Y180M-4	4.0	105	
	360	100	12.5								
	432	120	10.8								
250GHW-5	540	150	5.0	1180	8.97	82	/11	——	4.0	190	
250GHW-7	400	111	8.0	980	10.75	81	20/15	Y180L-6	4.0	168	10HB-35
	450	125	7.0		10.22	84					
	500	138.8	6.3		11.87	79					

泵 性 能 表 Performance Date

参数 Parameter / 型号 Type	流量 Capacity Q		扬程 Head H	转速 Speed n	轴功率 Shaft power Pa	效率 Eff. η	配带电动机 Motor		必需汽蚀余量 (NPSH)r	泵重 Weight	取代泵旧型号
							功率 Power	型号 Type			
	m^3/h	L/s	m	r/min	kW	%	kW		m	kg	
250GHW-8	335	93	6.5	970	7.67	77	/11	Y160L-6	2.7	190	
	444	123	5.4		7.78	84					
	533	148	4.1		7.74	76					
250GHW-8	407	113	9.6	1180	13.81	77	/18.5	——	4.0	190	10HB-30
	540	150	8.0		14.01	84					
	648	180	6.0		13.93	76					
250GHW-8	500	138.8	14.5	1450	25.6	77	/30	Y200L-6	6.4	190	
	664	184.4	12.1		26.0	84					
	796	221	9.1		25.9	76					
250GHW-11	400	111	5.5	980	7.22	83	15/11	Y160L-6	4.0	169	10HB-40
	450	125	4.8		7.00	84					
	500	138.8	4.0		6.81	80					
250GHW-11	550	152.7	13.2	1450	23.85	83	40/30	Y200L-4	6.0	169	10HB-40
	650	180.5	11.6		24.37	84					
	720	200	9.8		21.02	80					
250GHW-11	640	177.7	15.5	1600	32.59	83	60/37	——	6.5	169	10HB-40
	720	200	11.3		33.38	84					
	800	222	11.8		32.11	80					
250GHW-12	407	113	13.5	1180	21.88	84	/30	——	4.0	190	
	540	150	12.5		21.88	84					
	648	180	10.8		21.88	84					
300GHW-5	792	220	5.0	970	12.99	83	/15	Y180L-6	4.0	230	
300GHW-8	594	165	9.9	970	19.90	78	/22	$Y200L_2$-6	4.0	230	12HB-40
	792	195	8.0		20.30	85					
	950	263	6.0		20.10	77					

