



WQE系列小型潜水排污泵

WQE SERIES MINIATURE SUBMERSIBLE SEWAGE PUMP



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概述 Outline

我司最新推出的7.5kW及以下WQE系列小型潜水排污泵，该系列产品相较于原先WQC系列，结合我司多年以来泵类产品技术经验，对产品内部结构、水力及外形轮廓进行了优化，以满足市场使用迫切需求。WQE泵在水力模型、整体结构及密封等方面都进行了综合优化设计。

Our newly launched 7.5kW and below WQE series small submersible sewage pump, this series of products compared with the original WQC series, combined with our many years of pump product technical experience, the internal structure, hydraulic and contour of the product has been optimized to meet the urgent needs of market use. The WQE pump has been comprehensively optimized in hydraulic model, overall structure and seal.

产品特点 Characteristic

- 1、独特的水力设计，运行平稳，过流能力好，安全无堵塞。
- 2、泵与电机同轴直接传动，属机电一体化产品，结构紧凑，连接牢固且易于拆卸，其性能稳定，噪声低，更加轻便适用。
- 3、采用双端面机封，加装骨架油封，密封性能更好且密封面受力更为合理，适用于带悬浮颗粒、纤维介质。

1. Unique hydraulic design, smooth operation, good flow capacity, safety and no blockage.
2. Pump and motor coaxial direct transmission, mechanical and electrical integration products, compact structure, solid connection and easy to disassemble, its stable performance, low noise, more portable and applicable.
3. Double end machine seal, skeleton oil seal, sealing performance is better and the sealing surface force is more reasonable, suitable for suspended particles, fiber media.

产品用途和使用条件 Purpose and Conditions of use

主要适用于市政工程、楼宇建筑、工业排污、污水处理等行业场合。排送带固体颗粒及各种短纤维的污水、废水、雨水和城市生活用水。

使用条件：

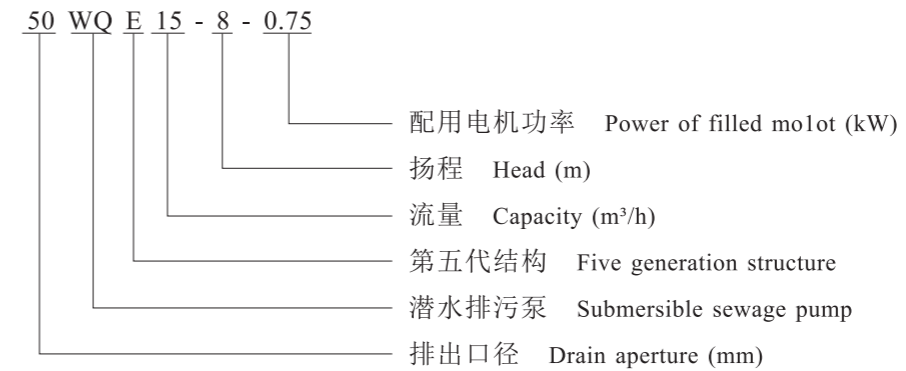
- 1、介质温度不应超过40℃，介质密度 $\leq 1050\text{kg/m}^3$ ，PH值在5-9范围内。
- 2、运行时泵不得低于最低液位，参见安装尺寸图中的“▽最低液位”。
- 3、额定电压为380V，额定频率为50Hz。在额定电压和额定频率的偏差不大于 $\pm 5\%$ 时，电机才能正常运行。
- 4、通过泵的固体颗粒的最大直径不得大于泵体排出口直径的40%。

It is mainly used in municipal engineering, building construction, industrial sewage, sewage treatment and other industrial occasions. Discharge sewage, waste water, rainwater and urban domestic water with solid particles and various short fibers.

Conditions of use:

1. Medium temperature should not exceed 40℃, medium density $\leq 1050\text{kg/m}^3$, PH value in the range of 5-9.
2. The pump shall not be lower than the lowest level during operation, refer to the "Minimum level" in the installation size diagram.
3. Rated voltage is 380V, rated frequency is 50Hz. When the deviation of rated voltage and rated frequency is not greater than $\pm 5\%$, the motor can operate normally.
4. The maximum diameter of solid particles passing through the pump shall not be greater than 40% of the diameter of the pump body outlet.

型号意义 Model meaning



结构说明 Structures description

轴承:

选用优质的滚动轴承。其合理的轴承配置，能够延长泵的寿命。

冷却:

泵的冷却，采用泵抽送介质直接冷却。

电机:

电机为F级绝缘，定子最高工作温度为155℃，有效的密封使电机防护等级为IPX8。

机械密封:

选用优质的机械密封，密封面受力更为合理，性能更好。

油室:

油可润滑并冷却机械密封，并具有阻止液体渗透至电机的附加安全功能。

叶轮:

经过优化设计，排出纤维和固体能力强，输送液体使其不产生堵塞。

泵体:

采用CAD/CAM技术，使泵提高效率和减少磨损。

Bearing:

High-quality roll bearing, which, with a reasonable configuration, can extend the duration of the pump.

