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R e s e r v e s t h e r i g h t t o c h a n g e t e c h n o l o g i c a l i n n o v a t i o n s . I f t h e r e i s a c h a n g e , n o n o t i c e w i l l b e g i v e n .



为了您的使用和安全，使用前请自吸阅读说明书
FOR YOUR SECURITY, READ THE INTRODUCTION CAREFULLY BEFORE USING

“科技创新，真诚奉献，互惠互利，共同发展。”
T e c h n o l o g i c a l I n n o v a t i o n , S i n c e r e D e d i c a t i o n , M u t u a l B e n e f i t a n d C o m m o n D e v e l o p m e n t .



QJB 系列潜水搅拌机 / QDT 系列低速推流器

QJB SERIES SUBMERSIBLE MIXER / QDT SERIES LOW-SPEED FLOW PROPELLER



上海渠江流体设备有限公司
SHANGHAIQUJIANG FLUID EQUIPMENT CO.,LTD.

QJB 系列潜水搅拌机 / QDT 系列低速推流器

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产品介绍 Product Description

QJB型潜水搅拌机作为水处理工艺中的关键设备之一，在水处理工艺流程中，可实现生化过程中固液二相流和固液气三相流的均质、流动的工艺要求。它由潜水电机、叶轮和安装系统等组成。潜水搅拌机为直联式结构，它与传统的大功率电机通过减速机降速相比，具有结构紧凑、能耗低、便于维护保养等优点。叶轮经过精铸或冲压成型，精度高、推力大，流线型造型简洁美观。该系列产品适用于需要固液搅拌、混合的场所。结构简图如下。

Model QJB Submersible Mixer, a key equipment used in the water treatment technology, can meet the technological requirement on the homogeneity of the two-phase solid-liquid flow and three-phase solid-liquid-gas flow and the fluidity in the bio-chemical process in the flow path of the water treatment technology. It is composed of the submersible motor, vanes, installation system and so on. The submersible mixer belongs to the structure of the direct connection type. In comparison with the traditional high-power electric motor for speed reduction through the speed reducer, it is characterized by compact structure, low energy consumption, convenience in maintenance and repair and some other advantages. The vanes are made with the process of precision casting or punching, leading to high precision, large thrust as well as simple, nice-looking and streamlined profiling. The series of the products are suitable for usage in such locations as requiring solid-liquid agitating or mixing. The schematic drawing of the structure is shown as follows:

两道独立的机械密封，保证潜水电机长期可靠运行
The two rows of independent mechanical sealing ensure the long-term and reliable operation of the submersible motor.

高质量进口一次性润滑轴承，设计使用寿命8000小时
The imported high-quality one-service lubricated bearings have the designed service life of 8,000 hours.

独特的电缆密封设计，排除了电缆漏水的隐患。电缆防护装置，使之不被叶轮隔断。
The unique sealing design for the cables removes the hidden "danger of water leakage for the cables."

多年生产潜水电机的技术，端面不采用密封胶，使潜水电机运行更可靠
Diving for many years the production of electrical technology, end-do not use sealant to make diving more reliable motor.

不锈钢、碳刚精铸焊接叶轮，经优化设计叶片呈后掠式，效率高，具有自洁功能。
The welded precision-cast stainless steel and carbon steel vanes are of the swept-back shape through the optimized design, resulting in high efficiency and self-cleaning function.

电机轴采用不锈钢材质，转子经动平衡检测，运转平稳。
The shaft of the motor employs the stainless steel; and the rotors are inspected with the use of dynamic balancing, leading to smooth rotation.

内部可设有泄漏传感器和定子绕组超温保护报警装置（选件）
The in-built leakage sensor and the alarming device for the over-temperature protection for the windings of the stator.