泵 性 能 表 Performance Date

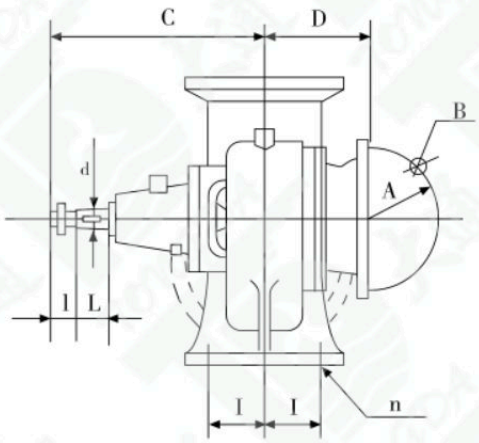
参数 Parameter / 型号 Type	流量 Capacity Q		扬程 Head H	转速 Speed n	轴功率 Shaft power Pa	效率 Eff. η	配带电动机 Motor		必需汽蚀余量 (NPSH)r	泵重 Weight	取代泵旧型号
							功率 Power	型号 Type			
	m^3/h	L/s	m	r/min	kW	%	kW		m	kg	
300GHW-8A	507	140.8	4.4	730	7.56	82.0	/11	Y180L-8	3.0	230	12HBC2-40
	581	161	3.9		7.48	84.0					
	678	188.3	2.8		6.75	78.0					
300GHW-8A	680	188.8	8.0	980	18.44	82.0	/22	Y20012-6	4.0	230	12HBC2-40
	780	216.6	7.0		18.08	84.0					
	910	252.7	5.0		16.22	78.0					
300GHW-8A	902	250.5	14.1	1300	43.16	82.0	/55	——	5.0	230	12HBC2-40
	1035	287.5	12.3		42.17	84.0					
	1207	335.2	8.8		37.79	78.0					
300GHW-12	594	165	13.5	970	31.72	85.0	/37	Y250M-6	4.0	230	
	792	220	12.5		31.72	85.0					
	950	263.8	10.8		31.72	85.0					
350GHW-8	670	186	5.2	730	11.16	85.0	20/15	Y200L-8	4.0	330	
	745	207	4.4		10.44	85.5					
	819	227.5	3.7		10.15	81.5					
350GHW-8	900	250	9.4	980	27.10	85.0	40/30	Y225M-6	5.0	330	14HBC2-40
	1000	277.7	8.0		25.50	85.5					
	1100	305.5	6.7		24.66	81.5					
400GHW-5	1440	400	5.0	730	23.3	84.0	/30	Y250M-8	4.0	486	
400GHW-7	1080	300	7.8	730	27.31	84.0	40/30	Y250M-8	4.0	486	16HBC-40
	1260	350	6.8		27.13	86.0					
	1368	380	6.2		27.50	84.0					
400GHW-7	1450	402.7	14.1	980	66.32	84.0	100/75	JS115-6 Y315S-6	5.0	486	
	1692	470	12.3		65.90	86.0					
	1836	510	11.2		66.67	84.0					
400GHW-8	1440	400	8.0	730	36.5	86.0	/45	Y280M-8	4.0	486	19HB-40
400GHW-10	1098	305	11.5	730	41.5	83.0	66/55	Y315S-8 JS115—8	4.0	496	
	1400	388.9	9.94		44.3	86.0					
	1720	477.8	7.55		42.4	83.5					
400GHW-10	1474	409.4	20.7	980	100.1	83.0	165/110	皮带传动	5.0	496	
	1880	522.2	18.0		107.1	86.0					
	2309	641.3	13.6		102.4	83.5					
400GHW-12	1440	400	12.5	730	57.0	86.0	/75	Y315M1-8	4.0	496	
500GHW-6	1690	469.4	7.6	580	41.9	83.4	60/55	JS116-10	5.5	770	20HB-40
	1980	550	6.2		38.4	87.0					
	2180	605.5	5.3		39.1	80.4					