Cooling:

Cooling of the pump: direct cooling by means of the pump to pump the medium

Motor:

Of F class insulation, max. working temperatures 155℃, and of a protective grade IPX8 with the effective seal.

Mechanical seal:

Use high-quality mechanical seal, sealing surface force is more reasonable, better performance.

Oil chamber:

Oil can lubricate and cool the mechanical seal and realize the attached function of safety by preventing liquid from penetrating into the motor.

Impeller:

The optimized design leaves the pump a powerful capacity in fiber and solid drainage and non-blocking in the liquid transportation

Pump casing:

Use of CAD/CAM know-how makes the pump an enhanced efficacy and a reduced wear.

轴:

泵与电机同轴

转轴悬伸设计得尽量短，降低转轴的挠度，并减少振动，延长机械密封和轴承的使用寿命，降低运行噪音。

监控系统:

定子内嵌有三个串联的热控开关。常温时为“常闭”状态，当定子温度达到115℃时，开关打开。

电控柜有对电机缺相进行检测的功能，以防缺相烧坏电机。

Shaft:

The pump is coaxial with the motor

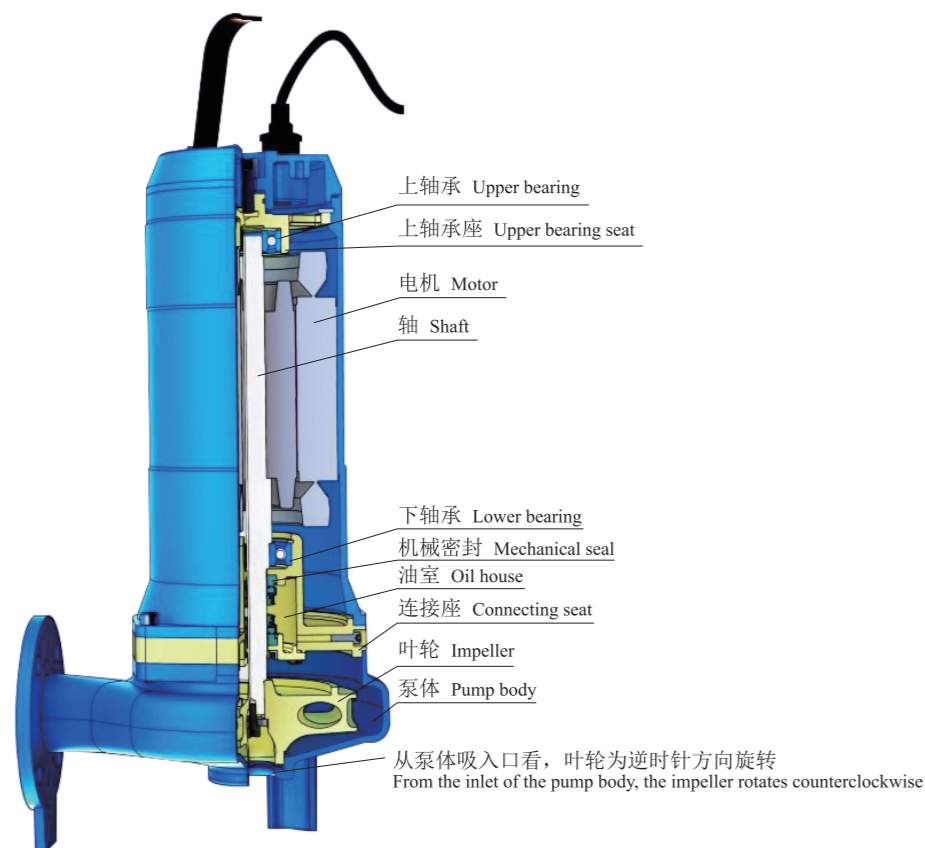
The as short as possible designed stretched rotating shaft can be reduced with its deflection and vibration, extend the duration of both mechanical seal and bearing and lower the noise at running.

Monitor system:

Inside of the stator there are three inlaid series heat-control switches, which are in the state of "N.O." at the normal temperature and opened when the temperature on the stator gets to 115°

The function to check if the motor lack of phase is available with the electric control cabinet so as to prevent it from burning due any lack of phase.