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产品介绍 Product Description

QDT型低速推流器，在水处理工艺流程中，广泛应用于氧化沟推流，各类生化池的搅拌，同时也可用于河流防冻，景观水循环等。低速推流器由潜水电机、减速装置、叶轮和安装系统等组成。其特点是配套功率小（1.5~7.5Kw），转速低（36~135r/min），叶桨直径大（1000~2500mm），低速旋转，产生大体积流场，服务范围广。后掠式香蕉型叶桨设计，具有自洁功能，采用聚氨酯或铝合金材质精铸成型，具有重量轻，强度高，耐腐蚀等优点，其优异的摩擦性能，可保证在低转速的运动状态下于液体产生良好的阻尼效果，从而创建出柔和的水流。该系列产品除了具有推流和创建水流的作用外还具搅拌功能。如图。

Model QDT low-speed flow propeller is extensively used for the flow propelling in the oxidizing ditches in the technological process of the water treatment, agitation in various types of bio-chemical tanks and also used in the mixing and flow propelling for freezing prevention in the rivers, landscape water cycling and so on. The low-speed flow propeller consists of the submersible motor, speed-reducing device, vanes, installation system, etc. The product is characterized by low power(1.5~7.5KW), low rotational speed(36~135rpm), large diameter of the vanes(1000~2500mm), low-speed rotation, production of large-volume flow field and wide scope of service. The swept-back, banana-shaped vanes have the self-cleaning function, being shaped with the use of PU or aluminum alloy through precision casting and having such advantages as light weight, high strength, good resistance against corrosion and so on. Its excellent frictional property can ensure the production of the good damping effect with relation to liquid under the moving state of low rotational speed so as to create the gentle water flow. The series of products have also the mixing function apart from the flow propelling and creation of water flow as shown in the drawing.

桨叶由弹性聚氨酯或铝合金制成，能承受变化的负荷，推力被平均分配到混合物上，具最佳水力设计
The vanes are made of elastic polyurethane or aluminum alloy, resulting in the ability for bearing the varying load, the equalized distribution of the propelling power onto the mixed substances and the availability of the optimized hydraulic design

两套独立的机械密封，保证潜水电机长期可靠运行
The two rows of independent mechanical sealing ensure the long-term and reliable operation of the submersible motor.

独特的电缆密封设计排除了电缆漏水的隐患
The unique sealing design for the cables removes the hidden "danger of water leakage for the cables."

所有接触介质的紧固件均采用不锈钢材质
All the tightening devices for the contact media employ the stainless-steel material.

减速装置
Speed-reducing device

进口的高质量一次润滑轴承，设计使用寿命8000小时
The imported high-quality, lubricated bearings designed service life of 8,000 hours

内部设有泄漏传感器和电机绕组超温保护报警装置
The in-built leakage sensor and the alarming device for the over-temperature protection for the windings of the motor

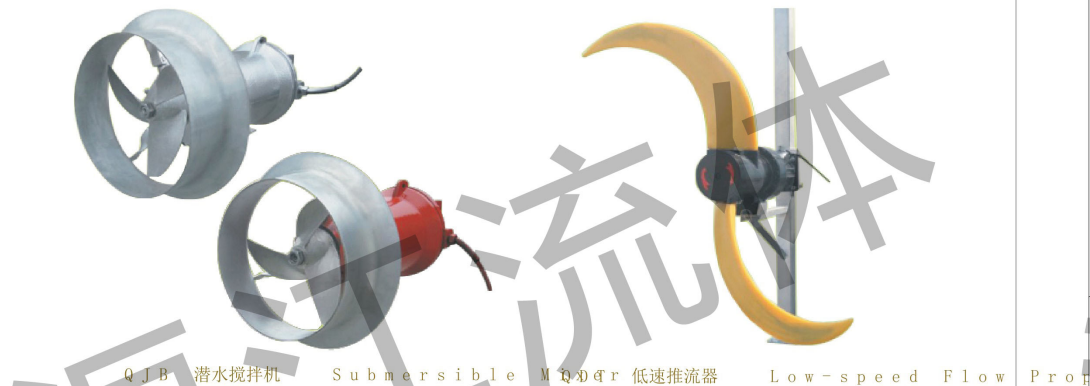
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应用范围 Scope of Application

潜水搅拌机主要运用在市政和工业污水处理过程中的混合、搅拌和环流，也可用作景观水环境的养护设备，通过搅拌达到创建水流的作用，改善水体质量，增加水中含氧量，有效阻止悬浮物沉积。

The submersible mixers are mainly used for the purposes of mixing, agitating and making ring flows in the process of municipal and industrial sewage treatment and can also be used as the maintenance equipment for the landscape water environment; through agitation, they can achieve the function of creating water flow, improving the quality of the water body, increasing the oxygen content in water and effectively preventing the sedimentation of the suspended substances.



