

## QZ、QH系列潜水轴流、混流泵

### QZ/QH series submersible axial flow pump/mixed flow pump



#### 一、产品简介 Descriptions

QZ系列潜水轴流泵、QH系列潜水混流泵是为大流量、较低扬程场合设计的，潜水轴流泵使用扬程一般在10米以下，潜水混流泵使用扬程在20米以内。本产品是传统轴流泵、混流泵的最佳换代产品，电机与水泵构成一体，潜入水中运行，具有传统机组无法比拟的一系列优点。

QZ series submersible axial flow pump and QH series submersible mixed flow pump are designed for places requiring large flow rate and low head. Generally, the submersible axial flow pump is used for the head under 10 m while the submersible mixed flow pump for the head under 20m. This product is an excellent replacement to the traditional axial flow pump and mixed flow pump. The motor is seamlessly integrated with the water pump and operates under water. It has a series of advantages, which are unrivaled by traditional units.

#### 二、主要用途及特点 Applications and features

主要用途:

在农业中，用于灌溉与排水；在市政中用于排雨水、轻度污水；在工业中用于工艺用水、冷却水及原水供应；在水利中用于调水工程。适宜用于输送清水或者轻度污水。

特点:

1、由于电机与水泵构成一体，现场无需进行耗工、耗时、复杂的轴线对中装配程序，安装十分方便、快捷，因此可不预留备用泵的机位，将备用泵存于库房，节省泵站进水池的投资。由于潜入水中运行，可大大简化泵站的土建及建筑结构工程，减少安装面积，节约泵站总造价的30~40%。

2、泵在水中运行，水流从电机周围流过，噪声低，电机冷却条件好。可以建为地下泵站，保持地面的环境风貌。

3、采用潜水电泵，是解决在水位涨落大的沿江、湖泊地区建泵站和防洪问题最彻底的方法，省去了机泵间的长轴，提高了运行安全可靠。

## 潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

These pumps are used in agriculture to irrigate and drain water, in municipal works to drain rainwater and slightly polluted water, in industries to supply process water, cooling water and raw water, and in irrigation works to divert water. They are suitable to transport clean water or slightly polluted water.

### Features

1. The motor and the water pump are an integral part. There is no need to perform the complicated axial alignment, which costs time and work. So it is very simple and easy to install.

No space reserve is needed for the standby pump. By storing the standby pump into the storehouse, investment can be saved. Because the motor operates under the water, the civil works and the building for the pump station can be greatly reduced. With reduced installation area, 30 - 40% of the total price for the pump station can be saved.

The pump operates under the water and the water flows around the motor. So low noises and good cooling conditions have been achieved.

2. The pump station can also be constructed under ground, thus preserving the landscape above the earth.

3. Using the submersible electric pump is the thorough solution to solve the challenge of pump station construction and flood prevention at rivers and lakes, where the water level has a large fluctuation. In this way, the long shaft has been saved between the motor and the pump, and the safety and reliability improved.

### 三、型号说明 Model

350 QZ(H) - 70 G (D)

比转数、名义排出口径相同, 低一档转速  
The specific speed and nominal outlet diameter are same but with one level lower rotating speed

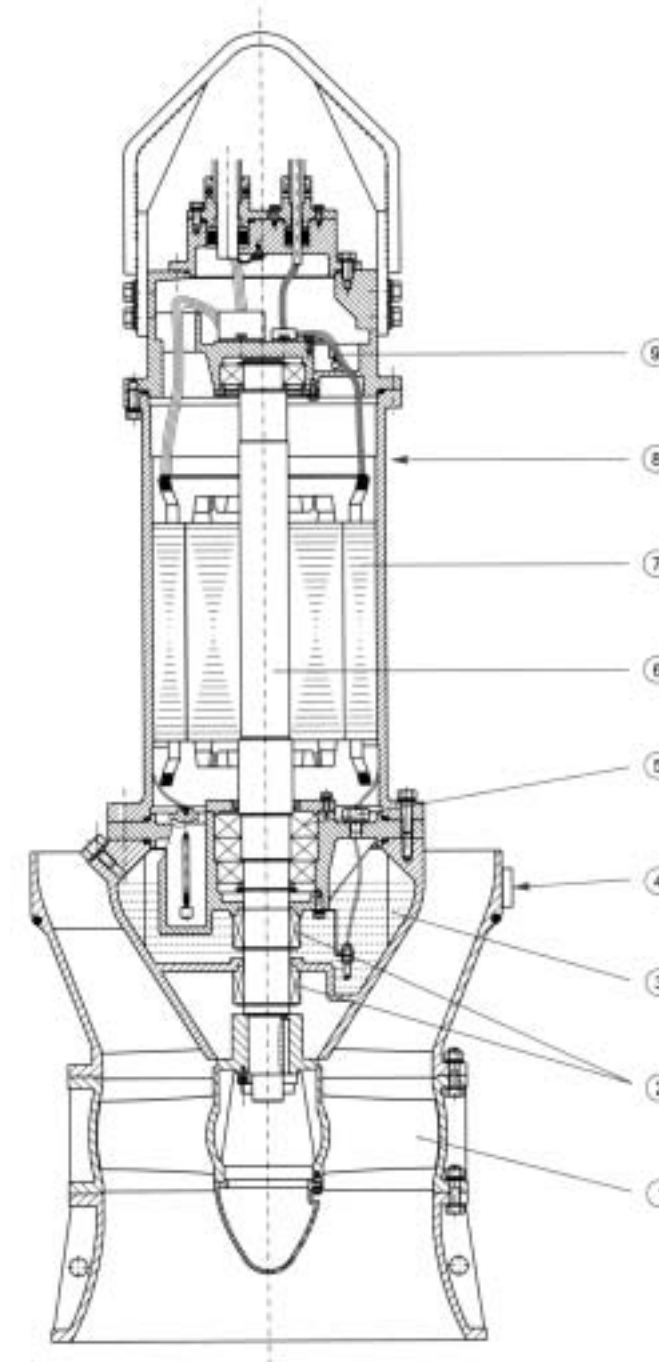
比转数、名义排出口径相同, 高一档转速  
The specific speed and nominal outlet diameter are same but with one level higher rotating speed

比转数的1/10  
1/10 of the specific speed

潜水轴流泵(潜水混流泵)  
Submersible axial flow pump (Submersible mixed flow pump)

名义排出口径(mm)  
Nominal outlet diameter(mm)

### 四、设计说明 Design description



QZ型潜水轴流泵结构图  
The structural drawing for the QZ type submersible water pump

#### 1、叶轮

叶轮采用目前最先进的水力模型换算所得, 性能优良、稳定、成熟。选择较小的nD值, 抗汽蚀性能好, 确保运行平稳。

#### 2、轴密封

两套独立的机械密封, 使电机与泵密封隔离; 上下串联安装, 提供多重保险, 提高了可靠性。

#### 3、油室

油润滑并冷却密封, 在电机与所输送的介质之间起到隔离作用。内留的体积可减缓油室内压力的升高。

#### 4、防转装置

机组启动瞬间, 电机起动力矩的反作用力矩, 常常会使机组整体向相反方向旋转, 防转装置能解决这个问题。

#### 5、轴承

轴承采用滚动轴承, 能够承受所有的轴向和径向负荷, 并完全与泵输送的介质分开。

#### 1. Impeller

The impeller is using the state-of-art hydraulic model and has superior, stable and sophisticated performance. Choosing a low nD value can ensure a good cavitation counter capability and smooth operation.

#### 2. Shaft seal

Two independent mechanical seals make the motor and the pump seal isolated. The tandem connection can provide multiple securities. So the reliability can be improved.

#### 3. Oil cavity

The oil lubricates and cools the seal. It has played the role of an isolator between motor and the pumped medium. The remaining oil volume can alleviate the rise of the pressure within the oil cavity.

#### 4. Anti-rotation equipment

At the moment the unit starts, the reactionary torque of the motor's starting torque often makes the whole unit rotate reversely. The antirotation equipment can solve this problem.

#### 5. Bearing

The bearing uses the rolling bearing and can endure all axial and radial load. It is fully separated from the pumped medium.

## 潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

### 6. 泵 / 电机轴

泵与电机同轴，结构紧凑，轴伸尽量缩短，从设计上减小挠度，运行时振动小，密封和轴承寿命更长。

### 7. 电机

高性能鼠笼式感应电机，特别为潜水泵设计制造，符合GB755标准。绝缘等级F级，最高工作温度可达135℃。随功率不同：可采用380V、660V、3kV、6kV、10kV等电压等级，对高电压电机采用两次VPI绝缘工艺，确保绝缘可靠。

### 8. 冷却

电机外壳直接将热量传到周围介质中，热量被周围的水流带走。大功率高电压电机，采用内风道散热专利技术，使得三相绕组温升低、温度场分布均匀。

### 9. 监测装置

潜水泵装有多道保护装置，可把引线引至电控箱。保护装置有：过载、缺相、泄漏、超温、湿度、浸水保护等(视泵的结构不同而有差别)。

### 6.Pump/motor shafts

The small pump and the motor share the same shaft. The structure is compact and axially short. When running, it produces little vibration. The seal and the shaft have a long operating life.

### 7.Motor

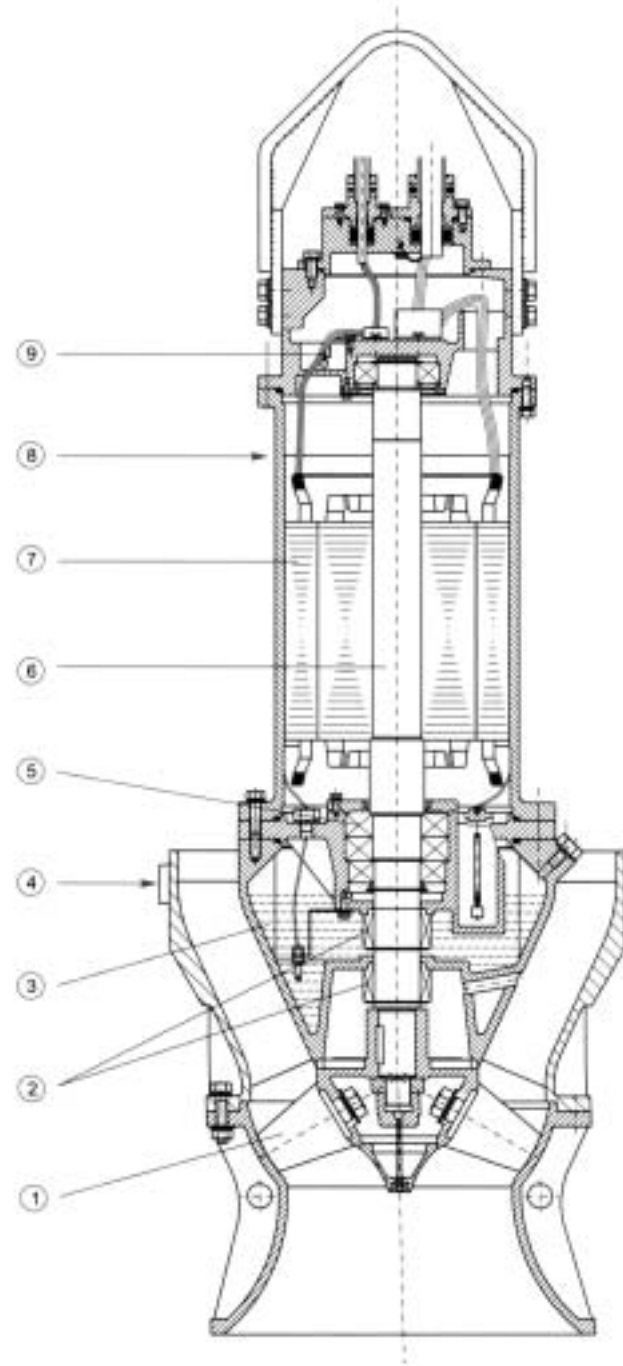
It is high-performance squirrel cage induction motor and is designed for use with a submersible water pump. It is up to GB755 standard. The insulation level is F class, The max. operating temperature can reach up to 135℃. Depending on the power, it can use various voltages such as 380V, 660V, 3kV, 6kV and 10kV. The high voltage motor has gone through double VPI insulation processes to achieve a reliable insulation.

### 8.Cooling

The motor housing transfers its heat directly to the surrounding media and then taken away by the water. The large capacity, high voltage motor uses a patented ventilation technology to reduce the temperature rise of three-phase winding and evenly distribute the temperature field.

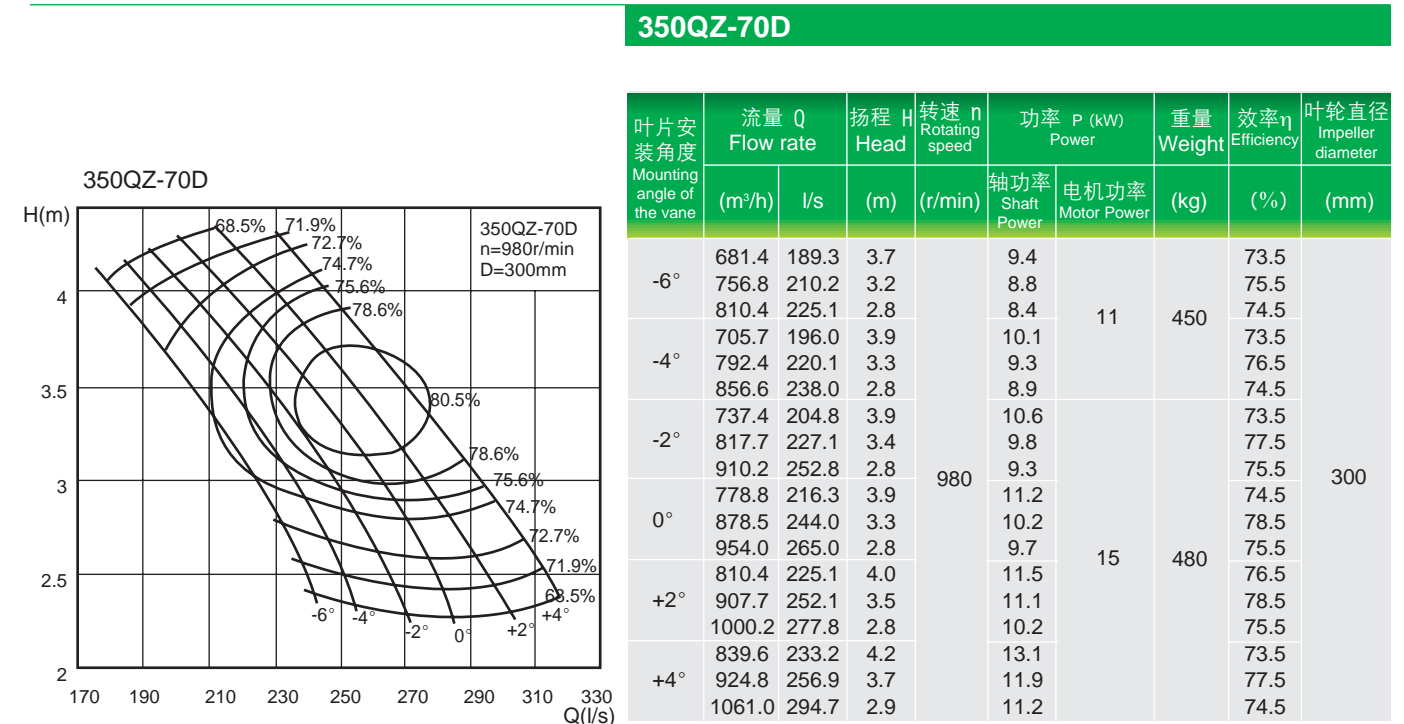
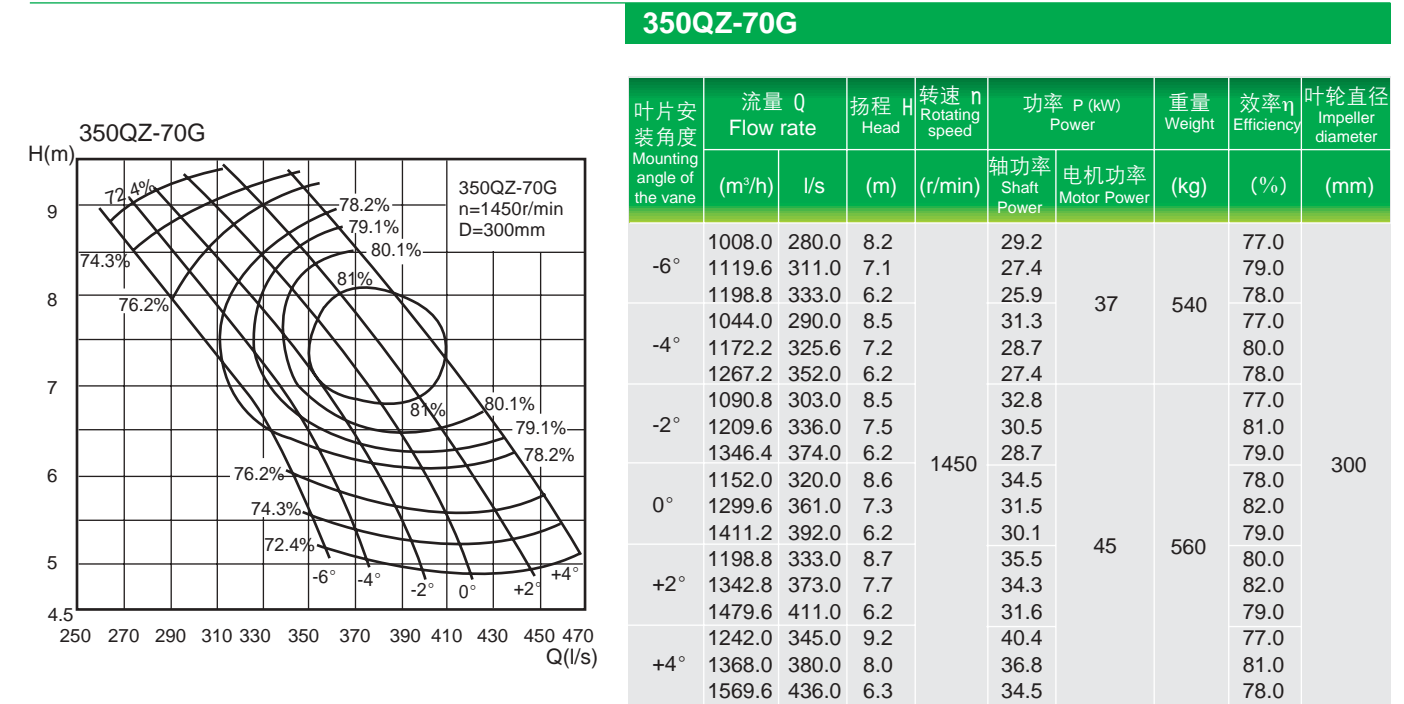
### 9.Monitoring device

The submersible pump has multiple protective devices and can be led to the electric cabinet via a control line. The protective devices include overload, phase failure, leakage, ultra temperature, humidity, and dampening protections.



QH型潜水混流泵结构图  
The structural drawing for the QH type submersible water pump

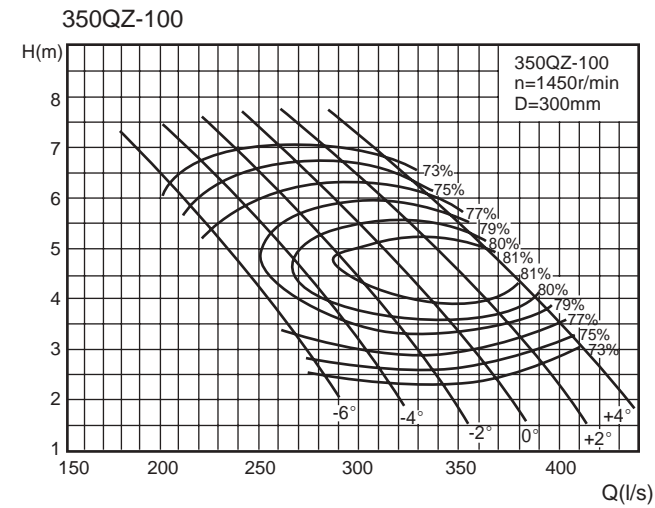
## 五、性能曲线与参数 Performance chart and parameters





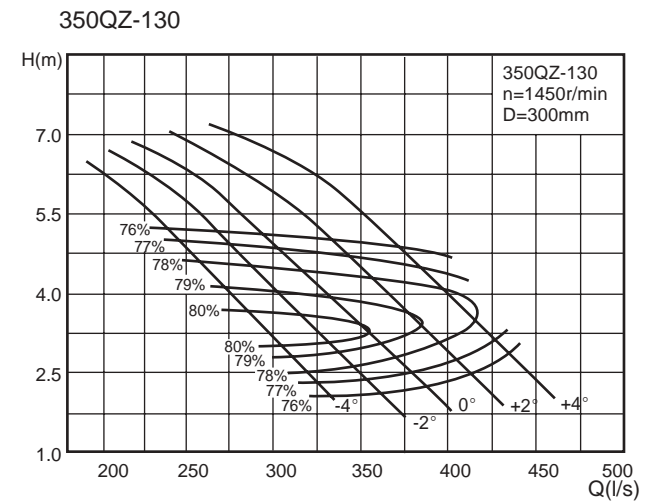
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

350QZ-100



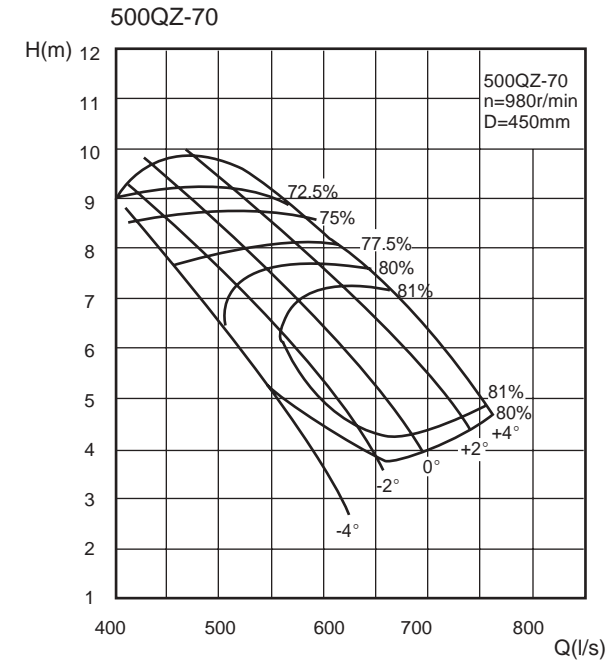
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				(kg)
-6°	826.2	229.5	5.2	1450	15.2	18.5	490	77.0	300	
	900.0	250.0	4.0		12.4			79.0		
	969.8	269.4	3.2		11.0			77.0		
-4°	877.1	243.6	5.8		18.0	22	500	77.0		300
	1008.0	280.0	4.1		14.0			80.1		
	1100.8	305.8	2.9		11.3			77.0		
-2°	938.8	260.8	6.1		20.2	30	525	77.0		300
	1098.0	305.0	4.2		15.5			80.7		
	1198.2	332.8	2.9		12.3			77.0		
0°	1005.8	279.4	6.2		22.0	30	525	77.0		300
	1188.0	330.0	4.2		16.8			81.0		
	1284.3	356.8	2.9		13.2			77.0		
+2°	1098.2	305.1	6.3	24.4	30	525	77.0	300		
	1260.0	350.0	4.4	18.5			81.5			
	1360.1	377.8	3.2	15.4			77.0			
+4°	1200.4	333.4	6.0	25.4	30	525	77.0	300		
	1350.0	375.0	4.4	19.9			81.2			
	1432.2	397.8	3.5	17.7			77.0			

350QZ-130



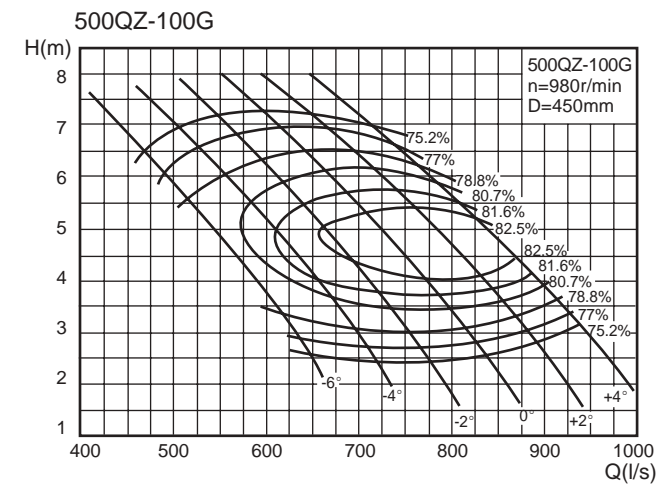
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				(kg)
-4°	864.4	240.1	5.2	1450	16.1	18.5	460	76.0	300	
	1116.7	310.2	2.9		10.9			80.8		
	1196.9	332.5	2.1		9.0			76.0		
-2°	964.2	267.8	5.2		17.9	22	480	76.0		300
	1200.6	333.5	3.1		12.6			80.5		
	1300.2	361.2	2.2		10.2			76.0		
0°	1064.7	295.8	5.1		19.4	30	495	76.0		300
	1280.2	355.6	3.2		13.9			80.1		
	1390.3	386.2	2.2		10.9			76.0		
+2°	1211.7	336.6	4.8		20.8	30	495	76.0		300
	1379.2	383.1	3.4		16.1			79.3		
	1484.9	412.5	2.5		13.3			76.0		
+4°	1334.4	370.7	4.8	22.9	30	495	76.0	300		
	1476.4	410.1	3.5	17.9			78.5			
	1563.6	434.3	2.8	15.7			76.0			

500QZ-70



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				(kg)
-4°	1368.0	380.0	9.4	980	50.0	55	860	70.0	450	
	1760.0	488.9	7.0		42.1			79.6		
	2060.0	572.2	4.3		30.7			78.5		
-2°	1720.0	477.8	8.2		51.5	55	860	74.5		450
	2010.0	558.3	6.4		43.7			80.0		
	2250.0	625.0	4.9		40.8			73.5		
0°	2099.0	583.1	7.0		50.1	55	860	79.8		450
	2160.0	600.0	6.3		45.6			81.2		
	2510.0	697.2	3.9		34.6			77.0		
+2°	2340.0	650.0	6.6		51.5	55	860	81.5		450
	2560.0	711.1	5.5		46.7			82.0		
	2660.0	738.9	4.6		40.8			81.5		
+4°	2520.0	700.0	6.2	51.8	55	860	82.1	450		
	2592.0	720.0	6.0	51.0			83.0			
	2844.0	790.0	4.7	45.9			79.2			

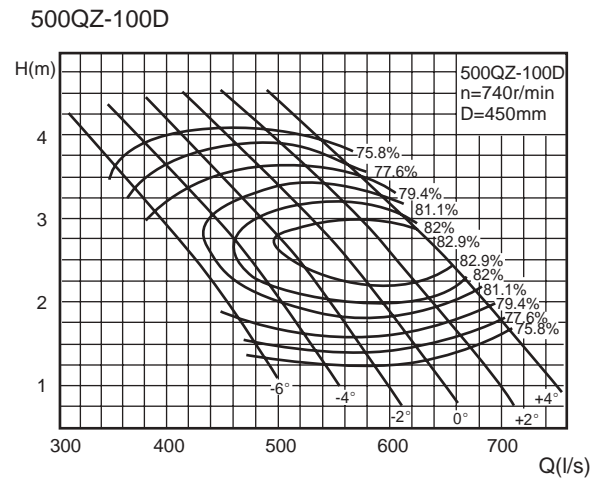
500QZ-100G



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				(kg)
-6°	1883.7	523.3	5.3	980	34.8	45	850	78.8	450	
	2052.0	570.0	4.1		28.4			80.8		
	2211.1	614.2	3.3		25.1			78.8		
-4°	2000.6	555.7	6.0		41.2	45	850	78.8		450
	2298.2	638.4	4.2		32.2			81.9		
	2509.8	697.2	3.0		25.8			78.8		
-2°	2140.5	594.6	6.3		46.3	55	870	78.8		450
	2503.4	695.4	4.3		35.6			82.5		
	2731.9	758.9	3.0		28.1			78.8		
0°	2293.2	637.0	6.4		50.5	55	870	78.8		450
	2708.6	752.4	4.3		38.4			82.8		
	2928.2	813.4	3.0		30.1			78.8		
+2°	2503.9	695.5	6.5	56.0	75	900	78.8	450		
	2872.8	798.0	4.5	42.4			83.3			
	3101.0	861.4	3.3	35.2			78.8			
+4°	2736.9	760.3	6.2	58.3	75	900	78.8	450		
	3078.0	855.0	4.5	45.6			83.0			
	3265.4	907.1	3.6	40.6			78.8			

