

WQ (11-22kW) Series Submersible Sewage Pumps
WQ (30kW and above) Series Intelligent Submersible Sewage Pumps



➤ No Overload Hydraulic Design

Smooth Operation and No Overloading

➤ Generalized Design

Modular Design, Standard Motor, High generality

➤ Intelligent cloud monitoring (Power $\geq 30KW$)

Remote Monitoring Pump Vibration, Bearing & Winding Temperature, Leakage Data Intelligent And Timely

➤ High Reliability

Short Shaft Extension, Mechanical Seal Self-Cleaning Design And Double Shaft Seal

➤ High Configuration

Standard Equip With SKF Bearing, EagleBurgmann Mechanical Seal, Class H Insulation, Ductile Iron Impeller & Pump Cover .



SKF Equipped



ISO9001 2015 版国际质量体系认证
ISO9001 Certified(version 2015)

CONTENT

Product Description.....	01
Mian Application.....	01
Working Conditions.....	01
WQ (11-22kW) Advantanges &Features.....	01
WQ (11-22kW) Diagram & Structural Dscription.....	02
Material Of Main Pump Parts.....	04
Installation Modes.....	05
Technical Description.....	06
Power&Control Cable Connection Diagram.....	10
WQ (11-22kW) Comparison Table Protection&Monitoring System Of Motor.....	10
WQ (11-22kW) Pump Control Panel Specification.....	11
WQ (11-22kW) Order Specification.....	20
WQ (11-22kW) Pump Supply List.....	21
WQ (11-22kW) Preformance Diagram Specification.....	22
WQ (11-22kW) Performance Data Sheet.....	23
WQ (11-22kW) Performance Curve, Mian parameter&Installation Drawing.....	24

Product Overview

The WQ(11-22kW) series submersible sewage pump developed by Shanghai kaiquan is in accordance with GB/t24674-2009 sewage submersible pump national standard

It absorbs the advantages of similar products at home and abroad, on the basis of its integration of existing sewage pump series. Developed an innovative hydraulic model without overload, is a true full head submersible pump.

At the same time in the mechanical structure, wiring, sealing, protection, control and other aspects of a comprehensive optimization design, so that a higher configuration, more excellent hydraulic performance, stronger versatility and better reliability.

Main Application

It is mainly used for sewage treatment plant, municipal sewage lifting pump station, waterworks, water conservancy drainage and irrigation, water diversion project, integrated pump station, etc.

Working Conditions

1. Temperature of the medium $< 40^{\circ}\text{C}$, Medium Density $\leq 1050 \text{ kg/m}^3$, PH value range 4~10
2. The liquid level should not be lower than the “ ∇ ” symbol shown in the installation dimension diagram.
3. Pump main parts are made of cast iron or ductile iron, So can not use to handle the medium with strong corrosion or solid particles.
4. The mechanical seal are applied with self-cleaning technology. Make sure the Mechanical seal have a long running life.
5. The fiber length of liquid should smaller than pump discharge diameter.

WQ (11-22kW) Submersible Pump Features

I. Innovative technology with unique overload-proof hydraulic design for sewage treatment pump

1. The innovative high-efficiency overload-proof hydraulic model design concept also takes into account the flow capacity of the sewage pump; effectively troubleshooting any operational issues.
2. Innovative overloading-proof hydraulic model ensures the maximum power output point within the high-efficiency zone, ensuring stable operation and minimal vibration.
3. Impeller capacity: Comprehensive CFD research, analysis, and testing is implemented so as to ensure that the impeller achieves the best balance between impeller blades and solid content flow through capacity, with the unique design of the flow passage parts guaranteeing smooth passage of solid contents and anti-winding performance of fibers.

II. Unique water pump sealing design for guaranteed long-term reliable running of the pump.

1. Select the Burgmann brand mechanical seal, Pump side material is WC Vs WC can make the running life more longer.

III. Mechanical seal self-cleaning technology

Two single seals are installed in series and special spiral grooves or small gaps are adopted at the pump cover to prevent the desposit of soild contenets surrounding the mechanical seals and thereby guarantee their stable performane

IV. Short shaft extension

The short shaft extension features fortified strength and improved resistance against breakage

V. Heavy-duty Bearing

With design of heavy-duty bearigs, The minimum service life is 100,000hr for the bearings

VI. Reliability design of submersible motor

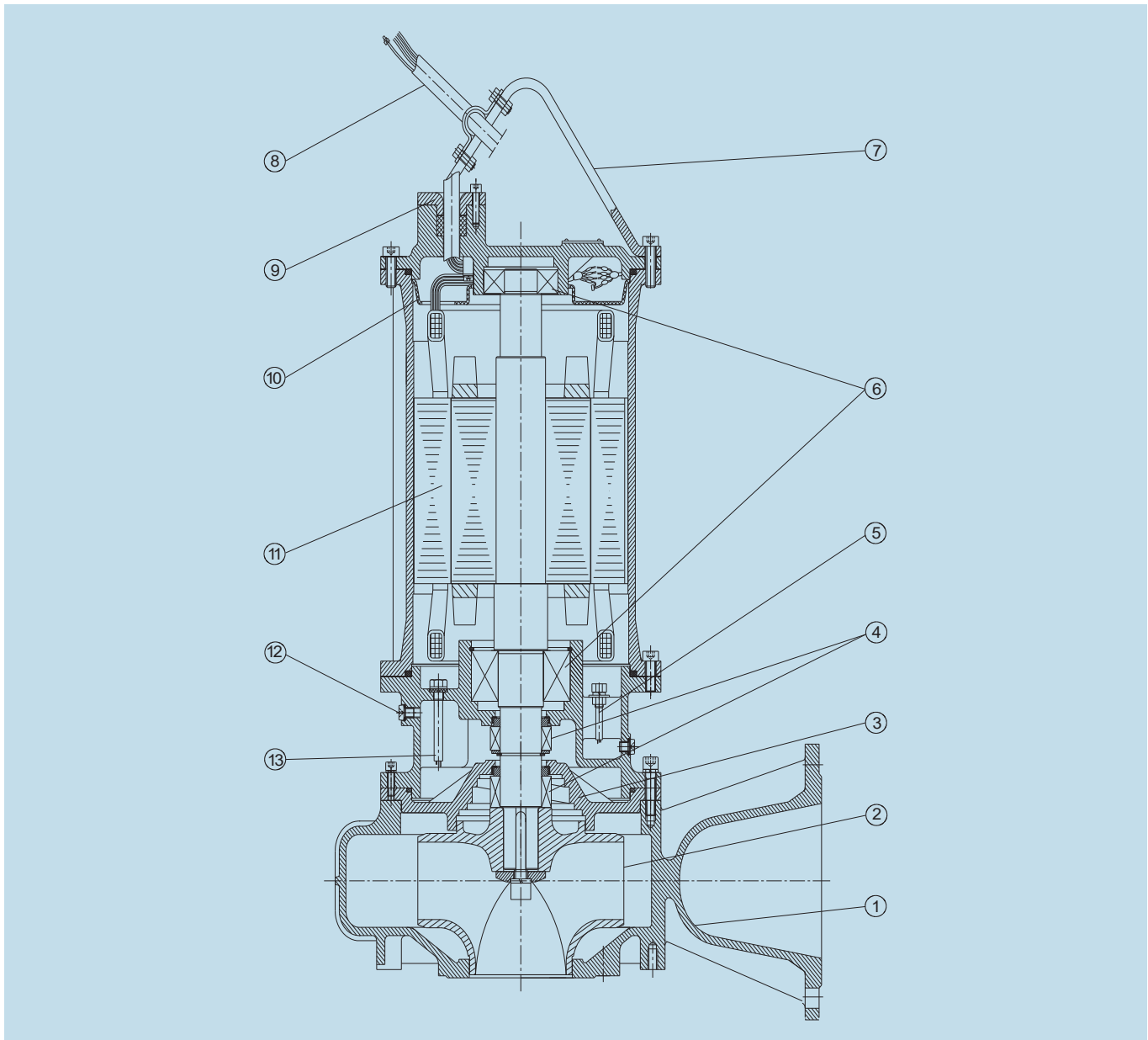
The motor is of insulation grade H (applicable for 180°C) improving reliability and the resistance of the winding to higher temperatures. The submersible motor of insulation grade H features higher durability.

VII. Universal pump installation design

The installation mode is diversified, including automatic coupling type installation. The pump and the outlet pipe are connected through the outlet pipe seat of the coupling device. No conventional fasteners are used.

WQ(11-22kW)Series Submersible Pump

11kW-22kW Submersible Structural Diagram



- 1. Casing 2. Impeller 3. Pump Cover 4. Mechanical Seal 5. Leakage Detector
- 6. Bearing 7. Lifting Handle 8. Cable 9. Cable Seal 10. Wiring Cover
- 11. Submersible Motor 12. Screw and Filler 13. Leakage Detector

Technical Specification

Wetted Parts: The design optimization of CFD technology achieves the best balance between overload-proof hydraulic design and high flow capacity, featuring a broad flow passage and improved flow-capacity of waste. The impeller has passed a strict dynamic balance test to minimize vibration and maximize the service lives of bearings and mechanical seals.

Pump Cover: Adopt the design of self-cleaning technology, the pump cover has a ring spiral groove structure, medium particles in the pump cover in the process of rotation by centrifugal force to the outside, can avoid particles in the sealed cavity to achieve the effect of self-cleaning machine seal.

Motor: Specially design and manufacture of submersible motor, protection grade IP68, stator winding for class H insulation, insulation limit working temperature 180 °C, winding embedded has overheating protection device at the same time, through the electronic control cabinet of motor protection.

Cooling of motor: The motor is cooled by the pumped medium via the radiator fins on the stator housing. The motor shall be immersed within the medium and the minimum stop position of the pump shall be no lower than the level “▽” shown in the installation dimension diagram.

The electric pump can be specially equipped with motor cooling system to cool the motor. The cooling medium flows between the stator housing and the cooling sleeve. The cooling medium can be pumped medium or external cooling water. The cooling channel is different between the pumped medium cooling and the external cooling water cooling. Therefore, when the user wants to install the cooling system, it shall indicate in the order whether to use the pumped medium cooling or external cooling water cooling. When the cooling medium is pumped medium, the pump structure can prevent large particles into the cooling channel. After a long period of operation, small particles may form in the sleeve, which can be flushed by cooling the outer connection of the pipe joint on the sleeve. Mechanical Seal: Borgman mechanical seal, mechanical seal selection of friction coefficient is very low and wear -resistant friction materials, rubber parts for oil - resistant nitrile butadiene rubber, The metal parts are stainless steel. The mechanical seal on the pump side is matched with silicon carbide/tungsten carbide, with a designed service life of 15,000 hours.

Oil Chamber: The oil in the oil chamber is 32# anti-wear hydraulic oil, standard: GB1118.1-2011. In addition to lubricating the mechanical seal, it can also take away the heat of the bearing, and the oil chamber also has the additional safety function of preventing liquid penetration. The oil chamber is equipped with a water leakage probe. When the pump side medium leaks into the oil chamber, the water leakage probe alarms the pump through the electric control cabinet and stops the pump to remind the operator for maintenance.

Bearing: The whole system is standard with original imported SKF bearing, the upper bearing is deep groove ball bearing or cylindrical roller bearing, used for bearing radial force. The bearing at the bottom is used to bear radial force and axial force. Each type of pump is different according to the radial force and axial force. Some of them are designed as a double-row angular contact ball bearing, while others are designed as a pair of angular contact ball bearing and a cylindrical roller bearing. Bearing design life of 100,000 hours, using 3# lithium grease for lubrication.

Cable: The cable is made of heavy-duty rubber-sheathed flexible cable which is resistant to sewage. The cross - sectional area and current carrying capacity of cable leads are based on ambient temperature 40°C, Long continuous working conditions are selected, so that under normal operating conditions, the current carrying capacity of the cable has sufficient margin and longer service life.

Motor seal: The cable gland compacts the cable seal ring to achieve reliable sealing between the cable and the wiring cavity. Fix the cable to prevent pulling. The cable adopts color mark and digital mark, which makes the cable identification and connection easier. The earthing mark and the earthing fasteners are set in the wiring cavity of the motor and the electric control cabinet. The cables are strictly earthed, safe and reliable.

During the assembly process, the o-ring, cable seal and mechanical seal of each pump shall be strictly tested to ensure the reliable sealing of the motor cavity, including the wiring cavity.

Protection Device: The pump is equipped with motor winding overheating protection components, motor cavity oil and water probe, oil chamber cavity leakage probe. In order to ensure the safe and reliable operation of your pump, especially to prevent the burning of the motor, it is recommended to use our special electric control cabinet for submersible sewage pump. When the user prepares the electric control cabinet, please contact the professional group of the electric control cabinet of our company for any electrical technical problems, especially for the electrical technical problems of the protective device.



Overheating protection: The overheating protection element is a temperature controlled electrical device embedded in the stator windings of the motor. Under abnormal operation condition, when the winding temperature reaches the set value of the overheat protection element, the overheat protection element will make the "overheat" indicator light on through the electric control cabinet and automatically stop the motor, remind the operator to check and find out the cause of the overheat of the motor.

After the winding temperature drops, the machine will return to the starting state.

Leakage detector: The oil-water probe is used for detecting water leakage or oil leakage.

The leakage probe in the oil chamber is called the oil probe for short. When the mechanical seal on the impeller side is damaged, when the water in the oil leakage chamber reaches a certain degree, the two electrodes of the water leakage probe will conduct an alarm signal (indicator light is on) through the electric control cabinet to remind the operator to timely check the mechanical seal or change the oil in the oil chamber.

The leakage probe in the motor cavity is called water probe for short. It is installed in the lower side of the motor cavity and the cavity next to the bearing. The cavity has holes and is communicated with the bearing chamber. When the mechanical seal on the motor side fails, the oil in the oil chamber enters the cavity through the bearing chamber, or the water entering the motor enters the cavity, the two electrodes of the leakage probe will be conducted, and the alarm signal (indicator light) will be sent out through the electric control cabinet and the pump will be stopped automatically to remind the operator to check the pump.



Hoist: The 304 SS lifting brackets are designed with sufficient space for the easy access of hooks, making the lifting easier and durable.

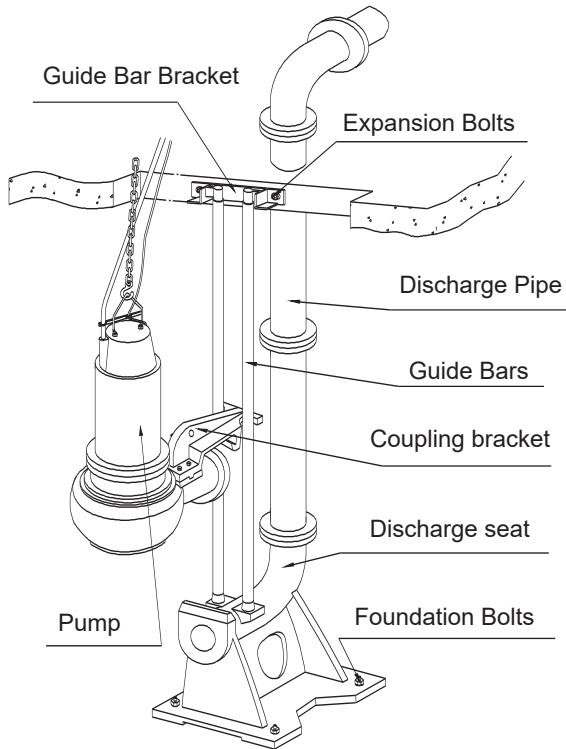
Materials Of Main Parts

NO.	Name		Material
1	Impeller, Pump Cover		Ductile iron
2	Casing, Terminal Box, Bracket		FC250
3	Shaft		SUS420
4	Motor insulator		180°C Insulation grade H
5	Bearing Brand		SKF
6	Mechanical Seal	Brand	Burgmann
		Motor side friction pairs	Graphite/SiC
		Pump side friction pairs	SiC/WC
7	O-ring		NRB 40
8	Cable seal ring		

Installation Modes

WQ Submersible sewage pump can be installed through auto-coupling installation (Z), fixed base installation (P), fixed base installation (F), mobile hose installation (R) and mobile pipe installation(Y). All above-mentioned installation modes are simple, and they will be introduced respectively as below.

Automatic Coupling Installation(Z)

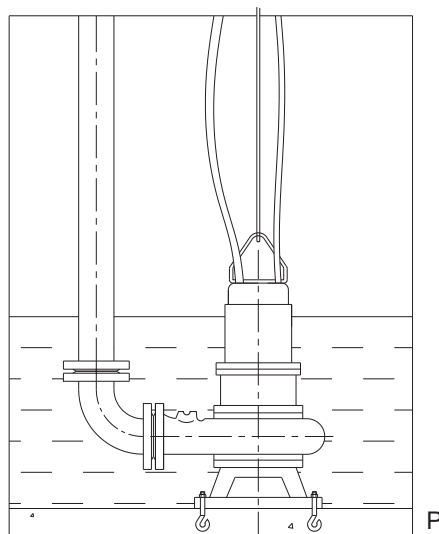


Automatic coupling installation actually USES coupling device to connect pump and pipeline. With the coupling device, the pump and the outlet line is independent of each other, without the need for conventional fasteners connection, so pump and outlet line connection and disconnection is very easy. Coupling device is very simple in fact, only out of the water pipe seat, guide rod, guide rod frame, coupling the four things, guide rod only play a guiding role, do not force, with ordinary water pipe or steel pipe can be, users can be self-provided, and can be very convenient according to the depth of the pool cut into the required length. When installation, the outlet pipe, guide rod, guide frame installed, the coupling loaded on the pump body, lift pump, wear the coupling frame of semicircle orifice into the guide rod and the pump to slide along the guide bar, coupling will put the pump body and outlet pipe fasten, at the same time, the pump body outlet and outlet pipe entrance automatic alignment, automatic tiejin flange end face. When you need to repair the pump, just put the pump up, the pump body and the outlet pipe seat off. This way of installation, really save worry, effort, trouble.

Since the coupling device and the pump are relatively independent, you can still use the original coupling device if your pump station needs to change to the same caliber pump with low head or high head due to the change of circumstances.

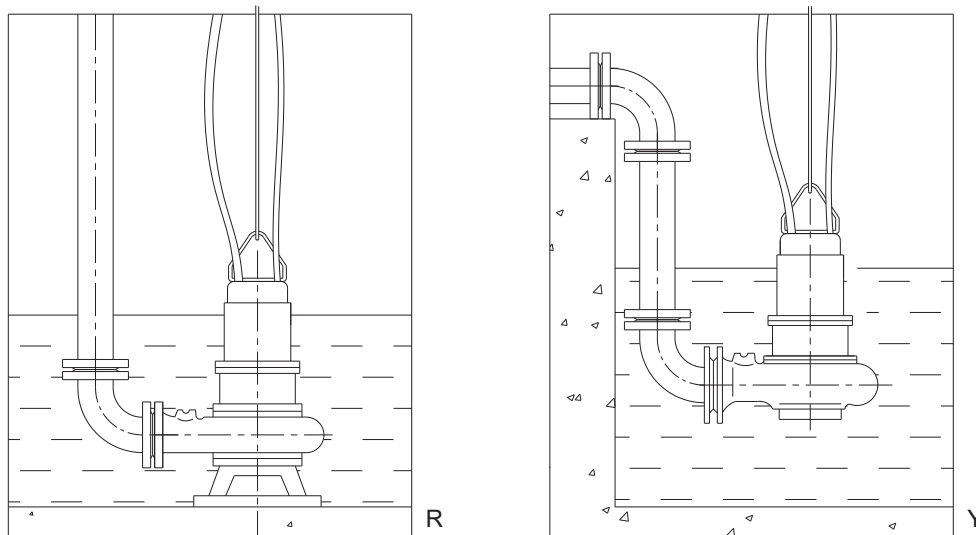
Fixed Installation(P)

Fix the supporting base on the foundation and connect the outlet pipe to operate. The base needs to be bolted.



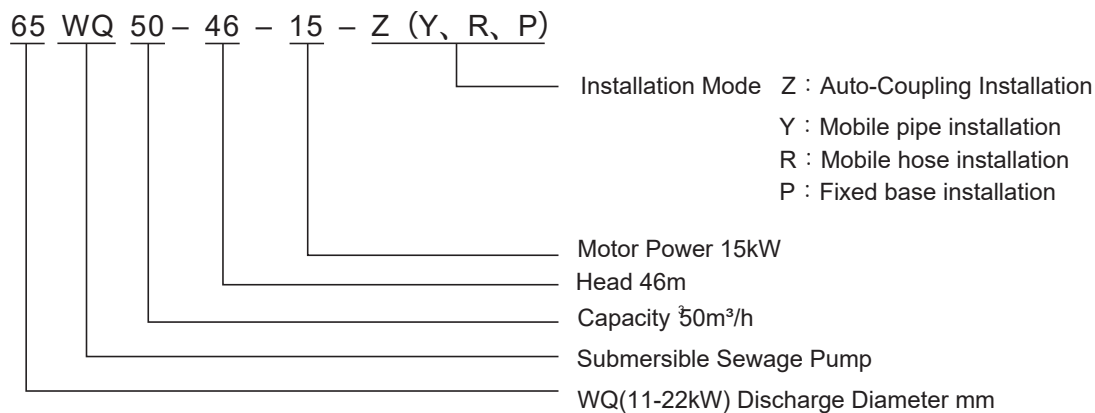
Mobile Installation (R, Y)

Support the pump by its base and connect the discharge hose or pipe to run the pump. This mode is mainly used for emergency use or repair or construction. If the pipeline for mobile pipe installation has enough stiffness, it is acceptable to hang the pump by pipeline for use.



Technical Description

Model Description



Rated Voltage, Rated Frequency:

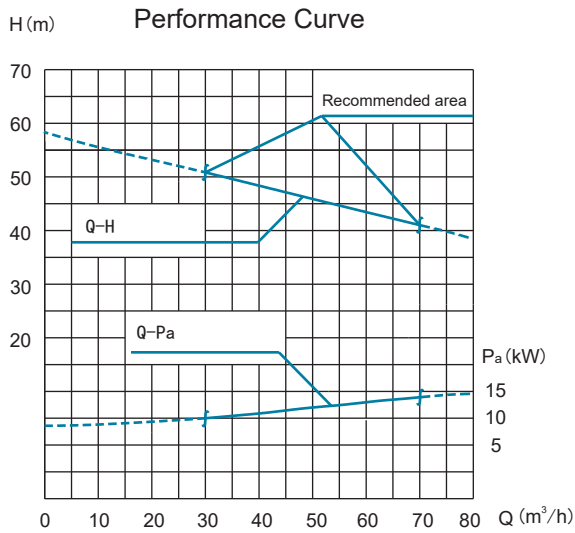
The rated voltage of the motor is 380V and rated frequency is 50Hz

Connection Method Of Lead Wire Of Motor Winding:

Pump delta (delta) connection, pump factory, connection line cavity has been connected by this. It can be started by direct start, auto - drop start or external soft starter.

Direction of rotation:

The impeller rotates counterclockwise from the suction inlet of the pump.

Descriptions of performance curve and main parameters

Main Parameters

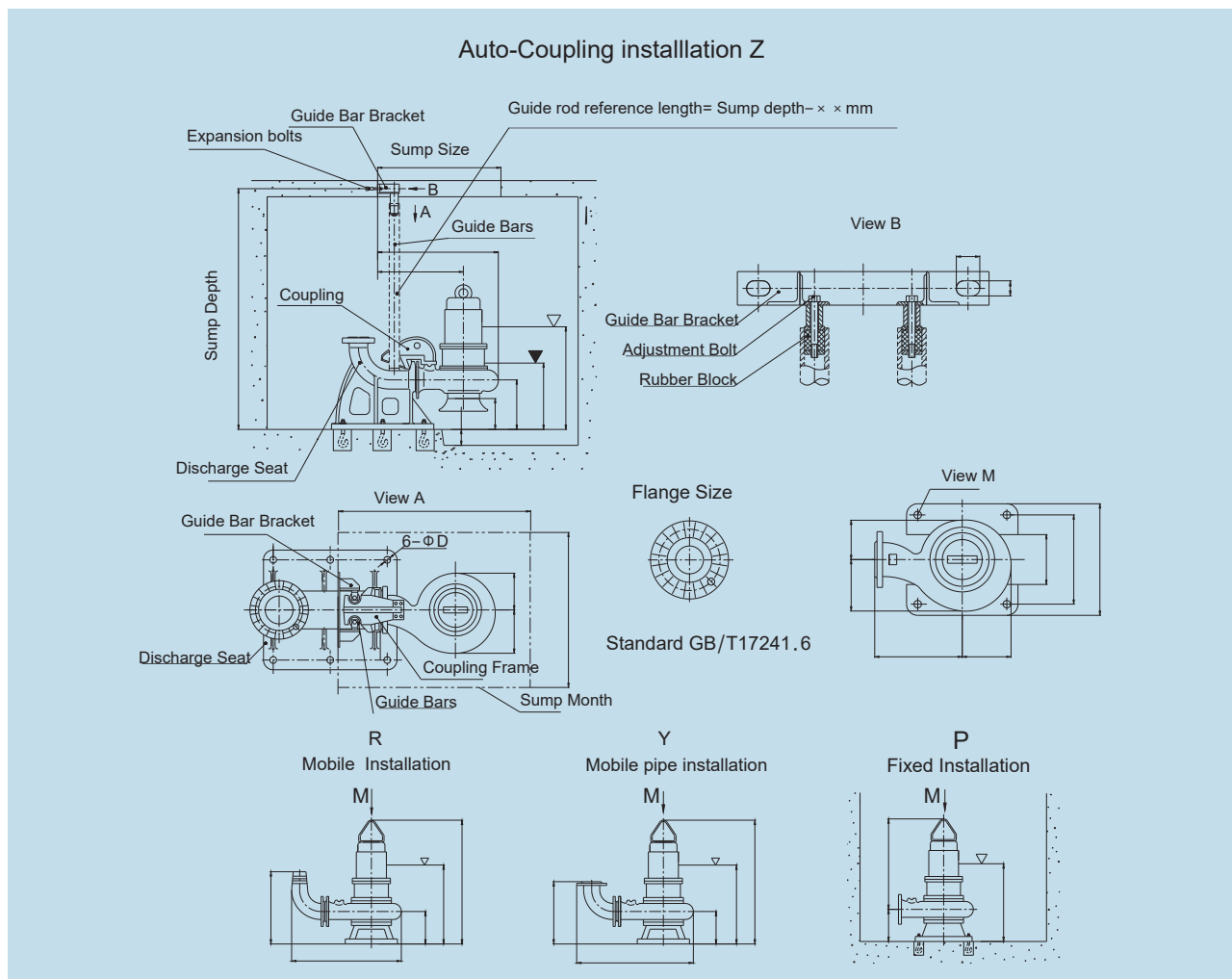
Discharge:65mm

New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
65WQ50-46-15	WQ2210-2112	38x38	2940	136
Motor Power (kW)	Rated Current (A)	Factor cos ϕ	M-Effici. (%)	Lock/Rated Torque
15	29	0.9	88.8	2.4

The solid parts of the curve in the above diagram denote the recommended operation range of the pump. The shaft power will rise no further after reaching a certain value. Generally, the overloading-proof pump poses no risk of overloading, and even the occasional minor overload is limited in nature. Therefore, the motor is safe under all flow conditions of the pump. However, it's best to use the pump within the recommended scope, as the pump can realize highest efficiency and sustainability within the recommended scope. However, when the flow is less than the left boundary, the pump efficiency will be really low causing high radial force and a broken key or shaft. When the flow is higher than the right boundary, the pump will create vibration and noise problems.

Please refer to "Performance Specification of WQ Series Submersible Sewage Pump" for the maximum sizes of solid contents. For the WQ2368-4149 pump shown in the figure, the diameter of the solid contents shall not exceed 100mm. The pump weight excludes accessories (such as coupling device, suction elbow, base, elbow connector, and hose elbow connector) required for diversified installation modes.

Introduction of Installation Sketches



1. All guide rod brackets can be fixed by M16×150 type I steel expansion bolts. The expansion bolts are easily available and can be prepared by clients or procured from our company. Function the rubber block on guide rod bracket: Tighten the adjustment screw on the rubber block to expand the rubber block tightly in the bore of guide rod and stabilize the guide rod.
2. Calculate the length of the guide rod as per the “sump depth” indicated on the diagram. Refer to attached Table 1 for the related information conaraing the guide rod.
3. For the coupling installation of pump without flared water inlet pipe, fabricate the bottom of the sump to a flat plane so that the height of the water discharge pipe seat can guarantee enough height between the suction the pump and the sump bottom to provide good suction conditions for the pump. Therefore, it s unnecessary to fabricate a boss for the discharge pipe seat, which can avoid construction troubles.
4. “▽” denotes the minimum liquid level required for the running of pump. The water level shall be higher than the minimum level during running the pump. If possible, completely immerse the pump to sufficiently cooling the motor. The minimum water level can be controlled by the float switch. Our special electric cabinets of submersible sewage pumps, a type of level control. If the level is high, the pemp will stop.
5. For pumps of mobile installation mode, we can provide the hose elbow connectors or the elbow connectors For mobile hose please refer to the attached Table 2 for the inside diameters of hoses applicable for diversified diameters of pumps.
6. For pumps of the same mode, the base is the same for fixed base installation and mobile installation, the shape and size of the base is shown in view M.
7. GB/T17241.6-2008/XG1-2011standard The flange size indicates the discharge and suction size of pump. The flange dimensions follow standard requirements: GB/T17241.6-2008/XG1-2011.

Appendix 1 Pump guide-bar configuration and dimensions

Pump Discharge (mm)	Guide-bar Stainless steel pipe/ water pipe	Guide Bar Length= (Sump-L) ±15mm The following is the size L
50	1" / 32×3.5	300
65		305
80		425
100		410
150	2" / 60×5	435
200		540
250		630
300	3" / 89×5	655
350		900

Appendix 2 Pump sofe pipe

Pump discharge diameter(mm)	50		65	80	100	150
Equipped sofe pipe bent joint	50-6	50×65-6	65-6	80-6	100-6	150-6
Equipped sofe pipe inner diameter(mm)	64	76	76	89	102	152

Appendix 3 The anchor bolts of automatic coupling installation discharge base.

Pump Discharge DN (mm)	Anchor Bolt (GB/T799-1988)		
	Model	Quantity	Anchor Bolt Hole L×W×H (mm)
50	M16×220	4	80×80×270
65			
80			
100	M20×300		100×100×350
150			
200	M24×300		
250	M30×400	6	160×160×450
300			
350			

Appendix 4 anchor bolts of fixed base mounting installation

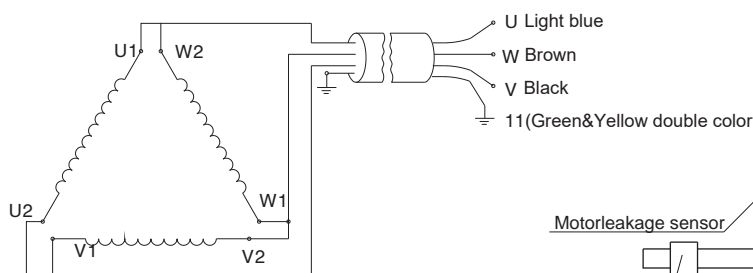
Base Hole	Anchor (GB/T799-1988)	
	Model	Anchor Bolt Hole L×W×H (mm)
Φ18、Φ20	M16×220	80×80×270
Φ25、Φ26	M20×300	100×100×350
Φ30	M24×300	

Appendix 5 Weight sheet of coupling parts

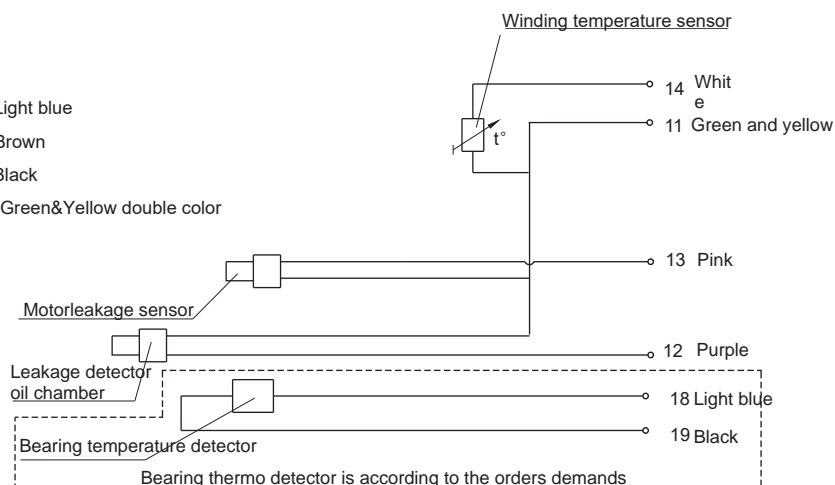
Pump Discharge (mm)	Coupling Parts		
	Discharge Base (kg)	Coupling Frame (kg)	Guide-bar
50	21.5	6	2.45kg/m
65	27.5	7.1	
80	41.3	8.1	
100	37	9.3	
150	74.3	20	6.78kg/m
200	119	24	
250	232	46	10.36kg/m
300	334	64	
350	428	106	

WQ (11-22kW)Submersible sewage pump control cable wiring diagram

Wiring diagram of power wiring
(Inner Delta Connection)



Wiring diagram of control wiring



The monitor elements of motor protection system performance comparison sheet

Protection element	Winding themal element (120°C)	Motor chamber Leakage detector	Oil chamber Leakage detector	Bearing temperature pt100
Control cable code	11-14	11-13	11-12	18-19
Normal(Ω)	0	≥30KΩ	≥15KΩ	at 0°C, a bout100Ω
Fault (Ω)	∞	<30KΩ	<15KΩ	at 95°C, a bout136Ω

WQ(11-22kW) Submersible pump leakage and thermal protection
KQ510 Leakage and thermal protector

KQ510 leakage above-thermal protector can monitor oil chamber leakage, motor chamber leakage, joint box leakage and winding above-thermal and express fault signs.

Supplied Power: AC220V, 50Hz, Input Power 5W。

Work Environment : Temperature-20°C~ +50°C, Relative Humidity≤8 5%RH。 Contactor Capacity: 5 A 250VAC

The protector outside shown as below:

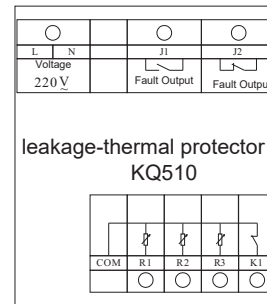
Sign input

COM&R1 are input of oil chamber leakage sensor

COM&R2 are input of motor chamber leakage sensor

COM&R3 are input of wire box leakage sensor

COM&K1 are input of winding thermal sensor


Fault output

J1 is a fault output sign. It is open if there is no fault and it is closed if there is any fault.

J2 is a fault output sign. It is closed if there is no fault and it is open if there is any fault

Fault check

When the resistance ,detected the oil chamber leakage probe, is less than 15K , the indicator light turn on and the fault sign is output ,then the relay work. When the resistance is more than 20K, the fault is removed and the protector turn normal. There is 1s ~5s delay for the input sign and less resiatance is for less delay time.

When the resistance ,detected the motor chamber leakage probe, is less than 30K , the indicator light turn on and the fault sign is output ,then the relay work. When the resistance is more than 35K, the fault is removed and the protector turn normal. There is 1s ~5s delay for the input signand less resiatance is for less delay time.

When the resistance ,detected the joint box leakage probe, is less than 30K , the indicator light turn on and the fault sign is output ,then the relay work. When the resistance is more than 35K, the fault is removed and the protector turn normal. There is 1s ~5s delay for the input sign and less resiatance is for less delay time.

When the winding above-thermal probe detects that the temperature exceed the normal value, the indicator light turn on and the output relay work. When the temperature get down and normal, the probe turn closed and the fault is removed. The protector reverts to the initial state.

KQ1010 leakage above-thermal protector

KQ1010 type leakage above-thermal protector can detect oil chamber leakage, motor chamber leakage, joint box leakage and winding above-thermal state and output the fault signs. And it canmake the two PT100 temperature sensors show temperature value and set specific alarm temperature.

Power: AC220V, 50HZ, input power 5W

Work environment: temperature: -20~+50 RH<85%

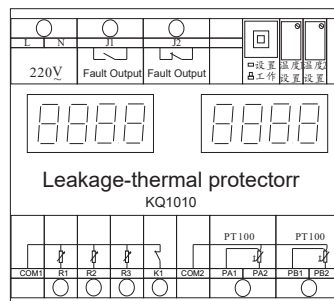
Relay contactor capacity: 5A 250VAC

PT100 temperature value shown range:-199~+199

The protectoe outside below:

Sign input

- COM1&R1 are input of oil chamber leakage sensor
- COM1&R2 are input of Motor chamber leakage sensor
- COM1&R3 are input of wire box leakage sensor
- COM1&K1 are input of winding thermal sensor
- COM2、PA1&PA2 are temperature PT100 input



COM2, PA1 and PA2 are input signs of temperature 1 PT100. It is three-wire system joint.(Two lines with the same color in PT100 is joint with COM2 and PA1. The other line is joint with PA2)
 COM2, PB1 and PB2 are input signs of temperature 2 PT100. It is three-wire system joint.(Two lines with the same color in PT100 is joint with COM2 and PB1. The other line is joint with PB2)

Fault output

- J1 is the fault output,turn off when there is not fault, turn on when there is any fault;
- J2 is the fault output,turn on when there is not fault, turn off when there is any fault.

- Release the button and the display shows the temperature detected by the two PT100s
- Press the button and the display shows the alarm temperature
- T1 inductor can change the line 1 PT100 alarm temperature value.
- T2 inductor can change the line 2 PT100 alarm temperature value.

Fault check

When the resistance ,detected the oil chamber leakage probe, is less than 15K , the indicator light turn on and the fault sign is output ,then the relay work. When the resistance is more than 20K, the fault is removed and the protector turn normal. There is 1s ~5s delay for the input sign and less resiatance is for less delay time
 When the resistance ,detected the motor chamber leakage probe, is less than 30K , the indicator light turn on and the fault sign is output ,then the relay work. When the resistance is more than 35K, the fault is removed and the protector turn normal. There is 1s ~5s delay for the input sign and less resiatance is for less delay time
 When the resistance ,detected the joint box leakage probe, is less than 30K , the indicator light turn on and the fault sign is output ,then the relay work. When the resistance is more than 35K, the fault is removed and the protector turn normal. There is 1s ~5s delay for the input sign and less resiatance is for less delay time.
 When the winding above-thermal probe detects that the temperature exceed the normal value, the indicator light turn on and the output relay work. When the temperature get down and normal, the probe turn closed and the fault is removed. The protector reverts to the initial state. There is time delay of 1s~2s.

PT100 temperature detection

There are double PT100 input for the protector design. And three-wire system is adopted to remove the influence to temperature caused by too long PT100 line. Temperature detection range is -199~+199, which is shown on the display. When temperature exceeds alarm temperature value, the indicator light turn on and the relay works. When temperature detected is less than the value set, the fault goes waay and the protectoe reverts to the initial state.

Set PT100 alarm temperature

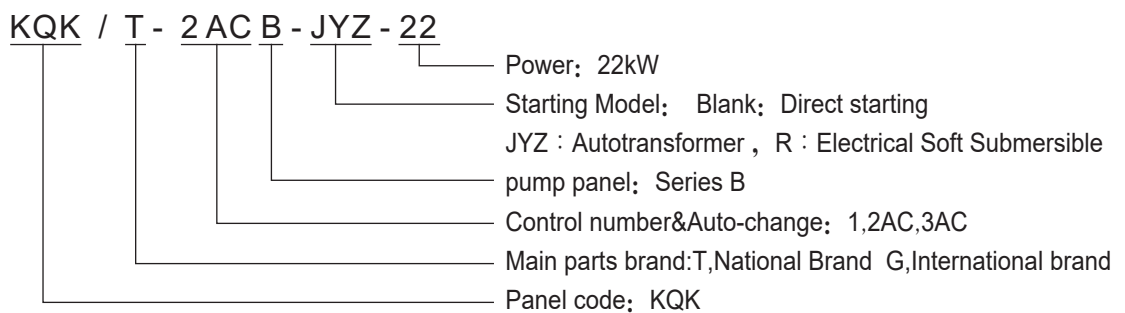
Two PT100 alarm temperature can be set. Press the setting alarm temperature button, the window shows the page of setting alarm temperature. Adjust the two alarm temperature setting inductor and change alarm value. After that, press the setting button again and the window shows the temperature detected by PT100.

WQ(11-22kW) submersible pump special control cabinet for introduction

Submersible pump control panel

KQK-B type control cabinet is an economical, safe and reliable automatic control system. The control cabinet is equipped with low voltage electrical appliances and liquid level sensors of well-known brands at home and abroad, with protection functions such as short circuit, missing phase, overload, leakage in motor cavity, leakage in oil chamber and over-heat of windings. The control cabinet can be equipped with various level sensors such as float level switch, input type or ultrasonic wave, etc. It can automatically control the start and stop of the water pump according to the level of the level when no one is on duty. In addition to the single control products, all the products with the control of the main and standby pumps have the function of self-closing the faulty pump and automatic input of the standby pump. Two and three pump control cabinet can achieve automatic alternating or cycle operation, to achieve the running time of each pump is equal.

General configuration of the control cabinet components are mainly tianzheng, zhengtai, delixi and other well known domestic brands; The high-end control cabinet components are famous international brands such as schneider, Siemens and ABB.


WQ(11-22kW) Submersible pump control panel selection
Direct starting

The following table lists the type and size of the control cabinet used for the direct starting

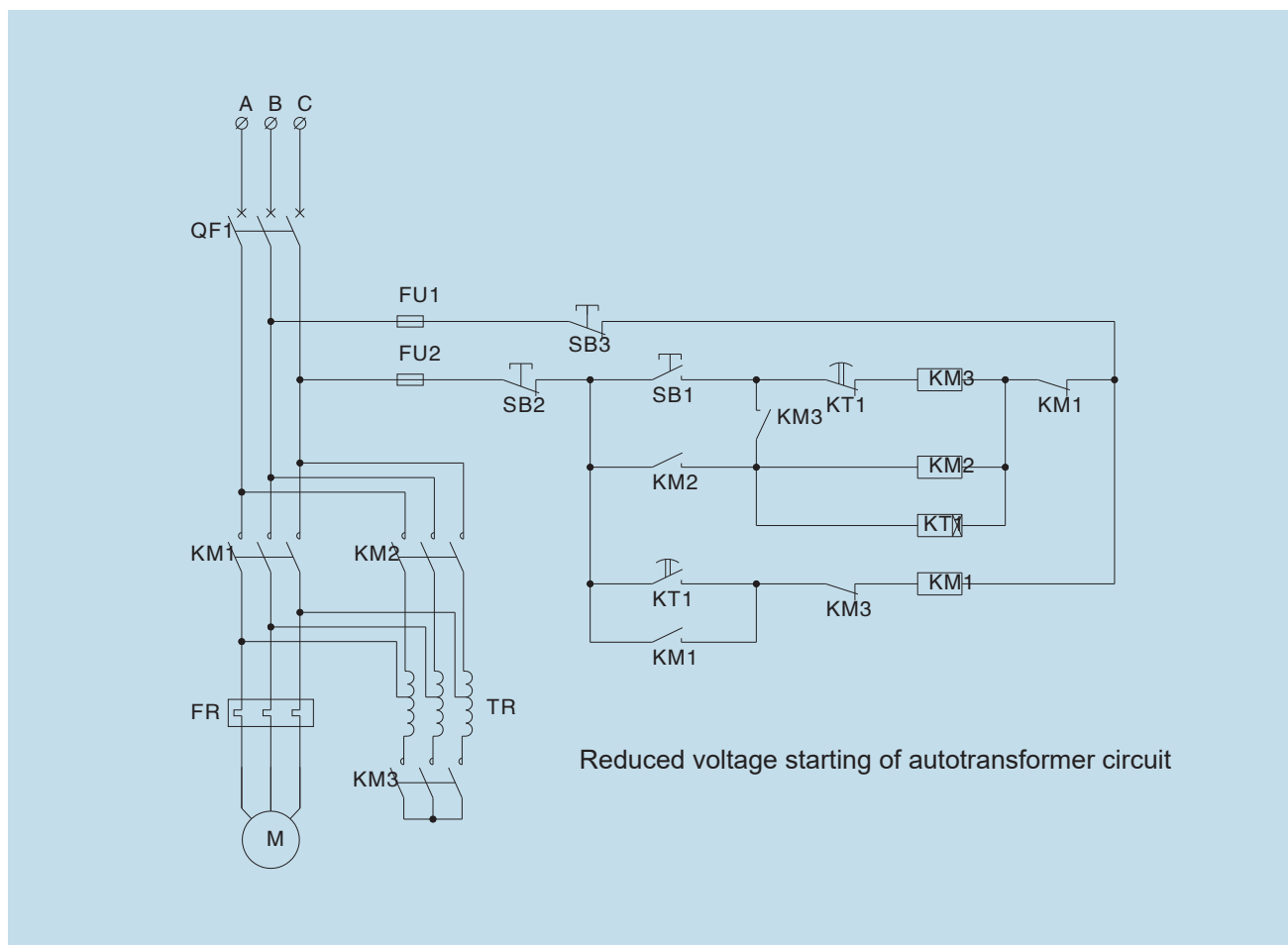
WQ(11-22kW) One control one - Direct starting							
NO.	Power (kW)	Motor	Current (A)	Panel Model		Panel Size (H × W × B)	Weight (kg)
				National Brand	International brand		
1	11	2p	22	KQK/T-1B-11	KQK/G-1B-11	500 × 400 × 200	15
2		4p	23				
3	15	2p	29	KQK/T-1B-15	KQK/G-1B-15	500 × 400 × 200	20
4		4p	30				
5		6p	31				
6		8p	35				

WQ(11-22kW) One control two - Direct							
NO.	Power (kW)	Motor	Current (A)	Panel Model		Panel Size (H × W × B)	Weight (kg)
				National Brand	International brand		
1	11	2P	22	KQK/T-2ACB-11	KQK/G-2ACB-11	600 × 400 × 200	20
2		4P	23				
3	15	2P	29	KQK/T-2ACB-15	KQK/G-2ACB-15	600 × 400 × 200	25
4		4P	30				
5		6P	31				
6		8P	35				

WQ(11-22kW) One control three - Direct starting							
No.	Power (kW)	Motor	Current (A)	Panel Model		Panel Size (H × W × D)	Weight (kg)
				National Brand	International brand		
1	11	2p	22	KQK/T-3ACB-11	KQK/G-3ACB-11	800 × 600 × 250	27
2		4p	23				
3	15	2p	29	KQK/T-3ACB-15	KQK/G-3ACB-15	800 × 600 × 250	35
4		4p	30				
5		6p	31				
6		8p	35				

Reduced voltage starting of autotransformer

Autotransformer is used to reduce the starting voltage of motor stator winding. After the motor is started, the motor can be separated from the auto-transformer, so as to operate normally under full voltage.



Can according to allow the starting current and starting torque required for different tap to choose autotransformer achieve step-down start, and regardless of the stator winding of the motor Y or Δ connection can be used.

The following table lists the type and size of the control cabinet selected for Reduced voltage starting of autotransformer circuit of the auxiliary submersible sewage pump

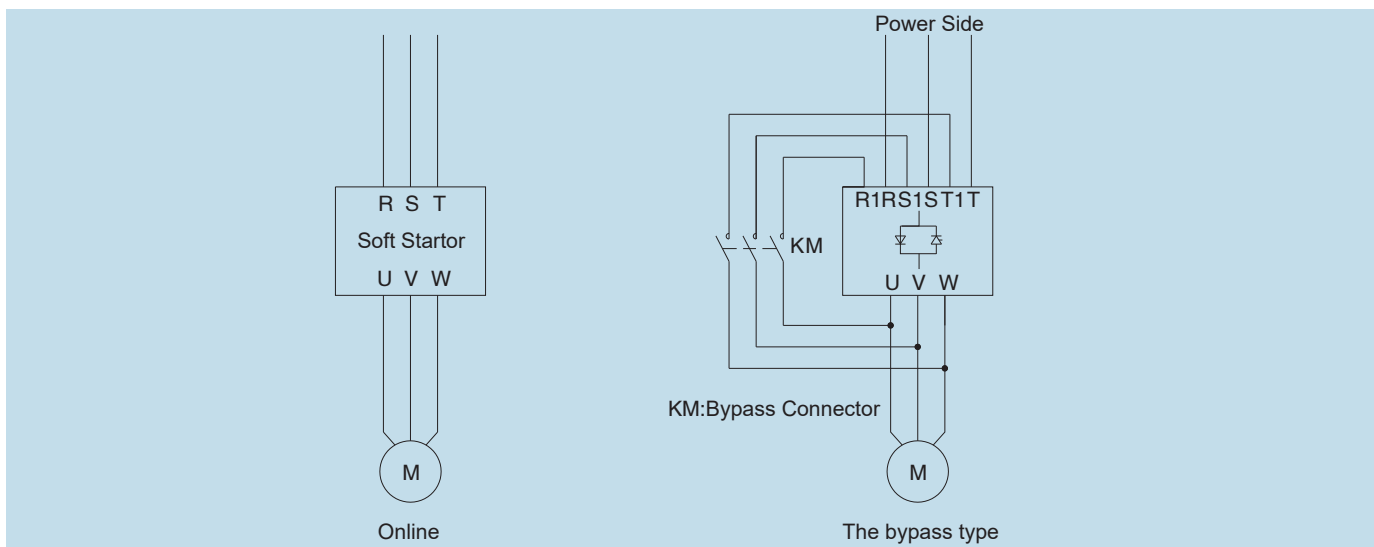
WQ(11-22kW)One control one —Reduced voltage starting of autotransformer circuit							
NO.	Power (kW)	Motor	Current (A)	Panel Model		Panel Size (H × W × D)	Weight (kg)
				National Brand	International Brand		
1	15	2p	29	KQK/T-1B-JYZ-15	KQK/G-1B-JYZ-15	1200 × 600 × 400	100
2		4p	30				
3		6p	31				
4		8p	35				
5	18.5	2p	35	KQK/T-1B-JYZ-18.5	KQK/G-1B-JYZ-18.5	1200 × 600 × 400	110
6		4p	36				
7		6p	38				
8		8p	40				
9	22	2p	41	KQK/T-1B-JYZ-22	KQK/G-1B-JYZ-22	1200 × 600 × 400	120
10		4p	40				
11		6p	45				
12		8p	47				

(11-22kW)One control two —Reduced voltage starting of autotransformer circuit							
NO.	Power (kW)	Motor	Current (A)	Panel Model		Panel Size (H × W × D)	Weight (kg)
				National Brand	International Brand		
1	15	2p	29	KQK/T-2ACB-JYZ-15	KQK/G-2ACB-JYZ-15	1400 × 600 × 400	130
2		4p	30				
3		6p	31				
4		8p	35				
5	18.5	2p	35	KQK/T-2ACB-JYZ-18.5	KQK/G-2ACB-JYZ-18.5	1400 × 600 × 400	145
6		4p	36				
7		6p	38				
8		8p	40				
9	22	2p	41	KQK/T-2ACB-JYZ-22	KQK/G-2ACB-JYZ-22	1400 × 600 × 400	155
10		4p	40				
11		6p	45				
12		8p	47				

(11-22kW)One control three —Reduced voltage starting of autotransformer circuit							
NO.	Power (kW)	Motor	Current (A)	Panel Model		Panel Size (H × W × D)	Weight (kg)
				National Brand	International Brand		
1	15	2p	29	KQK/T-3ACB-JYZ-15	KQK/G-3ACB-JYZ-15	1700 × 700 × 500	175
2		4p	30				
3		6p	31				
4		8p	35				
5	18.5	2p	35	KQK/T-3ACB-JYZ-18.5	KQK/G-3ACB-JYZ-18.5	1700 × 700 × 500	195
6		4p	36				
7		6p	38				
8		8p	40				
9	22	2p	41	KQK/T-3ACB-JYZ-22	KQK/G-3ACB-JYZ-22	1700 × 700 × 500	210
10		4p	40				
11		6p	45				
12		8p	47				

Electronic soft starting

The soft starter connected in series between the power supply and the controlled motor controls the conduction Angle of the internal semiconductor (thyristor), so that the motor input voltage gradually rises from zero to the preset function relationship until the end of the start, giving the motor full voltage. The voltage is gradually increased from zero to the rated voltage, so that the starting current of the motor in the starting process is changed from the past uncontrollable overload impulse current to controllable and the starting current can be adjusted as needed.



