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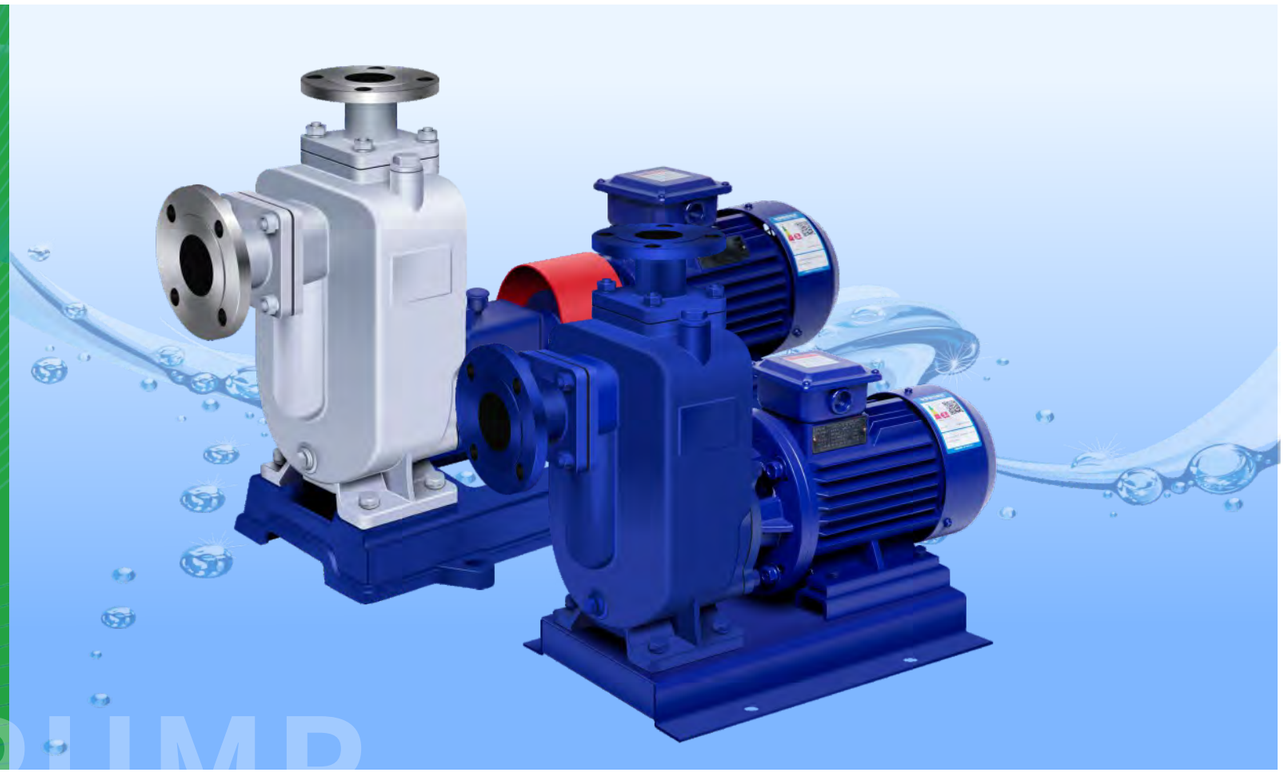
As we are constantly endeavouring to improve the performance of our equipment.

The company reserves the right to make alteration from time to time and equipment differ from that detailed in this brochure.

ZW系列自吸式无堵塞排污泵

ZW Series Self-priming Type Non-clogging Sewage Pump



YANGTZE RIVER PUMP

浙江扬子江泵业有限公司

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浙江扬子江泵业有限公司

ZHEJIANG YANGTZE RIVER PUMP CO.,LTD

■ 概述

Zw系列自吸式无堵塞排污泵是在反复研究国内外同类技术的础上开发成功的一种结构新颖的产品。该泵集自吸和无堵塞排污千一体，采用轴向回流外混式，并通过泵体、叶轮流道的独特设计，既可像一般自吸清水泵那样不需要安装底阀和灌引水，又可抽吸含有大颗粒固体和长纤维杂质液体。

该泵与国内同类产品相比，具有结构简单、自吸性能好、排污能力强、高效节能，使用维修方便等特点，在排污泵系列产品中各项技术性能指标居国内领先，达到国际先进水平，具有广阔的应用市场和发展前景。

■ 应用范围

ZW系列自吸式无堵塞排污泵是在反复研究国内外同类技术的基础上开发成功的一种结构新颖的产品。

该泵集自吸和无堵塞排污千一体， 采用轴向回流外混式，并通过泵体、 叶轮流道的独特设计， 既可像一般自吸清水泵那样不需要安装底阀和灌引水， 又可抽吸含有大颗粒固体和长纤维杂质液体。