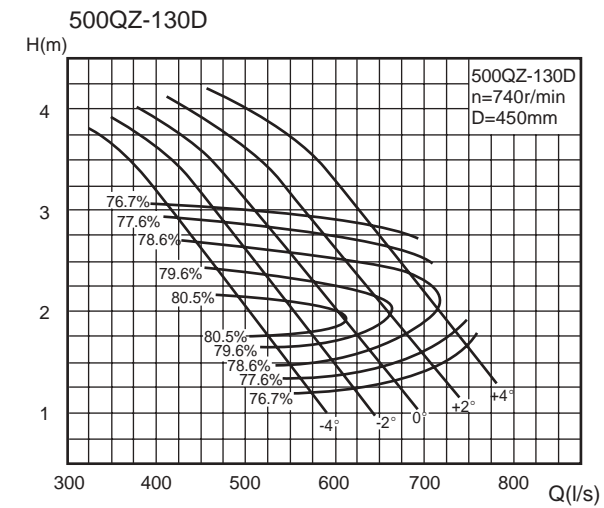
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

500QZ-100D



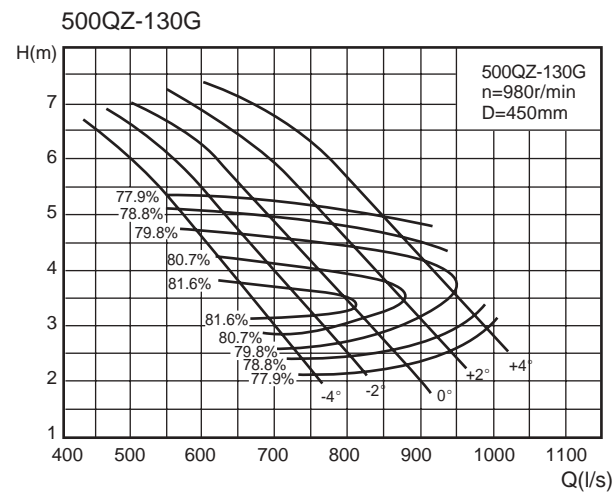
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power			
-6°	1422.7	395.2	3.0	740	15.2	18.5	760	77.6	450
	1549.8	430.5	2.3		12.4			79.6	
	1670.0	463.9	1.9		11.0			77.6	
-4°	1510.4	419.6	3.4		18.0	22	790	77.6	
	1895.6	526.5	1.7		14.1			80.7	
	1616.6	449.1	3.6		11.3			77.6	
-2°	1890.8	525.2	2.5		15.6	22	790	81.3	
	2063.3	573.1	1.7		12.3			77.6	
	1732.0	481.1	3.6		22.1			77.6	
0°	2045.7	568.3	2.5		16.8	30	830	81.6	
	2211.6	614.3	1.7		13.2			77.6	
	1891.1	525.3	3.7		24.5			77.6	
+2°	2169.7	602.7	2.6	18.5	30	830	82.1		
	2342.1	650.6	1.9	15.4			77.6		
	2067.1	574.2	3.5	25.5			77.6		
+4°	2324.7	645.8	2.6	19.9	30	830	81.8		
	2466.2	685.1	2.1	17.7			77.6		

500QZ-130D



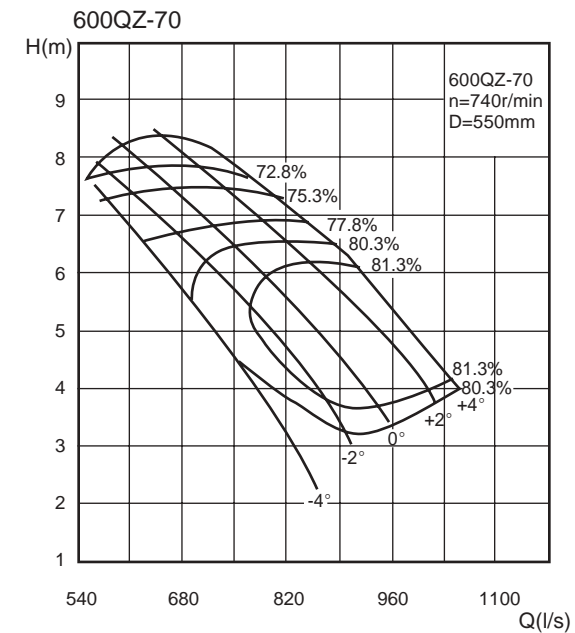
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power			
-4°	1488.5	413.5	3.0	740	16.1	18.5	750	76.7	450
	1923.0	534.2	1.7		10.9			81.5	
	2061.1	572.5	1.2		9.0			76.7	
-2°	1660.4	461.2	3.0		17.9	22	780	76.7	
	2067.4	574.3	1.8		12.6			81.2	
	2238.9	621.9	1.3		10.2			76.7	
0°	1833.4	509.3	3.0		19.4	22	780	76.7	
	2204.5	612.4	1.9		13.9			80.8	
	2394.1	665.0	1.3		10.9			76.7	
+2°	2086.5	579.6	2.8		20.8	30	830	76.7	
	2375.0	659.7	2.0		16.1			80.0	
	2557.0	710.3	1.5		13.3			76.7	
+4°	2297.8	638.3	2.8	22.9	30	830	76.7		
	2542.4	706.2	2.1	17.9			79.2		
	2692.5	747.9	1.6	15.7			76.7		

500QZ-130G



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power			
-4°	1971.7	547.7	5.3	980	36.8	45	860	77.9	450
	2547.2	707.6	3.0		25.0			82.7	
	2730.1	758.4	2.2		20.6			77.9	
-2°	2199.3	610.9	5.3		41.0	55	900	77.9	
	2738.6	760.7	3.2		28.8			82.4	
	2965.8	823.8	2.3		23.4			77.9	
0°	2428.6	674.6	5.2		44.4	55	900	77.9	
	2920.1	811.1	3.3		31.9			82.0	
	3171.3	880.9	2.3		25.0			77.9	
+2°	2763.9	767.7	4.9		47.6	75	950	77.9	
	3146.0	873.9	3.5		36.8			81.2	
	3387.1	940.8	2.6		30.4			77.9	
+4°	3043.8	845.5	4.9	52.4	75	950	77.9		
	3367.7	935.5	3.6	41.0			80.4		
	3566.6	990.7	2.9	35.8			77.9		

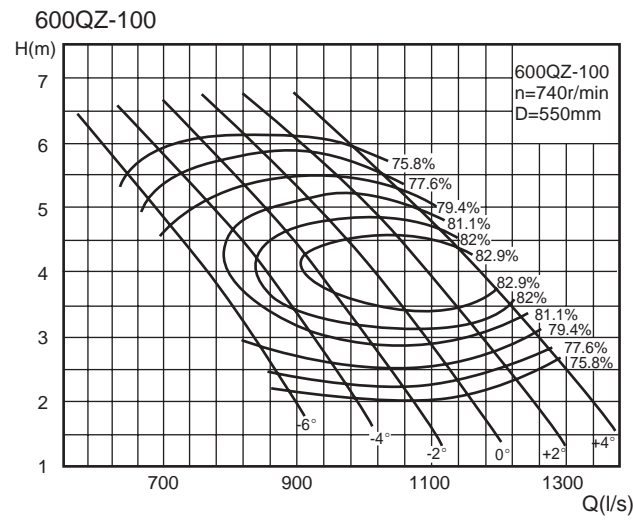
600QZ-70



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power			
-4°	1886.5	524.0	8.0	740	58.5	75	1350	70.3	550
	2427.0	674.2	6.0		49.3			79.9	
	2840.7	789.1	3.7		35.9			78.8	
-2°	2371.9	658.9	7.0		60.3	75	1350	74.8	
	2771.8	769.9	5.5		51.2			80.3	
	3102.8	861.9	4.2		47.7			73.8	
0°	2894.5	804.0	6.0		58.6	75	1350	80.1	
	2978.6	827.4	5.4		53.4			81.5	
	3461.3	961.5	3.3		40.5			77.3	
+2°	3226.9	896.4	5.6		60.3	75	1350	81.8	
	3530.2	980.6	4.7		54.7			82.3	
	3668.1	1018.9	3.9		47.8			81.8	
+4°	3475.1	965.3	5.3	53.7	75	1350	82.4		
	3574.4	992.9	5.1	60.6			83.3		
	3921.9	1089.4	4.0	59.7			79.5		

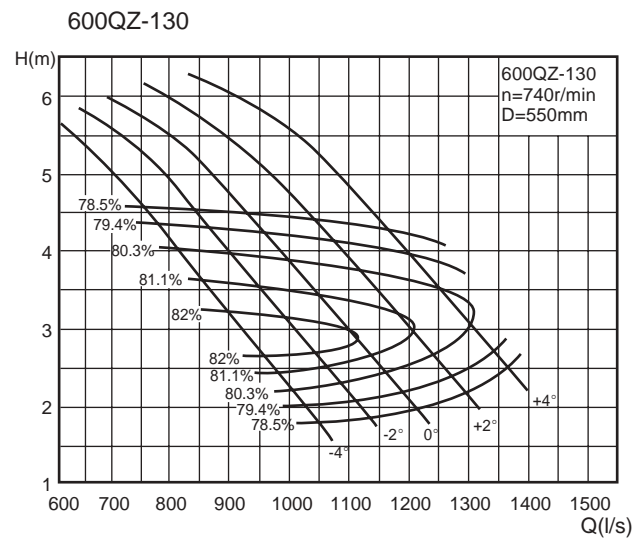
# 潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

## 600QZ-100



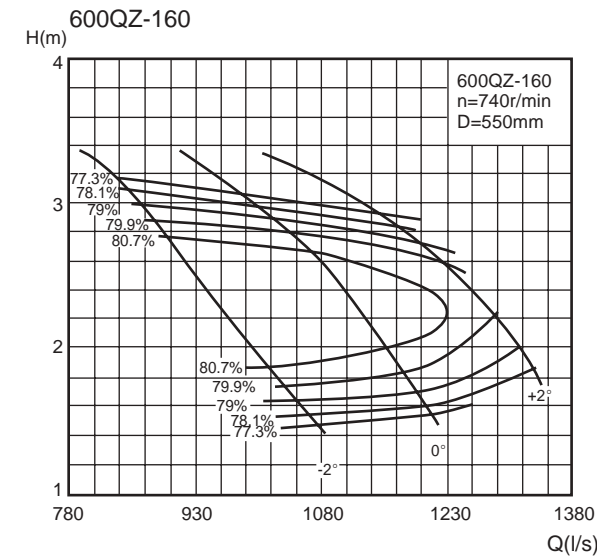
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-6°	2598.4	721.8	4.6	740	40.5	45	1210	79.4	550	
	2830.5	786.3	3.5		33.1			81.4		
	3050.0	847.2	2.8		29.3			79.4		
-4°	2758.5	766.2	5.1		48.0	55	1250	79.4		550
	3170.2	880.6	3.6		37.5			82.5		
	3462.0	961.7	2.5		30.1			79.4		
-2°	2952.5	820.1	5.3		54.0	75	1320	79.4		550
	3453.2	959.2	3.7		41.5			83.1		
	3768.3	1046.8	2.5		32.8			79.4		
0°	3163.2	878.7	5.4		58.8	75	1320	79.4		550
	3736.3	1037.9	3.7		44.8			83.4		
	4039.2	1122.0	2.5		35.1			79.4		
+2°	3453.8	959.4	5.5	65.2	75	1320	79.4	550		
	3962.7	1100.8	3.9	49.5			83.9			
	4277.5	1188.2	2.8	41.0			79.4			
+4°	3775.3	1048.7	5.3	67.9	75	1320	79.4	550		
	4245.8	1179.4	3.9	53.2			83.6			
	4504.3	1251.2	3.1	47.3			79.4			

## 600QZ-130



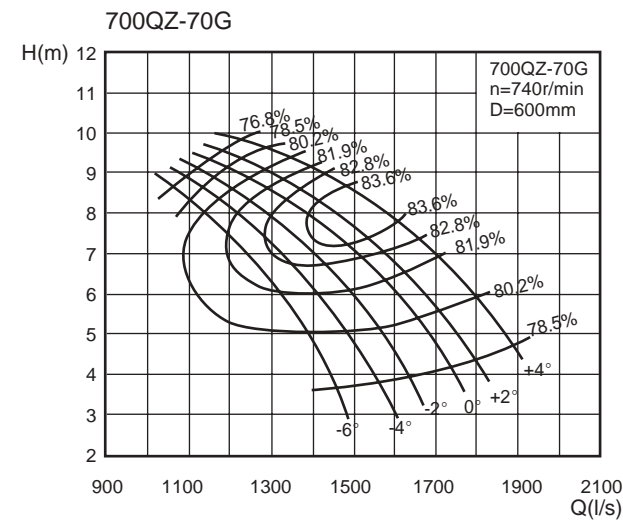
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-4°	2718.5	755.1	4.6	740	42.9	55	1320	78.5	550	
	3512.0	975.6	2.5		29.1			83.3		
	3764.3	1045.6	1.8		24.0			78.5		
-2°	3032.4	842.3	4.6		47.8	75	1400	78.5		550
	3775.9	1048.9	2.7		33.6			83.0		
	4089.1	1135.9	1.9		27.3			78.5		
0°	3348.5	930.1	4.5		51.8	75	1400	78.5		550
	4026.2	1118.4	2.8		37.1			82.6		
	4372.5	1214.6	1.9		29.2			78.5		
+2°	3810.8	1058.6	4.2		55.5	75	1400	78.5		550
	4337.6	1204.9	3.0		42.9			81.8		
	4670.0	1297.2	2.2		35.4			78.5		
+4°	4196.7	1165.7	4.2	61.1	75	1400	78.5	550		
	4643.3	1289.8	3.1	47.8			81.0			
	4917.5	1366.0	2.5	41.7			78.5			

## 600QZ-160



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-2°	3072.5	853.5	3.0	740	32.4	37	1380	78.1	550	
	3508.4	974.6	2.2		25.4			82.0		
	3832.5	1064.6	1.5		20.2			78.1		
0°	3629.2	1008.1	2.9		37.2	45	1420	78.1		550
	4074.3	1131.8	2.2		29.8			81.2		
	4331.5	1203.2	1.6		24.1			78.1		
+2°	4215.0	1170.8	2.8		40.7	45	1420	78.1		550
	4549.6	1263.8	2.4		36.4			79.9		
	4799.8	1333.3	1.8		30.9			78.1		

## 700QZ-70G

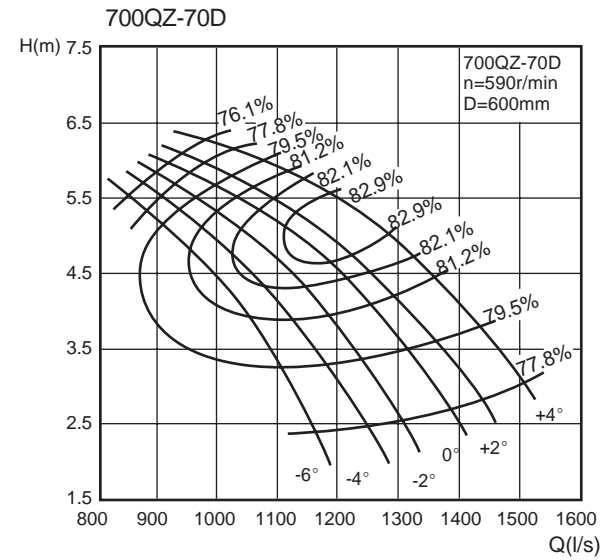


叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-6°	4032.0	1120.0	8.3	740	115.2	160	2350	79.0	600	
	4518.0	1255.0	7.0		104.9			82.0		
	4842.0	1345.0	5.8		94.3			81.0		
-4°	4204.8	1168.0	8.4		119.8	160	2350	80.2		600
	4734.0	1315.0	7.1		110.1			83.0		
	5104.8	1418.0	5.9		100.0			81.9		
-2°	4392.0	1220.0	8.6		127.6	160	2350	80.5		600
	4896.0	1360.0	7.6		121.9			83.0		
	5400.0	1500.0	6.0		108.8			81.0		
0°	4644.0	1290.0	8.7		134.8	160	2350	81.5		600
	5220.0	1450.0	7.6		128.5			84.0		
	5688.0	1580.0	6.1		115.8			81.5		
+2°	4824.0	1340.0	8.8	143.4	160	2350	80.5	600		
	5382.0	1495.0	7.7	134.2			84.0			
	5958.0	1655.0	6.0	120.0			81.0			
+4°	5004.0	1390.0	9.2	152.9	185	2430	81.9	600		
	5508.0	1530.0	8.5	151.6			84.0			
	6300.0	1750.0	6.2	131.2			81.0			



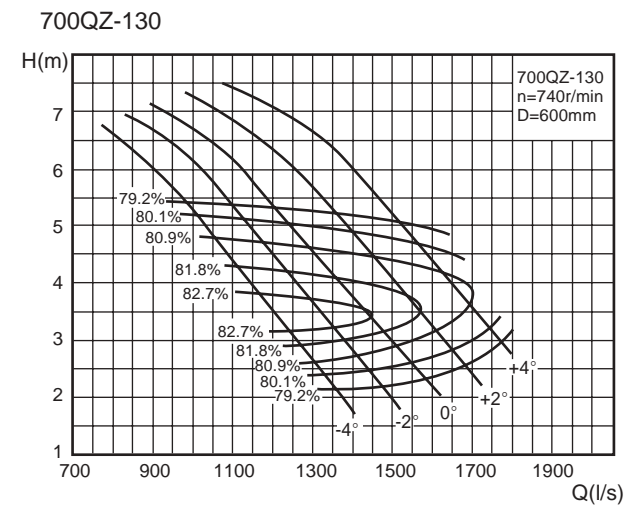
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

700QZ-70D



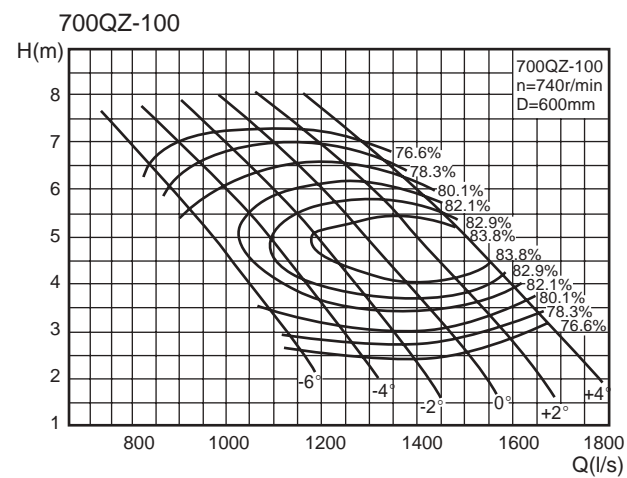
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power				
-6°	3213.5	892.6	5.3	590	58.9	75	2250	78.3	600	
	3600.8	1000.2	4.5		53.6			81.3		
	3859.1	1072.0	3.7		48.2			80.3		
3351.2	930.9	5.3	61.3		79.5					
3773.0	1048.1	4.5	56.3		82.3					
4068.5	1130.1	3.8	51.1		81.2					
-4°	3500.4	972.3	5.5		65.3	90	2360	79.8		600
	3902.1	1083.9	4.8		62.3			82.3		
	4303.8	1195.5	3.8		55.6			80.3		
3701.3	1028.1	5.5	68.9		80.8					
4160.3	1155.7	4.8	65.7		83.3					
4533.3	1259.3	3.9	59.2		80.8					
-2°	3844.7	1068.0	5.6	73.3	90	2360	79.8	600		
	4289.5	1191.5	4.9	68.6			83.3			
	4748.5	1319.0	3.8	61.4			80.3			
3988.2	1107.8	5.9	78.2	81.2						
4389.9	1219.4	5.4	77.5	83.3						
5021.1	1394.8	3.9	67.1	80.3						
0°	4160.3	1155.7	4.8	65.7	90	2360	80.8		600	
	4533.3	1259.3	3.9	59.2			80.8			
	3844.7	1068.0	5.6	73.3			79.8			
4289.5	1191.5	4.9	68.6	83.3						
4748.5	1319.0	3.8	61.4	80.3						
3988.2	1107.8	5.9	78.2	81.2						
+2°	4389.9	1219.4	5.4	77.5	90	2360	83.3	600		
	5021.1	1394.8	3.9	67.1			80.3			
	4160.3	1155.7	4.8	65.7			80.8			
4533.3	1259.3	3.9	59.2	80.8						
3844.7	1068.0	5.6	73.3	79.8						
4289.5	1191.5	4.9	68.6	83.3						
+4°	4748.5	1319.0	3.8	61.4	90	2360	80.3		600	
	3988.2	1107.8	5.9	78.2			81.2			
	4389.9	1219.4	5.4	77.5			83.3			
5021.1	1394.8	3.9	67.1	80.3						
4160.3	1155.7	4.8	65.7	80.8						
4533.3	1259.3	3.9	59.2	80.8						

700QZ-130



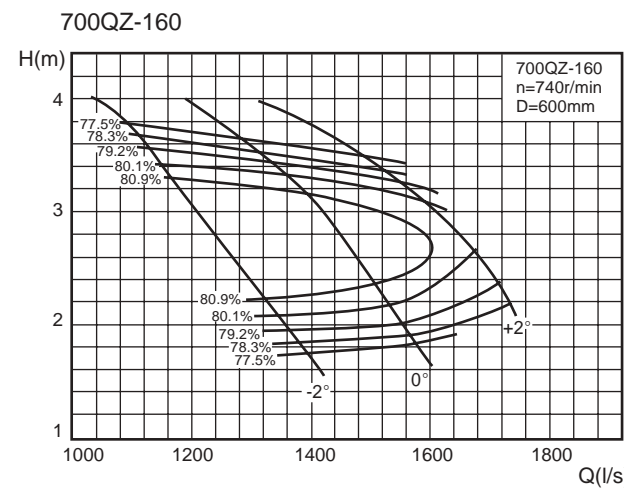
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power				
-4°	3528.5	980.1	5.4	740	65.7	75	2010	79.2	600	
	4558.4	1266.2	3.0		44.6			84.0		
	4885.7	1357.2	2.2		36.7			79.2		
3935.9	1093.3	5.4	73.2		79.2					
4900.8	1361.3	3.2	51.4		83.7					
5307.4	1474.3	2.3	41.8		79.2					
-2°	4346.1	1207.3	5.3		79.3	90	2150	79.2		600
	5225.8	1451.6	3.3		56.9			83.3		
	5675.2	1576.4	2.3		44.7			79.2		
4946.2	1373.9	5.0	85.0		79.2					
5629.9	1563.9	3.5	65.8		82.5					
6061.4	1683.7	2.6	54.2		79.2					
0°	5447.0	1513.1	5.0	93.6	110	2300	79.2	600		
	6026.7	1674.1	3.6	73.2			81.7			
	6382.6	1772.9	2.9	64.0			79.2			
4946.2	1373.9	5.0	85.0	79.2						
5629.9	1563.9	3.5	65.8	82.5						
6061.4	1683.7	2.6	54.2	79.2						
+2°	5629.9	1563.9	3.5	65.8	110	2300	82.5		600	
	6061.4	1683.7	2.6	54.2			79.2			
	6382.6	1772.9	2.9	64.0			79.2			
4946.2	1373.9	5.0	85.0	79.2						
5629.9	1563.9	3.5	65.8	82.5						
6061.4	1683.7	2.6	54.2	79.2						
+4°	6026.7	1674.1	3.6	73.2	110	2300	81.7	600		
	6382.6	1772.9	2.9	64.0			79.2			
	4946.2	1373.9	5.0	85.0			79.2			
5629.9	1563.9	3.5	65.8	82.5						
6061.4	1683.7	2.6	54.2	79.2						
6382.6	1772.9	2.9	64.0	79.2						

700QZ-100



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power				
-6°	3373.4	937.0	5.4	740	62.1	75	2050	80.1	600	
	3674.7	1020.8	4.2		50.7			82.1		
	3959.7	1099.9	3.3		44.8			80.1		
4115.7	1143.2	4.3	73.5		80.1					
4494.6	1248.5	3.0	57.5		83.2					
3833.1	1064.8	6.4	46.1		80.1					
-4°	4483.1	1245.3	4.4		82.7	90	2180	80.1		600
	4892.3	1359.0	3.0		63.7			83.8		
	4106.7	1140.7	6.5		50.2			80.1		
4850.6	1347.4	4.4	90.1		80.1					
5243.9	1456.6	3.0	68.7		84.1					
4484.0	1245.5	6.6	53.8		80.1					
-2°	5144.6	1429.1	4.6	100.0	110	2350	80.1	600		
	5553.3	1542.6	3.3	75.8			84.6			
	4901.2	1361.5	6.3	62.9			80.1			
4484.0	1245.5	6.6	75.8	84.6						
5144.6	1429.1	4.6	100.0	80.1						
5553.3	1542.6	3.3	62.9	84.6						
0°	4901.2	1361.5	6.3	104.1	110	2350	80.1		600	
	5512.1	1531.1	4.6	81.5			84.3			
	4901.2	1361.5	6.3	104.1			80.1			
5512.1	1531.1	4.6	81.5	84.3						
4901.2	1361.5	6.3	104.1	80.1						
5512.1	1531.1	4.6	81.5	84.3						
+2°	5512.1	1531.1	4.6	81.5	110	2350	84.3	600		
	5847.7	1624.4	3.6	72.4			80.1			
	4901.2	1361.5	6.3	104.1			80.1			
5512.1	1531.1	4.6	81.5	84.3						
4901.2	1361.5	6.3	104.1	80.1						
5512.1	1531.1	4.6	81.5	84.3						
+4°	5847.7	1624.4	3.6	72.4	110	2350	80.1		600	
	4901.2	1361.5	6.3	104.1			80.1			
	5847.7	1624.4	3.6	72.4			80.1			
4901.2	1361.5	6.3	104.1	80.1						
5847.7	1624.4	3.6	72.4	80.1						
4901.2	1361.5	6.3	104.1	80.1						

