

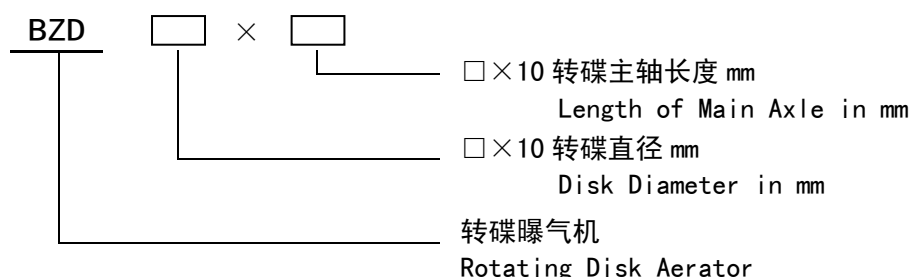
BZD 型转碟曝气机

BZD Rotating Disk Aerator

一、概述 Summary

BZD 型转碟曝气机是卧轴式曝气设备。卧轴带动转碟体旋转，推动水体水平流动。转碟曝气机具有充氧量高，混合作用大，推流能力强的特点。采用转碟曝气机的氧化沟工艺，在城市污水以及各种工业污水的处理中广泛应用，并取得良好的处理效果。

BZD rotating disk aerator is a horizontal axle type aerator. The rotation of the main axle and the disks create a horizontal laminar flow of water. The aerator has the characteristics of high oxygenation rate, excellent mixing and impelling abilities and has been widely used with the oxidation ditch process in the treatment of city sewage and industrial wastewater with good results.



二、工作原理 Operating Principle

转碟表面密布有梯形凸块、圆形凹坑和通气孔。通过碟片的旋转，带动水体水平运动。转碟特殊的形面可以增加带入水体的空气量，并强行均割气泡，提高充氧能力。

The surfaces of the disks are covered with trapezoidal protrusions, circular indentations and air holes. The rotation of the disks create a horizontal laminar flow. The features on the surface of the disks are designed to increase the amount of air mixed in with water and to break up air bubbles, thereby improving the oxygenation rate.

三、结构及特点 Construction and Characteristics

BZD 型转碟曝气机由电机、减速箱、联轴器、主轴、碟片、轴承座等构成，其特点如下：

- 1、本机采用立式户外电机，下端面距液面近 1m，避免转碟溅起的水雾对电机产生影响，同时整机安装占地小。
- 2、采用固定式防溅板，可以很好地保护电机和减速箱不受污水的侵蚀。
- 3、减速箱采用圆锥——圆柱齿轮传动，所有齿轮均为硬齿面(齿轮精度为 6 级)，承载能力大、结构紧凑、体积小，重量轻、运转平稳、噪音低、耗电省。

4、采用弹性柱销齿式联轴器，传递扭矩大，体积小，允许一定的径向和角度误差，安装简单。

5、转碟由两个半圆形碟片组成，均匀地安装在主轴上，安装维护方便，且牢固可靠。碟片采用增强型聚丙烯或高强度轻质玻璃钢压制成型，具有强度高、耐腐蚀、刚性好、耐热性好等优点。

6、尾部采用调心轴承及游动支座，可以克服安装误差，自动调心，能补偿转碟轴因温差引起的伸缩，保证正常运行。

7、转碟的负荷及充氧量随调节浸没水深而改变，简单易行。

8、更详细的说明请阅读设备的随机技术资料。

The BZD rotating disk aerator consists mainly of electric motor, gearbox, shaft coupling, main axle, disks, bearing support, etc. Its main characteristics are:

1. The vertical, outdoor type electric motor is located nearly 1m above the water surface; therefore the possibility of damage caused by splashed water is greatly reduced and the whole setup has a small footprint.

2. Fixed anti-splash board which effectively protects the motor and gearbox from water corrosion.

3. The gearbox uses cone - column gears. All gears have hard surfaces with gear precision Grade 6. The gearbox has the advantages of large bearing capacity, small volume, light weight, steady run, low noise and power efficient.

4. The elastic column-pin tooth-shaped shaft coupling is used for the gearbox. It can transmit a large amount of torque and has a small volume. It can also permit a certain radial and angular error during installation.

5. Each disk is made of two half disks, symmetrically installed on the main axle. The setup is easy to maintain and very durable. Disks are made of reinforced polypropylene or high-strength lightweight glass steel and pressed to form. They have the advantages of high strength, corrosion resistant, high rigidity and good heat-resistant property.`

6. Center-regulating bearing and floating bearing supports are used to align the center automatically and overcome installation errors. They can also compensate for the axial extension caused by changes in temperature.

7. The load of the aerator and the oxygenation rate can be easily changed by adjusting the immersion depth of the rotating disks.