During the whole starting process, the motor can be started smoothly without impact torque, and various parameters in the starting process, such as current limiting value and starting time, can be adjusted according to the characteristics of motor load. Soft parking can also be achieved. Due to the use of semiconductor converter technology, there will be high harmonic generation, causing pollution to the power grid.

The following table lists the type and size of the control cabinet selected for supporting electronic soft starting

WQ(11-22kW) One control one —Electrical soft starting							
NO.	Power (kW)	Motor	Current (A)	Panel Model		Panel Size (H × W × D)	Weight (kg)
				National Brand	International Brand		
1	15	2p	29	KQK/T-1B-R1-15	KQK/G-1B-R1-15	800 × 600 × 250	35
2		4p	30				
3		6p	31				
4		8p	35				
5	18.5	2p	35	KQK/T-1B-R1-18.5	KQK/G-1B-R1-18.5	800 × 600 × 250	40
6		4p	36				
7		6p	38				
8		8p	40				
9	22	2p	41	KQK/T-1B-R1-22	KQK/G-1B-R1-22	800 × 600 × 250	40
10		4p	40				
11		6p	45				
12		8p	47				

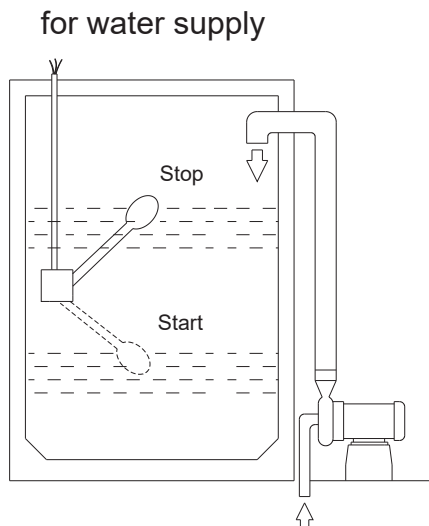
WQ(11-22kW) One control two —Electrical soft starting							
NO.	Power (kW)	Motor	Current (kW)	Panel Model		Panel Size (H × W × D)	Weight (kg)
				National Brand	International Brand		
1	15	2P	29	KQK/T-2ACB-R2-15	KQK/G-2ACB-R2-15	1600 × 600 × 400	50
2		4P	30				
3		6P	31				
4		8P	35	KQK/T-2ACB-R2-18.5	KQK/G-2ACB-R2-18.5		
5	18.5	2P	35	KQK/T-2ACB-R2-18.5	KQK/G-2ACB-R2-18.5	1600 × 600 × 400	55
6		4P	36				
7		6P	38				
8		8P	40				
9	22	2P	41	KQK/T-2ACB-R2-22	KQK/G-2ACB-R2-22	1600 × 600 × 400	55
10		4P	40				
11		6P	45				
12		8P	47				

WQ(11-22kW) One control three —Electrical soft starting							
NO.	Power (kW)	Motor	Current (A)	Panel Model		Panel Size (H × W × D)	Weight (kg)
				National Brand	International Brand		
1	15	2p	29	KQK/T-3ACB-R3-15	KQK/G-3ACB-R3-15	1700 × 700 × 500	70
2		4p	30				
3		6p	35				
4		8p	35	KQK/T-3ACB-R3-18.5	KQK/G-3ACB-R3-18.5	1700 × 700 × 500	80
5	18.5	2p	35	KQK/T-3ACB-R3-18.5	KQK/G-3ACB-R3-18.5	1700 × 700 × 500	80
6		4p	36				
7		6p	38				
8		8p	40				
9	22	2p	41	KQK/T-3ACB-R3-22	KQK/G-3ACB-R3-22	1700 × 700 × 500	80
10		4p	40				
11		6p	45				
12		8p	47				

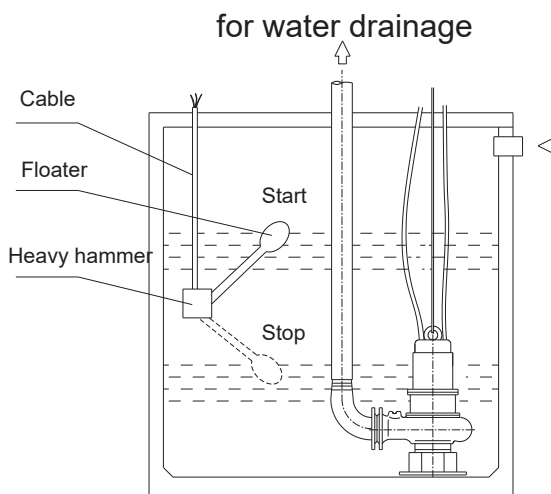
Floating switch, terminal box and wiring pipe

Floating switch

Floating switch schematic

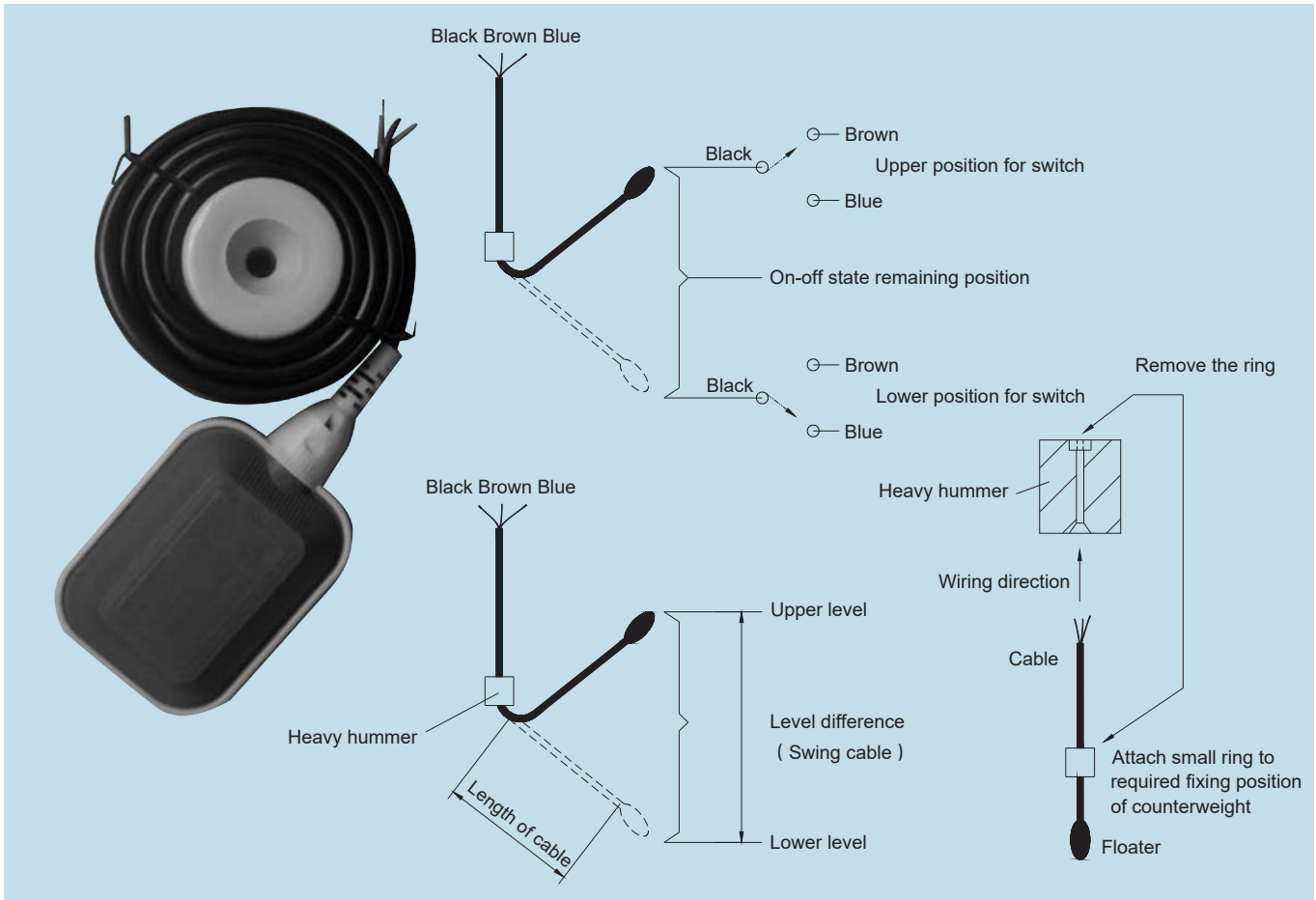


Floating switch schematic



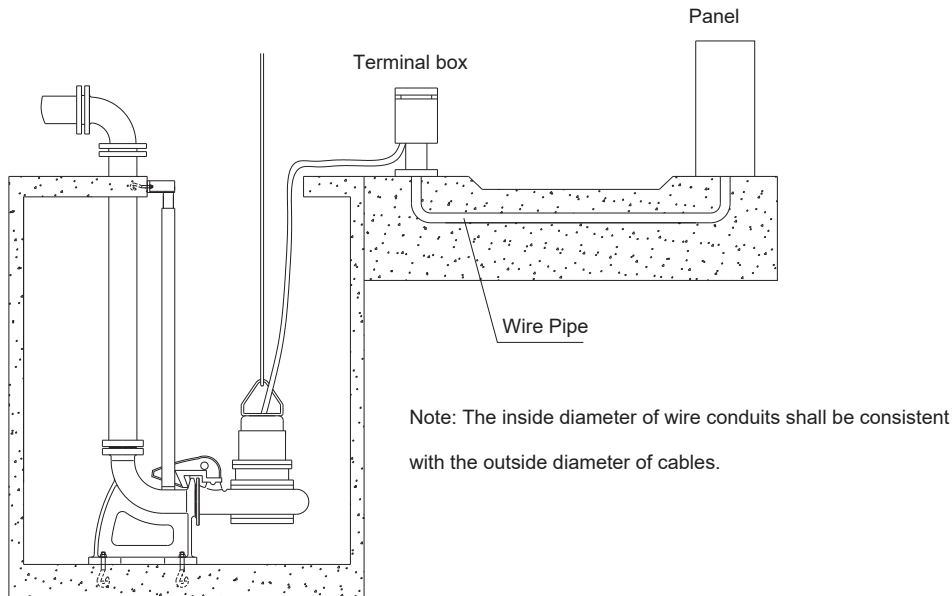
The lowest level is indicated in the submersible sump pump sample and instructions. "▽" That is, the stator part of the motor is submerged in half of the liquid level. The float switch is used when the electric control cabinet is placed in automatic gear.

Connect the black and brown cores, and disconnect the black and blue cores; When the float ball is droopy, on the contrary, the internal contact will connect the black and blue wire cores and disconnect the black and brown wire cores. When the float ball is in the middle position, the internal switch stays in the original position. Only when the float ball is in the floating and drooping position shown in the figure, the internal switch will change its action. For drainage occasions, connect the black and brown wire cores into the electric control cabinet, and the blue wire cores must be wrapped and insulated; In case of water supply, connect the black and blue wire core into the electric control cabinet, and the brown wire core must be wrapped and insulated. If a float ball switch is used to control the opening and stopping of two liquid levels, the position of the weight hammer on the cable can be adjusted, and the difference of the liquid level between the opening and closing of the pump can be determined. Therefore, in principle, a float ball switch can realize the starting and stopping control of a group of upper and lower liquid levels. However, if the liquid level difference is large, the swing arm length of the float ball will increase accordingly, and the weight of the cable from the weight hammer to the float ball will affect the precision of liquid level control. Therefore, our company's special electronic control cabinet for submersible sewage pump sets the float switch as follows: for the main pump or the large pump, two float switches are used to control the starting and stopping liquid levels respectively; For small pumps or extra high water level spare pump, a float switch to control the opening and stopping of the pump two levels. If the user needs more than the specified number of float switches or does not order our special electric control cabinet for submersible pump, he can also order float switches from us.



Terminal box and wiring conduit

The terminal box can be set if the electric cabinet is far from the pump house. The terminal box is one optional part.



This diagram is only for schematic purposes and doesn't denote design specification. The issues regarding the design and safety of the pump house shall be handled as per relevant standards and specifications.

When the setup of wire conduits (to be prepared by the user) is required, determine the inside diameter of wire conduits as per the outside diameter of cables. If our special cables for submersible sewage pump are used between the terminal box and electric cabinet, please contact the Technical Department of Shanghai Kaiquan (Hefei) Plant to determine the outside diameters of cables.

WQ(11-22kW) Submersible Pump Cable Data Sheet						
NO.	Frame	Motor model	Power cable	Control cable	Power cable diameter mm	Control cable diameter mm
1	Y210	WQ/E11-2P	1 YVC3 × 4+1 × 2.5+4 × 1		18	/
2		WQ/E15-2P	1 YVC3 × 6+1 × 4+4 × 1		19	
3		Y260	WQ/E11-4P	1 YVC3 × 4+1 × 2.5+4 × 1		
4	WQ/E15-4P		1 YVC3 × 6+1 × 4+4 × 1		19	
5	WQ/E18.5-2P		1 YCW3 × 10+1 × 6+4 × 1.5		28	
6	WQ/E22-2P					
7	WQ/E18.5-4P					
8	WQ/E22-4P					
9	Y290	WQ/E15-6P	1 YCW3 × 10+1 × 6	YVC5X1.5 cast joint cable (YVC7X1 cast joint cable is for below bearing detevtion)	25	13.5
10		WQ/E18.5-6P				
11		WQ/E22-6P				
12	WQ/E15-8P					
13	Y368	WQ/E18.5-8P				
14		WQ/E22-8P				

Note: for Y210 and Y260 motors, if the lower bearing temperature measurement is added, a separate control cable YVC7x1 with outer diameter of 13.5mm is required.

Ordering Description

To make your procured pump more suitable, customers are welcome to consult technical issues with our technical department. Please indicate the series number, impeller number, flow passage part material, installation mode, and discharge diameter at the time of ordering. If the star-delta (Y-Δ) start or internally connected electric soft starter is adopted, please add “-K” to the end of pump model and indicate “with K motor” on the pump order. If the auto-coupling voltage-reduction start or externally connected electric soft starter is adopted and the pump is fitted with motor of “internal delta wiring mode” (namely the motor winding is connected as per delta wiring mode in the wiring chamber), do not add “K” to the pump model.

The installation mode of water pump shall follow the installation dimension diagram on the brochure. Because of the excellent design of the guide rod bracket in the coupling device, it is necessary to use a common running water tube or steel tube as the guide rod. The specification and length calculation method for the tap water pipe or steel tube used as guide rod is provided on the brochure. The user only needs to procure a tap water pipe or steel tube and cut it to the required length. Therefore, guide rod is not included in the coupling device.

No motor cooling system is fitted for this series pump. Therefore, the cooling sleeve can not be additionally installed.

The standard configuration includes 10m motor cables. The user shall specify at the time of ordering if cables of other lengths are required.

The supply part package is supplied as per the users selected installation mode.

Optional parts and spare parts are ordered separately by the user.

For mobile pipe installation mode (Y), an elbow connector is supplied for every pump package. For mobile hose installation mode (R), a hose elbow connector is supplied for every pump package. If more than one elbow connector or hose elbow connector is required for the pump of mobile installation mode, please order separately.

The elbow connectors have a bore diameter of 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, and 600.

The hose elbow connectors are in bore diameter of 50 (For 64 hose), 50x65 (For 76 hose), 65 (For 76 hose), 80 (For 89 hose), 100 (For 102 hose), and 150 (For 152 hose).

The optional taper pipes have two-sided bore diameters of 50x65, 50x80, 65x80, 80x100, 100x150, 150x200, 200x250, 250x300, 300x350, 350x400, 400x450, 450x500, and 500x600. The taper pipe installed on the discharge pipeline shall be only used for expanded application, instead of contracted application.

While connecting the taper pipe and elbow connector on the discharge pipeline, the bore diameter of the elbow connector shall be consistent with that of the large end of the taper pipe, namely the principle of “expanding before turning” shall be followed, in which case the pipe loss is less than that of the “turning before expanding” .

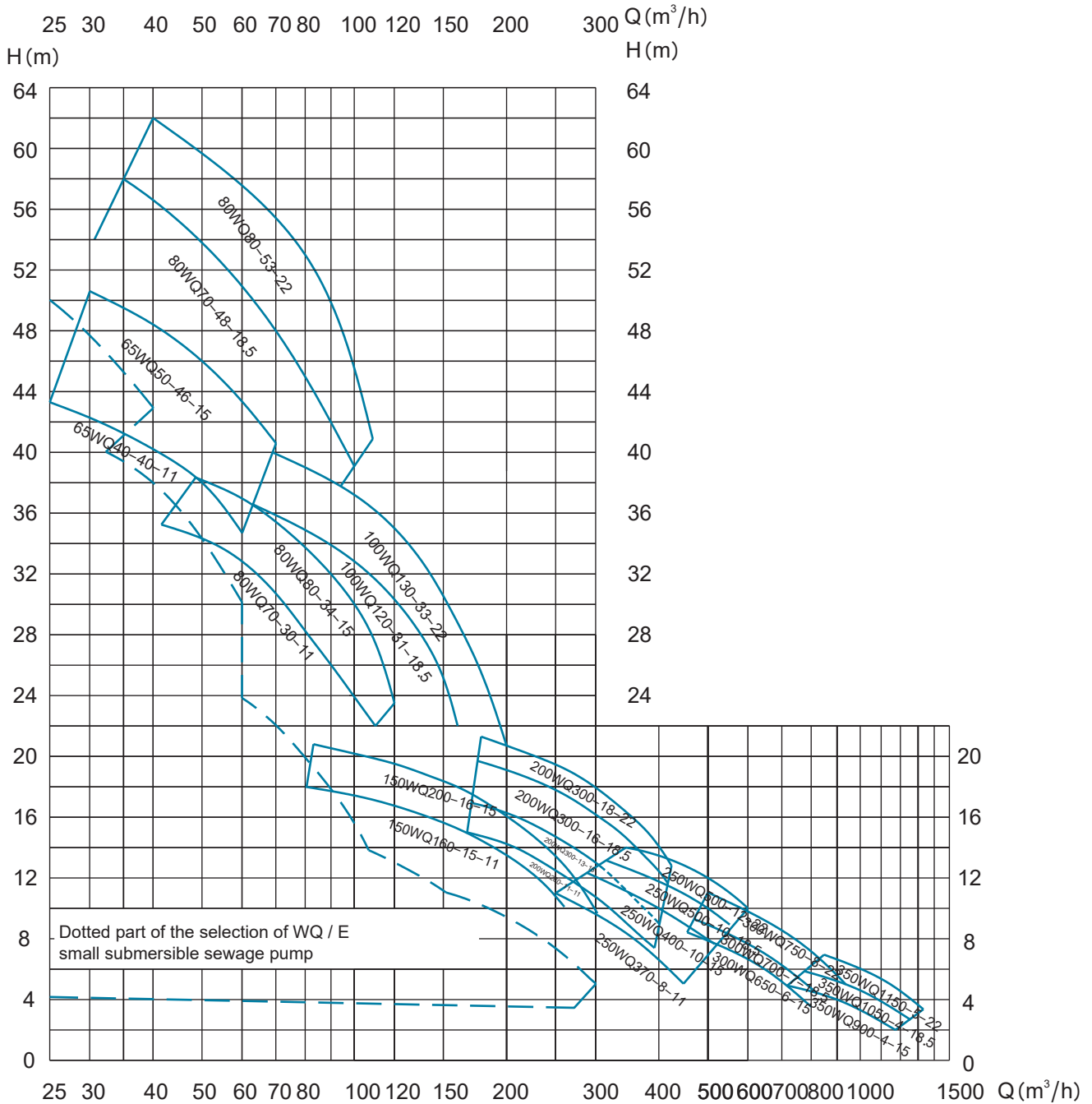
For the pump of coupling installation mode, if the bore diameter of the discharge is larger than that of the pump, a taper pipe can be additionally installed on the water discharge pipe seat and the small end bore diameter of the taper pipe shall be consistent with the bore diameter of the water discharge pipe seat (namely the bore diameter of pump).

Refer to the “Descriptions of Accessories” at the end of brochure for the specifications, nominal pressures, and dimensions of elbow connectors; hose elbow connectors, and taper pipes.

WQ(11-22kW) Submersible pump supply check list

Supply scope		Installation type	Submersible installation mode				
			Auto-coupling Installation	Fixed base Installation	Mobile hose Installation	Mobile pipe Installation	Single Pump
Supply Model			Z	P	R	Y	
Complete package	Pump (10m Cable)		✓	✓	✓	✓	✓
	Auto-coupling	DQC	✓				
		Bracket	✓				
		Fixed plate	✓				
	Base			✓	✓	✓	
	Elbow+Connector					✓	
	Hose+Connector				✓		
Necessary	Guide Bar		✓				
	Expansion Blot		✓				
	Anchor Bolt		✓	✓			
Choose and buy parts	Elbow+Connector			✓			
	Hose+Connector			✓			
	SS Lifting Chain		✓	✓	✓	✓	✓
	Carbon Lifting Chain		✓	✓	✓	✓	✓
	Taper Pipe		✓	✓		✓	✓
	Match Flange		✓	✓		✓	✓
Spare Parts	Impeller		✓	✓	✓	✓	✓
	Pump Cover		✓	✓	✓	✓	✓
	Bearing		✓	✓	✓	✓	✓
	Mechanical Seal		✓	✓	✓	✓	✓
	O-ring		✓	✓	✓	✓	✓
	Wear Ring		✓	✓	✓	✓	✓

WQ(11-22kW) Spectrum Diagram and Description



Description of spectrum diagram:

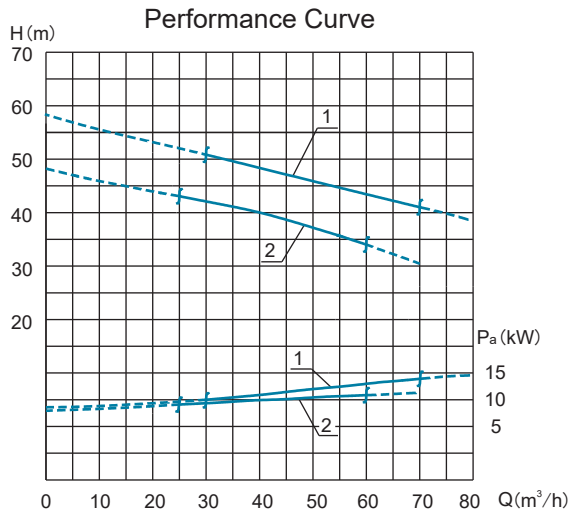
1. The spectrum diagram lists the basic range for most models, based on which model can be preliminarily selected. Please refer to the Performance Curve Diagram and Main Parameters below for detailed parameters of the water pump.
2. In the diagram, the rated power of pump motor is indicated behind the pump model.
3. For the WQ/E series in the diagram, please refer to the brochure "WQ/E Series Small-Sized Submersible Sewage Pump" for details.

WQ(11-22kW) Performance Specification

WQ(11-22kW) Series Submersible Pump Performance Table									
NO.	New Model	Old Model	DN	Capacity	Head	Speed	Power	Max.passby diameter	weight
			mm	m ³ /h	m	r/min	kW	mm	kg
1	65WQ40-40-11	WQ2210-2111-65	65	40	40	2940	11	30	128
2	65WQ50-46-15	WQ2210-2112-65		50	46	2940	15	30	136
3	80WQ70-30-11	WQ2210-2115-80	80	70	30	2935	11	36	128
4	80WQ80-34-15	WQ2210-2116-80		80	34	2935	15	36	138
5	80WQ70-48-18.5	WQ2260-2117-80	80	70	48	2940	18.5	40	185
6	80WQ80-53-22	WQ2260-2118-80		80	53	2940	22	40	200
7	100WQ120-31-18.5	WQ2260-2123-100	100	120	31	2940	18.5	44	222
8	100WQ130-33-22	WQ2260-2124-100		130	33	2940	22	44	236
9	150WQ160-15-11	WQ2260-4125-150	150	160	15	1460	11	60	226
10	150WQ200-16-15	WQ2260-4138-150		200	16	1460	15	60	242
11	200WQ280-11-11	WQ2260-4128-200	200	280	11	1460	11	70	258
12	200WQ300-13-15	WQ2260-4129-200		300	13	1460	15	70	274
13	200WQ300-16-18.5	WQ2260-4130-200		300	16	1470	18.5	70	294
14	200WQ300-18-22	WQ2260-4131-200		300	18	1470	22	70	306
15	200WQ380-7-11	WQ2260-4154-200	200	380	7	1460	11	80	254
16	200WQ400-8-15	WQ2260-4155-200		400	8	1460	15	80	270
17	200WQ500-8-18.5	WQ2260-4156-200		500	8	1470	18.5	80	286
18	200WQ520-10-22	WQ2260-4157-200		520	10	1470	22	80	298
19	250WQ370-8-11	WQ2260-4158A-250	250	370	8	1470	11	100	290
20	250WQ400-10-15	WQ2260-4158-250		400	10	1470	15	100	310
21	250WQ500-10-18.5	WQ2260-4159A-250		500	10	1470	18.5	100	325
22	250WQ500-12-22	WQ2260-4159-250		500	12	1470	22	100	350
23	300WQ650-6-15	WQ2290-6155-300	300	650	6	980	15	90	530
24	300WQ700-7-18.5	WQ2290-6156-300		700	7	980	18.5	90	550
25	300WQ750-8-22	WQ2290-6157-300		750	8	980	22	90	570
26	350WQ900-4-15	WQ2368-8152-350	350	900	4	730	15	70	760
27	350WQ1050-4-18.5	WQ2368-8153-350		1050	4	730	18.5	70	780
28	350WQ1150-5-22	WQ2368-8154-350		1150	5	730	22	70	800

Note: there is a one-to-one correspondence between the new model and old model

WQ(11-22kW) Performance curve, Main parameters, Installation dimensions

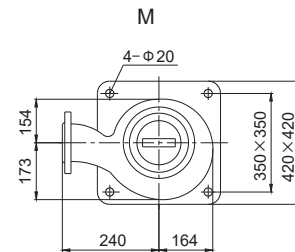
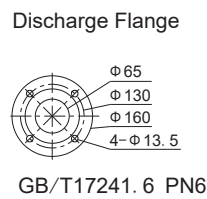
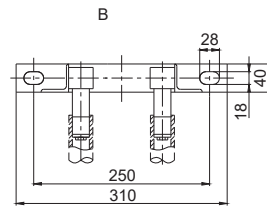
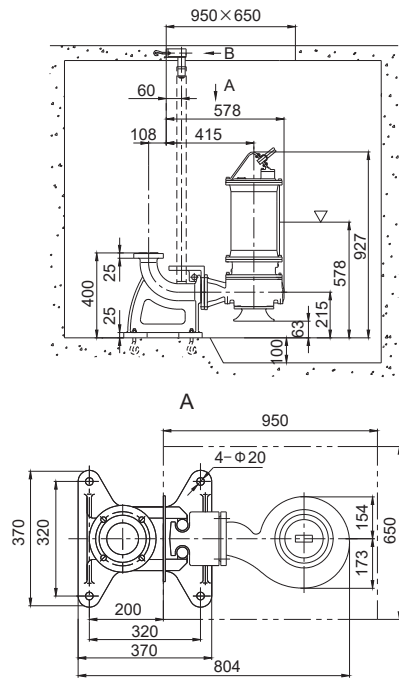


Main Parameter
DN 65mm

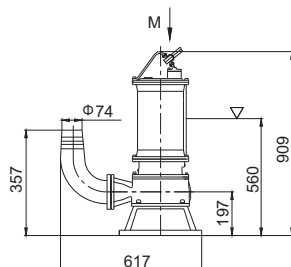
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight
1	65WQ50-46-15	WQ2210-2112	30X30	2940	136
2	65WQ40-40-11	WQ2210-2111	30X30	2940	128
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Effici. (%)	Lock/Rated Torque
1	15	29	0.90	88.8	2.4
2	11	22	0.89	87.6	2.3
	Q-H	Qmin	Q	Qmax	
1	m³/h-m	30-51	50-46	70-41	
2		25-43	40-40	60-34	

Installation diagram

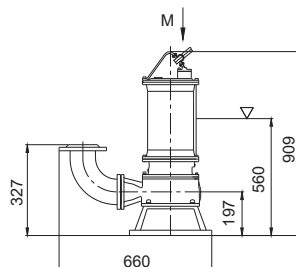
Z Automatic Coupling Installation



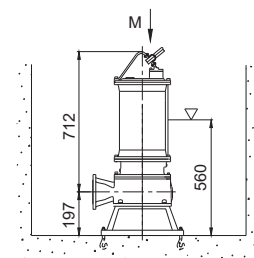
R Mobile Flexible Pipe

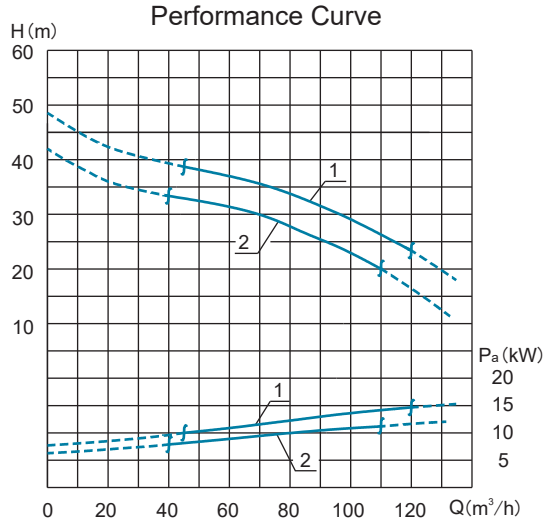


Y Mobile Rigid Pipe



P Fixed Base

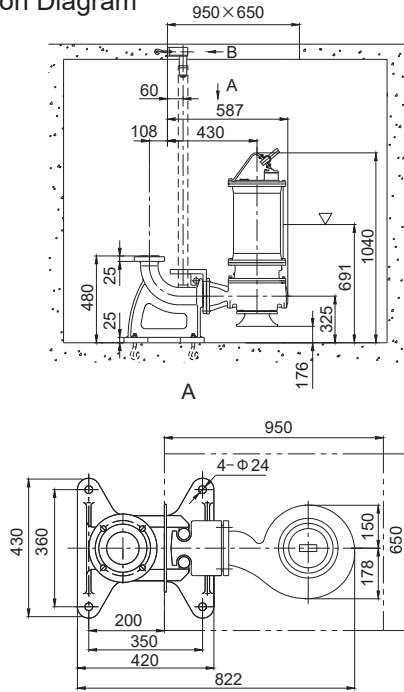




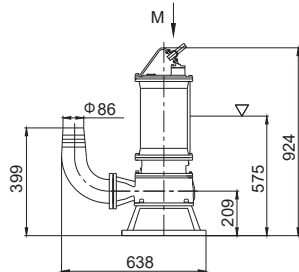
Main Parameter DN 80mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight
1	80WQ80-34-15	WQ2210-2116	45X45	2935	138
2	80WQ70-30-11	WQ2210-2115	45X45	2935	128
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Effici. (%)	Lock/Rated Torque
1	15	29	0.90	88.8	2.4
2	11	22	0.89	87.6	2.3
	Q-H	Qmin	Q	Qmax	
1	m³/h-m	45-38	80-34	120-23	
2		40-33	70-30	110-20	

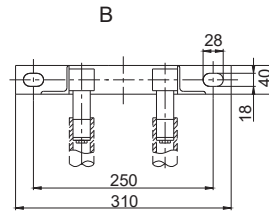
Installation Diagram



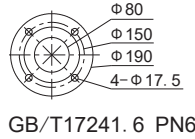
R Mobile Flexible Pipe



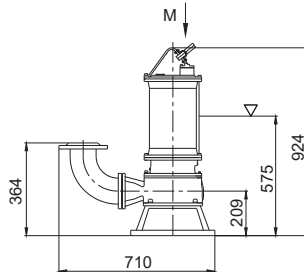
Z Automatic Coupling Installation



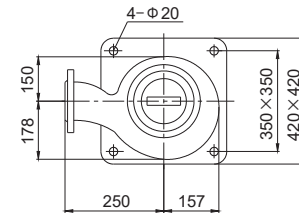
Discharge Flange



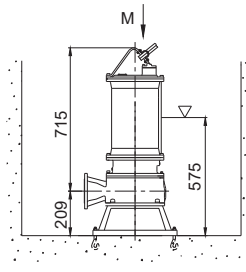
Y Mobile Rigid Pipe



M

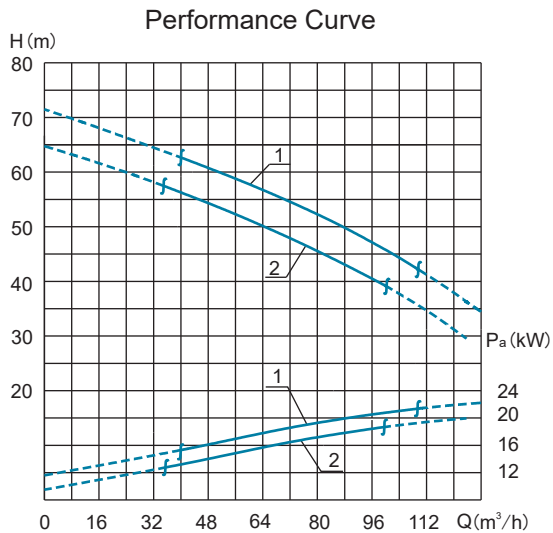


P Fixed Base



Main Parameter

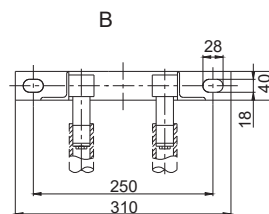
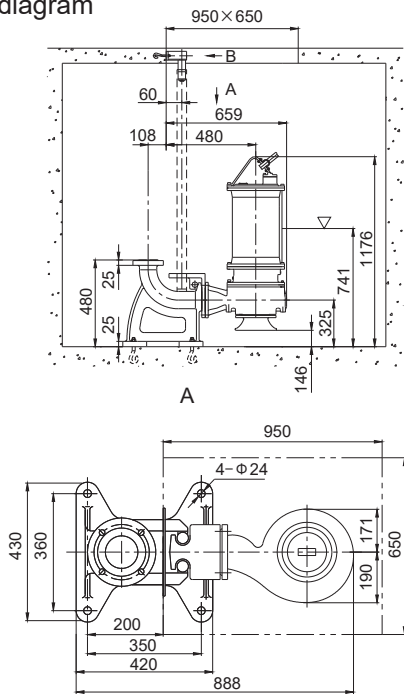
DN 80mm



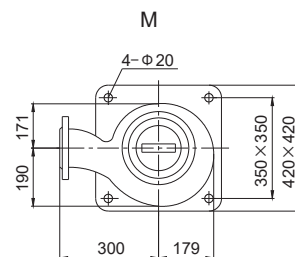
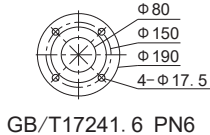
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight
1	80WQ80-53-22	WQ2260-2118	40X40	2935	200
2	80WQ70-48-18.5	WQ2260-2117	40X40	2935	185
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Effici. (%)	Lock/Rated Torque
1	22	41	0.90	90.5	2.0
2	18.5	35	0.91	90	2.7
	Q-H	Qmin	Q	Qmax	
1	m³/h-m	40-62	80-53	108-41	
2		35-58	70-48	100-39	

Installation diagram

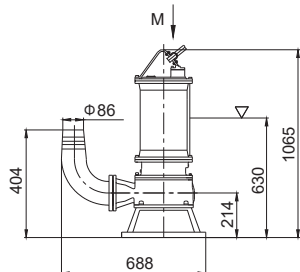
Z Automatic Coupling Installation



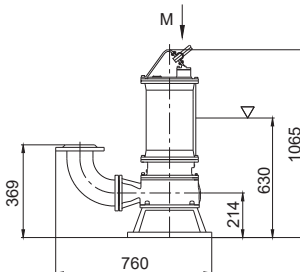
Discharge Flange



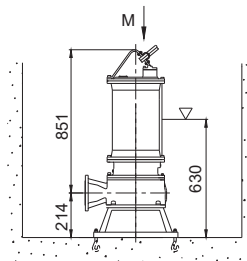
R Mobile Flexible Pipe



Y Mobile Rigid Pipe

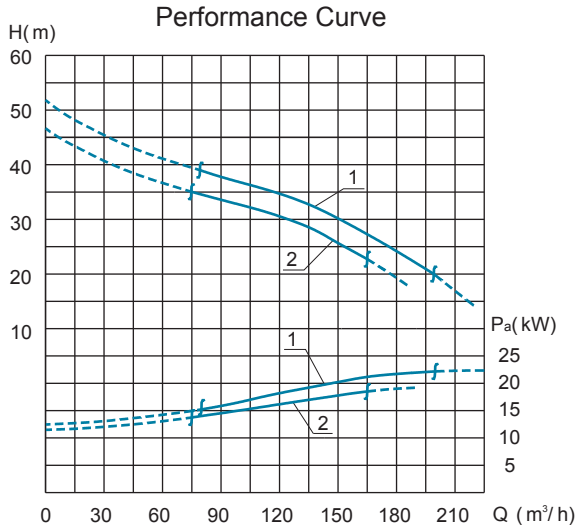


P Fixed Base



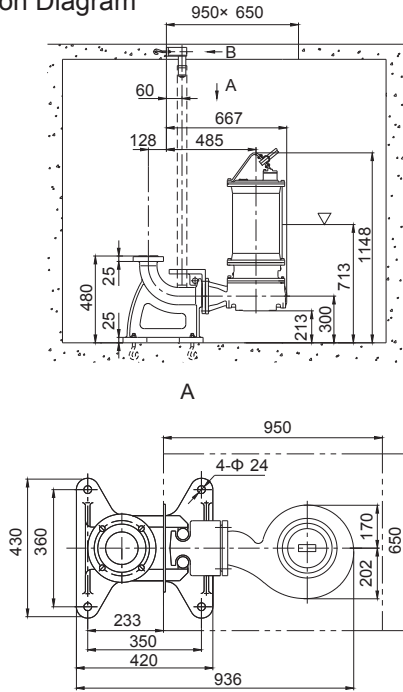
Main Parameter

DN 100mm

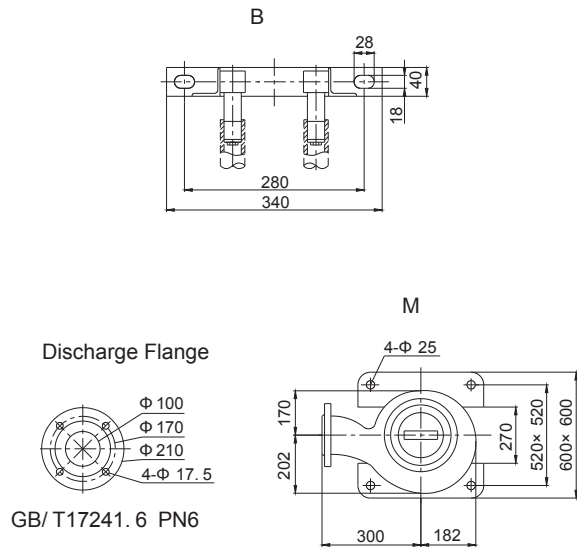


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	100WQ130-33-22	WQ2260-2124	55×65	2940	236
2	100WQ120-31-18.5	WQ2260-2123	55×65	2940	222
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	22	41	0.90	90.5	2.0
2	18.5	35	0.91	90	2.7
Q-H		Qmin	Q	Qmax	
1	m³/h-m	80-39	130-33	200-20	
2		75-35	120-31	160-22	

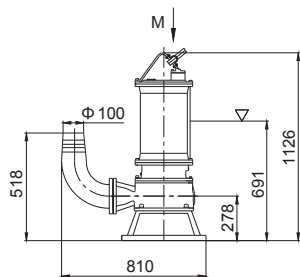
Installation Diagram



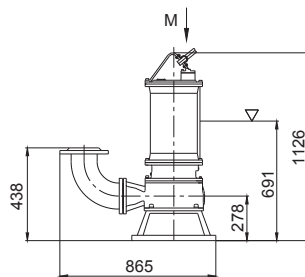
Z Automatic Coupling Installation



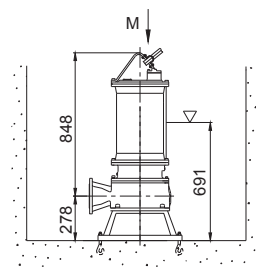
R Mobile Flexible Pipe



Y Mobile Rigid Pipe

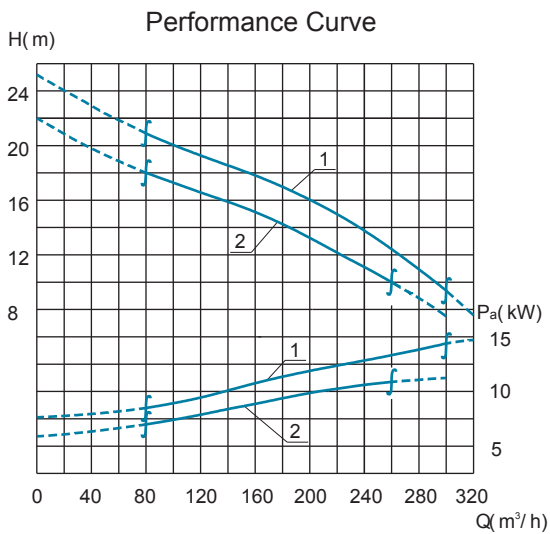


P Fixed Base



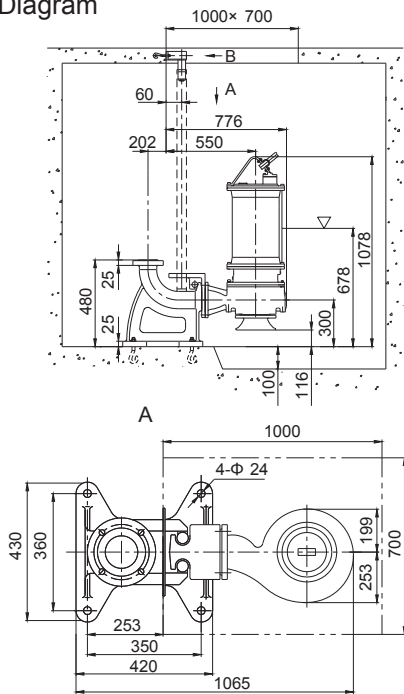
Main Parameter

DN 150mm

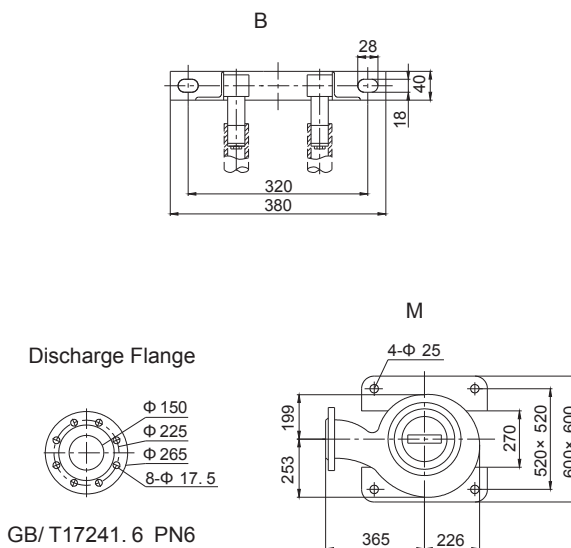


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	150WQ200-16-15	WQ2260-4138	7× 79	1460	242
2	150WQ160-15-11	WQ2260-4125	77× 79	1460	226
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	15	30	0.85	89.4	2.6
2	11	23	0.85	88	2.4
Q-H		Qmin	Q	Qmax	
1	m³/h-m	80-21	200-16	300-9	
2		80-18	160-15	260-10	

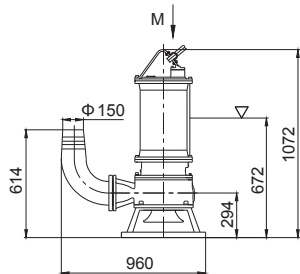
Installation Diagram



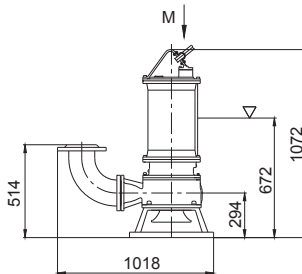
Z Automatic Coupling Installation



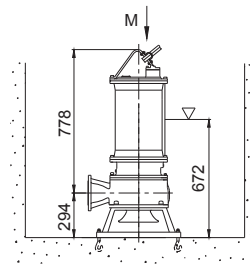
R Mobile Flexible Pipe



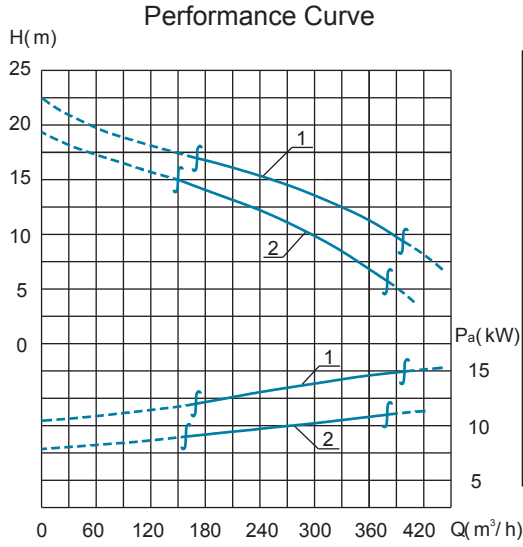
Y Mobile Rigid Pipe



P Fixed Base



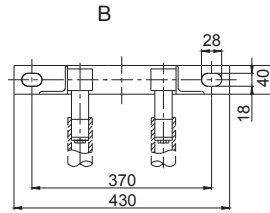
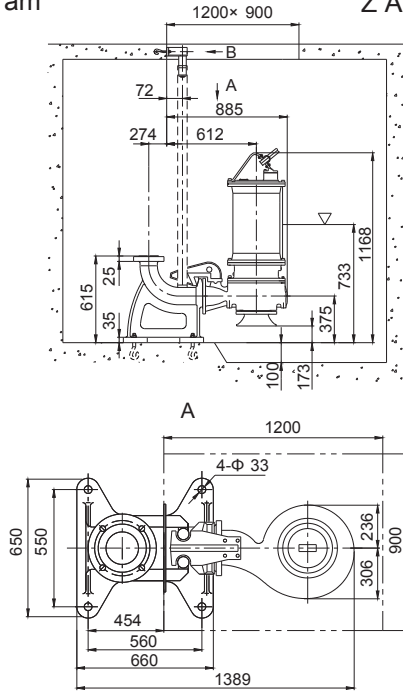
Main Parameter DN 200mm



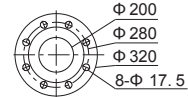
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	200WQ300-13-15	WQ2260-4129	85×93	1460	274
2	200WQ280-11-11	WQ2260-4128	85×93	1460	258
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	15	30	0.85	89.4	2.6
2	11	23	0.85	88	2.4
		Q-H	Qmin	Q	Qmax
1	m³/h-m	170-17	300-13	400-9	
2		150-15	280-11	380-6	

Installation Diagram

Z Automatic Coupling Installation

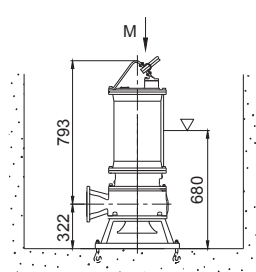


Discharge Flange

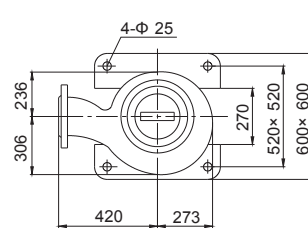


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P Fixed Base

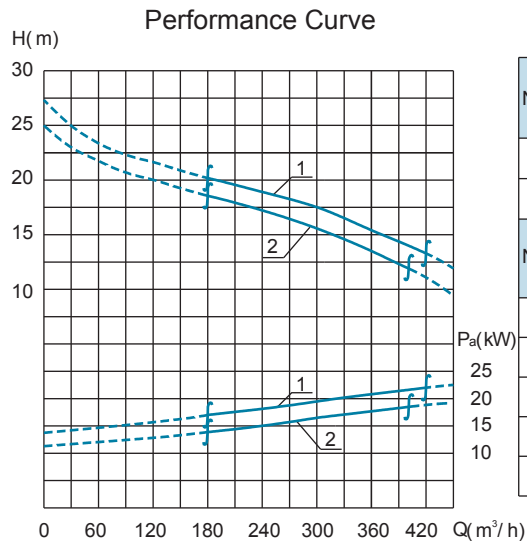


M



Main Parameter

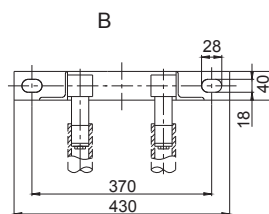
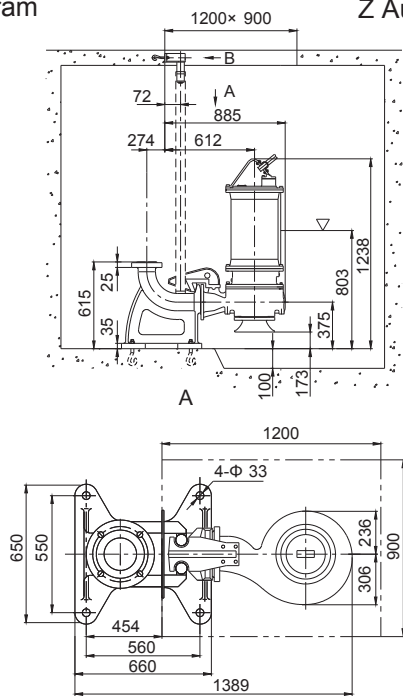
DN 200mm