WQE型结构图 WQE type structure diagram



WQE型泵性能参数 Performance parameters of type WQE pump

序号 No.	型号 Type	排出口径 Outlet diameter (mm)	流量 Capacity		扬程 Head (m)	转速 Speed (r/min)	功率 Power (kW)	效率 Efficiency (%)	重量 Weight (Kg)
			(m³/h)	(L/s)					
1	32WQE8-10-0.75	32	6	1.7	12	2825	0.75	40	
			8	2.2					
			10	2.8					
2	32WQE8-15-1.1	32	6	1.7	17	2825	1.1	40	
			8	2.2					
			10	2.8					
3	50WQE15-8-0.75	50	10	2.8	9	2825	0.75	52	
			15	4.2					
			20	5.6					
4	50WQE15-12-1.1	50	10	2.8	13	2825	1.1	47	
			15	4.2					
			20	5.6					
5	50WQE15-16-1.5	50	10	2.8	18	2840	1.5	52	
			15	4.2					
			20	5.6					
6	50WQE15-22-2.2	50	10	2.8	23	2840	2.2	40	
			15	4.2					
			20	5.6					
7	50WQE15-30-3	50	10	2.8	31	2880	3	45	
			15	4.2					
			20	5.6					
8	50WQE25-25-3	50	20	5.6	26	2880	3	55	
			25	6.9					
			30	8.3					
9	50WQE25-32-5.5	50	20	5.6	33	2900	5.5	45	
			25	6.9					
			40	11.1					
10	50WQE25-36-5.5	50	20	5.6	38	2900	5.5	47	
			25	6.9					
			40	11.1					
11	50WQE30-20-3	50	20	5.6	25	2890	3	55	
			30	8.3					
			40	11.1					
12	65WQE30-10-1.5	65	20	5.6	12	2840	1.5	55	
			30	8.3					
			45	12.5					
13	65WQE30-15-2.2	65	20	5.6	16	2840	2.2	54	
			30	8.3					
			45	12.5					
14	65WQE30-22-4	65	20	5.6	26	2890	4	57	
			30	8.3					
			45	12.5					
15	65WQE30-30-5.5	65	20	5.6	32	2900	5.5	46	
			30	8.3					
			45	12.5					
16	65WQE30-35-7.5	65	20	5.6	37	2900	7.5	47	
			30	8.3					
			45	12.5					
17	65WQE35-15-3	65	25	6.9	17	2880	3	61	
			35	9.7					
			45	12.5					
18	80WQE50-8-2.2	80	40	11.1	10	2840	2.2	54	
			50	13.9					
			75	20.8					
19	80WQE50-10-3	80	40	11.1	12	2880	3	63	
			50	13.9					
			75	20.8					
20	80WQE50-15-4	80	40	11.1	18	2890	4	61	
			50	13.9					
			75	20.8					
21	80WQE50-20-5.5	80	40	11.1	22	2900	5.5	60	
			50	13.9					
			75	20.8					
22	80WQE50-25-5.5	80	40	11.1	26	2900	5.5	63	
			50	13.9					
			75	20.8					
23	100WQE80-7-3	100	65	18.1	9	2880	3	65	
			80	22.2					
			100	27.8					
24	100WQE80-10-4	100	65	18.1	14	2890	4	65	
			80	22.2					
			100	27.8					
25	100WQE80-13-5.5	100	65	18.1	16	2900	5.5	67	
			80	22.2					
			100	27.8					
26	100WQE80-18-7.5	100	65	18.1	20	2900	7.5	60	
			80	22.2					
			100	27.8					

WQE型泵安装方式 Type WQE pump installation method

1、自动耦合式安装

泵沿导杆放下，自动连接至排出管道系统。安装建筑费用极少，维修费用降低。

2、移动式硬管安装

泵由其底座支承，硬管接头与管路系统连接。

3、移动式软管安装

泵由其底座支承，软管接头与出水胶管相接，多用途，易于安装，水泵可轻易地从一个地方移到另一个地方。

1.Auto-coupled installation

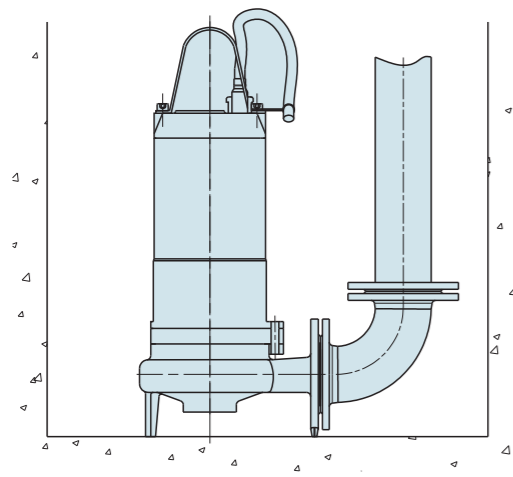
The pump is placed down along with the guide rod and auto-matically connected to the drainage pipeline system. Less cost for mounting and lowering the cost for repair.

2.Movable Hard Pipe installation

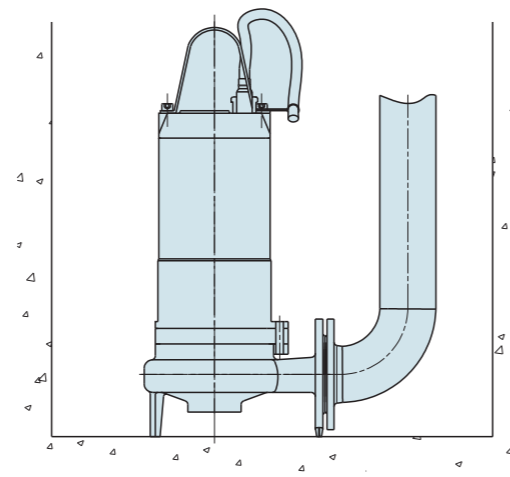
The pump is supported by its foundation, the hard pipe joint is connected to the pipeline system.