该泵与国内同类产品相比， 具有结构简单、 自吸性能好、排污能力强、 高效节能， 使用维修方便等特点， 在排污泵系列产品中各项技术性能指标居国内领先，达到国际先进水平， 具有广阔的应用市场和发展前景。

■ Summary

A new style product successfully developed on the basis of the repeated research on the same know-how of both at home and abroad.
This pump integrates self-suction and non-clogging and uses axial-back flow outside-mixing type and, through the unique design of both pump casing and impeller geat, needs not to mount a foot valve and prime the leading water just like the common self-suction pure water pump and also can pump the liquid containing the solid of big grains and long fiber impurities.
Compared with the same domestic products, this pump features a simple structure, good self-suction performance, strong sewage draining capacity, high efficiency, energy saving and easy use and repair, with every technical performance index of it ranking first nationally among the sewage pump series products and up to the world advanced level, and holds a wide applicable market and progressive future.

■ Application

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■ 型号意义 Model Meaning

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YANGTZE RIVER PUMP
ZW系列自吸式无堵塞排污泵
ZW Series Self-priming Type Non-clogging Sewage Pump

■ 结构说明

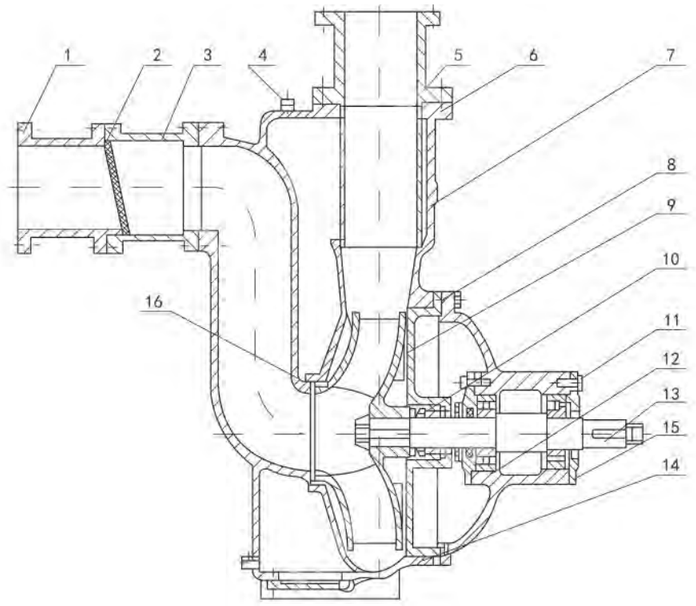
ZW系列自吸式无堵寒排污泵， 主要由泵体、 叶轮 、 后盖、机械密封、 泵轴、 轴承座、 进口阀、 气液分离管、 加水阀门、进、 排接管等组成。

泵体内设有储液腔， 并逢过上方的回流孔和下方的循环孔与泵工作腔相通， 构成泵的轴向回流外混式系统。 泵停止工作后，泵内腔已储有一定容积的液体。 当泵起动时， 泵内的储液在叶轮的作用下， 夹带着空气被向上抛出， 液体通过气液分离管的网格回流到工作腔， 气体被排出泵外， 使泵内形成一定的真空度， 达到自吸的作用。

■ Structure

This pump consists of pump casing, impeller, rear cover, mechanical seal, shaft, bearing seat, inlet valve, air-liquid separating pipe, water filling valve, inlet and drain-out nipples etc.
A liquid storing cavity is set inside of the pump casing and connected to the working cavity through the back-flow hole on the upper and the cycling hole on the lower to form the axial-back flow outside mixing type system of the pump. Liquid of a certain volume has been stored in the storing cavity after the pump stops working and, under the action of the impeller when the pump starts, is thrown out upwards with air and then flows back to the working cavity through the grids of the air-liquid separating pipe, the air is exhausted out of the pump to have a certain vacuum formed inside of the pump so as to get the self-suction action.