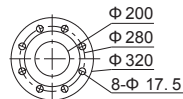
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	200WQ300-18-22	WQ2260-4131	85× 93	1470	306
2	200WQ300-16-18.5	WQ2260-4130	85× 93	1470	294
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	22	40	0.87	91.2	2.2
2	18.5	36	0.87	90.7	2.2
	Q-H	Qmin	Q	Qmax	
1	m³/h-m	180-20	300-18	420-13	
2		180-18.5	300-16	400-12	

Installation Diagram

Z Automatic Coupling Installation

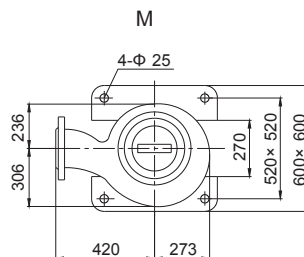
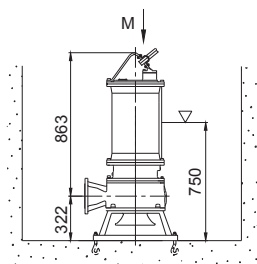


Discharge Flange



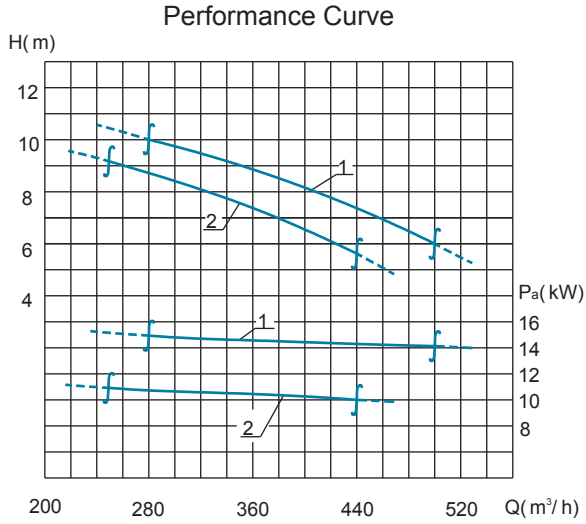
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P Fixed Base



Main Parameter

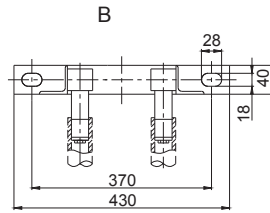
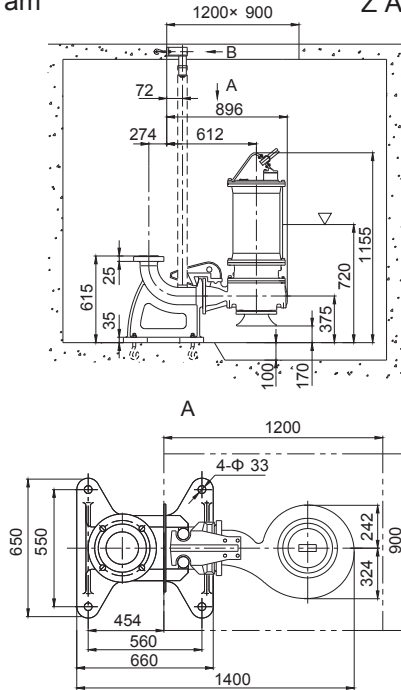
DN 200mm



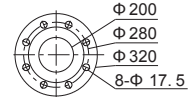
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	200WQ400-8-15	WQ2260-4155	100	1460	270
2	200WQ380-7-11	WQ2260-4154	100	1460	254
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	15	30	0.85	89.4	2.6
2	11	23	0.85	88	2.4
Q-H		Qmin	Q	Qmax	
1	m³/h-m	280-10	400-8	500-6	
2		250-9	380-7	440-5.5	

Installation Diagram

Z Automatic Coupling Installation

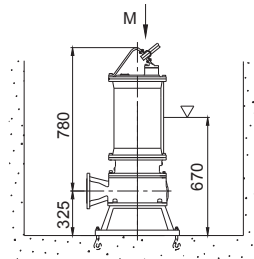


Discharge Flange

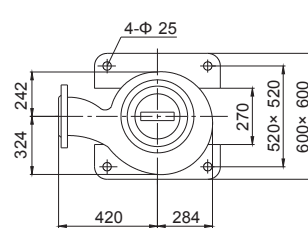


GB/T17241.6 PN6

P Fixed Base

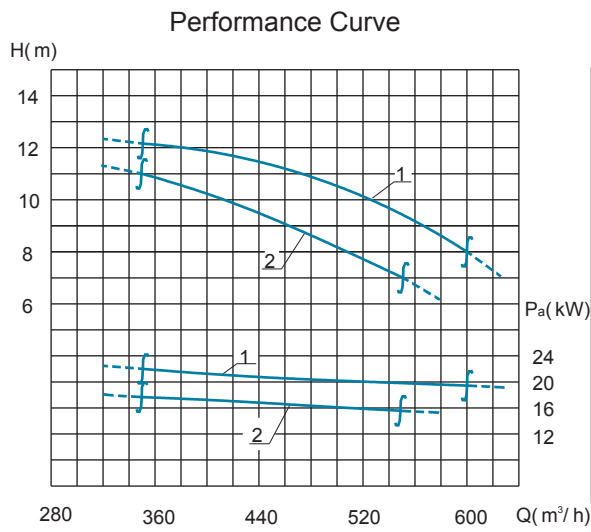


M



Main Parameter

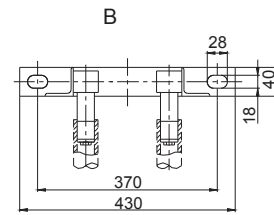
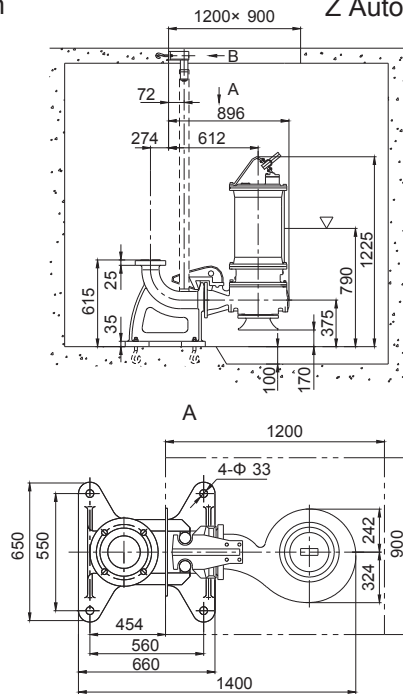
DN 200mm



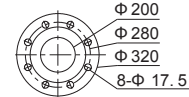
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	200WQ520-10-22	WQ2260-4157	100	1470	298
2	200WQ500-8-18.5	WQ2260-4156	100	1470	286
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	22	42	0.87	91.2	2.2
2	18.5	36	0.87	90.7	2.2
		Q-H	Q min	Q	Qmax
1	m³/h-m	350-12		520-10	600-8
2		350-11		500-8	550-7

Installation Diagram

Z Automatic Coupling Installation

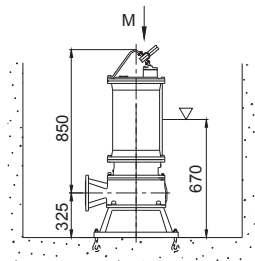


Discharge Flange

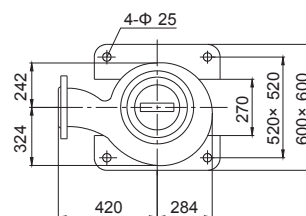


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P Fixed Base

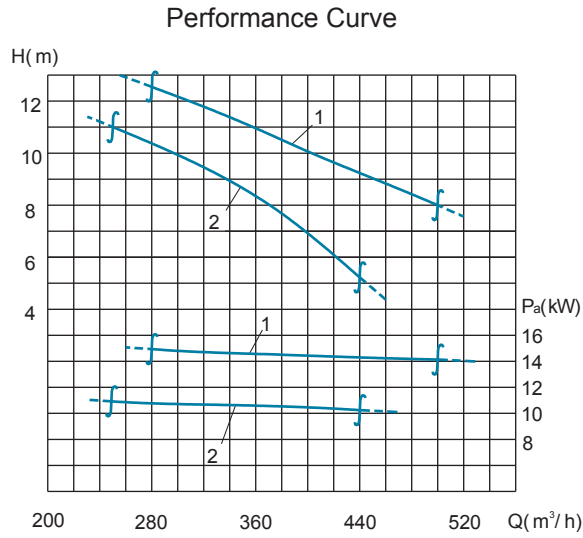


M



Main Parameter

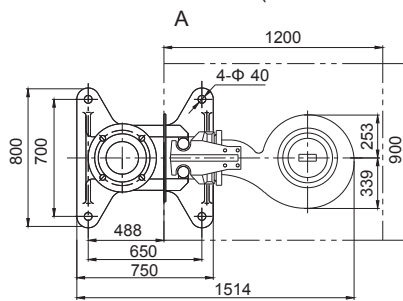
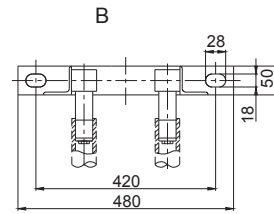
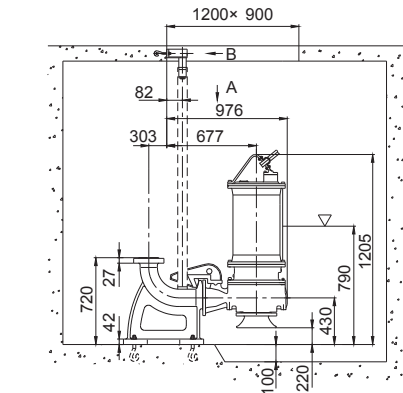
DN 250mm



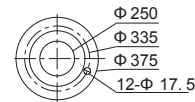
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	250WQ400-10-15	WQ2260-4158	100	1460	310
2	250WQ370-8-11	WQ2260-4158A	100	1460	290
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	15	30	0.85	89.4	2.6
2	11	23	0.85	88	2.4
			Q	Qmax	
1	m³/h-m		280-12.5	400-10	500-8
2			250-11	370-8	440-5.2

Installation Diagram

Z Automatic Coupling Installation

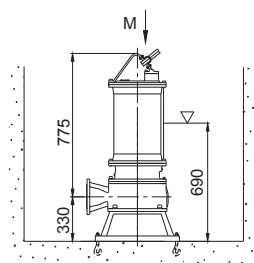


Discharge Flange

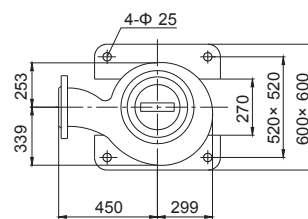


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P Fixed Base

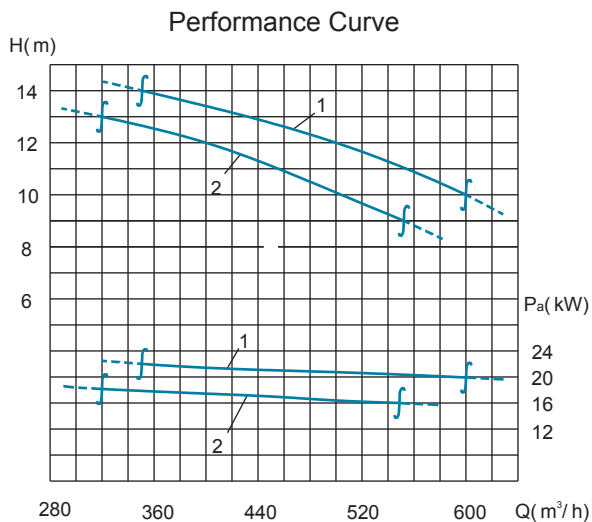


M



Main Parameter

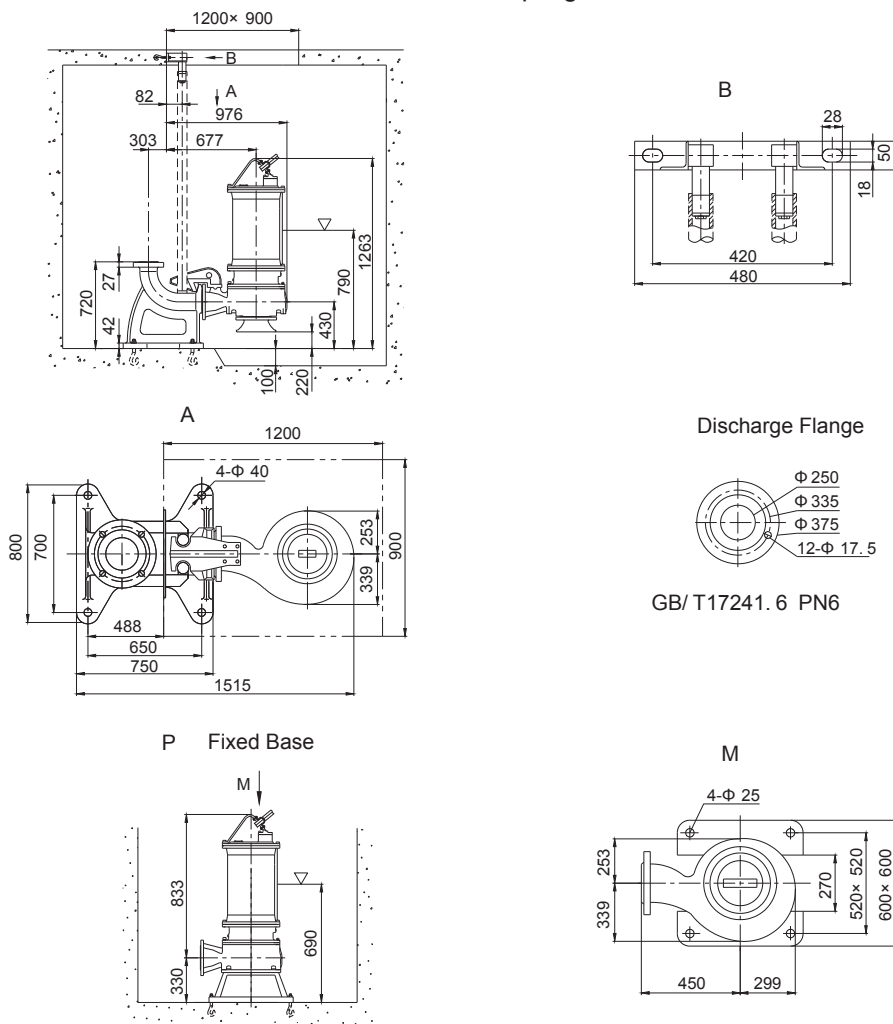
DN 250mm



NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	250WQ500-12-22	WQ2260-4159	100	1470	350
2	250WQ500-10-18.5	WQ2260-4159A	100	1470	325
NO.	Motor Power (kW)	Rated Current (A)	Factor cosφ	M-Eff. (%)	Lock/Rated Torque
1	22	42	0.87	91.2	2.2
2	18.5	36	0.87	90.7	2.2
		Q-H	Qmin	Q	Qmax
1	m³/h-m	350-14		500-12	600-10
2		320-13		500-10	550-9

Installation Diagram

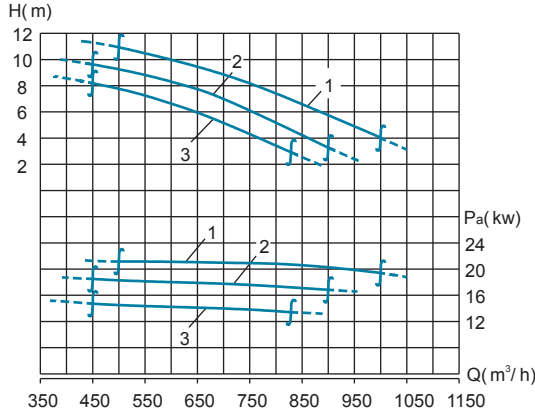
Z Automatic Coupling Installation



Main Parameter

DN 300mm

Performance Curve

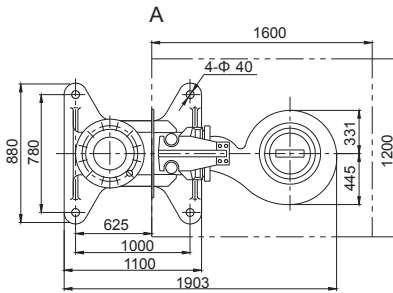
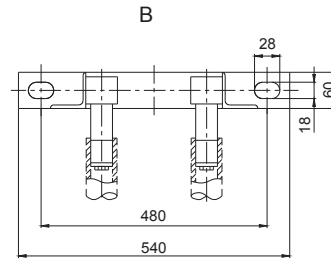
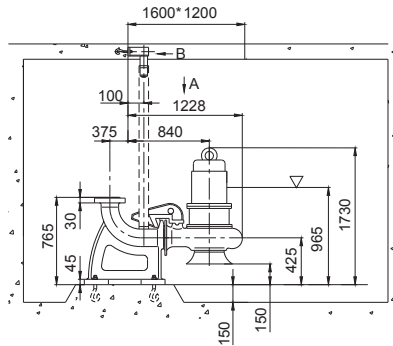


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	300WQ750-8-22	WQ2290-6157	113	980	570
2	300WQ700-7-18.5	WQ2290-6156	113	980	550
3	300WQ650-6-15	WQ2290-6155	113	980	530

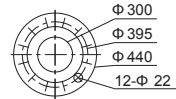
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/rated Torque
1	22	45	0.83	90.5	2.1
2	18.5	38	0.82	90	2.1
3	15	31	0.83	90	2.1

Installation Diagram

Z Automatic Coupling Installation

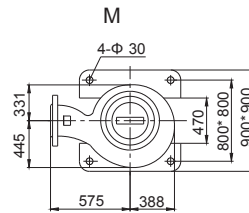
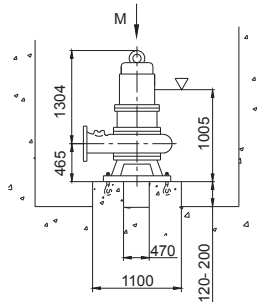


Discharge Flange

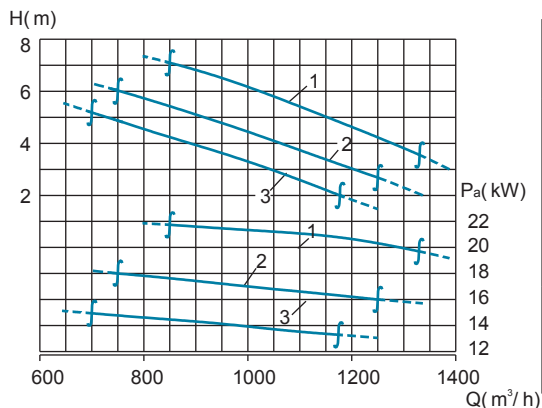


GB/T17241.6 PN6

P Fixed Base



Performance Curve



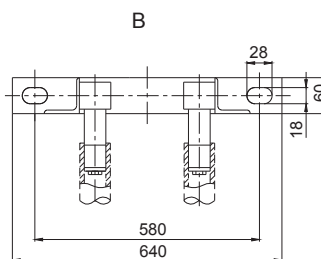
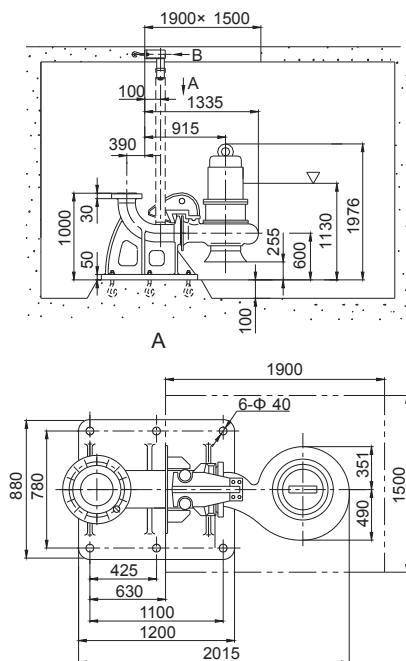
Main parameter
DN 350mm

No.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	350WQ1150-5-22	WQ2368-8154	91	730	800
2	350WQ1050-4-18.5	WQ2368-8153	91	730	780
3	350WQ900-4-15	WQ2368-8152	91	730	760

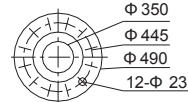
No.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	22	47	0.8	90.7	2.0
2	18.5	40	0.77	90.1	2.0
3	15	35	0.76	88.5	2.0

Installation diagram

Z Automatic Coupling Installation

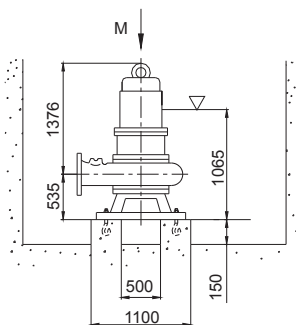


Discharge Flange

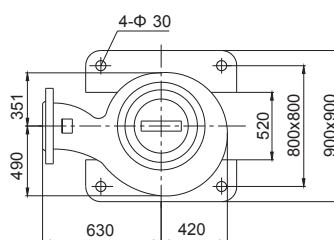


GB/T17241.6 PN6

P Fixed Base



M



Content

Product Overview	01
Main Application	01
Working Conditions	01
WQ(P≥30kW)Features & Advantages	01
WQ(P≥30kW)Structure & Technical description	02
Main Parts Material	04
Installation Modes	05
Technical Description	06
Power,Control Cable connection	10
wQ(P≥30kW)Motor Protection And Monitoring Systems	11
WQ(P≥30kW)Special Control Panel Introduction And Selection	12
Floating Switch、 Terminal Box、 Wire Pipe And Wire Model	22
WQ(P \times 30kW)Ordering Description	25
WQ(P \times 30kW)Supply Checklist	26
WQ(P \times 30kW)Spectrum Diagram And Description	27
WQ(P \times 30kW)Performance Data Sheet	31
Performance、 Main parameter、 Installation diagram	34
Accessories Descriptions	77

Product Overview

The WQ(P≥30kW) series submersible sewage pump developed by Shanghai kaiquan is in line with GB/ t24674-2009 sewage submersible pump national standard. It is to absorb the advantages of similar products at home and abroad, and integration of existing sewage pump series. Developed an innovative hydraulic model without overload, is a true full head submersible pump.

At the same time in the mechanical structure, sealing, online monitoring, intelligent control and other aspects of the comprehensive optimization design, so that a higher configuration, better hydraulic performance, more universal, better reliability.

As an integral part of kaiquan's smart products, kaiquan WQ(30kW and above) series submersible sewage pump aims to provide professional diagnostic services for users of submersible sewage pump, help enterprises to improve production efficiency, avoid potential crises and reduce production and operation costs.

Main Applications

WQ series submersible sewage pump is primarily used for municipal engineering, buildings, industrial discharges and sewage treatment to discharge sewage, waste water and rainwater containing solid matters and continuous fibers.

Working Conditions

1. Temperature of the medium cannot exceed 40°C; Medium Density < 1,050kg/m³; and the PH value ranges from 4 to 10.
- 2 The liquid level should not be lower than the “▽” symbol shown in the installation dimension diagram during the operation of the pump.
- 3 As its main parts are made of cast iron or ductile cast iron, this pump can't be applied for the pumping of medium with strong corrosiveness or containing strong corrosive solid particles.
- 4.The diameter of solid contents in the medium should be less than the minimum size of the flow channel. Please refer to the “Performance Specification of WQ Series Submersible Sewage Pump” specific sizes of solid contents.
5. The length of fibers contained in the medium should be smaller than the discharge diameter of the pump.

WQ (P ≥30kW) Advantages and Features

I. Intelligent water pump, cloud remote monitoring

Pump internal integrated vibration sensor, bearing temperature PT100, winding temperature PT100, oil chamber leakage, motor cavity leakage and other protection components, all-round monitoring of pump operation, and can be real-time data display through the intelligent control cabinet, alarm or stop automatic operation. At the same time, the remote monitoring operation and maintenance platform of Shanghai kaiquan intelligent cloud can be logged in for monitoring and operation and maintenance operation.

II. Unique non-overload hydraulic design, innovative technology of sewage treatment pump, innovative design concept of high-efficiency non-overload hydraulic model, as well as the capacity design of sewage pump. Completely solve the operation of the pump worries.

No overload hydraulic technology features, maximum power point out of the efficient zone, smooth operation, no vibration. Impeller passing capacity: impeller through a large number of CFD research and analysis and testing, so that the impeller blade and solid through the ability to achieve the best balance, the unique design of the flow components to ensure the solid through the fiber and the anti-winding.

III. the original pump seal design, ensure the pump long-term reliable operation seal to ensure that the stator cavity does not water damage the motor.

IV. Excellent mechanical seal

Imported borgmann mechanical seal is adopted, the pump head seal material is silicon carbide to tungsten carbide, providing the maximum wear resistance, and the design service life of the pump head seal is 15000 hours

Mechanical seal self-cleaning technology

Two single-end mechanical seals are installed in series. Special spiral grooves or small crevice are adopted at the pump cover to prevent solid particles from depositing on the pump side mechanical seals, so as to achieve the self-cleaning function of the mechanical seals and extend the service life of the mechanical seals

VI.Short shaft extension design

Short shaft extension design can significantly eliminate the shaft eccentricity error.Reduce pump center of gravity, reduce pump vibration, prolong mechanical seal and bearing life

VII.Bearing design

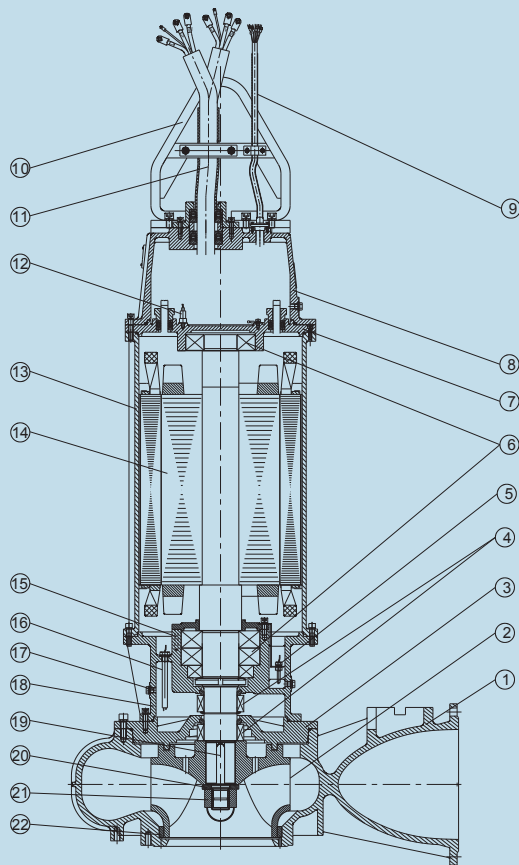
The bearing is designed according to the minimum service life of 100,000 hours to ensure the normal operation of the pump.

VIII.Reliability design of submersible motor

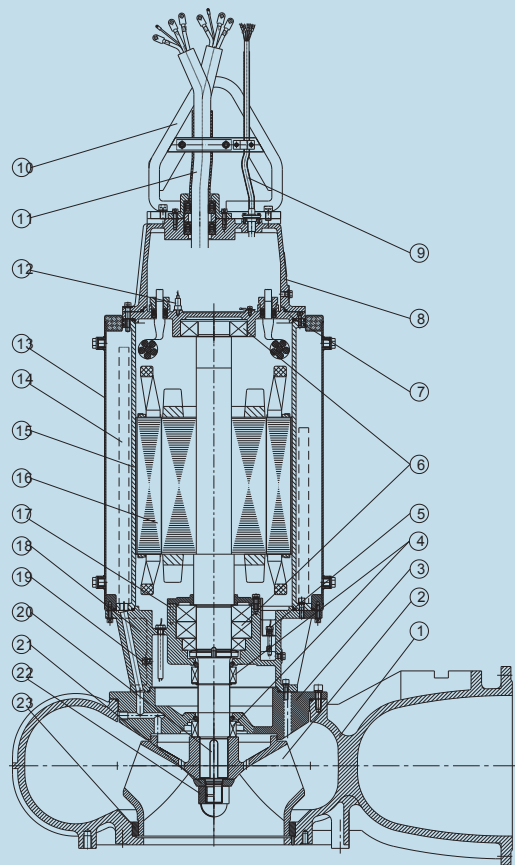
The motor insulation class with class H, the maximum allowable temperature 180 ℃, the F has a qualitative improvement, the motor can withstand higher temperatures, more durable

General pump installation design

The installation mode is diversified, including automatic coupling type installation. The pump and the outlet pipe are connected through the outlet pipe seat of the coupling device. No conventional fasteners are used.

WQ(P≥30kW) Description of series submersible sewage pump
Structure Diagram


1. Casing 2. Impeller 3. Cover 4. Mechanical Seal
5. Leakage Detector 6. bearing 7. Upper Cover 8. Terminal Box
9. Control Cable 10. Handle 11. Pow.Cable 12. Vibration Sensor
13. Motor Case 14. Motor 15. B.T.S 16. Leakage Detector
17. Bolt and water hole 18. Bracket 19. Key 20. Impeller Plate
21. Impeller Nut 22. Seal Ring

Structure Diagram Withe Cooling jacket


1. Casing 2. Impeller 3. Cover 4. Mechanical Seal
5. Leakage Detector 6. Bearing 7. Upper Cover 8. Terminal Box
9. Control Cable 10. Handle 11. Pow.Cable 12. Vibration Sensor
13. Cooling Jacket 14. Cooling Pipe 15. Motor Case 16. Motor
17. Bearing PT100 18. Bracket 19. Bolt and water hole 20. Key
21. Impeller Plate 22. Impeller Nut 23. Seal Ring

Technical specifications

Pump Impeller CFD technology is adopted to optimize the design. Wide outlet, high efficiency, non-overload impeller, non-overload hydraulic design and the best balance of high passing capacity are adopted. The impeller is subjected to strict dynamic balance test, so as to minimize vibration and maximize the life of the bearing and mechanical seal.

Pump Cover Adopt the design of self-cleaning technology, the pump cover has a ring spiral groove structure, medium particles in the pump cover in the process of rotation by centrifugal force to the outside, can avoid particles in the sealed cavity to achieve the effect of self-cleaning machine seal.

Motor Specially design and manufacture of submersible motor, stator winding for IP68 protection grade for class H insulation, insulation limit working temperature 180 °C, at the same time there are winding temperature PT100, through the electronic control cabinet of motor protection.

Motor Cooling Motor is through the stator housing heat sink by pump medium to cool, the medium to subdue the motor, the lowest stop pump position should not be lower than the installation size of the "polish" mark liquid level.

The electric pump can be specially equipped with motor cooling system to cool the motor. The cooling medium flows between the stator housing and the cooling sleeve. The cooling medium can be pumped medium or external cooling water. The cooling channel is different between the pumped medium cooling and the external cooling water cooling. Therefore, when the user wants to install the cooling system, it shall indicate in the order whether to use the pumped medium cooling or external cooling water cooling. When the cooling medium is pumped medium, the pump structure can prevent large particles into the cooling channel. After a long period of operation, small particles may form in the sleeve, which can be flushed by cooling the outer connection of the pipe joint on the sleeve.

Mechanical Seal .Borgman mechanical seal, mechanical seal selection of friction coefficient is very low and wear resistant friction materials, rubber parts for oil - resistant nitrile butadiene rubber

The oil in the oil chamber is 32# anti-wear hydraulic oil, standard: gb1118.1-2011. In addition to lubricating the mechanical seal, it can also take away the heat of the bearing, and the oil chamber also has the additional safety function of preventing liquid penetration. The oil chamber is equipped with a water leakage probe. When the pump side medium leaks into the oil chamber, the water leakage probe alarms the pump through the electric control cabinet and stops the pump to remind the operator for maintenance.

Add oil quantity to overflow oil from the oil hole so far, and can ensure that the oil room has a certain volume of air, so that the oil temperature rises after the oil chamber pressure will not rise significantly, so as to avoid excessive wear or leakage of mechanical seal.

Bearing The whole system is standard with original imported SKF bearing, the upper bearing is deep groove ball bearing or cylindrical roller bearing, used for bearing radial force. Lower bearing, used to bear radial force and axial force, the model pump according to the size of the radial force and axial force is different, have designed a double row angular contact ball bearings, have a plenty of a diagonal contact ball bearing and a cylindrical roller bearing, have full load power margin, bearing design service life of 100000 hours, 3 # lithium base grease for lubrication.

Seal of Cable and motor

The cable is made of heavy-duty rubber-sheathed flexible cable which is resistant to sewage. Cable conductor cross-sectional area and current-carrying capacity is according to the environmental temperature 40 °C, long-term continuous working condition is selected, and thus in normal use conditions, the current-carrying capacity of the cable have enough margin, longer life. The cable gland compacts the cable seal ring to achieve reliable sealing between the cable and the wiring cavity. Fix the cable to prevent pulling. The cable adopts color mark and digital mark, which makes the cable identification and connection easier. The earthing mark and the earthing fasteners are set in the wiring cavity of the motor and the electric control cabinet. The cables are strictly earthed, safe and reliable. During the assembly process, the o-ring, cable seal and mechanical seal of each pump shall be strictly tested to ensure the reliable sealing of the motor cavity, including the wiring cavity.

Intelligent protection device

Pump standard with motor winding overheating PT100, bearing temperature PT100, pump vibration sensor, motor cavity leakage probe, oil chamber cavity leakage probe. At the same time, it is equipped with intelligent signal acquisition box or intelligent control cabinet of drainage pump to realize real-time display, monitoring and failure warning of pump status. When the user prepares the electric control cabinet, it must be matched with the intelligent signal acquisition box of the drainage pump.

Thermal Sensor PT100

PT100 is installed in two positions in the pump, one is embedded in the stator winding of the motor, the other is installed in the bearing. The display screen of the electric control cabinet displays real-time data. When the temperature of the winding or the bearing rises to the set value under the abnormal operation condition of the water pump, the indicator light of "winding over heat" or "bearing over heat" in the control cabinet lights up and automatically stops the motor, reminding the operator to check and find out the cause of motor over heat.

Leakage Detector

Water leakage probe is used for water detection in oil chamber and motor chamber.

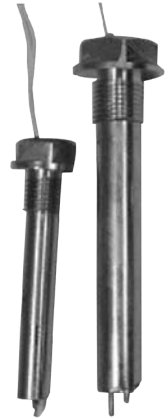
The leakage probe in the oil chamber is called the oil probe for short. When the mechanical seal on the impeller side is damaged and the water in the oil leakage chamber reaches a certain level, the two electrodes of the leakage probe will conduct a conduction and send an alarm signal (indicator light is on) through the electric control cabinet to remind the operator to timely check the mechanical seal or replace the oil in the oil chamber.

The leakage probe in the motor cavity is called water probe for short. It is installed in the lower side of the motor cavity and the cavity next to the bearing. The cavity has holes and is communicated with the bearing chamber. When the mechanical seal on the motor side fails, the oil in the oil chamber enters the cavity through the bearing chamber, or enters the electricity

Machine water into the cavity, will make the two electrodes of the leakage probe conduction, through the electric control cabinet alarm signal (indicator light) and make the pump automatically stop operation, remind the operator maintenance pump.

Lifting device

The lifting frame of the pump is made of 304 material, and the design has larger space, which is convenient to hook and hang, making it convenient to lift and durable.


Material of Main Parts

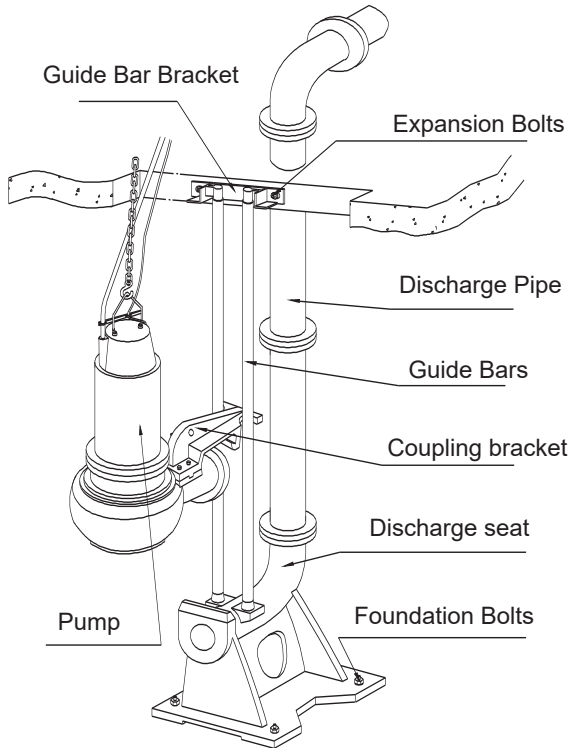
NO.	Name		Material
1	Impeller, Cover		Ductile iron
2	Casing, Terminal box, Bracket		FC250
3	Shaft		SUS420
4	Wear Ring		FC250
5	Motor Insulation		180°C H Grade
6	Bearing Brand		SKF
7	Mechanical Seal	Brand	Burgman
		Motor side friction pairs	Graphite/silicon carbide
		Pump side friction pairs	Silicon carbide/tungsten carbide
8	O-ring		Nitrile rubber
9	Cable Seal Ring		

Installation Modes

WQ Series submersible sewage pump can be installed through auto-coupling installation (Z), fixed base installation (P), fixed base installation (F), mobile hose installation (R) and mobile pipe installation(Y). All above-mentioned installation modes are simple, and they will be introduced respectively as below.

Automatic Coupling Mounting (Z)

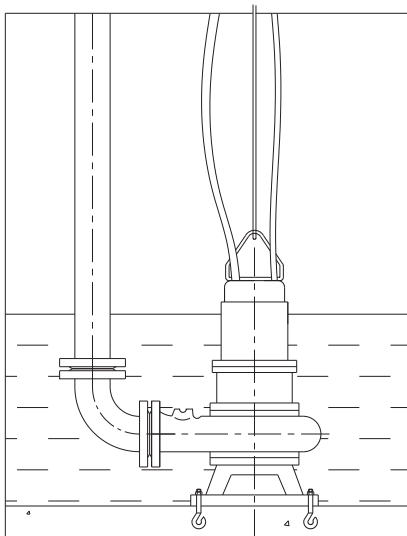
Automatic Coupling Installation(Z)



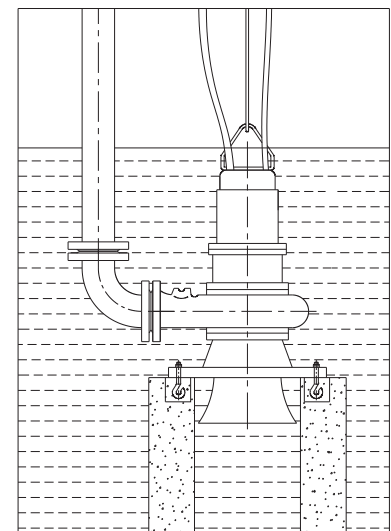
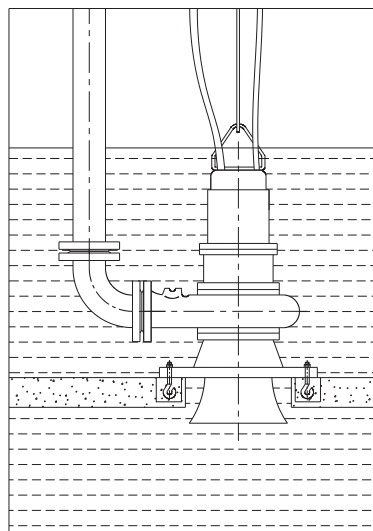
Automatic coupling installation actually USES coupling device to connect pump and pipeline. With the coupling device, the pump and the outlet line is independent of each other, without the need for conventional fasteners connection, so pump and outlet line connection and disconnection is very easy. Coupling device is very simple in fact, only out of the water pipe seat, guide rod, guide rod frame, coupling the four things, guide rod only play a guiding role, do not force, with ordinary water pipe or steel pipe can be, users can be self-provided, and can be very convenient according to the depth of the pool cut into the required length. When installation, the outlet pipe, guide rod, guide frame installed, the coupling loaded on the pump body, lift pump, wear the coupling frame of semicircle orifice into the guide rod and the pump to slide along the guide bar, coupling will put the pump body and outlet pipe fasten, at the same time, the pump body outlet and outlet pipe entrance automatic alignment, automatic tiejin flange end face. When you need to repair the pump, just put the pump up, the pump body and the outlet pipe seat off. This way of installation, really save worry, effort, trouble.

Since the coupling device and the pump are relatively independent, you can still use the original coupling device if your pump station needs to change to the same caliber pump with low head or high head due to the change of circumstances.

Fixed Base Installation (P)



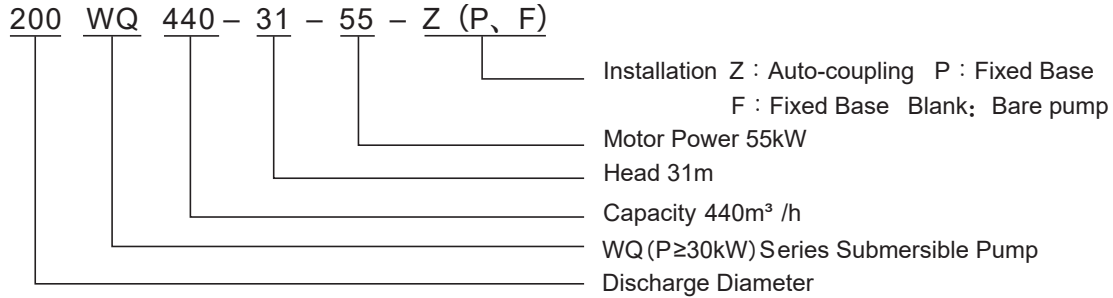
Fixed Base Installation (P)(F)



Fix the supporting base on the foundation and connect the outlet pipe to operate. The base needs to be bolted.

Technical Description

Model Description



Rated voltage and rated frequency

Rated voltage and rated frequency of the motor are 380V and 50Hz respectively

Wiring mode

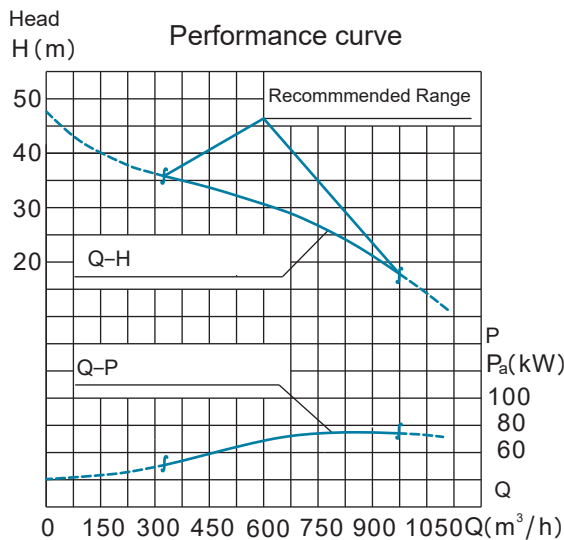
Wiring mode of motor winding wires:

The delta wiring mode (Δ) is adopted for ≤ 55 kW pumps. The wires are already connected as per this wiring mode in the wiring chamber of the pump at the time of delivery. The direct start, auto-coupling voltage-reduction start, or externally connected electric soft starter can be adopted based on the site condition.

For ≥ 75 kW pumps, there are two wiring modes for the winding lead wires: Direct connection between 6 power cores in two main cables and 6 lead wires of motor winding, which is applicable for star-delta (Y- Δ) start or internally connected electric soft starter, and connection of winding as per delta wiring method (Δ) within wiring chamber, which is applicable for auto-coupling voltage-reduction start or externally connected electric soft starter.

Rotation Direction The impeller rotates counterclockwise from the suction inlet of the pump.

Descriptions of performance curve and main parameters



Main Parameter

DN 250mm

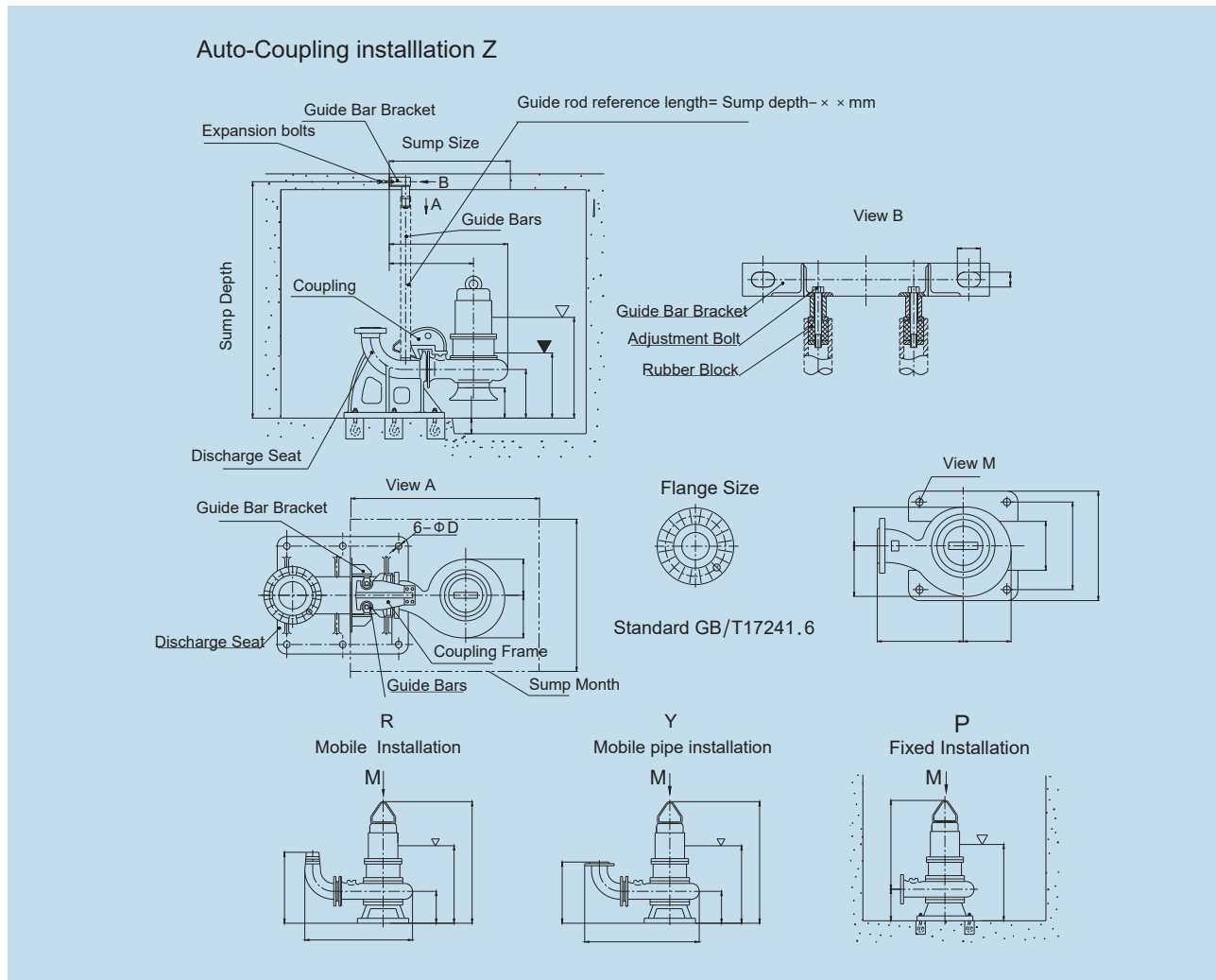
New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
250WQ600-30-75	WQ2368-4149	138	1485	850
Motor (kW)	Rated Current (A)	Factor $\cos \phi$	Motor Efficiency (%)	Lock/Rated Torque
75	140	0.87	93.8	2.2

The solid line part of the curve indicates the recommended service range of the pump. Shaft power increased to a certain value is no longer increased, no overload pump generally no overload risk, even if occasionally a little overload is also limited, so this pump in any flow when the use of motor is safe. However, it is better to use within the recommended range, because the efficiency of the pump within the recommended range is higher, and the pump is more economical to use. However, when the flow rate is less than the limit on the left, the unit efficiency is very low, resulting in a large radial force, resulting in rolling keys and broken shaft. When the flow is greater than the right limit, pump vibration, noise and other problems.

Refer to "performance parameters table of WQ(30kW and above) series submersible sewage pump" for maximum size of solid. Pump weight does not include all kinds of installation accessories, such as coupling device, base, elbow, hose elbow, etc.

Description of installation dimension drawing

Introduction To Installation Sketches



1. All guide rod brackets can be fixed by M16x150 type I steel expansion bolts. The expansion bolts are easily available and can be prepared by clients or procured from our company. Function the rubber block on guide rod bracket: Tighten the adjustment screw on the rubber block to expand the rubber block tightly in the bore of guide rod and stabilize the guide rod.
2. Calculate the length of the guide rod as per the "sump depth" indicated on the diagram. Refer to attached Table 1 for the related information conaraing the guide rod.
3. For the coupling installation of pump without flared water inlet pipe, fabricate the bottom of the sump to a flat plane so that the height of the water discharge pipe seat can guarantee enough height between the suction the pump and the sump bottom to provide good suction conditions for the pump. Therefore, it s unnecessary to fabricate a boss for the discharge pipe seat, which can avoid construction troubles.
4. "▽" denotes the minimum liquid level required for the running of pump. The water level shall be higher than the minimum level during running the pump. If possible, completely immerse the pump to sufficiently cooling the motor. The minimum water level can be controlled by the float switch. Our special electric cabinets of submersible sewage pumps, a type of level control. If the level is high, the pemp will stop.
5. For pumps of mobile installation mode, we can provide the hose elbow connectors or the elbow connectors For mobile hose please refer to the attached Table 2 for the inside diameters of hoses applicable for diversified diameters of pumps.
6. For pumps of the same mode, the base is the same for fixed base installation and mobile installation, the shape and size of the base is shown in view M
7. GB/T17241.6-2008/XG1-2011standard The flange size indicates the discharge and suction size of pump. The flange dimensions follow standard requirements: GB/T17241.6-2008/XG1-2011.