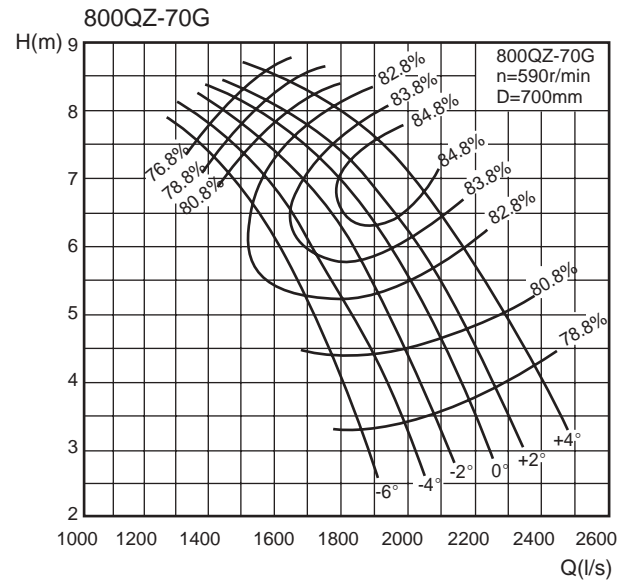
700QZ-160



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power				
-2°	3990.2	1108.4	3.6	740	49.9	55	1860	78.1	600	
	4556.4	1265.7	2.6		39.2			82.0		
	4977.3	1382.8	1.8		31.1			78.1		
4713.3	1309.3	3.5	57.3		78.1					
5291.3	1469.8	2.6	46.0		81.2					
5625.3	1562.6	1.9	37.1		78.1					
0°	5474.0	1520.6	3.3		62.8	75	1980	78.1		600
	5908.6	1641.3	2.8		56.2			79.9		
	6233.5	1731.5	2.2		47.6			78.1		
4713.3	1309.3	3.5	57.3		78.1					
5291.3	1469.8	2.6	46.0		81.2					
5625.3	1562.6	1.9	37.1		78.1					
+2°	5474.0	1520.6	3.3	62.8	75	1980	78.1	600		
	5908.6	1641.3	2.8	56.2			79.9			
	6233.5	1731.5	2.2	47.6			78.1			
4713.3	1309.3	3.5	57.3	78.1						
5291.3	1469.8	2.6	46.0	81.2						
5625.3	1562.6	1.9	37.1	78.1						

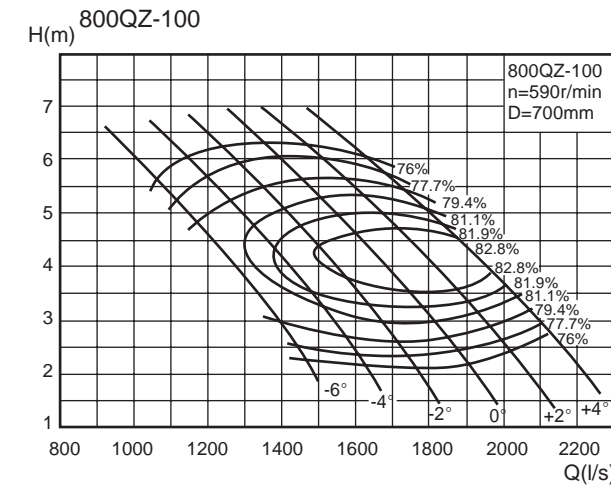
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

800QZ-70G



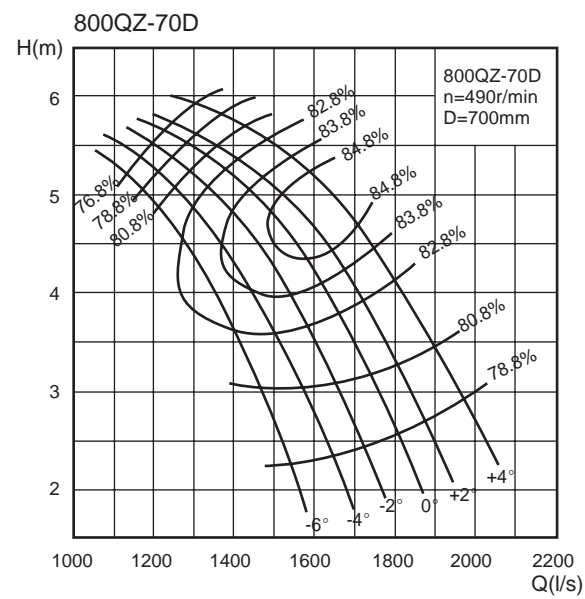
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power			
-6°	6380.0	1772.2	4.4	590	94.5	160	3480	80.8	700
	5170.0	1436.1	6.2		104.9				
	5100.0	1416.7	7.3		128.5				
6810.0	1891.7	4.4	100.9						
6000.0	1666.7	6.3	122.4						
5065.0	1406.9	7.8	139.9						
-4°	7170.0	1991.7	4.4		106.2	185	3650	80.8	
	6365.0	1768.1	6.4		131.5				
	5390.0	1497.2	7.8		145.1				
7535.0	2093.1	4.6	116.7						
6620.0	1838.9	6.7	140.6						
5540.0	1538.9	8.0	153.0						
-2°	7790.0	2163.9	4.7	123.3	200	3750	80.8		
	6830.0	1897.2	6.8	147.9					
	5645.0	1568.1	8.1	157.8					
8210.0	2280.6	5.0	138.2						
7770.0	2158.3	6.0	153.1						
7130.0	1980.6	7.2	164.7						
0°	6380.0	1772.2	4.4	94.5	220	3900	80.8		
	5170.0	1436.1	6.2	104.9					
	5100.0	1416.7	7.3	128.5					
6810.0	1891.7	4.4	100.9						
6000.0	1666.7	6.3	122.4						
5065.0	1406.9	7.8	139.9						
+2°	7170.0	1991.7	4.4	106.2	185	3650	80.8		
	6365.0	1768.1	6.4	131.5					
	5390.0	1497.2	7.8	145.1					
7535.0	2093.1	4.6	116.7						
6620.0	1838.9	6.7	140.6						
5540.0	1538.9	8.0	153.0						
+4°	7790.0	2163.9	4.7	123.3	200	3750	80.8		
	6830.0	1897.2	6.8	147.9					
	5645.0	1568.1	8.1	157.8					
8210.0	2280.6	5.0	138.2						
7770.0	2158.3	6.0	153.1						
7130.0	1980.6	7.2	164.7						

800QZ-100



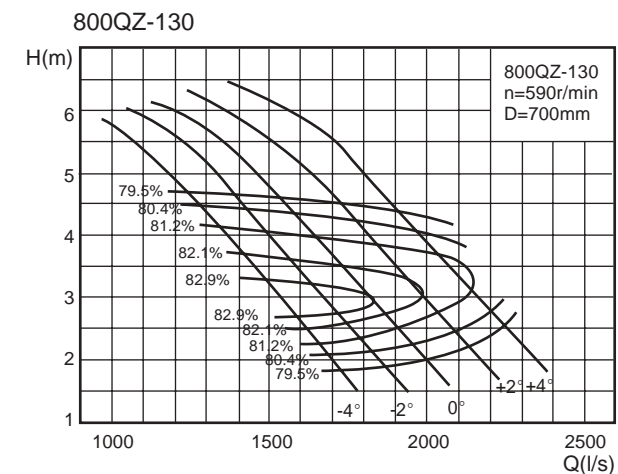
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power			
-6°	4270.6	1186.3	4.7	590	68.5	75	2580	79.4	700
	4652.1	1292.3	3.6		56.0				
	5012.9	1392.5	2.9		49.5				
4533.7	1259.4	5.2	81.2						
5210.4	1447.3	3.7	63.5						
5690.0	1580.6	2.6	50.9						
-4°	4852.7	1348.0	5.5		91.4	90	2650	79.4	
	5675.6	1576.5	3.8		70.3				
	6193.5	1720.4	2.6		55.4				
5199.0	1444.2	5.6	99.5						
6140.8	1705.8	3.8	75.8						
6638.7	1844.1	2.6	59.4						
-2°	5676.6	1576.8	5.7	110.4	110	2790	79.4		
	6512.9	1809.2	4.0	83.7					
	7030.4	1952.9	2.9	69.4					
6204.9	1723.6	5.4	114.9						
6978.2	1938.4	4.0	90.0						
7403.0	2056.4	3.2	80.0						
0°	6140.8	1705.8	3.8	75.8	132	2950	79.4		
	6638.7	1844.1	2.6	59.4					
	7030.4	1952.9	2.9	69.4					
6204.9	1723.6	5.4	114.9						
6978.2	1938.4	4.0	90.0						
7403.0	2056.4	3.2	80.0						
+2°	6140.8	1705.8	3.8	75.8	132	2950	79.4		
	6638.7	1844.1	2.6	59.4					
	7030.4	1952.9	2.9	69.4					
6204.9	1723.6	5.4	114.9						
6978.2	1938.4	4.0	90.0						
7403.0	2056.4	3.2	80.0						
+4°	6140.8	1705.8	3.8	75.8	132	2950	79.4		
	6638.7	1844.1	2.6	59.4					
	7030.4	1952.9	2.9	69.4					
6204.9	1723.6	5.4	114.9						
6978.2	1938.4	4.0	90.0						
7403.0	2056.4	3.2	80.0						

800QZ-70D



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power			
-6°	5295.4	1470.9	3.0	490	54.5	90	2780	80.3	700
	4291.1	1192.0	4.3		60.5				
	4233.0	1175.8	5.0		74.1				
5652.3	1570.1	3.0	58.1						
4980.0	1383.3	4.3	70.5						
4204.0	1167.8	5.4	80.7						
-4°	5951.1	1653.1	3.0		61.2	110	3120	80.3	
	5283.0	1467.5	4.4		75.8				
	4473.7	1242.7	5.4		83.6				
6254.1	1737.2	3.2	67.2						
5494.6	1526.3	4.6	81.0						
4598.2	1277.3	5.5	88.2						
-2°	6465.7	1796.0	3.2	71.0	132	3500	80.3		
	5668.9	1574.7	4.7	85.2					
	4685.4	1301.5	5.6	91.0					
6814.3	1892.9	3.5	79.6						
6449.1	1791.4	4.1	88.2						
5917.9	1643.9	5.0	96.1						
0°	6465.7	1796.0	3.2	71.0	132	3500	80.3		
	5668.9	1574.7	4.7	85.2					
	4685.4	1301.5	5.6	91.0					
6814.3	1892.9	3.5	79.6						
6449.1	1791.4	4.1	88.2						
5917.9	1643.9	5.0	96.1						
+2°	6465.7	1796.0	3.2	71.0	132	3500	80.3		
	5668.9	1574.7	4.7	85.2					
	4685.4	1301.5	5.6	91.0					
6814.3	1892.9	3.5	79.6						
6449.1	1791.4	4.1	88.2						
5917.9	1643.9	5.0	96.1						
+4°	6465.7	1796.0	3.2	71.0	132	3500	80.3		
	5668.9	1574.7	4.7	85.2					
	4685.4	1301.5	5.6	91.0					
6814.3	1892.9	3.5	79.6						
6449.1	1791.4	4.1	88.2						
5917.9	1643.9	5.0	96.1						

800QZ-130

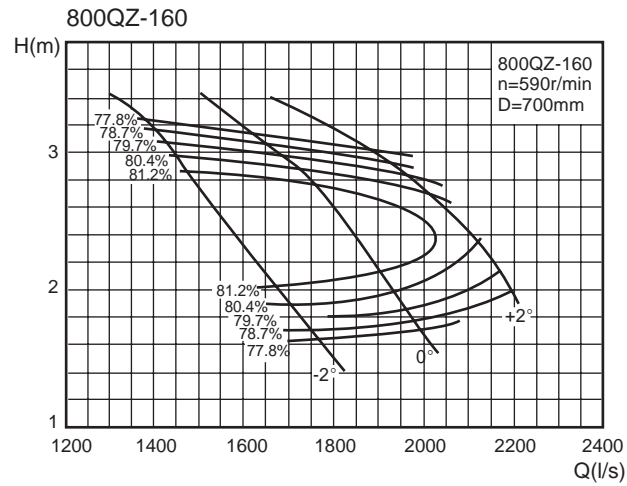


叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power			
-4°	4468.1	1241.1	4.7	590	71.6	90	2600	79.5	700
	5772.2	1603.4	2.6		48.7				
	6186.8	1718.5	1.9		40.1				
4983.9	1384.4	4.7	79.9						
6205.9	1723.9	2.8	56.1						
6720.7	1866.9	2.0	45.6						
-2°	5503.4	1528.7	4.6		86.5	110	2730	79.5	
	6617.4	1838.2	2.9		62.1				
	7186.5	1996.2	2.0		48.7				
6263.3	1739.8	4.3	92.7						
7129.1	1980.3	3.1	71.7						
7675.4	2132.1	2.3	59.2						
0°	6897.5	1916.0	4.3	102.1	132	2900	79.5		
	7631.5	2119.9	3.2	79.8					
	8082.2	2245.1	2.5	69.8					
4468.1	1241.1	4.7	71.6						
5772.2	1603.4	2.6	48.7						
6186.8	1718.5	1.9	40.1						
+2°	4468.1	1241.1	4.7	71.6	132	2900	79.5		
	5772.2	1603.4	2.6	48.7					
	6186.8	1718.5	1.9	40.1					
4983.9	1384.4	4.7	79.9						
6205.9	1723.9	2.8	56.1						
6720.7	1866.9	2.0	45.6						
+4°	5503.4	1528.7	4.6	86.5	132	2900	79.5		
	6617.4	1838.2	2.9	62.1					
	7186.5	1996.2	2.0	48.7					
6263.3	1739.8	4.3	92.7						
7129.1	1980.3	3.1	71.7						
7675.4	2132.1	2.3	59.2						



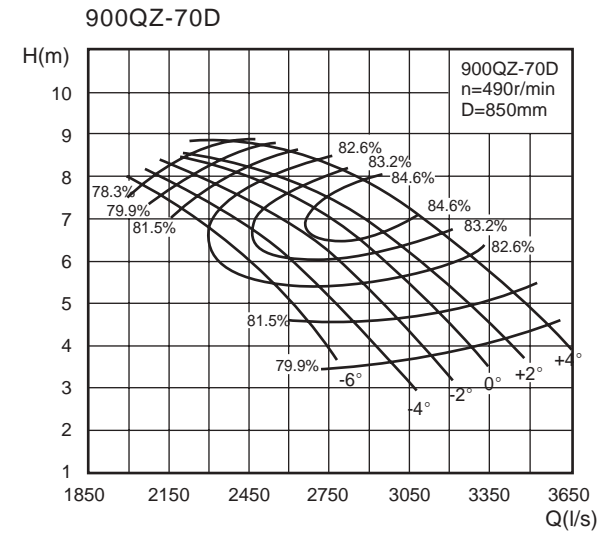
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

800QZ-160



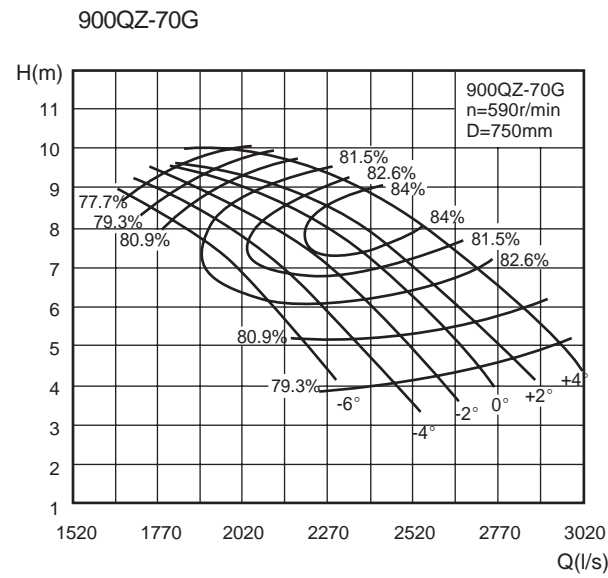
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-2°	5051.6	1403.2	3.1	590	54.4	75	2490	78.7	700
	5768.4	1602.3	2.2		42.7			82.6	
	6301.3	1750.4	1.6		33.9			78.7	
0°	5967.0	1657.5	3.0		62.4			78.7	
	6698.8	1860.8	2.2		50.1			81.8	
	7121.6	1978.2	1.6		40.5			78.7	
+2°	6930.1	1925.0	2.9		68.4			78.7	
	7480.3	2077.9	2.4		61.2			80.5	
	7891.6	2192.1	1.9		51.9			78.7	

900QZ-70D



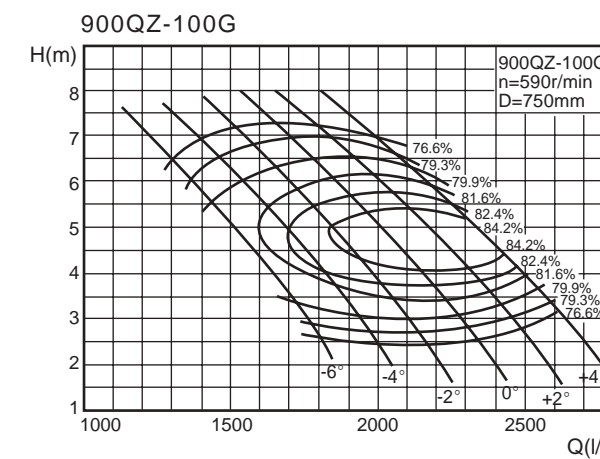
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-6°	9996	2776.7	3.5	490	119.0	220	6100	80.0	850
	9335	2593.1	5.1		156.8			82.6	
	8301	2305.8	6.8		184.8			83.1	
-4°	7637	2121.4	7.5		194.7			80.0	
	10667	2963.1	3.6		130.6			80.0	
	9906	2751.7	5.1		166.4			82.6	
-2°	8841	2455.8	6.7		192.0			83.9	
	7858	2182.8	7.8		208.4			80.0	
	11214	3115.0	3.7		141.1			80.0	
0°	10487	2913.1	5.1		176.3			82.5	
	9028	2507.8	7.2	210.7	83.9				
	8080	2244.4	8.1	222.5	80.0				
+2°	11753	3264.7	3.9	155.8	80.0				
	11124	3090.0	5.1	188.0	82.1				
	10080	2800.0	6.8	220.4	84.6				
+4°	8308	2307.8	8.3	234.5	80.0				
	12154	3376.1	4.1	169.4	80.0				
	10521	2920.0	6.7	226.4	84.6				
+2°	9732	2703.3	7.5	234.7	84.6				
	8481	2355.8	8.4	242.2	80.0				
	12790	3552.8	4.4	182.2	80.0				
+4°	11268	3130.0	6.7	242.7	84.0				
	10273	2853.6	7.9	261.1	84.6				
	8945	2484.7	8.7	264.6	80.0				

900QZ-70G



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-6°	8266.7	2296.3	4.0	590	112.1	200	4860	79.3	750
	7720.0	2144.5	5.8		147.8			81.9	
	6864.9	1906.9	7.7		174.1			82.4	
-4°	6315.8	1754.4	8.5		183.6			79.3	
	8821.6	2450.4	4.1		123.1			79.3	
	8192.3	2275.6	5.8		156.8			81.9	
-2°	7311.5	2031.0	7.6		181.0			83.2	
	6498.6	1805.2	8.8		196.5			79.3	
	9274.0	2576.1	4.2		133.0			79.3	
0°	8672.7	2409.1	5.8		166.2			81.8	
	7466.2	2073.9	8.1	198.6	83.2				
	6682.2	1856.2	9.2	209.8	79.3				
+2°	9719.7	2699.9	4.4	146.9	79.3				
	9199.5	2555.4	5.8	177.2	81.4				
	8336.2	2315.6	7.7	207.7	83.8				
+4°	6870.7	1908.5	9.4	221.1	79.6				
	10051.4	2792.0	4.6	159.7	79.3				
	8693.4	2414.8	7.6	213.4	82.9				
+2°	8048.4	2235.7	8.5	221.1	83.9				
	7013.8	1948.3	9.5	228.4	79.3				
	10577.3	2938.1	5.0	171.7	79.3				
+4°	9318.6	2588.5	7.6	228.7	83.3				
	8495.8	2359.9	8.9	245.3	83.9				
	7397.5	2054.9	9.8	249.4	79.3				

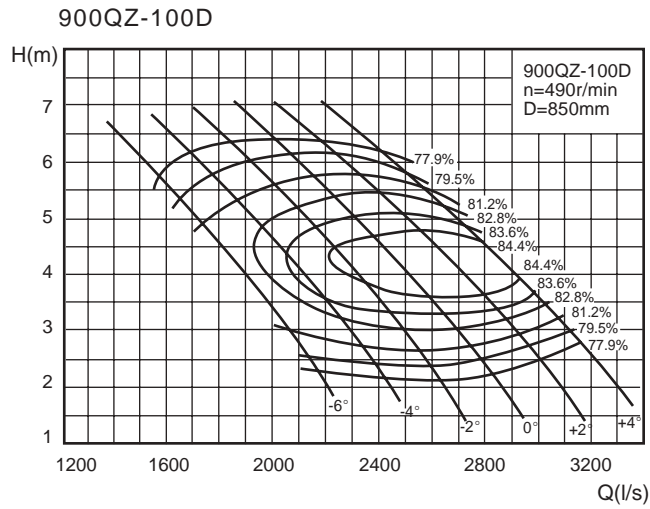
900QZ-100G



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-6°	5253.0	1459.2	5.4	590	96.2	132	3620	79.9	750
	5722.2	1589.5	4.1		78.7			81.9	
	6166.0	1712.8	3.3		69.5			79.9	
-4°	5576.6	1549.1	6.0		114.0			79.9	
	6408.9	1780.2	4.2		89.1			83.0	
	6998.9	1944.1	3.0		71.5			79.9	
-2°	5968.9	1658.0	6.3		128.3			79.9	
	6981.1	1939.2	4.3		98.7			83.6	
	7618.2	2116.2	3.0		77.8			79.9	
0°	6394.9	1776.4	6.4		139.7			79.9	
	7553.3	2098.1	4.3	106.4	83.9				
	8165.7	2268.3	3.0	83.4	79.9				
+2°	6982.4	1939.5	6.5	155.0	79.9				
	8011.1	2225.3	4.6	117.6	84.4				
	8674.5	2402.1	3.3	97.5	79.9				
+4°	7632.1	2120.0	6.2	161.3	79.9				
	8583.3	2384.3	4.6	126.4	84.1				
	9105.9	2529.4	3.6	112.3	79.9				

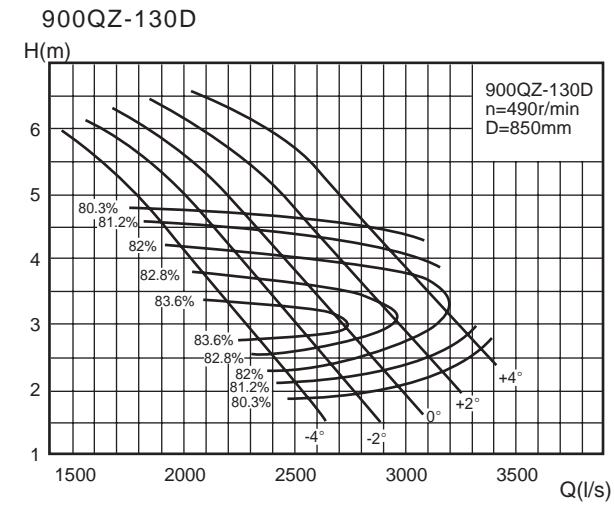
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

900QZ-100D



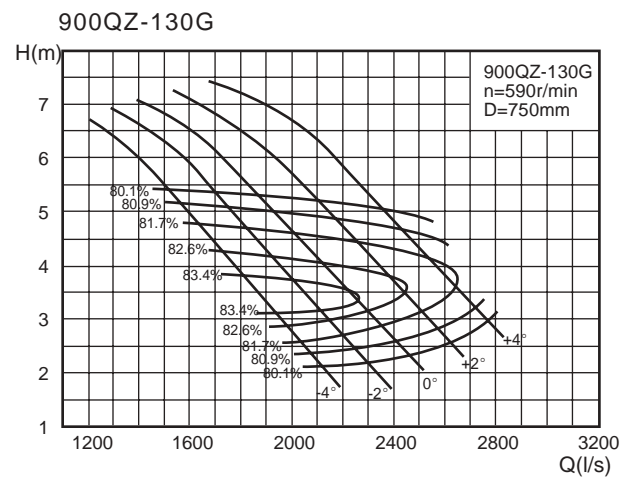
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-6°	6350	1763.9	4.8	490	102.6	132	4540	80.2	850
	6917	1921.5	3.7		83.9				
	7454	2070.5	2.9		74.1				
6741	1872.6	5.3	121.5						
7747	2152.1	3.8	95.0						
8461	2350.2	2.7	76.2						
-4°	7216	2004.3	5.6		136.7	160	5020	80.2	
	8439	2344.2	3.8		105.3				
	9209	2558.2	2.7		83.0				
7731	2147.4	5.7	148.9						
9131	2536.4	3.8	113.5						
9871	2742.0	2.7	88.9						
0°	8441	2344.7	5.8	165.2	185	5520	80.2		
	9684	2690.1	4.0	125.3					
	10454	2903.8	2.9	103.9					
9226	2562.9	5.5	172.0						
10376	2882.3	4.0	134.8						
11008	3057.7	3.2	119.7						

900QZ-130D



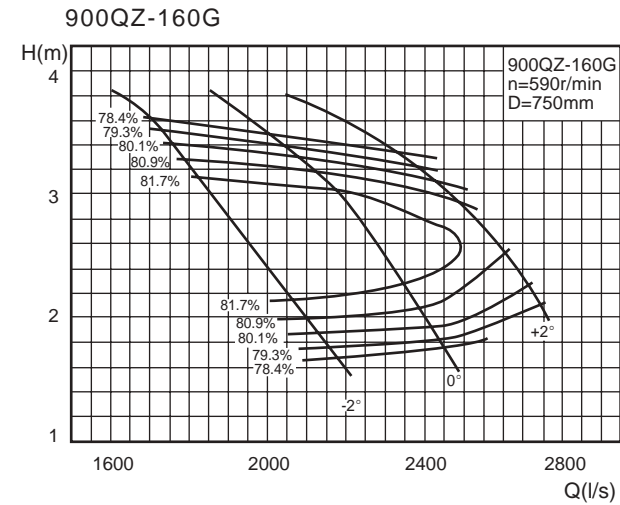
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	6644	1845.5	4.8	490	107.2	132	4300	80.3	850
	8583	2384.2	2.7		72.9				
	9199	2555.4	1.9		59.9				
7411	2058.8	4.8	119.6						
9228	2563.3	2.8	84.0						
9993	2775.9	2.0	68.2						
-2°	8183	2273.1	4.7		129.5	160	4650	80.3	
	9840	2733.2	2.9		93.0				
	10688	2968.3	2.0		72.9				
9313	2587.0	4.4	138.7						
10601	2944.6	3.1	107.4						
11413	3170.3	2.3	88.5						
0°	10256	2848.9	4.4	152.7	185	4900	80.3		
	11348	3152.1	3.2	119.5					
	12018	3338.3	2.6	104.4					

900QZ-130G



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	5495.0	1526.4	5.4	590	100.3	110	3300	80.1	750
	7098.9	1971.9	3.0		68.2				
	7608.7	2113.5	2.2		56.1				
6129.4	1702.6	5.4	111.9						
-2°	7632.2	2120.1	3.2		78.7				
8265.4	2295.9	2.3	63.8						
6768.3	1880.1	5.3	121.2						
0°	8138.2	2260.6	3.3		87.0				
8838.1	2455.0	2.3	68.3						
7702.8	2139.7	5.0	129.8						
+2°	8767.6	2435.4	3.5		100.5	160	3850	80.1	
9439.5	2622.1	2.6	82.9						
8482.8	2356.3	5.0	143.0						
9385.5	2607.1	3.6	111.8						
9939.8	2761.1	2.9	97.7						

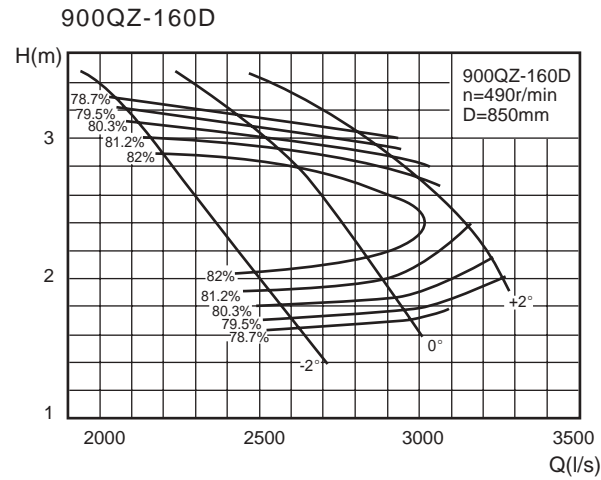
900QZ-160G



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-2°	6212.7	1725.8	3.6	590	76.2	90	2850	79.3	750
	7094.3	1970.6	2.6		59.9				
	7749.7	2152.7	1.8		47.5				
7338.6	2038.5	3.5	87.5						
0°	8238.6	2288.5	2.6		70.2				
8758.6	2432.9	1.9	56.7						
+2°	8523.0	2367.5	3.3		95.8	110	3100	79.3	
9199.7	2555.5	2.8	85.8						
9705.6	2696.0	2.2	72.7						