■ 结构图 Structure Drawing



序号 No	名称 Name	序号 No	名称 Name	序号 No	名称 Name	序号 No	名称 Name
1	进口接管Inletnipple		出口接管Outlet nipple		叶轮Impeller		泵轴Pump Shaft
2	进口法兰Inletflange		泵体Pump Casing		机械密封 Mechanical seal		轴承盖Bearing Cover
3	进口阀座 Inlet valve seat		气液分离管 A1r-llqu1d separating pipe		挡水圈Waterbaffle		底盖板 Bottom cover-plate
4	加水螺栓 Water filling bolt		后盖Rear Cove		轴承座Bearingseat		口环Oral ring

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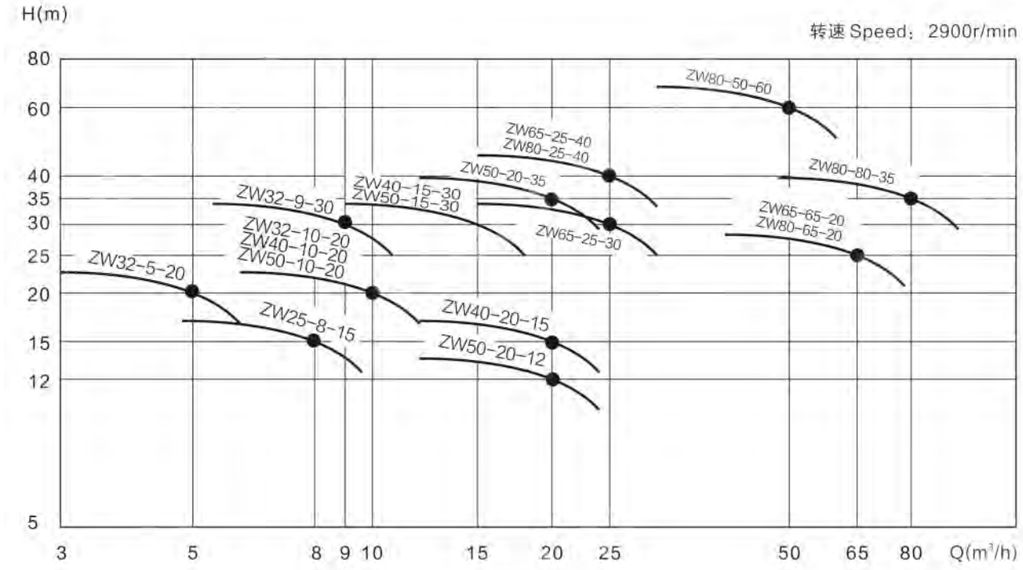
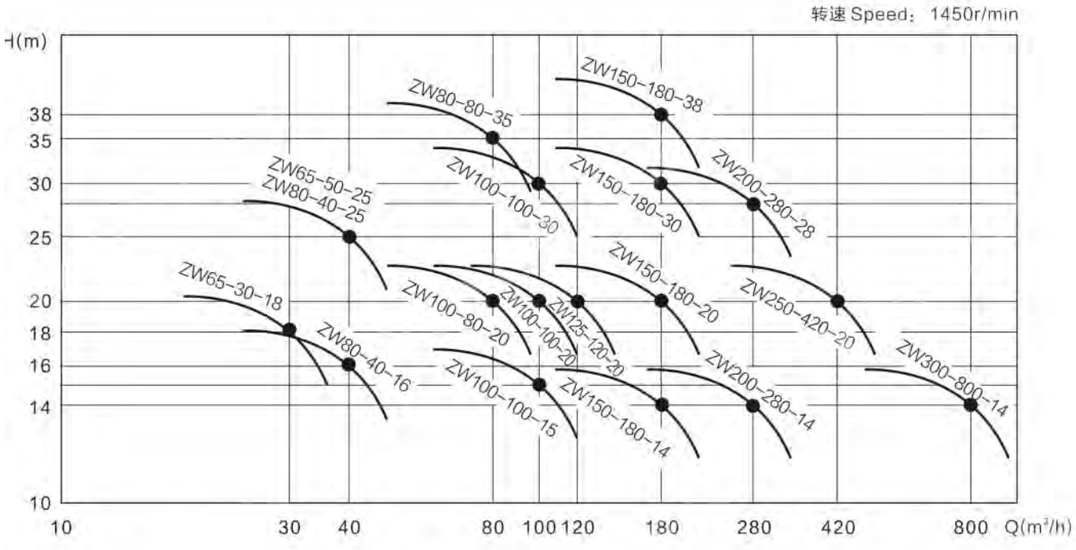
■ 型谱图 Performance Curve





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ZW系列自吸式无堵塞排污泵
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■ 性能参数表 Table of performance parameters