Appendix 1 Pump guide-bar configuration and dimensions

Discharge diameter (mm)	Guide-bar Stainless steel pipe/ water pipe	Advised guide-bar length= (pool depth-L)+-15mm L dimensions
50	1"/ 32× 3.5	300
65		305
80		425
100		410
150	2"/ 60× 5	435
200		540
250		630
300	3"/ 89× 5	655
350		900
400		900
500		1035
600		1150
700		1150
800		1150
900		1320
1000		1320

Appendix 2 Pump sofe pipe

Pump discharge diameter(mm)	50	65	80	100	150	
Equipped sofe pipe bent joi	50-6	50×65-6	65-6	80-6	100-6	150-6
Equipped sofe pipe inner diameter(mm)	64	76	76	89	102	152

Appendix 3 The anchor bolts of automatic coupling installation discharge

Discharge DN (mm)	Anchor bolt(GB/T799-1988)			
	Model	Quantity	Reserved hole reference dimensions Length x width x depth (mm)	
50	M16×220	4	80× 80× 270	
65				
80				
100	M20×300			
150				
200				
250	M30×400		6	100× 100× 350
300				
350				
400				
500	M36×500	160× 160× 450		
600				
700				
800	M42×700	160× 160× 550		
900				
1000	M48×800	8	200× 200× 750	
			230× 230× 900	

Appendix 4 Anchor bolts of fixed base mounting installation

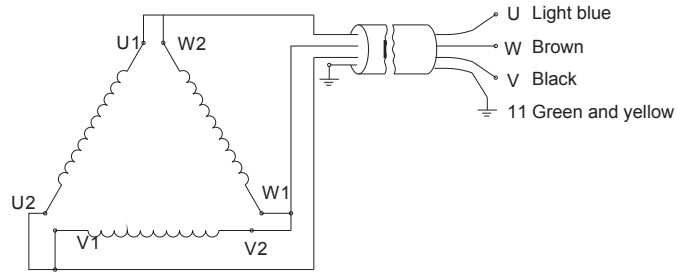
Base hole DN	Anchor bolt GB/T7991988)	
	Model	Reserved hole dimensions
		L × W × D (mm)
Φ18、Φ20	M16×220	80×80×270
Φ25、Φ26	M20×300	100×100×350
Φ30	M24×300	
Φ36、Φ40	M30×400	130×130×450
Φ46、Φ48	M36×500	160×160×550
Φ52	M42×700	200×200×750
Φ56	M48×800	230×230×900

Appendix 5 Weight sheet of coupling parts

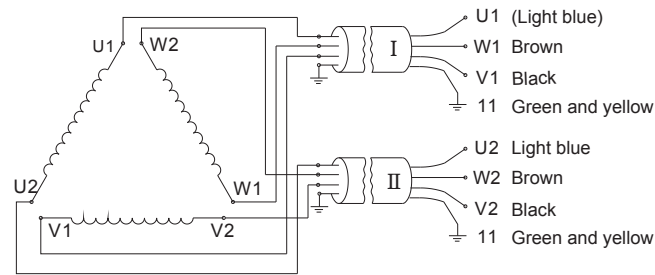
Discharge (mm)	Coupling Parts		
	Discharge base(kg)	Coupling frame(kg)	Guide Bar
50	21.5	6	2.45kg/m
65	27.5	7.1	
80	41.3	8.1	
100	37	9.3	6.78kg/m
150	74.3	20	
200	119	24	
250	232	46	10.36kg/m
300	334	64	
350	428	106	
400	510	106	
500	795	114	
600	1075	153	
700	2461	264	
800	3589	382	
900	4610	557	
1000	5400	685	

WQ (P≥30kW) Series Subme

30-55kW Stator line and main cable wiring diagram(inner triangle wiring)

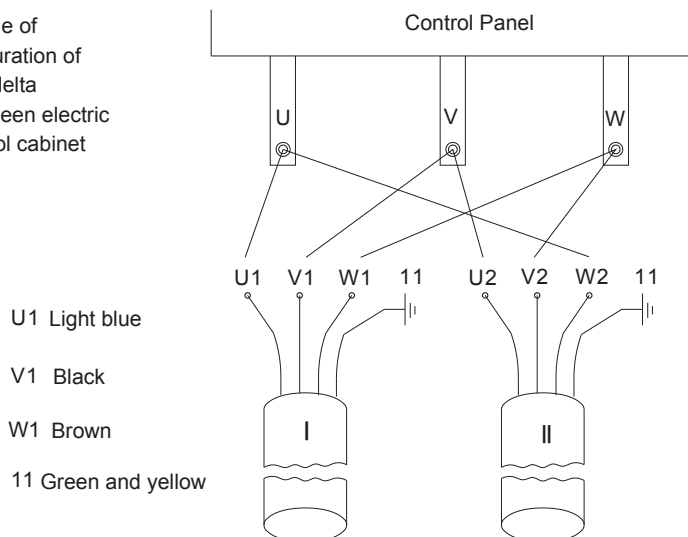


75-315kW Stator line and main cable wiring diagram(outer triangle wiring)



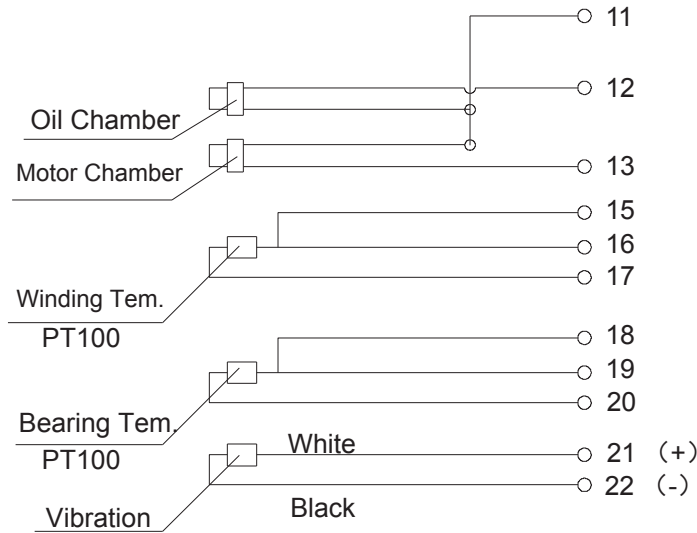
75-315 KW sewage pump and the control cabinet wiring
Outer triangle wiring(standard specification)

Connection mode of standard configuration of sewage pump: delta connection between electric pump and control cabinet

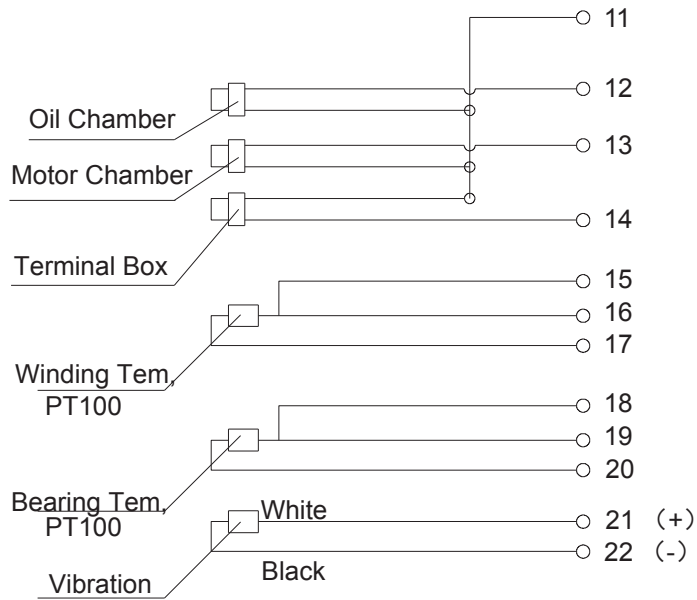


Judgment method: any two phases of U, V and W of the same main cable are not connected, that is, the two cables of the water pump and the control cabinet are connected by external triangle method.

Y290-Y445 Schematic diagram of YVC12 x 1 wiring of the control cable



Y520-Y590 Schematic diagram of YVC12 x 1 wiring of the control cable



Note: pay attention to the positive and negative terminals when connecting the vibration sensor.

The monitor elements of motor protection system performance comparison sheet

Protection Name	Oil chamber Leakage Detector	Motor Chamber Leakage Detector	Terminal Box Leakage Detector	Winding Temperature pt100	Bearing Temperature pt100
Control cable code	11- 12	11- 13	11- 14	15、 16、 17	18、 19、 20
Normal(Ω)	$\geq 15K\Omega$	$\geq 30K\Omega$	$\geq 30K\Omega$	0°C, 100 Ω	0°C, 100 Ω
Fault(Ω)	<15K Ω	<30K Ω	<30K Ω	135°C, 151 Ω	95°C, 136 Ω

KQK-DZC Type selection of intelligent signal acquisition box of drainage pump and KQK-B (Z) series control cabinet**Overview**

The series submersible sewage pump is equipped with built-in leakage, temperature, vibration and other sensing elements, and the real-time monitoring and failure warning of the pump status can be realized by cooperating with the intelligent signal acquisition box or control cabinet of the drainage pump on site. Through real-time monitoring data, diagnostic engineers regularly browse and analyze, and timely realize comprehensive monitoring coverage of the unit through various forms such as kaiquan intelligent cloud platform operation and maintenance system, real-time SMS push, mobile APP push and so on.

In case of any abnormality of the series submersible sewage pump, the diagnostic service engineer will analyze the abnormality,

contact the customer in time, and conduct in-depth analysis and feedback based on the actual situation on site. With the cooperation of customers, the diagnostic service engineer will provide the abnormal handling advice and continuously track the abnormal situation until the problem is solved.

According to the state data of the unit, the life cycle of the unit, fault mechanism, fault range and so on, experts from different majors and departments are collected for analysis and diagnosis. Through the remote monitoring of WQ(30kW and above) series submersible sewage pump, sensitive sensing unit state change, early and fast start service procedures, to provide scientific service decision-making. To provide users with professional, targeted, scientific and efficient service.

KQK-DZC4-WQ Common type drainage pump intelligent signal acquisition box**KQK-DZC5-WQ Outdoor drainage pump intelligent signal acquisition box**

When the start and stop control cabinet and signal acquisition cabinet of WQ(30kW and above) series submersible sewage pump are independently set, the signal collection must be matched with the intelligent signal collection cabinet of kaiquan kqk-dzc drainage pump. Kqk-dzc4 (5) drainage pump intelligent signal acquisition box is specially designed for WQ(30kW and above) series submersible sewage pump and high-tech multi-functional state monitoring protection device. It USES intelligent digital instrument and has the superiority that traditional on-line monitoring instrument can't compare. The terminal box is suitable for online monitoring and protection of kaiquan intelligent submersible sewage pump and other products.

The intelligent signal acquisition box of the drainage pump can continuously measure and monitor the process parameters related to safety, such as water leakage, winding temperature, bearing temperature and pump vibration, and can also be equipped with an optional power meter to collect electrical parameters, including the voltage, current, power and other electrical parameters of the water pump. The acquisition terminal can identify the abnormal state of the water pump in time to ensure the safe and reliable operation of the equipment. It has important practical significance for understanding the running state of the unit and early diagnosis of common mechanical faults.

Function

1. It adopts color LCD screen with backlight for Chinese display, with bar chart, trend curve, digital display, etc. The screen is rich and intuitive, which can display pump group information, acquisition time, channel name, sensor state, channel alarm state and other information at the same time.
2. The system is composed of a box frame and each instrument, human-machine interface, programmable controller and communication module. The system can be installed with two meter positions. Temperature instrument can realize 8 - way temperature measurement and circuit display. PLC has switch quantity input and output terminals, with 4 analog quantity input channels.
3. The configuration is flexible. The range, sensitivity, alarm value, alarm delay time, alarm logic and zero position of any channel can be directly set by the user through the Chinese menu on the screen, which is convenient and quick.
4. The system has built-in self-check and channel self-check functions to ensure that the relay does not misoperate in case of system failure or sensor line failure.
5. Built-in high-capacity memory card interface with power off protection ensures sufficient storage space and saves the trouble of frequent data backup. Historical data can be easily backed up through USB interface and network communication interface, which is conducive to the establishment of equipment documents and provides a powerful means for accident analysis.
6. The maximum value, minimum value, average value, alarm times and cumulative alarm time of any channel in a certain period can be conveniently calculated through the trend analysis, accident recall, statistical analysis and other functions of the cloud platform.

7. can provide a very flexible state network, serial port connection (RS232/RS485) and USB interface, using standard communication protocol, can easily exchange data with other systems, constitute a remote state monitoring network.

8. Accept input from eddy current sensor, velocity sensor, acceleration sensor, temperature sensor, pressure transmitter and any other standard signal variables.

9. The intelligent signal acquisition box of the drainage pump provides independent alarm relay output. The alarm logic and alarm action delay time can be set by the software. The passive contact signal output can be used for the alarm and fault shutdown control of the pump control cabinet supplied by the third party.

Technical parameters

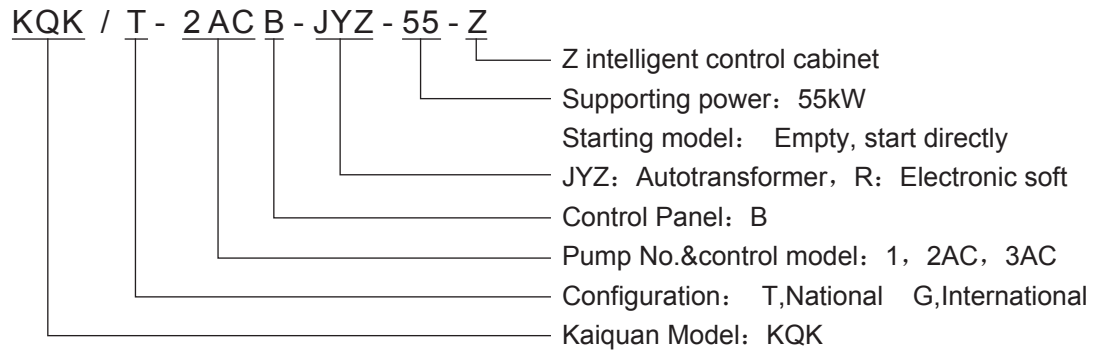
1. Display mode: 4.3 inch true color touch screen display
2. Measuring range: vibration channel measuring range
Amplitude: 0 ~ 500 m(peak-to-peak)
Intensity: 0 ~ 50mm/s(true effective value)
Temperature: - 50 ~ 200°C
3. Measuring accuracy: 0.5 level linear error 1%FS(full range)
4. Input mode: vibration channel input signal: various vibration sensor signals;
Temperature channel input signal: thermal resistance.
5. Output mode: passive contact, load capacity DC24V/2A or AC250V/5A
6. Ambient temperature: - 20°C ~ 65°C, relative humidity: 90% or less
7. Power supply voltage: AC220V/50Hz±10%
8. Installation: wall mounted
9. Dimensions: 600×400×200mm(H×W×D)

WQ Introduction and model selection of WQ(30kW and above) series submersible sewage pump kqk-b (Z) series control cabinet

KQK-B(Z) type control cabinet of WQ(30kW and above) series submersible sewage pump is an economical, safe and reliable automatic control system with simple maintenance. Control cabinet to choose domestic and foreign well-known brands of low-voltage electrical appliances and the liquid level sensor, has the short circuit, lack of phase, overload, and vibration parameters, temperature changes, the motor cavity leakage, oil leakage and winding super thermal protection function, such as control cabinet can form a complete set of ball float liquid level switch, the input type or ultrasonic, etc. Various kinds of liquid level sensor, in the case of unattended according to level of high and low automatic start-stop control pump. In addition to the single control products, all the products with the control of the main and standby pumps have the function of self-closing the faulty pump and automatic input of the standby pump. Two and three pump control cabinet can automatically stop or cycle operation, to achieve the running time of each pump is equal.

General configuration of the control cabinet is mainly tianzheng, zhengtai, delixi and other well-known domestic brands; The high-end control cabinet components mainly include schneider, Siemens, ABB and other internationally renowned brands.

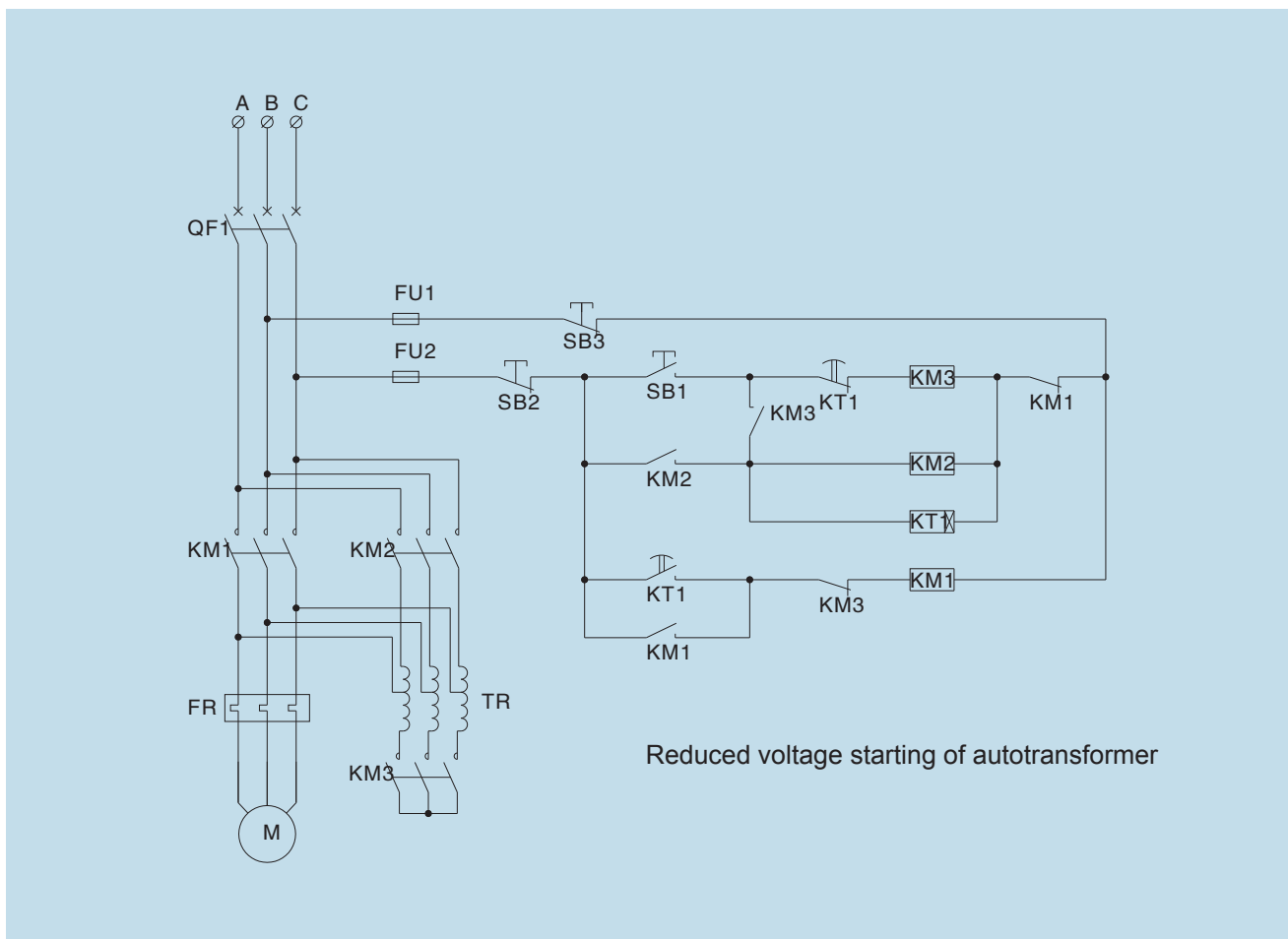
WQ(30kW and above)KQK-B(Z) control cabinet for submersible sewage pump



WQ(30kW and above) series submersible sewage pump special kqkq-b (Z) control cabinet selection and description

Reduced voltage starting of autotransformer

Autotransformer is used to reduce the starting voltage of motor stator winding. After the motor is started, the motor can be separated from the auto-transformer, so as to operate normally under full voltage.



Can according to allow the starting current and starting torque required for different tap to choose autotransformer achieve step-down start, and regardless of the stator winding of the motor Y or Δ connection can be used.

WQ (30kW and above) Series Intelligent Submersible Sewage Pumps

The following table lists the model and size of the control cabinet selected for the automatic voltage reducing starting of the supporting WQ(30kW and above) series submersible sewage pump

WQ(30kW and above)One control one—Autotransformer

NO.	Power (kW)	Motor	Current (A)	Model of intelligent control cabinet		Cabinet Size (H×W×D)	Weight (kg)
				National Brand	International Brand		
1	30	2p	56	KQK/ T- 1B- JYZ- 30Z	KQK/ G- 1B- JYZ- 30Z	1600×600×400	130
2		4p	58				
3		6p	58				
4		8p	63				
5	37	2p	68	KQK/ T- 1B- JYZ- 37Z	KQK/ G- 1B- JYZ- 37Z	1600×600×400	130
6		4p	70				
7		6p	71				
8		8p	78				
9	45	4p	85	KQK/ T- 1B- JYZ- 45Z	KQK/ G- 1B- JYZ- 45Z	1600×600×400	140
10		6p	86				
11		8p	95				
12	55	4p	103	KQK/ T- 1B- JYZ- 55Z	KQK/ G- 1B- JYZ- 55Z	1600×600×400	140
13		6p	105				
14		8p	115				
15	75	4p	140	KQK/ T- 1B- JYZ- 75Z	KQK/ G- 1B- JYZ- 75Z	1600×600×400	150
16		6p	142				
17		8p	150				
18		10p	163				
19	90	4p	167	KQK/ T- 1B- JYZ- 90Z	KQK/ G- 1B- JYZ- 90Z	1700×700×500	150
20		6p	170				
21		8p	180				
22		10p	191				
23	110	4p	201	KQK/ T-- 1B- JYZ- 110Z	KQK/ G-- 1B- JYZ- 110Z	1700×700×500	160
24		6p	207				
25		8p	220				
26		10p	230				
27	132	4p	242	KQK/ T-- 1B- JYZ- 132Z	KQK/ G-- 1B- JYZ- 132Z	2200×800×600	200
28		6p	245				
29		8p	265				
30		10p	275				
31	160	4p	294	KQK/ T-- 1B- JYZ- 160Z	KQK/ G-- 1B- JYZ- 160Z	2200×800×600	220
32		6p	291				
33		8p	315				
34		10p	333				

WQ(30kW and above)One control two—Autotransformer

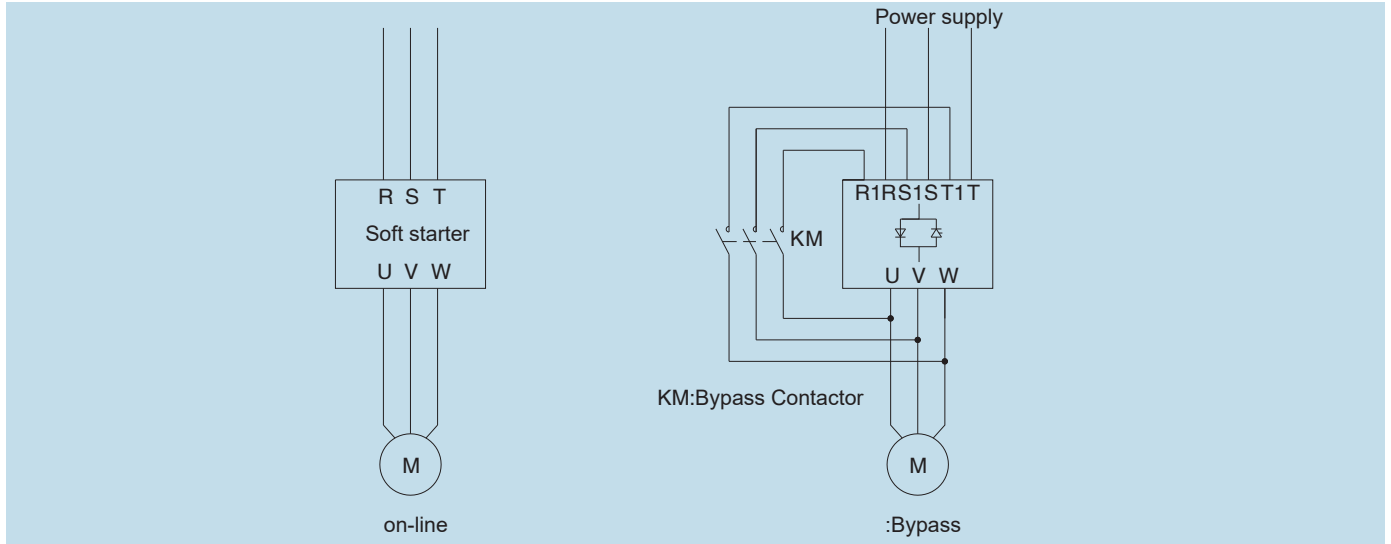
NO.	Power (kW)	Motor	Current (A)	Model of intelligent control cabinet		Cabinet Size (H×W×D)	Weight (kg)
				National Brand	International Brand		
1	30	2p	56	KQK/ T-2ACB- JYZ- 30Z	KQK/ G-2ACB- JYZ- 30Z	1700×700×500	170
2		4p	58				
3		6p	58				
4		8p	63				
5	37	2p	68	KQK/ T-2ACB- JYZ- 37Z	KQK/ G-2ACB- JYZ- 37Z	1700×700×500	170
6		4p	70				
7		6p	71				
8		8p	78				
9	45	4p	85	KQK/ T-2ACB- JYZ- 45Z	KQK/ G-2ACB- JYZ- 45Z	1700×700×500	180
10		6p	86				
11		8p	95				
12	55	4p	103	KQK/ T-2ACB- JYZ- 55Z	KQK/ G-2ACB- JYZ- 55Z	1700×700×500	180
13		6p	105				
14		8p	115				
15	75	4p	140	KQK/ T-2ACB- JYZ- 75Z	KQK/ G-2ACB- JYZ- 75Z	1800×800×500	195
16		6p	142				
17		8p	150				
18		10p	163				
19	90	4p	167	KQK/ T-2ACB- JYZ- 90Z	KQK/ G-2ACB- JYZ- 90Z	1800×800×500	195
20		6p	170				
21		8p	180				
22		10p	191				
23	110	4p	201	KQK/ T-2ACB- JYZ- 110Z	KQK/ G-2ACB- JYZ- 110Z	2000×800×600	210
24		6p	207				
25		8p	220				
26		10p	230				
27	132	4p	242	KQK/ T-2ACB- JYZ- 132Z	KQK/ G-2ACB- JYZ- 132Z	2200×1000×600	260
28		6p	245				
29		8p	265				
30		10p	275				
31	160	4p	294	KQK/ T-2ACB- JYZ- 160Z	KQK/ G-2ACB- JYZ- 160Z	2200×1000×600	285
32		6p	291				
33		8p	315				
34		10p	333				

WQ(30kW and above)One control three—Autotransformer

NO.	Power (kW)	Motor	Current (A)	Model of intelligent control cabinet		Cabinet Size (H×W×D)	Weight (kg)
				National Brand	International Brand		
1	30	2p	56	KQK/ T-3ACB- JYZ- 30Z	KQK/ G- 3ACB- JYZ- 30Z	1800×800×500	230
2		4p	58				
3		6p	58				
4		8p	63				
5	37	2p	68	KQK/ T-3ACB- JYZ- 37Z	KQK/ G- 3ACB- JYZ- 37Z	1800×800×500	230
6		4p	70				
7		6p	71				
8		8p	78				
9	45	4p	85	KQK/ T-3ACB- JYZ- 45Z	KQK/ G- 3ACB- JYZ- 45Z	1800×800×500	240
10		6p	86				
11		8p	95				
12	55	4p	103	KQK/ T-3ACB- JYZ- 55Z	KQK/ G- 3ACB- JYZ- 55Z	1800×800×500	240
13		6p	105				
14		8p	115				
15	75	4p	140	KQK/ T-3ACB- JYZ- 75Z	KQK/ G- 3ACB- JYZ- 75Z	2200×1000×600	260
16		6p	142				
17		8p	150				
18		10p	163				
19	90	4p	167	KQK/ T-3ACB- JYZ- 90Z	KQK/ G- 3ACB- JYZ- 90Z	2200×1000×600	260
20		6p	170				
21		8p	180				
22		10p	191				
23	110	4p	201	KQK/ T-3ACB- JYZ- 110Z	KQK/ G- 3ACB- JYZ- 110Z	2200×1000×600	285
24		6p	207				
25		8p	220				
26		10p	230				
27	132	4p	242	KQK/ T-3ACB- JYZ- 132Z	KQK/ G- 3ACB- JYZ- 132Z	2200×1000×600	350
28		6p	245				
29		8p	265				
30		10p	275				
31	160	4p	294	KQK/ T-3ACB- JYZ- 160Z	KQK/ G- 3ACB- JYZ- 160Z	2200×1000×600	385
32		6p	291				
33		8p	315				
34		10p	333				

Electronic soft starting

The soft starter connected in series between the power supply and the controlled motor controls the conduction Angle of the internal semiconductor (thyristor), so that the motor input voltage gradually rises from zero to the preset function relationship until the end of the start, giving the motor full voltage. The voltage is gradually increased from zero to the rated voltage, so that the starting current of the motor in the starting process is changed from the past uncontrollable overload impulse current to controllable and the starting current can be adjusted as needed.



During the whole starting process, the motor can be started smoothly without impact torque, and various parameters in the starting process, such as current limiting value and starting time, can be adjusted according to the characteristics of motor load. Soft parking can also be achieved. Due to the use of semiconductor converter technology, there will be high harmonic generation, causing pollution to the power grid.

WQ (30kW and above) Series Intelligent Submersible Sewage Pumps

The following table lists the model and size of the control cabinet used for the electronic soft start of the submersible sewage pump supporting WQ(30kW and above) series

WQ(30kW and above)One control one —Electronic Soft Starting							
No.	Power (kW)	Motor	Current (A)	Model of intelligent control cabinet		Cabinet Size (H×W×D)	Weight (kg)
				National Brand	International Brand		
1	30	2p	56	KQK/ T- 1B- R1- 30Z	KQK/ G- 1B- R1- 30Z	1700×700×500	75
2		4p	58				
3		6p	58				
4		8p	63				
5	37	2p	68	KQK/ T- 1B- R1- 37Z	KQK/ G- 1B- R1- 37Z	1700×700×500	75
6		4p	70				
7		6p	71				
8		8p	78				
9	45	4p	85	KQK/ T- 1B- R1- 45Z	KQK/ G- 1B- R1- 45Z	1700×700×500	85
10		6p	86				
11		8p	95				
12	55	4p	103	KQK/ T- 1B- R1- 55Z	KQK/ G- 1B- R1- 55Z	1700×700×500	85
13		6p	105				
14		8p	115				
15	75	4p	140	KQK/ T- 1B- R1- 75Z	KQK/ G- 1B- R1- 75Z	1700×700×500	90
16		6p	142				
17		8p	150				
18		10p	163				
19	90	4p	167	KQK/ T- 1B- R1- 90Z	KQK/ G- 1B- R1- 90Z	2000×800×600	100
20		6p	170				
21		8p	180				
22		10p	191				
23	110	4p	201	KQK/ T- 1B- R1- 110Z	KQK/ G- 1B- R1- 110Z	2000×800×600	100
24		6p	207				
25		8p	220				
26		10p	230				
27	132	4p	242	KQK/ T- 1B- R1- 132Z	KQK/ G- 1B- R1- 132Z	2000×800×600	120
28		6p	245				
29		8p	265				
30		10p	275				
31	160	4p	294	KQK/ T- 1B- R1- 160Z	KQK/ G- 1B- R1- 160Z	2200×800×600	130
32		6p	291				
33		8p	315				
34		10p	333				
35	185	4p	340	KQK/ T- 1B- R1- 200Z	KQK/ G- 1B- R1- 200Z	2200×800×600	150
36		6p	337				
37		8p	360				
38		10p	386				
39		12p	392				
40	200	4p	363	KQK/ T- 1B- R1- 200Z	KQK/ G- 1B- R1- 200Z	2200×800×600	150
41		6p	370				
42		8p	386				
43		12p	438				
44	220	4p	396	KQK/ T- 1B- R1- 250Z	KQK/ G- 1B- R1- 250Z	2200×800×600	170
45		6p	398				
46		8p	446				
47		12p	479				
48	250	4p	450	KQK/ T- 1B- R1- 250Z	KQK/ G- 1B- R1- 250Z	2200×800×600	170
49		6p	453				
50		8p	504				
51		12p	537				
52	280	4p	495	KQK/ T- 1B- R1- 335Z	KQK/ G- 1B- R1- 335Z	2200×800×600	200
53		6p	507				
54		8p	562				
55		12p	597				
56	315	8p	632	KQK/ T- 1B- R1- 335Z	KQK/ G- 1B- R1- 335Z	2200×800×600	200
57		12p	671				

WQ(30kW and above)One control one —Electronic Soft Starting							
NO.	Power (kW)	Motor	Current (A)	Model of intelligent control cabinet		Cabinet Size (H×W×D)	Weight (kg)
				National Brand	International Brand		
1	30	2p	56	KQK/ T-2ACB- R2- 30Z	KQK/ G- 2ACB- R2- 30Z	1800×800×500	105
2		4p	58				
3		6p	58				
4		8p	63				
5	37	2p	68	KQK/ T-2ACB- R2- 37Z	KQK/ G- 2ACB- R2- 37Z	1800×800×500	105
6		4p	70				
7		6p	71				
8		8p	78				
9	45	4p	85	KQK/ T-2ACB- R2- 45Z	KQK/ G- 2ACB- R2- 45Z	1800×800×500	120
10		6p	86				
11		8p	95				
12	55	4p	103	KQK/ T-2ACB- R2- 55Z	KQK/ G- 2ACB- R2- 55Z	1800×800×500	120
13		6p	105				
14		8p	115				
15	75	4p	140	KQK/ T-2ACB- R2- 75Z	KQK/ G- 2ACB- R2- 75Z	1800×800×500	125
16		6p	142				
17		8p	150				
18		10p	163				
19	90	4p	167	KQK/ T-2ACB- R2- 90Z	KQK/ G- 2ACB- R2- 90Z	2200×1000×600	140
20		6p	170				
21		8p	180				
22		10p	191				
23	110	4p	201	KQK/ T-2ACB- R2- 110Z	KQK/ G- 2ACB- R2- 110Z	2200×1000×600	140
24		6p	207				
25		8p	220				
26		10p	230				
27	132	4p	242	KQK/ T-2ACB- R2- 132Z	KQK/ G- 2ACB- R2- 132Z	2200×1000×600	170
28		6p	245				
29		8p	265				
30		10p	275				
31	160	4p	294	KQK/ T-2ACB- R2- 160Z	KQK/ G- 2ACB- R2- 160Z	2200×1000×600	180
32		6p	291				
33		8p	315				
34		10p	333				
35	185	4p	340	KQK/ T-2ACB- R2- 200Z	KQK/ G- 2ACB- R2- 200Z	2200×1000×600	210
36		6p	337				
37		8p	360				
38		10p	386				
39		12p	392				
40	200	4p	363	KQK/ T-2ACB- R2- 200Z	KQK/ G- 2ACB- R2- 200Z	2200×1000×600	210
41		6p	370				
42		8p	386				
43		12p	438				
44	220	4p	396	KQK/ T-2ACB- R2- 250Z	KQK/ G- 2ACB- R2- 250Z	2200×1000×600	240
45		6p	398				
46		8p	446				
47		12p	479				
48	250	4p	450	KQK/ T-2ACB- R2- 250Z	KQK/ G- 2ACB- R2- 250Z	2200×1000×600	240
49		6p	453				
50		8p	504				
51		12p	537				
52	280	4p	495	KQK/ T-2ACB- R2- 335Z	KQK/ G- 2ACB- R2- 335Z	2200×1000×600	280
53		6p	507				
54		8p	562				
55		12p	597				
56	315	8p	632	—	—	—	—
57		12p	671	—	—	—	—

WQ(30kW and above)One control one —Electronic Soft Starting							
NO.	Power (kW)	Motor	Current (A)	Model of intelligent control cabinet		Cabinet Size (H×W×D)	Weight (kg)
				National Brand	International Brand		
1	30	2p	56	KQK/ T- 3ACB- R3- 30Z	KQK/ G- 3ACB- R3- 30Z	1800×800×500	145
2		4p	58				
3		6p	58				
4		8p	63				
5	37	2p	68	KQK/ T- 3ACB- R3- 37Z	KQK/ G- 3ACB- R3- 37Z	1800×800×500	145
6		4p	70				
7		6p	71				
8		8p	78				
9	45	4p	85	KQK/ T- 3ACB- R3- 45Z	KQK/ G- 3ACB- R3- 45Z	2000×800×600	170
10		6p	86				
11		8p	95				
12	55	4p	103	KQK/ T- 3ACB- R3- 55Z	KQK/ G- 3ACB- R3- 55Z	2000×800×600	170
13		6p	105				
14		8p	115				
15	75	4p	140	KQK/ T- 3ACB- R3- 75Z	KQK/ G- 3ACB- R3- 75Z	2000×800×600	175
16		6p	142				
17		8p	150				
18		10p	163				
19	90	4p	167	KQK/ T- 3ACB- R3- 90Z	KQK/ G- 3ACB- R3- 90Z	2200×(1000+800)×600	235
20		6p	170				
21		8p	180				
22		10p	191				
23	110	4p	201	KQK/ T- 3ACB- R3- 110Z	KQK/ G- 3ACB- R3- 110Z	2200×(1000+800)×600	235
24		6p	207				
25		8p	220				
26		10p	230				
27	132	4p	242	KQK/ T- 3ACB- R3- 132Z	KQK/ G- 3ACB- R3- 132Z	2200×(1000+800)×600	290
28		6p	245				
29		8p	265				
30		10p	275				
31	160	4p	294	KQK/ T- 3ACB- R3- 160Z	KQK/ G- 3ACB- R3- 160Z	—	—
32		6p	291				
33		8p	315				
34		10p	333				
35	185	4p	340	KQK/ T- 3ACB- R3- 200Z	KQK/ G- 3ACB- R3- 200Z	—	—
36		6p	337				
37		8p	360				
38		10p	386				
39	200	12p	392	KQK/ T- 3ACB- R3- 200Z	KQK/ G- 3ACB- R3- 200Z	—	—
40		4p	363				
41		6p	370				
42		8p	386				
43	220	12p	438	KQK/ T- 3ACB- R3- 250Z	KQK/ G- 3ACB- R3- 250Z	—	—
44		4p	396				
45		6p	398				
46		8p	446				
47	250	12p	479	KQK/ T- 3ACB- R3- 250Z	KQK/ G- 3ACB- R3- 250Z	—	—
48		4p	450				
49		6p	453				
50		8p	504				
51	280	12p	537	KQK/ T- 3ACB- R3- 335Z	KQK/ G- 3ACB- R3- 335Z	—	—
52		4p	495				
53		6p	507				
54		8p	562				
55	315	12p	597	—	—	—	—
56		8p	632				
57		12p	671				

Description of electronic soft start selection

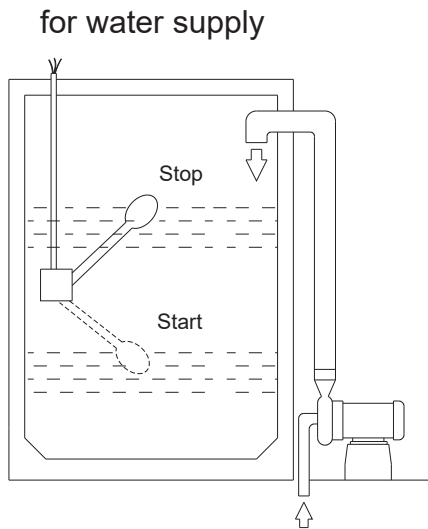
The main brands of low-voltage electrical appliances (mainly ac contactors) are rated above 110kW as 132kW, 160kW, 200kW, 250kW and 335kW, and the corresponding contactor current values are 250A, 300A, 400A, 500A and 630A respectively. No 185kW, 220kW, 280kW, 315kW power range.

The low-voltage electrical apparatus of the control cabinet is selected according to its actual working current. In actual application, the control cabinet models of 185kW, 220kW, 280kW and 315kW water pump may be 200kW, 250kW and 355kW.

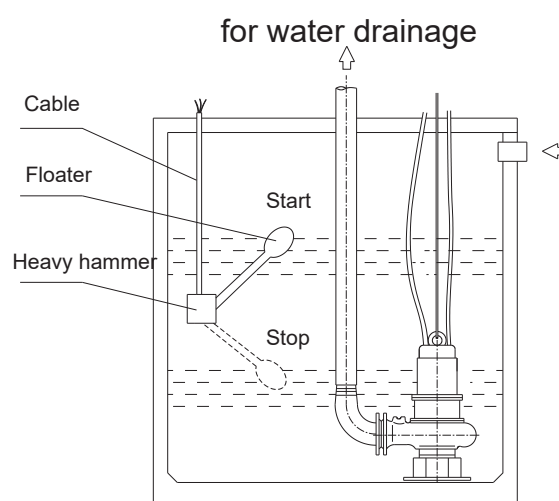
Floating switch, terminal box and wire pipe

Floating switch

Floating switch schematic for water supply

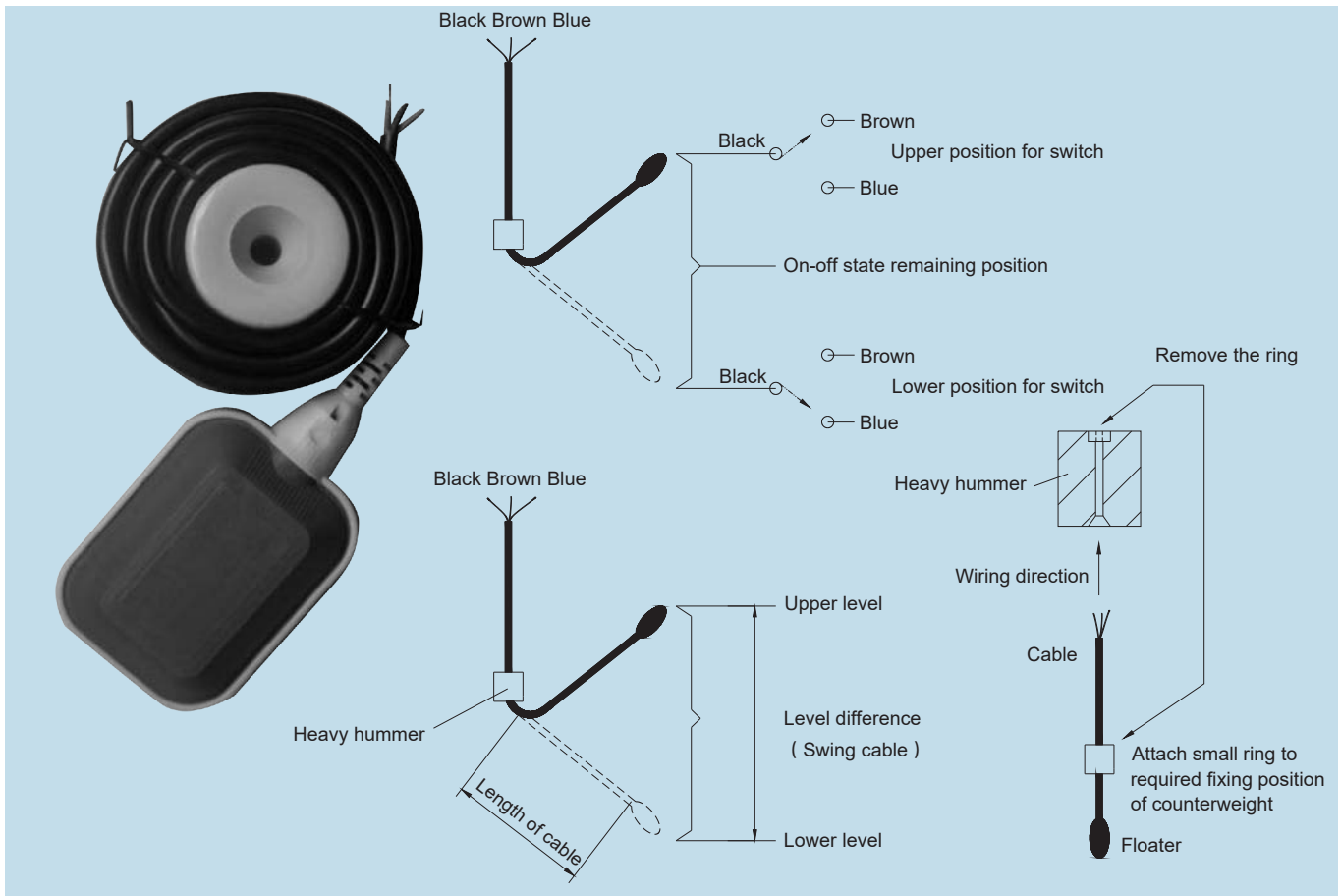


Floating switch schematic for water drainage



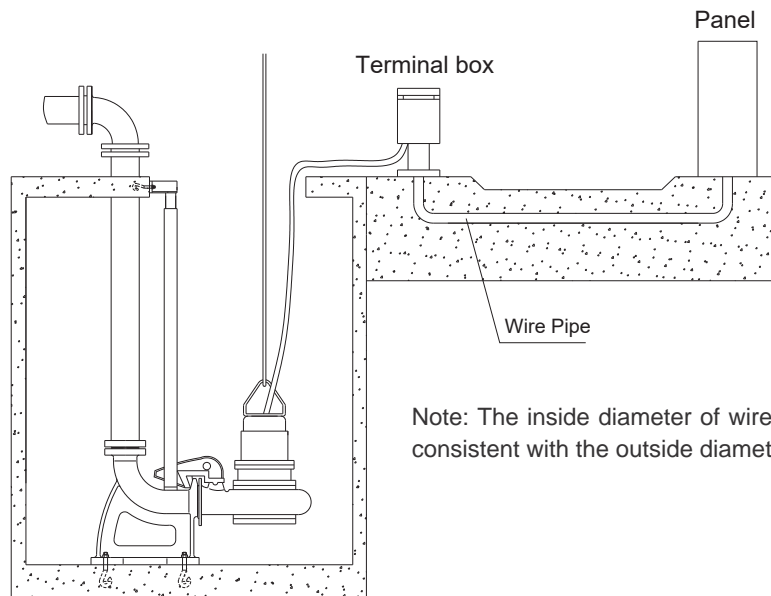
The lowest level is indicated in the submersible sump pump sample and instructions. "▽" That is, the stator part of the motor is submerged in half of the liquid level. The float switch is used when the electric control cabinet is placed in automatic gear.

Connect the black and brown cores, and disconnect the black and blue cores; When the float ball is droopy, on the contrary, the internal contact will connect the black and blue wire cores and disconnect the black and brown wire cores. When the float ball is in the middle position, the internal switch stays in the original position. Only when the float ball is in the floating and drooping position shown in the figure, the internal switch will change its action. For drainage occasions, connect the black and brown wire cores into the electric control cabinet, and the blue wire cores must be wrapped and insulated; In case of water supply, connect the black and blue wire core into the electric control cabinet, and the brown wire core must be wrapped and insulated. If a float ball switch is used to control the opening and stopping of two liquid levels, the position of the weight hammer on the cable can be adjusted, and the difference of the liquid level between the opening and closing of the pump can be determined. Therefore, in principle, a float ball switch can realize the starting and stopping control of a group of upper and lower liquid levels. However, if the liquid level difference is large, the swing arm length of the float ball will increase accordingly, and the weight of the cable from the weight hammer to the float ball will affect the precision of liquid level control. Therefore, our company's special electronic control cabinet for submersible sewage pump sets the float switch as follows: for the main pump or the large pump, two float switches are used to control the starting and stopping liquid levels respectively; For small pumps or extra high water level spare pump, a float switch to control the opening and stopping of the pump two levels. If the user needs more than the specified number of float switches or does not order our special electric control cabinet for submersible pump, he can also order float switches from us.



Terminal box and wire conduit

The terminal box can be set if the electric cabinet is far from the pump house. The terminal box is one optional part.



Note: The inside diameter of wire conduits shall be consistent with the outside diameter of cables.

This diagram is only for schematic purposes and doesn't denote design specification. The issues regarding the design and safety of the pump house shall be handled as per relevant standards and specifications.

When the setup of wire conduits (to be prepared by the user) is required, determine the inside diameter of wire conduits as per the outside diameter of cables. If our special cables for submersible sewage pump are used between the terminal box and electric cabinet, please contact the Technical Department of Shanghai Kaiquan (Hefei) Plant to determine the outside diameters of cables.