3.Movable Soft Pipe Installation

The pump is supported by its foundation, the soft pipe joint is connected to the outlet rubber pipe, of multiple purposes, easy to be mounted, the pump can be easily moved form one place to another.

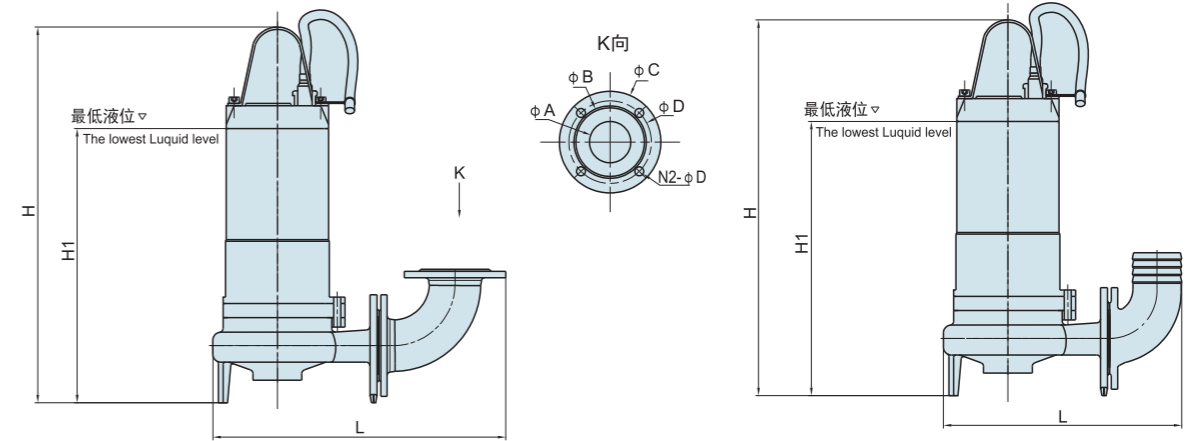


移动式硬管安装
Movable hard pipe installation



移动式软管安装
Movable soft pipe installation

WQE型安装尺寸表 Type WQE pump installation dimension table



硬管联接尺寸
Hard pipe connection dimension

软管联接尺寸
Soft pipe connection dimension

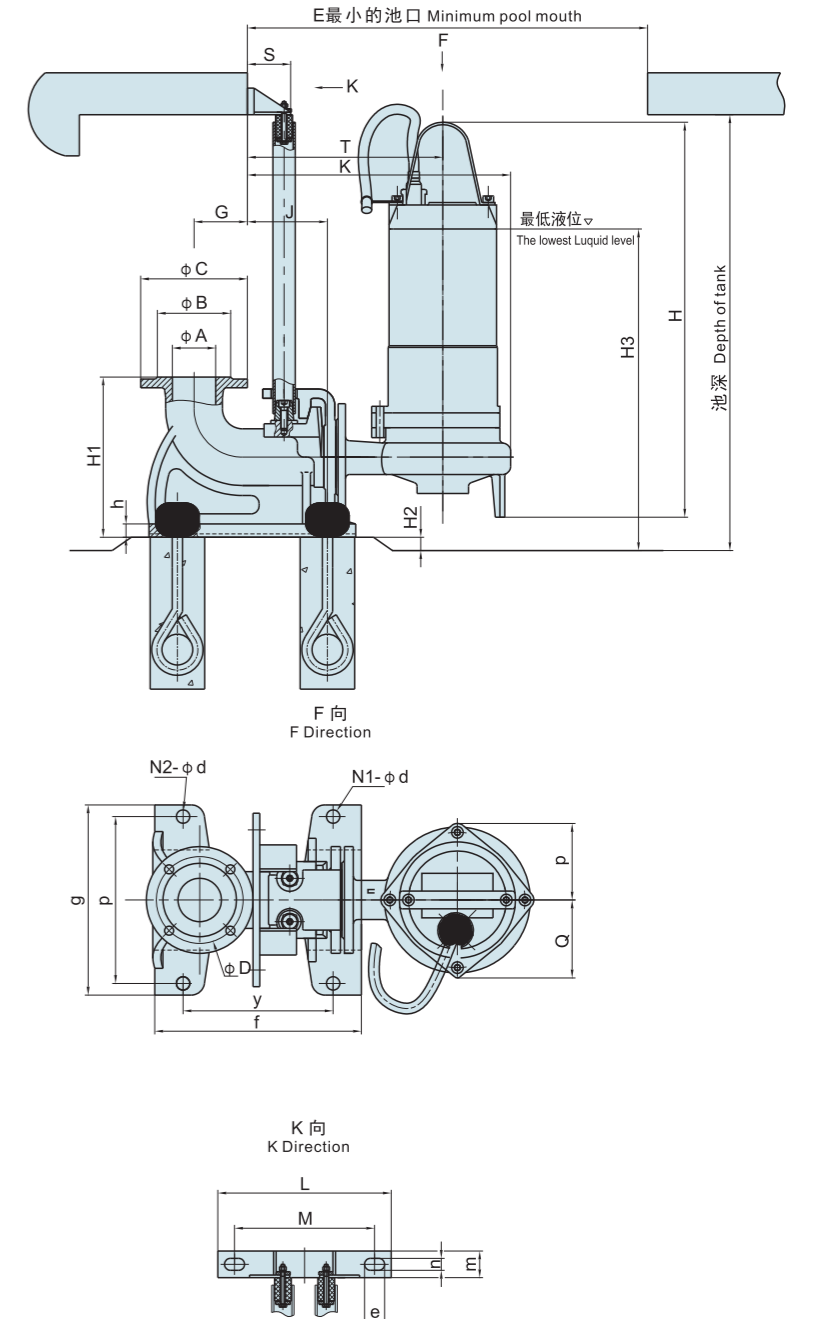
序号 No.	型号 Type	硬管联接尺寸 Hard pipe connection dimension							软管联接尺寸 Soft pipe connection dimension				
		φ A	φ B	φ C	φ D	N2-φ d	H	H ₁	L	φ D	L	H	H ₁
1	32WQE8-10-0.75	40	69	120	90	4-φ 13.5	484	355	352	26	290	484	355
2	32WQE8-15-1.1	40	69	120	90	4-φ 13.5	484	355	352	26	290	484	355
3	50WQE15-8-0.75	50	88	140	110	4-φ 14	507	378	376	50	309	507	378
4	50WQE15-12-1.1	50	88	140	110	4-φ 14	507	378	376	50	309	507	378
5	50WQE15-16-1.5	50	88	140	110	4-φ 14	548	419	408	50	341	548	419
6	50WQE15-22-2.2	50	88	140	110	4-φ 14	560	431	408	50	341	560	431
7	50WQE15-30-3	50	88	140	110	4-φ 14	609	480	431	50	364	609	480
8	50WQE25-25-3	50	88	140	110	4-φ 14	609	480	431	50	364	609	480