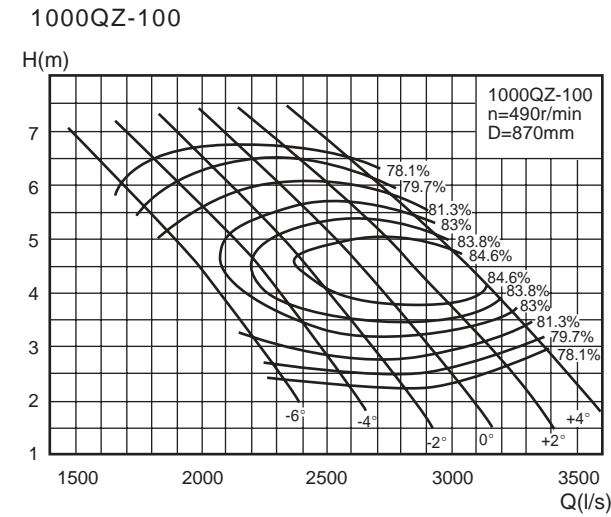
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

900QZ-160D



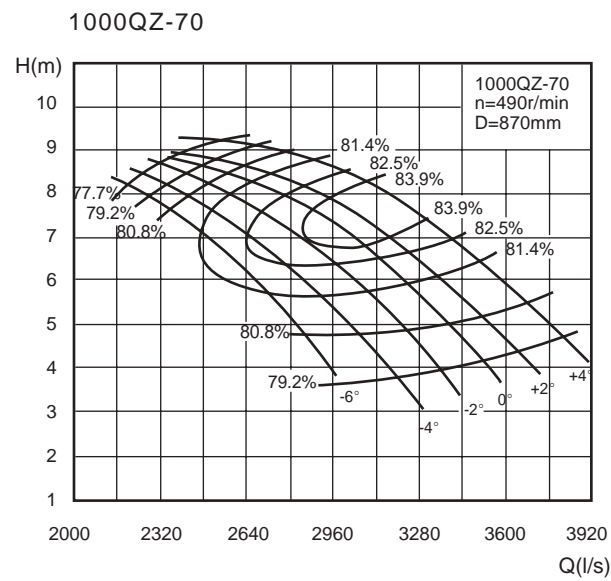
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-2°	7509.6	2086.0	3.2	490	81.4	90	3500	79.5	850	
	8575.1	2382.0	2.3		64.0					
	9367.3	2602.0	1.6		50.8					
0°	8870.4	2464.0	3.1		93.5	110	3800	79.5		82.6
	9958.2	2766.2	2.3		75.0					
	10586.6	2940.8	1.7		60.6					
+2°	10302.1	2861.7	2.9		102.4	132	4100	81.3		79.5
	11120.0	3088.9	2.5		91.7					
	11731.4	3258.7	1.9		77.7					

1000QZ-100



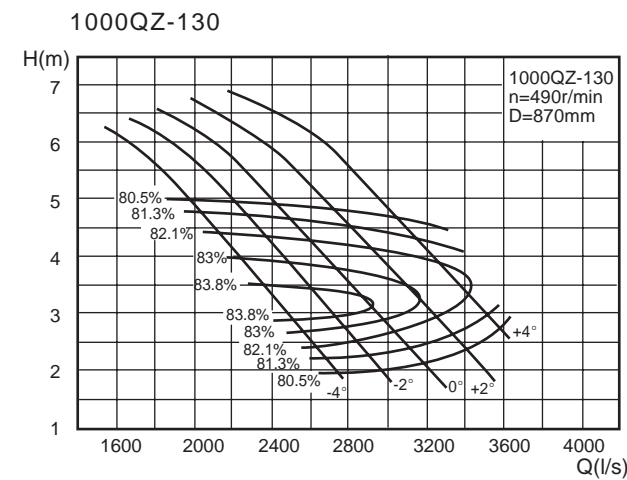
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-6°	6809.5	1891.5	5.0	490	114.9	132	4800	80.5	870	
	7417.8	2060.5	3.8		83.9					
	7993.1	2220.3	3.1		83.0					
-4°	7229.1	2008.1	5.6		136.0	160	5100	80.5		83.6
	8307.9	2307.8	3.9		106.4					
	9072.8	2520.2	2.8		85.3					
-2°	7737.6	2149.3	5.9		153.1	185	5500	80.5		84.2
	9049.7	2513.8	4.0		117.9					
	9875.6	2743.2	2.8		92.9					
0°	8289.8	2302.7	6.0		166.7	200	5800	85.0		80.5
	9791.5	2719.9	4.0		127.1					
	10585.4	2940.4	2.8		99.6					
+2°	9051.4	2514.3	6.0	185.0	220	6100	80.5	84.7		
	10384.9	2884.7	4.2	140.4						
	11209.9	3113.9	3.1	116.4						
+4°	9893.7	2748.2	5.8	192.6	134.0	185.0	80.5	80.5		
	11126.7	3090.8	4.2	150.9						
	11804.2	3278.9	3.4	134.0						

1000QZ-70



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-6°	10715.7	2976.6	3.7	490	133.1	250	6500	80.3	870	
	10007.1	2779.8	5.3		175.4					
	8898.7	2471.9	7.1		206.7					
-4°	8186.9	2274.1	7.9		217.9	280	6800	80.3		82.9
	11435.0	3176.4	3.8		146.1					
	10619.2	2949.8	5.3		186.2					
-2°	9477.6	2632.7	7.0		214.9	315	7200	80.3		84.2
	8423.8	2339.9	8.2		233.2					
	12021.4	3339.3	3.9		157.8					
0°	11242.1	3122.8	5.3		197.3	280	6800	80.3		82.8
	9678.0	2688.3	7.5		235.8					
	8661.8	2406.0	8.5		249.0					
+2°	12599.2	3499.8	4.1	174.4	315	7200	80.3	80.3		
	11924.9	3312.5	5.3	210.3						
	10805.8	3001.6	7.1	246.6						
+4°	8906.2	2473.9	8.7	262.3	280	6800	80.3	80.3		
	13029.1	3619.2	4.3	189.6						
	11268.9	3130.2	7.0	253.4						
+4°	10432.7	2898.0	7.9	262.6	280	6800	80.3	84.9		
	9091.6	2525.5	8.8	271.0						
	13710.9	3808.6	4.6	203.9						
+4°	12079.3	3355.4	7.0	271.6	280	6800	80.3	84.3		
	11012.7	3059.1	8.3	293.1						
	9589.0	2663.6	9.1	296.0						

1000QZ-130

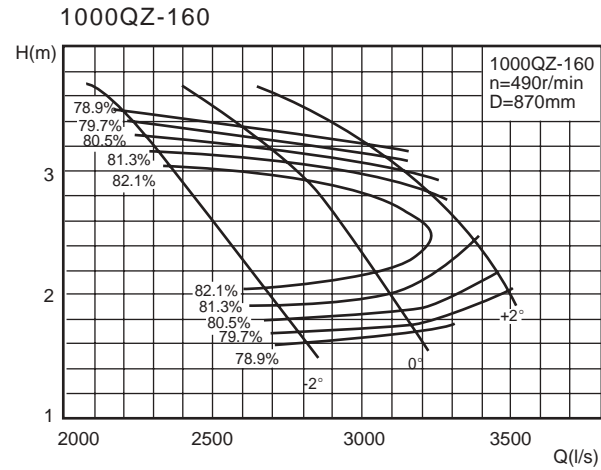


叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-4°	7124.4	1979.0	5.0	490	120.2	132	4700	80.5	870	
	9203.8	2556.6	2.8		81.7					
	9864.8	2740.2	2.0		67.2					
-2°	7946.9	2207.5	5.0		134.0	160	5000	80.5		85.0
	9895.3	2748.7	3.0		94.2					
	10716.2	2976.7	2.1		76.5					
0°	8775.3	2437.6	4.9		145.2	185	5300	80.5		80.5
	10551.4	2930.9	3.1		104.2					
	11458.9	3183.0	2.1		81.8					
+2°	9986.8	2774.1	4.6		155.5	200	5600	80.5		83.8
	11367.4	3157.6	3.3		120.4					
	12238.5	3399.6	2.4		99.2					
+4°	10998.1	3055.0	4.6	171.2	200	5600	80.5	80.5		
	12168.5	3380.1	3.4	134.0						
	12887.2	3579.8	2.7	117.0						



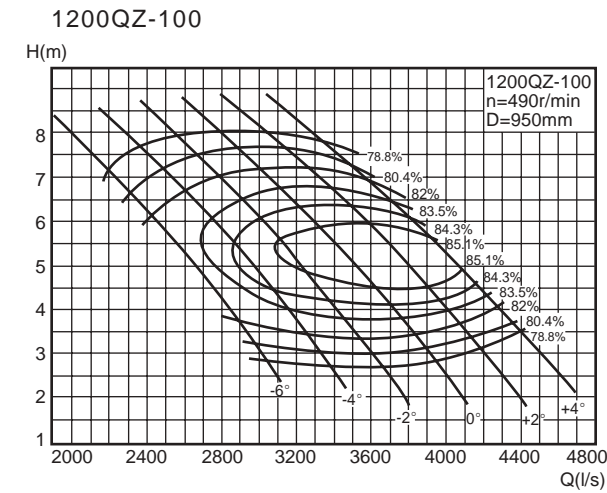
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

1000QZ-160



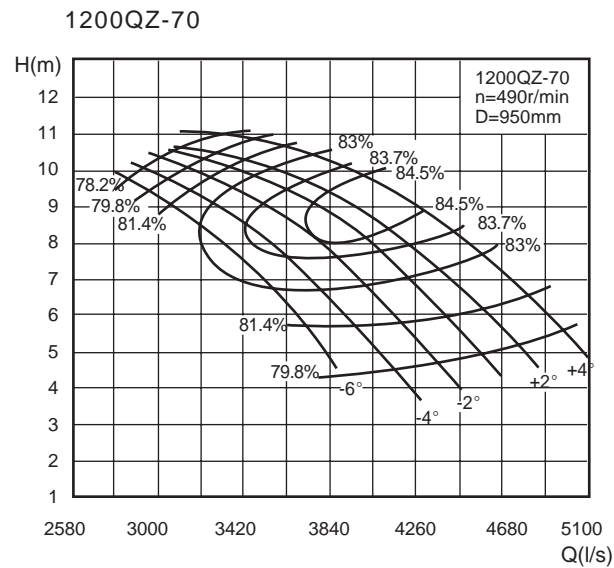
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-2°	8052.2	2236.7	3.5	490	96.3	110	4400	79.7	870
	9194.8	2554.1	2.5		75.7			83.6	
	10044.2	2790.1	1.8		60.1			79.7	
0°	9511.4	2642.1	3.4		110.6			79.7	
	10677.8	2966.1	2.5		88.8			82.8	
	11351.9	3153.3	1.8		71.7			79.7	
+2°	11046.5	3068.5	3.2		121.1			79.7	
	11923.6	3312.1	2.7		108.5			81.5	
	12579.2	3494.2	2.1		91.9			79.7	

1200QZ-100



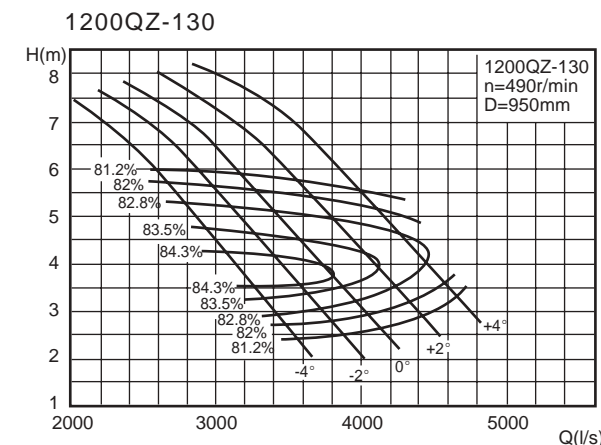
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-6°	8865.1	2462.5	6.0	490	178.3	200	7800	80.5	950
	9657.0	2682.5	4.6		145.8			82.5	
	10406.0	2890.5	3.7		128.8			80.5	
-4°	9411.3	2614.2	6.6		211.2			80.5	
	10815.8	3004.4	4.7		165.2			83.6	
	11811.6	3281.0	3.3		132.5			80.5	
-2°	10073.3	2798.1	7.0		237.7			80.5	
	11781.5	3272.7	4.8		183.0			84.2	
	12856.7	3571.3	3.3		144.2			80.5	
0°	10792.2	2997.8	7.1		258.9			80.4	
	12747.2	3540.9	4.8	197.3	84.5				
	13780.8	3828.0	3.3	154.6	80.5				
+2°	11783.7	3273.2	7.2	287.2	80.5				
	13519.8	3755.5	5.0	218.0	85.0				
	14593.9	4053.9	3.7	180.7	80.5				
+4°	12880.3	3577.9	6.9	299.0	80.5				
	14485.5	4023.8	5.0	234.4	84.7				
	15367.5	4268.8	4.0	208.1	80.5				

1200QZ-70



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-6°	13954.4	3876.2	4.4	490	205.1	400	9400	80.9	950
	13031.7	3619.9	6.4		270.4			83.5	
	11588.2	3218.9	8.5		318.7			84.0	
	10661.3	2961.5	9.4		335.8			80.9	
-4°	14891.1	4136.4	4.5		225.1			80.9	
	13282.8	3841.3	6.4		286.9			83.5	
	12342.0	3428.3	8.4		331.3			84.8	
	10969.8	3047.2	9.7		359.3			80.9	
-2°	15654.7	4348.5	4.6		243.2			80.9	
	14639.9	4066.6	6.4		304.1			83.4	
	12603.1	3500.9	9.0	363.5	84.8				
	11279.7	3133.2	10.1	383.7	80.9				
0°	16407.2	4557.6	4.9	268.7	80.9				
	15529.1	4313.6	6.4	324.2	83.0				
	14071.7	3908.8	8.5	380.2	85.5				
	11598.0	3221.7	10.4	404.2	80.9				
+2°	16967.0	4713.1	5.1	292.1	80.9				
	14674.8	4076.3	8.4	390.7	85.1				
	13585.9	3773.9	9.4	404.9	85.5				
	11839.5	3288.7	10.5	417.6	80.9				
+4°	17854.8	4959.7	5.5	314.4	80.9				
	15730.1	4369.5	8.4	418.8	84.9				
	14341.1	3983.6	9.9	452.0	85.5				
	12487.2	3468.7	10.9	456.2	80.9				

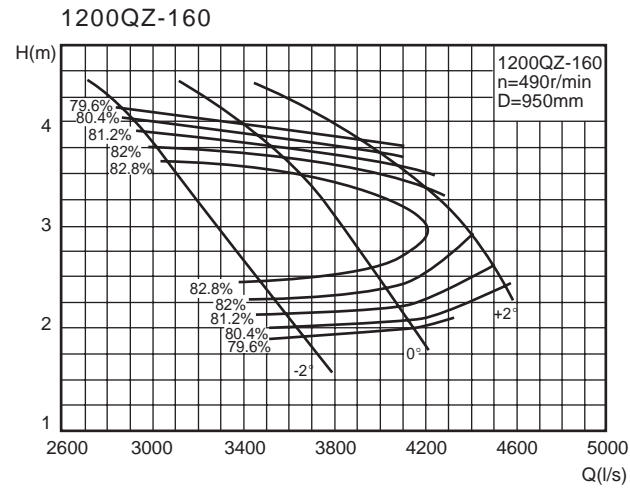
1200QZ-130



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	9275.0	2576.4	6.0	490	185.4	200	7700	81.0	950
	11982.2	3328.4	3.3		126.1			85.8	
	12842.7	3567.4	2.4		103.7			81.0	
-2°	10345.9	2873.9	6.0		206.9			81.0	
	12882.4	3578.5	3.5		145.5			85.5	
	13951.1	3875.3	2.5		118.0			81.0	
0°	11424.2	3173.4	5.8		224.0			81.0	
	13736.5	3815.7	3.7		160.9			85.1	
	14917.9	4143.9	2.5		126.2			81.0	
+2°	13001.5	3611.5	5.5		240.0			81.0	
	14798.8	4110.8	3.9	185.9	84.3				
	15933.0	4425.8	2.9	153.2	81.0				
+4°	14318.1	3977.3	5.5	264.3	81.0				
	15841.8	4400.5	4.0	206.8	83.5				
	16777.4	4660.4	3.2	180.6	81.0				

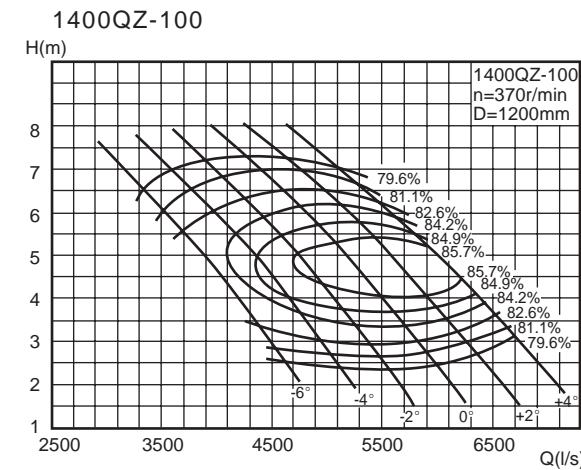
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

1200QZ-160



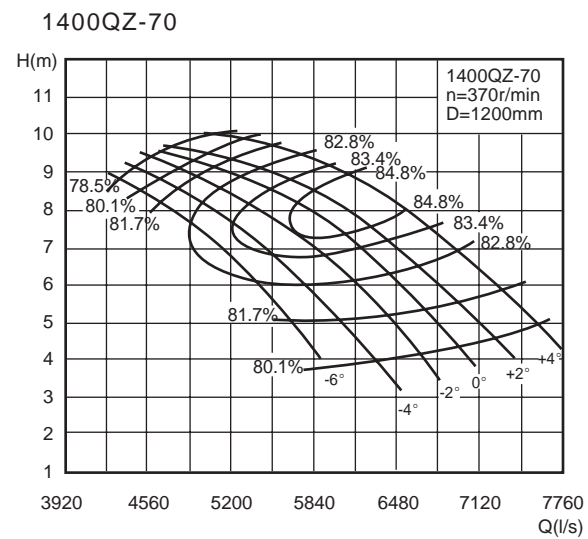
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-2°	10486.2	2912.8	4.0	490	140.4	160	7200	80.4	950
	11974.2	3326.2	2.9		110.4				
	13080.3	3633.4	2.0		87.5				
0°	12386.6	3440.7	3.8		161.2	185	7500	80.4	
	13905.5	3862.6	2.9		129.4				
	14783.3	4106.5	2.1		104.4				
+2°	14385.7	3996.0	3.6		176.5	200	7700	80.4	
	15527.8	4313.3	3.1		158.1				
	16381.6	4550.5	2.4		134.0				

1400QZ-100



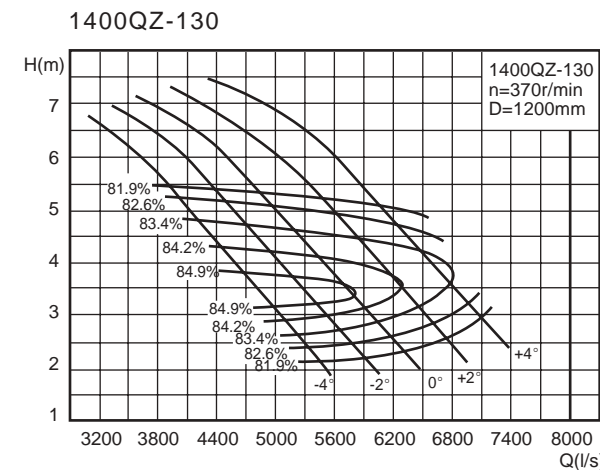
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-6°	13492.7	3748.0	5.4	370	244.0	280	9700	81.5	1200
	14697.9	4082.8	4.2		199.6				
	15837.8	4399.4	3.3		176.2				
-4°	14323.9	3978.9	6.0		288.9	315	10100	81.5	
	16461.6	4572.7	4.3		226.1				
	17977.2	4993.7	3.0		181.3				
-2°	15331.5	4258.8	6.4		325.2	355	10400	81.5	
	17931.4	4981.0	4.4		250.5				
	19567.8	5435.5	3.0		197.3				
0°	16425.7	4562.7	6.5		354.2	400	10800	81.5	
	19401.2	5389.2	4.4	270.1					
	20974.2	5826.2	3.0	211.5					
+2°	17934.7	4981.9	6.6	392.5	450	11200	81.5		
	20577.1	5715.9	4.6	298.4					
	22211.8	6169.9	3.3	247.2					
+4°	19603.7	5445.5	6.3	409.0	450	11200	81.5		
	22046.9	6124.1	4.6	320.8					
	23389.3	6497.0	3.6	284.7					

1400QZ-70



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-6°	21241.5	5900.4	4.0	370	282.9	500	11800	81.2	
	19836.9	5510.2	5.8		373.0				
	17639.6	4899.9	7.7		439.7				
	16228.6	4508.0	8.5		463.2				
-4°	22667.4	6296.5	4.1		310.5	560	12400	81.2	
	21050.3	5847.3	5.8		395.9				
	18787.1	5218.6	7.6		457.0				
	16698.3	4638.4	8.9		495.6				
-2°	23829.8	6619.4	4.2		335.5	710	13900	81.2	
	22284.9	6190.2	5.8		419.6				
	19184.5	5329.0	8.2	501.5					
	17170.0	4769.4	9.2	529.2					
0°	24975.1	6937.5	4.4	370.6	630	13100	81.2		
	23638.5	6566.3	5.8	447.2					
	21420.0	5950.0	7.7	524.6					
	17654.5	4904.0	9.4	557.6					
+2°	25827.3	7174.2	4.7	403.0	710	13900	81.2		
	22338.0	6205.0	7.6	539.0					
	20680.5	5744.6	8.5	558.6					
	18022.1	5006.1	9.5	576.1					
+4°	27178.8	7549.7	5.0	433.7	710	13900	81.2		
	23944.5	6651.3	7.6	577.8					
	21830.1	6063.9	9.0	623.4					
	19008.1	5280.0	9.9	629.3					

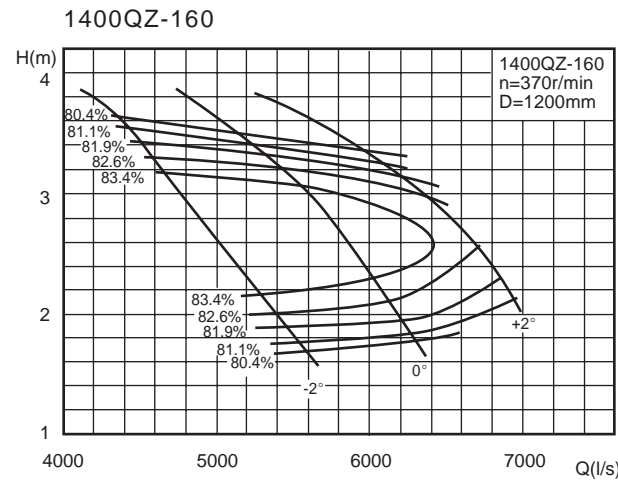
1400QZ-130



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	14116.5	3921.3	5.4	370	255.9	280	9600	81.3	
	18236.8	5065.8	3.0		174.1				
	19546.6	5429.6	2.2		143.1				
-2°	15746.4	4374.0	5.4		285.4	315	10100	81.3	
	19607.0	5446.4	3.2		200.8				
	21233.6	5898.2	2.3		162.9				
0°	17387.6	4829.9	5.3		309.1	355	10300	81.3	
	20906.9	5807.5	3.3		222.0				
	22705.0	6306.9	2.3		174.1				
+2°	19788.3	5496.7	5.0		331.1	400	11100	81.3	
	22523.7	6256.6	3.5	256.6					
	24249.9	6736.1	2.6	211.3					
+4°	21792.1	6053.4	5.0	364.7	400	11100	81.3		
	24111.1	6697.5	3.6	285.4					
	25535.2	7093.1	2.9	249.3					

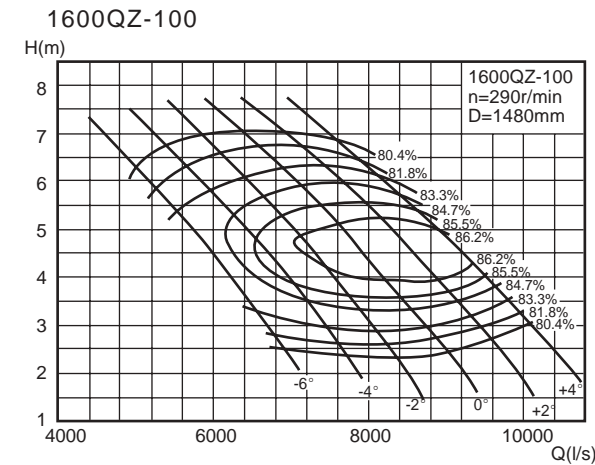
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

1400QZ-160



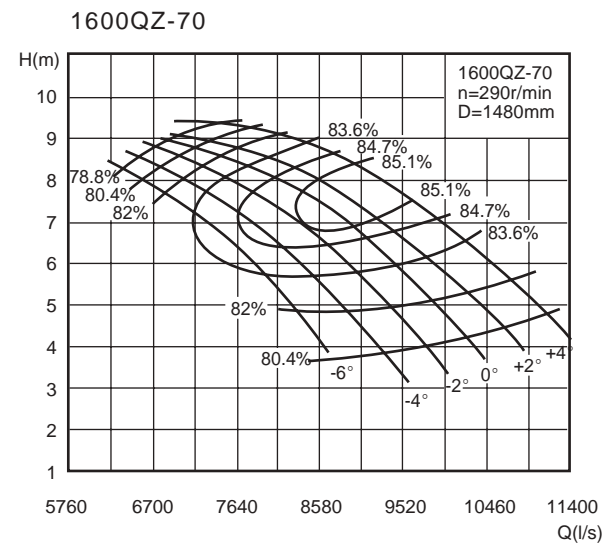
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter			
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power						
-2°	15960.8	4433.6	3.6	370	192.7	220	8800	81.1	1200			
	18225.6	5062.7	2.6		151.6							
	19909.2	5530.3	1.8		120.2							
0°	18853.2	5237.0	3.5		221.3	250				9200	81.1	1200
	21165.2	5879.2	2.6		177.8							
	22501.2	6250.3	1.9		143.4							
+2°	21896.0	6082.2	3.3	242.3	280	9560	81.1	1200				
	23634.4	6565.1	2.8	217.1								
	24934.0	6926.1	2.2	184.0								