型号 Model	流量 Flow m³/h	扬程 Head m	转速 Speed rpm	功率 Power KW	效率 Eff. %	汽蚀余量 (NPSH)r m	自吸高度 Self-suction height m	自吸时间 Self-suction time min/5m	重量 Weight KG
ZW25-8-15	8	15	2900	1.5	45	2.0	5.5	3	100
ZW32-5-20	5	20	2900	2.2	45	2.5	5.5	3	100
ZW32-10-20	10	20	2900	2.2	45	2.5	5.5	3	100
ZW32-9-30	9	30	2900	3	48	2.5	5.5	3	120
ZW40-10-20	10	20	2900	2.2	45	2.5	5.5	3	100
ZW40-20-15	20	15	2900	2.2	45	2.5	5.5	3	100
ZW40-15-30	15	30	2900	3	48	2.5	5.5	3	120
ZW50-10-20	10	20	2900	2.2	45	2.5	5.5	3	100
ZW50-20-12	20	12	2900	2.2	45	2.5	5.5	3	100
ZW50-15-30	15	30	2900	3	48	2.5	5.5	3	120
ZW50-20-35	20	35	2900	5.5	48	2.5	5.5	3	150
ZW65-30-18	30	18	1450	4	45	2.5	5.5	3	200
ZW65-25-30	25	30	2900	5.5	50	3.0	5.5	3	200
ZW65-25-40	25	40	2900	7.5	50	3.0	5.5	2	200
ZW65-40-25	40	25	2900	7.5	50	3.0	5.5	2	200
ZW65-65-25	65	25	2900	7.5	52	3.0	5.5	2	240
ZW80-40-16	40	16	1450	4	50	3.0	5.0	3	240
ZW80-40-25	40	25	2900	7.5	50	3.0	5.5	2	200
ZW80-25-40	25	40	2900	7.5	50	3.0	5.5	2	200
ZW80-65-25	65	25	2900	7.5	52	3.0	5.5	2	240
ZW80-80-35	80	35	2900	15	45	3.0	5.5	3	285
ZW80-80-35	80	35	1450	15	50	3.0	5.5	2	450
ZW80-50-60	50	60	2900	22	55	3.0	5.0	3	340
ZW100-100-15	100	15	1450	7.5	50	4.0	5.5	3	300
ZW100-80-20	80	20	1450	7.5	53	4.0	5.5	3	300
ZW100-100-20	100	20	1450	11	53	4.0	5.5	3	340
ZW100-100-30	100	30	2900	22	53	4.0	5.5	2	510
ZW125-120-20	120	20	1450	15	55	4.5	5.5	2	500
ZW150-180-14	180	14	1450	15	60	5.0	5.5	3.5	500
ZW150-180-20	180	20	1450	22	60	5.0	5.0	3	570
ZW150-180-30	180	30	1450	37	65	5.0	5.0	3	680
ZW150-180-38	180	38	1450	55	45	5.0	5.0	3.5	800
ZW200-280-14	280	14	1450	22	65	5.0	5.0	3	700
ZW200-280-28	280	28	1450	55	55	4.8	5.2	3	940
ZW250-420-20	420	20	1450	55	61	6.0	4.5	2.5	1150
ZW300-800-14	800	14	1450	55	65	6.0	4.5	2.5	1400
ZW300-800-20	800	20	1450	75	65	6.0	4.5	2.5	1600

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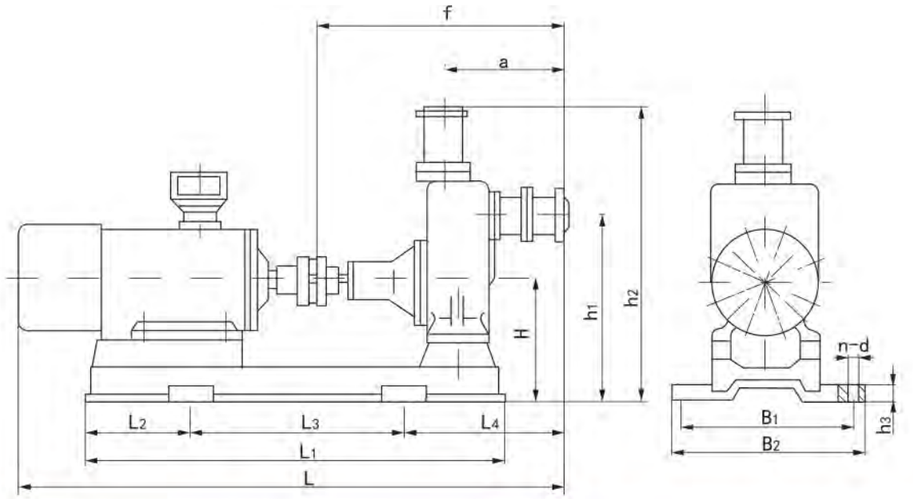
■ 外形及安装尺寸图表 Installation Drawing Dimension