9	50WQE25-32-5.5	50	88	140	110	4-φ 14	668	539	466	50	399	668	539
10	50WQE25-36-5.5	50	88	140	110	4-φ 14	668	539	466	50	399	668	539
11	50WQE30-20-3	50	88	140	110	4-φ 14	609	480	431	50	364	609	480
12	65WQE30-10-1.5	65	108	160	130	4-φ 14	556	427	461	60	376	556	427
13	65WQE30-15-2.2	65	108	160	130	4-φ 14	568	439	461	60	376	568	439
14	65WQE30-22-4	65	108	160	130	4-φ 14	631	502	467	60	381	631	502
15	65WQE30-30-5.5	65	108	160	130	4-φ 14	668	539	517	60	431	668	539
16	65WQE30-35-7.5	65	108	160	130	4-φ 14	713	584	517	60	431	713	584
17	65WQE35-15-3	65	108	160	130	4-φ 14	598	469	461	60	374	598	469
18	80WQE50-8-2.2	80	124	190	150	4-φ 18	587	458	533	70	419	587	458
19	80WQE50-10-3	80	124	190	150	4-φ 18	616	487	533	70	419	616	487
20	80WQE50-15-4	80	124	190	150	4-φ 18	636	507	540	70	426	636	507
21	80WQE50-20-5.5	80	124	190	150	4-φ 18	713	584	572	70	458	713	584
22	80WQE50-25-5.5	80	124	190	150	4-φ 18	713	584	572	70	458	713	584
23	100WQE80-7-3	100	142	210	170	4-φ 18	635	506	581	85	468	635	506
24	100WQE80-10-4	100	142	210	170	4-φ 18	654	525	581	85	468	654	525
25	100WQE80-13-5.5	100	142	210	170	4-φ 18	713	584	590	85	477	713	584
26	100WQE80-18-7.5	100	142	210	170	4-φ 18	758	629	590	85	477	758	629