1600QZ-100



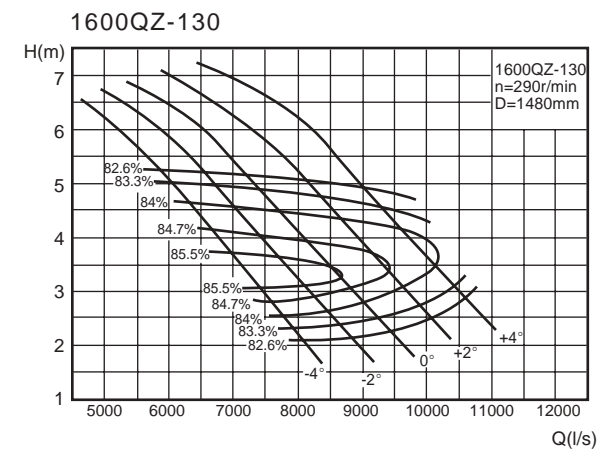
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter									
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power												
-6°	19837.1	5510.3	5.1	290	332.9	400	12100	82.0	1480									
	21609.0	6002.5	3.9		272.3													
	23284.0	6468.0	3.1		240.5													
-4°	21059.2	5849.8	5.6		394.2	450				12500	82.0	1480						
	24202.1	6722.8	4.0		308.6													
	26430.2	7341.7	2.8		247.4													
-2°	22540.6	6261.3	5.9		443.8	500							12800	82.0	1480			
	26363.0	7323.1	4.1		341.9													
	28768.8	7991.3	2.8		269.3													
0°	24149.3	6708.1	6.0		483.2	560										13200	82.0	1480
	28523.9	7923.3	4.1		368.7													
	30836.5	8565.7	2.8		288.6													
+2°	26367.8	7324.4	6.1	536.1	630	13700	82.0	1480										
	30252.8	8403.5	4.3	407.3														
	32658.0	9071.1	3.1	337.3														
+4°	28821.5	8005.0	5.8	558.1	630				13700	82.0	1480							
	32413.5	9003.8	4.3	437.9														
	34387.1	9552.0	3.4	388.4														

1600QZ-70



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter									
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power												
-6°	31227.5	8674.3	3.7	290	387.4	710	15900	81.5	1480									
	29162.5	8100.7	5.4		510.8													
	25932.3	7203.4	7.2		602.1													
-4°	23858.0	6627.2	8.0		634.2	710				15900	81.5	1480						
	33323.7	9256.6	3.8		425.2													
	30946.3	8596.2	5.4		542.1													
-2°	27619.3	7672.0	7.1		625.9	710							15900	81.5	1480			
	24548.4	6819.0	8.3		678.7													
	35032.5	9731.3	3.9		459.4													
0°	32761.4	9100.4	5.4		574.6	710										15900	81.5	1480
	28203.5	7834.3	7.6		686.9													
	25241.9	7011.6	8.6		724.7													
+2°	36716.4	10199.0	4.1	507.5	710	15900	81.5	1480										
	34751.4	9653.2	5.4	612.4														
	31489.9	8747.2	7.2	718.4														
+4°	25954.2	7209.5	8.8	763.5	710				15900	81.5	1480							
	37969.1	10547.0	4.4	551.8														
	32839.5	9122.1	7.1	738.2														
+4°	30402.8	8445.2	8.0	765.0	900							19300	81.5	1480				
	26494.6	7359.6	8.9	788.8														
	39956.0	11098.9	4.7	594.0														
+4°	35201.2	9778.1	7.1	791.3	900										19300	81.5	1480	
	32092.9	8914.7	8.4	852.3														
	27944.2	7762.3	9.2	861.7														

1600QZ-130

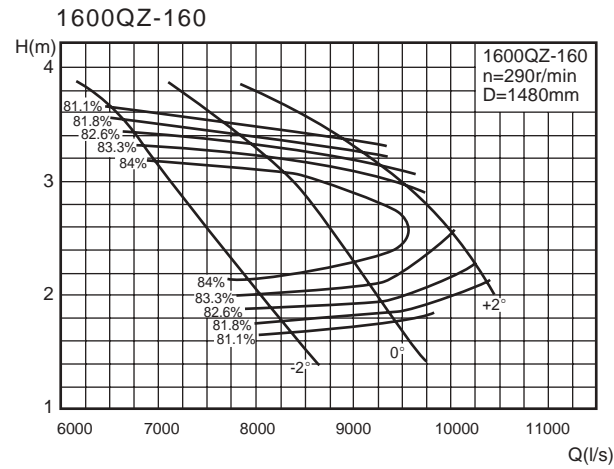


叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter									
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power												
-4°	20754.2	5765.1	5.1	290	352.6	400	11800	81.0	1480									
	26812.0	7447.8	2.8		239.8													
	28737.6	7982.7	2.0		197.2													
-2°	23150.4	6430.7	5.1		393.3	450				12200	81.0	1480						
	28826.4	8007.3	3.0		276.6													
	31217.8	8671.6	2.1		224.4													
0°	25563.4	7101.0	5.0		426.0	500							12500	81.0	1480			
	30737.6	8538.2	3.1		305.9													
	33381.1	9272.5	2.1		239.9													
+2°	29092.9	8081.4	4.7		456.3	560										12900	81.0	1480
	33114.6	9198.5	3.3		353.5													
	35652.4	9903.5	2.4		291.2													
+4°	32038.9	8899.7	4.7	502.5	630	13400	81.0	1480										
	35448.4	9846.8	3.4	393.2														
	37542.0	10428.3	2.7	343.5														



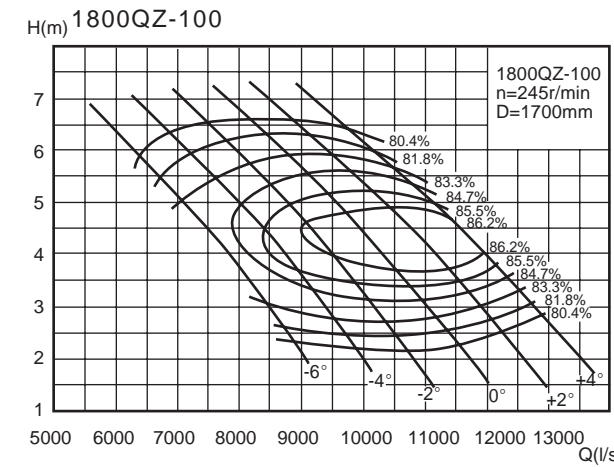
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

1600QZ-160



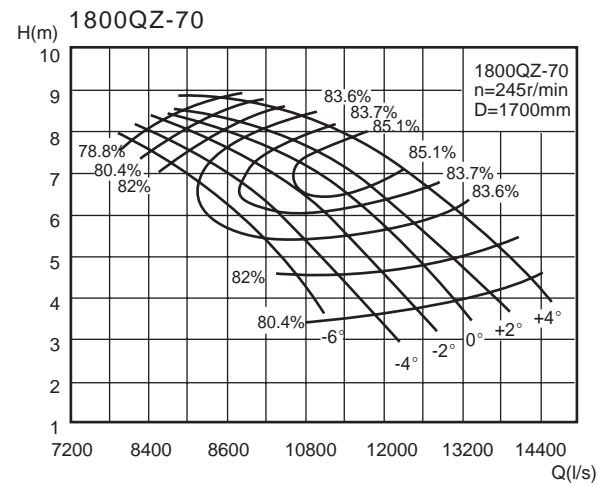
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)		
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power					
-2°	23462.4	6517.3	3.3	290	262.5	315	11100	81.4	1480		
	26791.6	7442.1	2.4		206.6			85.3			
	29266.5	8129.6	1.7		163.7			81.4			
0°	27714.2	7698.4	3.3		301.4	355		11500		81.4	
	31112.8	8642.5	2.4		242.2					84.5	
	33076.8	9188.0	1.8		195.3					81.4	
+2°	32187.1	8940.9	3.1		330.1	400				11900	81.4
	34742.6	9650.7	2.6		295.8						83.2
	36653.0	10181.4	2.0		250.6						81.4

1800QZ-100



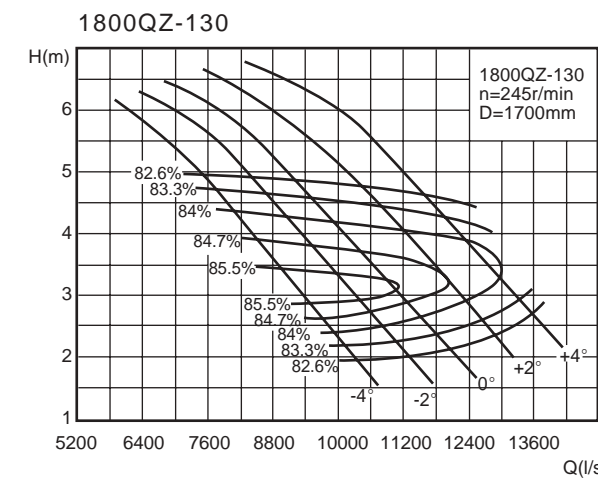
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)		
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power					
-6°	25391.5	7053.2	4.8	245	404.5	500	14300	82.0	1700		
	27659.5	7683.2	3.7		328.9			84.0			
	29804.7	8279.0	2.9		288.6			82.0			
-4°	26955.8	7487.7	5.3		471.5	560		14700		82.0	
	30978.7	8605.2	3.8		373.0					85.1	
	33830.7	9397.4	2.6		295.9					82.0	
-2°	28852.0	8014.5	5.6		531.8	630				15200	82.0
	33744.6	9373.6	3.9		413.5						85.7
	36824.1	10228.9	2.6		322.1						82.0
0°	30911.1	8586.4	5.6		579.4	710					17400
	36510.8	10141.8	3.9	445.9	86.0						
	39470.7	10964.1	2.6	345.2	82.0						
+2°	33750.8	9375.2	5.7	643.1	800	18900	82.0				
	38723.3	10756.5	4.0	493.1			86.5				
	41799.7	11611.0	2.9	404.8			82.0				
+4°	36891.8	10247.7	5.5	668.4	800		18900	82.0			
	44189.3	11524.9	4.0	530.1				86.2			
	44015.5	12226.6	3.2	467.5					82.0		

1800QZ-70



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)		
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power					
-6°	39971.2	11103.1	3.5	245	464.8	900	20300	81.5	1700		
	37328.0	10368.9	5.1		613.9			84.1			
	33193.3	9220.4	6.8		723.6			84.6			
-4°	30538.2	8482.8	7.5		767.8	1000		21800		81.5	
	42654.3	11848.4	3.6		509.4					81.5	
	39611.3	11003.1	5.1		651.5					84.1	
-2°	35352.7	9820.2	6.7		752.9	1100				23100	85.4
	31422.0	8728.3	7.8		819.7						81.5
	44841.6	12456.1	3.7		549.6						81.5
0°	41934.6	11648.5	5.1		690.5	1000					21800
	36100.5	10027.9	7.1	822.9	85.4						
	32309.6	8974.8	8.1	873.3	81.5						
+2°	46997.0	13054.7	3.9	605.6	1100	23100	81.5				
	44481.8	12356.1	5.1	736.0			83.6				
	40307.1	11196.4	6.8	863.4			86.1				
+4°	33221.4	9228.2	8.3	918.8	1100		23100	81.5			
	48600.4	13500.2	4.1	672.1				81.5			
	42034.6	11676.3	6.7	887.9				85.8			
+4°	38915.6	10809.9	7.5	926.2	1100			23100	86.1		
	33913.1	9420.3	8.4	948.6					81.5		
	51143.7	14206.6	4.4	755.5						81.5	
	45057.5	12516.0	6.7	958.4						85.5	
	41078.9	11410.8	7.9	1026.6					86.1		
	35768.6	9935.7	8.6	1034.3					81.5		

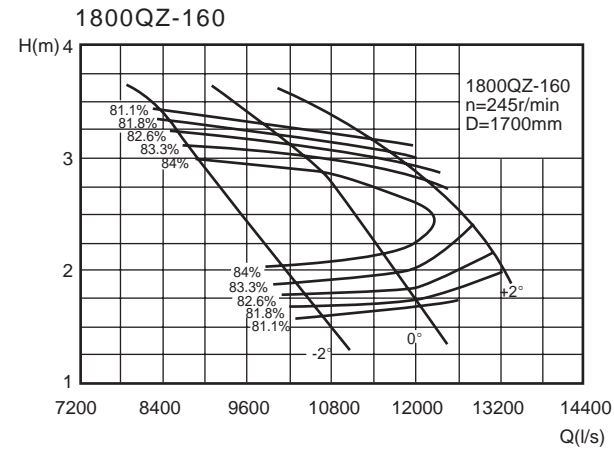
1800QZ-130



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)		
	(m³/h)	(l/s)			轴功率 Shaft Power	电机功率 Motor Power					
-4°	26565.4	7379.3	4.8	245	428.4	450	13400	81.0	1700		
	34319.4	9533.2	2.6		286.9			85.8			
	36784.1	10217.9	1.9		232.6			81.0			
-2°	29632.5	8231.3	4.8		477.9	500		13800		81.0	
	36897.8	10249.3	2.8		331.6					85.5	
	39958.8	11099.6	2.0		265.4					81.0	
0°	32721.2	9089.3	4.7		517.4	560				14200	81.0
	39344.1	10928.9	2.9		367.1						85.1
	42727.8	11868.8	2.0		283.8						81.0
+2°	37238.9	10344.2	4.4		553.5	630					14800
	42386.7	11774.1	3.1	425.0	84.3						
	45635.1	12676.5	2.3	346.4	81.0						
+4°	41009.8	11391.6	4.4	609.5	710	16900	81.0				
	45374.0	12603.9	3.2	473.3			83.5				
	48053.8	13348.2	2.5	410.3				81.0			

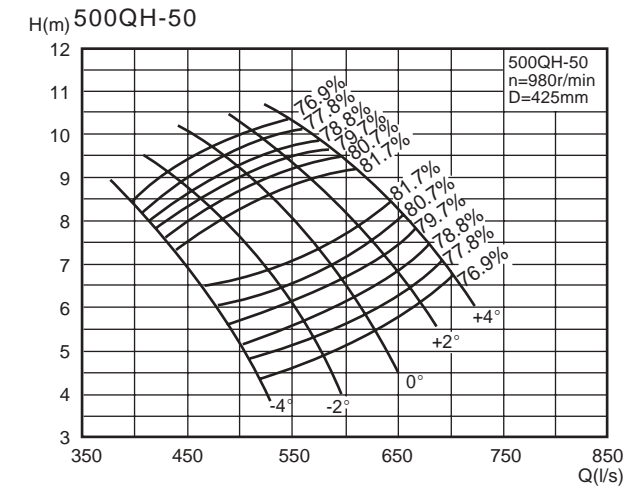
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

1800QZ-160



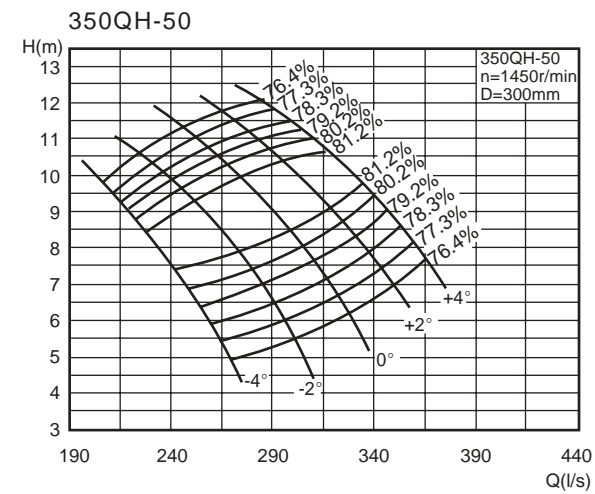
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-2°	30031.9	8342.1	3.1	245	311.9	355	12800	81.4	1700	
	34293.2	9525.9	2.3		247.2			85.3		
	37461.1	10406.9	1.6		200.4			81.4		
0°	35474.2	9854.0	3.1		368.4	400		13100		81.4
	39824.4	11062.4	2.3		289.7					84.5
	42338.3	11760.6	1.7		239.8					81.4
+2°	41199.5	11444.4	2.9		401.9	450		13500		81.4
	44470.5	12352.9	2.4		356.0					83.2
	46915.8	13032.2	1.9		295.3					81.4

500QH-50



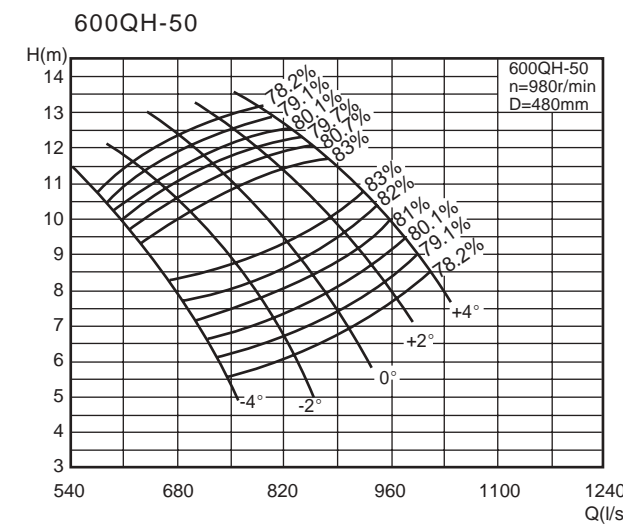
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-4°	1499.0	416.4	8.0	980	41.5	55	820	78.6	425	
	1626.0	451.7	6.8		36.8			81.7		
	1806.0	501.7	5.2		32.5			78.6		
-2°	1626.0	451.7	8.5		47.2	75		850		79.7
	1806.0	501.7	7.3		43.9					81.7
	1965.0	545.8	6.0		40.2					79.7
0°	1734.0	481.7	9.5		57.6	90		890		77.8
	1987.0	551.9	8.0		52.9					81.7
	2204.0	612.2	6.0		45.8					78.6
+2°	1965.0	545.8	9.5		63.7	90		890		79.7
	2168.0	602.2	8.2		59.2					81.7
	2326.0	646.1	6.8		54.7					78.6
+4°	2059.0	571.9	10.0	71.8	90	890	78.0			
	2276.0	632.2	8.7	65.9			81.7			
	2475.0	687.5	7.0	60.6			77.8			

350QH-50



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-4°	779.5	216.5	8.7	1450	23.7	30	510	78.1	300	
	845.5	234.9	7.4		21.0			81.2		
	939.1	260.9	5.7		18.5			78.1		
-2°	845.5	234.9	9.3		26.9	37		530		79.2
	939.1	260.9	8.0		25.0					81.2
	1021.8	283.8	6.5		23.0					79.2
0°	901.7	250.5	10.4		32.9	45		550		77.3
	1033.2	287.0	8.7		30.2					81.2
	1146.1	318.4	6.5		26.1					78.1
+2°	1021.8	283.8	10.4		36.3	45		550		79.2
	1127.4	313.2	8.9		33.8					81.2
	1209.5	336.0	7.4		31.2					78.1
+4°	1070.7	297.4	10.9	41.0	45	550	77.5			
	1183.5	328.8	9.5	37.6			81.2			
	1287.0	357.5	7.6	34.6			77.3			

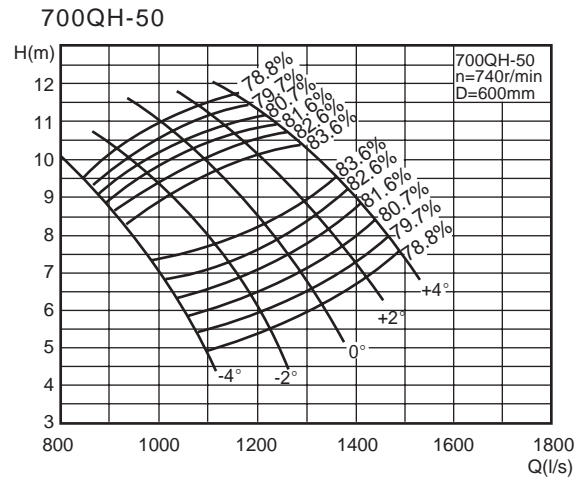
600QH-50



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率 η Efficiency	叶轮直径 Impeller diameter	
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power				
-4°	2158.6	599.6	10.2	980	75.0	90	1620	79.9	480	
	2341.4	650.4	8.7		66.5			83.0		
	2600.6	722.4	6.6		58.7			79.9		
-2°	2341.4	650.4	10.8		85.2	110		1860		81.0
	2600.6	722.4	9.3		79.3					83.0
	2829.6	786.0	7.7		72.7					81.0
0°	2497.0	693.6	12.1		104.0	132		2100		79.1
	2861.3	794.8	10.2		95.6					83.0
	3173.8	881.6	7.7		82.7					79.9
+2°	2829.6	786.0	12.1		115.1	132		2100		81.0
	3121.9	867.2	10.5		107.0					83.0
	3349.4	930.4	8.7		98.9					79.9
+4°	2965.0	823.6	12.8	129.7	132	2100	79.3			
	3277.4	910.4	11.1	119.1			83.0			
	3564.0	990.0	8.9	109.4			79.1			

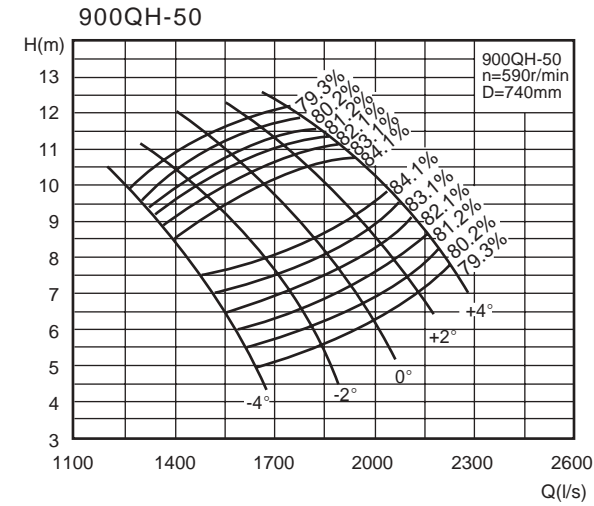
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

700QH-50



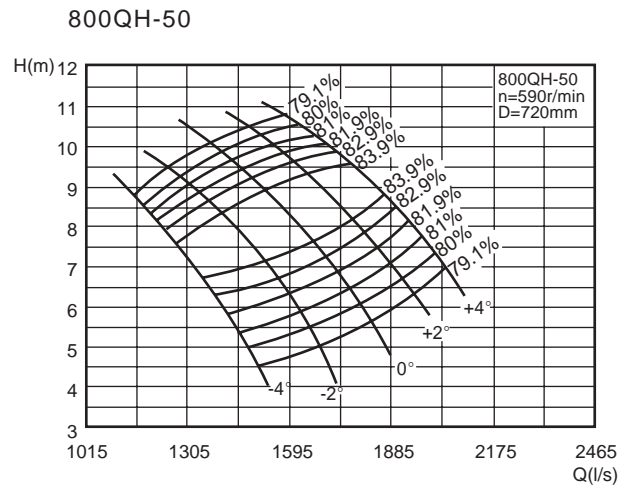
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	3183.9	884.4	9.1	740	97.8	132	2400	80.5	600
	3453.6	959.3	7.7		86.8				
	3835.9	1065.5	5.9		76.6				
3453.6	959.3	9.7	111.2						
3835.9	1065.5	8.3	103.5						
4173.7	1159.4	6.8	94.8						
-2°	3683.0	1023.1	10.8		135.6	160	2600	83.6	
	4220.4	1172.3	9.1		124.8				
	4681.3	1300.4	6.8		107.8				
4173.7	1159.4	10.8	150.1						
4604.8	1279.1	9.3	139.6						
4940.4	1372.3	7.7	129.0						
0°	4373.3	1214.8	11.4	169.1	185	3050	79.9		
	4834.2	1342.8	9.9	155.4					
	5256.9	1460.3	8.0	142.7					
+2°	4373.3	1214.8	11.4	169.1			185	3050	79.9
	4834.2	1342.8	9.9	155.4					
	5256.9	1460.3	8.0	142.7					
+4°	4373.3	1214.8	11.4	169.1	185	3050			79.9
	4834.2	1342.8	9.9	155.4					
	5256.9	1460.3	8.0	142.7					

900QH-50



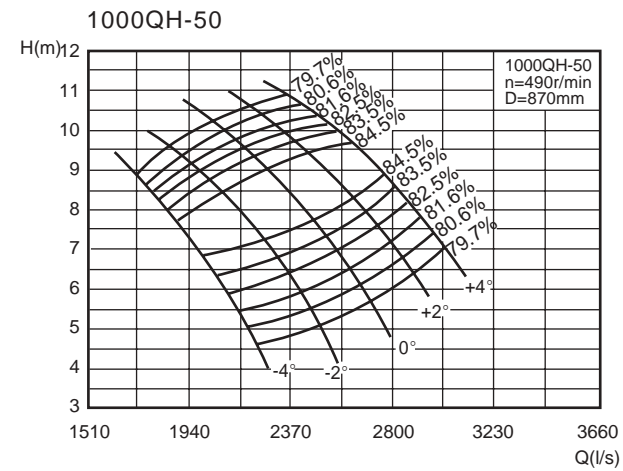
叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	4763.8	1323.3	8.8	590	140.6	185	5050	81.0	740
	5167.4	1435.4	7.5		124.9				
	5739.5	1594.3	5.7		110.1				
5167.4	1435.4	9.3	159.9						
5739.5	1594.3	8.0	148.9						
6244.8	1734.7	8.6	136.4						
-2°	5510.7	1530.7	10.4		195.1	200	5290	82.1	
	6314.7	1754.1	8.8		179.6				
	7004.3	1945.6	6.6		155.1				
6244.8	1734.7	10.4	216.0						
6889.9	1913.9	9.0	200.8						
7392.0	2053.3	7.5	185.5						
0°	6543.5	1817.6	11.0	243.3	250	6080	84.1		
	7233.1	2009.2	9.6	223.7					
	7865.6	2184.9	7.7	205.2					
+2°	6543.5	1817.6	11.0	243.3			250	6080	84.1
	7233.1	2009.2	9.6	223.7					
	7865.6	2184.9	7.7	205.2					
+4°	6543.5	1817.6	11.0	243.3	250	6080			84.1
	7233.1	2009.2	9.6	223.7					
	7865.6	2184.9	7.7	205.2					

800QH-50



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	4387.8	1218.8	8.3	590	122.9	160	3260	80.8	720
	4759.3	1322.0	7.1		109.1				
	5286.2	1468.4	5.4		96.2				
4759.3	1322.0	8.8	139.7						
5286.2	1468.4	7.6	130.1						
5751.6	1597.7	6.2	119.2						
-2°	5075.4	1409.8	9.9		170.5	185	3420	81.9	
	5815.9	1615.5	8.3		156.9				
	6451.1	1792.0	6.2		135.5				
5751.6	1597.7	9.9	188.7						
6345.7	1762.7	8.5	175.4						
6808.2	1891.2	7.1	162.1						
0°	6026.7	1674.1	10.4	212.6	200	3540	80.2		
	6661.9	1850.5	9.0	195.4					
	7244.3	2012.3	7.3	179.3					
+2°	6026.7	1674.1	10.4	212.6			200	3540	80.2
	6661.9	1850.5	9.0	195.4					
	7244.3	2012.3	7.3	179.3					
+4°	6026.7	1674.1	10.4	212.6	200	3540			80.2
	6661.9	1850.5	9.0	195.4					
	7244.3	2012.3	7.3	179.3					