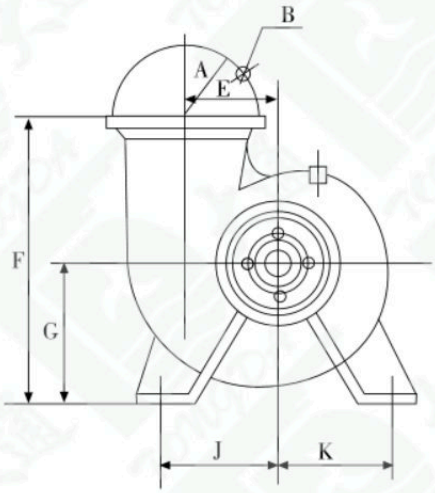
泵 性 能 表 Performance Date

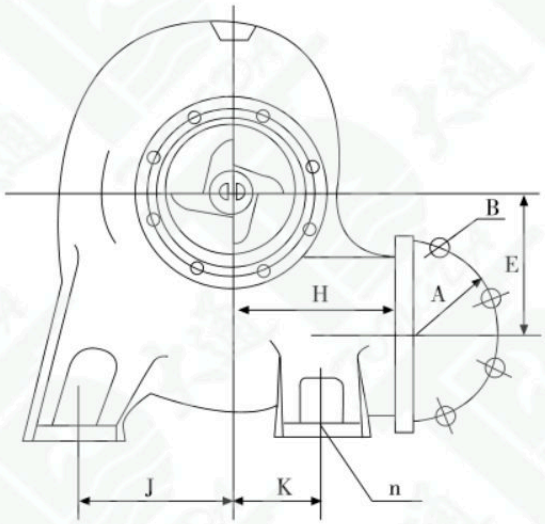
参数 Parameter / 型号 Type	流量 Capacity Q		扬程 Head H	转速 Speed n	轴功率 Shaft power Pa	效率 Eff. η	配带电动机 Motor		必需汽蚀余量 (NPSH)r	泵重 Weight	取代泵旧型号
							功率 Power	型号 Type			
	m^3/h	L/s	m	r/min	kW	%	kW		m	kg	
500GHW-6	2127	509.8	12	730	83.4	83.4	120/95	JS125-8	6.0	770	
	2402	667.2	9.8		76.4	87.0					
	2744	762.2	8.4		78.1	80.4					
500GHW-7	2340	650	7.0	730	52.5	85	/75	Y315M1-8	5.5	770	
500GHW-11	2340	650	11.0	730	80.6	87	/95	JS125-8	5.5	780	
650GHW-7	3060	850	7.4	450	72.5	85	120/90	皮带传动	5.3	1940	26HB-40
	3400	944.4	6.5		68.4	88					
	3960	1100	5.0		63.4	85					
650GHW-7	3295	915.2	8.6	485	90.8	85	135/100	JS137-12 JS13-12	5.5	1940	26HB-40
	3663	1017.5	7.6		86.1	88					
	4244	1178.8	5.9		80.6	85					
650GHW-7	4014	1115	12.7	590	163.3	85	220/180	JS138-10	6.0	1940	26HB-40
	4457	1238	11.18		154.2	88					
	5193	1442.5	8.59		142.9	85					
650GHW-10	3200	888.8	15.8	590	170.0	81	250/180	JS138-10	6.0	1940	
	4000	1111	14.0		173.3	88					
	5000	1388.8	10.4		166.6	85					
650GHW-10	2658	738.3	10.9	490	97.4	81	150/115	皮带传动	5.5	1940	
	3322	922.7	9.7		99.7	88					
	4153	1153.6	7.2		95.8	85					
700GHW-7	3650	1013.8	7.0	580	80.9	86	/95	JS126-10	5.5	2680	
700GHW-11	3650	1013.8	11.0	580	124.3	88	/145	JS137-10	5.5	2690	
800GHW-10	4784	1328.8	14.8	490	227	85	310/250	Y450-64-12	5.5	3433	
	5980	1661	12.2		225	88					
	7176	1993.3	8.6		210	80					
800GHW-16	5760	1600	21.5	590	397	85	550/450	Y500—50-10	6.5	3433	
	7200	2000	17.7		394.6	88					
	8640	2400	12.5		367	80					