型号 Model	L	L1	L2	L3	L4	a	f	B1	B2	H	h1	h2	h3	n×d
ZW25-8-15	850	680	115	450	240	255	510	310	370	228	410	625	24	4×φ18
ZW32-5-20	850	680	115	450	240	255	510	310	370	228	410	625	24	4×φ18
ZW32-10-20	850	680	115	450	240	255	510	310	370	228	410	625	24	4×φ18
ZW32-9-30	890	710	130	450	240	260	510	310	370	238	410	630	24	4×φ18
ZW40-10-20	850	680	115	450	240	255	510	310	370	228	410	625	24	4×φ18
ZW40-20-15	850	680	115	450	240	255	510	310	370	228	410	625	24	4×φ18
ZW40-15-30	890	710	130	450	240	260	510	310	370	238	410	630	24	4×φ18
ZW50-10-20	850	680	115	450	240	255	510	310	370	228	410	625	24	4×φ18
ZW50-20-12	850	680	115	450	240	255	510	310	370	228	410	625	24	4×φ18
ZW50-15-30	890	710	130	450	240	260	510	310	370	238	410	630	24	4×φ18
ZW50-20-35	980	750	125	450	240	250	480	380	450	238	410	630	24	4×φ18
ZW65-30-18	1040	760	135	500	340	350	650	380	450	265	485	760	25	4×φ18
ZW65-25-30	1230	850	135	580	340	350	700	370	520	270	480	720	25	4×φ18
ZW65-25-40	1230	850	135	580	340	350	700	370	520	270	480	720	25	4×φ18
ZW65-40-25	1165	850	135	580	340	350	650	370	430	265	485	760	25	4×φ18
ZW65-65-25	1300	940	150	640	350	350	700	430	485	270	480	720	25	4×φ18
ZW80-40-16	1040	760	135	500	340	350	650	380	450	265	485	760	25	4×φ18
ZW80-40-25	1165	850	135	580	340	350	650	370	430	265	485	760	25	4×φ18
ZW80-25-40	1230	850	135	580	340	350	700	370	520	270	480	720	25	4×φ18
ZW80-65-25	1300	940	150	640	350	350	700	430	485	270	480	720	25	4×φ18
ZW80-80-35	1300	1020	190	640	360	350	700	450	520	270	480	720	25	4×φ23
ZW80-80-35	1365	1180	190	640	330	370	760	480	540	350	600	890	25	4×φ23
ZW80-50-60	1360	1020	190	640	400	350	650	450	590	280	495	770	25	4×φ23
ZW100-100-15	1230	920	140	630	375	400	730	450	510	330	630	920	28	4×φ23
ZW100-80-20	1230	920	140	630	375	400	730	450	510	330	630	920	28	4×φ23
ZW100-100-20	1320	1020	200	625	420	400	730	450	510	330	630	920	28	4×φ23
ZW100-100-30	1650	1300	320	730	480	460	900	480	550	330	570	870	30	4×φ23
ZW125-120-20	1600	1170	175	820	450	510	880	480	540	330	665	990	30	4×φ23
ZW150-180-14	1600	1170	175	820	450	510	880	480	540	330	650	990	30	4×φ23
ZW150-180-20	1580	1300	200	730	500	490	870	480	550	350	700	1030	30	4×φ23
ZW150-180-30	1690	1370	235	800	500	490	870	520	600	350	700	1030	30	4×φ23
ZW150-180-38	1920	1570	245	1080	400	490	870	580	660	350	700	1020	30	4×φ23
ZW200-280-14	1920	1470	270	970	520	650	1090	520	565	350	700	1090	30	4×φ23
ZW200-280-28	2020	1570	245	1080	500	650	1090	580	660	350	700	1090	30	4×φ23
ZW250-420-20	2180	1600	325	950	720	800	1330	610	670	430	800	1200	30	4×φ23
ZW300-800-14	2580	1880	300	1280	800	1030	1500	610	655	530	900	1350	30	4×φ23

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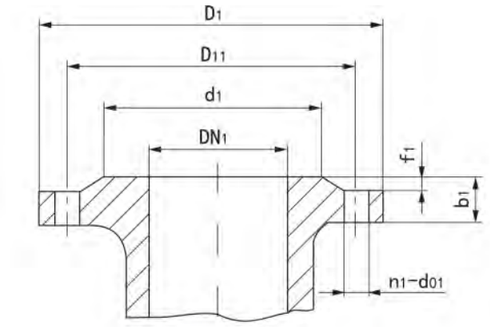
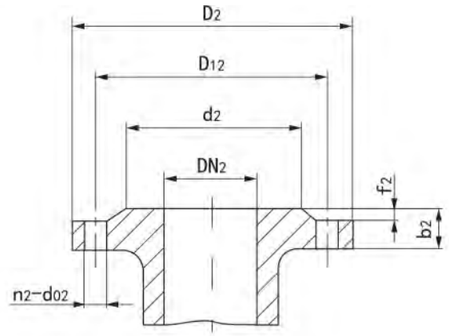
ZW Series Self-priming Type Non-clogging Sewage Pump