8. For more detail please refer to the documentation came with the equipment.

四、规格及技术参数 Specifications and Technical Parameters

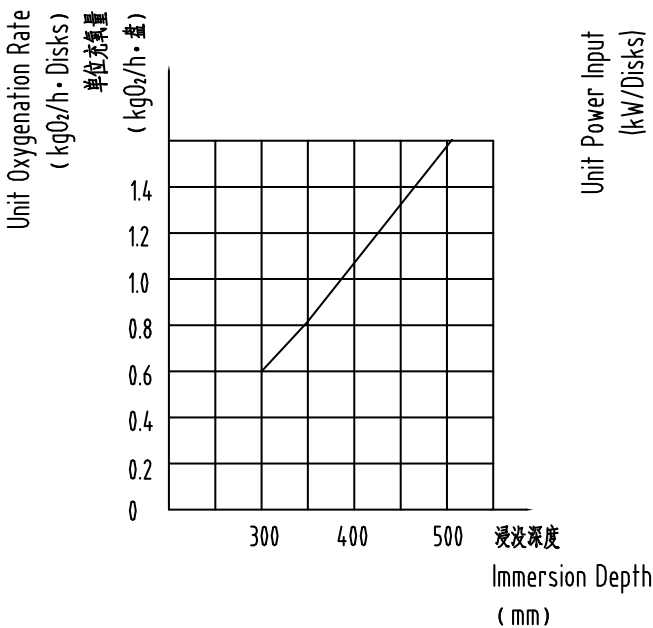


图 1 充氧量图

Figure 1 Oxygenation Rate Diagram

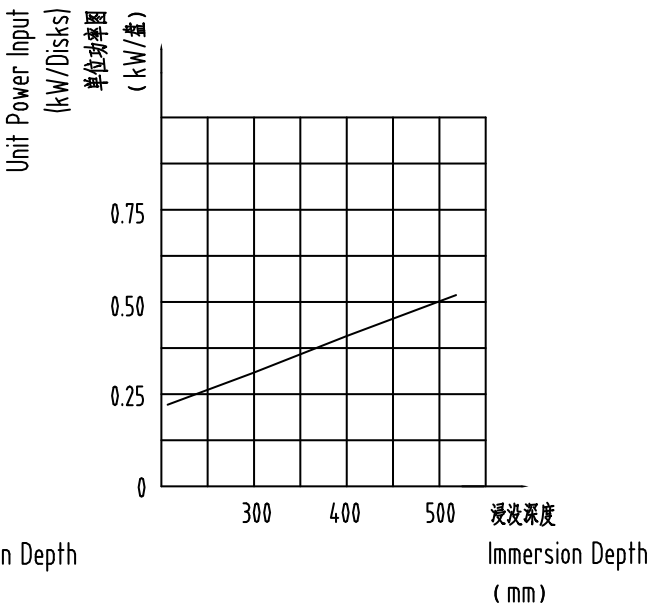


图 2 叶轮轴功率图

Figure 2 Impeller Axial Power Diagram

表 1 BZD140 型转碟曝气机性能参数

Table 1 BZD140 Rotating Disk Aerator Performance Parameters

型 号 Model	主轴长度 Length of Main Axle (mm)	转碟数 (盘) Number of Disks (Disks)	充氧量 Oxygenation Rate (kgO ₂ /h)	转速 RPM (r/min)	电机功率 Motor Power (kW)	总高度 Total Height H (mm)	整机质量 Total Mass (kg)
BZD140×300	3000	14	21.84	50	11	1550	2000
BZD140×400	4000	19	29.64	50	15	1550	2200
BZD140×500	5000	23	35.88	50	18.5	1665	2400
BZD140×600	6000	27	42.12	50	22	1665	2600
BZD140×700	7000	34	53.04	50	30	1775	2900
BZD140×800	8000	38	59.28	50	30	1775	3100
BZD140×900	9000	45	70.20	50	37	1806	3320

表 2 BZD150 型转碟曝气机性能参数

Table 2 BZD150 Rotating Disk Aerator Performance Parameters

型 号 Model	主轴长度 Length of Main Axle (mm)	转碟数 (盘) Number of Disks (Disks)	充氧量 Oxygenation Rate (kgO ₂ /h)	转速 RPM (r/min)	电机功率 Motor Power (kW)	总高度 Total Height H (mm)	整机质量 Total Mass (kg)
BZD150×300	3000	8	22.72	50	11	1550	2000
BZD150×400	4000	10	28.40	50	15	1550	2200
BZD150×500	5000	13	36.92	50	18.5	1665	2400
BZD150×600	6000	15	42.60	50	22	1665	2600
BZD150×700	7000	18	51.12	50	30	1775	2900
BZD150×800	8000	20	56.80	50	30	1775	3100
BZD150×900	9000	23	65.32	50	37	1806	3320