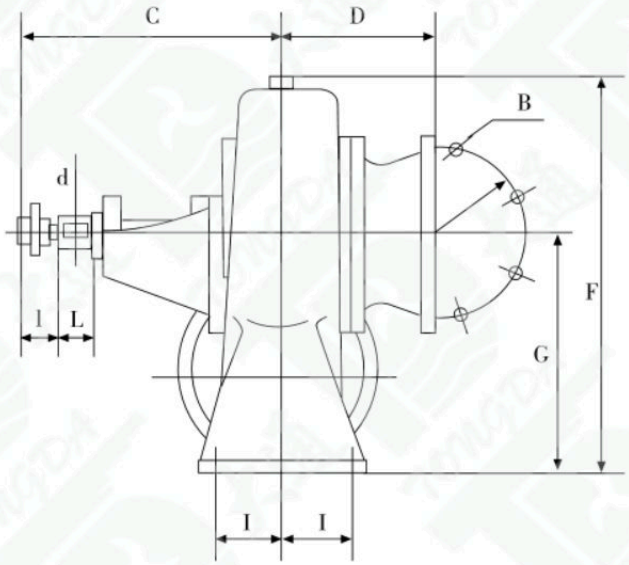
GHW型泵外形安装图一

Overall and Installation Figure 1



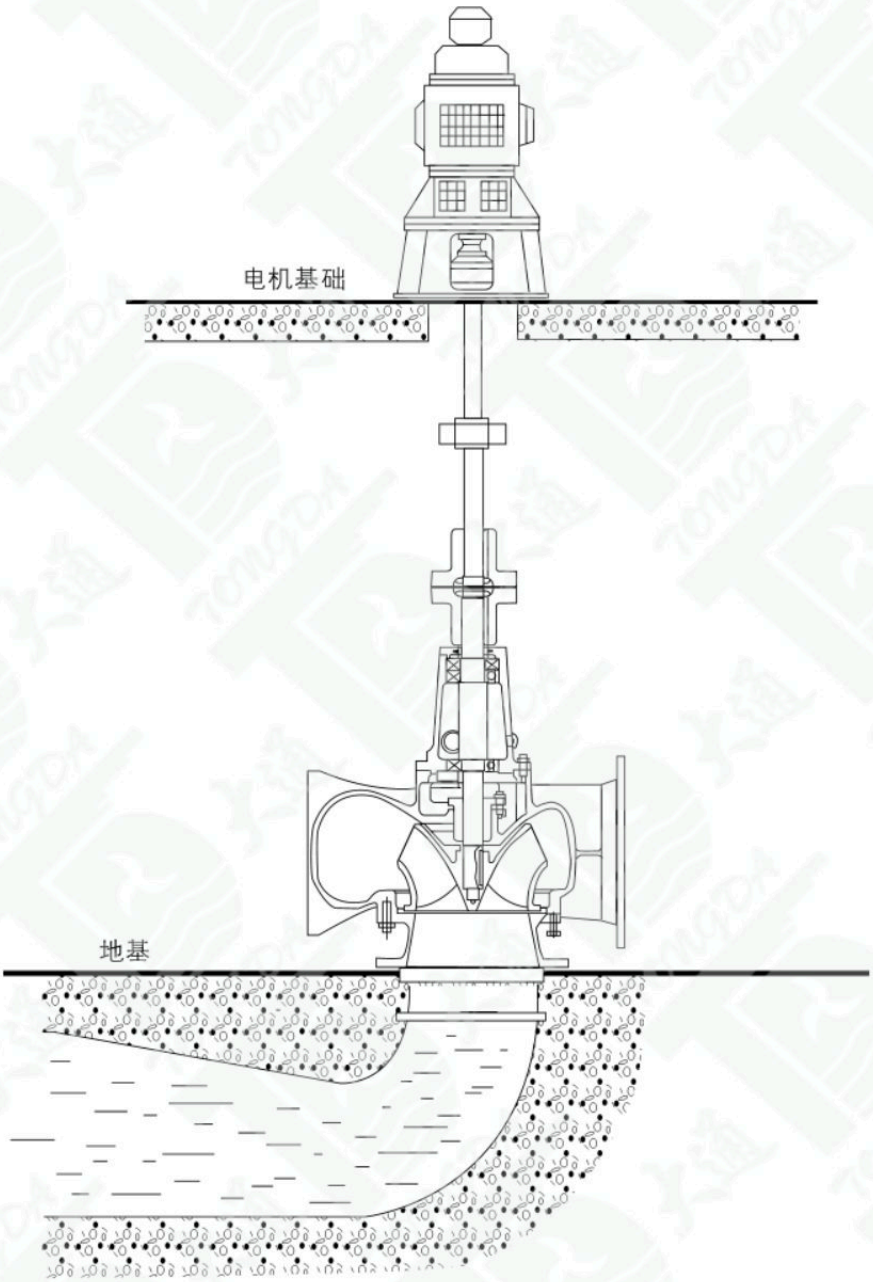






GHW型泵外形安装图二

Overall and Installation Figure 2



外型安装尺寸表

Installation Dimension Table Of The Whole Shape

泵型号	A	B	C	D	E	F	G	I	J	K	n	L×d	l	H
150GHW-5	ϕ225	8-ϕ17.5	360	160	158	400	212	80	170	120	4-ϕ18.5	42×28	14	-
150GHW-6			301	163	155									
150GHW-8			344	178	145									
150GHW-12			340	170	128	350	170							
200GHW-5	ϕ280	8-ϕ17.5	430	188	200	500	265	100	220	150	4-ϕ18.5	58×35	16	-
200GHW-8			430	188	104									
200GHW-12			406	210	180									
200GHW-10			451	192	200	530	280	110	240					
250GHW-5	ϕ335	6-ϕ17.5	546	249	220	590	315	120	270	190	4-ϕ24	82×50	18	-
250GHW-8			570	225	237									
250GHW-7			570	225	232									
255GHW-11			570	225	232									
250GHW-12			546	249	221									
300GHW-5	ϕ395	6-ϕ22	572	260	290	725	375	150	330	230	4-ϕ24	82×50	18	-
300HV-8			572	260	282									
300HV-8A			572	260	282									
300GHW-12			540	300	265									
350GHW-8	ϕ445	6-ϕ22	583	200	290	780	400	150	320	200	4-ϕ24	82×55	18	-
400HV-5	ϕ495	8-ϕ22	718	306	370	1097	670	190	425	230	4-ϕ30	82×55	18	450
400HV-7			718	306	370									
400GHW-10			718	306	370									
400HV-12			718	306	370									
500GHW-6	ϕ600	10-ϕ22	849	331	400	1246	750	195	550	335	4-ϕ30	105×65	20	565
500GHW-7			849	331	400									
500GHW-11			849	331	400									
650GHW-5	ϕ760	10-ϕ26	1132	480	570	1670	1000	290	700	430	4-ϕ34	130×95	35	735
650GHW-7			1132	480	570									
650GHW-10			1132	480	570									
800GHW-10	ϕ920	12-ϕ33	1368	640	705	2050	1250	400	700	600	4-ϕ34	165×110	37	1095
800GHW-16	ϕ1015		1368	640	705									
700GHW-7	ϕ820	12-ϕ30	1200	540	610	1795	1085	330	600	495	4-ϕ34	165×110	37	870
700GHW-I1	ϕ880	12-ϕ30	1200	540	610	1795	1085	330	600	495	4-ϕ34	165×110	37	870