■ 法兰尺寸图及尺寸表 Flange Drawing Dimension



吸入口法兰
Inlet Flange



吐出口法兰
Outlet Flange

型号 Model	吸入口法兰尺寸 Dimension of inlet flange							吐出口法兰尺寸 Dimension of outlet flange						
	DN1	D1	D11	d1	b1	f1	n1-d01	DN2	D2	D12	d2	b2	f2	n2-d02
ZW25-8-15	25	100	75	60	14	2	4×φ14	25	100	75	60	14	2	4×φ14
ZW32-5-20	32	120	90	70	14	2	4×φ14	32	120	90	70	14	2	4×φ14
ZW32-10-20	32	120	90	70	14	2	4×φ14	32	120	90	70	14	2	4×φ14
ZW32-9-30	32	120	90	70	14	2	4×φ14	32	120	90	70	14	2	4×φ14
ZW40-10-20	40	130	100	80	14	2	4×φ14	32	120	90	70	14	2	4×φ14
ZW40-20-15	40	130	100	80	14	2	4×φ14	32	120	90	70	14	2	4×φ14
ZW40-15-30	40	130	100	80	14	2	4×φ14	32	120	90	70	14	2	4×φ14
ZW50-10-20	50	140	110	90	14	2	4×φ14	40	130	100	80	14	2	4×φ14
ZW50-20-12	50	140	110	90	14	2	4×φ14	40	130	100	80	14	2	4×φ14
ZW50-15-30	50	140	110	90	14	2	4×φ14	40	130	100	80	14	2	4×φ14
ZW50-20-35	50	140	110	90	14	2	4×φ14	40	130	100	80	14	2	4×φ14
ZW65-30-18	65	160	130	110	14	2	4×φ14	65	160	130	110	14	2	4×φ14
ZW65-25-30	65	160	130	110	14	2	4×φ14	65	160	130	110	14	2	4×φ14
ZW65-25-40	65	160	130	110	14	2	4×φ14	65	160	130	110	14	2	4×φ14
ZW65-40-25	65	160	130	110	14	2	4×φ14	65	160	130	110	14	2	4×φ14
ZW65-65-25	65	160	130	110	14	2	4×φ14	65	160	130	110	14	2	4×φ14
ZW80-40-16	80	190	150	125	15	2	4×φ18	65	160	130	110	14	2	4×φ14
ZW80-40-25	80	190	150	125	15	2	4×φ18	65	160	130	110	14	2	4×φ14
ZW80-25-40	80	190	150	125	15	2	4×φ18	65	160	130	110	14	2	4×φ14
ZW80-65-25	80	190	150	125	15	2	4×φ18	65	160	130	110	14	2	4×φ14
ZW80-80-35	80	190	150	125	15	2	4×φ18	65	160	130	110	14	2	4×φ14
ZW80-80-35	80	190	150	125	15	2	4×φ18	65	160	130	110	14	2	4×φ14
ZW80-50-60	80	190	150	125	15	2	4×φ18	65	160	130	110	14	2	4×φ14
ZW100-100-15	100	210	170	145	15	3	4×φ18	80	190	150	125	15	2	4×φ18
ZW100-80-20	100	210	170	145	15	3	4×φ18	80	190	150	125	15	2	4×φ18
ZW100-100-20	100	210	170	145	15	3	4×φ18	80	190	150	125	15	2	4×φ18
ZW100-100-30	100	210	170	145	15	3	4×φ18	80	190	150	125	15	2	4×φ18
ZW125-120-20	125	240	200	175	20	3	8×φ18	125	240	200	175	20	3	8×φ18
ZW150-180-14	150	265	225	200	20	3	8×φ18	125	240	200	175	20	3	8×φ18
ZW150-180-20	150	265	225	200	20	3	8×φ18	125	240	200	175	20	3	8×φ18
ZW150-180-30	150	265	225	200	20	3	8×φ18	125	240	200	175	20	3	8×φ18
ZW150-180-38	150	265	225	200	20	3	8×φ18	125	240	200	175	20	3	8×φ18
ZW200-280-14	200	320	280	255	22	3	8×φ18	150	265	225	200	20	3	8×φ18
ZW200-280-28	200	320	280	255	22	3	8×φ18	150	265	225	200	20	3	8×φ18
ZW250-420-20	250	375	335	310	24	3	12×φ18	200	320	280	255	22	3	8×φ18
ZW300-800-14	300	435	395	362	24	4	12×φ23	250	375	335	310	24	3	12×φ18

