QXB/QFB型潜水自吸式曝气机
QXB/QFB Self-absorption Type Submersible Aerator

用途 Usage

QXB型潜水自吸式自吸曝气机，适用于各种污水的生化处理工艺中，作为曝气兼搅拌的专用设备。

QXB Self-absorption type submersible aerator can be used as a special equipment for aeration and agitating in varies of bio-chemical treatment process for sewage water.

QFB潜水浮动式曝气机是我公司专利产品（ZL200520073797.4），它是将原QXB潜水曝气机（电机为潜水电机）靠自重在池底定位的安装形式改为利用进气管并靠浮圈悬吊在水中浮动的安装形式。QXB型曝气机在安装检修时，若污水池中有水，人员无法下池操作，需用吊车伸入池中吊装或排完池中水后搬运，而且这种安装形式必须有坚硬的基础或平台作支撑，经过改进设计后的 QFB型曝气机除了在曝气池中工作，还适合在如氧化塘、养鱼池、景观湖、污水渠、河道等软基础环境下工作，从而经改进后设计的QFB则使安装更便捷、省时、省工，并扩展了潜水曝气机的使用范围 。

Based on the existing QXB submersible aerator, QFB submersible floating aerator (ZL200520073797.4) is not installed by using dual air inlet pipe or floating in the water by hanging on water wings, instead it is installed in the pool bottom by its deadweight. Nowadays when an QXB aerator needs to be examined and repaired, the workers cannot launch into the pool if there is water in the sewage pool, so a crane is needed to submerse in the pool for hoist or convey after the water is drained from the pool. Furthermore, this installation method shall need a firm foundation or platform for support. After modification and improvement, the QFB aerator not only can work in the aeration tank, but it also can work in the soft foundation environment such as oxidation pond, fishpond, landscape lake, sewage channel, and riverway, the installation is more facile, can save time and manpower, the application scope of submersible aeration is extended as well.

型号表示 Type Code

QXB/QFB □－□

- □（进气口径(mm) Diameter of air inlet(mm)）
- □（电机功率(Kw) Motor power(KW)）
- QXB/QFB：QXB－潜水自吸式曝气机Self-absorption type submersible aerator；QFB－潜水浮动式曝气机 Submersible floating aerator