安装、使用与保养

一、安装：

1、本泵安装时请参看外形安装图和外形安装尺寸表。

2、配带电机座的整套水泵机组安装：对固定不移的机组，可考虑一定的基础，并用地脚螺栓将机组固定，对经常移动的临时性使用， 应尽量使机组底座的安置面固实、牢靠、并应保证机组的水平度，使水泵轴承壳中的前后轴承均能浸油润滑。

3、当水泵与柴油机或其他动力配套采用皮带传动时，应将配套的三角皮带轮安上固紧，动力机的皮带轮直径应符合水泵的转速要求。 安装时应注意到水泵和动力机的相互位置的合理可靠——即两皮带轮轴心的平行，三角槽面对准及调到适宜的张力。并要设置防护罩。

4、水泵的安装高度应能满足规定的允许吸上真空高度，减去吸入水管管路中全部水力损失及输送液体温度和使用场合间的大气压对安装高度的影响等因素。

5、当水泵工作有吸入高度时。泵的吸水管下部应安上底阀，阀必须浸入水中，其在水中位置一般为：距池底1D～3D；距最低枯水面1D～3D；距池壁1D～1.5D（D为进水管口径）。一般水泵取大值、大泵取小值。

6、在泵的输送管路中，不应有窝存空气的可能以及尽量避免急弯，变径等而增加管路损失的情况，对吸入管一定要防止漏气现象。

二、安装注意事项：

1、泵盖不宜直接接弯管。应先接直管后再接弯管，以保证进口处流速分布均匀。

2、出水口应淹没在出水池的水里，并尽量靠近水面，以减少扬程损失。

3、进水处应设防污栅或在管口设置网罩，以防水草、杂物等进入泵内打碎叶轮或堵塞流道。

三、工作前试运行：

泵在安装完成后，必须进行试运行，以检查泵的转向和消除安装过程中的毛病。

四、试运行的顺序如下：

1、关闭出口闸阀或逆止阀，

2、加引水：先开机并将水从泵体上部的螺孔加入；或打开逆止阀使出水池中的水倒灌加入；或用真空泵抽气引水。

3、查动力机达到正常转速后，开大闸阀，然后调节填料的松紧。如泵的运转和轴承温度正常，振动轻微，则可投入正常工作。（使用逆止阀时，在泵出水后应将阀盖吊起，以减少阻力）。

五、使用与保养：

1、轴承采用稀油润滑时，应经常检查和控制轴承体的油位在油标杆两刻线间，轴承采用半油(润滑脂)润滑时，应定时补充适量油量。对150～350mm口径泵(可拆去前盖和后盖来补充)对400～800mm口径泵可通过油杯来补充。

2、经常检查轴承的温升。一般不得高于环境温度35℃，但最高不得超过75℃。

3、注意泵运转时有无摩擦和撞击声。如泵盖与叶轮摩擦， 可在泵盖和泵体间增加纸垫。 实际使用适宜间隙0.3～0.7mm。

4、填料的调整必须适当，液体应从填料压盖处成滴状间断漏出。填料太紧，轴会发热和功率增加；填料太松，液体泄漏过多，效率降低。

5、如电机与泵直联，两轴的轴心线应在一直线上。

6、检查进水管路有无漏气现象。

7、注意功率是否突然增大或降低，流量是否突然减少。如有，应停车排除。

8、经常检查各螺栓是否因振动而松动。

9、在冬季，停车后应将泵和管路内存水放出。

10、泵初期使用200小时或半年后， 应更换润滑油或润滑脂， 以后每1000小时或一年后换油一次。

11、泵工作3000小时或三年后，应解体检查和保养。

12、对于长期停用的泵，应将运转部分拆下，作防锈处理后妥善保管。

INSTALLATION, USAGE AND MAINTENANCE

● First, the installation:

1, In pump installation, please refer to the installation diagram and outline shape of installation dimensions table.