■ 泵的安装 Pump installation

1、在泵与电动机联轴传动时， 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， 否则易引起叶轮窑动， 造成机城故障。

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磨擦， 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泵自吸性能高度， 在条件许可时， 吸入口的安装高度应尽可能地低于水池录低储水面，并尽虽缩短吸入管的长度， 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、 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、水泵在安装时， 应使泵及管路的静电接地电阻达到其规定要求。

6、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。

7、在机组实际运转3-4小时后， 作晟后检查， 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℃。

8、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。

■ Pump installation

1. With the shafts of both pump and motor linked in actuation, pay attention to the concentricity between the pump shaft and the motor's output; and carefully mount and calibrate the pump as which will leave a bigger affection to the running stability and duration of it .

2. Fasten the nut on the pump's clutch, or the impeller may be made easily movable to cause a mechanical failure.

3. Have the pump inlet higher than the central line of the pump shaft so as to have a certain volume of liquid kept inside of the pump to get a better self-suction capacity and prevent the mechanical seal from drying friction.

4. Cautions for the installation of the suck-in pipelineA. The installation height of the suck-in port shall not be higher than the self-suction height and shall be lower than the lowest stored water level 1n the water pool as can as possible, the suck-in pipe shall be as short as possible and mount less elbows so as to shorten the self-suction time and raise the selfsuction function.

B. The valve, flange etc. inside of the suck-in pipeline shall be prevented from air or liquid leaking, that means no air-leaking is allowed inside of it.

C. Get both suck-in and vomiting pipelines a stand of theirown and do not let the pump bearing any pipeline.

5. During installation of the pump, make the static grounding es1stance of it and the pipeline up to the set requirement.

6. Calibrate the installation space and the concentricity between the clutches of both pump and motor, with the allowed deviation of the concentricity at 0.1 mm, and put a copper or iron sheet under the foot to adjust the height difference between the shafts of both pump and motor.

7. Take a final check after the unit actually runs for 3-4h and it is deemed for the installation to have been well done if nonbad condition. Check the bearing temperature during trial, which shall not be over 70°C.

8. If the pump can not be made to successfully exhaust during the self-suction process with a single-way valve mounted on the pump's outlet pipeline, connect a small exhausting pipe and valve at the pump outlet.

YANGTZE RIVER PUMP
ZW系列自吸式无堵塞排污泵
ZW Series Self-priming Type Non-clogging Sewage Pump

■ 泵的安装

（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；检查泵体底脚及各联结处螺母有无松动现象；检查泵轴与电动机主轴的同轴度或平行度；检查进口管路是否漏气，如有漏气，必须设法排除；打开吸入管路的阀门，稍开（不要全开）出口控制阀。

（二）起动及操作

1、起动自吸泵，注意泵轴的转向是否正确；注意转动时有无不正常的声响和振动。

2、注意压力表及真空表读数，起动后当压力表及真空表的读数经过一段时间的波动而指定稳定后，说明泵内已经上液，泵进入正常输液作业。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。

3、如果泵内液体温度过高而引起自引困难，那行可以暂时停机，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下来向泵内补充液体，使泵内液体降温，然后起动即可。

4、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。

5、泵在工作过程中因故停泵，需再起动时，出口控制阀应稍开（不要全开），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，同时，注意检查管路系统有无渗漏现象。

（三）停泵

1、首先必须关闭吐出管路上的阀门。

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 installation

Preparations And Checks Prior To Starting

1. According to the running states, this series self-suction pumps are lubricated with quality calcium-based grease and 10# engine oil separately. For those lubricated with grease, fill grease into the bearing box in a periodic time and, for those with engine oil, fill it fully when the oil level is insufficient.

2. Check if the stored liquid inside of the pump casing is above the upper edge of the impeller and, if not, prime liquid directly from the filling port on the casing. Do not start the pump in case of an insufficient stored liquid, or the pump would not work normally and the mechanical seal would be easily damaged.

3. Check if the moving parts of the pump are jammed or collided; if the foot on the pump bottom and the nuts on the joints are loose; check the concentricity or the parallelism between the shafts of both pump and motor; check if there is air-leaking with the inlet pipeline and settle it if any; open the valve on the suck-in pipeline and slightly open (not fully) the outlet control valve.