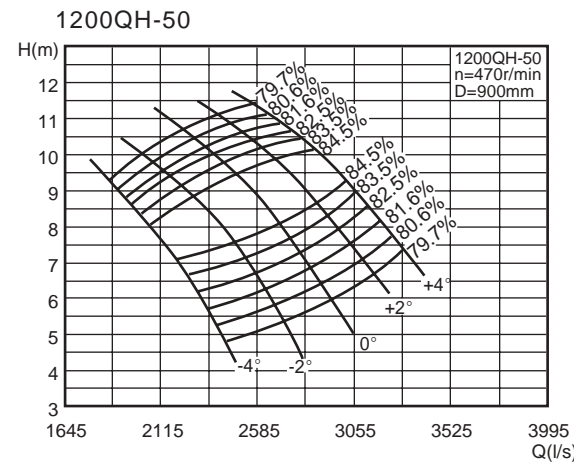
1000QH-50



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head (m)	转速 n Rotating speed (r/min)	功率 P (kW) Power		重量 Weight (kg)	效率 η Efficiency (%)	叶轮直径 Impeller diameter (mm)
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	6429.2	1785.9	8.4	490	179.9	220	6000	81.4	870
	6973.9	1937.2	7.1		159.8				
	7745.9	2151.6	5.4		140.9				
6973.9	1937.2	8.9	204.6						
7745.9	2151.6	7.6	190.6						
8427.9	2341.1	6.3	174.6						
-2°	7437.1	2065.9	9.9		249.6	250	6300	82.5	
	8222.2	2367.3	8.4		229.8				
	9453.0	2625.8	6.3		198.4				
8427.9	2341.1	9.9	276.4						
9298.6	2582.9	8.6	257.0						
9976.2	2771.2	7.1	237.3						
0°	8831.1	2453.1	10.5	311.3	315	6900	80.8		
	9761.8	2711.6	9.1	286.2					
	10615.3	2948.7	7.3	262.5					
+2°	8831.1	2453.1	10.5	311.3			315	6900	80.8
	9761.8	2711.6	9.1	286.2					
	10615.3	2948.7	7.3	262.5					
+4°	8831.1	2453.1	10.5	311.3	315	6900			80.8
	9761.8	2711.6	9.1	286.2					
	10615.3	2948.7	7.3	262.5					



1200QH-50



叶片安装角度 Mounting angle of the vane	流量 Q Flow rate		扬程 H Head	转速 n Rotating speed	功率 P (kW) Power		重量 Weight	效率η Efficiency	叶轮直径 Impeller diameter
	(m³/h)	l/s			轴功率 Shaft Power	电机功率 Motor Power			
-4°	7117.3	1977.0	9.0	470	213.3	250	7800	81.4	900
	7720.2	2144.5	7.6		189.5			84.5	
	8574.9	2381.9	5.8		167.0			81.4	
-2°	7720.2	2144.5	9.5		242.6	280	8100	82.5	
	8574.9	2381.9	8.2		225.9			84.5	
	9329.8	2591.6	6.7		206.9			82.5	
0°	8233.0	2287.0	10.7		295.9	315	8400	80.6	
	9434.3	2620.6	8.0		272.4			84.5	
	10464.6	2906.8	6.7		235.2			81.4	
+2°	9329.8	2591.6	10.7		327.6	355	8700	82.5	
	10293.7	2859.4	9.2		304.6			84.5	
	11043.8	3067.7	7.6		281.3			81.4	
+4°	9776.1	2715.6	11.2	369.0	400	9100	80.8		
	10806.4	3001.8	9.8	339.3			84.5		
	11751.3	3264.3	7.8	311.2			80.6		

六、安装形式及尺寸 Mounting type and the size

QZ系列潜水轴流泵、QH系列潜水混流泵一般采用开敞式进水，安装形式为悬吊式安装、钢制井筒式安装、混凝土预制井筒式安装。悬吊式安装、钢制井筒式安装由本公司提供整套井筒，混凝土预制井筒式安装由本公司提供安装底座(含防转装置)、井盖装置。

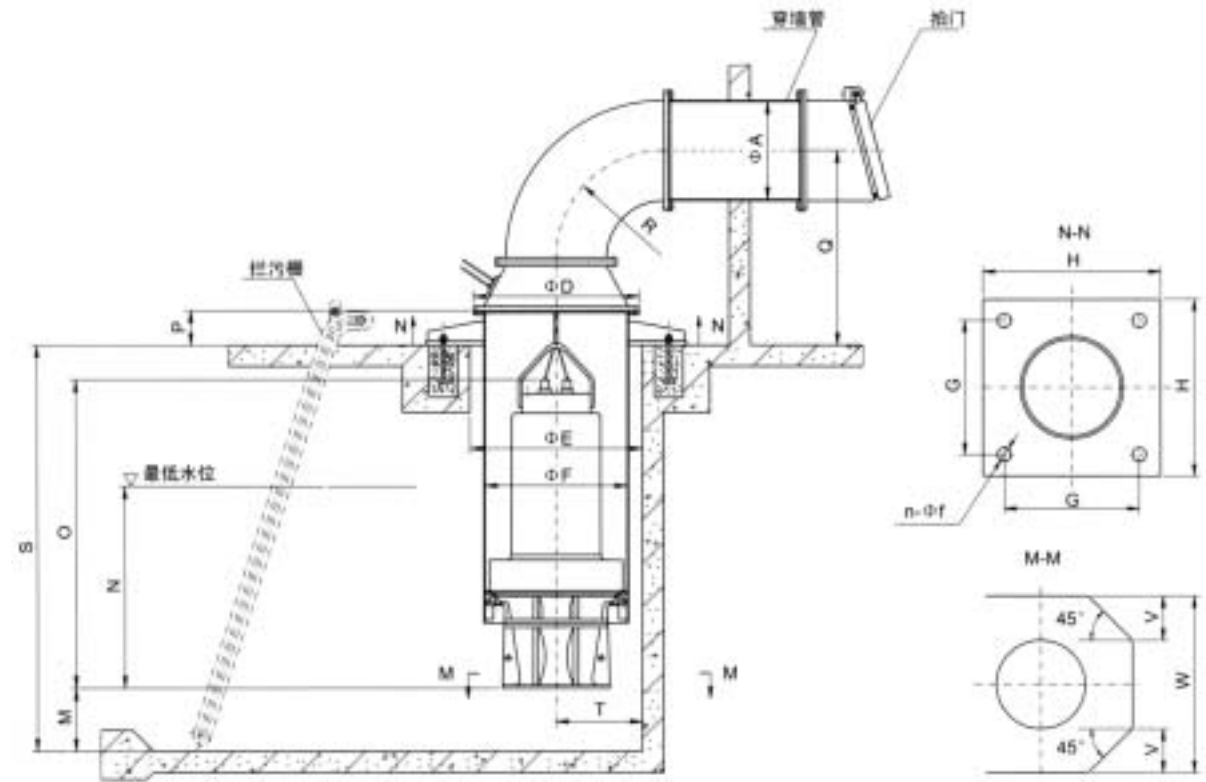
安装时将潜水电泵吊入井筒着底为止，导叶体上的斜面与支座斜面配合，止水橡皮(O形圈)起密封作用。

较大的潜水泵(一般叶轮直径在1米以上)，采用带封闭进水流道的安装形式。

QZ series submersible axial flow pump and QH series submersible mixed-flow pump generally use open inlet. The mounting type can be suspension type, steelness column pipe type and concrete pre-fabricated column pipe type. We provide the whole set of column pipe for the suspension type and steel prefabricated column pipe type. and the foundation (including anti-rotation equipment) and the well cover for the concrete prefabricated column pipe type.

During installation, the submersible electric pump is lowered to the bottom of the column pipe, letting the bevel face of the vane body touch that of the support. The O-shaped water ring is used as the seal. For a large submersible pump (generally the impeller's diameter is above 1 m), the mounting type with enclosed intake passages is used.

1、悬吊式安装 Suspension type



注:

①表中尺寸为泵的安装尺寸、泵站设计的水力控制尺寸，其中泵站设计的水力尺寸为参考值，也可参考后文的“泵站进水池(流道)设计参考”。

②尺寸A依据泵流量确定，以控制流速，减少水力损失，表中尺寸为参考值，如需要，可适当加大；尺寸S、Q依据泵站具体条件确定；尺寸R为最小参考尺寸，如条件许可，可适当加大。

上述尺寸均依据用户要求确定。

③泵中心距后池壁不大于尺寸T。

④同池内两泵中心距不小于尺寸Z。

Note:

①The size in the table refers to the installation size of the pump or the hydraulic control size of the pump station size wherein the hydraulic size is a reference value. The "design reference for the intake pool (passage)" in later section can also be referred to.

②The size A is determined according to the pump capacity so as to control the flow rate and reduce the loss of the hydraulic force. The size in the table is the reference value. If required, the size can be increased. The sizes S and Q are defined according to the specific condition of the pump station; the size R is a minimal reference size and, if conditions allowed, can be increased. The above sizes can be determined upon customers' request.

③The distance between the pump center and the pool wall cannot be more than the size T.

④The distance between the centers of two pumps cannot be less than the size Z.

悬吊式安装尺寸表 (一) Size table for suspensory column pipe type installation

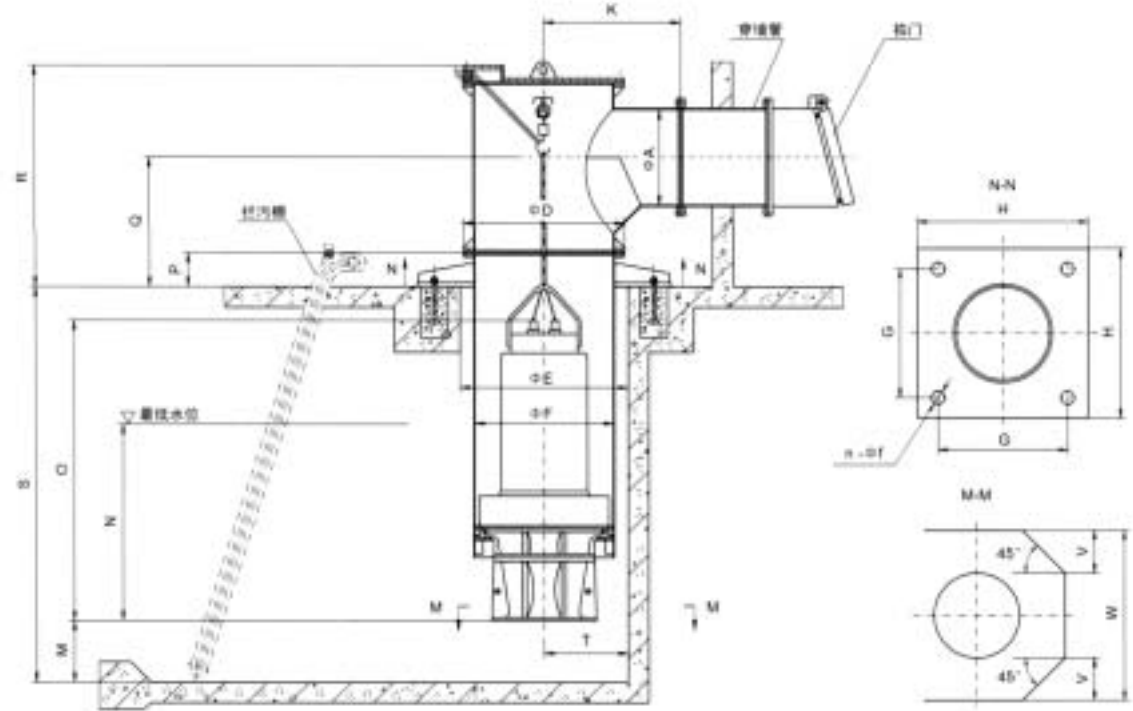
序号 Item No.	型号 Model	øA	øD	øE	øF	G	H	n-øf	R	M	N	O	P	Z	T	W	V	轴向水推力 Axial thrust (N)
1	350QH-50										710	1733						3100
2	350QZ-70G										720	2300						6800
3	350QZ-70D	400	755	800	600	1150	1350	4-M24x400	600	290	720	1733	200	1400	360	1400	350	3500
4	350QZ-100										710	1733						5500
5	350QZ-130										800	1733						4800
6	500QH-50										810	2900						10800
7	500QZ-70										1120	2553						15700
8	500QZ-100G	500	975	1050	800	1350	1600	4-M30x400	900	430	810	2080	200	1800	540	1800	450	12700
9	500QZ-100D										810	2013						7200
10	500QZ-130G										1200	2080						11000
11	500QZ-130D										810	2015						6300
12	600QH-50										880	2900						24100
13	600QZ-70										880	2570						19900
14	600QZ-100	700	1175	1225	1000	1600	1850	4-M30x500	1000	530	880	2570	220	2200	660	2200	550	16100
15	600QZ-130										880	2570						14000
16	600QZ-160										880	2570						14000
17	700QH-50										960	2900						34200
18	700QZ-70G										1400	2850						28300
19	700QZ-70D	800	1305	1365	1100	1700	2000	4-M36x500	1250	580	1400	2850	220	2400	720	2400	600	28300
20	700QZ-100										960	2570						22900
21	700QZ-130										1480	2570						19900
22	700QZ-160										1100	2570						13900

悬吊式安装尺寸表 (二) Size table for suspensory column pipe type installation

序号 Item No.	型号 Model	øA	øD	øE	øF	G	H	n-øf	R	M	N	O	P	Z	T	W	V	轴向水推力 Axial thrust (N)
23	800QH-50										1120	3100						37400
24	800QZ-70G										1120	3100						40200
25	800QZ-70D	900	1405	1450	1200	1900	2150	4-M36x500	1450	670	1120	2900	260	280	840	2800	700	33300
26	800QZ-100										1120	2900						26900
27	800QZ-130										1120	2900						23400
28	800QZ-160										1120	2900						16400
29	900QH-50										1360	3800						56100
30	900QZ-70G										1520	3600						56300
31	900QZ-70D										1360	3700						49900
32	900QZ-100G	1000	1520	1600	1300	2000	2250	4-M36x500	1600	820	1360	3370	300	3400	1020	3400	850	45600
33	900QZ-100D										1360	3500						40400
34	900QZ-130G										1600	3000						39600
35	900QZ-130D										1360	3100						35100
36	900QZ-160G										1360	3000						27800
37	900QZ-160D										1360	3100						24600
38	1000QH-50										1390	4200						66200
39	1000QZ-70										1390	3900						54800
40	1000QZ-100	1200	1630	1700	1400	2050	2300	4-M36x500	1800	840	1390	3300	300	3480	1040	3480	870	44300
41	1000QZ-130										1390	3300						38500
42	1000QZ-160										1390	3300						27000
43	1200QH-50										2080	4600						94100
44	1200QZ-70										2740	4300						77800
45	1200QZ-100	1400	1830	1900	1600	2200	2500	4-M36x500	2000	910	2520	3800	300	3800	1140	3800	950	63000
46	1200QZ-130										2830	3800						54700
47	1200QZ-160										2910	3800						38400

潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

2、钢制井筒式安装 Steeliness column pipe type



注:

①表中尺寸为泵安装尺寸、泵站设计的水力控制尺寸，其中泵站设计的水力尺寸为参考值，也可参考后文的“泵站进水池(流道)设计参考”。

②尺寸A依据泵流量确定，以控制流速，减少水力损失，表中尺寸为参考值，如需要，可适当加大；尺寸S、Q、R依据泵站具体条件确定。

上述尺寸均依据用户要求确定。

③泵中心距后池壁不大于尺寸T。

④同池内两泵中心距不小于尺寸Z。

Note:

①The size in the table refers to the installation size of the pump or the hydraulic control size of the pump station size, where in the hydraulic size is a reference value. The "design reference for the intake pool (passage)" in later section can also be referred to.

②The size A is determined according to the pump capacity so as to control the flow rate and reduce the loss of the hydraulic force. The size in the table is a reference value and, if required, can be increased. The sizes S, Q and R is defined according to the specific condition of the pump station. The above sizes can be determined upon customers' request.

③The distance between the pump center and the pool wall cannot be more than the size T.

④The distance between the centers two pumps cannot be less than the size Z.

钢制井筒式安装尺寸表 (一) Steeliness column pipe type

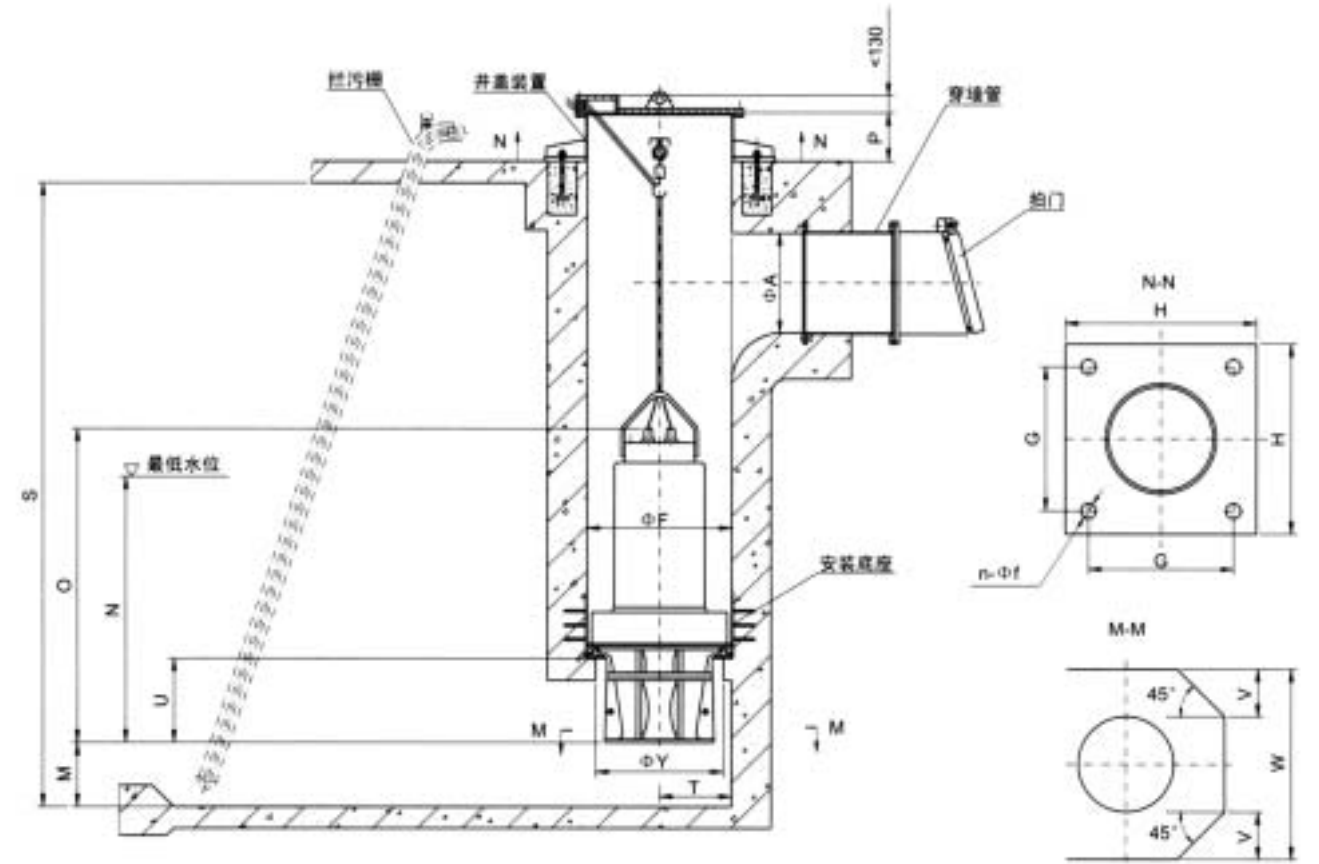
序号 Item No.	型号 Model	φA	φD	φE	φF	G	H	n-φf	K	M	N	O	P	Z	T	W	V	轴向水推力 Axial thrust (N)
1	350QH-50										710	1733						3100
2	350QZ-70G										720	2300						6800
3	350QZ-70D	400	755	800	600	1150	1350	4-M24x400	750	290	720	1733	200	1400	360	1400	350	3500
4	350QZ-100										710	1733						5500
5	350QZ-130										800	1733						4800
6	500QH-50										810	2900						10800
7	500QZ-70										1120	2553						15700
8	500QZ-100G	500	975	1050	800	1350	1600	4-M30x400	900	430	810	2080	200	1800	540	1800	450	12700
9	500QZ-100D										810	2013						7200
10	500QZ-130G										1200	2080						11000
11	500QZ-130D										810	2015						6300
12	600QH-50										880	2900						24100
13	600QZ-70										880	2570						19900
14	600QZ-100	700	1175	1225	1000	1600	1850	4-M30x500	1000	530	880	2570	220	2200	660	2200	550	16100
15	600QZ-130										880	2570						14000
16	600QZ-160										880	2570						14000
17	700QH-50										960	2900						34200
18	700QZ-70G										1400	2850						28300
19	700QZ-70D	800	1305	1365	1100	1700	2000	4-M36x500	1000	580	1400	2850	220	2400	720	2400	600	28300
20	700QZ-100										960	2570						22900
21	700QZ-130										1480	2570						19900
22	700QZ-160										1100	2570						13900



钢制井筒式安装尺寸表 (二) Steeliness column pipe type

序号 Item No.	型号 Model	øA	øD	øE	øF	G	H	n-øf	K	M	N	O	P	Z	T	W	V	轴向水推力 Axial thrust (N)
23	800QH-50										1120	3100						37400
24	800QZ-70G										1120	3100						40200
25	800QZ-70D	900	1405	1450	1200	1900	2150	4-M36x500	1100	670	1120	2900	260	280	840	2800	700	33300
26	800QZ-100										1120	2900						26900
27	800QZ-130										1120	2900						23400
28	800QZ-160										1120	2900						16400
29	900QH-50										1360	3800						56100
30	900QZ-70G										1520	3600						56300
31	900QZ-70D										1360	3700						49900
32	900QZ-100G										1360	3370						45600
33	900QZ-100D	1000	1520	1600	1300	2000	2250	4-M36x500	1200	820	1360	3500	300	3400	1020	3400	850	40400
34	900QZ-130G										1600	3000						39600
35	900QZ-130D										1360	3100						35100
36	900QZ-160G										1360	3000						27800
37	900QZ-160D										1360	3100						24600
38	1000QH-50										1390	4200						66200
39	1000QZ-70										1390	3900						54800
40	1000QZ-100	1200	1630	1700	1400	2050	2300	4-M36x500	1300	840	1390	3300	300	3480	1040	3480	870	44300
41	1000QZ-130										1390	3300						38500
42	1000QZ-160										1390	3300						27000
43	1200QH-50										2080	4600						94100
44	1200QZ-70										2740	4300						77800
45	1200QZ-100	1400	1830	1900	1600	2200	2500	4-M36x500	1500	910	2520	3800	300	3800	1140	3800	950	63000
46	1200QZ-130										2830	3800						54700
47	1200QZ-160										2910	3800						38400

3、混凝土预制井筒式安装 Concrete prefabricated column pipe type



注:

①表中尺寸为泵安装尺寸、泵站设计的水力控制尺寸，其中泵站设计的水力尺寸为参考值，也可参考后文的“泵站进水池(流道)设计参考”。

②尺寸A依据泵流量确定，以控制流速，减少水力损失，表中尺寸为参考值，如需要，可适当加大；尺寸S依据泵站具体条件确定。上述尺寸均依据用户要求确定。

③泵中心距后池壁不大于尺寸T。

④同池内两泵中心距不小于尺寸Z。

Note:

①The size in the table refers to the installation size of the pump or the hydraulic control size of the pump station size, where in the hydraulic size is a reference value. The "design reference for the intake pool (passage)" in later section can also be referred to.

②The size A is determined according to the pump capacity so as to control the flow rate and reduce the loss of the hydraulic force. The size in the table is a reference value and, if required, can be increased. The size S is defined according to the specific condition of the pump station. The above sizes can be determined upon customers' request.

③The distance between the pump center and the pool wall cannot be more than the size T.

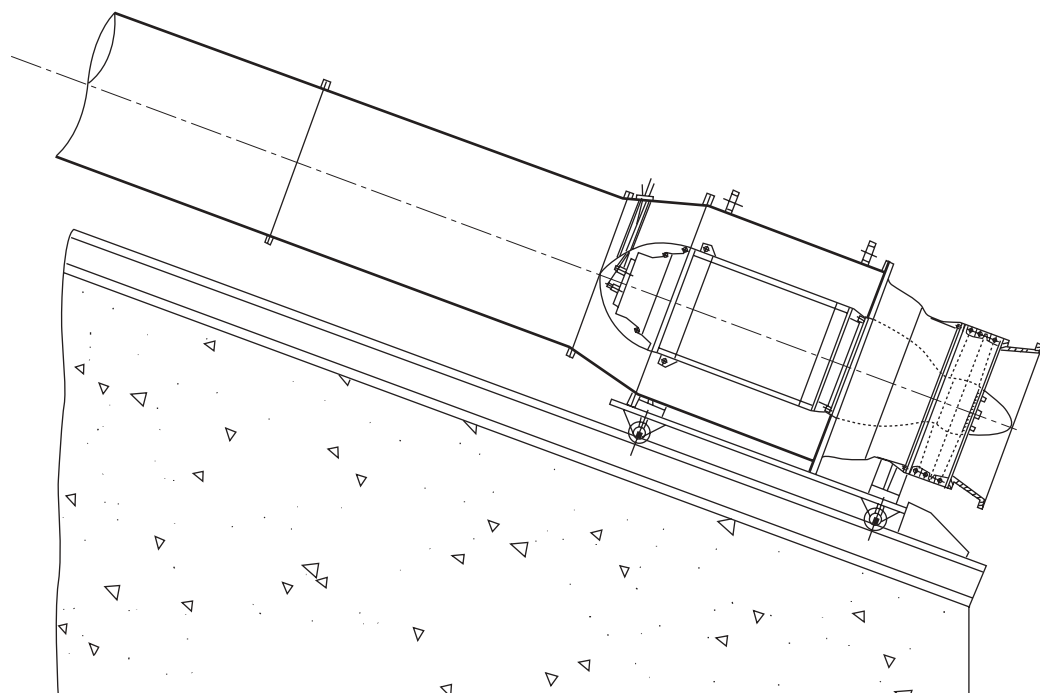
④The distance between the centers of two pumps cannot be less than the size Z.





5、斜拉式安装 Inclined installation type

(1) 管道联接式安装 Pipe coupling



特点:

直接利用管道输送介质，密封可靠无泄漏，无需修建进出水池，这种方式对单独泵房的结构来说，尤为节约空间。  
土建简单，工程建设量少(利用现有的坡道坎沟)，施工周期短，投资省。  
适宜于水位涨幅变化较频繁的江河湖泊取水。

注意点:

防翻倒，设计时要有足够的跨距。

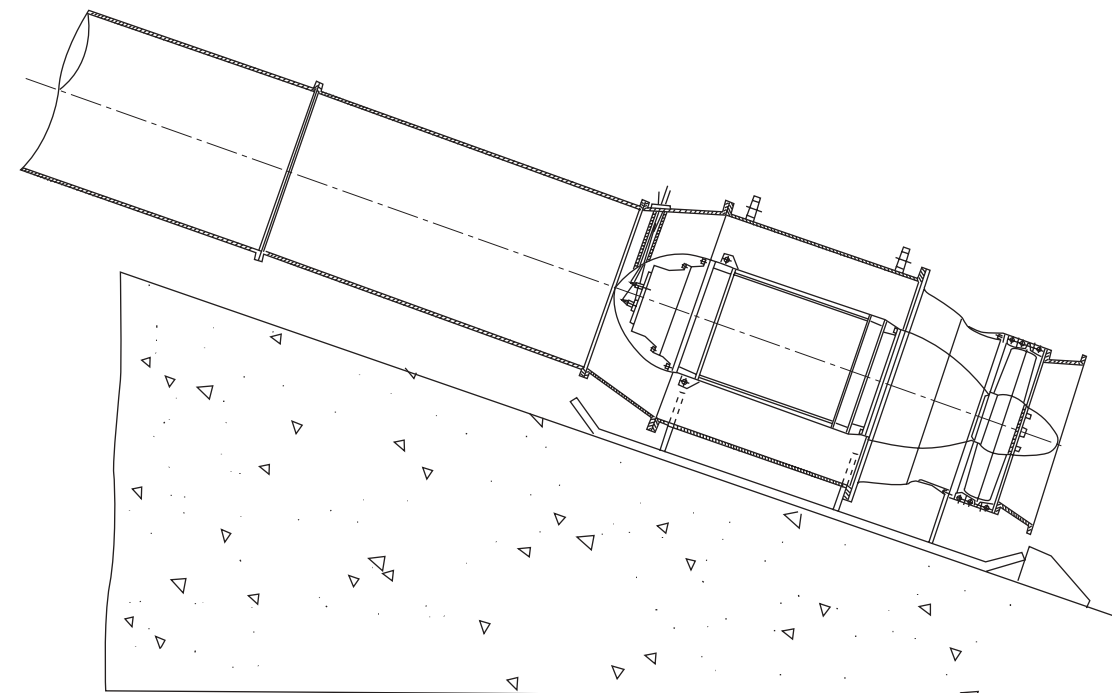
Features:

This installation is used directly to transport medium through pipeline. The seal is reliable and free from the leakage. There is no need to construct inlet and outlet pools. This type can save space for an individual pump room.