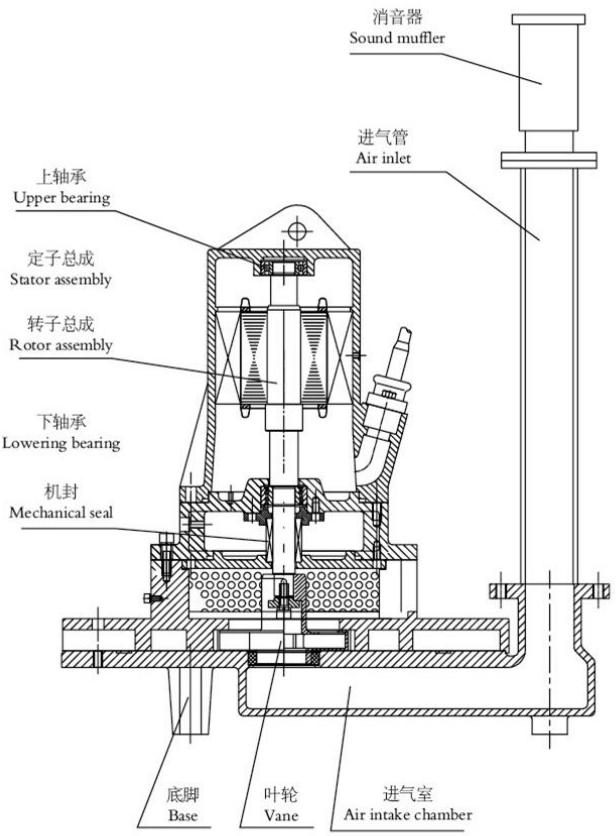
工作原理 Operating Principle

QXB型潜水自吸曝气机的结构为直联式，见图。

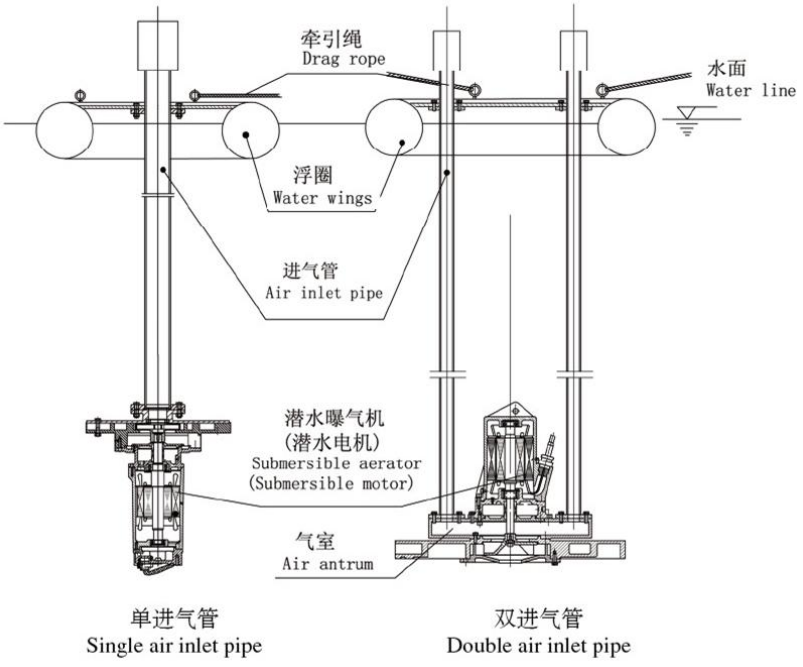
QXB型产品为自吸式曝气，旋转的叶轮产生的离心力，在叶轮的进口处形成负压吸入空气和水，利用叶轮的动能在混合室里将一定比例的气水混合，在离心力作用下，气水二相流沿叶轮的切线方向经流道整流，向圆周方向扩散，细碎的微小气泡充分与水融合，从而达到曝气充氧的效果。

QXB Self-absorption type submersible aerator is of the direct-connection structure as shown in the drawing. QXB products belong to the self-suction type. The centrifugal force is produced by the rotating vanes resulting in a negative pressure at the inlet of the vane for sucking air and water. The dynamic energy of the vane is used for mixing the proportional air and water in the mixing chamber. Under the powerful centrifugal force, the air-water two-phase flow diffuses to the circumference after rectification via the flow path along the tangential direction of the vanes. The fine air bubbles will be fully merged with water so as to get oxygenation aeration.

QFB在原QXB的基础上，进气管上部加装有浮圈（不锈钢或玻璃钢制作）。浮圈、进气管、曝气机连接成一个整体。如图，浮圈依靠水的浮力使曝气机悬吊在水中，浮圈用三根钢丝绳牵拉着，钢丝绳的另一端固定在池边，或在池塘里设三个锚点固定。安装时将曝气机和浮圈整体放入水中，并用钢丝绳拖至预定区域，再将三根钢丝绳另一端分别按三个不同方位固定在池边，水面较大的池塘可设三个锚点定位。检修时只需将固定在池边的钢丝绳解开，把设备拉回池边吊出水面即可。



QXB型结构图　QXB Type Structure Diagram



QFB型结构图　QFB Type Structure Diagram

Based on the existing QXB, QFB changed the admission mode from unilateral admission to bilateral admission or center admission, Water wings are installed on the top of the air inlet pipe, which was made of stainless steel or glass reinforced plastics. The water wings, air inlet pipe, and aerator are united. (See the drawing), the aerator is hanging in the water by means of the flotage of the water wings, and the water wings are dragged by a three wire rope. The other end of the wire rope is fixed to the pool, or held by three anchors in the pool. The aerator and water wings are placed in the water during installation, and pulled to the pointed area by the wire cable. The ends of the three wire cable are to be fixed to the pool in three directions, and the big water surface pool can have three anchors. The wire cable can be loosened and the equipment will be lifted out of the water if it needs to be examined and repaired.