2, Installation of set of pump equipped with a motor block : Build a foundation for fixed unit, and use anchor bolts to fasten it. The base of walking unit should be set solidly, and ensured that the unit level of degree, so that the the front and rear beaings in the pump shaft are able to dip in lubrication.

3, When the pump works with diesel or other power facilities by belt, the triangle belt should be set tightly and diameter of pulley should be consistent with the pump speed requirements. In installation, pumps and power machine should be set at reasonable and reliable position that is that two pulley axises is parallel, triangular groove surfaces are align with appropriate tension and protective cover.

4, The pump mounting height should be able to meet the requirements of the vacuum suction height, minusing the impact of other factors like the total suction water pipe hydraulic loss and transmission fluid temperature, and the atmospheric pressure at sight.

5, When the pump works with suction height, the lower end of the suction pipe should be equiped with bottom valve which must be immersed in water, its location in the water generally is: 1D ~ 3D to pool bottom; 1D ~ 3D to the lowest low water surface; 1D ~ 1.5D to the wall(D is the inlet pipe diameter). Normal pumps take a large value, large pumps take a small value.

6, Make sure there is no air in the delivery pipe and try to avoid sharp bends, educers, etc., which increase pipeline loss. Must prevent air leaks in the inhalation tube.

● Second, installation note:

1, The cover of the pump is unfavorable to take bent pipe directly. It should firstly take straight pipe then the tube bending, in order to ensure that the inlet velocity distribution even.

2, The outlet should be submerged in a pool of water, and try to make it close to the surface of the water, in order to reduce headlift losses.

3, Antifouling gate and nets cover shall be established in the inlet, in case of aquatic plants and sundry etc. into the pump impeller to break it or block flow.

● Third, Trial run before work:

When the installation is completed, must take a test run, in order to check the pump rolling direction and eliminate the faults in the installation process.

● Fourth, the order of the test run as follows:

1, Close the outlet gate valve or non-return valve,

2, Add water diversion: first open and add water from the the screw holes at the upper portion of pump body; Or open non-return valve draw water backward from a pool; Or use vacuum pump to draw water.

3, When motor is at normal speed, open valve largely, then adjust tightness of packing. If pump operation and bearing temperature is normal, vibration is mild pump can be put into normal work. (when use non-return valve, the cover should be lifted after water in pump in order to reduce resistance).

● Fifth, usage and maintenance:

1, Bearing with thin oil lubrication, the bearing should always be checking and control the oil benchmark between the two the oil grooves; Bearing with semi-oil (grease) lubricant, the amount of fuel to be added regularly. Oil can be added to 150 ~ 350mm diameter pump by removing the front and rear doors; oil can be added to the 400 ~ 800mm diameter through oil cup

2, Always checking the bearing temperature rise. Generally not lower than the ambient temperature 35 ℃, but can not exceed 75 ℃.

3, When the pump is running check the friction and percussion. If the pump cover and impeller rub, pad of paper can be added between them. The suitable gap is 0.3 ~ 0.7 mm in actual applicaton .

4, The packing must be properly adjusted, the liquid in the form of droplets leak from the packing gland. When packing is too tight, heat and power shaft will increase; when packing is too loose, liquid leaks too much, reducing efficiency.

5, When motors and pumps directly connected, the two bearings' axis lines should be in line.

6, Check the water pipes with or without air leaks.

7, Note the sudden increase or decrease of power, flow rate sudden reduce. If so, should stop the pump and inspect it.

8, Always check whether the bolts are loose due to vibration.

9, When pump is not working in the winter, water should be released from pump and pipe.

10, After initial use of 200 hours or six months the oil or grease should be replaced; after every 1,000 hours or one year later the oil should be changed.

11, After the pump operation of 3000 hours or three years, pump should be dismantled for inspection and maintenance.

12, The long-term disused pumps' moving parts should be removed to take anti-rust treatment for safekeeping.