It is easy to construct, with reduced construction works(by using the existing slope and passage),shortened construction period and saved investment. It is suitable to pump water from rivers or lakes which have frequent water level fluctuation.

Note: sufficient spans should be provided in the design to prevent overturn.

(2) 雪橇式安装 Sledge type installation



特点:

适用于中小型机组，灵活方便，特别适用于防洪抢险或者需要建立临时泵站的场合。  
直接利用管道输送介质，密封可靠无泄漏。  
土建简单，工程建设量少(利用现有的坡道坎沟)，施工周期短，投资省。

注:

上述两种斜拉式安装形式，在订货时应明确具体安装方式，具体安装尺寸、供货范围应由供、需双方共同确定。

Features:

This installation is used for small and middle units. It is flexible and expedite and suitable in particular for places requiring flood control or a temporary pump station.

It is easy to construct,with reduced construction works(by using the existing slope and passage),shortened construction period and saved investment.

Note:

For the above two cable-stayed type installations,please indicate the mounting type.The specific installation sizes and the scope of the supply should be determined by both parties.



七、成套供应范围及订货须知 Scope of unit supply and order information

1、供货范围 Scope of supply

供应范围 Scope of supply		安装方式 Mounting method				备注 Remarks
		井筒式 Column pipe type			封闭进水流道 混凝土预制 The enclosed inlet conduit is prefabricated with cement	
		钢制 Steel made	混凝土预制 Concrete prefabrication	悬吊式 Suspension type		
必购件 Required parts	控制柜 Control cabinet	●	●	●	●	
	主泵 Main pump	●	●	●	●	
	井筒(含三通) Column pipe(including three-way pipe)	●		●		
	电缆固定装置 Cable fixture	●	●	●	●	长度根据用户要求确定 The length to be decided according to users' requirement
	井盖装置 Column pipe cover		●		●	
	安装底座 Mounting seat		●			
	一、二次预埋件 The first and second embedded parts				●	
选购件 Optional parts	拦污栅 Screening grate	●	●	●	●	外形尺寸及安装尺寸由用户确定 The dimension and mounting size to be decided by the user
	可挠性橡胶接管 Bendable rubber joint	●	●	●	●	
	蝶(闸)阀 Butterfly (gate)valve	●	●	●	●	
	止回阀 Check valve	●	●	●	●	
	端子箱 Terminal box	●	●	●	●	
	液位开关 Level limit switch	●	●	●	●	
	穿墙管 Wall bushing pipe	●	●	●	●	
易损件 Consumable parts	拍门 Flap valve	●	●	●	●	
	O形圈 O-shaped ring	●	●	●	●	
	叶片 Vane	●	●	●	●	
	轴承 Bearing	●	●	●	●	
	机械密封 Mechanical Seal	●	●	●	●	
	进线密封圈 Gasket incoming cables	●	●	●	●	
	电缆线 Cable	●	●	●	●	

2、订货须知 Order information

- (1) 在合同中应注明准确的产品型号和产品名称、安装形式、性能参数(流量、扬程、电机功率)和使用电压。
- (2) 控制柜应注明其启动方式(直接启动; 自耦降压启动; 可控硅软启动)、液位控制方式(浮球液位; 压力变送器数显液位)、安装型式(户内型、户外型)。
- (3) 如需配端子箱, 应注明是控制型, 还是接线型。
- (4) 在“供货范围”中需由用户确定的尺寸应及时提供, 同时用户应提供安装施工图。
- (5) 本公司潜水泵潜水电缆正常供货长度为10m, 若用户有特殊要求, 请予注明。
- (6) 如有其它特殊要求, 签订合同前请与亚太销售部门联系。

(1) In the contract, the product type, name, mounting type and functional parameters (capacity, head, motor power) and voltage used should be provided specifically.

(2) For the control cabinet, the way to start it (directly, self-coupling, step-down, or controlled silicon soft start), the way to control the liquid level (floating level, pressure transmitter's displayed liquid level) and the mode to install (indoor type, or outdoor type) should be indicated.

(3) If a terminal box is required, please indicate the control type or the wiring type.

(4) Please provide the size to be decided by the user for items, which are listed in the "scope of supply" section. The user should also provide construction drawings for installation purpose.

(5) Normally, we only provide 10m long cables for the relief pump. For any special requirement, please indicate.

(6) For special requirements to be met, please consult our sales department before a contract.

泵站进水池(流道)设计参考  
Design reference for intake pool(inlet conduit)

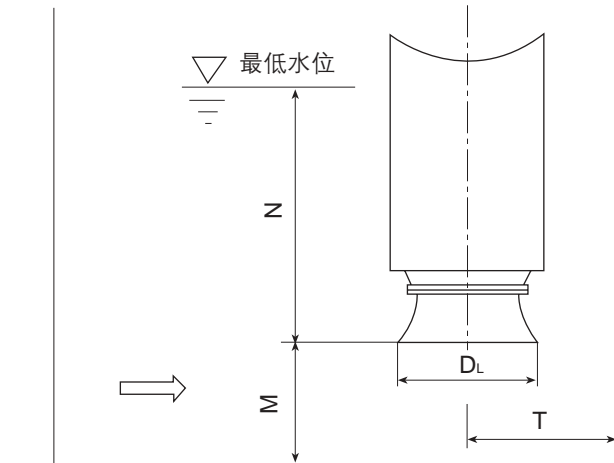
一、开敞式进水(进水池) open style intake (intake pool)

开敞式进水(进水池)结构简单, 施工方便, 在中小型泵站的应用非常广泛。国内外对这种流道的水力设计都很重视, 做了大量的试验研究工作。许多研究者都是根据试验结果, 以经验系数的形式提出了开敞式进水池的设计准则。可是, 各家提出的准则出入很大, 至今还没有统一的或是最优的水力设计准则。下面给出一般设计参考准则。

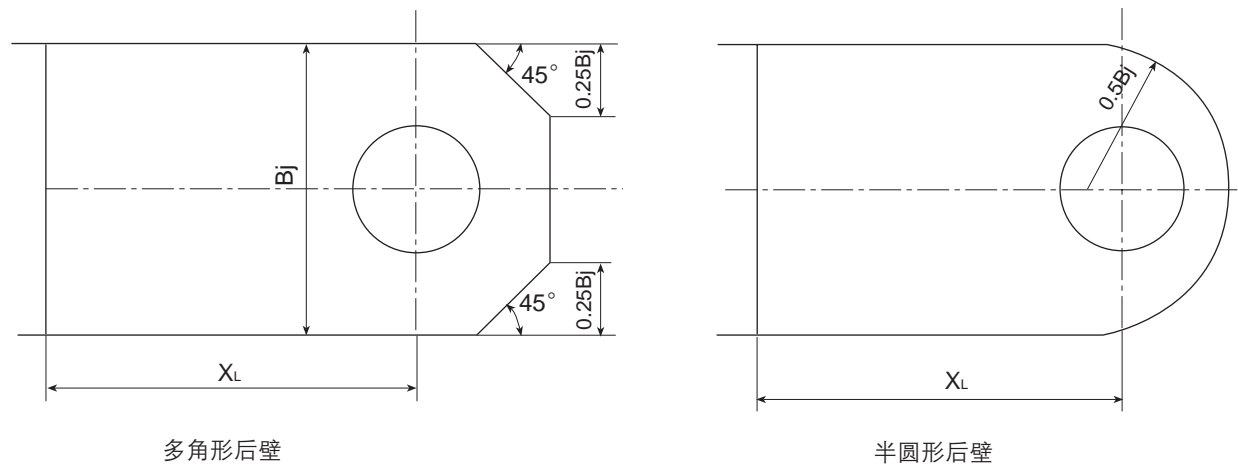
The open style intake(intake pool) is simple in construction and easy to construct. It has been widely used for small and middle pump stations. Great effort has been put on the hydraulic design for this conduit. Many scholars have set forth their own design guideline based on their research findings. However, those guidelines vary greatly. Up to now, there is no complete or best set of hydraulic design guideline. The following is a reference to the design.

正向进水直线型进水池几何尺寸

Geometrical size for the linear intake pool with front inlet



进水池几何尺寸 Geometrical size for the intake pool	日本机械学会 Japan mechanical association	英国流体力学 工程学会 Hydromechanics engineering association	美国水利研究所 US hydraulic research institute	溧阳双桥站 现场测试 LiYang shuangqiao station field test	建议取值 Recommended value	使用条件 Working conditions
池宽 $B_j/D_L$ Pool width $B_j/D_L$	2.0~2.5	2~3	2.6~2.8	2.0~2.5	2.0~2.5	小泵取小值 大泵取大值 Minimum of small pump Maximum of large pump
悬空高 $M/D_L$ Suspension height $M/D_L$	0.5~0.75	0.5~0.75	0.52~0.59	0.5~0.7	0.5~0.7	小泵取小值 大泵取大值 Minimum of small pump Maximum of large pump
后池壁 $T/D_L$ Back wall $T/D_L$	0.8~1.0	0.75	1.2~1.4		0.5~0.75	
池长 $X_L/D_L$ Pool length $X_L/D_L$		4.0		8.0	5~8	



进水池综合尺寸（不同形状后壁）  
Overall size drawing for intake pool(back wall of different shapes)

开敞式进水(进水池)的水力设计，一般以喇叭管进口直径 $D_L$ ，为基本参数，其原因主要是：进泵水流首先通过喇叭管管口与流道底板之间的圆柱面，然后再经喇叭管口进入水泵。进水流道尺寸的确定以喇叭管进口直径为基本参数也就是很自然的事。但问题在于，目前设计的喇叭管并未实现标准化，喇叭管进口直径是一个变数，喇叭管进口直径与水泵叶轮直径的比值都不一定相同，若再以 $D_L$ 为基本参数，就会给水力设计准则造成混淆，显得不太适宜。

若喇叭管能实现标准化，进水流道的水力设计以喇叭口直径或叶轮直径 $D_0$ 为基本参数都一样，若不然，则应以水泵叶轮直径为基本参数。

依据资料《泵站进水流道优化水力设计》，对开敞式进水推荐设计如下：

(1) 悬空高M

推荐悬空高为 $M=(0.68\sim 1.2)D_0$ ，较大的喇叭管进口直径( $1.67D_0$ )取小值，较小的喇叭管进口直径( $1.46D_0$ )取大值；对于更大一些或更小一些的喇叭管进口直径，悬空高的取值仍可在这个范围内。

(2) 后壁距T

后壁距的确定基本不受所用喇叭管进口直径的影响。喇叭管吸水时一部分水流必须从喇叭管后部进泵，因而一定的后壁距是必要的；然而，过大的后壁距增加了水流在后壁空间的自由度，加大了涡带产生的可能，需相应地增加淹没水深。根据优化计算的结果，后壁距取 $(0.8\sim 1.0)D_0$ ，也就足以满足要求。

### (3)池宽 $B_j$

为使一部分水流顺利地由喇叭管两侧及后部进泵，需要有一定的池宽，过大的池宽会徒然地增加土建投资。喇叭管进口直径在一定程度上影响到最佳池宽的确定，根据优化计算的结果，推荐池宽为 $(3.5\sim 4.5)D_0$ ，较大的喇叭管进口直径取小值，较小的喇叭管进口直径取大值。

### (4)池长 $X_L$

在正向进水的情况下，为使水流在到喇叭管之前能达到大体均匀的状况，足够的池长是必要的。池长可按泵房上部结构的布置要求确定，一般可取 $(7.0\sim 8.0)D_0$ ；在侧向进水的情况下，池长还需适当加大或采取必要的整流措施。池长的确定与所用喇叭管进口直径的大小无关。

### (5)平面形状

计算结果表明，进水池平面形状对泵的工作状态并无多少影响；根据试验资料，平面形状对进水池的水力损失有一定影响，心形的水力损失最小，矩形的水力损失最大。

The hydraulic design for the open entrance(intake pool)generally uses the diameter DL of the bell entrance as the basic parameter. The reason is that the water flow first goes through the column surface between the bell pipe's nozzle and the bottom plate of the passage and then enters the water pump through the pipe nozzle. However, the design for the bell pipe has not been standardized at present. The inlet diameter for the bell pipe is variable. The specific parameters for the bell pipe's inlet diameter and the impeller diameter are not the same. If DL is taken as a basic parameter, it will confuse the hydraulic design guideline,which appears improper.

If the bell pipe can be standardized, and either the bell diameter or the impeller diameter  $D_0$  are taken as the basic parameter, hydraulic design for the intake passage is the same. Otherwise, the impeller diameter should be the basic parameter.

According to the Hydraulic Design for inlet Passage in Pump Station, the open entrance should be designed as follows:

#### (1)Suspension height

The distance M is $(0.68\sim 1.2)D_0$ . The larger inlet diameter for bell pipe $(1.67D_0)$ uses a small value while the smaller inlet diameter $(1.46D_0)$ uses a large value. For the inlet diameter that is much larger or lower, the value for the suspension height can still be controlled within this scope.

#### (2)Back wall distance T

The determination of the ball wall distance cannot be affected by the inlet diameter of the bell pipe. When the bell pipe takes in water, some water has to enter the pump form behind the bell pipe. So a certain back wall distance is required. However, a too large back wall distance increases the freedom of the water flow at the back wall, thus the possibility to produce vortex. So the diving depth also should be increased. According to the optimal calculation, the back wall distance $(0.8 - 1.0)D_0$  is enough..

#### (3)Pool width $B_j$

In order to let some water flow enter the pump smoothly from both sides and back of the bell pipe, a certain length of the pool is required. If the length is too large, it only will increase the investment of civil construction. The inlet pipe for the bell pipe can affect the determination of the optimal pool length to some extent. According to the optimal calculation, the recommended length of the pool can be  $(3.5- 4.5)D_0$ . The larger inlet diameter for the bell pipe uses a small value or the smaller inlet diameter for the bell pipe uses a big value.

#### (4)Pool length $X_L$

For front-run water entrance, a sufficient pool length is required in order to make the water flow evenly distributed before it reaches the bell pipe.The pool length can be determined according to the layout of the top pump station structure. It can be $(7.0\sim 8.0)D_0$ .if the water enters from both sides, the pool length can be extended or necessary measures should be taken. The length of the pool is not associated with the the inlet diameter of the bell pipe.

#### (5)Planar shape

According to calculation, the planar shape of the intake pool has no effect to the operating status of the pump. According to test data. The planar shape has some impact on the hydraulic loss of the intake pipe. The hydraulic loss of the heart shape is the smallest and the hydraulic loss of the rectangle pool is the biggest.

## 二、进水池设计中需注意的问题

进水池的设计，一般应注意的事项有：

- (1)使进水池内流动接近于自然流动，流动要能使各泵平均吸入。
- (2)泵的配置、流入口的位置和进水池形状的设计应不引起旋回流。
- (3)进入进水池入口的流速要慢，其值约在 $0.7\text{m/s}$ 以下。另外，位于进水池内的泵吸入口附近的流速以在 $0.3\text{m/s}$ 以下为宜。
- (4)流道不能突然扩大，不能急剧改变方向。
- (5)相对于泵的流量，进水池的设计尺寸不能太大也不能过小。
- (6)要避免在一台泵的上流处设置另一台泵。
- (7)要有足够的淹没深度，以避免产生空气吸入涡。
- (8)降低进水管道的底面，使进水管平滑地与进水池连接；同时，进水池中的进水管、回水管的管端应没入水中，这样有利于平缓放水。这样，从进水管道流入的水不会卷入空气流进进水池内。
- (9)为防止旋涡的发生，应装设适当的防涡壁和间隔壁。

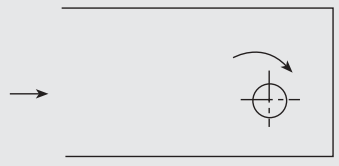
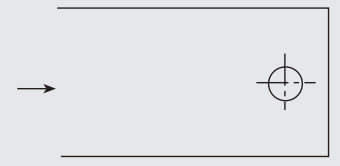
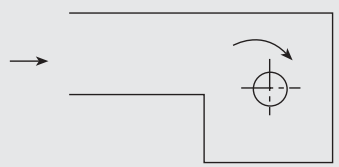

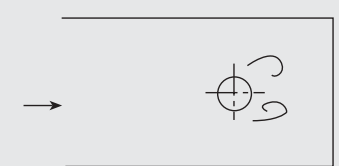
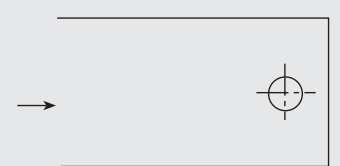
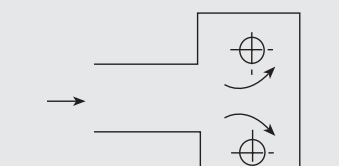
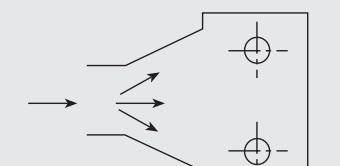
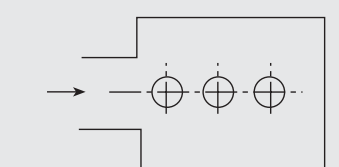
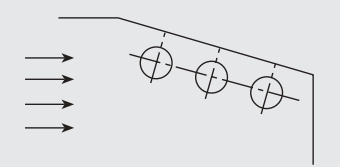
For the design of the intake pool,the following notes should be taken:

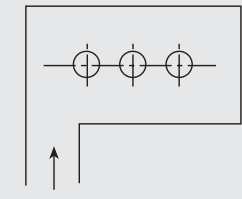
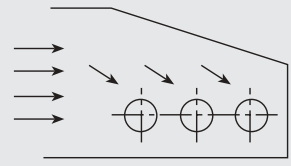
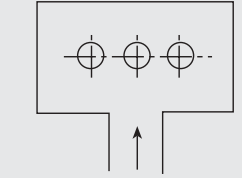
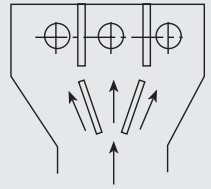
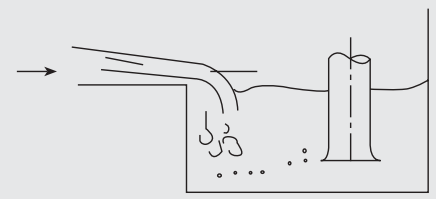
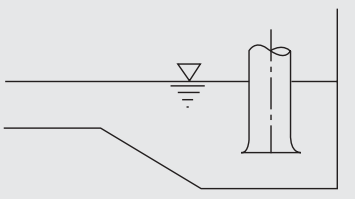
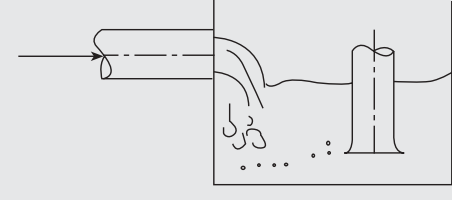
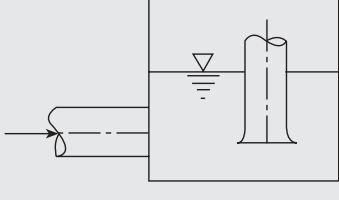
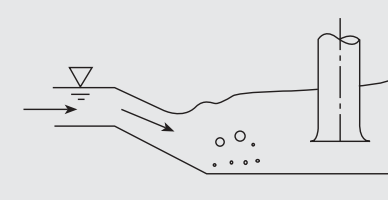
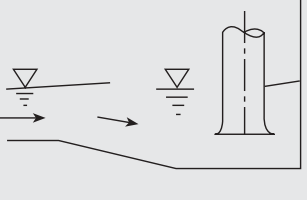
- (1)The water flow in the pool should be closer to natual water flow,making the water enter the pumps equally.
- (2)The pump configuration,location of the water entrance and design of the pool shape should not cause turbulance
- (3)The flow rate at the pool entrance should be less than  $0.7\text{m/s}$ . Furthermore, the flow rate near the pump inlet should. properly, be less than  $0.3\text{m/s}$ .
- (4)The water passage cannot be expanded out of sudden. Its direction also should not be changed abruptly.
- (5)Compared to the flow rate of the pump,the design size of the intake pool should be not too large or too small.
- (6)The pump should not be installed at the upstream of another pump.
- (7)The diving depth should be enough to avoid air swirl.
- (8)The bottom face of the intake pipeline should be low so as to connect the pipeline and the pool smoothly. At the same time,the ends of the inlet pipe and the return pipe should be submerged into the water,In this way,the water from the inlet pipe won't make air enter the pool.
- (9)In order to avoid vortex or swirl,appropriate anti-swirl and partition wall should be set up.

潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

下表列出了不正确和正确的进水池示例

The table below has listed the correct and wrong pool examples

劣例 bad case	注意事项 Notes	优例 Preferred case
	(2)	
	(2)、(4)	
	(5)	
	(2)、(4)	
	(1)、(4)、(6)	

劣例 bad case	注意事项 Notes	优例 Preferred case
	(1)、(2) (4)、(6)	
	(1)、(2)、(4)	
	(8)	
	(8)	
	(8)	



### 三、封闭式进水流道参考图 Reference drawing for the enclosed water passage

#### 1、肘形进水流道Elbow water passage

肘形进水流道应用普遍，设计研究比较成熟。肘形进水流道断面逐渐收缩，流道内水流状态较好，水力损失小：流道平面宽度较小，通常 $B/D_0=2\sim 2.5$ ( $D_0$ 为泵叶轮直径， $B$ 为流道宽度)。肘形进水流道不足之处是流道高度较大，可能因之增大泵站基坑挖深。通常 $H_w/D_0=1.6\sim 1.8$ ( $H_w$ 为叶轮中心至流道底部的垂直距离)，其次，因型线复杂，施工技术要求高。

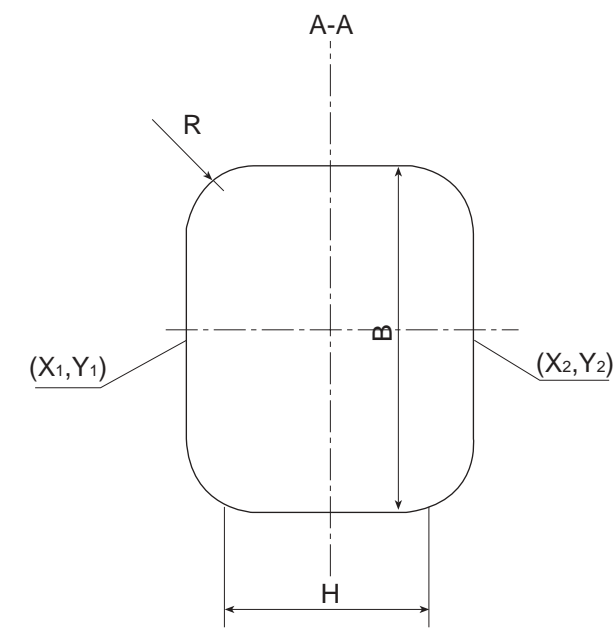
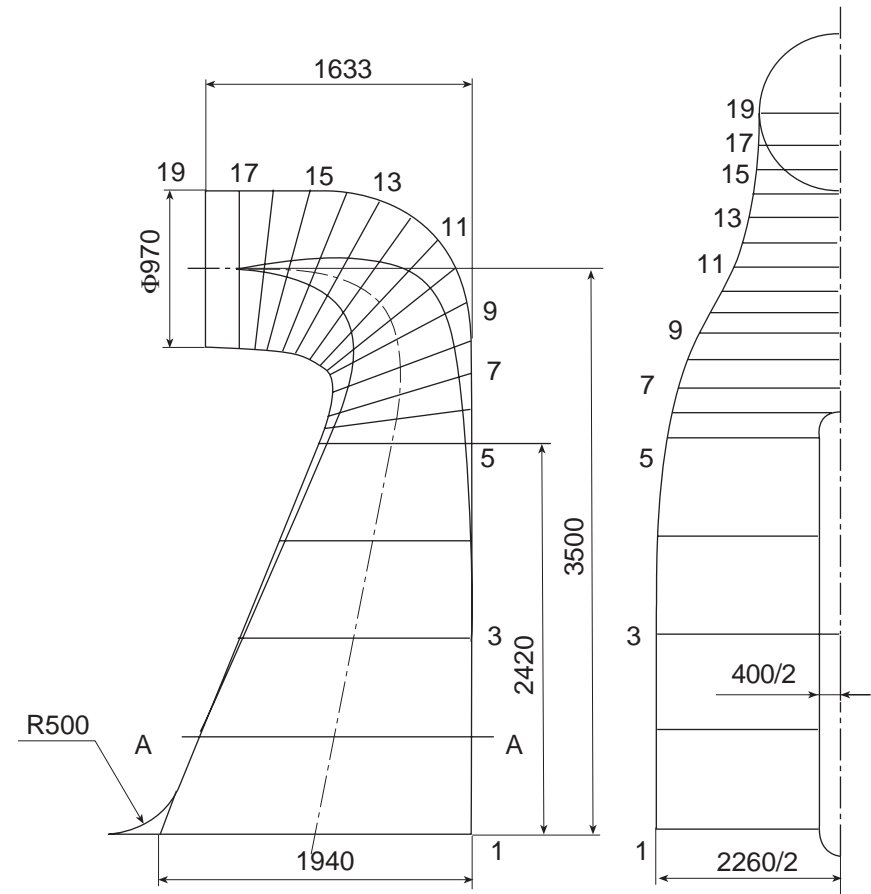
肘形进水流道水力设计的主要矛盾是没法提高水流入泵的平均角度，流速均匀度一般均可满足要求。对水流入泵平均角度影响最大的几何参数是水泵叶轮中心高度 $H_w$ ，其取值不宜过小，最好不要小于 $1.6D_0$ ，在不显著增加土建投资的情况下，尽量采用 $1.8D_0$ 。

下图以叶轮直径 $D_0=1\text{m}$ ，叶轮室进口直径 $D_1=0.97D_0$ ，水泵叶轮中心至叶轮室进口的距离 $H_0=0.67D_0$ 为例设计，对于不同的水泵叶轮直径和水泵叶轮室尺寸，可按水泵叶轮直径的比值作相应换算。

The elbow water passage has been widely used. The section of the elbow water passage is narrowed gradually. The water flow runs in good states along the passage. So the hydraulic loss is small. The planar width of the passage is small and, generally, is  $B/D_0=2\sim 2.5$  ( $D_0$  is the diameter of the pump impeller and  $B$  is the width of the water passage). But it has disadvantages. First, the height of the water passage is large. So the foundation pit for the pump station should have a large depth. Generally, it is  $H_w/D_0=1.6\sim 1.8$  ( $H_w$  is the vertical distance between the impeller center to the bottom of the passage). Second, the shape is too complex and requires a high level of construction technology. The main conflict for the hydraulic design of the elbow water passage is that the average angle for water entering the pump cannot be improved. The geometric parameter that affects the average angle greatly is the height  $H_w$  of the impeller center. The value should not be too small. It is preferable that the value is not less than  $1.6D_0$ . If additional investment in the civil construction is not expected, it should be  $1.8D_0$  preferably.

In the following drawing, the diameter for the impeller is  $D_0=1\text{m}$ , the inlet diameter for the impeller chamber is  $D_1=0.97D_0$  and the distance  $H_0$  between the impeller center and the entrance of the impeller chamber is  $0.167D_0$ . For different impeller diameter and impeller chamber size, the value may be converted according to the impeller's diameter.