结构特点 Structural Features:

QXB型

1．自重定位，安装方便，可在不中断工艺运行的状态下自由布置；

2．设计结构紧凑，利用自吸功能无需外接气源；

3．主机潜水作业减少占地面积，噪音小；

4．可直接在氧化塘中使用，节省基建成本；

5．独立移动的曝气装置，曝气时兼有搅拌功能；

6．底盘可根据用户要求作特殊设计。

1.Positioning by deadweight, convenient installation; free layout without interrupting the technological operations

2.Compact designed structure, use self-suction function, don't need to connect to any external air sources.

3.Submersible operation of the mainframe, low noise.

4. directly operated in the oxidation pond, save construction cost.

5.Independent mobile type aerating equipment can be used-for agitation in the meantime of aeration.

6.The base can be specifically designed in accordance with the users' requirements.

QFB型

1、浮动定位，安装方便，可在不中断工艺运行的状态下自由布置和移动；

2、设计结构紧凑，利用自吸功能无需外接气源,气泡匀均；

3、主机水下作业，不受水位变化影响曝气，无地面设备，噪音小；

4、可直接在氧化塘、河道、养鱼池等大面积水域中使用，省基建；

1. Floating fixture, facile installation, free layout and movement without interruption to the process.

2. Compact design structure, self-priming, no need for external air intaking, or even air bubbles

3. Mainframe is operating under water, with no ground equipment, and low noise

4. It can be directly used in the big water area such as an oxidation pond, riverway, fishipond, with no foundation construction

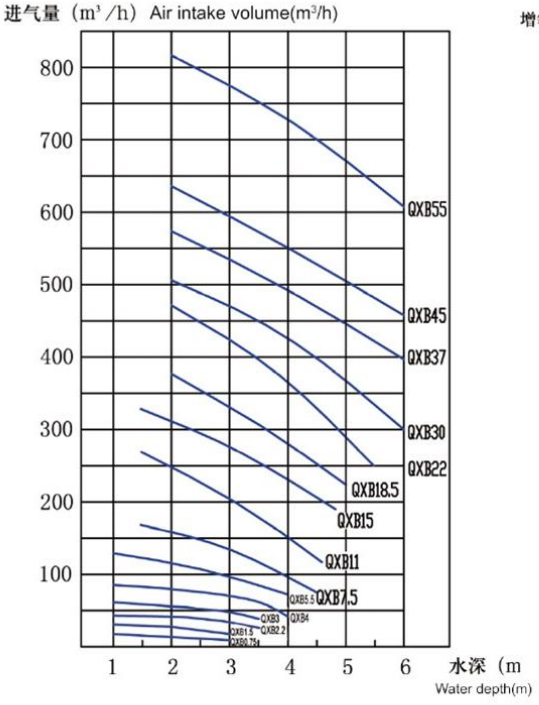
QFB潜水浮动式曝气机与QXB潜水自吸曝气机除增加了浮圈外，其主机结构、性能参数、外形尺寸完全相同。选型按QXB系列确定。