WQ(30kW and more) Submersible Pump Cable Data Sheet

WQ(30kW and more) Submersible Pump Cable Data Sheet							
NO.	Frame	Motor Model	Power Cable	Control Cable	Power cable diameter mm	Control cable diameter mm	
1	Y290	WQ/ Z30- 2P	1YCW3× 16+1× 6	YVC12×1电缆	28	17.5	
2		WQ/ Z37- 2P					
3		WQ/ Z30- 4P					
4		WQ/ Z37- 4P					
5		WQ/ Z45- 4P	1YCW3× 25+1× 10				
6		WQ/ Z55- 4P					
7	Y368	WQ/ Z75- 4P	2YCW3× 25+1× 10		33		
8		WQ/ Z90- 4P					
9		WQ/ Z30- 6P	1YCW3× 16+1× 6		28		
10		WQ/ Z37- 6P					
11		WQ/ Z45- 6P	1YCW3× 25+1× 10		33		
12		WQ/ Z55- 6P	1YCW3× 35+1× 10		38		
13		WQ/ Z30- 8P	1YCW3× 16+1× 6		28		
14		WQ/ Z37- 8P					
15		WQ/ Z45- 8P	1YCW3× 25+1× 10		33		
16		WQ/ Z55- 8P	1YCW3× 35+1× 10		38		
17		Y445	WQ/ Z110- 4P		2YCW3× 50+1× 16		43
18			WQ/ Z132- 4P				
19			WQ/ Z160- 4P		2YCW3× 70+1× 25		48
20			WQ/ Z75- 6P		2YCW3× 25+1× 10		33
21			WQ/ Z90- 6P		2YCW3× 35+1× 10		38
22			WQ/ Z110- 6P		2YCW3× 50+1× 16		43
23	WQ/ Z132- 6P						
24	Y520	WQ/ Z185- 4P	2YCW3× 70+1× 25		48		
25		WQ/ Z200- 4P	2YCW3× 95+1× 35		54		
26		WQ/ Z220- 4P					
27		WQ/ Z250- 4P					
28		WQ/ Z280- 4P	2YCW3× 120+1× 35		57		
29		WQ/ Z160- 6P	2YCW3× 70+1× 25		48		
30		WQ/ Z185- 6P					
31		WQ/ Z200- 6P	2YCW3× 95+1× 35		54		
32		WQ/ Z75- 8P	2YCW3× 25+1× 10		33		
33		WQ/ Z90- 8P	2YCW3× 35+1× 10		38		
34		WQ/ Z110- 8P	2YCW3× 50+1× 16		43		
35		WQ/ Z132- 8P					
36		WQ/ Z160- 8P	2YCW3× 70+1× 25		48		
37		WQ/ Z75- 10P	2YCW3× 25+1× 10		33		
38		WQ/ Z90- 10P	2YCW3× 35+1× 10		38		
39		WQ/ Z110- 10P	2YCW3× 50+1× 16		43		
40	WQ/ Z132- 10P						
41	Y590	WQ/ Z220- 6P	2Y CW3× 95+1× 35		54		
42		WQ/ Z250- 6P					
43		WQ/ Z280- 6P					
44		WQ/ Z185- 8P	2YCW3× 70+1× 25		48		
45		WQ/ Z200- 8P	2YCW3× 95+1× 35		54		
46		WQ/ Z220- 8P					
47		WQ/ Z250- 8P					
48		WQ/ Z280- 8P	2YCW3× 120+1× 35		57		
49		WQ/ Z315- 8P	2YCW3× 150+1× 50		63		

To make your procured pump more suitable, customers are welcome to consult technical issues with our technical department. Please indicate the series number, impeller number, flow passage part material, installation mode, and discharge diameter at the time of ordering. If the star delta (Y- Δ) start or internally connected electric soft starter is adopted, please add “-K” to the end of pump model and indicate “with K motor” on the pump order. If the auto-coupling voltage-reduction start or externally connected electric soft starter is adopted and the pump is fitted with motor of “internal delta wiring mode” (namely the motor winding is connected as per delta wiring mode in the wiring chamber), do not add “K” to the pump model.

The installation mode of water pump shall follow the installation dimension diagram on the brochure. Because of the excellent design of the guide rod bracket in the coupling device, it is necessary to use a common running water tube or steel tube as the guide rod. The specification and length calculation method for the tap water pipe or steel tube used as guide rod is provided on the brochure. The user only needs to procure a tap water pipe or steel tube and cut it to the required length. Therefore, guide rod is not included in the coupling device.

No motor cooling system is fitted for this series pump. Therefore, the cooling sleeve can not be additionally installed.

The standard configuration includes 10m motor cables. The user shall specify at the time of ordering if cables of other lengths are required.

The supply part package is supplied as per the users selected installation mode.

Optional parts and spare parts are ordered separately by the user.

For mobile pipe installation mode (Y), an elbow connector is supplied for every pump package. For mobile hose installation mode (R), a hose elbow connector is supplied for every pump package. If more than one elbow connector or hose elbow connector is required for the pump of mobile installation mode, please order separately. The elbow connectors have a bore diameter of 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, and 600.

The hose elbow connectors are in bore diameter of 50 (For 64 hose), 50x65 (For 76 hose), 65 (For 76 hose), 80 (For 89 hose), 100 (For 102 hose), and 150 (For 152 hose). The optional taper pipes have two-sided bore diameters of 50x65, 50x80, 65x80, 80x100, 100x150, 150x200, 200x250, 250x300, 300x350, 350x400, 400x450, 450x500, and 500x600. The taper pipe installed on the discharge pipeline shall be only used for expanded application, instead of contracted application.

While connecting the taper pipe and elbow connector on the discharge pipeline, the bore diameter of the elbow connector shall be consistent with that of the large end of the taper pipe, namely the principle of “expanding before turning” shall be followed, in which case the pipe loss is less than that of the “turning before expanding” .

For the pump of coupling installation mode, if the bore diameter of the discharge is larger than that of the pump, a taper pipe can be additionally installed on the water discharge pipe seat and the small end bore diameter of the taper pipe shall be consistent with the bore diameter of the water discharge pipe seat (namely the bore diameter of pump).

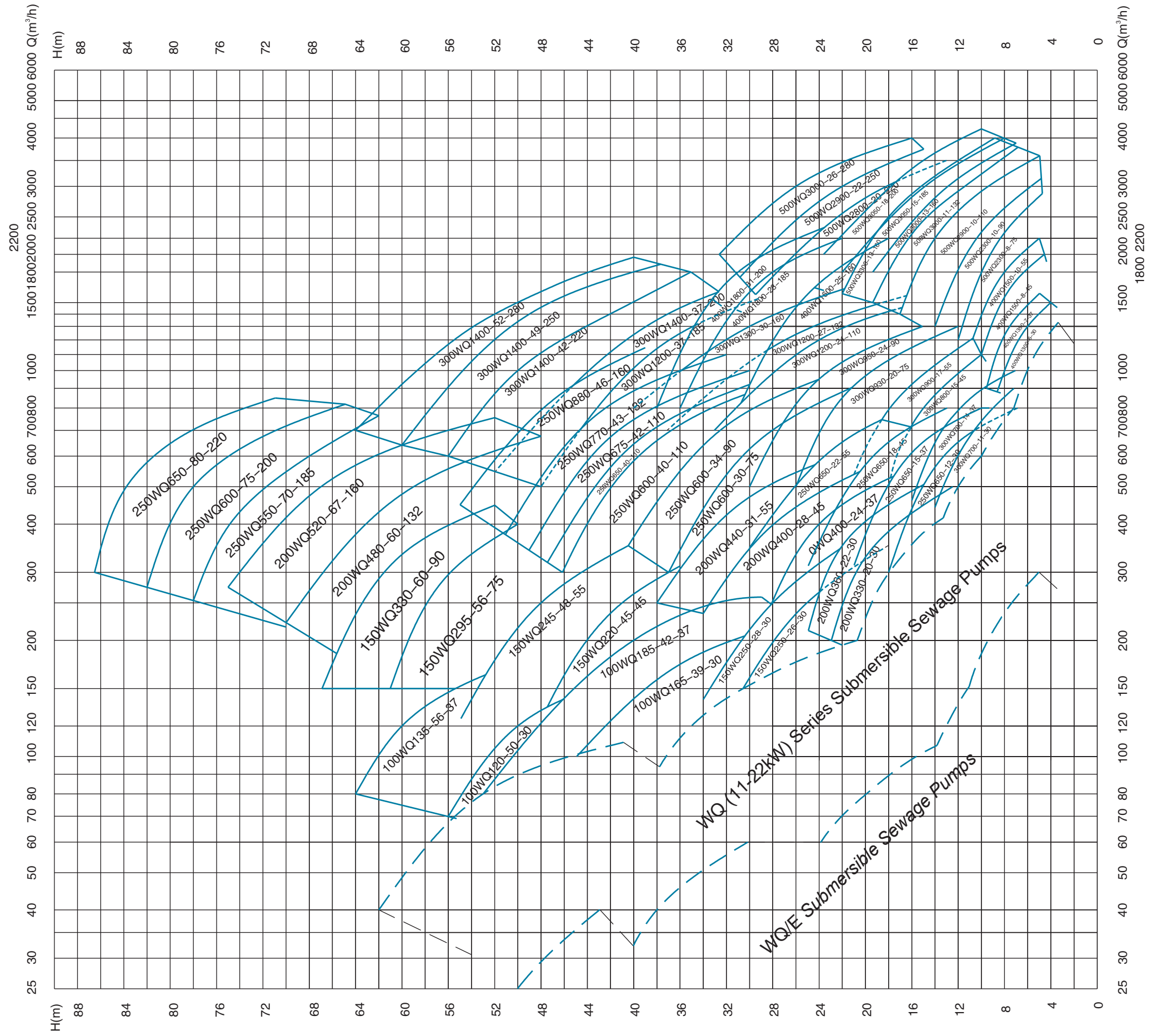
Refer to the “Descriptions of Accessories” at the end of brochure for the specifications, nominal pressures, and dimensions of elbow connectors; hose elbow connectors, and taper pipes.

WQ (30kW and above) Submersible pump supply check list

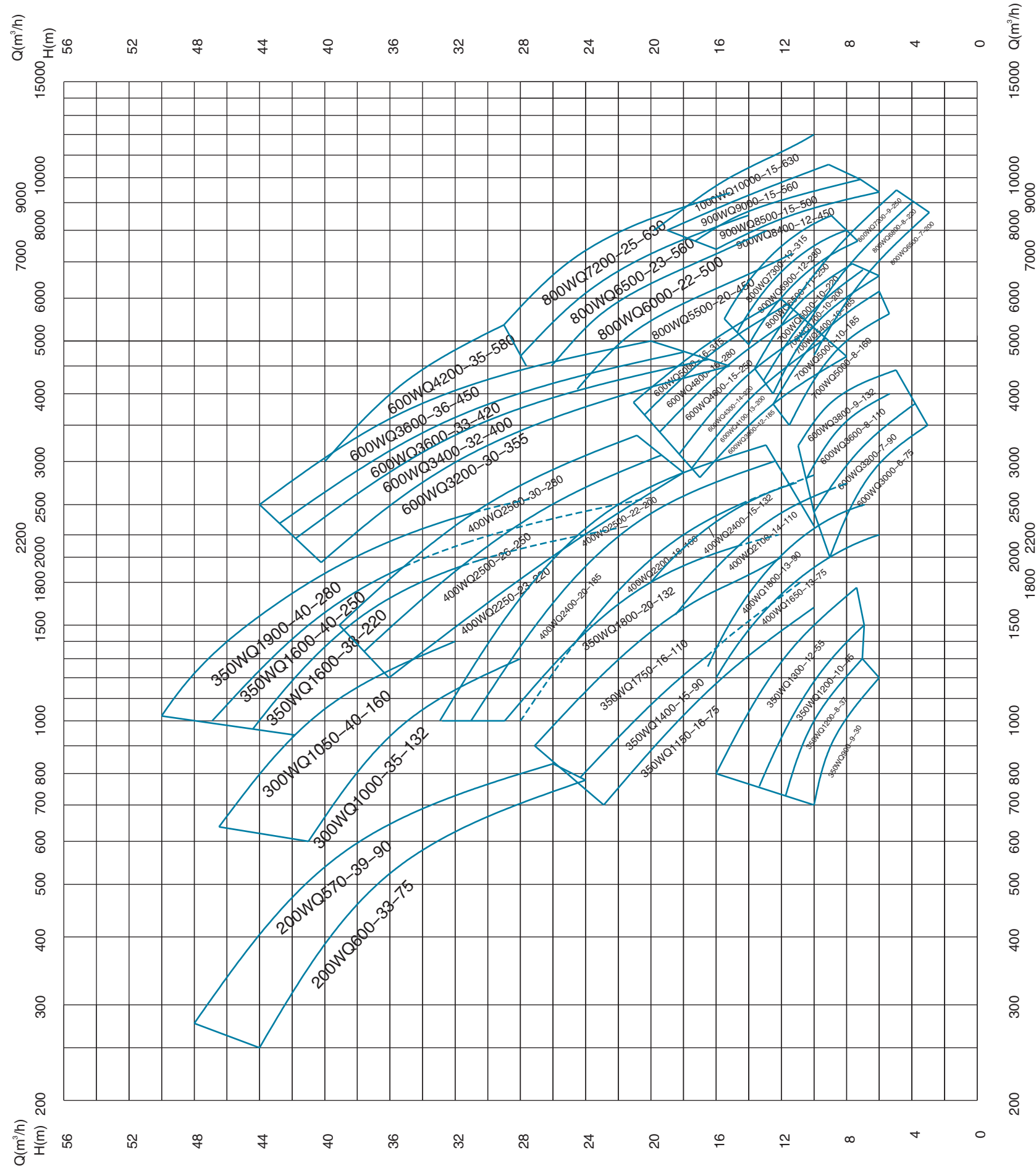
Supply scope		Installation type	Submersible installation mode				
			Auto-coupling Installation	Fixed base Installation	Mobile hose Installation	Mobile pipe Installation	Single Pump
			Z	P	R	Y	
Supply Model							
Complete package	Pump (10m Cable)		✓	✓	✓	✓	✓
	Auto-coupling	DQC	✓				
		Bracket	✓				
		Fixed plate	✓				
	Base			✓	✓	✓	
	Elbow+Connector					✓	
	Hose+Connector				✓		
Necessary	Guide Bar		✓				
	Expansion Blot		✓				
	Anchor Bolt		✓	✓			
Choose and buy parts	Elbow+Connector			✓			
	Hose+Connector			✓			
	SS Lifting Chain		✓	✓	✓	✓	✓
	Carbon Lifting Chain		✓	✓	✓	✓	✓
	Taper Pipe		✓	✓		✓	✓
	Match Flange		✓	✓		✓	✓
Spare Parts	Impeller		✓	✓	✓	✓	✓
	Pump Cover		✓	✓	✓	✓	✓
	Bearing		✓	✓	✓	✓	✓
	Mechanical Seal		✓	✓	✓	✓	✓
	O-ring		✓	✓	✓	✓	✓
	Wear Ring		✓	✓	✓	✓	✓

WQ(30kW and above)Submersible pump Spectrum Diagram and Description

Spectrum Diagram 1



Spectrum Diagram2



Description of the spectrogram: :

1. In order to make the shape spectrum neat, the shape spectrum lists the general range of most models, which can be used for preliminary selection, but the complete pump curve and parameters

2. In the figure, WQ/E and WQ/EC series are shown in the sample of WQ/E series small submersible sewage pump and WQ/EC series small submersible sewage pump

WQ(30kW) Series Submersible Pump Performance Table

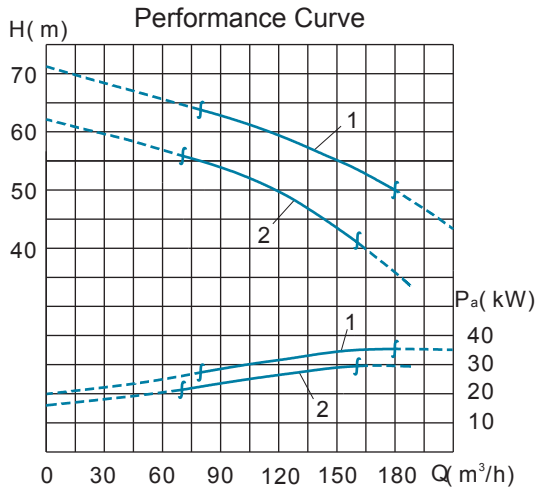
NO.	New Model	Old Model	DN mm	Capacity m ³ /h	Head m	Speed r/min	Power kW	Max.passby diameter mm	Weight kg
1	100WQ120-50-30	WQ2290-2125-100	100	120	50	2945	30	40	360
2	100WQ135-56-37	WQ2290-2126-100		135	56	2945	37	40	380
3	100WQ165-39-30	WQ2290-2131-100	100	165	39	2945	30	40	365
4	100WQ185-42-37	WQ2290-2132-100		185	42	2945	37	40	385
5	150WQ160-38-30	WQ2290-4135B-150	150	160	38	1470	30	62	435
6	150WQ160-40-30	WQ2290-4135A-150		160	40	1470	30	62	440
7	150WQ160-42-30	WQ2290-4135-150		160	42	1470	30	62	445
8	150WQ250-26-30	WQ2290-4134A-150	150	250	26	1470	30	60	440
9	150WQ250-28-30	WQ2290-4134-150		250	28	1475	30	60	445
10	150WQ220-45-45	WQ2290-4170-150	150	220	45	1475	45	60	520
11	150WQ245-48-55	WQ2290-4171-150		245	48	1475	55	60	550
12	150WQ295-56-75	WQ2368-4165-150	150	295	56	1485	75	60	790
13	150WQ330-60-90	WQ2368-4166-150		330	60	1485	90	60	820
14	200WQ330-20-30	WQ2290-4172A-200		200	330	20	1470	30	90
15	200WQ360-22-30	WQ2290-4172-200	360		22	1470	30	90	480
16	200WQ400-24-37	WQ2290-4173-200	400		24	1470	37	90	500
17	200WQ400-28-45	WQ2290-4174-200	400		28	1470	45	90	530
18	200WQ440-31-55	WQ2290-4175-200	440		31	1470	55	90	560
19	200WQ600-33-75	WQ2368-4145-200	200	600	33	1485	75	80	780
20	200WQ570-39-90	WQ2368-4146-200		570	39	1485	90	80	810
21	200WQ480-60-132	WQ2445-4147-200	200	480	60	1485	132	80	1400
22	200WQ520-67-160	WQ2445-4148-200		520	67	1485	160	80	1500
23	250WQ650-12-30	WQ2290-4109-250		250	650	12	1470	30	100
24	250WQ650-15-37	WQ2290-4110-250	650		15	1470	37	100	520
25	250WQ650-18-45	WQ2290-4112-250	650		18	1470	45	100	550
26	250WQ650-22-55	WQ2290-4168-250	650		22	1470	55	100	580
27	250WQ600-30-75	WQ2368-4149-250	250	600	30	1485	75	100	850
28	250WQ600-34-90	WQ2368-4150-250		600	34	1485	90	100	880
29	250WQ600-40-110	WQ2445-4151A-250		600	40	1485	110	100	1200
30	250WQ650-40-110	WQ2445-4151-250	250	650	40	1485	110	100	1205
31	250WQ675-42-110	WQ2445-4152A-250		675	42	1485	110	100	1210
32	250WQ770-43-132	WQ2445-4152-250		770	43	1485	132	100	1300
33	250WQ880-46-160	WQ2445-4153-250		880	46	1485	160	100	1400
34	250WQ550-70-185	WQ2520-4165-250	250	550	70	1485	185	60	1850
35	250WQ600-75-200	WQ2520-4166-250		600	75	1485	200	60	1900
36	250WQ650-80-220	WQ2520-4167-250		650	80	1485	220	60	2000
37	300WQ700-11-30	WQ2290-4115-300		300	700	11	980	30	100
38	300WQ700-14-37	WQ2290-4116-300	750		13	980	37	100	720
39	300WQ800-15-45	WQ2290-4117-300	800		15	980	45	100	770
40	300WQ900-17-55	WQ2290-4118-300	900		17	980	55	100	800
41	300WQ930-20-75	WQ2368-4120A-300	300	930	20	1485	75	120	870
42	300WQ950-24-90	WQ2368-4120-300		950	24	1485	90	120	900
43	300WQ1000-22-90	WQ2368-4121-300		1000	22	1485	90	120	902

NO.	New Model	Old Model	DN mm	Capacity m ³ /h	Head m	Speed r/min	Power kW	Max. passby diameter mm	Weight kg
44	300WQ1200-24-110	WQ2445-4139-300	300	1200	24	1485	110	120	1430
45	300WQ1200-27-132	WQ2445-4140A-300		1200	27	1485	132	120	1500
46	300WQ1300-30-160	WQ2445-4140-300		1300	30	1485	160	120	1600
47	300WQ1000-35-132	WQ2445-4141A-300	300	1000	35	1485	132	120	1520
48	300WQ1050-40-160	WQ2445-4141-300		1050	40	1485	160	120	1615
49	300WQ1200-37-185	WQ2520-4160-300	300	1200	37	1485	185	80	2000
50	300WQ1400-37-200	WQ2520-4161-300		1400	37	1485	200	80	2050
51	300WQ1400-42-220	WQ2520-4162-300		1400	42	1485	220	80	2150
52	300WQ1400-49-250	WQ2520-4163-300		1400	49	1485	250	80	2300
53	300WQ1400-52-280	WQ2520-4164-300		1400	52	1485	280	80	2500
54	350WQ900-9-30	WQ2368-6158-350		350	900	9	980	30	91
55	350WQ1200-8-37	WQ2368-6159-350	1200		8	980	37	91	880
56	350WQ1200-10-45	WQ2368-6160-350	1200		10	980	45	91	920
57	350WQ1300-12-55	WQ2368-6161-350	1300		12	980	55	91	960
58	350WQ1150-16-75	WQ2445-6121-350	350	1150	16	990	75	105	1570
59	350WQ1400-15-90	WQ2445-6122-350		1400	15	990	90	105	1600
60	350WQ1750-16-110	WQ2445-6123-350		1750	16	990	110	105	1650
61	350WQ1800-20-132	WQ2445-6124-350	350	1800	20	990	132	105	1700
62	350WQ1600-38-220	WQ2590-6113-350		1600	38	990	220	140	3200
63	350WQ1600-40-250	WQ2590-6114-350		1600	40	990	250	140	3300
64	350WQ1900-40-280	WQ2590-6115-350		1900	40	990	280	140	3400
65	400WQ1300-6-30	WQ2368-8155-400	400	1300	6	735	30	80	1180
66	400WQ1350-7-37	WQ2368-8156-400		1350	7	735	37	80	1200
67	400WQ1500-8-45	WQ2368-8157-400		1500	8	735	45	80	1250
68	400WQ1500-10-55	WQ2368-8158-400		1500	10	735	55	80	1300
69	400WQ1650-13-75	WQ2445-6162-400	400	1650	13	990	75	110	1730
70	400WQ1800-13-90	WQ2445-6163-400		1800	13	990	90	110	1750
71	400WQ2100-14-110	WQ2445-6164-400		2100	14	990	110	110	1800
72	400WQ2400-15-132	WQ2445-6165-400		2400	15	990	132	110	1850
73	400WQ1600-25-160	WQ2520-6101-400	400	1600	25	990	160	130	2320
74	400WQ1800-28-185	WQ2520-6102-400		1800	28	990	185	130	2360
75	400WQ1800-31-200	WQ2520-6103-400		1800	31	990	200	130	2400
76	400WQ2200-18-160	WQ2520-6104-400	400	2200	18	990	160	130	2340
77	400WQ2400-20-185	WQ2520-6125-400		2400	20	990	185	130	2380
78	400WQ2500-22-200	WQ2520-6126-400		2500	22	990	200	130	2420
79	400WQ2250-23-220	WQ2590-6105-400		2250	23	990	220	150	3830
80	400WQ2500-26-250	WQ2590-6106-400	400	2500	26	990	250	150	3900
81	400WQ2500-30-280	WQ2590-6107-400		2500	30	990	280	150	4000
82	500WQ2300-8-75	WQ2520-8159-500		500	2300	8	735	75	140
83	500WQ2300-10-90	WQ2520-8160-500	2300		10	735	90	140	2860
84	500WQ2900-10-110	WQ2520-8161-500	2900		10	735	110	140	2900
85	500WQ3000-11-132	WQ2520-8162-500	3000		11	745	132	140	2940
86	500WQ3300-13-160	WQ2520-8163-500	3300		13	745	160	140	3000

NO.	New Model	Old Model	DN mm	Capacity m ³ /h	Head m	Speed r/min	Power kW	Max.passby diameter mm	Weight kg
87	500WQ3000-13-160	WQ2520-6108-500	500	3000	13	990	160	130	2920
88	500WQ3050-15-185	WQ2520-6109-500		3050	15	990	185	130	2960
89	500WQ3050-18-200	WQ2520-6110-500		3050	18	990	200	130	3000
90	500WQ2800-20-220	WQ2590-6117-500	500	2800	20	990	220	150	4150
91	500WQ2900-22-250	WQ2590-6118-500		2900	22	990	250	150	4210
92	500WQ3000-26-280	WQ2590-6119-500		3000	26	990	280	150	4300
93	600WQ3000-6-75	WQ2520-1054-600	600	3000	6	590	75	160	4570
94	600WQ3200-7-90	WQ2520-1055-600		3200	7	590	90	160	4610
95	600WQ3600-8-110	WQ2520-1056-600		3600	8	590	110	160	4670
96	600WQ3800-9-132	WQ2520-1057-600		3800	9	590	132	160	4730
97	600WQ3200-30-355	WQ2740-6170C-600	600	3200	30	980	355	100	5800
98	600WQ3400-32-400	WQ2740-6170B-600		3400	32	980	400	100	6000
99	600WQ3600-33-420	WQ2740-6170A-600		3600	33	980	420	100	6200
100	600WQ3600-36-450	WQ2740-6170-600		3600	36	980	450	100	6300
101	600WQ4200-35-580	WQ2850-8175-600	600	4200	35	745	580	100	9800
102	600WQ3900-12-185	WQ2590-8164-600		3900	12	745	185	150	4200
103	600WQ4100-13-200	WQ2590-8165-600		4100	13	745	200	150	4350
104	600WQ4300-14-220	WQ2590-8166-600		4300	14	745	220	150	4470
105	600WQ4600-15-250	WQ2590-8167-600		4600	15	745	250	150	4550
106	600WQ4800-16-280	WQ2590-8168-600		4800	16	745	280	150	4620
107	600WQ5000-16-315	WQ2590-8169-600		5000	16	745	315	150	4800
108	700WQ5000-8-160	WQ2590-1058-700	700	5000	8	590	160	170	6200
109	700WQ5000-10-185	WQ2590-1059-700		5000	10	590	185	170	6500
110	700WQ5400-10-185	WQ2590-1250-700	700	5400	10	495	185	176	6800
111	700WQ5700-10-200	WQ2590-1251-700		5700	10	495	200	176	7100
112	700WQ6000-10-220	WQ2590-1252-700		6000	10	495	220	176	7400
113	800WQ6500-7-200	WQ2670-1601-800		6500	7	370	200	240	8000
114	800WQ6800-8-220	WQ2670-1602-800	800	6800	8	370	220	240	8300
115	800WQ7200-9-250	WQ2670-1603-800		7200	9	370	250	240	8500
116	800WQ6500-11-250	WQ2670-1253-800		6500	11	495	250	200	8000
117	800WQ6900-12-280	WQ2670-1254-800	800	6900	12	495	280	200	8400
118	800WQ7300-12-315	WQ2670-1255-800		7300	12	495	315	200	8800
119	800WQ5500-20-450	WQ2850-8173A-800		5500	20	745	450	220	8000
120	800WQ6000-22-500	WQ2850-8173-800	800	6000	22	745	500	220	8200
121	800WQ6500-23-560	WQ2850-8174A-800		6500	23	745	560	220	8500
122	800WQ7200-25-630	WQ2850-8174-800		7200	25	745	630	220	8700
123	900WQ8400-12-450	WQ2850-8170-900	900	8400	12	745	450	200	9100
124	900WQ8500-15-500	WQ2850-8171-900		8500	15	745	500	200	9300
125	900WQ9000-15-560	WQ2850-8172-900		9000	15	745	560	200	9600
126	1000WQ10000-15-630	WQ2850-1062-1000	1000	10000	15	590	630	250	10500

Note: there is a one-to-one correspondence between the new model and old model

WQ(30kW and more) Performance curve, Main parameters, Installation dimensions



Main Parameter

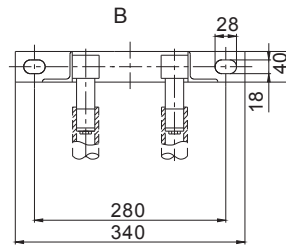
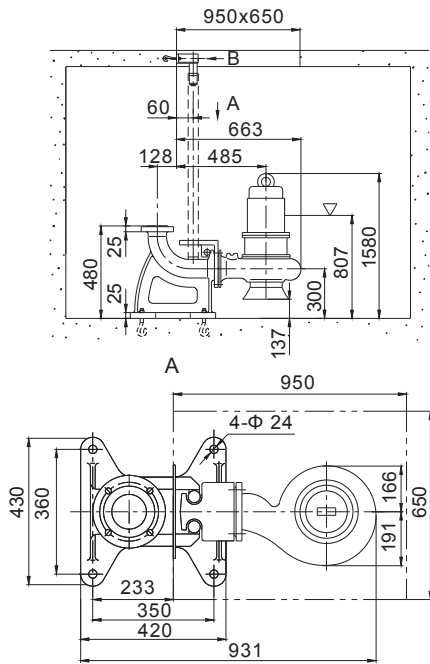
DN 100mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	100WQ135-56-37	WQ2290-2126	48	2945	420
2	100WQ120-50-30	WQ2290-2125	48	2945	400

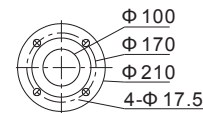
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	37	68	0.90	92.0	2.2
2	30	56	0.90	91.2	2.1

Installation diagram

Z Automatic Coupling Installation

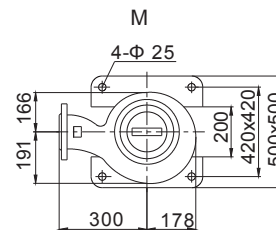
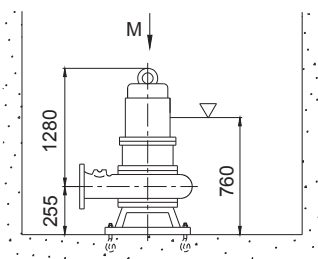


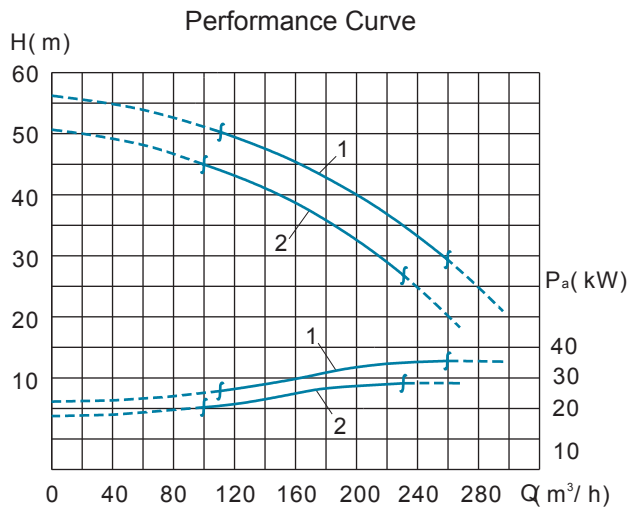
Discharge Flange



GB/T17241.6 PN6

P Fixed Base





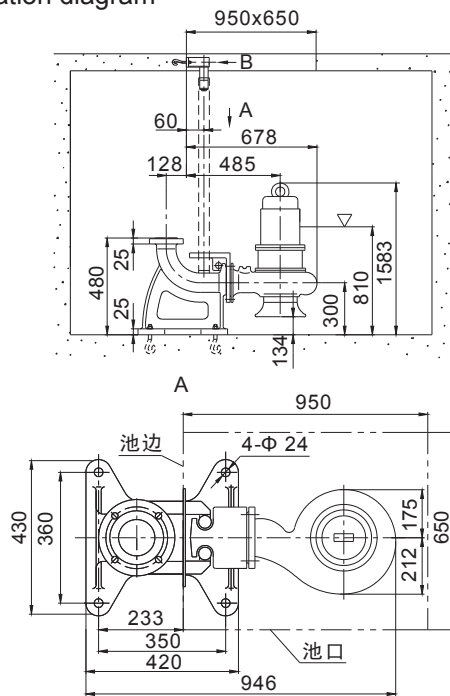
Main Parameter

DN 100mm

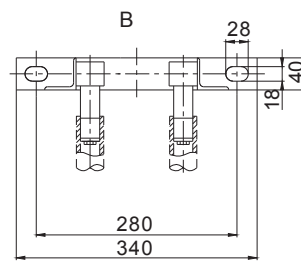
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	100WQ185-42-37	WQ2290-2132	48	2945	430
2	100WQ165-39-30	WQ2290-2131	48	2945	410

NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	37	68	0.90	92.0	2.2
2	30	56	0.90	91.2	2.1

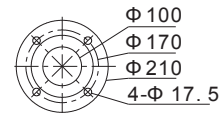
Installation diagram



Z Automatic Coupling Installation

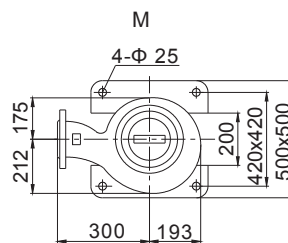
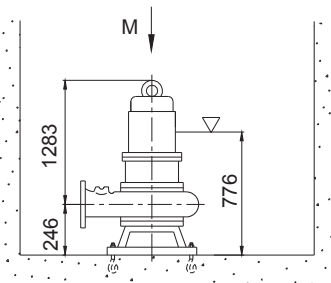


Discharge Flange



GB/T17241.6 PN6

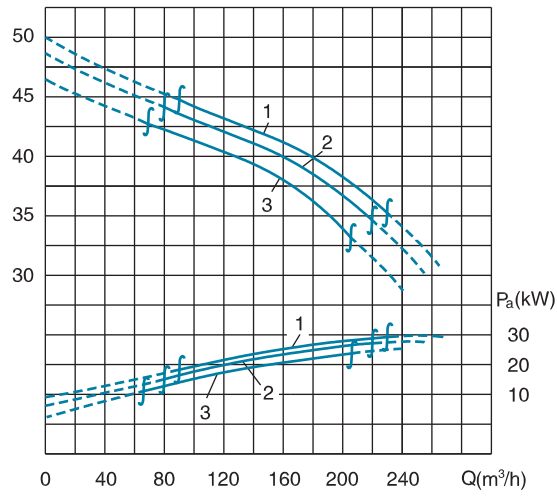
P Fixed Base



Main Parameter

DN 150mm

Performance Curve

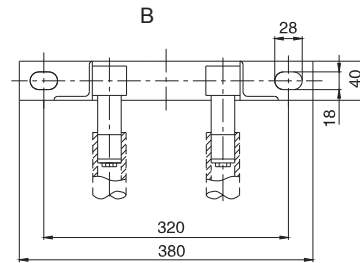
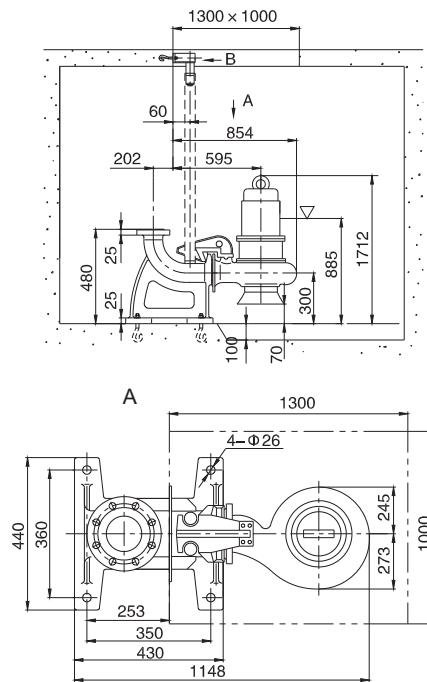


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	150WQ160-42-30	WQ2290-4135	89	1470	445
2	150WQ160-40-30	WQ2290-4135A	89	1470	440
3	150WQ160-38-30	WQ2290-4135B	89	1470	435

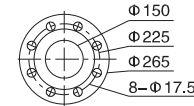
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	30	58	0.86	92	2.2
2	30	58	0.86	92	2.2
3	30	58	0.86	92	2.2

Installation diagram

Z Automatic Coupling Installation

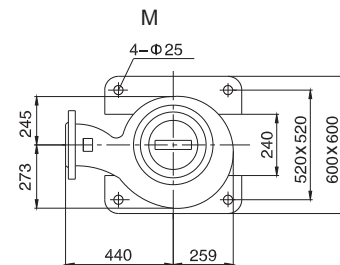
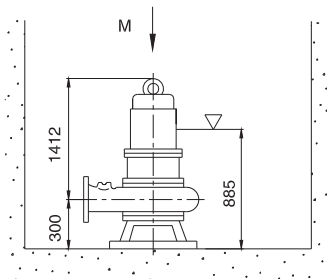


Discharge Flange



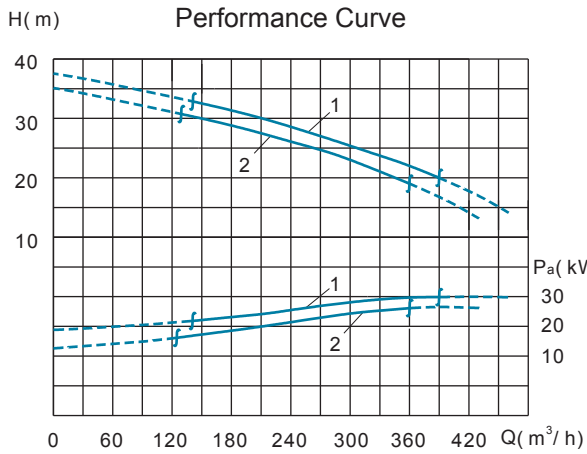
GB/T17241.6 PN6

P Fixed Base



Main Parameter

DN 150mm

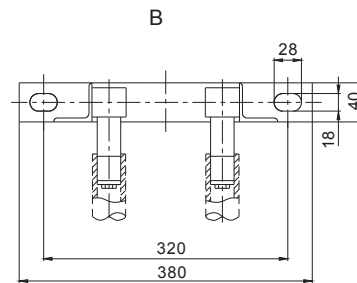
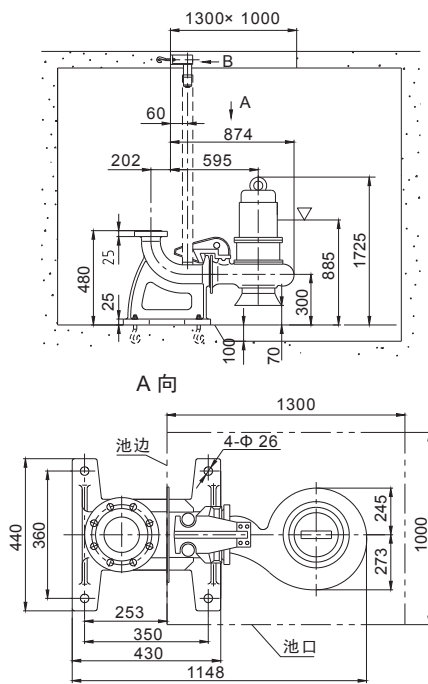


NO.	New Model	New Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	150WQ250-28-30	WQ2290-4134	76	1475	445
2	150WQ250-26-30	WQ2290-4134A	76	1475	440

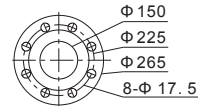
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	30	58	0.86	92	2.2
2	30	58	0.86	92	2.2

Installation diagram

Z Automatic Coupling Installation

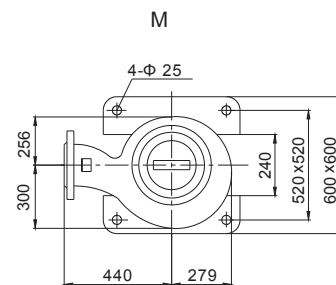
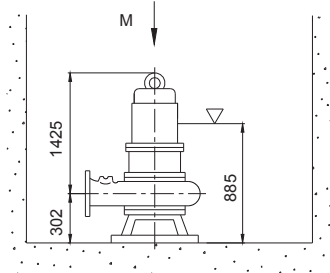


Discharge Flange



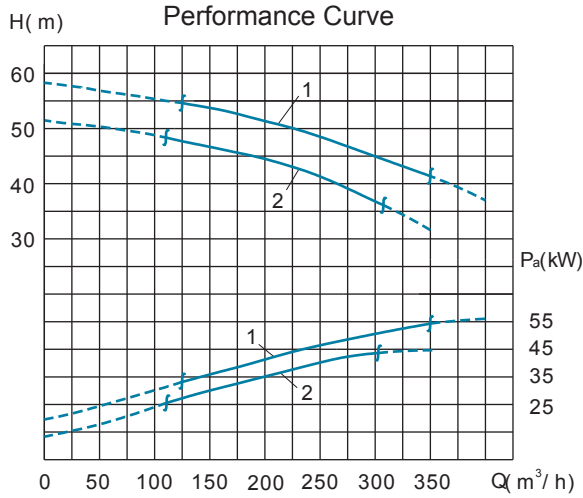
GB/T17241.6 PN6

P Fixed Base



Main Parameter

DN 150mm

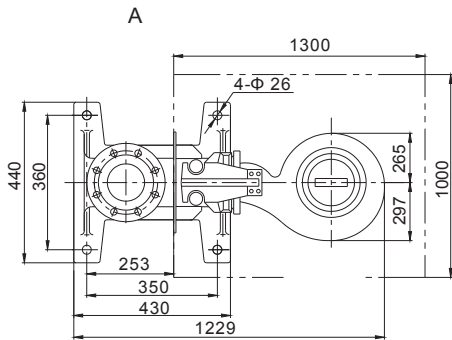
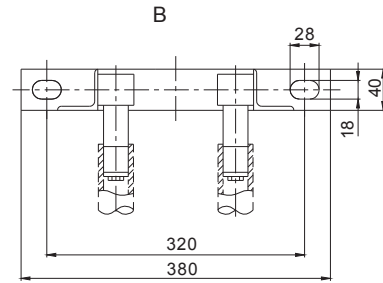
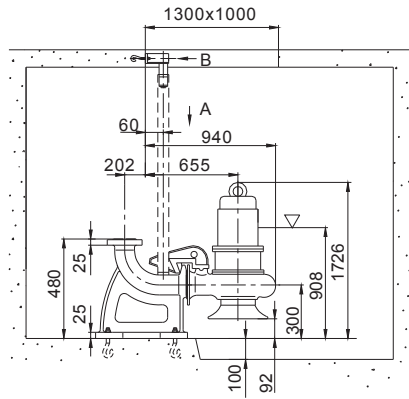


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	150WQ245-48-55	WQ2290-4171	76	1475	550
2	150WQ220-45-45	WQ2290-4170	76	1475	520

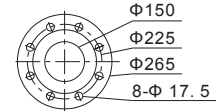
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	55	103	0.87	93.2	2.2
2	45	85	0.87	93	2.2

Installation diagram

Z Automatic Coupling Installation

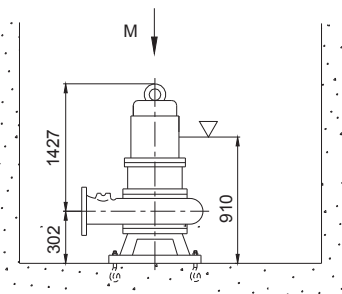


Discharge Flange

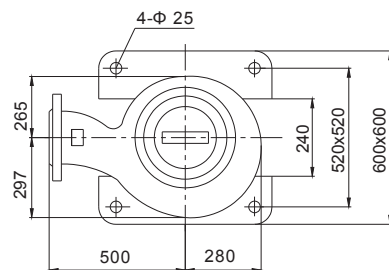


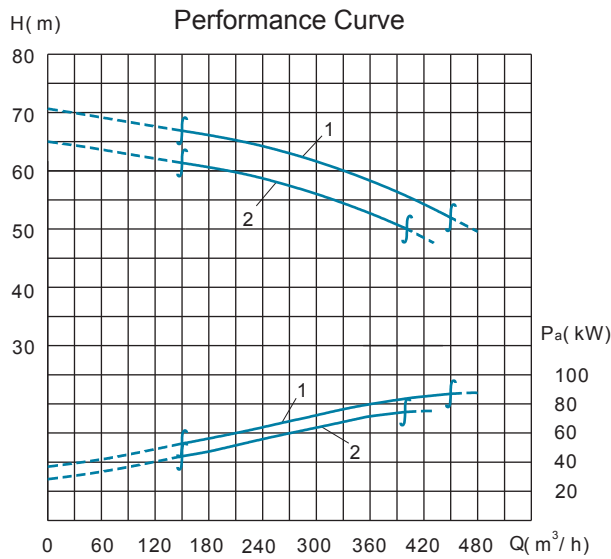
GB/ T17241.6 PN6

P Fixed Base



M





Main Parameter

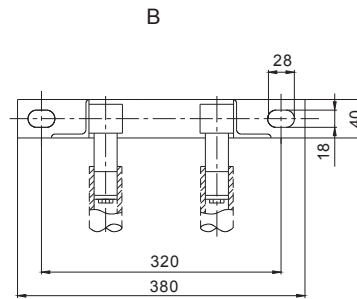
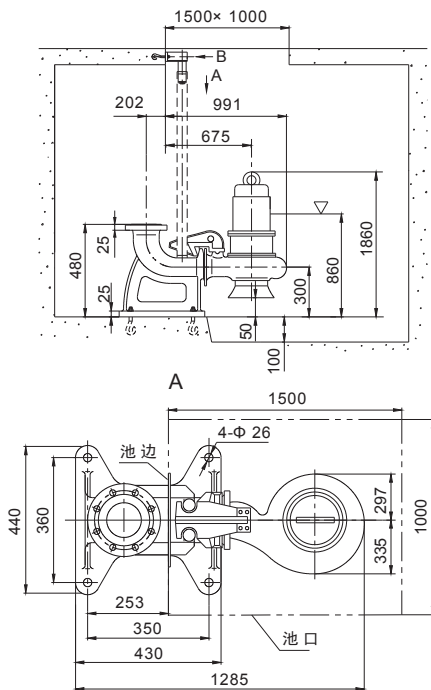
DN 150mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	150WQ330-60-90	WQ2368-4166	82	1485	820
2	150WQ295-56-75	WQ2368-4165	82	1485	790

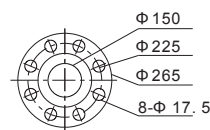
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	90	167	0.87	94.2	2.2
2	75	140	0.87	93.8	2.2

Installation diagram

Z Automatic Coupling Installation

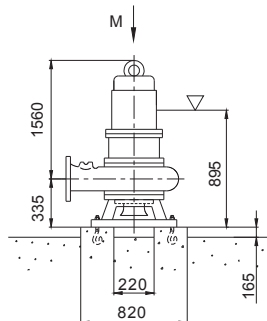


Discharge Flange

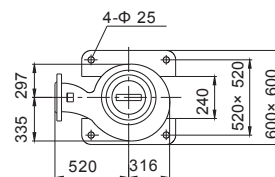


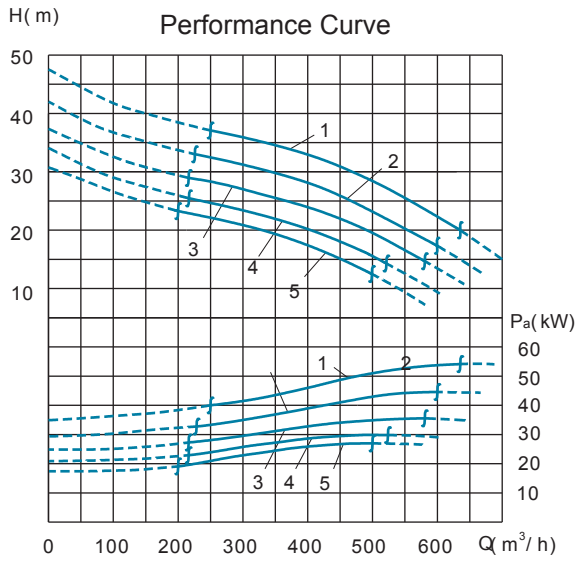
GB/T17241.6 PN6

P Fixed Base



M





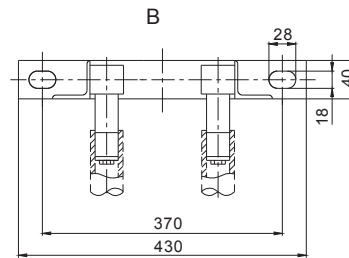
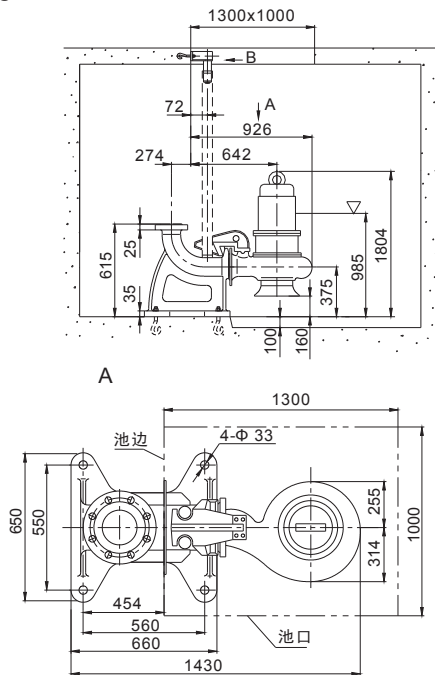
Main Parameter
DN 200mm

NO.	New Model	Old Model	channel (mm)	Speed (r/ min)	Weight (kg)
1	200WQ440-31-55	WQ2290-4175	113	1470	560
2	200WQ400-28-45	WQ2290-4174	113	1470	530
3	200WQ400-24-37	WQ2290-4173	113	1470	500
4	200WQ360-22-30	WQ2290-4172	113	1470	480
5	200WQ330-20-30	WQ2290-4172A	113	1470	475

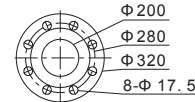
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	55	103	0.87	93.2	2.2
2	45	85	0.87	93	2.2
3	37	70	0.87	92.5	2.2
4	30	58	0.86	92.0	2.2
5	30	58	0.86	92.0	2.2