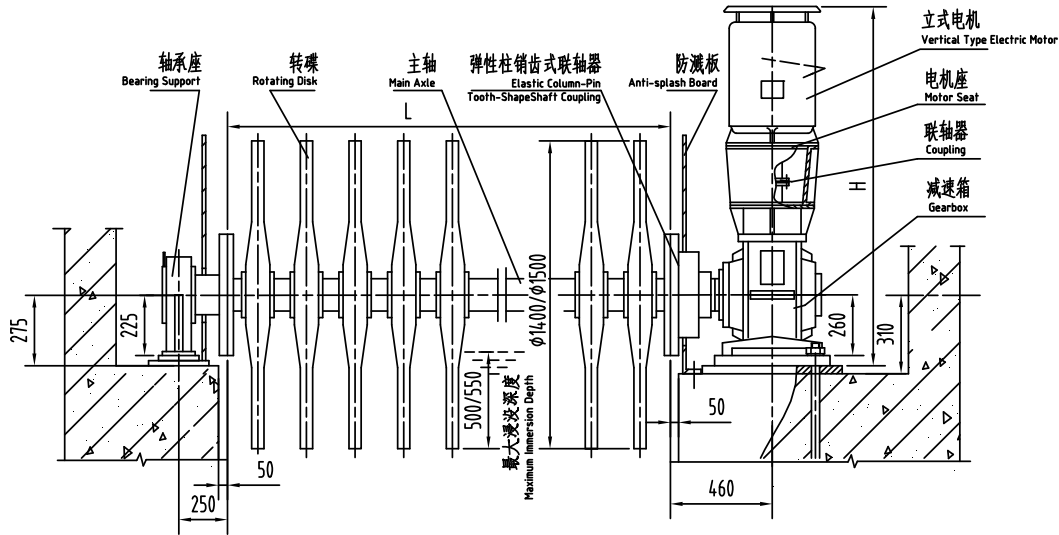


图 3 转碟曝气机简图(单出轴)

Figure 3 Rotating Disk Aerator Diagram (single axle)

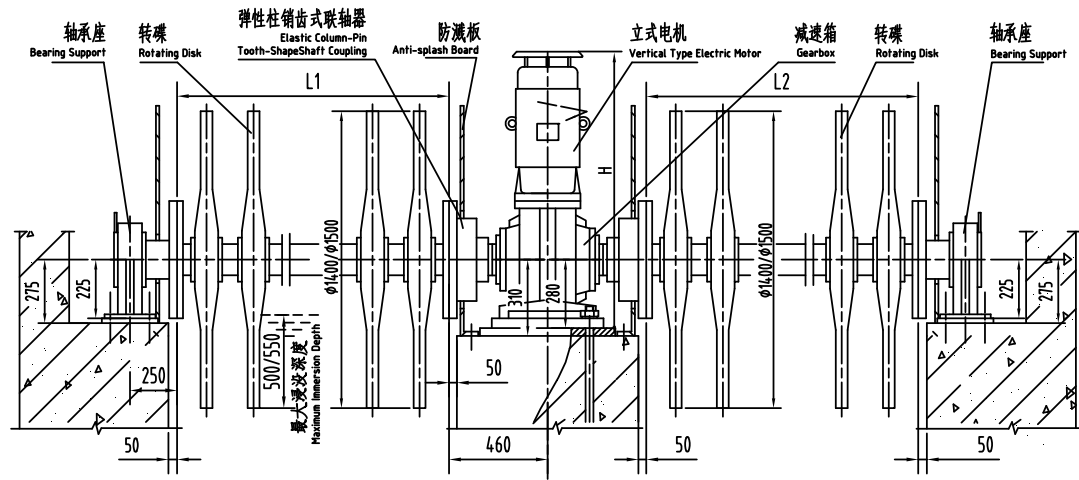


图 4 转碟曝气机简图(双出轴)

Figure 4 Rotating Disk Aerator Diagram (double axle)

型 号 Model	L (mm)	F ₁ (N)	F ₂ (N)	F ₃ (N)	F ₄ (N)	M ₁ (N·M)	M ₂ (N·M)
BZD140/150×300	3000	4586	15671	2940	2940	2100	108
BZD140/150×400	4000	5620	17037	4011	4011	2860	148
BZD140/150×500	5000	6541	18448	4946	4946	3530	182
BZD140/150×600	6000	7934	19988	5880	5880	4200	216
BZD140/150×700	7000	9005	21611	8022	8022	5730	295
BZD140/150×800	8000	9967	22573	8022	8022	5730	295
BZD140/150×900	9000	11271	24819	12032	12032	7060	364