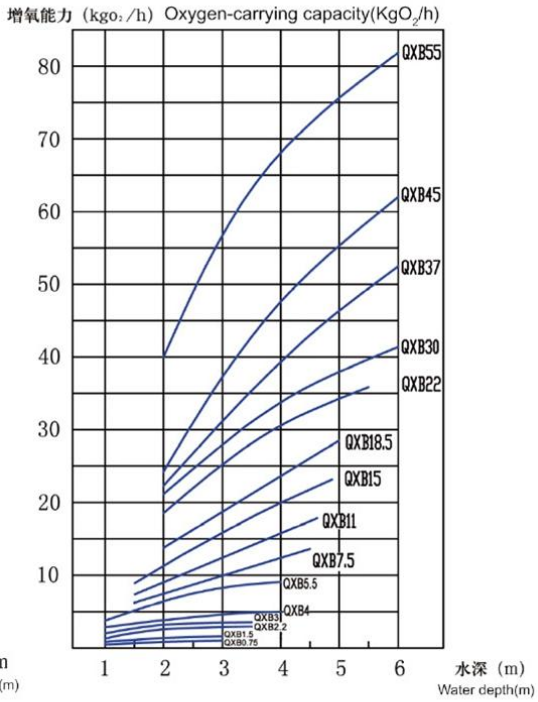
Except for the water wings, the main structure, performance parameters, external dimension of QFB submersible floating aerator are completely the same as those of QXB submersible self-absorption aerator. The equipment type selection shall be confirmed according to the QXB series

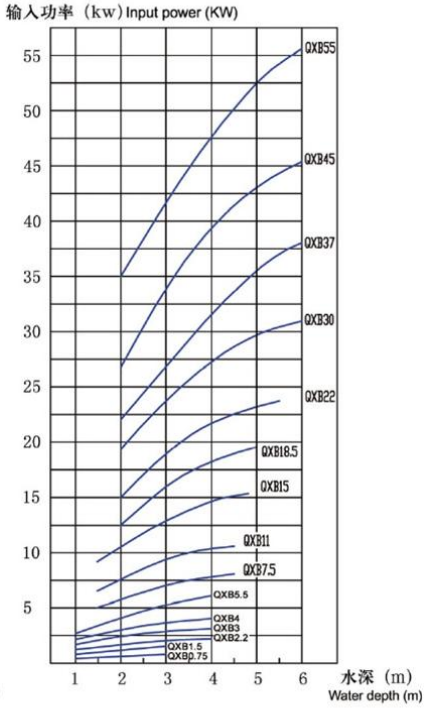
性能参数表 Table of Performance Parameters:

型　号 Type	功率 Power (kW)	额定电流 Rated current (A)	叶轮转速 Rotate speed of impeller (r/min)	作用范围 Service range ϕ (m)	潜水深度 submersible depth(m)	空气吸入管径 tube diameter of air suction(mm)	进气量 Air input m^3/h	重量 Weight (kg)
QXB0.75-32	0.75	2	1390	2.8	1~2	32	15~10	62
QXB1.5-32	1.5	3.7	1400	3.5	1~3	32	25~18	105
QXB2.2-50	2.2	4.9	1430	4.8	1~3.5	50	44~25	182
QXB3-50	3	6.8	1430	5.5	2~4	50	50~40	198
QXB4-50	4	9	1440	6.5	2~4	50	75~45	234
QXB5.5-65	5.5	11	1440	8.0	2~4.5	65	120~70	298
QXB7.5-80	7.5	15	1440	10	2~4.6	80	160~75	318
QXB11-80	11	22.6	1460	11	2~4.8	80	260~120	382
QXB15-100	15	30.3	1460	12	2~5	100	325~220	413
QXB18.5-100	18.5	36.0	1470	12.5	2~5	100	375~260	476
QXB22-100	22	43.2	1470	13.5	2~5	100	470~260	495
QXB30-150	30	56.8	1470	16	2~5	150	510~390	1200
QXB37-150	37	69.8	1480	16	2~5	150	570~390	1296
QXB45-150	45	84.2	1480	16	2~5	150	630~460	1380
QXB55-150	55	103	1480	16	2~5	150	825~620	1430