Start and operation

1. Pay attention to the pump shaft to see if it moves in the correct direction when to start the self-suction pump; and if there is abnormal sounds and vibration when it moves.

2. Pay attention to the readings on both pressure gauge and vacuum meter, when the indications of which get stable after a periodic time fluctuation after the pump is started, that means liquid has been primed into the pump and the pump gets into the normal liquid transportation. Before the pump gets into the normal liquid transportation, e.g. during the self-suction process, pay special attention to the temperature rise of the liquid and stop the pump to check the cause if this process is too long and the temperature is so caused too high.

3. Temporarily stop the pump in case of a difficult selfsuction caused due to too high liquid temperature and make it lower by means of the back flow into the pump of the liquid in the vomiting pipeline or supplementing liquid directly from the filling port on the pump casing, then start the pump again.

4. It is possible for an air erosion to occur with the pump that causes a severe vibration and noise during the work of the pump and the air erosion occurs with two causes: one is too quick flow rate in the inlet pipe and the other is too high suction travel. For the former, adjust the outlet control valve, raise the reading on the pressure gauge and remove it in case of block- up in the inlet pipeline; for the latter, properly lower the pump's installation height.

5. When the pump is stopped because of something during work and started again, slightly (not fully) open the outlet control valve. This is benefit for the air to be exhausted on-time from the vomiting port during the self-suction process and also ensures the pump is started with a lighter load. Meanwhile, pay attention to checking if there is a leak from the pipeline system.

Stop

1. First close the valve on the vomiting pipeline.

2. Have the pump stopped running.

3. In cold seasons, drain out the liquid stored inside of the pump casing and the water inside of the bearing's cooling chamber completely to prevent any parts from being frozen to crack.

■ 故障原因及排除方法

故障现象	可能产生的原因	排除方法
1、水泵不出水	a、泵壳内未加储液或储液不足 b、吸入管路漏气 c、转速太低 d、吸程太高或吸入管路过长 e、机械密封泄漏量过大 f、吸入管路气体不能从出口排出	a、加足储液 b、检查并排除漏气现象 c、调整转速 d、降低吸程或缩短吸入管路 e、修复或更换 f、打开出口阀门，使气体排出
2、杂音和振动较大	a、底脚不稳 b、泵轴弯曲 c、汽蚀现象 d、轴承磨损严重 e、进口看路内有杂物 f、泵与电动机两者主轴不同心	a、加固 b、更换或校正 c、调整工况 d、更换轴承 e、清除杂物 f、调整同轴度
3、出水量不足	a、杂物进入吸入管或叶轮流道堵塞 b、转速太低 c、叶轮或叶轮密封磨损严重	a、排除堵塞物 b、调至额定转速 c、更换口环
4、轴功率消耗过大	a、流量过大 b、转速太高 c、泵轴弯曲或叶轮卡碰 d、泵内流道堵塞或被卡住	a、升高出口压力 b、适当降低 c、更换或校正 d、排除堵塞物

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■ Failures causes and troubleshooting

Failure	Possible Causes	Troubleshooting
1、No water out of pump	a、No or insufficient liquid stored inside of pump casing b、Air leaks from suck-in pipeline c、Too slow speed d、Too high suction travel or too long suck-in pipeline e、Too severe leakage from mechanical seal f、Air inside of suck-in pipeline unable to be exhausted from the outlet	a、Fill sufficient liquid b、Check and settle the air leak c、Adjust the speed d、Lower suction travel or shorten suck-in pipeline e、Repair or replace it f、Open the outlet valve to let air out
2、Bigger noise and vibration	a、Foot unstable b、Pump shaft bent c、Steam erosion d、Bearing seriously worn out e、Impurities exist inside of inlet pipeline f、Shafts of both pump and motor is not concentric	a、Solidify it b、Replace or correct it c、Adjust working conditions d、Replace it e、Get rid of impurities f、Adjust them to be concentric
3、Insufficient water-out quantity	a、Impurities get into suck-in pipe or impeller geat blocked up b、Too slow speed c、Impeller or impeller seal seriously worn out	a、Get rid of impurities b、Adjust the speed to the rated one c、Replace oral ring
4、Too big consumption of shaft power	a、Too heavy flow b、Too quick speed c、Pump shaft bent or impeller jammed or collided d、The geat inside of the pump blocked-up or jammed	a、Raise the outlet pressure b、Properly lower it c、Replace or correct d、Get rid of blocking matters

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