使用条件 Conditions of Usage

为了保证潜水搅拌机的正常工作，请正确选择工作环境和运行模式。

In order to ensure the normal operation of the submersible mixer, please make correct selection of the operating environment and the operating modes.

最高介质温度不超过40℃；

The highest temperature of the media shall not exceed 40℃；

介质密度不超过1150Kg/m³；

The density of the media shall not exceed 1150Kg/m³；

介质的PH值范围：5~9；

The scope of the PH value of the media: 5~9；

潜水深度不超过10m。

The depth of submersion shall not exceed 10m.



特别提示：潜水搅拌机必须完全潜入水中工作，不能在易燃易爆和强腐蚀性及高温的环境中工作。针对特殊环境下的要求，我公司可为用户提供特殊设计。

Special Warning: The submersible mixer must operate in the complete submersion into water and cannot operate in the inflammable, explosive, highly corrosive and high-temperature environment. In line with the requirement for the special environment, our company can provide the special design to the users.

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性能参数 Performance Parameters

潜水搅拌机在额定电压为380伏，频率为50Hz的性能参数如下表：

The performance parameters of the submersible mixer show in the following table at a rated voltage of 380V and a frequency of 50Hz:

	型号 Model	电机功率 (KW) Motor power	额定电流 (A) Rated current	叶轮转速 (r/min) Rpm of fan	叶轮直径 (mm) Diameter of fan	推力 (N) Thrust	重量 (kg) Weight
Submersible mixer 潜水搅拌机	QJB0.85/8-260/3-740/S	0.85	3.2	740	260	163	55/65
	QJB1.5/6-260/3-980/S	1.5	4	980	260	290	55/65
	QJB2.2/8-320/3-740/S	2.2	5.9	740	320	582	88/93
	QJB4/6-320/3-960/S	4	10.3	960	320	609	88/93
	QJB1.5/8-400/3-740/S	1.5	5.2	740	400	600	74/82
	QJB2.5/8-400/3-740/S	2.5	7	740	400	800	74/82
	QJB3.8/8-400/3-740/S	3	8.6	740	400	920	74/82
	QJB4/6-400/3-980/S	4	10.3	980	400	1200	74/82
	QJB4/12-620/3-480/S	4	14	480	620	1400	190/206
	QJB5/12-620/3-480/S	5	18.2	480	620	1800	196/212
	QJB7.5/12-620/3-480/S	7.5	28	480	620	2600	240/256
	QJB10/12-620/3-480/S	10	32	480	620	3300	250/266
Low-speed flow propeller 低速推流器	QDT1.5/4-1100/2-85/P	1.5	4	85	1000	1780	170
	QDT3/4-1100/2-135/P	3	6.8	135	1100	2410	170
	QDT1.5/4-1400/2-36/P	1.5	4	36	1400	696	180
	QDT2.2/4-1400/2-42/P	2.2	4.9	42	1400	854	180
	QDT2.2/4-1600/2-36/P	2.2	4.9	36	1600	1058	190
	QDT3/4-1600/2-52/P	3	6.8	52	1600	1386	190
	QDT3/4-1800/2-52/P	1.5	4	42	1800	1480	198
	QDT4/4-1800/2-63/P	3	6.8	52	1800	1946	198
	QDT4.4/4-1800/2-63/P	4	9	63	1800	2750	198
	QDT2.2/4-2000/2-36/P	2.2	4.9	36	2000	1459	200
	QDT4/4-2000/2-52/P	4	9	52	2000	1960	200
	QDT4/4-2200/2-52/P	4	9	52	2200	1986	220
	QDT5/4-2200/2-63/P	5	11	63	2200	2380	230
	QDT1.3/4-2500/2-36/P	3	6.8	36	2500	2380	230
	QDT4/4-2500/2-42/P	4	9	42	2500	2350	250
	QDT5/4-2500/2-52/P	5	11	42	2500	3090	250
	QDT7.5/4-2500/2-63/P	7.5	15	63	2500	4275	280