常见故障及解决方法

常见故障	原因	消除方法
泵不出水	1、引水不够或真空泵抽吸泵内空气不够 2、进水管路漏气 3、吸程太高 4、水泵转向不对 5、输水总高度超过规定	1、继续加灌或抽气 2、检查和排除 3、降低水泵安装位置 4、改变 5、减少
泵刚出水就中断	1、水中有过多气泡 2、进水管中窝储空气 3、进水管路漏气 4、进水管路或叶轮被水草杂物堵塞	1、增加进水管浸入水中的深度 2、排除 3、拧紧螺栓，调整垫料，堵塞缝隙 4、清除
出水量不足	1、进水管路或叶轮有水草杂物 2、转速不够或功率不够 3、输水高度过高 4、泵盖及叶轮磨损，密封间隙过大 5、闸阀开得太小或逆止阀有障碍物堵塞 6、进水管口浸入水中深度不够	1、清除 2、调整 3、降低 4、修复或调整纸垫 5、适当开放闸阀，清除障碍物 6、增加深入深度
耗用功率太大	1、转速太高 2、传动轴弯曲 3、填料压得太紧 4、轴承磨损或损坏 5、皮带太紧	1、降低 2、校直 3、旋松压紧螺母或将填料取出打扁一些 4、更换 5、适当放松
杂声和振动	1、轴中心没有对正 2、轴弯曲，轴承磨损过大 3、底脚螺栓松动 4、叶轮局部堵塞 5、吸程太高，发生汽蚀 6、泵吸入杂物	1、找正 2、校直或更换 3、旋紧 4、清除 5、降低水泵安装位置 6、清除
轴承发热	1、润滑油量不足 2、润滑油质量不好或不清洁 3、轴中心没有对正 4、轴承磨损 5、皮带太紧	1、加油 2、清洗轴承更换合适的润滑油 3、找正 4、更换 5、适当放松
填料发热	1、填料压得太紧及四周紧度不均匀 2、填料压得偏斜，使轴套摩擦不匀	1、旋松压盖螺母，调整填料紧度 2、松开压盖，重新均匀地上紧
填料处漏水太多	1、填料未压紧 2、填料装置不当 3、填料规格不符或磨损 4、轴套磨损	1、适当旋紧压盖螺母 2、调整填料搭口，使之错开一定角度 3、更换 4、更换

COMMON FAULTS AND SOLUTIONS

Common failure	Reasons	Solutions
No water from pump	1. Not enough water drawed or not enough air in the vacuum suction pump 2. Air leak in water pipelie 3. Suction lift too high 4. Pump rolling diretion wrong 5. Water exceeds the total height	1. Continue to increase irrigation or pumping 2. Check and correct 3. Lower pump mounting position 4. Change 5. Reduce
Water is interrupted after its first output	1. There are too many bubbles in water 2. Air nest in inlet 3. Air leak in water pipeline 4. Water pipe or impeller is clogged by plants	1. Increase the depth of immersion of water inlet 2. Remove 3. Tighten bolts, adjust the litter, plug gap 4. Remove
Water output shortage	1. Water plant debris in the impeller or inlet 2. Speed ??is not enough or not enough power 3. Water height is too high 4. Pump cover and impeller wear and tear, the seal gap is too large 5. Valve opened too small or obstructions on non–return valve 6. Inlet submerged not deep enough	1. Remove 2. Adjustment 3. Lower 4. Repair or adjust the paper pad 5. Appropriately open gate, removal of obstructions 6. Increase the depth
Power consumption too huge	1. Speed is too high 2. Shaft bending 3. Tight packing 4. Bearing wear or damage 5. Belt too tight	1. Lower 2. Alignment 3. Loosen the compression nut or take out packing and make it flat 4. Change 5. Appropriate to relax
Noises and vibrations	1. Central axis is not align 2. Shaft bending, excessive bearing wear 3. Foot bolts loose 4. Impeller partially blocked 5. Suction lift is too high, the occurrence of cavitation 6. Pump sucks debris	1. Alignment 2. Straightening or replacing 3. Tighten 4. Remove 5. Lower pump mounting position 6. Remove
Bearing heating	1. Lubricant is not enough 2. Shaft center no straight 3. Bearing wear 4. Belt is too tight	1. refuel oil 2. rectify 3. Replace 4. Appropriate loosen
Packing heat	1. Packing gland too tight and the surrounding the degree not uniform 2. Packing gland have skewed, make bearing friction not even	1. Spin send gland nut, adjust the packing the degree 2. Loosen the gland, even to the earth tight
Packing place leak too much water	1. Packing should not compress too tightly 2. Packing device not available 3. Packing is off–gauge or wear and tear 4. Sleeve pipe is wear and tear	1.Appropriate tighten gland nut 2.Adjustment by mouth packing to stagger the certain point of view 3. exchange 4, exchange