Installation diagram

Z Automatic Coupling Installation

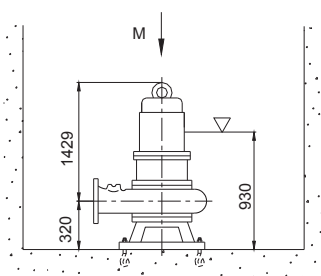


Discharge Flange

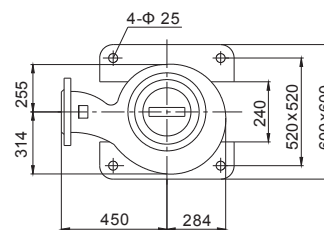


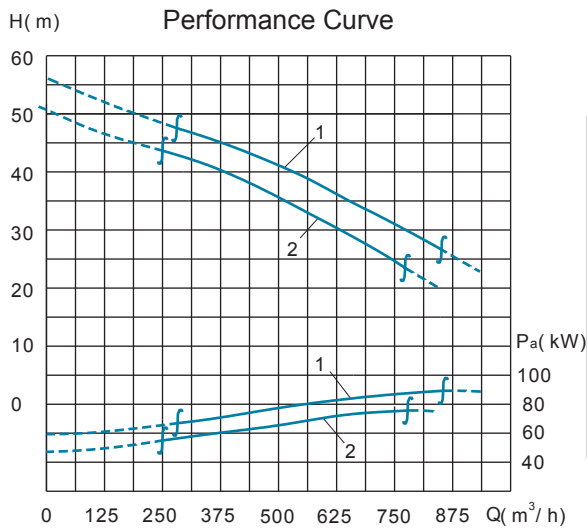
GB/T17241.6 PN6

P Fixed Base



M





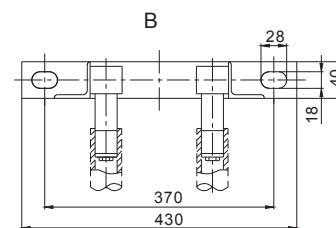
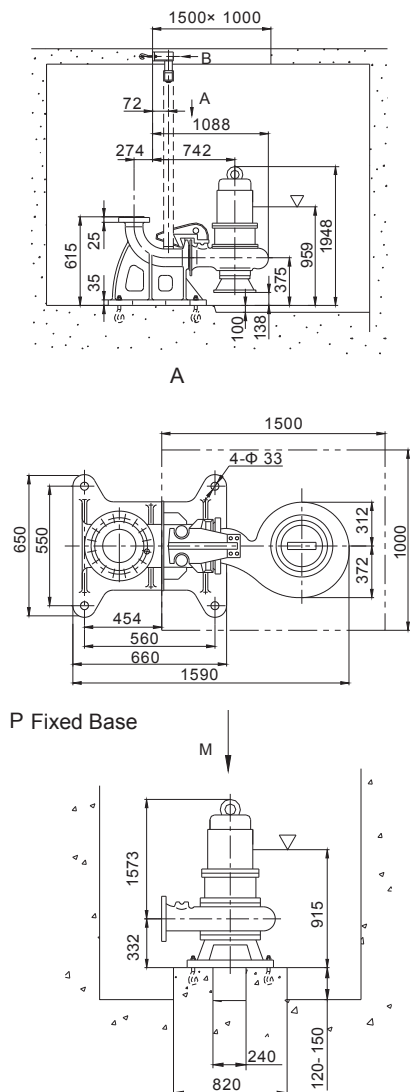
Performance Curve
DN 200mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	200WQ570-39-90	WQ2368-4146	96	1485	810
2	200WQ600-33-75	WQ2368-4145	96	1485	780

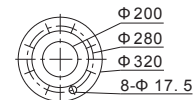
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	90	167	0.87	94.2	2.2
2	75	140	0.87	93.8	2.2

Installation diagram

Z Automatic Coupling Installation

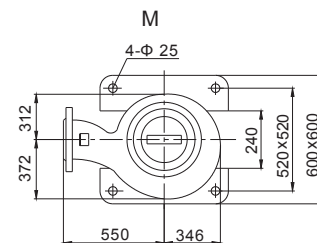


Discharge Flange



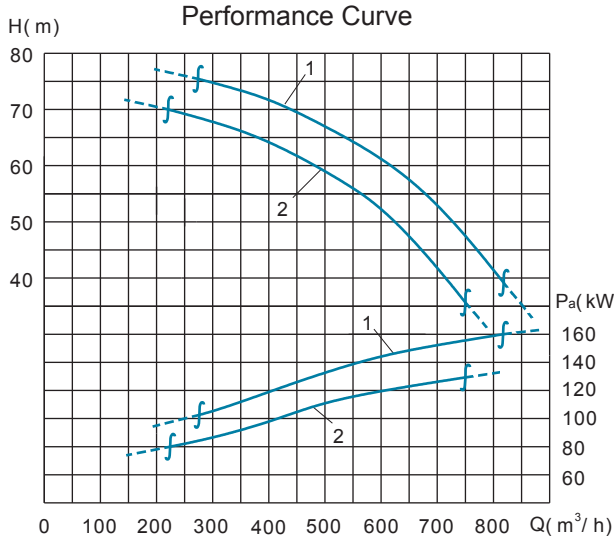
GB/T17241.6 PN6

P Fixed Base



Main Parameter

DN 200mm

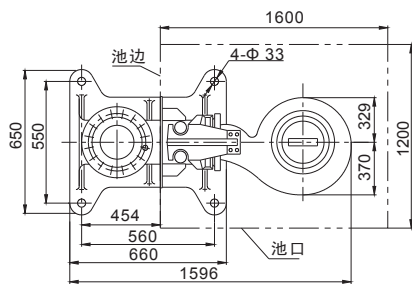
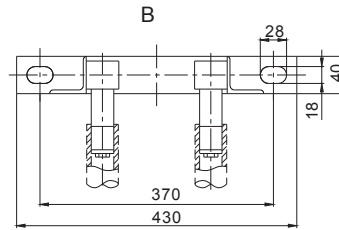
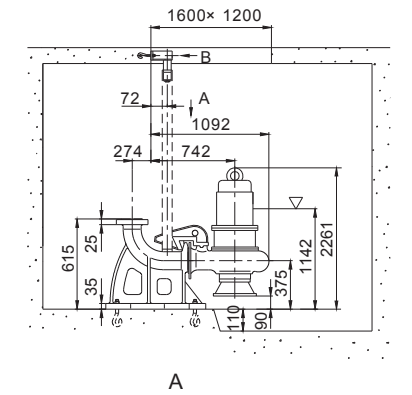


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	200WQ520-67-160	WQ2445-4148	96	1485	1500
2	200WQ480-60-132	WQ2445-4147	96	1485	1400

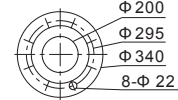
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	160	294	0.88	94	2.2
2	132	242	0.88	94	2.2

Installation diagram

Z Automatic Coupling Installation

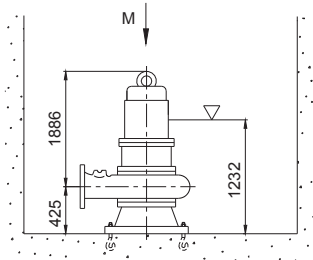


Discharge Flange

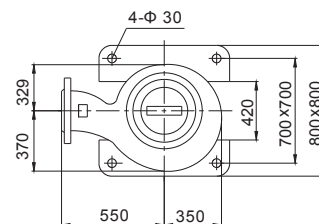


GB/T17241.6 PN10

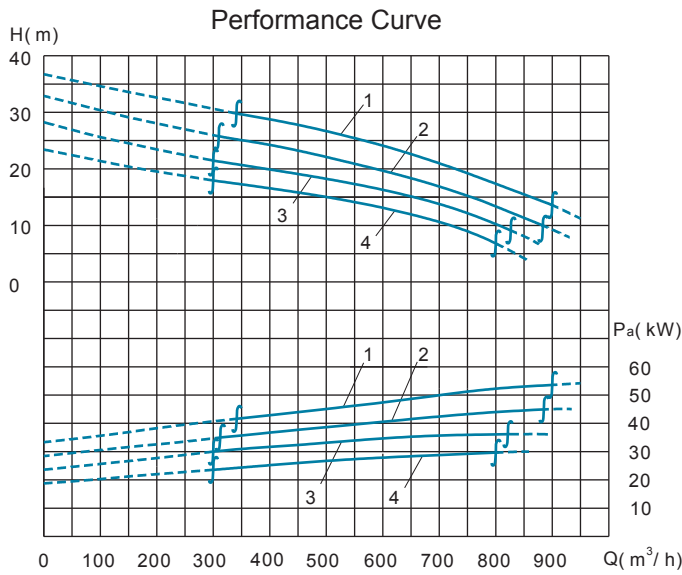
P Fixed Base



M



Main Parameter
DN 250mm

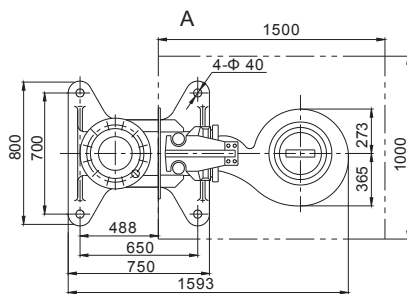
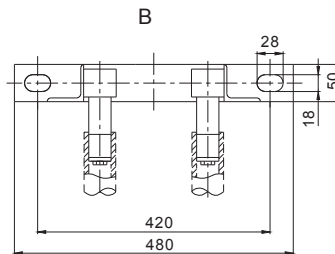
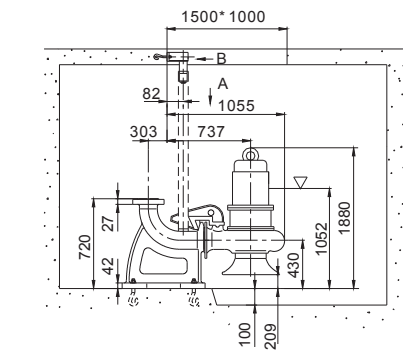


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	250WQ650-22-55	WQ2290-4168	130	1470	580
2	250WQ650-18-45	WQ2290-4112	130	1470	550
3	250WQ650-15-37	WQ2290-4110	130	1470	520
4	250WQ650-12-30	WQ2290-4109	130	1470	500

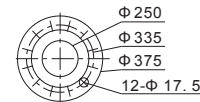
NO.	Motor Power Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	55	103	0.87	93.2	2.2
2	45	85	0.87	93	2.2
3	37	70	0.87	92.5	2.2
4	30	58	0.86	92	2.2

Installation diagram

Z Automatic Coupling Installation

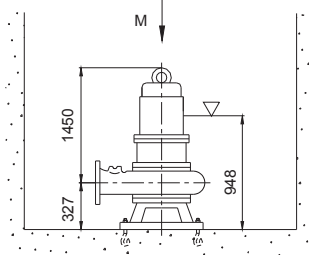


Discharge Flange

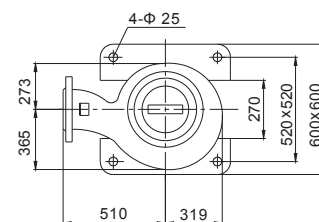


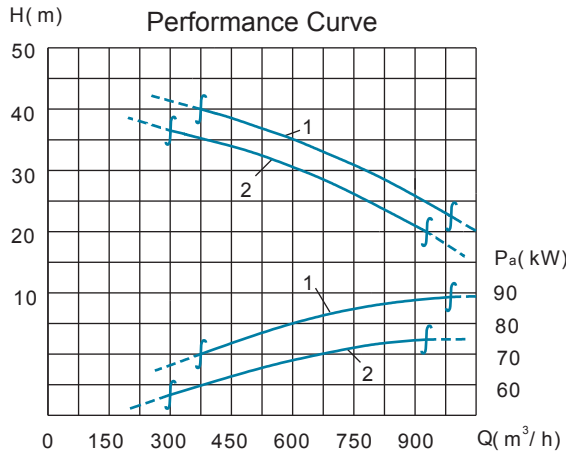
GB/T17241.6 PN6

P Fixed Base



M





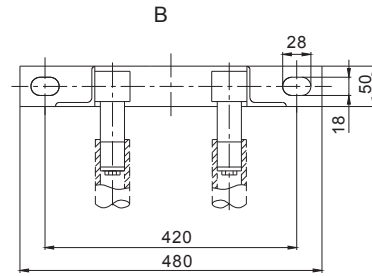
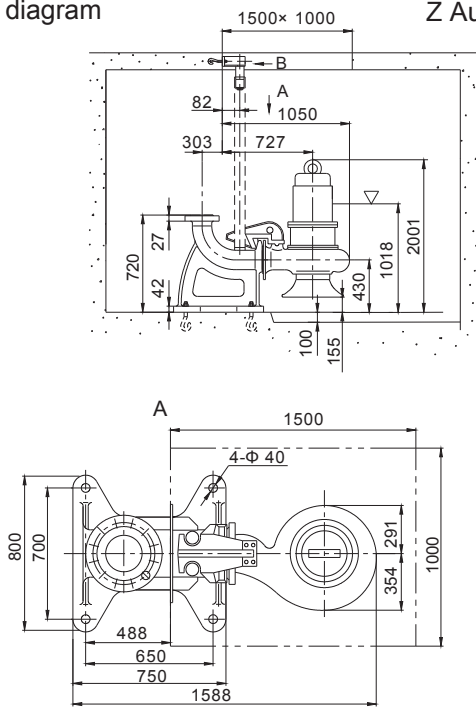
Main Parameter
DN 250mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	250WQ600-34-90	WQ2368-4150	138	1485	880
2	250WQ600-30-75	WQ2368-4149	138	1485	850

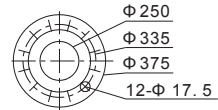
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Effici. (%)	Lock/Rated Torque
1	90	167	0.87	94.2	2.2
2	75	140	0.87	93.8	2.2

Installation diagram

Z Automatic Coupling Installation

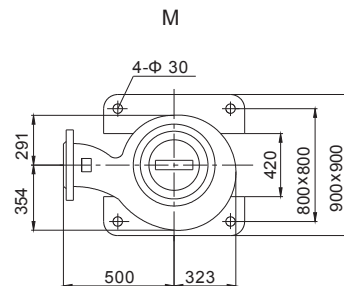
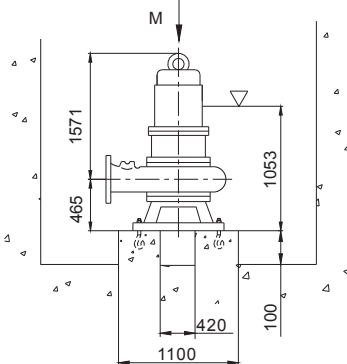


Discharge Flange



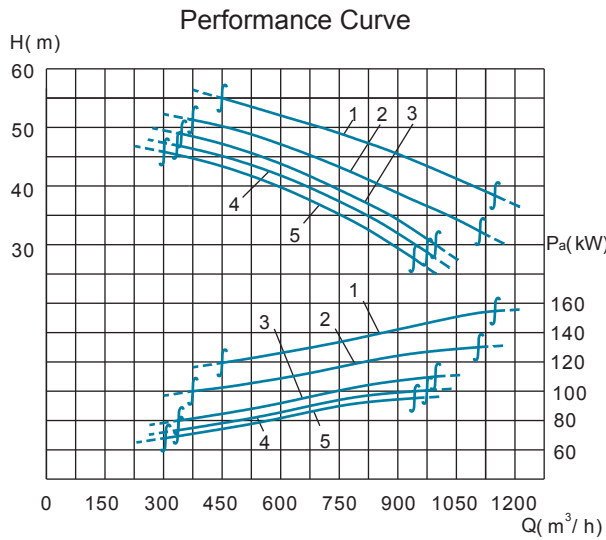
GB/T17241.6 PN6

P Fixed Base



Main Parameter

DN 250mm

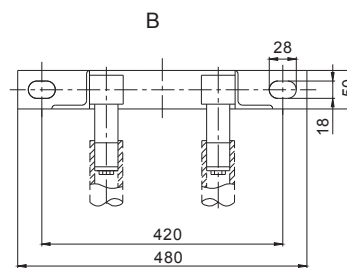
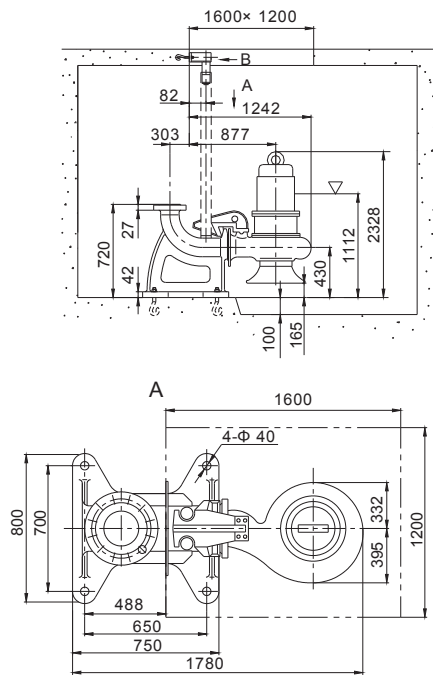


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	250WQ880-46-160	WQ2445-4153	110	1485	1400
2	250WQ770-43-132	WQ2445-4152	110	1485	1300
3	250WQ675-42-110	WQ2445-4152A	110	1485	1210
4	250WQ650-40-110	WQ2445-4151	110	1485	1205
5	250WQ600-40-110	WQ2445-4151A	110	1485	1200

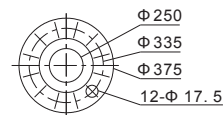
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	160	294	0.88	94	2.1
2	132	242	0.88	94	2.2
3	110	201	0.88	94	2.2
4	110	201	0.88	94	2.2
5	110	201	0.88	94	2.2

Installation diagram

Z Automatic Coupling Installation

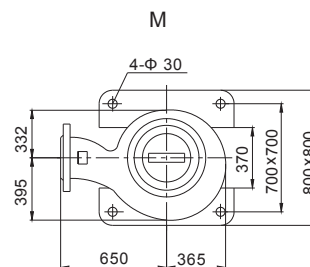
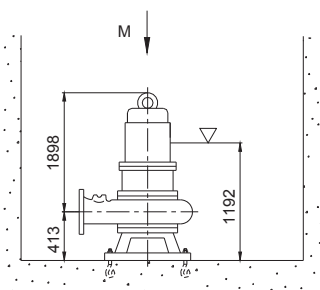


Discharge Flange

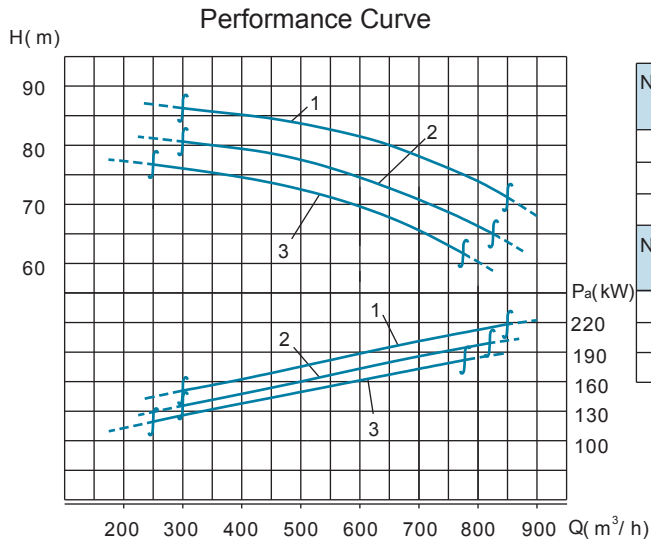


GB/ T17241.6 PN6

P Fixed Base



Main Parameter
DN 250mm

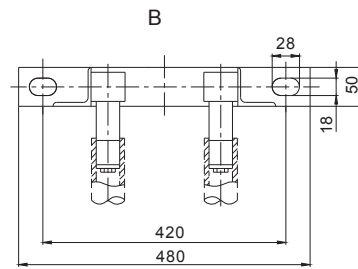
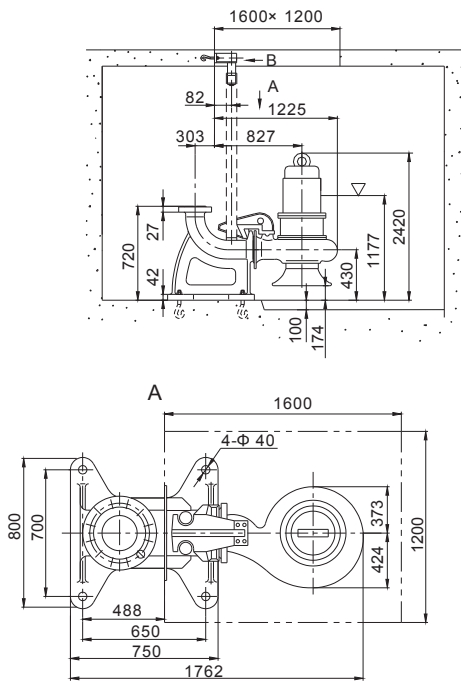


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	250WQ650- 80- 220	WQ2520- 4167	138	1485	2000
2	250WQ600- 75- 200	WQ2520- 4166	138	1485	1900
3	250WQ550- 70- 185	WQ2520- 4165	138	1485	1850

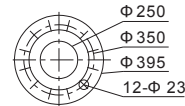
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	220	396	0.89	95	2.2
2	200	363	0.89	94	2.2
3	185	340	0.88	94	2.1

Installation diagram

Z Automatic Coupling Installation

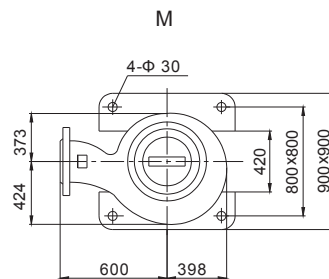
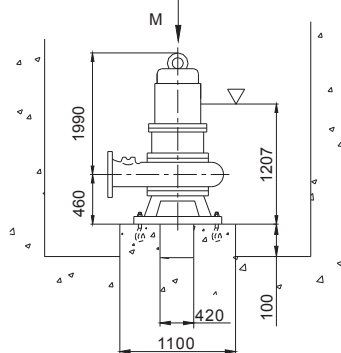


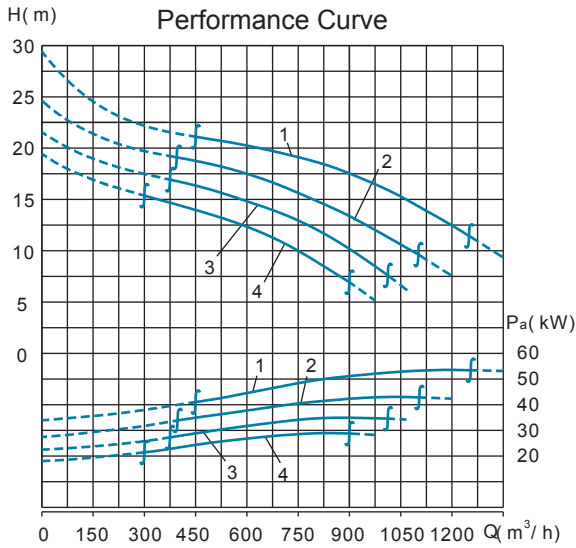
Discharge Flange



GB/T17241.6 PN10

P Fixed Base





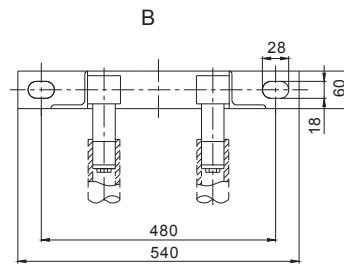
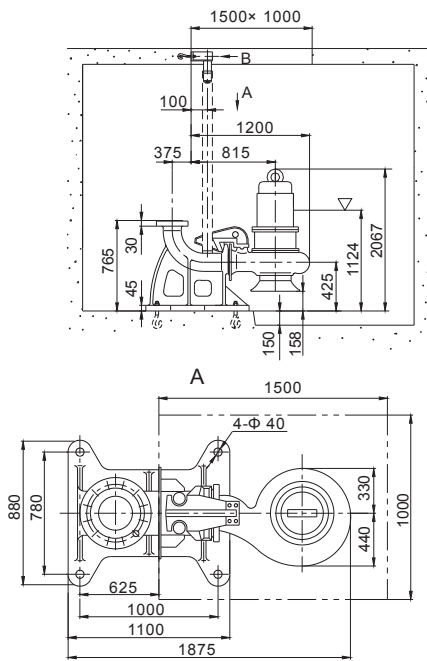
Main Parameter
DN 300mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	300WQ900-17-55	WQ2290-4118	149×136	980	800
2	300WQ800-15-45	WQ2290-4117	149×136	980	770
3	300WQ700-14-37	WQ2290-4116	149×136	980	720
4	300WQ700-11-30	WQ2290-4115	149×136	980	700

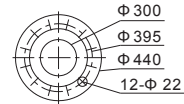
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	55	105	0.86	92.8	2.3
2	45	86	0.86	92.5	2.3
3	37	71	0.86	91.7	2.3
4	30	58	0.85	91.6	2.1

Installation diagram

Z Automatic Coupling Installation

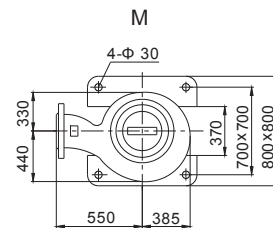
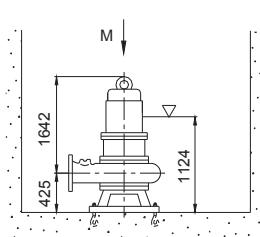


Discharge Flange



GB/T17241.6 PN6

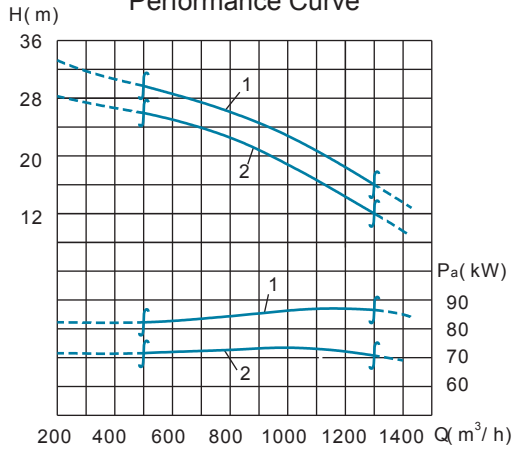
p Fixed Base



Main Parameter

DN 300mm

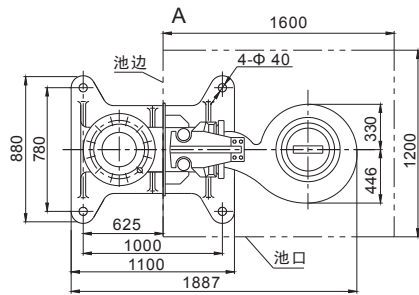
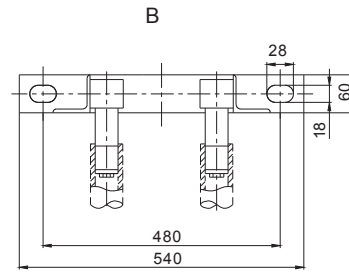
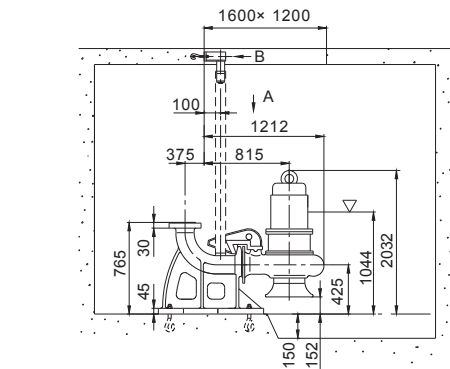
Performance Curve



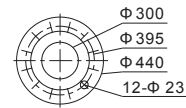
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	300WQ950-24-90	WQ2368-4120	157	1485	900
2	300WQ930-20-75	WQ2368-4120A	157	1485	870
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Fff (%)	Lock/Rated Torque
1	90	167	0.87	94.2	2.2
2	75	140	0.87	93.8	2.2

Installation Diagram

Z Automatic Coupling Installation

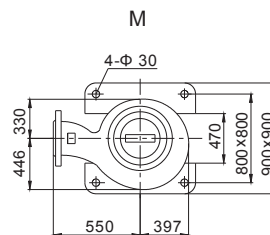
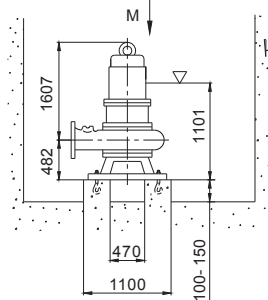


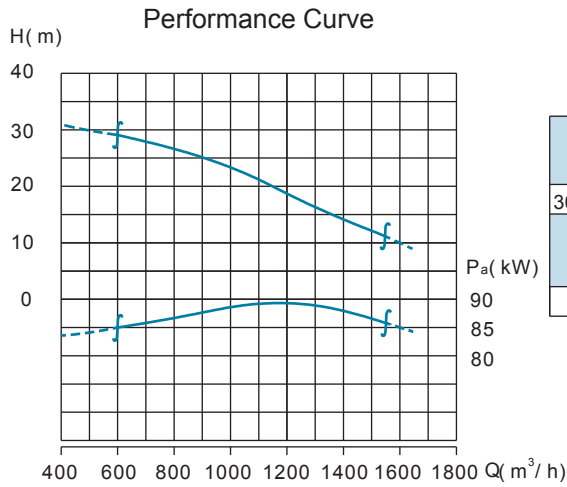
Discharge Flange



GB/T17241.6 PN6

P Fixed Base





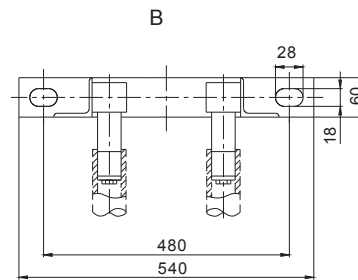
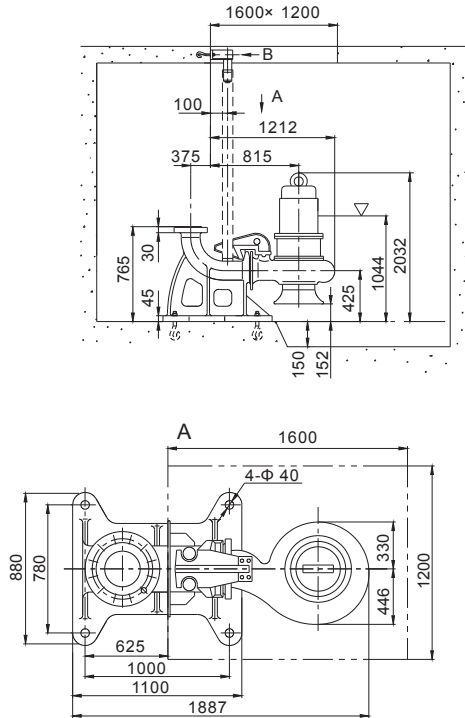
Main Parameter

DN 300mm

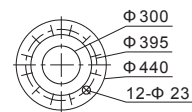
New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
300WQ1000-22-90	WQ2368-4121	157	1485	902
Motor Power (kW)	Rated Current (A)	Factor cosφ	M-Fff (%)	Lock/Rated Torque
90	167	0.87	94.2	2.2

Installation Diagram

Z Automatic Coupling Installation

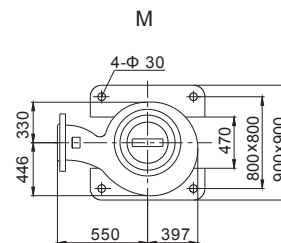
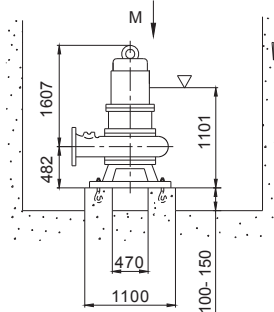


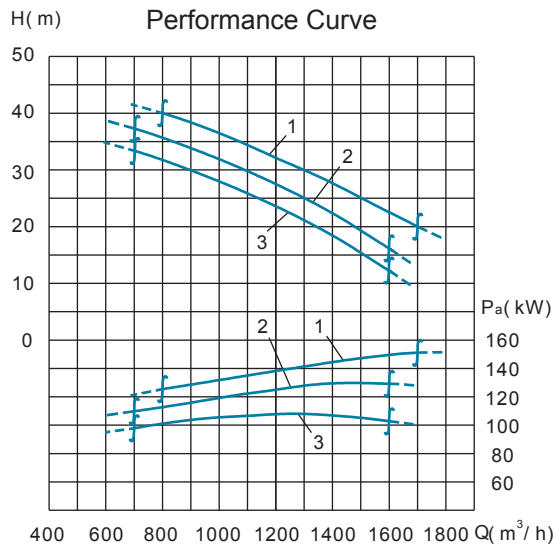
Discharge Flange



GB/T17241.6 PN6

P Fixed Base





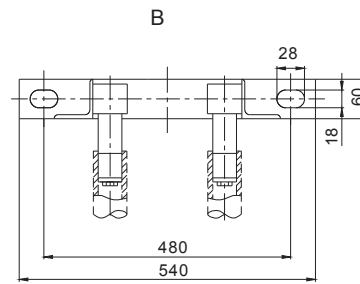
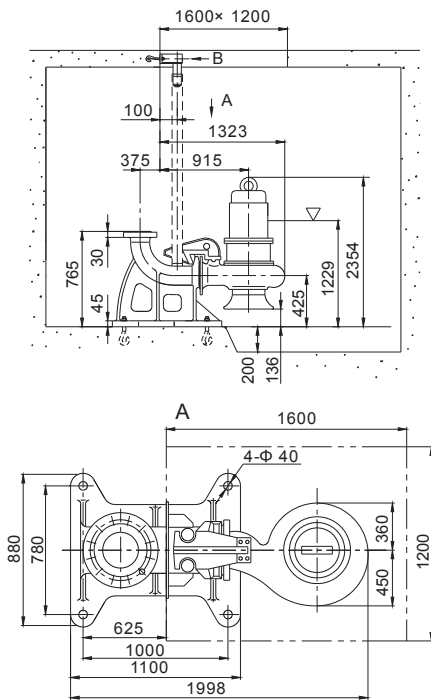
Main Parameter
DN 300mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	300WQ1300-30-160	WQ2445-4140	128	1485	1600
2	300WQ1200-27-132	WQ2445-4140A	128	1485	1500
3	300WQ1200-24-110	WQ2445-4139	128	1485	1430

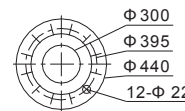
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Ff. (%)	Lock/Rated Torque
1	160	294	0.88	94	2.1
2	132	242	0.88	94	2.1
3	110	202	0.88	94	2.2

Installation Diagram

Z Automatic Coupling Installation

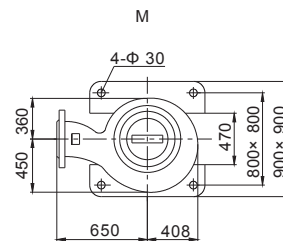
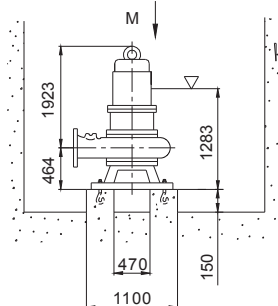


Discharge Flange

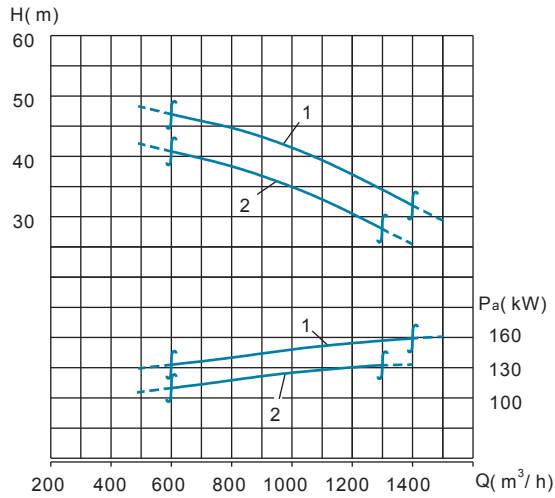


GB/T17241.6 PN6

P Fixed Base



Performance Curve



Main Parameter

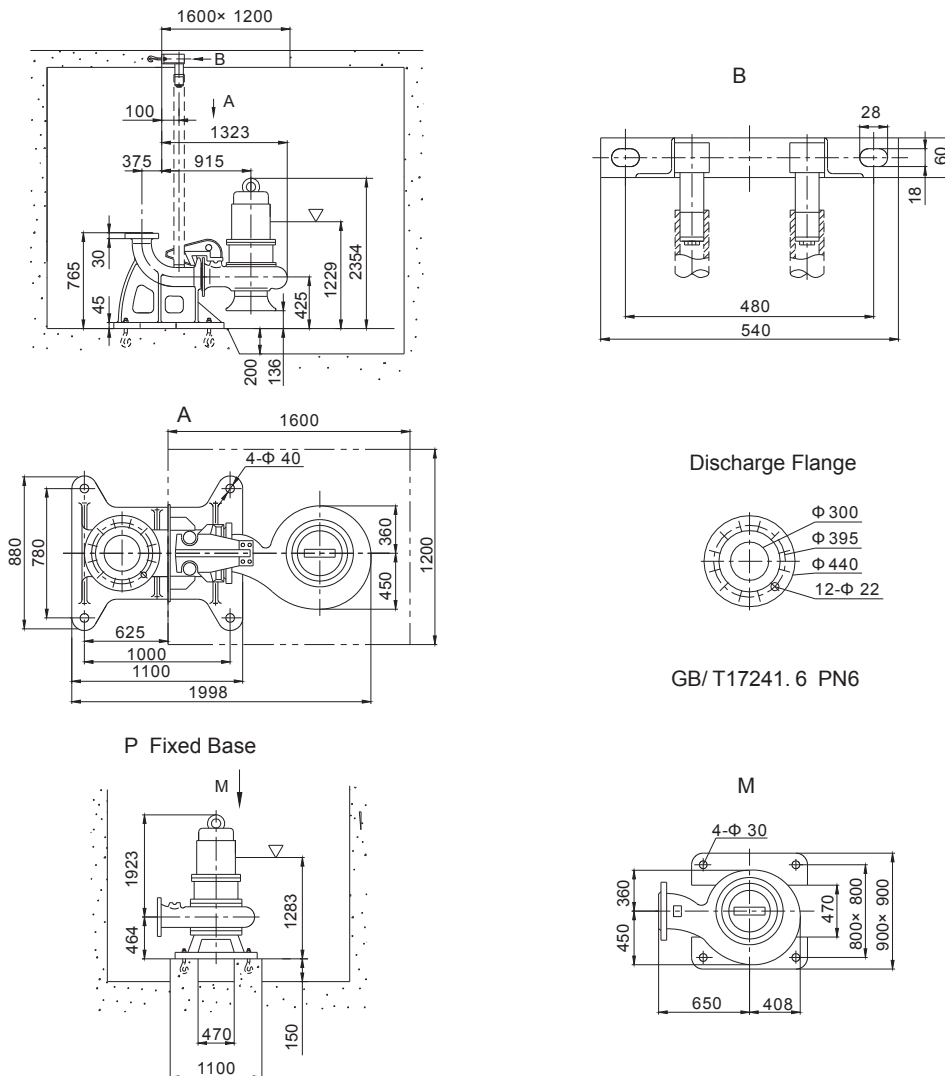
DN 300mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	300WQ1050-40-160	WQ2445-4141	128	1485	1615
2	300WQ1000-35-132	WQ2445-4141A	128	1485	1520

NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Fff (%)	Lock/Rated Torque
1	160	294	0.88	94	2.1
2	132	242	0.88	94	2.2

Installation Diagram

Z Automatic Coupling Installation



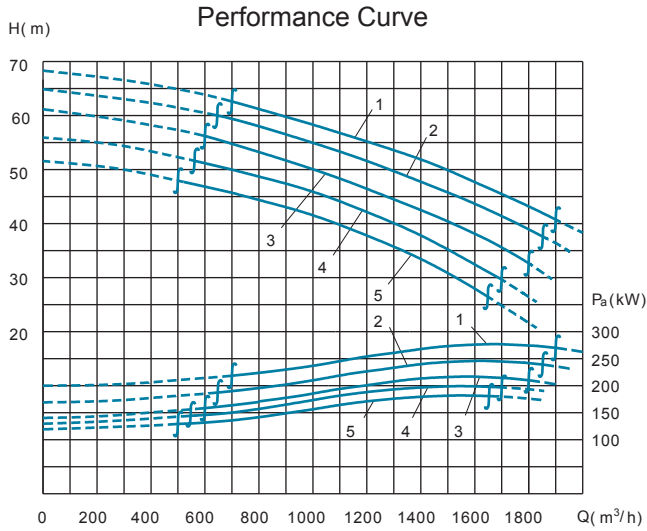
Discharge Flange

GB/T17241.6 PN6

P Fixed Base

M

Main Parameter
DN 300mm

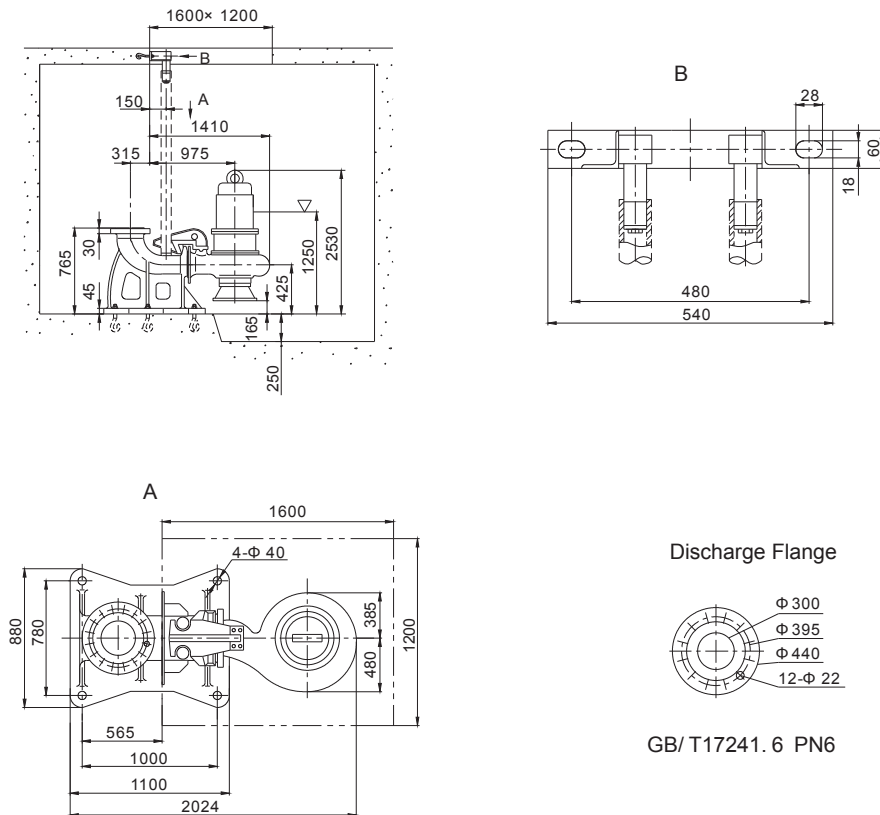


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	300WQ1400-52-280	WQ2520-4164	74	1485	2500
2	300WQ1400-49-250	WQ2520-4163	74	1485	2300
3	300WQ1400-42-220	WQ2520-4162	74	1485	2150
4	300WQ1400-37-200	WQ2520-4161	74	1485	2050
5	300WQ1200-37-185	WQ2520-4160	74	1485	2000

NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	280	495	0.90	95.5	2.2
2	250	450	0.89	95	2.2
3	220	396	0.89	95	2.2
4	200	363	0.89	94	2.2
5	185	340	0.88	94	2.1

Installation Diagram

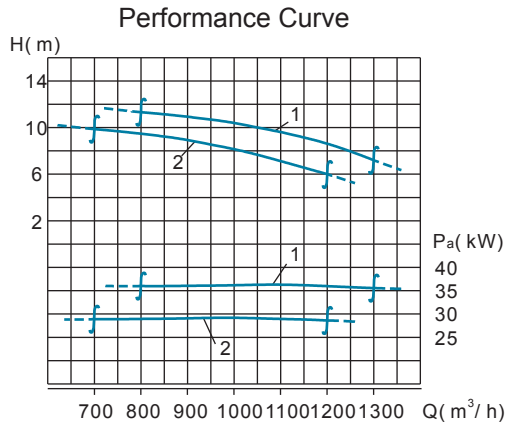
Z Automatic Coupling Installation



Note: this pump is not interchangeable with other 300 caliber coupling devices.