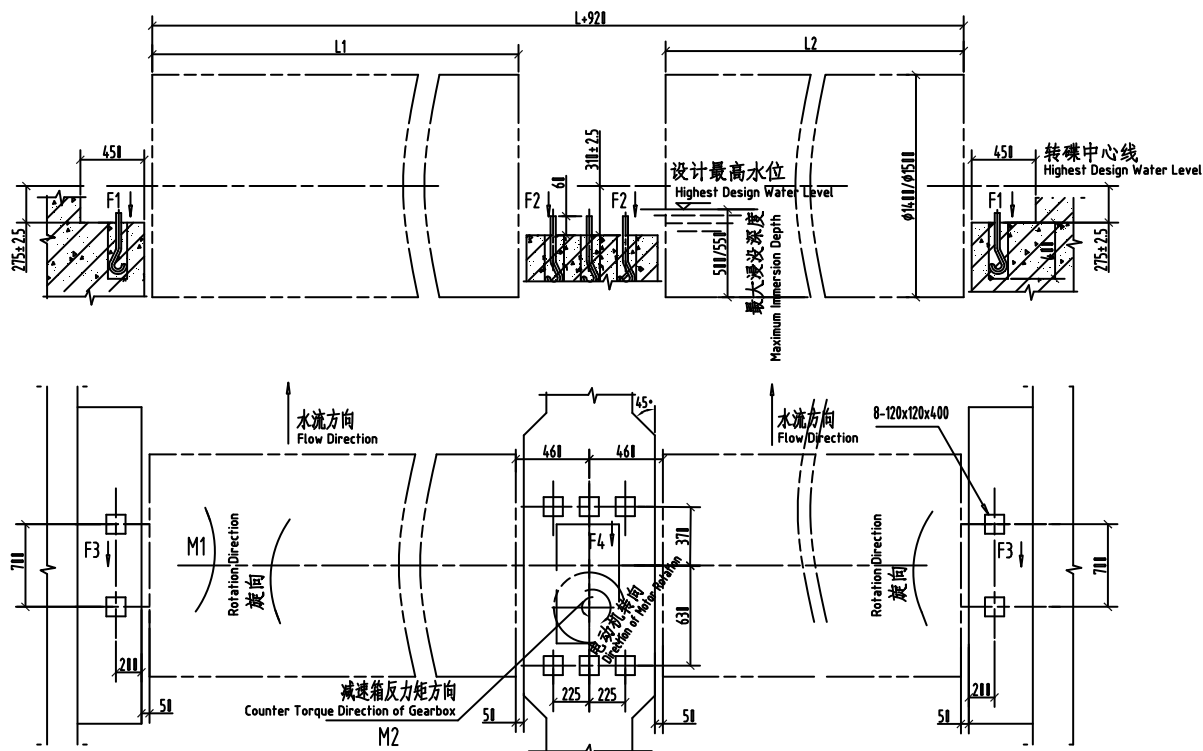


图 6 BZD140/150× (L₁+L₂) 双出轴转碟曝气机基础条件图

Figure 6 BZD140/150× (L₁+L₂) Double Axle Rotating Disk Aerator Foundation Requirement Diagram

BZD140/150× (L₁+L₂) 双出轴转碟曝气机载荷分布根据不同规格具体确定。

BZD140/150× (L₁+L₂) double axle rotating disk aerator load distribution depends on the specification of the aerator.

说明:

- 1、BZD140/150 型转碟曝气机最大浸没深度为 500/550mm。
- 2、根据氧化沟的形式要求，转碟曝气机的减速机可配置成双出轴型。也可根据用户要求，主轴长度、碟片数量和功率配置进行特殊设计。
- 3、电机可配双速电机或变频调速，改变转碟的转速来实现不同曝气量的要求。
- 4、样本所示为我公司产品标准配置，如用户对驱动装置有特殊要求，其外形和基础将另行提供。
- 5、本设备有正、反两种转向及左、右两种出轴形式，这是由水流方向及驱动装置的位置来确定。图 5 所示为正转、左出轴形式。用户在设计选用时应予明确。

Remark:

1. Maximum immersion depth of BZD140/150 type rotating disk aerator is 500/550mm.
2. Depending on the oxidation ditch requirement, the aerator's gearbox can be double axial. The axial length, number of disks and motor power can all be modified based on customer requests.
3. The electric motor can be dual speed or variable speed in order to meet different oxygenation rate requirements.
4. The diagrams provided are for standard specifications, if custom modifications are required on the aerator, the outline and foundation diagrams will be supplied separately.
5. The drive unit can rotate clockwise or counterclockwise and the main axle can be installed on the left or the right side of the drive unit all depending on the direction of water flow and the location of the drive unit. The drawings provided are for clockwise rotation with the main axle on the left side. Please specify all requirements when placing the order.