性能曲线 Performance Curves







外形及尺寸 Outside Appearance and Dimensions

型　号 Type	外型尺寸 Overall dimension (mm)				
	H1	L	D	d	H
QXB0.75-32	200	2000	500	32	600
QXB1.5-32	200	3000	650	32	630
QXB2.2-50	250	3300	710	50	680
QXB3-50	250	3300	710	50	720
QXB4-50	250	3800	810	50	810
QXB5.5-65	300	3800	810	65	980
QXB7.5-80	300	4300	890	80	980
QXB11-80	350	5000	1020	80	1000
QXB15-100	350	5000	1020	100	1000
QXB18.5-100	400	5500	1020	100	1050
QXB22-100	400	6000	1020	100	1050
QXB30-150	450	6000	1150	150	1100
QXB37-150	450	6000	1150	150	1100
QXB45-150	450	6500	1150	150	1150
QXB55-150	450	6500	1150	150	1150

选型需提供的数据资料：

1.需氧量(kgO2／h)；

2.曝气池形状、尺寸及水深(m)；

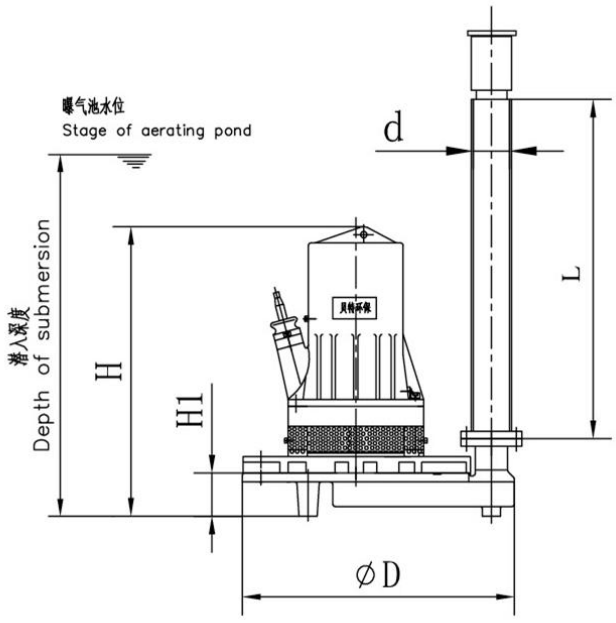
3.曝气池水质状况(如温度、BOD5、COD等)。

Data Required for type Selection

1. Oxygen demand (KgO2/h)

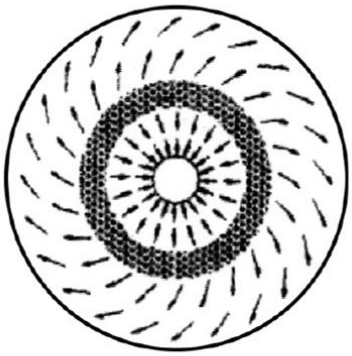
2.Shape, dimensions and water depth(m)of the aeration pond

3. Water quality Conditions of the aeration pond (e.g.,temperature, BOD5,COD,etc.)

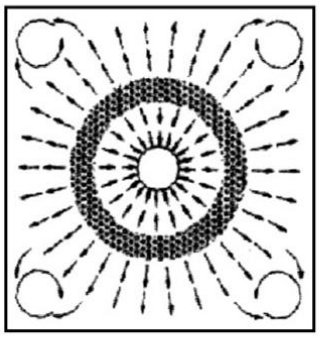


推荐布置选型 Recommended Arrangement for Type Selection

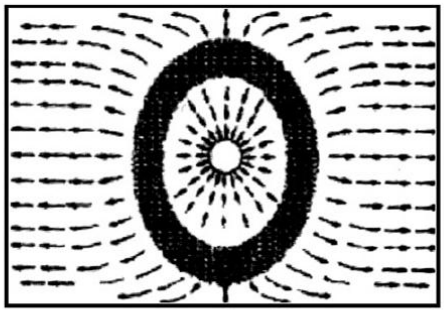
圆形池Circular pond



方形池Square pond



长方形池（长：宽＜1.5:1）
Rectangular pond(Length: Width<1.5:1)



长方形池（长：宽＝2：1）
Rectangular pond(Length: Width=2:1)