WQE型泵自动耦合安装尺寸表 Automatic coupling installation dimension table for WQE pump

序号 No.	型号 Type	φA	φB	φC	φD	N2-φd	H	H ₁	H ₂	H ₃	h	G	J	S	T	g	f	p	y	N1-φd
1	32WQE8-10-0.75	32	69	120	90	4-φ13.5	484	200	50	436	20	65	105	55	265	260	310	230	210	4×φ20
2	32WQE8-15-1.1	32	69	120	90	4-φ13.5	484	200	50	436	20	65	105	55	265	260	310	230	210	4×φ20
3	50WQE15-8-0.75	50	90	140	110	4-φ13.5	507	215	50	443	20	65	105	55	258	260	310	230	210	4×φ20
4	50WQE15-12-1.1	50	90	140	110	4-φ13.5	507	215	50	443	20	65	105	55	258	260	310	230	210	4×φ20
5	50WQE15-16-1.5	50	90	140	110	4-φ13.5	548	215	50	486	20	65	105	55	278	260	310	230	210	4×φ20
6	50WQE15-22-2.2	50	90	140	110	4-φ13.5	560	215	50	498	20	65	105	55	278	260	310	230	210	4×φ20
7	50WQE15-30-3	50	90	140	110	4-φ13.5	609	215	50	542	20	65	105	55	293	260	310	230	210	4×φ20
8	50WQE25-25-3	50	90	140	110	4-φ13.5	609	215	50	542	20	65	105	55	293	260	310	230	210	4×φ20
9	50WQE25-32-5.5	50	90	140	110	4-φ13.5	668	215	50	599	20	65	105	55	313	260	310	230	210	4×φ20
10	50WQE25-36-5.5	50	90	140	110	4-φ13.5	668	215	50	599	20	65	105	55	313	260	310	230	210	4×φ20
11	50WQE30-20-3	50	90	140	110	4-φ13.5	609	215	50	542	20	65	105	55	293	260	310	230	210	4×φ20
12	65WQE30-10-1.5	65	110	160	130	4-φ13.5	556	240	65	517	20	80	120	55	293	285	310	250	225	4×φ20
13	65WQE30-15-2.2	65	110	160	130	4-φ13.5	568	240	65	529	20	80	120	55	293	285	310	250	225	4×φ20
14	65WQE30-22-4	65	110	160	130	4-φ13.5	631	240	65	577	20	80	120	55	293	285	310	250	225	4×φ20
15	65WQE30-30-5.5	65	110	160	130	4-φ13.5	668	240	65	624	20	80	120	55	333	285	310	250	225	4×φ20
16	65WQE30-35-7.5	65	110	160	130	4-φ13.5	713	240	65	669	20	80	120	55	333	285	310	250	225	4×φ20
17	65WQE35-15-3	65	110	160	130	4-φ13.5	598	240	65	559	20	80	120	55	293	285	310	250	225	4×φ20
18	80WQE50-8-2.2	80	128	190	150	4-φ17.5	587	275	80	578	25	70	175	90	345	290	340	255	260	4×φ20
19	80WQE50-10-3	80	128	190	150	4-φ17.5	616	275	80	607	25	70	175	90	345	290	340	255	260	4×φ20
20	80WQE50-15-4	80	128	190	150	4-φ17.5	636	275	80	627	25	70	175	90	355	290	340	255	260	4×φ20
21	80WQE50-20-5.5	80	128	190	150	4-φ17.5	713	275	80	669	25	70	175	90	385	290	340	255	260	4×φ20
22	80WQE50-25-5.5	80	128	190	150	4-φ17.5	713	275	80	669	25	70	175	90	385	290	340	255	260	4×φ20
23	100WQE80-7-3	100	148	210	170	4-φ17.5	635	330	100	648	25	90	215	90	385	340	410	305	310	4×φ20
24	100WQE80-10-4	100	148	210	170	4-φ17.5	654	330	100	667	25	90	215	90	385	340	410	305	310	4×φ20
25	100WQE80-13-5.5	100	148	210	170	4-φ17.5	713	330	100	704	25	90	215	90	395	340	410	305	310	4×φ20
26	100WQE80-18-7.5	100	148	210	170	4-φ17.5	758	330	100	749	25	90	215	90	395	340	410	305	310	4×φ20

WQE型泵自动耦合安装尺寸表 Automatic coupling installation dimension table for WQE pump

P	Q	K	L	M	e	n	m	E
86	86	330	260	210	30	18	40	700×570
86	86	330	260	210	30	18	40	700×570
86	86	323	260	210	30	18	40	700×570
86	86	323	260	210	30	18	40	700×570
100	100	343	260	210	30	18	40	700×570
100	100	343	260	210	30	18	40	700×570
100	100	364	260	210	30	18	40	850×700
100	100	364	260	210	30	18	40	850×700
109	109	397	260	210	30	18	40	850×700
109	109	397	260	210	30	18	40	850×700
100	100	364	260	210	30	18	40	850×700
100	100	358	260	210	30	18	40	850×700
100	100	358	260	210	30	18	40	850×700
100	100	364	260	210	30	18	40	850×700
109	109	416	260	210	30	18	40	900×750
109	109	416	260	210	30	18	40	900×750
100	100	364	260	210	30	18	40	900×750
100	100	410	380	320	30	18	40	850×700
100	100	416	380	320	30	18	40	850×700
100	100	426	380	320	30	18	40	850×700
109	109	469	380	320	30	18	40	900×750
109	109	469	380	320	30	18	40	900×750
100	100	456	380	320	30	18	40	900×750
100	100	456	380	320	30	18	40	900×750
109	109	479	380	320	30	18	40	900×750
109	109	479	380	320	30	18	40	900×750