注：1、上表混合搅拌系列中，“重量”一列所标的数值为含导流罩的重量；

2、电机绕组绝缘等级：F级，防护等级：IP68，电机工作制式：24小时连续工作。

Notes of the mixed agitating series in the above table, the value is the weight of the guide vane included.
Insulation class for the windings of the motor: Class F; Protection grade of the motor: IP68; Operating mode of the motor: Continuous operation.

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型号表示方式 Mode of Model Denotation

QJB / QDT □ - □ / □ - □ / □

材质: S—不锈钢; P—叶桨为聚氨酯

Material: S—stainless steel; P—Vanes are

额定转速 (r/min) Rated rotational speed (rpm)

叶片数 Number of vanes

叶轮(桨)直径 Diameter of the vane or propeller

电机级数 Cascade number of the motor

电机额定功率 (KW) Rated power of the motor (KW)

QJB 潜水搅拌机 Submersible Mixer

QDT 低速推流器 Low-speed Flow Propeller

选型参考 Information for Model Selection

潜水搅拌机的选型是一项比较复杂的工作, 选型方案的正确与否直接影响到设备的正常使用, 作为选型的原则就是要让搅拌机在适合的容积里发挥充分的搅拌功能, 这个标准一般可用流速来确定。根据污水处理厂的不同工艺要求, 搅拌机选型的最佳流速应保证在 $0.15\sim 0.3\text{m/s}$ 之间, 如果低于 0.15m/s 的流速则达不到推流搅拌的效果, 如果超过 0.3m/s 的流速则会影响工艺效果且造成浪费。所以在选型前, 首先确定潜水搅拌机运用在什么场所, 如: 污水池、污泥池还是生化池; 其次是介质的参数, 如: 悬浮物含量、温度、PH值等; 还有水池的形状、水深甚至安装方式等都将对选型产生影响, 同时还应考虑到节能因素, 因为这将会影响到用户今后的运行成本。可参考下面的潜水搅拌机流场图。

为了满足在不同的环境下都能达到最佳的搅拌功能, 我们为用户提供了多种型号的潜水搅拌机, 同时可提供选型服务。

The model selection of the submersible mixer is a rather complicated job. The correctness of the scheme selection will directly affect the normal usage of the equipment. The principle for the model selection is to enable the mixer to give full play to its mixing function in the appropriate volume. This standard can generally be determined with the use of the flow velocity. In line with the different technological requirement of the sewage treatment, the optimum flow velocity for the mixer model selection shall ensure the velocity range of $0.15\sim 0.3\text{m/s}$. In case of the flow velocity lower than 0.15m/s , the effect of agitation or mixing can not be achieved. In case of the flow velocity greater than 0.3m/s , the technological result will be affected and waste will be caused. Therefore, first of all, it is necessary to determine what kind of locations the mixer will be used in, for instance, sewage tank, slag pond or bio-chemical pond. Secondly, the parameters of the media such as content of the suspended substances, temperature, PH value as well as the shape of the pond, water depth and even the mode of installation and so on will all influence the model selection. Meanwhile, it is also necessary to consider the energy-saving factor, because this will affect the operating cost of the users in the future. Reference can be made to the diagrams of the flow field of the submersible mixer. For the purpose of obtaining the optimum mixing function under the different environments, we can supply a multiple of models of the submersible mixers to the users and provide the model selection service.