Main Parameter

DN 350mm

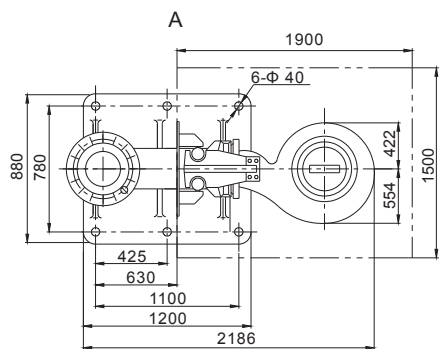
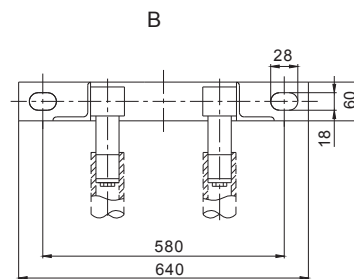
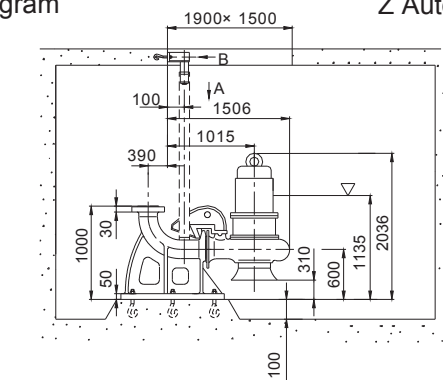


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	350WQ1200-8-37	WQ2368-6159	114	980	880
2	350WQ900-9-30	WQ2368-6158	114	980	850

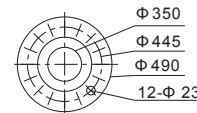
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	37	71	0.86	91.7	2.3
2	30	58	0.85	91.6	2.1

Installation Diagram

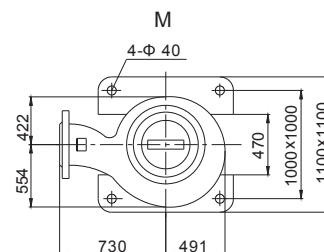
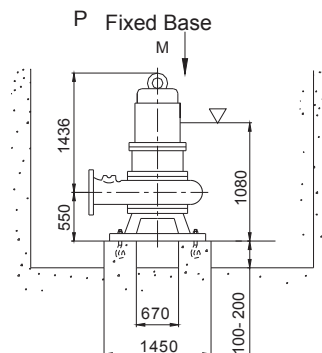
Z Automatic Coupling Installation



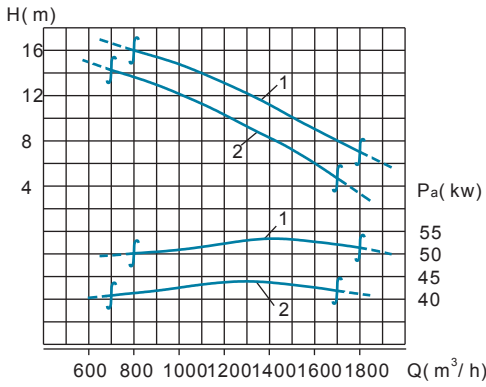
Discharge Flange



GB/T17241.6 PN6



Performance Curve



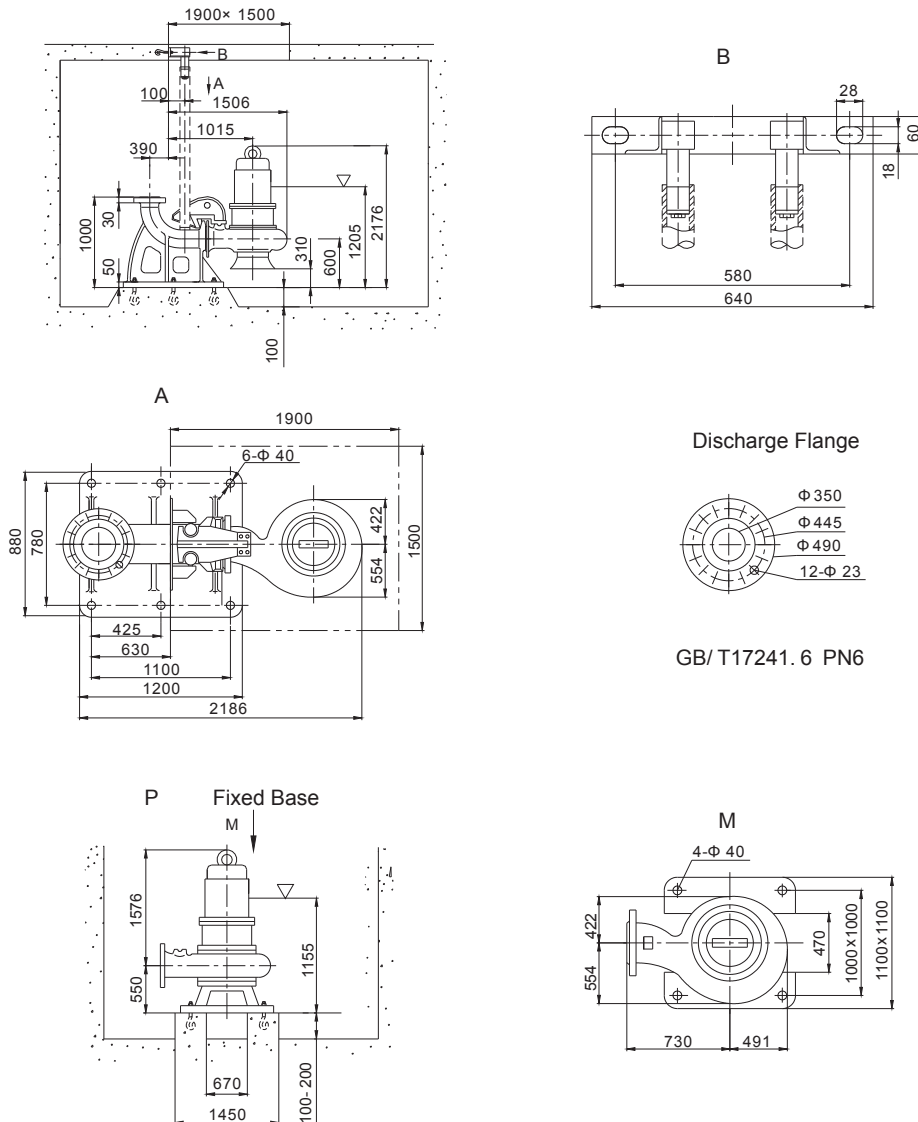
Main Parameter

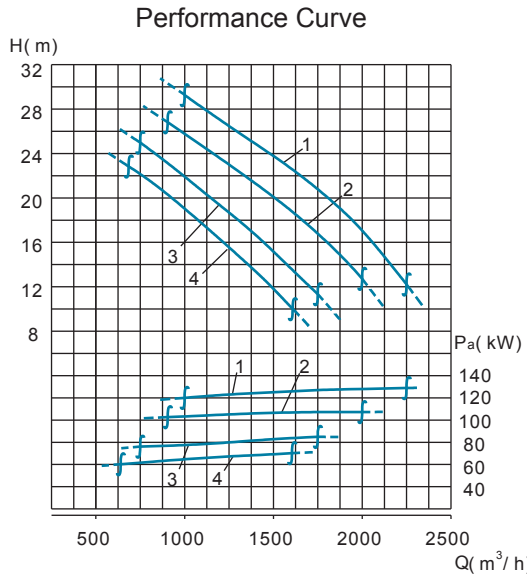
DN 350mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	350WQ1300-12-55	WQ2368-6161	114	980	960
2	350WQ1200-10-45	WQ2368-6160	114	980	920
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	55	105	0.86	92.8	2.3
2	45	86	0.86	92.5	2.3

Installation Diagram

Z Automatic Coupling Installation





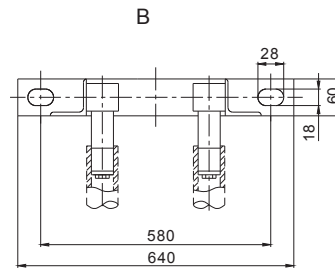
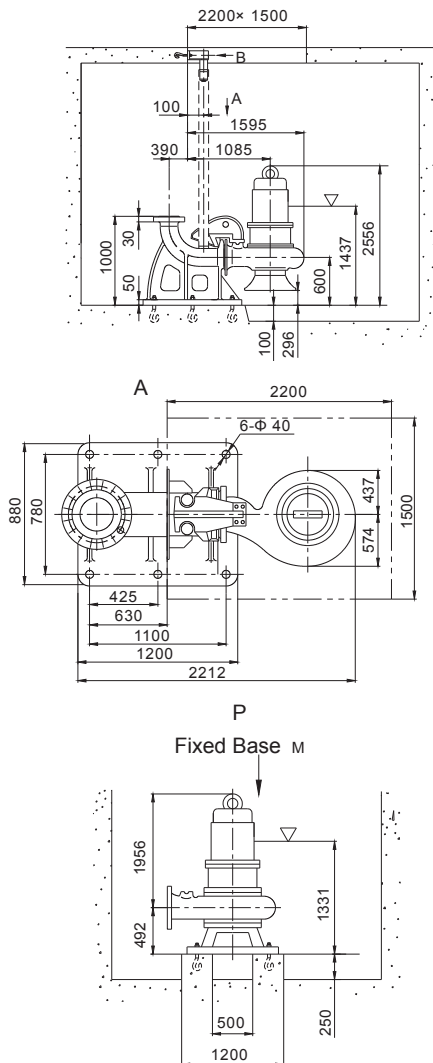
Main Parameter DN 350mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	350WQ1800-20-132	WQ2445-6124	130	990	1700
2	350WQ1750-16-110	WQ2445-6123	130	990	1650
3	350WQ1400-15-90	WQ2445-6122	130	990	1600
4	350WQ1150-16-75	WQ2445-6121	130	990	1570

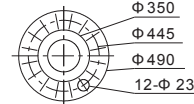
NO.	Motor Power (kW)	Rated Current (A)	Factor $\cos \phi$	M-Eff. (%)	Lock/Rated Torque
1	132	245	0.87	94.2	2.1
2	110	207	0.86	94	2.1
3	90	170	0.86	93.8	2.0
4	75	142	0.86	93.5	2.0

Installation Diagram

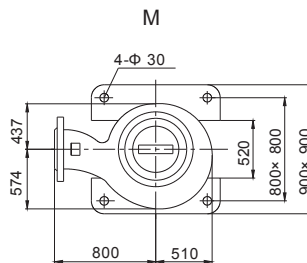
Z Automatic Coupling Installation

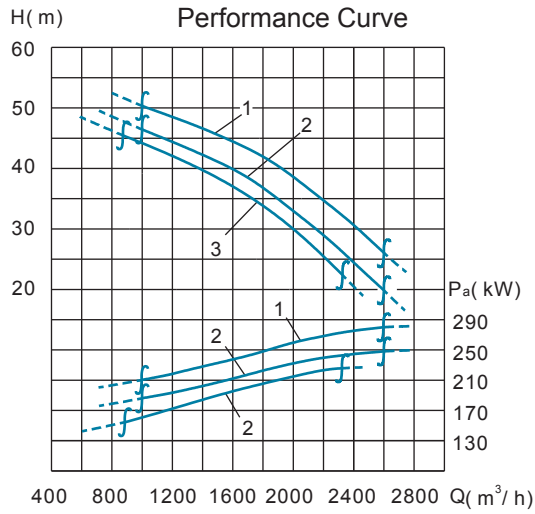


Discharge Flange



GB/T17241.6 PN6





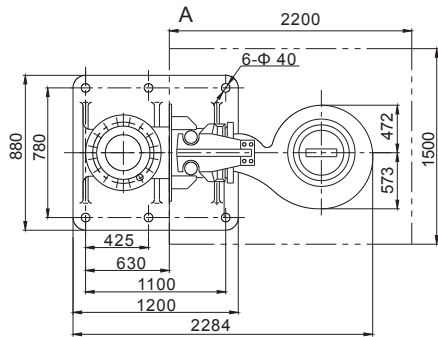
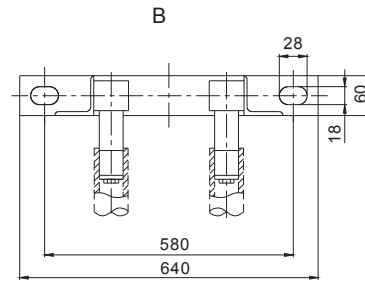
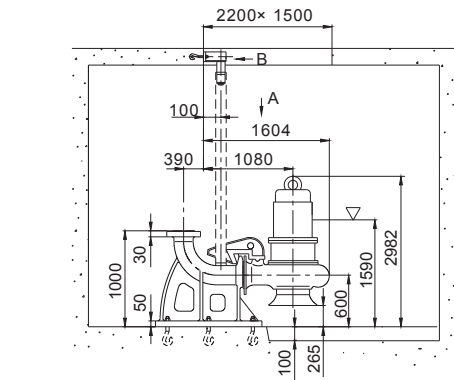
Main Parameter
DN 350mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	350WQ1900-40-280	WQ2590-6115	169	990	3400
2	350WQ1600-40-250	WQ2590-6114	169	990	3300
3	350WQ1600-38-220	WQ2590-6113	169	990	3200

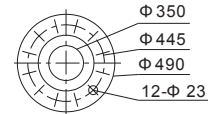
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	280	507	0.88	95.2	1.5
2	250	453	0.88	95.1	1.45
3	220	398	0.88	95.1	1.52

Installation Diagram

Z Automatic Coupling Installation

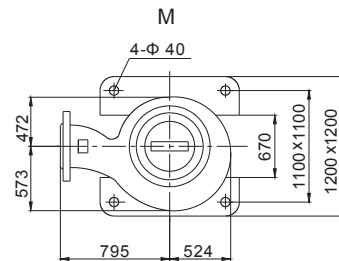
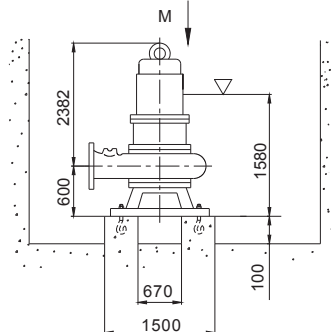


Discharge Flange

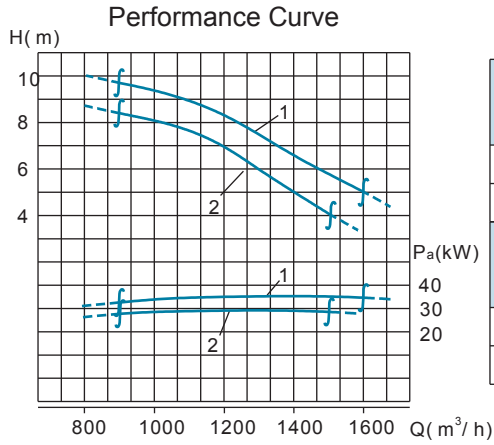


GB/T17241.6 PN6

P Fixed Base



Main Parameter
DN 400mm

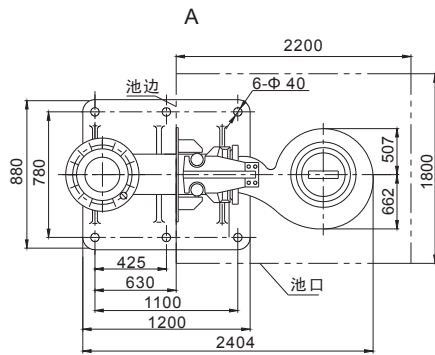
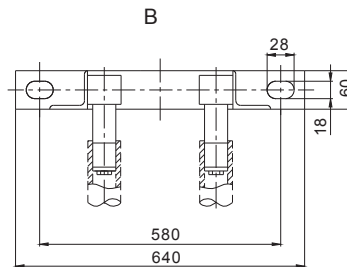
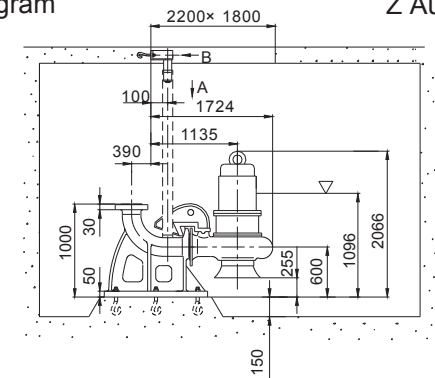


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	400WQ1350-7-37	WQ2368-8156	104	735	1200
2	400WQ1300-6-30	WQ2368-8155	104	735	1180

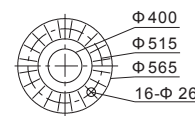
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	37	78	0.79	91.5	2.0
2	30	63	0.8	90.7	1.9

Installation Diagram

Z Automatic Coupling Installation

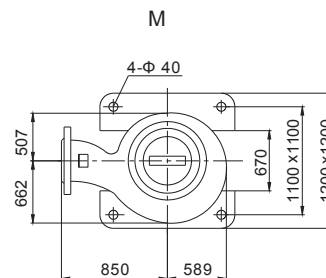
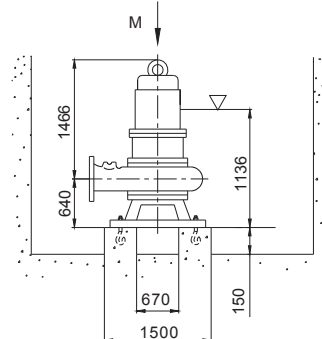


Discharge Flange

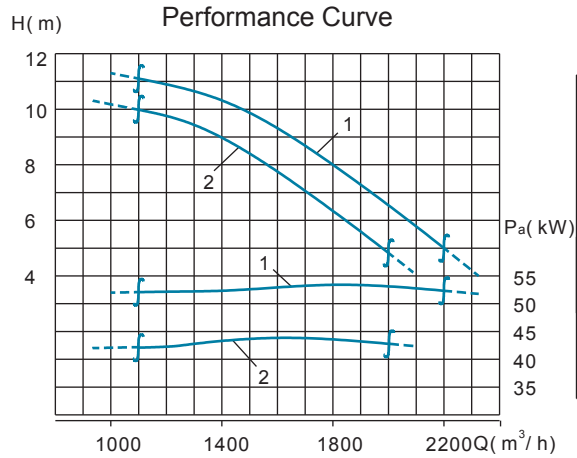


GB/T17241.6 PN6

P Fixed Base



Main Parameter
DN 400mm

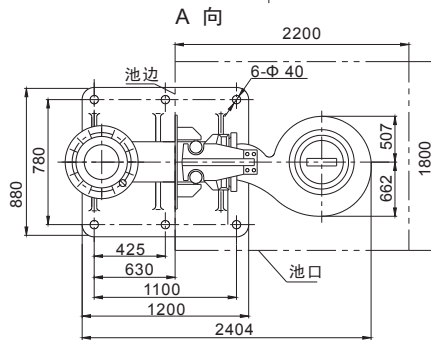
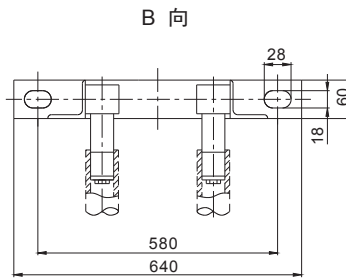
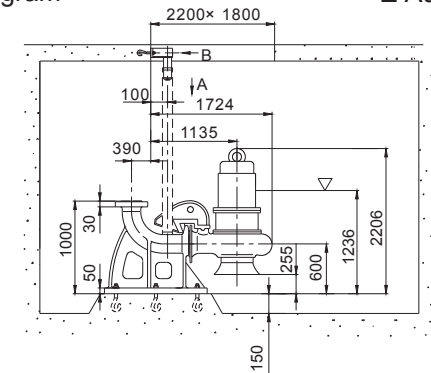


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	400WQ1500-10-55	WQ2368-8158	104	735	1300
2	400WQ1500-8-45	WQ2368-8157	104	735	1250

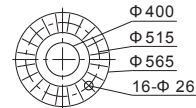
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	55	115	0.81	92.8	1.8
2	45	95	0.79	92	2.0

Installation Diagram

Z Automatic Coupling Installation

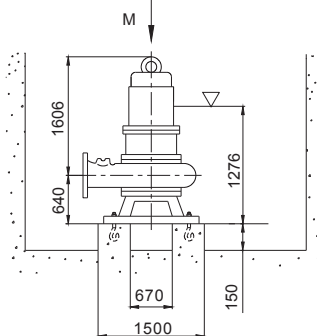


Discharge Flange

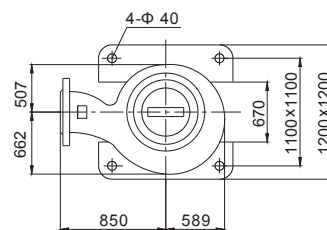


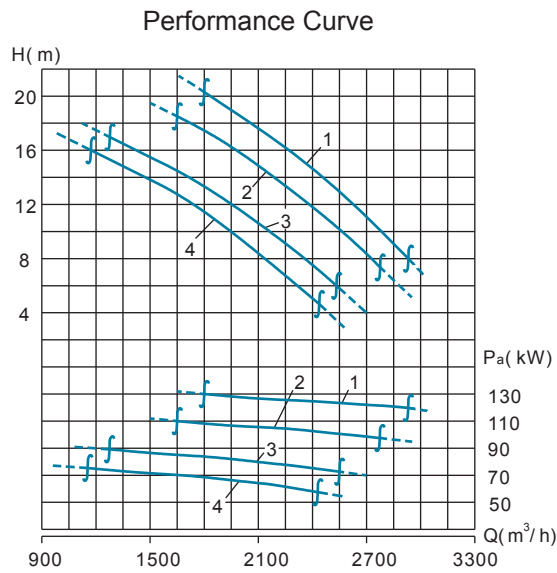
GB/T17241.6 PN10

P Fixed Base



M





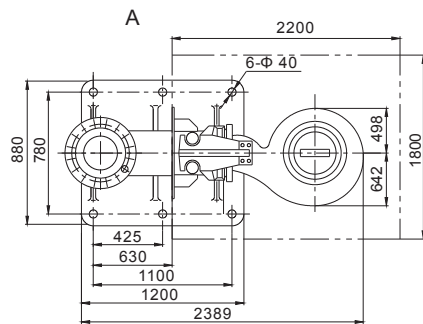
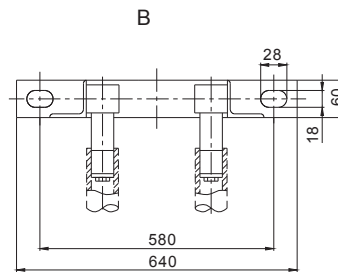
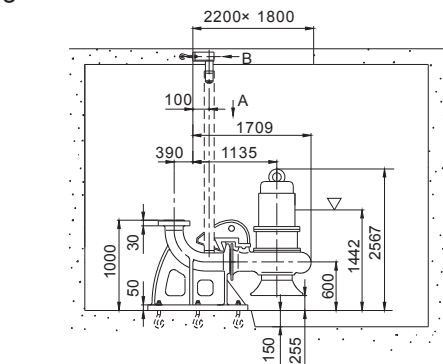
Main Parameter DN 400mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	400WQ2400-15-132	WQ2445-6165	125	990	1850
2	400WQ2100-14-110	WQ2445-6164	120	990	1800
3	400WQ1800-13-90	WQ2445-6163	118	990	1750
4	400WQ1650-13-75	WQ2445-6162	115	990	1730

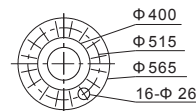
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	132	245	0.87	94.2	2.1
2	110	207	0.86	94	2.1
3	90	170	0.86	93.8	2.0
4	75	142	0.86	93.5	2.0

Installation Diagram

Z Automatic Coupling Installation

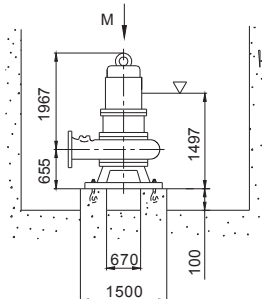


Discharge Flange

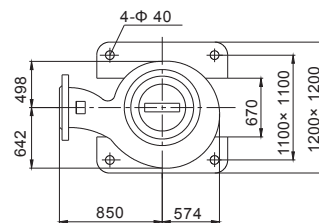


GB/T17241.6 PN10

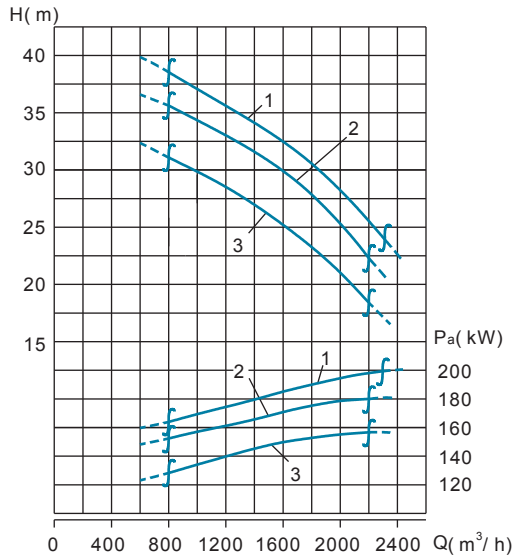
P Fixed Base



M



Performance Curve



Main Parameter

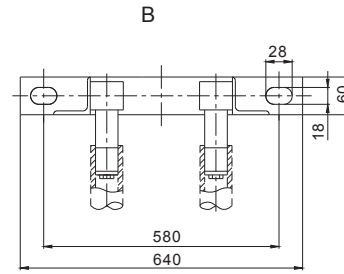
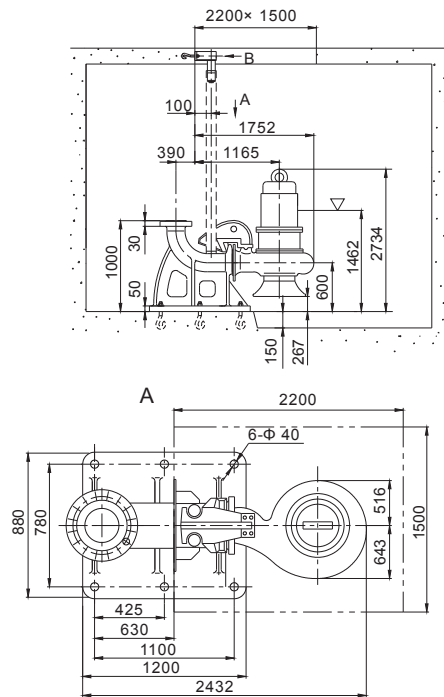
DN 400mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	400WQ1800-31-200	WQ2520-6103	163	990	2400
2	400WQ1800-28-185	WQ2520-6102	163	990	2360
3	400WQ1600-25-160	WQ2520-6101	163	990	2320

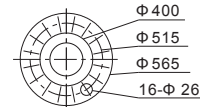
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	200	370	0.88	95	2.0
2	185	337	0.88	94.9	2.0
3	160	291	0.88	94.8	2.0

Installation Diagram

Z Automatic Coupling Installation

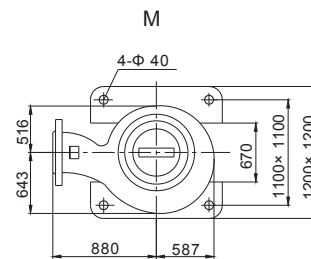
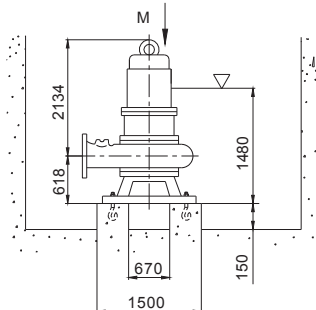


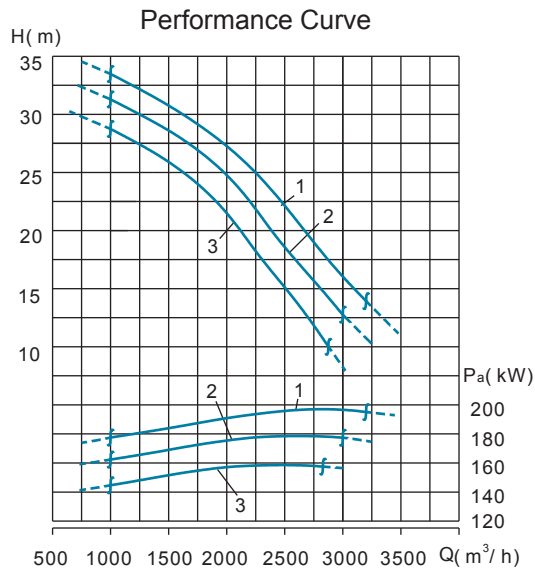
Discharge Flange



GB/T17241.6 PN10

P Fixed Base



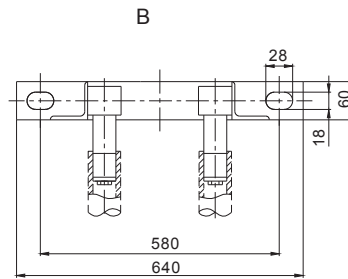
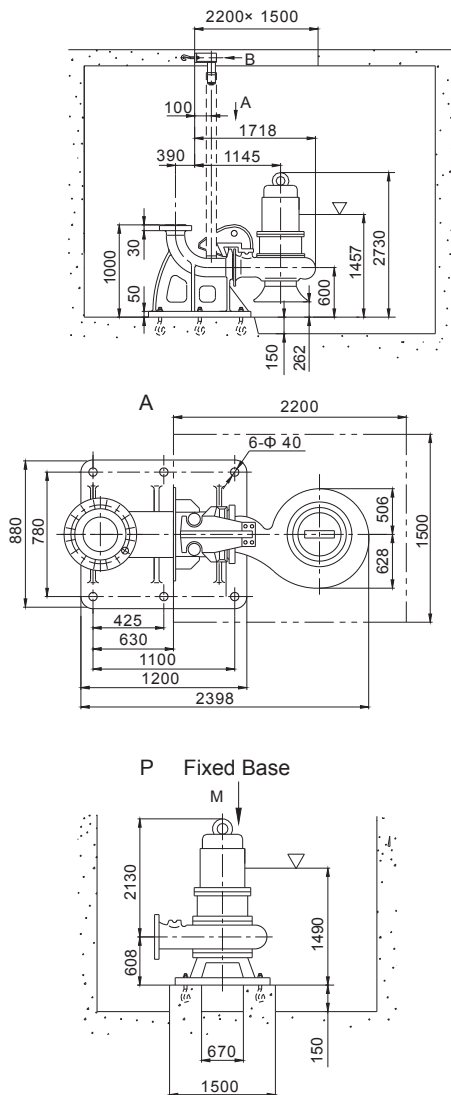


Main Parameter
DN 400mm

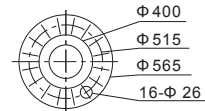
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	400WQ2500-22-200	WQ2520-6126	163	990	2420
2	400WQ2400-20-185	WQ2520-6125	163	990	2380
3	400WQ2200-18-160	WQ2520-6104	163	990	2340
NO.	Motor Power (kW)	Rated Current (A)	Factor cosφ	M-Eff. (%)	Lock/Rated Torque
1	200	370	0.88	95	2.0
2	185	337	0.88	94.9	2.0
3	160	291	0.88	94.8	2.0

Installation Diagram

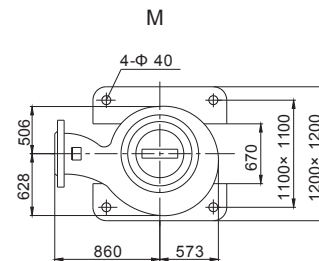
Z Automatic Coupling Installation



Discharge Flange

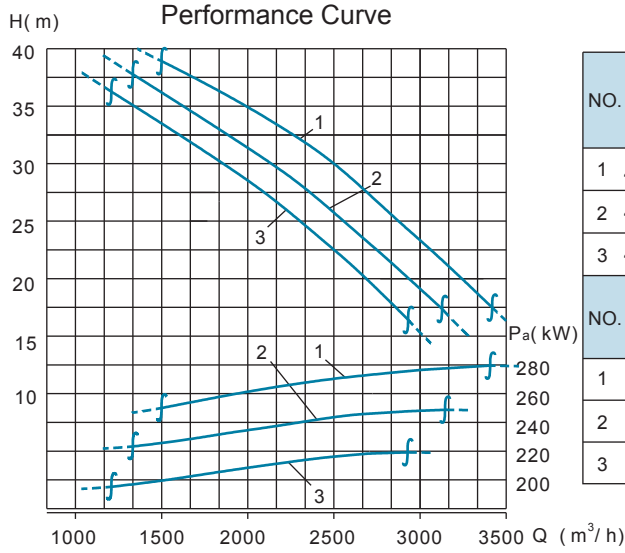


GB/T17241.6 PN10



Main Parameter

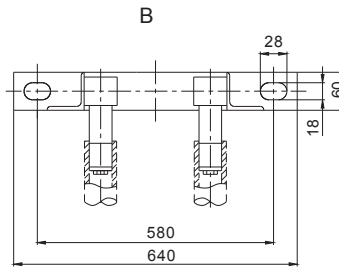
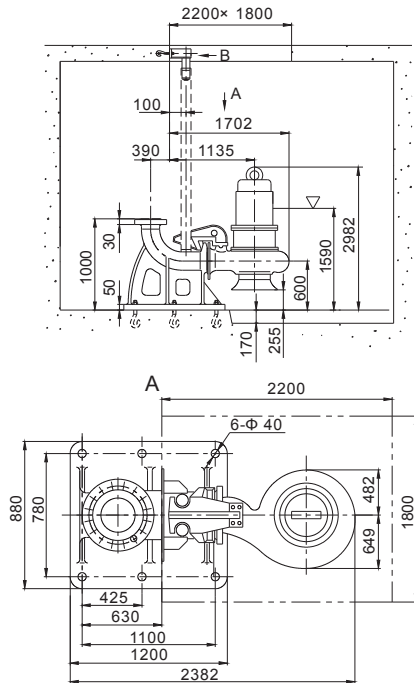
DN 400mm



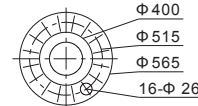
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	400WQ2500-30-280	WQ2590-6107	190	990	4000
2	400WQ2500-26-250	WQ2590-6106	190	990	3900
3	400WQ2250-23-220	WQ2590-6105	190	990	3830
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	280	507	0.88	95.2	1.5
2	250	453	0.88	95.1	1.45
3	220	398	0.88	95.1	1.52

Installation Diagram

Z Automatic Coupling Installation

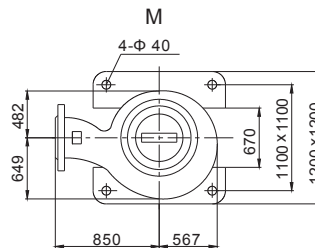
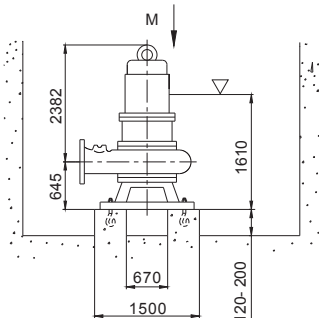


Discharge Flange



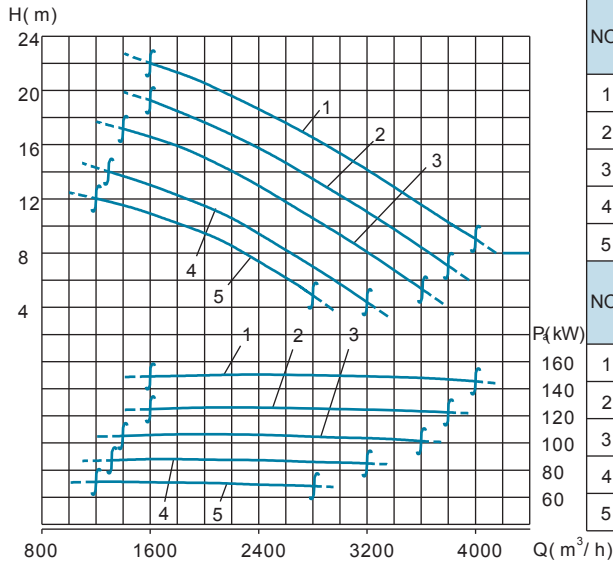
GB/T17241.6 PN10

P Fixed Base



Main Parameter
DN 500mm

Performance Curve

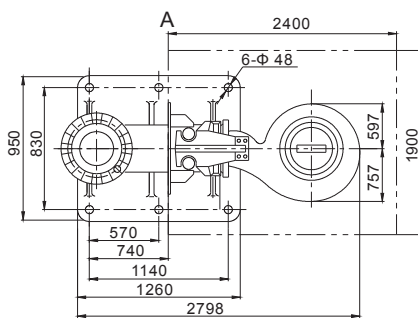
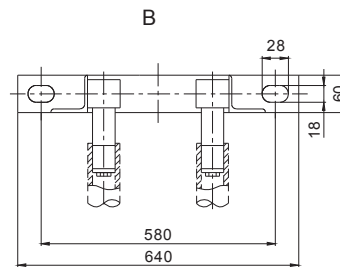
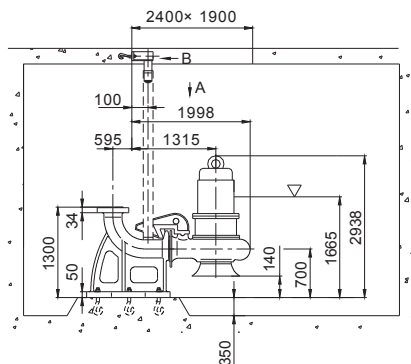


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	500WQ3300-13-160	WQ2520-8163	174	745	3000
2	500WQ3000-11-132	WQ2520-8162	174	745	2940
3	500WQ2900-10-110	WQ2520-8161	174	735	2900
4	500WQ2300-10-90	WQ2520-8160	174	735	2860
5	500WQ2300-8-75	WQ2520-8159	174	735	2820

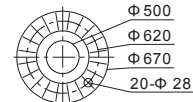
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	160	315	0.83	93.5	1.9
2	132	265	0.82	93.5	1.9
3	110	220	0.82	94	1.9
4	90	180	0.82	93.8	1.8
5	75	150	0.81	93	1.8

Installation Diagram

Z Automatic Coupling Installation

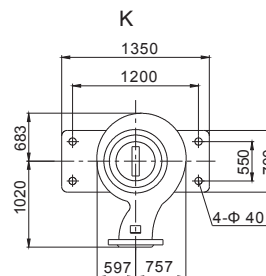
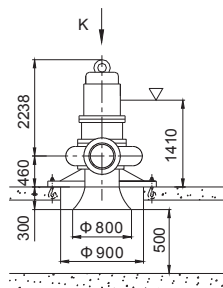


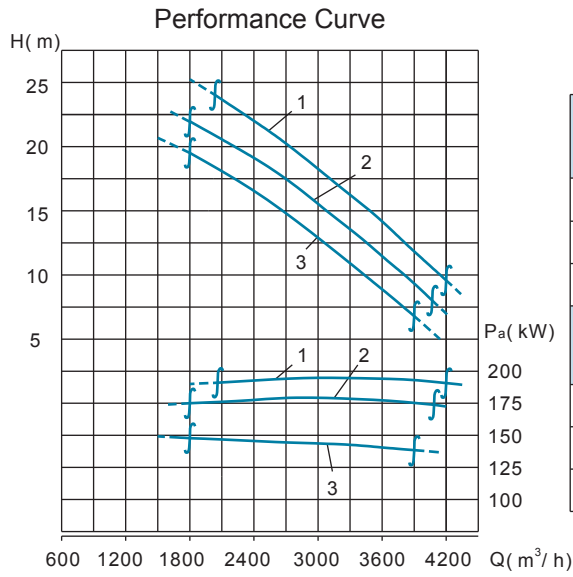
Discharge Flange



GB/T17241.6 PN10

Fixed Base (F)



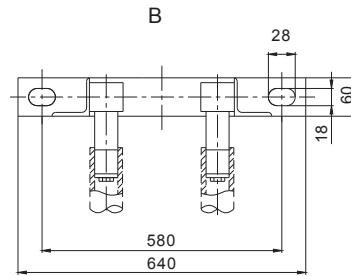
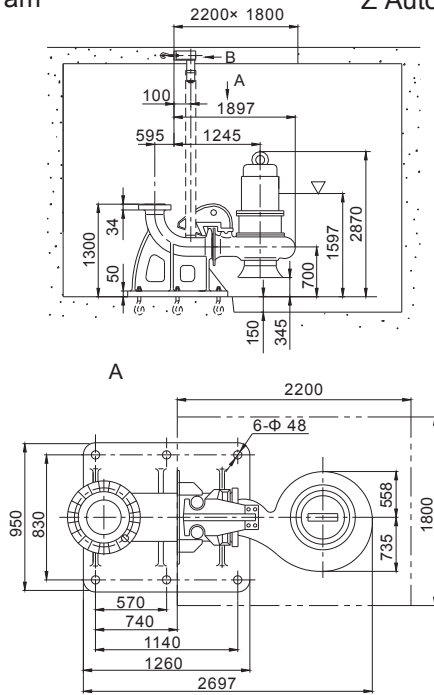


Main Parameter DN 500mm

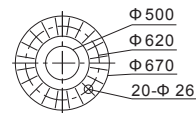
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	500WQ3050- 18- 200	WQ2520- 6110	163	990	3000
2	500WQ3050- 15- 185	WQ2520- 6109	163	990	2960
3	500WQ3000- 13- 160	WQ2520- 6108	163	990	2920
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	200	370	0.88	95	2.0
2	185	337	0.88	94.9	2.0
3	160	291	0.88	94.8	2.0

Installation Diagram

Z Automatic Coupling Installation

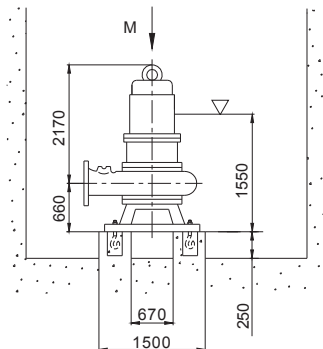


Discharge Flange

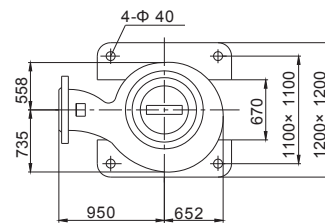


GB/T17241.6 PN10

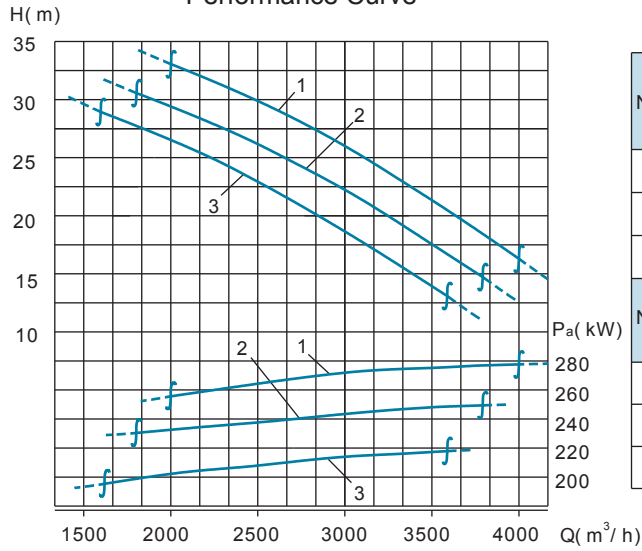
P Fixed Base



M



Performance Curve



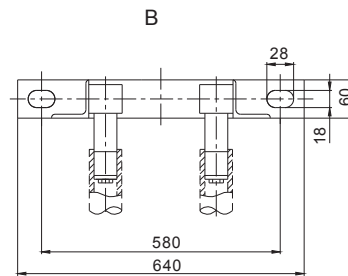
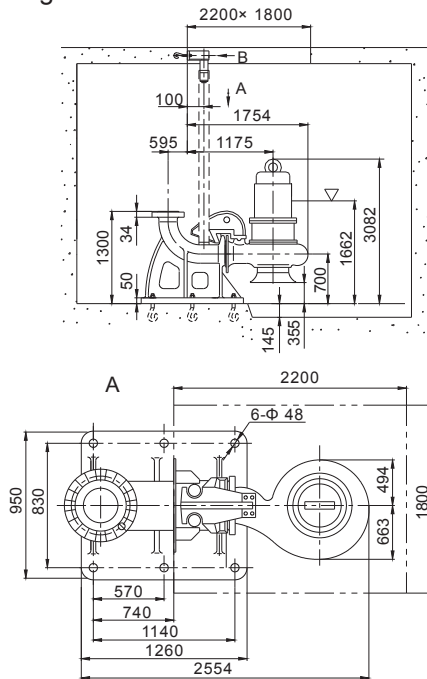
Main Parameter

DN 500mm

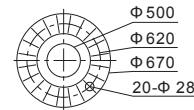
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	500WQ3000-26-280	WQ2590-6119	190	990	4300
2	500WQ2900-22-250	WQ2590-6118	190	990	4210
3	500WQ2800-20-220	WQ2590-6117	190	990	4150
NO.	Motor Power (kW)	Rated Current (A)	Factor cos φ	M-Eff. (%)	Lock/Rated Torque
1	280	507	0.88	95.2	1.5
2	250	453	0.88	95.1	1.45
3	220	398	0.88	95.1	1.52

Installation Diagram

Z Automatic Coupling Installation

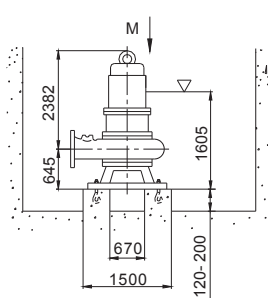


Discharge Flange

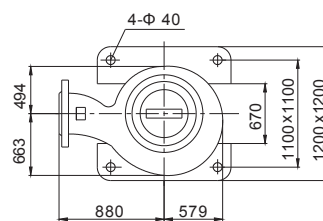


GB/T17241.6 PN10

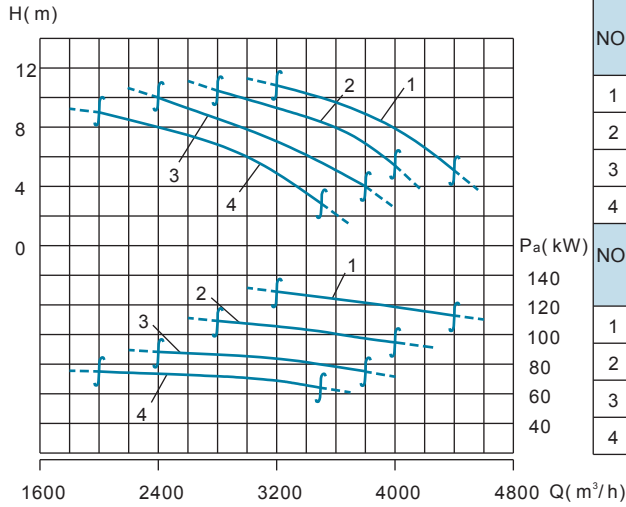
P Fixed Base



M



Performance Curve



Main Parameter

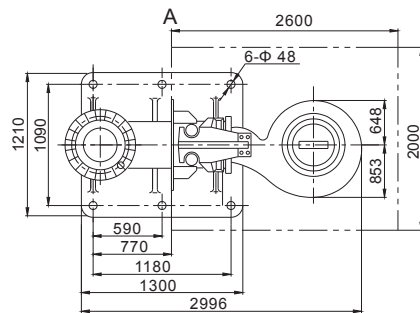
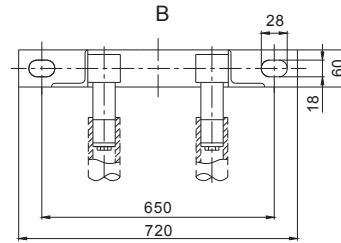
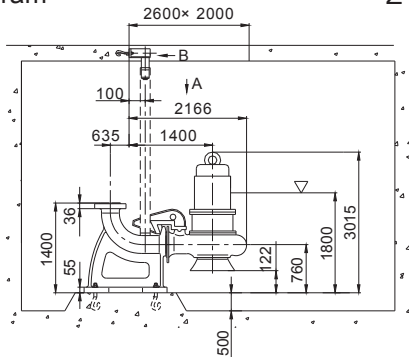
DN 600mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	600WQ3800-9-132	WQ2520-1057	200	590	4730
2	600WQ3600-8-110	WQ2520-1056	200	590	4670
3	600WQ3200-7-90	WQ2520-1055	200	590	4610
4	600WQ3000-6-75	WQ2520-1054	200	590	4570

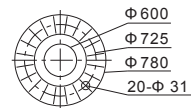
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	132	275	0.78	93.5	1.3
2	110	230	0.78	93.2	1.3
3	90	191	0.77	93	1.5
4	75	163	0.76	92.5	1.5

Installation Diagram

Z Automatic Coupling Installation

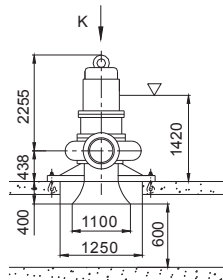


Discharge Flange

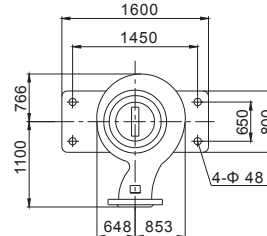


GB/ T17241.6PN10

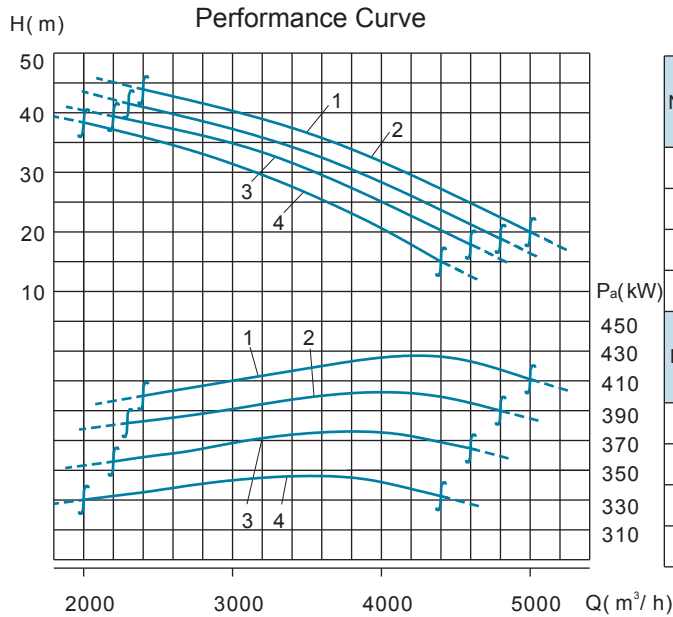
Fixed Base (F)



K



Main Parameter
DN 600mm

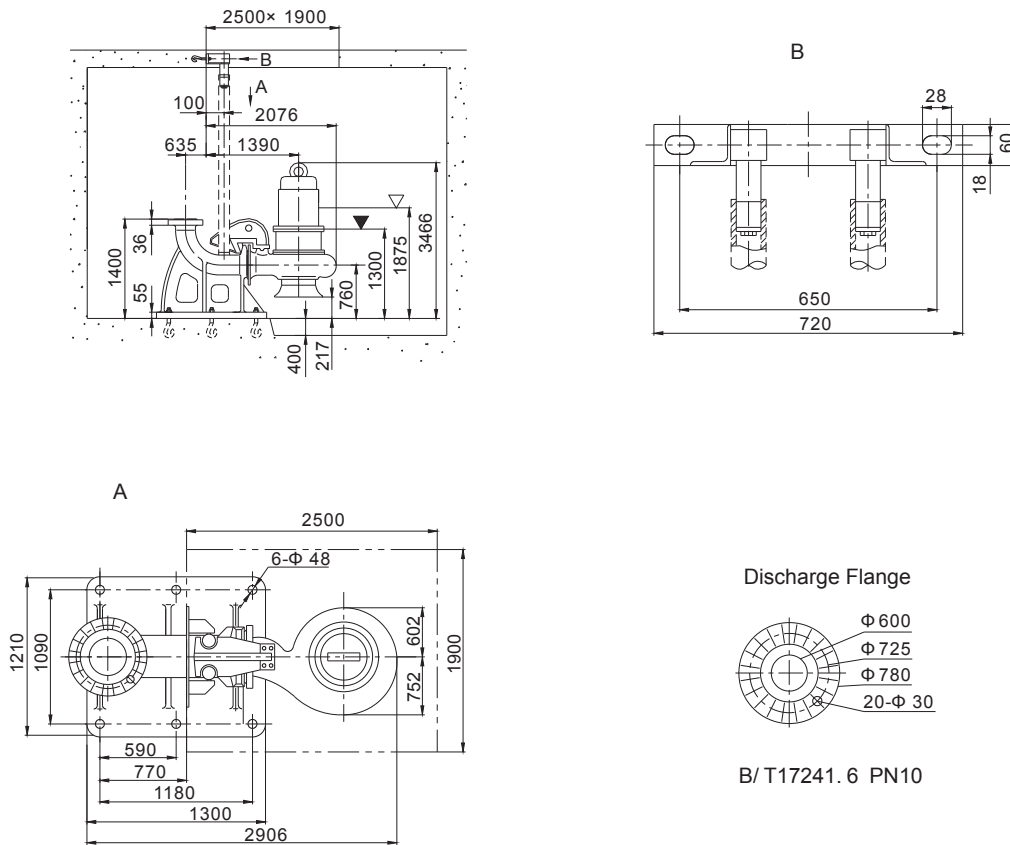


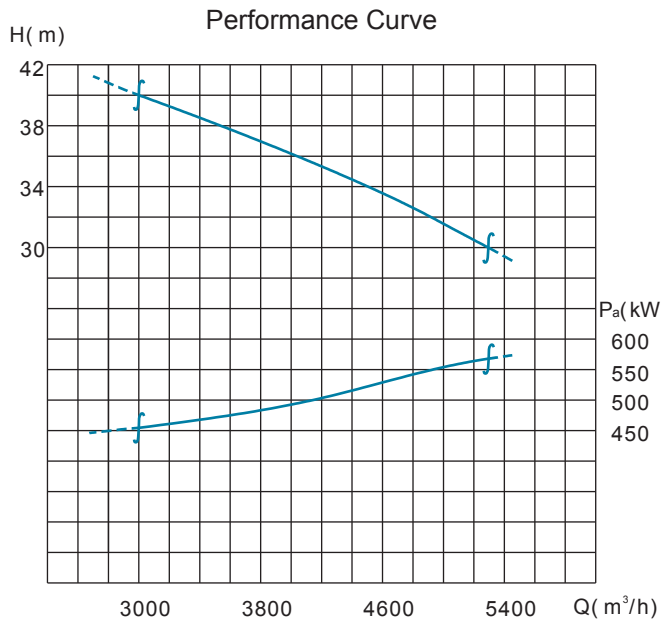
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	600WQ3600-36-450	WQ2740-6170	125	980	6300
2	600WQ3600-33-420	WQ2740-6170A	128	980	6200
3	600WQ3400-32-400	WQ2740-6170B	130	980	6000
4	600WQ3200-30-355	WQ2740-6170C	130	980	5800

NO.	Motor Power (kW)
1	450
2	420
3	400
4	355

Installation Diagram

Z Automatic Coupling Installation





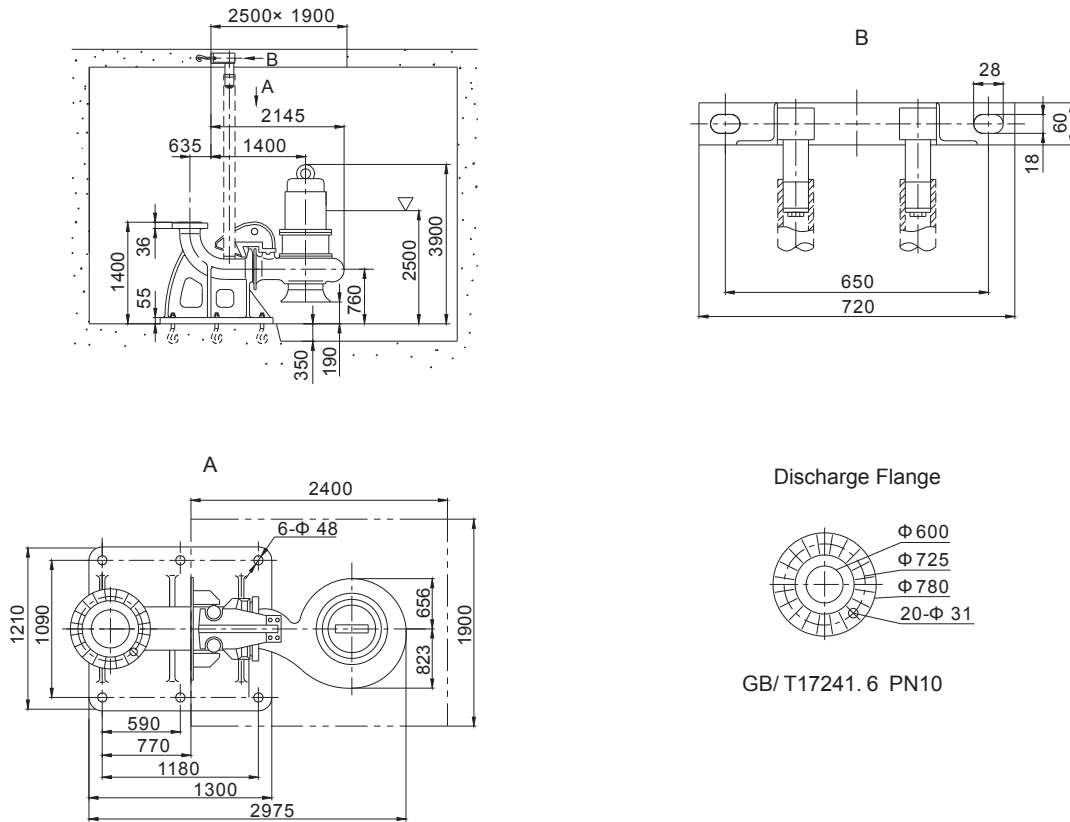
Main Parameter

DN 600mm

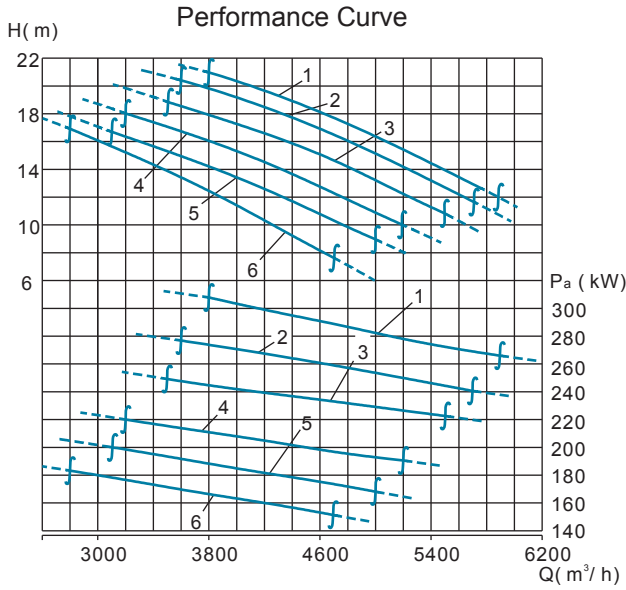
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	600WQ4200-35-580	WQ2850-8175	140	745	7500
NO.	Motor Power (kW)				
1	580				