使用、检查与维修 Use, check and service

1、使用注意事项

泵不宜在易燃、易爆的介质环境中使用，也不宜抽送可燃性液体。

严禁撞击、压延电缆，严禁将电缆线当起吊绳使用。泵运行时不得随意拉扯电缆，以免损坏电缆发生触电事故或降低电缆密封性、降低电机接线腔绝缘性能。

当采用固定式自动耦合安装时，用吊链拴住提手，上下起吊泵，注意轻起轻放。

泵放入水中时应垂直起吊，不允许横放着地，更不能陷入污泥中。

吐出管路上应装流量调节阀，避免流量过大导致电机过载。

2、使用前的检查

仔细检查泵在运输、存放、安装过程中有无变形或损坏，紧固件是否松动或脱落。

检查电缆线有无破损、折断，电缆线的引出口密封是否完好，发现有可能漏电及密封不良之处应及时妥善处理。

用500V兆欧表测量电机相间和相对地间的绝缘电阻，其值不应低于50兆欧，否则应对电机定子绕组进行干燥处理，干燥处理的温度不得超过120℃。

检查油室上的螺塞和密封垫片是否齐全。检查螺塞是否已将密封垫片压紧。

检查叶轮转动是否灵活。

检查电源装置是否安全可靠、正常、检查电缆中的接地线是否已可靠接地。

泵放入池中之前须先进行点动检查转向是否正确，如转向不对，应立即切断电源，调换电控柜中接U、V、W的三相电缆中的任意两相。

1.Precautions at use

It is not proper to use the pump in a medium environment easy to explode and burn and to extract any combustible liquid.

It is strictly prohibited to impact or press the cable and use it as a lifting rope, and pull it at will when the pump is running so as not to damage it, which may result in an electric shock, or lowering the cable sealness, or the insulation performance of the wiring box of the motor.

When to use the way of fixed automatic coupling installation, lift or lower down the pump with the screw of the two hand ring and take care to handle it.

The pump has to be vertically lifted when it is placed in water and not horizontally landed, further more, not sunk into sludge.

A flow regulating valve must be equipped with the spitting pipeline to avoid overload of the motor due to a too heavy flow.

2.Check before use

Carefully check if there is any deformation or damage with the pump and any looseness or fall-off with the fasteners during transport, storage and installation.

Check if any damage or fracture with the cable, if the seal on its outlet intact and make a proper treatment in time if any possible leakage or bad seal is found.

Measure the dielectric resistance between the phases and between the phase and ground with a 500V megohm 2 meter, the value of which has not to be lower than megohm, otherwise a drying treatment must be taken for the stator winding of the motor with a temperature not over 120℃.

Check if there is oil in the oil chamber and do not stop filling it until it overflows on the filler.

Check if the screw cork and sealing pad on the oil chamber are full and if the screw cork presses the sealing pad tightly.

Check if the impeller rotates flexibly.

Check if the power device safe, reliable or normal and if the grounding wire inside of the cable reliably grounded.

Before placing the pump in the pool, check if it is in a correct. Direction of rotation by way of dot moving and cut off the power and change the U, V, W three wires with any two of which in the electric control cabinet if not correct.

3、启动

启动时应关闭吐出管路上的流量调节阀，当泵全速运转后再逐渐打开阀门。注意不能长时间在该阀门关闭的情况下运转。

4、停车

当泵停用预计达半月以上时，应将泵吊起清洗并置于干燥处。当气温较低时，应将泵提出水面并排尽泵内液体，防止冰冻。

5、定期检查

电机相间和相对地间绝缘电阻，其值不低于50兆欧，否则应拆机检修，同时应检查接地是否牢固可靠。

泵在规定的工作介质条件下正常运行半年后，应检查油室状况，如油室中的油呈乳化状态，应及时更换N10机械油。如果换油运行很短时间漏水检测探头立即报警，可能泵侧机械密封已经损坏，应更换机械密封。对于在恶劣工作条件下使用的泵，更应经常检修。

在工作条件下泵工作一年后，应进行一次大修，更换已磨损的易损件并检查紧固件，同时应补充或更换轴承润滑脂，保证泵在运行中的良好润滑。

需拆卸时不得猛敲猛打以免损坏密封件。非熟练技工不要随便拆卸泵以免造成泵泄露或电机损坏。

3.Starting

Close the flow regulating valve on the spitting pipeline at starting and gradually open it when the pump gets in the full speed running. Note the pump can not run for a long time with the valve closed.

4.Stopping

Lift the pump, clean it and place it in a dry place when intended not to use it up to half a month and lift it out of the water and let the liquid inside of it drain out to prevent it from being frozen when the temperature is very low.

5.Check

Periodically check the dielectric resistance between phases and between phase and ground, the value of which should not be lower than 2 megohm, otherwise it has to be removed to overhaul, and, at the same time, check if the grounding is secured and reliable.

After half a year running of the pump under the provided working medium condition, check the state of the oil chamber and replace it with N10 mechanical oil if it shows emulsified state. It is possible that the mechanical seal on the pump. Side is made damaged when the leakage probe gives a warning with the pump running for a short time after the oil replacement and replace it at once. More often check the pump when it is used under a very adverse working condition.

After one year work of the pump under the normal working condition, a big overhaul must be taken for replacing the worn-out parts, checking the fasteners and supplementing or replacing the grease on the bearing so as to ensure a good lubrication of the pump during its running.

To disassemble, do not knock at it at will in order to avoid damaging the seal and do not allow non-skilled persons to do that in order not cause it leaking or the motor damaged.