QJB 系列潜水搅拌机 / QDT 系列低速推流器

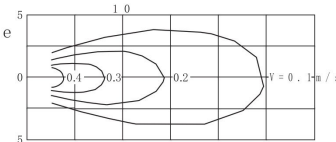
QJB SERIES SUBMERSIBLE MIXER / QDT SERIES LOW-SPEED FLOW PROPELLER

潜水搅拌机流场图 Diagrams of the Flow Field of the Submersible Mixer

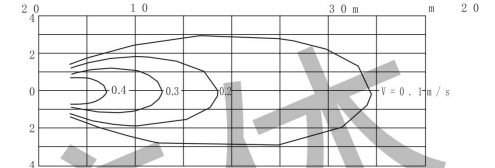
该流速场是在清水中边界水流速度 $V=0.1\text{m/s}$

The flow velocity fields are located in the clear water with

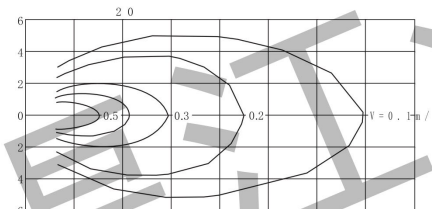
QJB0.85/8, QJB1.5/6, QJB1.5/8



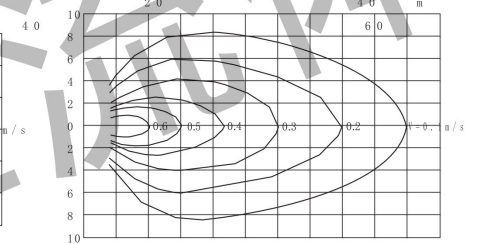
QJB2.2/8, QJB4/6-320, QJB2.5/8, QJB3/8, QJB4/6-400



QJB4/12, QJB5/12

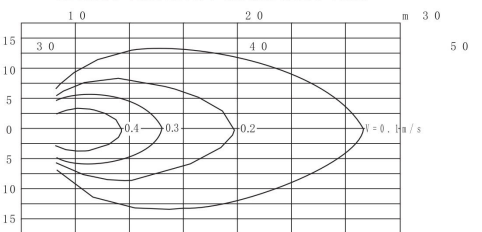
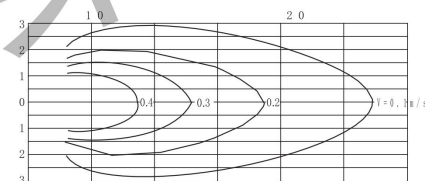


QJB7.5/12, QJB10/12

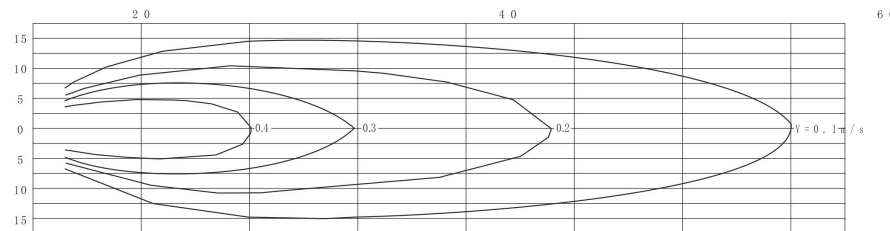


QDT1.5/4-1800, QDT1.5/4-2500, QDT1.5/4-1400
QDT2.2/4-1400, QDT3/4-1600, QDT2.2/4-1600,

QDT3/4-1100, QDT1.5/4-1100



QDT5/4-2200, QDT4/4-2200, QDT2/4-2000, QDT2.2/4-2000
QDT3/4-1800, QDT4/4-2500, QDT4/4-1800, QDT5/4-2500, QDT7.5/4-2500



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安装方式及尺寸 Installation Modes and Dimensions

潜水搅拌机可以有多种安装方式，这里提供四种最通用的方式供选择，尺寸可参考下表。我公司还可以根据用户的要求作特殊设计。

The submersible mixers can be installed in a multiple of modes. Here are four generally accepted modes of installation for selection with reference made to the following table. Our company can also provide the special designs in accordance with the demand of the users.