No	$X_1$	$Y_1$	$X_2$	$Y_2$	B	H	R
1	0	1940	0	0	2260	1940	0
2	1210	1445	1210	0	2260	1445	0
3	2420	950	2420	0	2127	950	31
4	2583	894	2855	0	1968	935	75
5	2753	873	3288	37	1748	992	146
6	2908	937	3682	212	1456	1060	258
7	2981	1090	3919	570	1192	1072	379
8	3002	1261	3392	998	1041	1024	459
9	3008	1433	3992	1433	984	984	492
10	3015	1633	3985	1633	970	970	485



推荐的肘形进水流道单线图( $H_w=1.8D_0$ )  
Single line drawing for the recommended elbow water passage

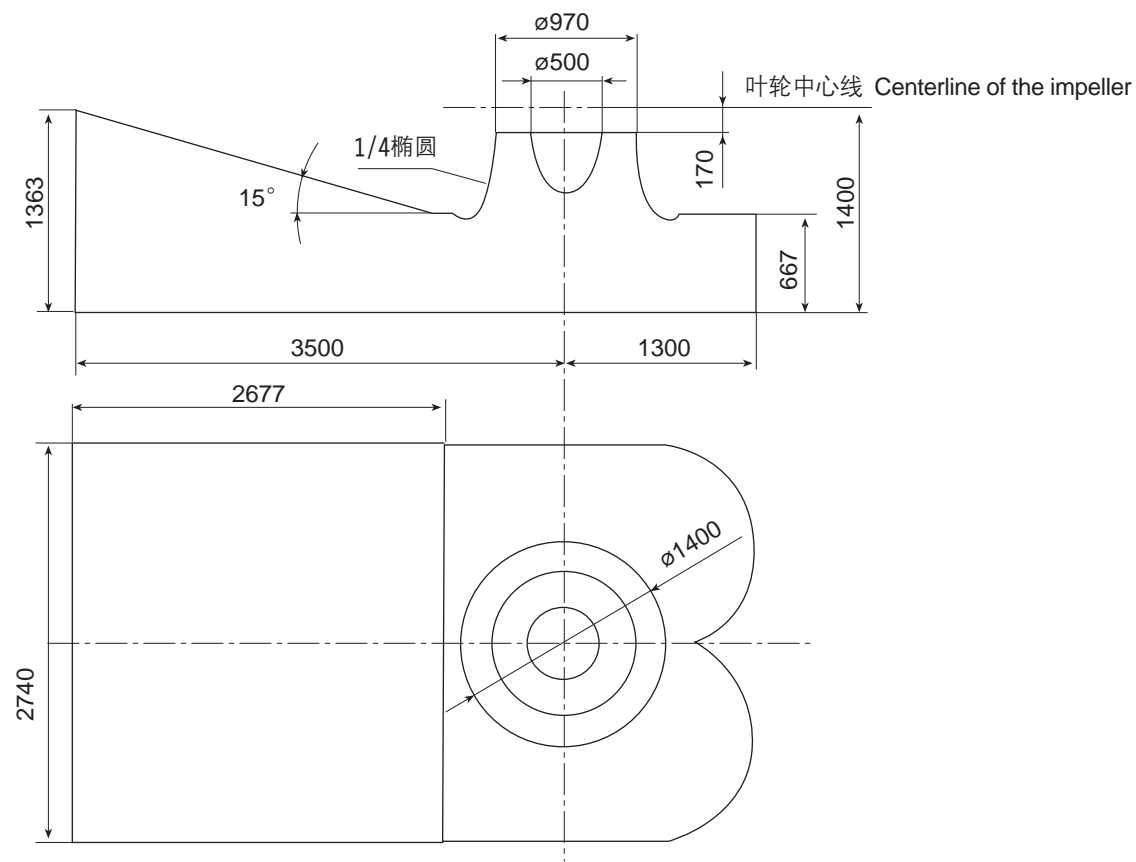
### 2、钟形进水流道 Bell water passage

钟形进水流道的显著特点是水泵叶轮中心高度(即水泵叶轮中心到流道底板的距离)较小,这对于站址地质条件较差的泵站,具有特别重要的意义。这种进水流道早期在日本的一些大型排灌泵站应用较多,70年代起,在我国的大型泵站建设中也得到了一些应用。与肘形流道相比,钟形流道的几何形状要复杂些,故其水力设计的难度比较大。

下图以叶轮直径 $D_0=1\text{m}$ ,叶轮室进口直径 $D_1=0.97D_0$ ,水泵叶轮中心至叶轮室进口的距离 $H_p=0.167D_0$ 为例设计,对于不同的水泵叶轮直径和水泵叶轮室尺寸,可以按水泵叶轮直径的比值作相应换算。

The main feature for the bell-shaped water passage is that the height for the impeller center(the distance between the impeller center to the bottom plate)is small.This is important for the pump station having a poor geological conditions.This passage at its early stage was widely used in the large irrigation pump stations. Since 1970s,it has been applied in the large pump station in China. Compared to the elbow water passage,the bell-shaped water passage is much more complex. So the hydraulic design is much more difficult.

In the following drawing,the diameter for the impeller is  $D_0=1\text{m}$ ,the inlet diameter for the impeller chamber is  $D_1=0.97D_0$  and the distance  $H_p$  between the impeller center and the entrance of the impeller chamber is  $0.167D_0$ . For different impeller diameter and impeller chamber size,the value may be converted according to the impeller diameter.

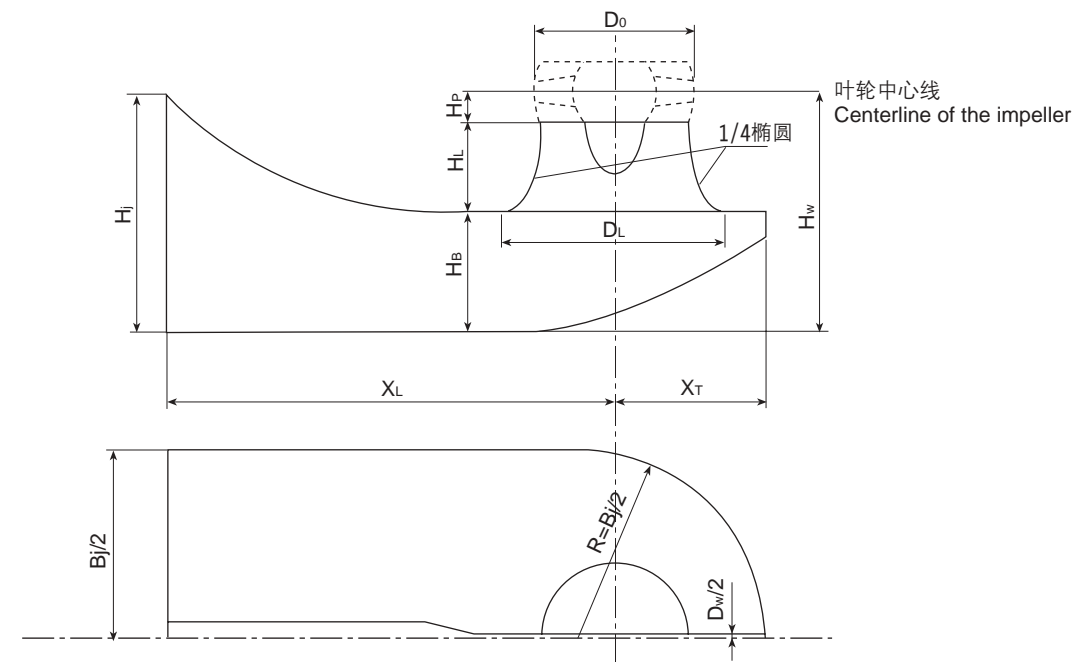


经过优化的钟形进水流道单线图( $H_w=1.4D_0$ )  
Single line drawing for the optimized bell-shaped water passage

### 3、簸箕形进水流道 Dustpan-shaped water passage

簸箕形进水流道单线图如下,表中未提及的不同水泵叶轮直径和水泵叶轮室尺寸,可以按水泵叶轮直径的比值作相应换算。中隔板厚度 $D_w$ 应在施工条件允许的情况下尽量减薄,若结构不能满足,可采用变厚度中隔板,在喇叭口下方的中隔板减至最低限度200mm。

The single line drawing for the dustpan-shaped water passage is as follows. Different impeller diameter and the impeller chamber size not listed in the table can be converted according to the specific parameter of the impeller diameter. The thickness of the partition board  $D_w$  should be as thin as possible if allowed.if the structure cannot meet this requirement,the partition board can be thicker. The partition board under the bell opening should be reduced to 200 mm at the least.



簸箕形进水流道主要尺寸表 The size table for the dustpan-shaped water passage

$D_0$	$D_L$	$X_T$	$H_B$	$X_L/\text{min}$	$D_w$	$B_j$	$H_w$
1000	1470	1000	800	3000	200~600	2500	1600~1750
1200	1760	1200	960	3600		3000	1920~2100
1300	1900	1300	1040	3900		3250	2080~2280
1400	2050	1400	1120	4200		3500	2240~2450
1500	2200	1500	1200	4500		3750	2400~2630

## 水力元件 Hydraulic elements

### 一、拍门 Flap valve

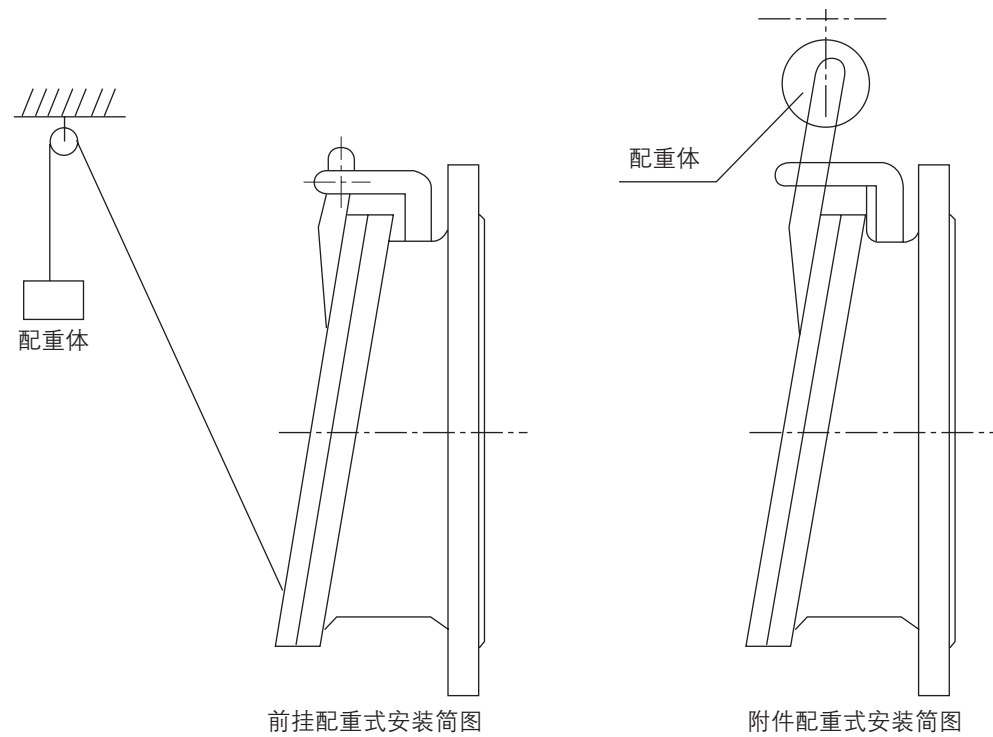
配重式拍门 Equipped with multiple flap valves

#### 1. 用途与特点

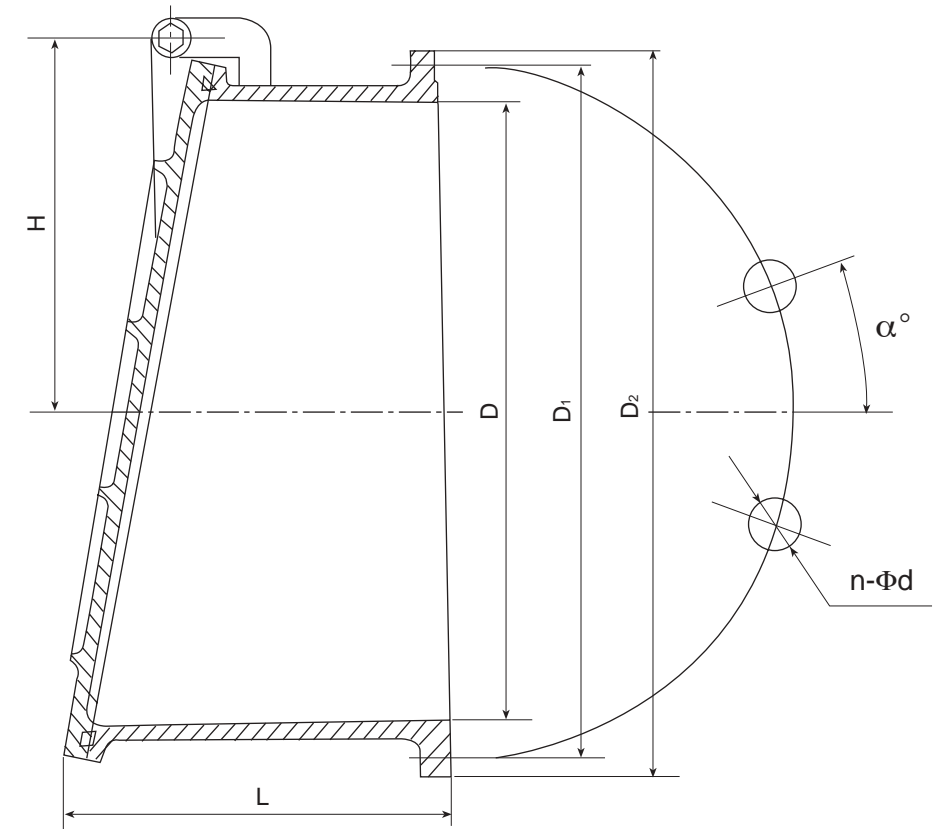
- 适用于给水排水及污水处理工程的各种管道和水渠道作溢流，止回作用，也可用于各种竖井井盖。
- 仅用于单向水流的圆形、方形或矩形出水口。
- 结构简单，工作可靠，不需人力操作。
- 逆水方向承受压力：PN=6bar
- 安装可以与标准法兰连接，可预埋，也可承插。
- 如果正向水力不足，不能打开门板，可根据安装位置需要设置不等重量的配重装置。

#### 1.Applications and features

- It is applied to supply or drain water,manage the sewage treatment works and overflow stop water passage. It can also be used in covers for various vertical wells.
- Only used for round,square or rectangle outlet having a single water flow direction.  
Simple construction and reliable operation without human operation.  
PN=6bar
- The withstood pressure for the reverse flow direction:PN=6bar
- The installation can be made through standard flanges,either embedded or plugged.
- If the front-run hydraulic force is not enough and the flap cannot be opened,various ballast installations can be used according to the mounting location.



配重式拍门外形图联接尺寸表  
Exterior drawing & joint size table for flap valve matched with heavy

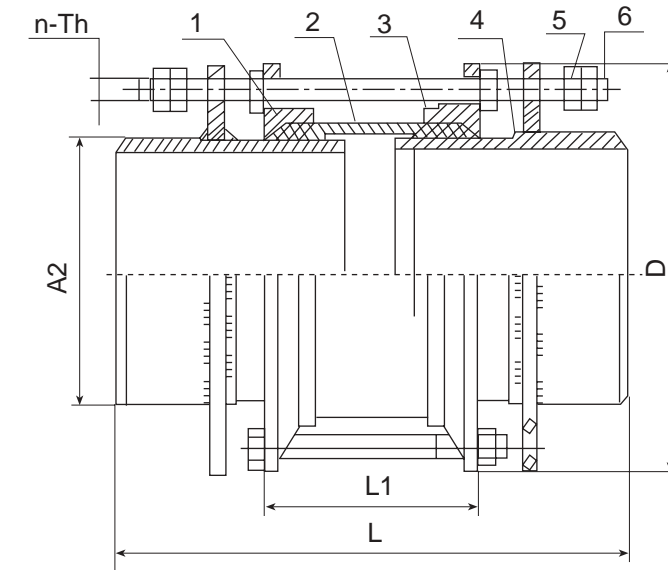
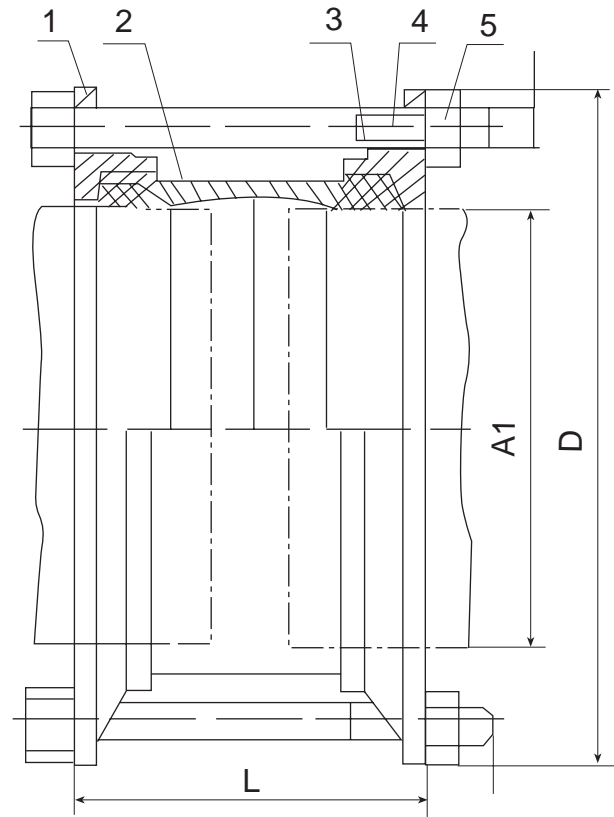


井筒出水口径 Column pipe outlet diameter	D	D <sub>1</sub>	D <sub>2</sub>	L	H	n-ød	α°
400	400	495	540	230	260	8-23	22.5
500	500	655	710	280	310	6-27	30
600	600	705	755	330	360	10-27	18
700	700	810	860	420	410	12-27	15
800	800	920	980	420	460	12-27	15
900	900	1020	1075	420	510	12-27	15
1000	1000	1120	1175	420	560	12-27	15
1200	1200	1320	1380	420	700	12-27	15
1400	1400	1560	1630	480	790	12-36	15



二、管道接头 Pipe connector

1、AY01系列成型伸缩接头 AY01 series shaped telescopic connector



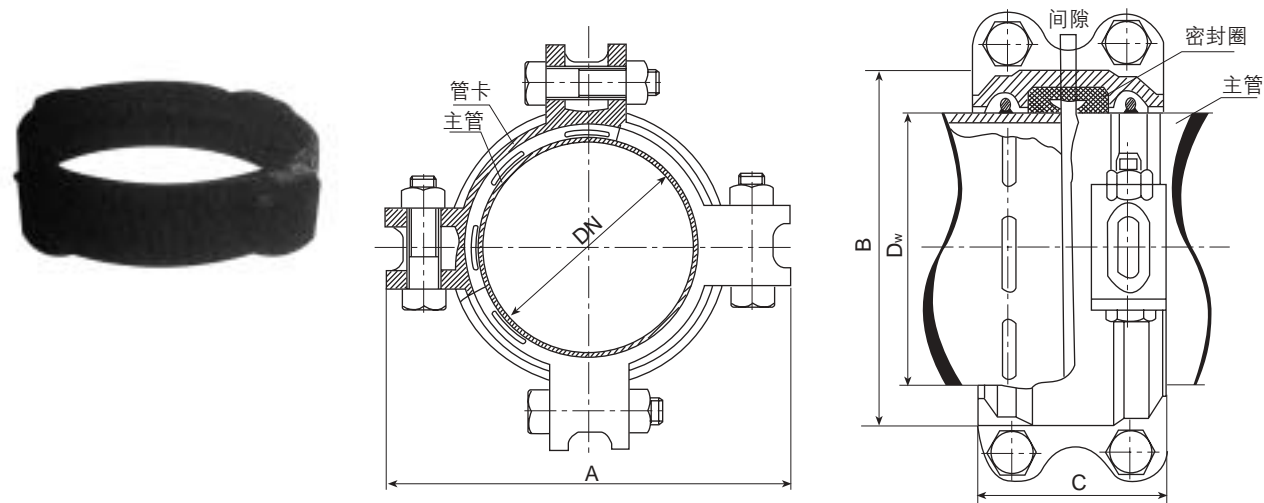
材质表 Bill of material

序号 No.	名称 Name	数量 Qty.	材料 Material
1	压盖 Gland	2	QT450-10 Q235-A
2	套筒 Sleeve	1	Q235-A
3	密封圈 Sealing ring	2	NBR
4	螺柱 Bolt	2	ICr18Ni9Ti
5	螺母 Nut	Tn	ICr18Ni9Ti
6	长螺柱 Long bolt	N	ICr18Ni9Ti
7	限位短管 Limit spool	n	ICr18Ni9Ti

公称通径 DN Nominal bore	管子外径 Tube O.D.		外形尺寸 Outline dimensions			伸缩量 Telescopic amount
	A1	A2	D	L	L1	$\Delta L$
65	76	76	155	645	180	90
80	89	89	165			
100	108	108	190			
	114	114	195			
125	133	133	215			
	140	140	225			
150	159	159	245			
	168	168	255			
200	219	219	310	835	220	110
250	273	273	375			
300	325	325	440			
350	377	377	490			
400	426	426	540			
450	480	480	590			
500	530	530	645	1075	290	150
600	630	630	750			
700	720	720	850			
800	820	826	965			
900	920	926	1065			
1000	1020	1026	1165			
1200	1220	1226	1365			

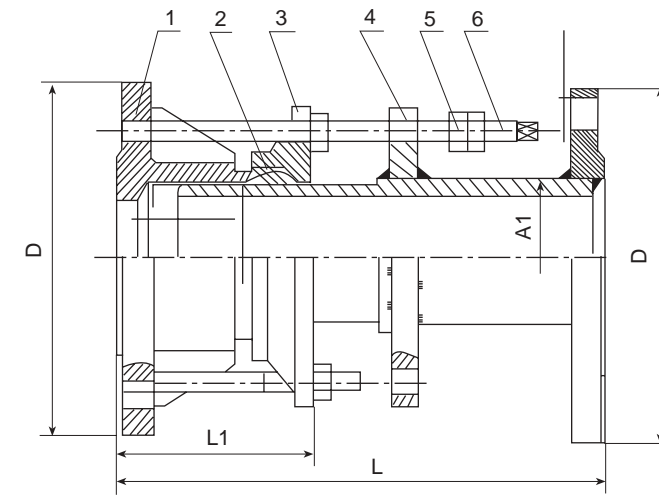
潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

2、AY02系列卡箍式管道接头 Clamp-on pipe connection AY02 series



工作压力 Operating pressure	公称直径DN Nominal diameter	管子外径 Outer diameter of the pipe	瓣数N Number of petals	允许间隙 allowed gap	允许弯角 allowed bent angle	外形尺寸 Outline dimensions		
						A	B	C
1.0 1.6	50	57	2	13	3	133	81	73
	60	68	2	13	3	133	83	73
	80	89	2	14	3	160	118	74
	100	108	2	15	3	197	137	90
	125	133	2	17	3	214	163	98
	150	159	2	20	3	240	189	104
	200	219	2	21	3	329	256	118
	250	273	2	24	3	388	313	124
	300	325	2	26	3	462	364	138
	350	377	4	27	3	502	423	151
	400	426	4	32	3	556	468	135
	450	478	4	34	3	626	522	166
1.0 1.6	500	529	4	36	3	756	573	161
	600	630	4	41	3	796	678	173
	700	720	4	45	3	896	768	179
	800	820	4	48	3	1016	868	202
	900	920	4	52	3	1044	968	210
	1000	1020	4	56	3	1212	1070	222
	1200	1220	4	64	3	1418	1272	238

3、AY03系列带法兰连接的伸缩接头 AY03 series telescopic connector with flange connection



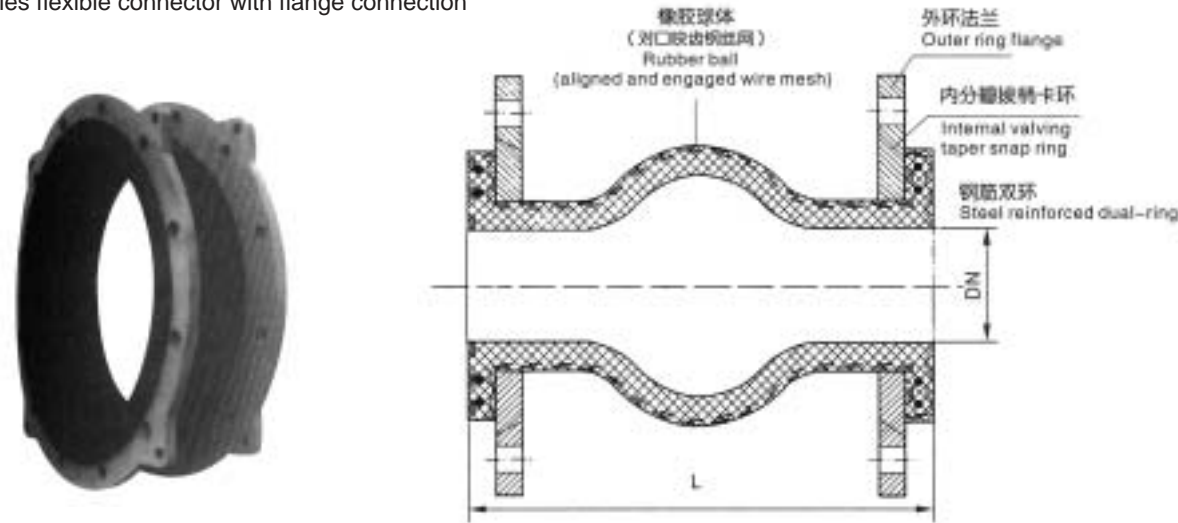
公称通径 DN Nominal bore	管子外径 Tube O.D. A1	外形尺寸 Outline dimensions			伸缩量 Telescopic amount $\Delta L$	
		D	L	L1		
65	76	155	645	180	90	
80	89	165				
100	108	190				
	114	195				
125	133	215				
	140	225				
150	159	245				
	168	255				
200	219	310	835	220	110	
250	273	375				
300	325	440				
350	377	490				
400	426	540				
450	480	590				
500	530	645				
600	630	750				
700	720	850				
800	820	965				
900	920	1065	1075	290	150	
	1000	1165				
	1000	1020				1165
	1200	1220				1365

## 潜水轴流、混流泵 SUBMERSIBLE AXIAL FLOW PUMP/MIXED FLOW PUMP

材质表 Bill of material

序号 No.	名称 Name	数量 Qty.	材料 Material
1	压盖 Gland	2	QT450-10 Q235-A
2	套筒 Sleeve	1	Q235-A
3	密封圈 Sealing ring	2	NBR
4	螺柱 Bolt	2	ICr18Ni9Ti
5	螺母 Nut	Tn	ICr18Ni9Ti
6	长螺柱 Long bolt	N	ICr18Ni9Ti
7	限位短管 Limit spool	n	ICr18Ni9Ti

4、AY03系列带法兰连接的软接头  
AY03 series flexible connector with flange connection



规格DN Specs DN	40 50 65	80 100	125	150	200	250 300 350	400 450	500 600 700	800 900 1000	1200
接头长度L Connector length L	100 150	150		200			250		300	
轴向伸长 Axial extension	10	12	15		20		25			
周向压缩 Axial compression	12	18	20		25					
承受压力 Bearing pressure	1.0-2.5MPa			0.6-1.6MPa			0.6-1.0MPa		0.6MPa	