Installation Diagram

Z Automatic Coupling Installation



Main Parameter
DN 600mm

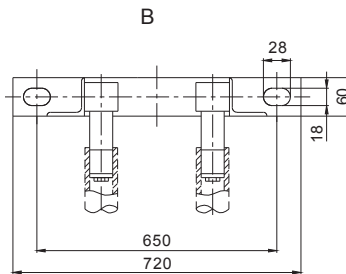
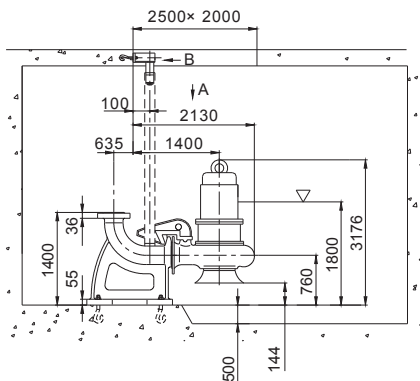


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	600WQ5000- 16- 315	WQ2590- 8169	190	745	4800
2	600WQ4800- 16- 280	WQ2590- 8168	190	745	4620
3	600WQ4600- 15- 250	WQ2590- 8167	190	745	4550
4	600WQ4300- 14- 220	WQ2590- 8166	190	745	4470
5	600WQ4100- 13- 200	WQ2590- 8165	190	745	4350
6	600WQ3900- 12- 185	WQ2590- 8164	190	745	4200

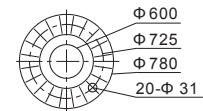
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	315	632	0.81	93.5	1.0
2	280	562	0.81	93.5	1.0
3	250	504	0.81	93	1.0
4	220	446	0.81	92.5	1.0
5	200	386	0.83	94.8	1.9
6	185	360	0.83	94	1.9

Installation Diagram

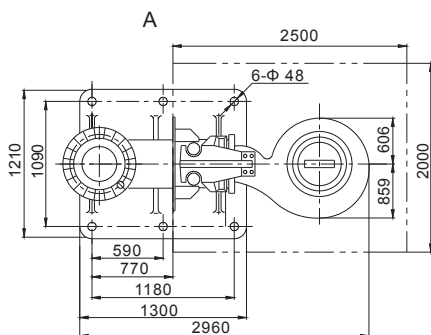
Z Automatic Coupling Installation



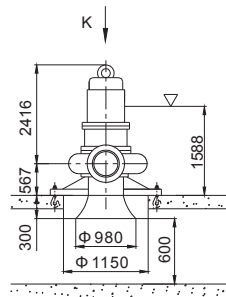
Discharge Flange



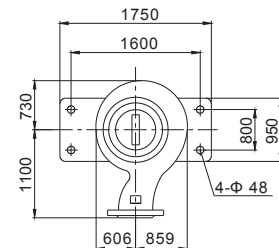
GB/ T17241.6 PN10



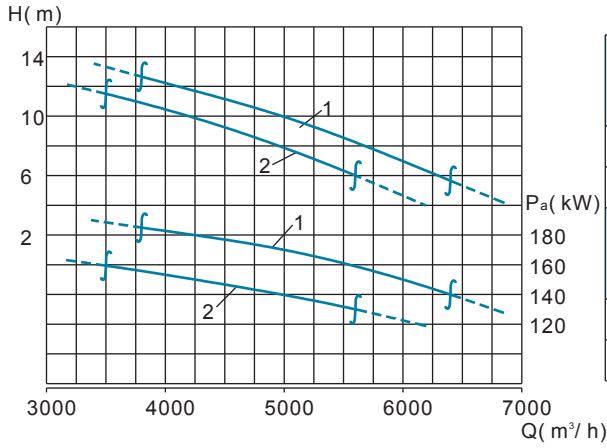
Fixed Base (F)



K



Performance Curve

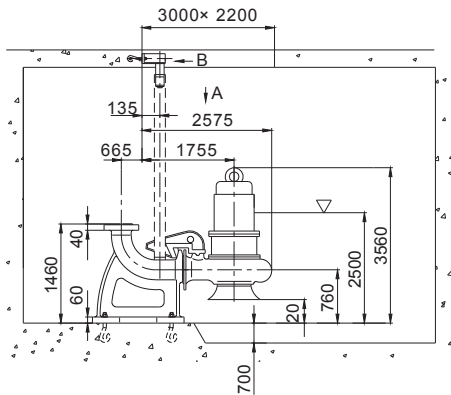


Main Parameter

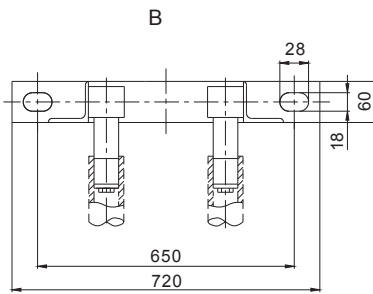
DN 700mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	700WQ5000-10-185	WQ2590-1059	215	590	6500
2	700WQ5000-8-160	WQ2590-1058	215	590	6200
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Effici. (%)	Lock/Rated Torque
1	185	386	0.8	94	1.54
2	160	333	0.78	93.5	1.3

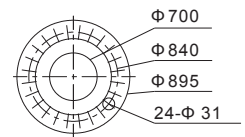
Installation Diagram



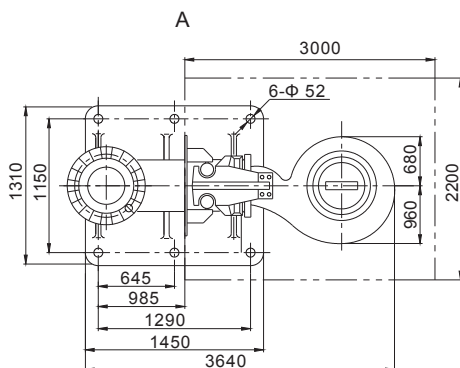
Z Automatic Coupling Installation



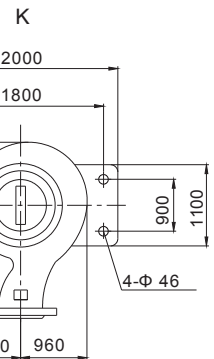
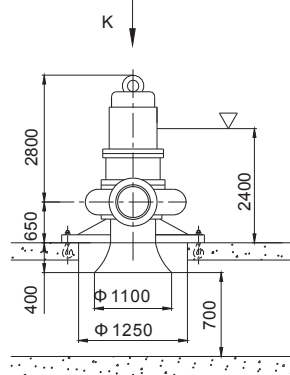
Discharge Flange



GB/T17241.6 PN10

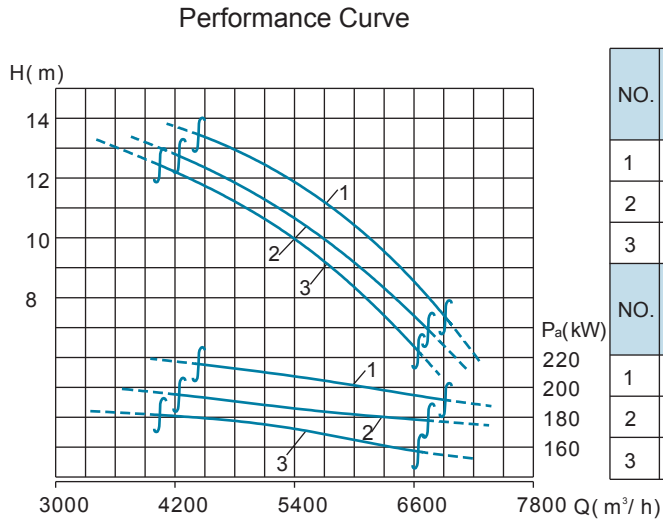


Fixed Base (F)



Main Parameter

DN 700mm

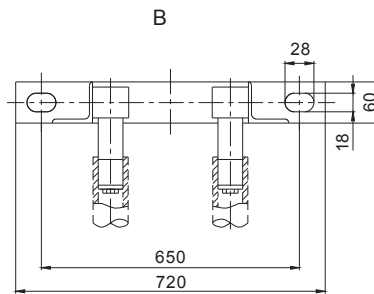
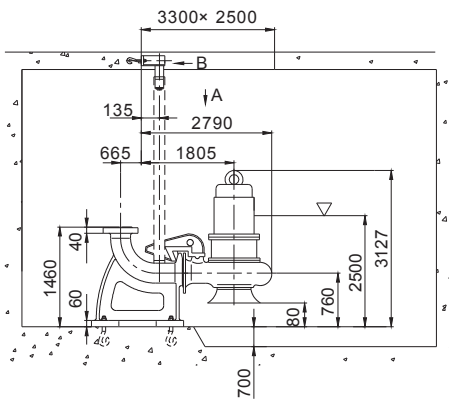


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	700WQ6000- 10- 220	WQ2590- 1252	220	495	7400
2	700WQ5700- 10- 200	WQ2590- 1251	220	495	7100
3	700WQ5400- 10- 185	WQ2590- 1250	220	490	6800

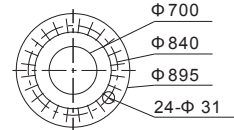
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	220	479	0.755	92.5	0.8
2	200	438	0.755	92	0.8
3	185	392	0.78	92	1.0

Installation Diagram

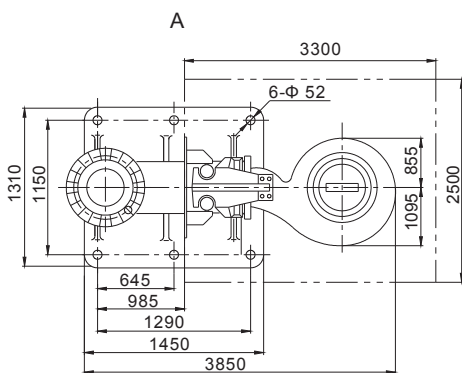
Z Automatic Coupling Installation



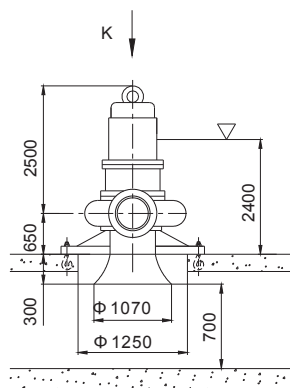
Discharge Flange



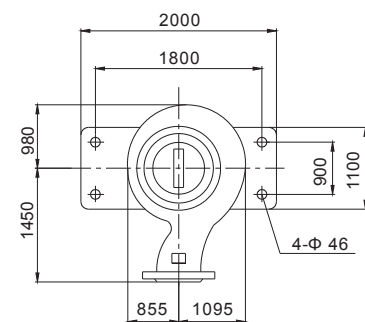
GB/T17241.6 PN10



Fixed Base (F)

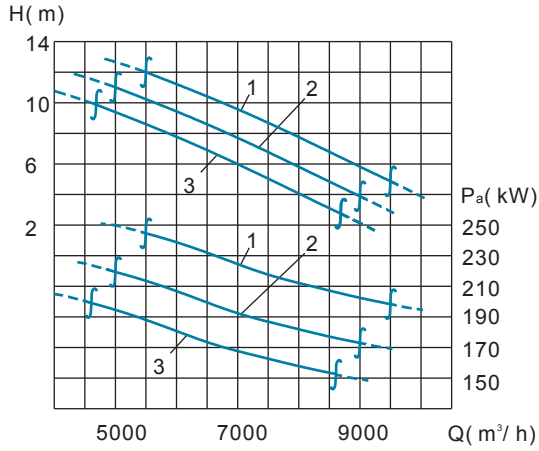


K



Main Parameter
DN 800mm

Performance Curve

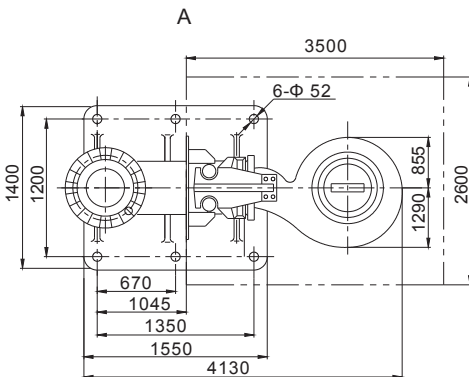
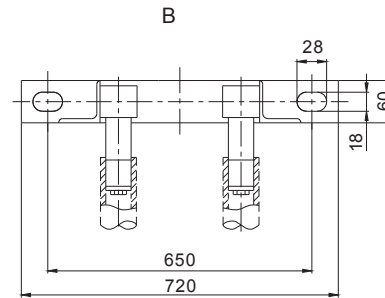
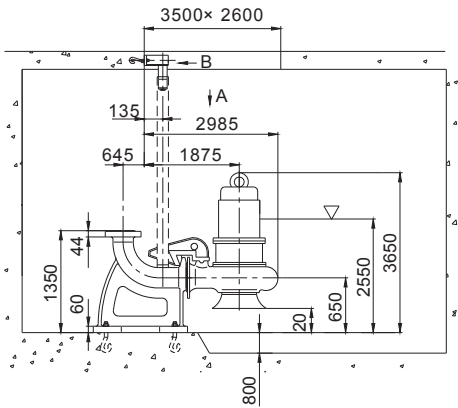


NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	800WQ7200-9-250	WQ2670-1603	310	370	8500
2	800WQ6800-8-220	WQ2670-1602	310	370	8300
3	800WQ6500-7-200	WQ2670-1601	310	370	8000

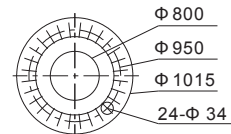
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	250	615	0.74	83.5	0.8
2	220	541	0.74	83.5	0.8
3	200	492	0.74	83.5	0.8

Installation Diagram

Z Automatic Coupling Installation

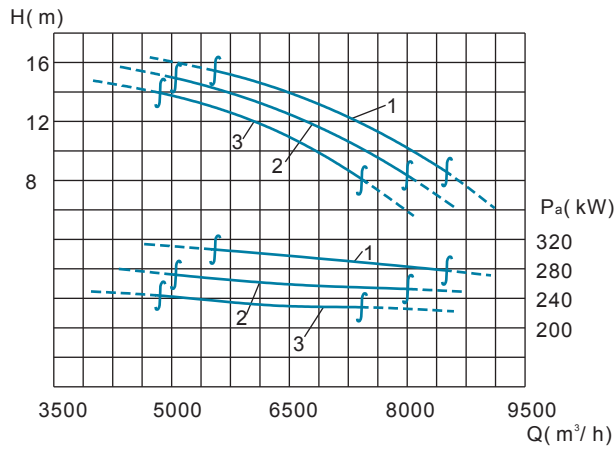


Discharge Flange



GB/T 17241.6 PN10

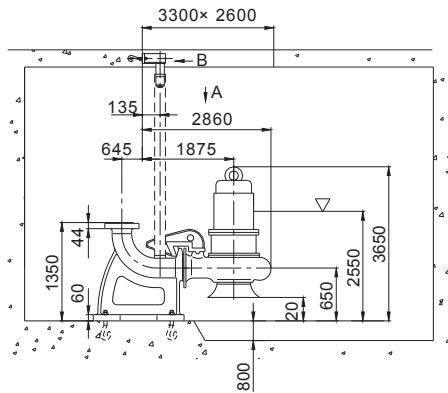
Performance Curve



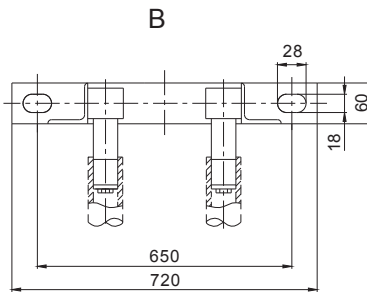
Main Parameter
DN 800mm

NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	800WQ7300-12-315	WQ2670-1255	250	495	8800
2	800WQ6900-12-280	WQ2670-1254	250	495	8400
3	800WQ6500-11-250	WQ2670-1253	250	495	8000
NO.	Motor Power (kW)	Rated Current (A)	Factor Cos φ	M-Eff. (%)	Lock/Rated Torque
1	315	671	0.76	93.8	0.8
2	280	597	0.76	93.8	0.8
3	250	537	0.76	93	0.8

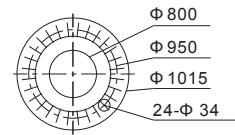
Installation Diagram



Z Automatic Coupling Installation

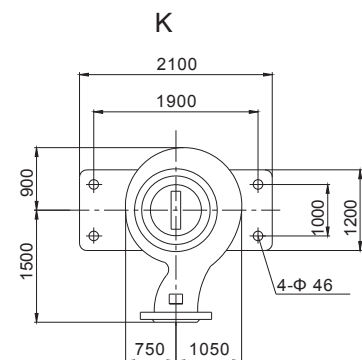
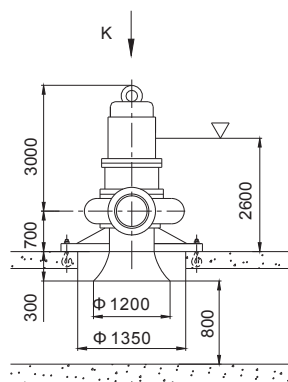
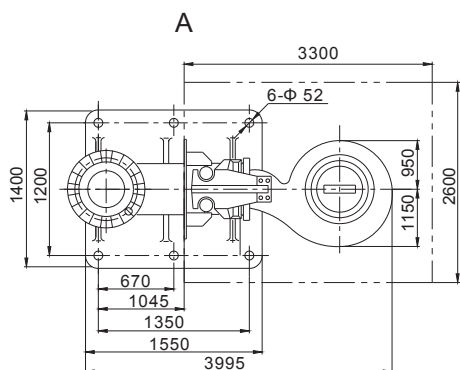


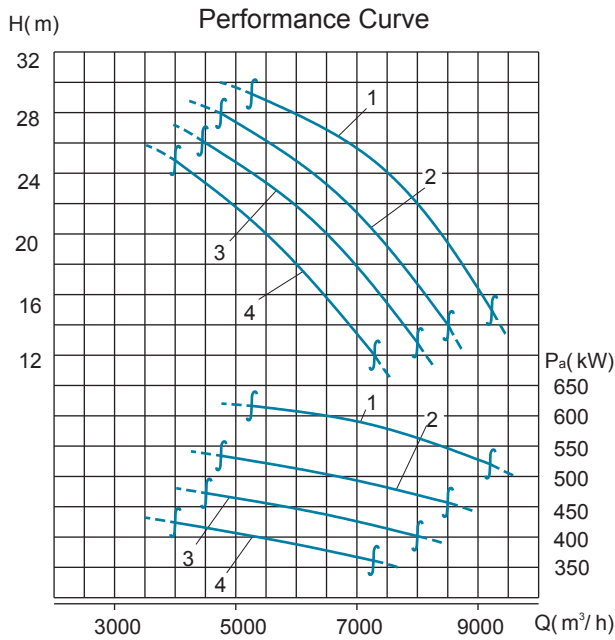
Discharge Flange



GB/T17241.6 PN10

Fixed Base (F)



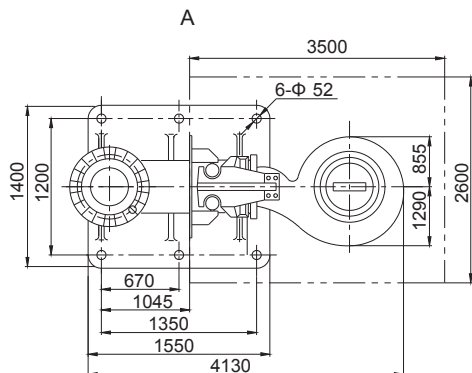
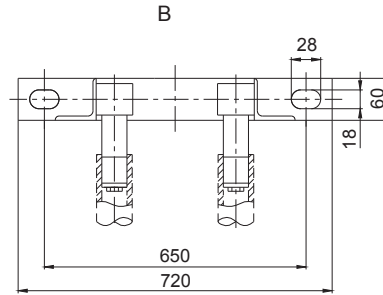
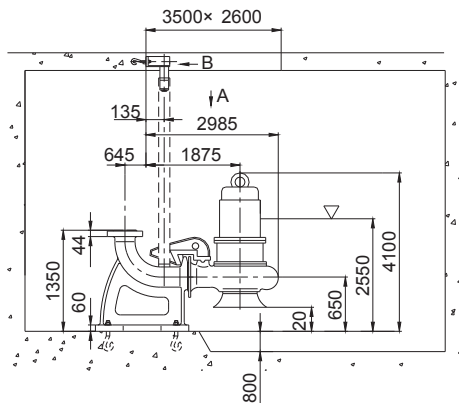


Main Parameter
DN 800mm

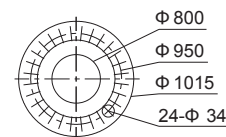
NO.	New Model	Old Model	Channel (mm)	Speed (r/min)	Weight (kg)
1	800WQ7200-25-630	WQ2850-8174	275	745	8700
2	800WQ6500-23-560	WQ2850-8174A	275	745	8500
3	800WQ6000-22-500	WQ2850-8173	275	745	8200
4	800WQ5500-20-450	WQ2850-8173A	275	745	8000
NO.	Motor Power (kW)				
1	630				
2	560				
3	500				
4	450				

Installation Diagram

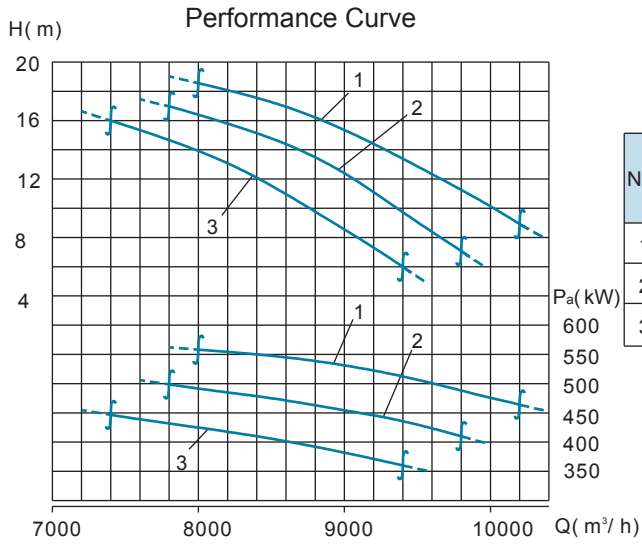
Z Automatic Coupling Installation



Discharge Flange



GB/T17241.6 PN10

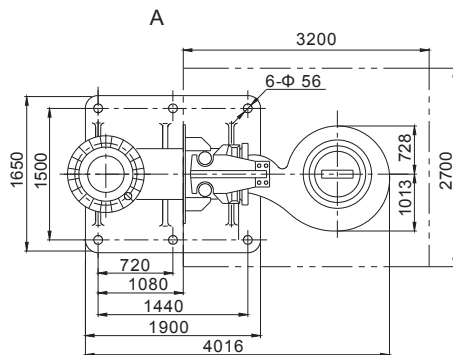
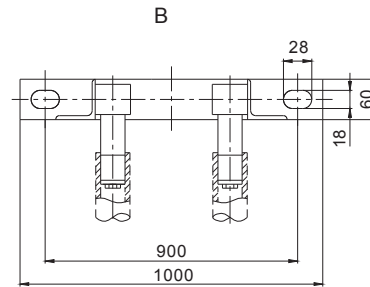
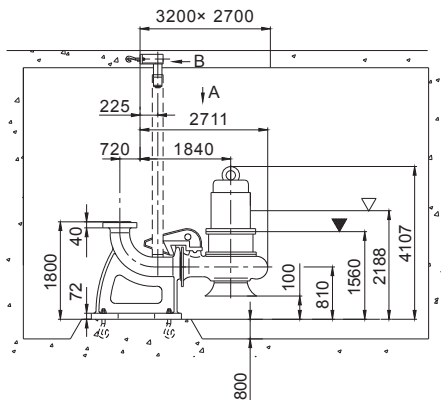


Main Parameter
DN 900mm

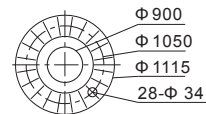
NO.	New Model	Old Model	Channel (mm)	Power (kW)	Speed (r/min)	Weight (kg)
1	900WQ9000-15-560	WQ2850-8172	258	560	745	9600
2	900WQ8500-15-500	WQ2850-8171	263	500	745	9300
3	900WQ8400-12-450	WQ2850-8170	267	450	745	9100

Installation Diagram

Z Automatic Coupling Installation

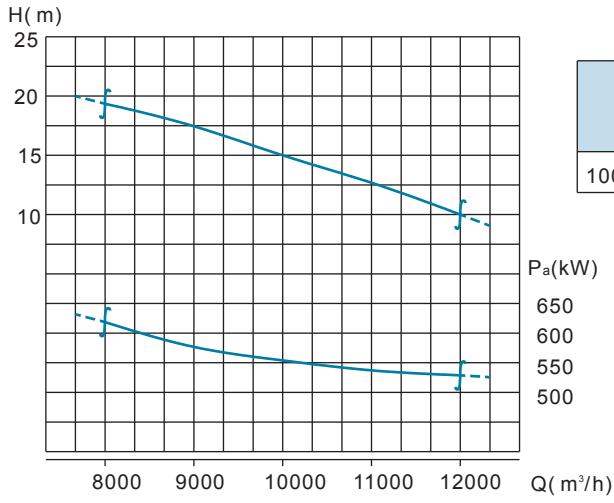


Discharge Flange



GB/T17241.6 PN10

Performance Curve



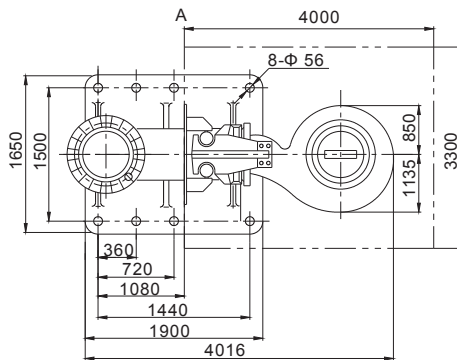
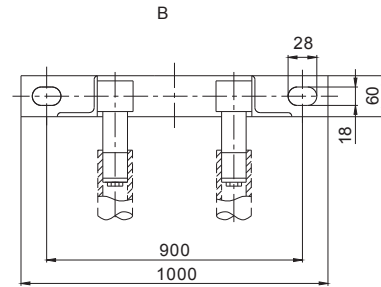
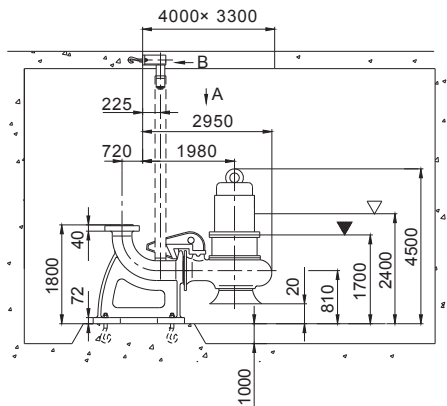
Main Parameter

DN 1000mm

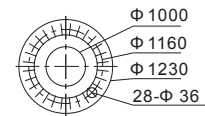
New Model	Old Model	Channel (mm)	Power (kW)	Speed (r/min)	Weight (kg)
1000WQ10000-15-630	WQ2850-1062	313	630	590	10500

Installation Diagram

Z Automatic Coupling Installation



Discharge Flange



GB/T17241.6 PN10

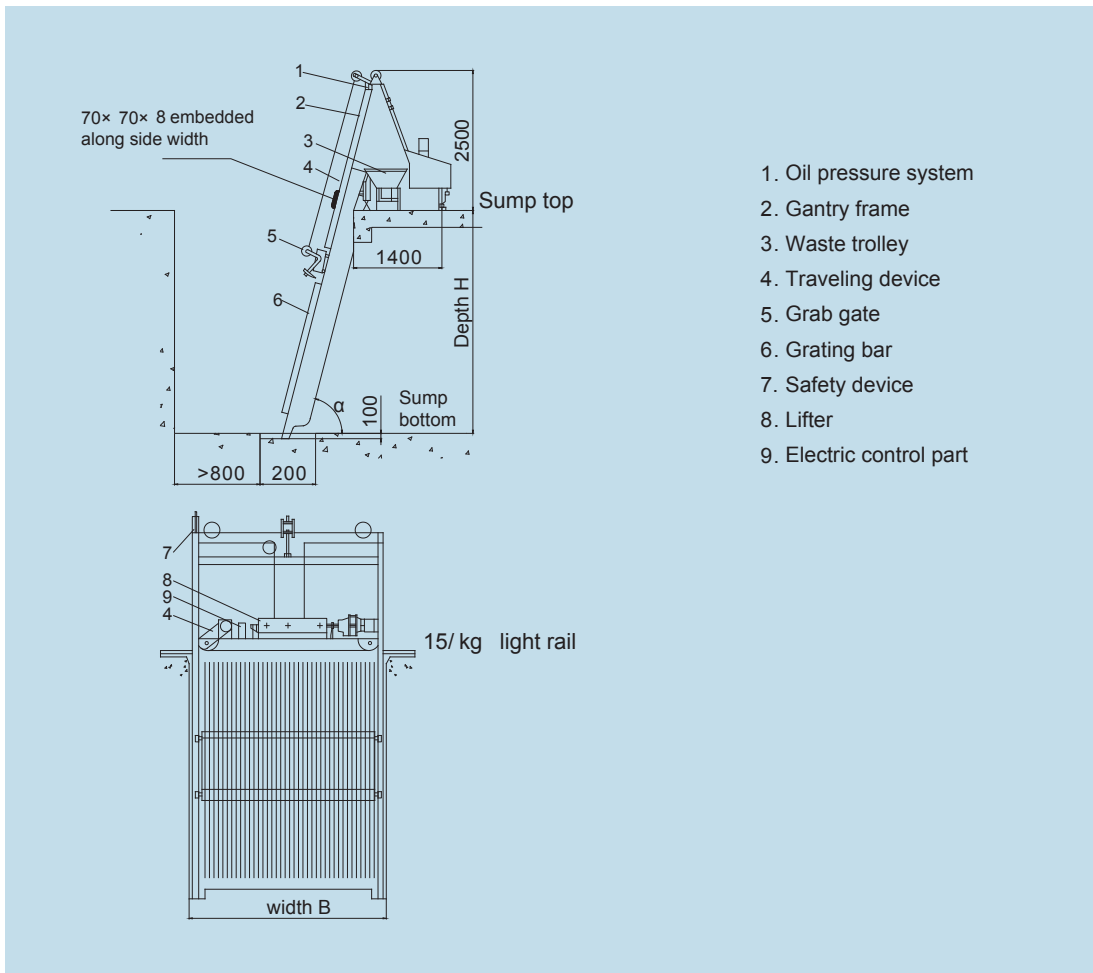
Descriptions of Accessories

Trash screen

Based on the scale of the pump station, the diversified automatic decontamination (removal of impurities from trash screen) series are an option

for users and the dimensions are to be determined in site. The grating cleaner is shown in the figure below.

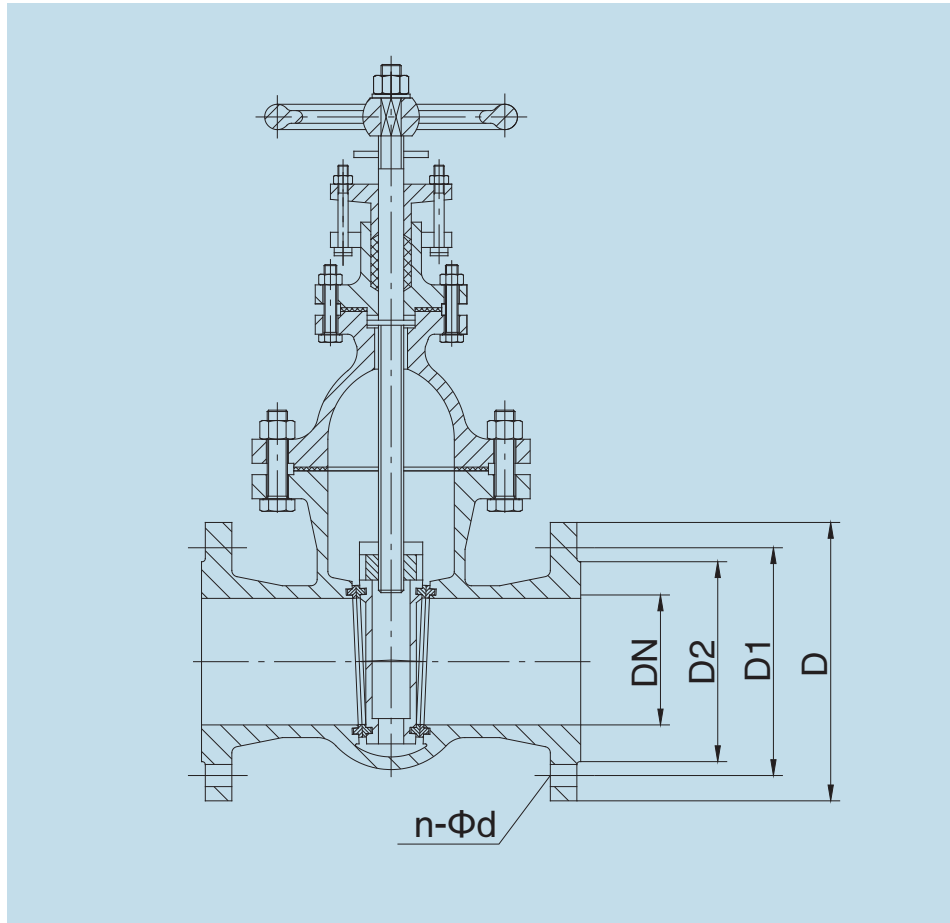
Trash screen machine



Main Specification and Technical Parameters

Model	Grating width (mm)	Derrick(m)	Grating spacing (mm)	Installation Angle	Power
GS GSE -1000	1000	2-12	20-1000	60°-70° or 90° under special cases	0.8/0.4kW (Double speed) 1.1~1.5kw for lifting motor, 0.75kW for control motor, and 0.8/0.4kW for (double-speed) traveling
GS GSE -1250	1250				
GS GSE -1500	1500				
GS GSE -1750	1750				
GS GSE -2000	2000				

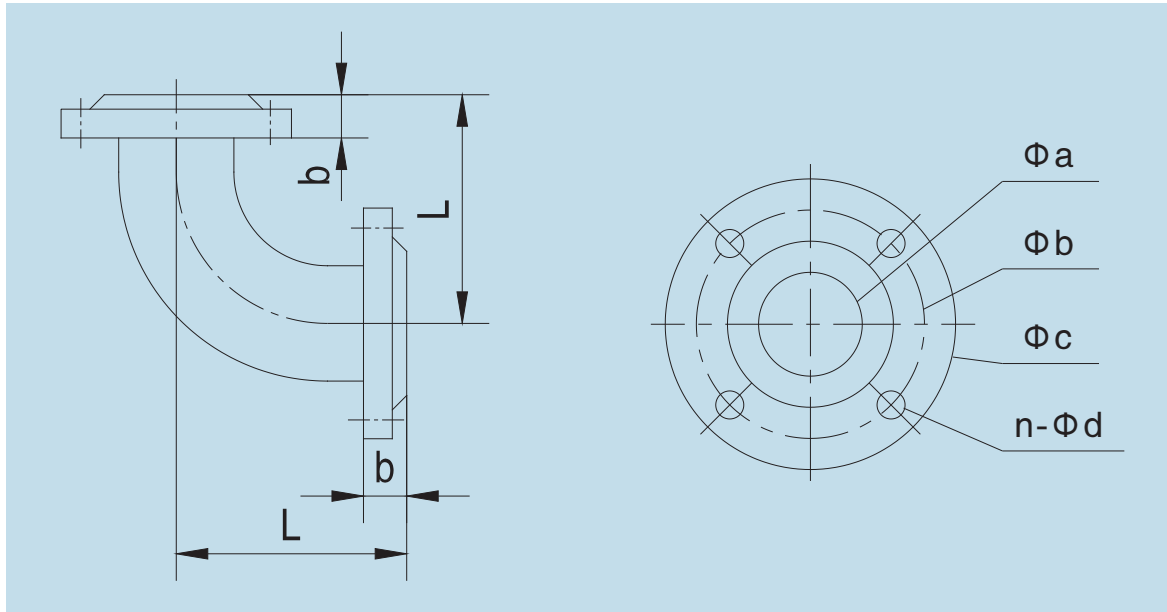
Valve



Nominal Pressure	Diameter DN (mm)	Dimension (mm)			
		D	D1	D2	n- ϕ d
1.0 (Mpa)	50	165	125	102	4- ϕ 18
	65	185	145	122	4- ϕ 18
	80	200	160	133	8- ϕ 18
	100	220	180	158	8- ϕ 18
	125	250	210	184	8- ϕ 18
	150	285	240	212	8- ϕ 22
	200	340	295	268	8- ϕ 22
	250	395	350	320	12- ϕ 22
	300	445	400	370	12- ϕ 22
	350	505	460	430	16- ϕ 22
	400	565	515	482	16- ϕ 26
	450	615	565	532	20- ϕ 26
	500	670	620	585	20- ϕ 26
	600	780	725	685	20- ϕ 30
	700	895	840	794	24- ϕ 30
	800	1015	950	901	24- ϕ 33
900	1115	1050	1001	28- ϕ 33	

Elbow connectors

We can provide two elbow connectors for users, one is of 0.6MPa nominal pressure and the other is of 1.0MPa nominal pressure. They are applicable for direct connection with the discharge flange of submersible sewage pump and for the connection with the flange of the other pipeline of the same bore diameter and same nominal pressure. The user may select based on the actual flange size (DN and PN values). To avoid confusion, please state the specification of elbow connector at the time of ordering.



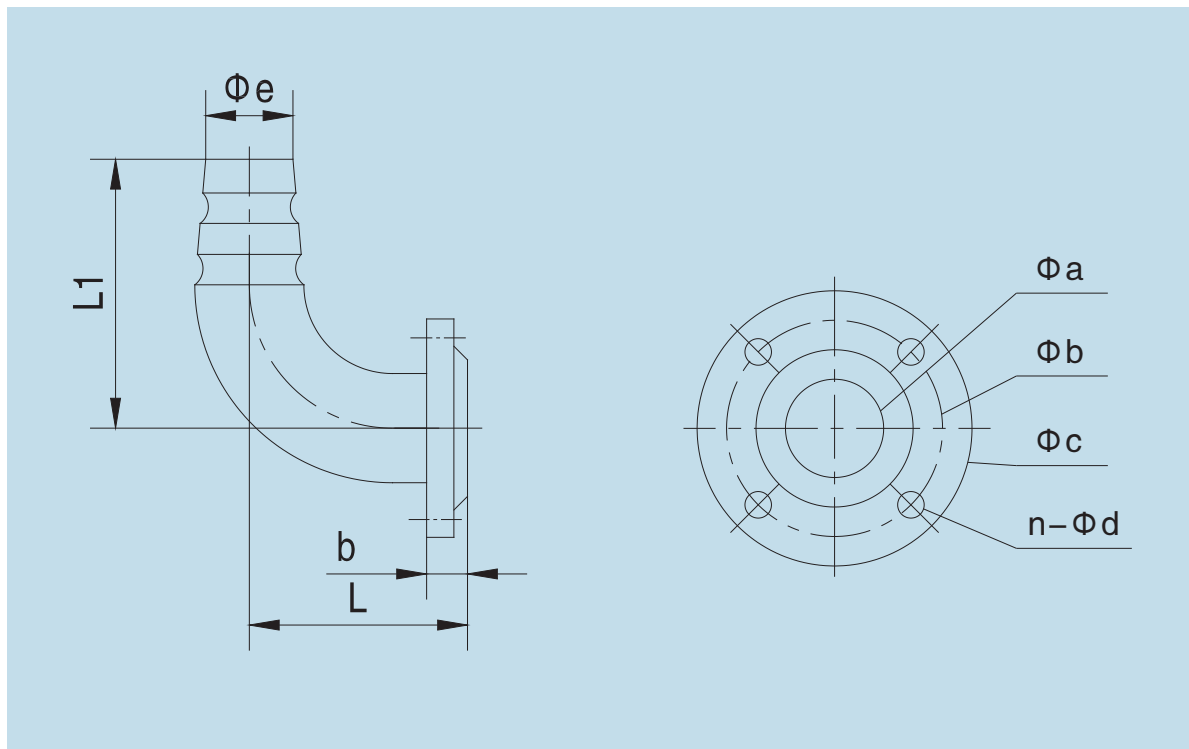
Elbow Connectors with Flange Nominal Pressure Consistent with Pump Body Flange

Elbow Model	Φa	Φb	Φc	$n-\Phi d$	b	Flange Standard	L
50-6	50	110	140	4-13.5	16	As per GB/ T17241.6 PN6 (0.6MPa)	105
65-6	65	130	160	4-13.5	16		130
80-6	80	150	190	4-17.5	18		155
100-6	100	170	210	4-17.5	18		160
150-6	150	225	265	8-17.5	20		220
200-6	200	280	320	8-17.5	22		270
250-6	250	335	375	12-17.5	24		320
300-6	300	395	440	12-22	24		370
350-6	350	445	490	12-22	26	420	
400-10	400	515	565	16-26	32	As per GB/ T17241.6 PN10(1.0MPa)	460
450-10	450	565	615	20-26	32		500
500-10	500	620	670	20-26	34		540
550-10	550	675	730	20-30	35		590
600-10	600	725	780	20-30	36		640

Elbow Connectors in Diameter of 50-350 and in Flange Nominal Pressure of PN10 (1.0MPa)

Elbow Model	Φa	Φb	Φc	$n-\Phi d$	b	Flange Standard	L
50-10	50	125	165	4-17.5	20	GB/T17241.6 PN10 (1.0MPa)	140
65-10	65	145	185	4-17.5	20		160
80-10	80	160	200	8-17.5	22		180
100-10	100	180	220	8-17.5	24		200
150-10	150	240	285	8-22	26		230
200-10	200	295	340	8-22	28		280
250-10	250	350	395	12-22	28		330
300-10	300	400	445	12-22	28		380
350-10	350	460	505	16-22	30		440

Hose Elbow Connectors



Dimension Table of Hose Elbow Connectors (Diameter of nominal pressure of flange for hose elbow connector are consistent with those of pump body flange)

hose elbow Model	Φa	Φb	Φc	$n-\Phi d$	b	Flange Standard	L	L1	Φe	Hose inner diameter Φ
50-6	50	110	140	4-13.5	16	As per GB/ T17241.6 PN6 (0.6MPa)	120	140	60	64
50 × 65-6	50	110	140	4-13.5	16		120	140	74	76
65-6	65	130	160	4-13.5	16		130	160	74	76
80-6	80	150	190	4-17.5	18		135	190	86	89
100-6	100	170	210	4-17.5	18		160	240	100	102
150-6	150	225	265	8-17.5	20		220	320	150	152

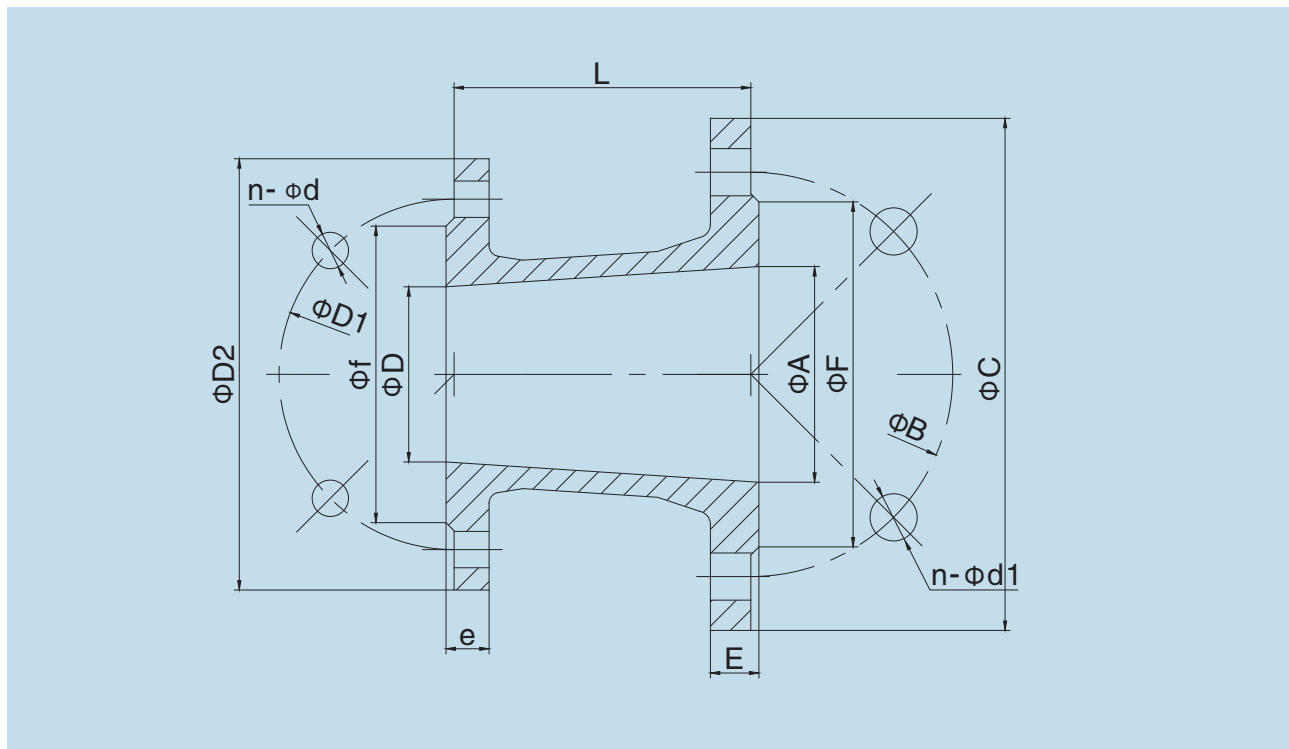
Note: 1. The Φa of hose elbow connector is the same as bore diameter of pump, but the inside diameter of fitted hose differs from the bore diameter of the pump.

2. The pump with a bore diameter of 50 can select 50-6 or 50×65-6 hose elbow connector.
3. Please verify the specification of hose elbow connector at the time of ordering.

Taper pipe

(Two taper pipes are available for the users, one is of 0.6Mpa flange nominal pressure and the other is of 1.0MPa nominal pressure. They are applicable for direct connection with the discharge flange of the submersible sewage pump, with suction flange of suction elbow under dry installation mode, and with discharge flange of discharge pipe seat under auto-coupling installation mode and for the connection with the flange of other pipeline of same bore diameter and same nominal pressure. The user may select based on the actual flange size (DN and PN values).

To avoid confusion, please verify the specification of taper connector at the time of ordering.)



Taper pipe Model	ΦD	ΦD1	ΦD2	n-Φd	Φf	e	ΦA	ΦB	ΦC	n-Φd1	ΦF	E	L
50×65-6	50	110	140	4-13.5	90	16	65	130	160	4-13.5	110	16	100
50×80-6	50	110	140	4-13.5	90	16	80	150	190	4-17.5	128	18	150
65×80-6	65	130	160	4-13.5	110	16	80	150	190	4-17.5	128	18	100
80×100-6	80	150	190	4-17.5	128	18	100	170	210	4-17.5	148	18	150
100×150-6	100	170	210	4-17.5	148	18	150	225	265	8-17.5	202	20	250
150×200-6	150	225	265	8-17.5	202	20	200	280	320	8-17.5	258	22	250
200×250-6	200	280	320	8-17.5	258	22	250	335	375	12-17.5	312	24	230
250×300-6	250	335	375	12-17.5	312	24	300	395	440	12-22	365	24	240
300×350-6	300	395	440	12-22	365	24	350	445	490	12-22	415	26	250
(350-6)× (400-10)	350	445	490	12-22	415	26	400	515	565	16-26	482	32	250
400×450-10	400	515	565	16-26	482	32	450	565	615	20-26	532	32	250
450×500-10	450	565	615	20-26	532	32	500	620	670	20-26	585	34	250
500×600-10	500	620	670	20-26	585	34	600	725	780	20-30	685	36	600

DN≤350、The flange nominal pressure PN10 cone tube

Taper pipe Model	ΦD	ΦD1	ΦD2	n-Φd	Φf	e	ΦA	ΦB	ΦC	n-Φd1	ΦF	E	L
50×65-10	50	125	165	4-17.5	102	20	65	145	185	4-17.5	122	20	150
50×80-10	50	125	165	4-17.5	102	20	80	160	200	8-17.5	133	22	150
65×80-10	65	145	185	4-17.5	122	20	80	160	200	8-17.5	133	22	150
80×100-10	80	160	200	8-17.5	133	22	100	180	220	8-17.5	158	24	150
100×150-10	100	180	220	8-17.5	158	24	150	240	285	8-22	212	26	250
150×200-10	150	240	285	8-22	212	26	200	295	340	8-22	268	28	250
200×250-10	200	295	340	8-22	268	28	250	350	395	12-22	320	28	250
250×300-10	250	350	395	12-22	320	28	300	400	445	12-22	370	28	250
300×350-10	300	400	445	12-22	370	28	350	460	505	16-22	430	30	250
350×400-10	350	460	505	16-22	430	30	400	515	565	16-26	482	32	250

W h e r e t h e r e i s K a i q u a n , T h e r e i s w a t e r



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