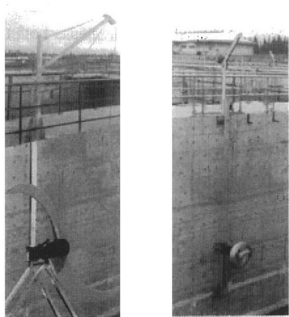
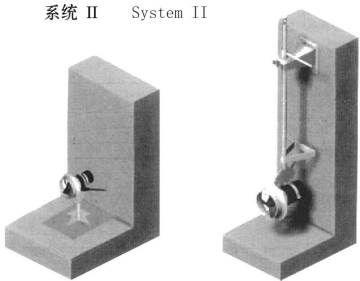
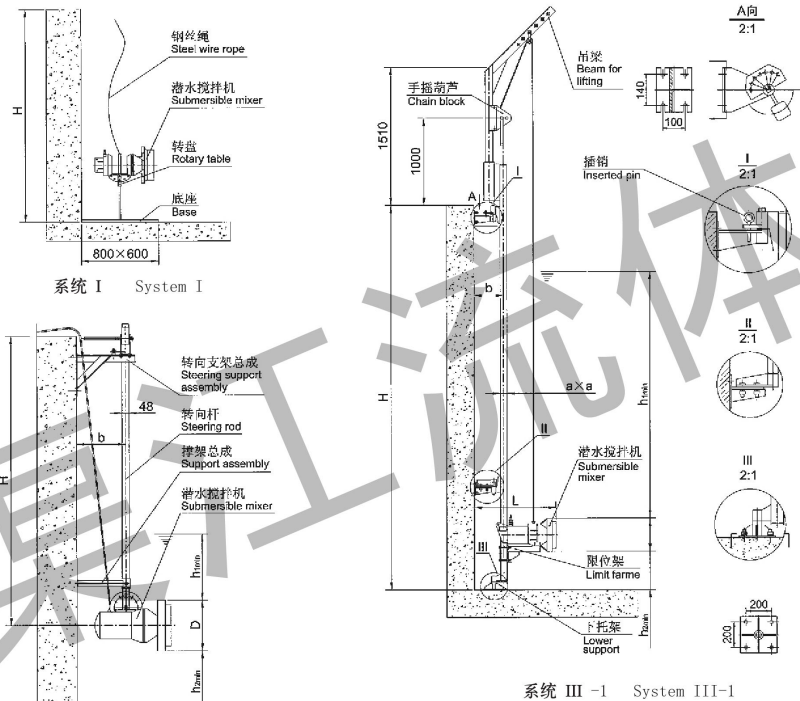
型号 Model	a	D	b	L	h _{1m} in	h _{2m} in	安装系统 Installation system
QJB0.85/8	40	360	330	630	500	500	I
QJB1.5/6	40	360	330	630	500	500	I
QJB2.2/8	70	460	320	970	800	800	II
QJB4/6	70	460	320	970	800	800	II
QJB1.5/8	70	530	320	960	500	500	II
QJB2.5/8	70	530	320	960	500	500	II
QJB3/8	70	530	320	1010	800	800	II
QJB4/6	70	530	320	1010	800	800	II
QJB4/12	70	820	335	1150	1100	1100	III-1, III-2
QJB5/12	70	820	335	1150	1100	1100	III-1, III-2
QJB7.5/12	Φ70	820	335	1280	1500	1500	III-1, III-2
QJB10/12	Φ70	820	335	1280	1500	1500	III-1, III-2
QDT1.5/4-1000	Φ40	1000	200	1240	1000	1000	III-1, III-2, IV
QDT3/4-1100	Φ50	1100	200	1240	1000	1000	III-1, III-2, IV
QDT1.5/4-1400	Φ40	1400	200	1212	750	750	III-1, III-2, IV
QDT2.2/4-1400	Φ40	1400	200	1212	750	750	III-1, III-2, IV
QDT2.2/4-1600	Φ40	1600	200	1212	750	750	III-1, III-2, IV
QDT3/4-1600	Φ50	1600	200	1250	800	800	III-1, III-2, IV
QDT2.2/4-1800	Φ40	1800	200	1212	800	800	III-1, III-2, IV
QDT3/4-1800	Φ50	1800	200	1250	800	800	III-1, III-2, IV
QDT4/4-1800	Φ50	1800	200	1250	900	900	III-1, III-2, IV
QDT2.2/4-2000	Φ40	2000	200	1340	750	750	III-1, III-2, IV
QDT4/4-2000	Φ50	2000	200	1370	800	800	III-1, III-2, IV
QDT4/4-2200	Φ50	2200	200	1370	800	800	III-1, III-2, IV
QDT5/4-2200	Φ70	2200	200	1370	800	800	III-1, III-2, IV
QDT3/4-2500	Φ50	2500	200	1340	750	750	III-1, III-2, IV
QDT4/4-2500	Φ50	2500	200	1370	800	800	III-1, III-2, IV
QDT5/4-2500	Φ70	2500	200	1370	800	800	III-1, III-2, IV
QDT7.5/4-2500	Φ70	2500	200	1430	850	850	III-1, III-2, IV