故障原因及排除方法 Failures cause and troubleshooting

故障现象 Failure	可能产生的原因 Possible causes	排除方法 Troubleshooting
1、流量不足或不出 Flow not enough or not water out	a)叶轮反转 Impeller reversedly rotates b)流道堵塞 Geat blocked up c)被抽介质浓度过大 Too high concentration of the medium to be extracted d)装置扬程太高 Too high head e)叶轮严重磨损 Impeller seriously worn out	a)纠正电机转向 Correct its direction b)清除杂物 Get rid of foreign matters c)用水冲稀降低浓度 Get it thinned with water d)改泵或降低装置扬程 Change the pump or lower the head e)更换叶轮 Replace it
2、不能启动 Unable to start	a)缺相 Lack of phase b)叶轮卡住 Impeller blocked c)绕组接头或电缆断路 Circuit breaking of winding joint or cable d)定子绕组烧坏 Stator winding burnt e)电器控制故障 Electric control fault	a)检查线路 Check the circuit b)清除杂物 Get rid of foreign matters c)用欧姆表检查修复 Check and repair with an ohmmeter d)进行修理，更换绕组 Repair or replace it e)检查控制柜，修理后调换电器零件 Check electric control cabinet and replace faulty components
3、定子烧坏 Stator burnt	a)缺相运行 Running with phase lack b)被抽介质浓度过大 Too high concentration of the medium extracted c)叶轮卡死或松动 Impeller blocked or loose d)密封损坏电机进水 Seal damaged and water going in the motor e)紧固件松动造成电机进水 Fasteners loose to make water in the motor	修理好电机后，使用前必须： After repair, it is required before use: a)查清线路，清除故障 To check the circuit and clear off the failures b)用水稀释 Get it thinned with water c)清除脏物，拧紧叶轮固螺钉 Get rid of dirt, tighten the screws on impeller d)更换机械密封或“O”型密封圈 Replace mechanical seal or "O"-ring seal e)拧紧各部紧固件 Tighten fasteners on every part
4、电流过大 Too heavy current	a)管道、叶轮被堵 Pipeline, impeller blocked up b)抽送液体的密度或粘度较高 Too high density or viscosity of the liquid extracted c)流量过大 Too heavy flow	a)清理管道和叶轮中的堵塞物 Clear up both b)改变抽送液体的密度或粘度 Change either of both c)关小出口阀，减小流量 Close the outlet valve a little to reduce the flow

管路损耗参考表 Reference table for pipeline loss

管径 Pipe diameter (mm)	流量 Capacity(L/s)									
	1	2	4	6	8	10	15	20	25	30
25	32.7	13.0								
38	3.5	14	55							
50	0.8	3.1	13	29						
65		1.6	3.2	7.1	13	20				
75		0.4	0.8	3.3	5.9	9.6	21.6			
100			0.23	0.8	1.3	2.1	6.8	8.6	13	19.4
125				0.23	0.4	0.63	1.3	2.7	4.1	5.9
150					0.16	0.26	0.58	1.1	1.6	2.3
175						0.11	0.27	0.5	0.74	1.05
200							0.13	0.26	0.37	0.53
250								0.07	0.12	0.18
300									0.12	0.19
									0.27	0.37
									0.48	0.68
									1.5	2.1
									2.9	4.3
									4.2	6.4
									6.4	9.4
									9.4	13.0
									120	160
									130	180
									140	200
									160	240
									180	280
									200	300

直管摩擦损失简表(估计用)100m直管损失米数以新铸铁管为标准，旧管加倍。
Brief table for the frictional loss of a straight pipe(for evaluation),the lost meters of a 100m straight pipe takes the newly iron pipe as the standard and multiple for the old one.

一定管路直径之最大流量限制
Limit of the maximum flow for a pipe with a certain diameter

管径 Pipeline diameter (mm)	最大流量 Maximum flow (L/s)	最大流速 Maximum flow rate (m/s)
25	1	2.04
38	2.5	1.69
50	4.17	2.12
65	6.67	2.01
75	10.0	2.26
100	18.4	2.33
125	30.0	2.44
150	43.0	2.45
175	60.0	2.49
200	83.3	2.69
250	133.0	2.72
300	192.0	2.71

注：超过此限使管路损失显著增加。
Note: The pipeline loss would be made greatly increased once the limit is over.

阀及弯管折合直管长度(每个)
The length of a straight pipe converted into from both valve and elbow(each)

种类 Variety	折合直管直径倍数 Convert into the times of the diameter of a straight pipe	备注 Remark
标准弯管 Standard elbow	12	未畅开加倍 Multiple in case of unopen
全开闸阀 Fully opened gate valve	25	
截止阀 Back valve	100	
底阀 Foot valve	100	部分堵塞加倍 Partial block-up multiplied

注：例如100mm直管，底阀折合100倍直径等于100×100=10000mm=10m直径长度，假定流量为8L/s查上表，直管每100m损失1.3m，则10m损失0.13m，即一个100mm底阀，流量为8L/s时，损失扬程0.13m。

Note: For instance, a 100mm diameter pipe, the foot valve has a 100×100=10000mm=10m diameter when which is converted into 100 times that of the pipe's diameter. Suppose the flow is 8L/s. Looked into the above table, the loss of the straight pipe is 1.3m each 100m, then the one for 100mm is 0.13m, that is, for a 100mm foot valve with a flow 8L/s, its head low is 0.13m.