- 注：1、潜水搅拌机的专用安装系统，可在无需排出池中污水的情况下，快速安装和拆卸潜水搅拌机；
2、安装系统I-1只适用于池深 < 4m，机型为QJB0.85/8和QJB1.5/6，且可在水平方向和垂直方向调节角度；
当池深 > 4m时，应选用安装系统I-2型；
3、安装系统II、III导杆可沿水平方向绕导杆轴线旋转，最大转角为 ±60° ；
4、当H > 4m时需，在导杆中间添加一支撑架；
5、支撑架和下托架与池壁，池底均用膨胀螺栓或化学锚栓固定，无需预留孔；
6、客户订货时，请提供池深H及池型图，以便确定导杆尺寸和支撑架个数；
7、安装系统材质采用不锈钢和碳钢防腐可供选择；
8、多台搅拌机可共用一套起吊系统。

QJB 系列潜水搅拌机 / QDT 系列低速推流器

QJB SERIES SUBMERSIBLE MIXER / QDT SERIES LOW-SPEED FLOW PROPELLER

安装系统 Installation System



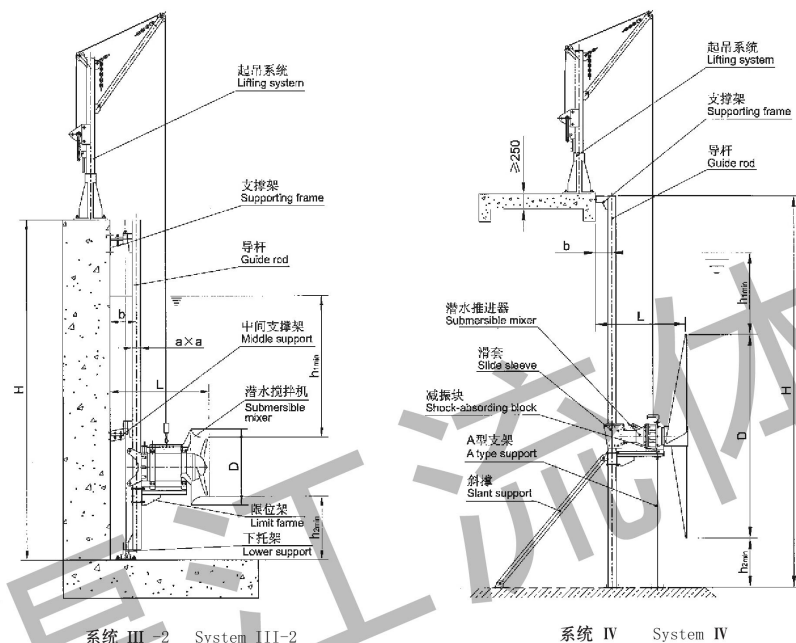
安装须知：导杆、钢丝绳、起吊系统必须保持平行！

Installation Notes: guide rod, steel wire rope, l

QJB 系列潜水搅拌机 / QDT 系列低速推流器

QJB SERIES SUBMERSIBLE MIXER / QDT SERIES LOW-SPEED FLOW PROPELLER

安装系统 Installation System



系统 III-2 System III-2

系统 IV System IV

安装须知：导杆、钢丝绳、起吊系统必须保持平行！

Installation Notes: guide rod, steel wire rope, lifting

Notes:

- The special installation systems for the submersible mixers can facilitate the quick installation and dismantling of the submersible mixers under the conditions of no need for draining off sewage from the pond.
- Installation System I-1 is only suitable for the pond depth <4m and the mixer models of QJB0.85/8 and QJB1.5/6 and with the possibility of adjusting the angles in both the horizontal and longitudinal directions. With the depth >4m, the installation system I-2 shall be chosen.
- For Installation Systems II and III, the guide rod can rotate round the axial line of the guide rod along the horizontal direction with the maximum angle of rotation $\pm 60^\circ$.
- With $H > 4m$, it is necessary to add a supporting frame between the guide rods.
- The supporting frame and the lower support shall be fixed onto the pond wall and the pond bottom with the use of expansion bolts or chemical anchors; any pre-prepared holes can be dispensed with.
- While placing an order by customer, please supply the pond depth H and the drawing of the pond shape so as to determine the dimensions of the guide rod and the number of the supporting frames.
- The installation systems may employ the material of stainless steel or carbon steel for the selection of the corrosion-resisting properties.
- A multiple of mixers can share one lifting system.

QJB 系列潜水搅拌机 / QDT 系列低速推流器

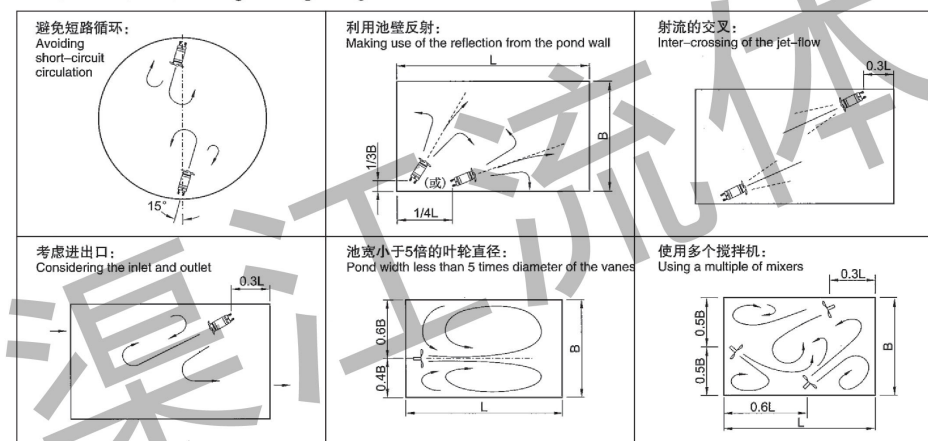
QJB SERIES SUBMERSIBLE MIXER / QDT SERIES LOW-SPEED FLOW PROPELLER

运行模式 Operating Modes

潜水搅拌机的安装定位对其搅拌效果有很大的影响，为了达到事半功倍的运行效果，我们建议用户按照专业设计人员的要求去做，要充分考虑到水池的形状，进出水的位置以及搅拌机的水流反射到构筑物而引起的涡流等情况，尽量减少短路循环和死角产生，避免与池壁的撞击而降低流速。参照下面的运行模式图，可帮助您合理选择搅拌机和安装形式。

The installation and positioning of the submersible mixers will produce a great impact on the effect of mixing. In order to obtain the double operating result with the half effort, it is suggested that the advice of the specialized designers shall be followed and full consideration given to the shape of the pond, position of the water inlet and outlet, the vortex resulting from the outflow from the mixer onto the structures and some other conditions. Every effort shall be made to reduce the short-circuit circulation and the occurrence of dead corners and avoid the dashing of the flow against the pond wall for lowering the flow velocity. Making reference to the diagrams of operating modes below will help you to make a reasonable selection of the mixers and their installation modes.

混合、搅拌系列 Mixing and Agitating Series



低速推流系列(池形) Low-speed Flow Propeller Series (Pond Shape)

