Leading the Rise of Chinese Pump Industry

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WQ(11-22kW)系列潜水排污泵

WQ (11-22kW) Series Submersible Sewage Pumps

None Overload Hydraulic Design

Stable operation, and the off load condition will not exceed power

General Design

Modular design of water pump, standardized design of motor, high general purpose

High Reliability

Short shaft extension, self cleaning technology of machine seal, double cable sealing

High Configuration

Standard SKF Bearing, Burgmannn mechanical seal, H-class motor insulated impeller,casing cover wear-resistant ductile iron

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SKF Equipped

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

Kaiquan and SKF Strategic Cooperation

SKF is rooted in China, Kaiquan goes to the World!

Kaiquan became the first company in the world to allow the use of SKF Equipped trademarks on equipment!

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Shanghai Kaiquan is a large-scale comprehensive pump industry group integrating design/production/sales of pumps, water supply equipment and pump control equipment. The group has more than 6,000 employees, including more than 800 engineering and technical personnel, mainly composed of well-known pump experts, professors, doctors and masters, and intermediate and senior engineers, forming an echelon talent structure with innovative thinking. It has 7 enterprises and 5 industrial parks in Shanghai, Zhejiang, Hebei, Liaoning, Anhui and other provinces and cities. Shanghai Kaiquan Group has won the "Shanghai Top 100 High-tech Enterprises", "Shanghai Famous Brand Products", "China Quality Credit AAA Level", "National Contract Credit Rating AAA Level", "Quality, Credit and Service Three Excellent Enterprise", etc. Honorable title. The products serve the construction (including heating and air conditioning), municipal, nuclear power, thermal power, petrochemical, large-scale water conservancy and other fields.

SKF Group is constantly committed to reducing friction, making machinery and equipment run faster, longer service life, more environmentally friendly and safer. Adhering to the business philosophy of efficiency and sustainability, SKF Group is the world's leading supplier of products, solutions and services in the fields of rolling bearings, seals, mechatronics, services and lubrication systems. Services include technical support, maintenance services, condition monitoring, asset efficiency optimization, engineering consulting and training.

Today, SKF has more than 130 production bases around the world, sales companies in more than 130 countries, and more than 17,000 dealer stores, providing customers all over the world with customized solutions and products that meet global quality standards.

Catalogue

Product Overview

The WQ (11-22kW) series submersible sewage pump developed by Shanghai Kaiquan is in compliance with the national standard of GB/T24674-2009 "Sewage sewage submersible pump". It absorbs the advantages of similar products at home and abroad, and integrates the existing sewage pump series on its basis. The research and development of an innovative non-overload hydraulic model is a true full-head submersible pump.

At the same time, comprehensive optimization design has been carried out in terms of mechanical structure, wiring, sealing, protection, control, etc., so that it has a higher configuration, better hydraulic performance, stronger versatility, and better reliability.

Main Applications

Mainly used for sewage treatment plants, municipal sewage lifting pumping stations, water plants, water conservancy drainage and irrigation, water diversion projects, integrated pumping stations, etc. to discharge sewage, wastewater, rainwater containing solids and long fibers.

Usage Conditions

1. The temperature of the medium does not exceed 40℃, the density of the medium is <1050kg/m³, and the PH value is in the range of 4-10.
2. The liquid level of the pump during operation shall not be lower than the dimension "▽" in the installation dimension drawing.
3. The main parts of the pump are made of gray cast iron and nodular cast iron, so it cannot be used to pump strong corrosive or strong abrasive solid particles.
4. The diameter of the solids in the medium should be smaller than the minimum size of the flow channel, see "WQ (11-22kW) series submersible sewage pump performance parameter table" for the specific solids size.
5. The length of the fiber in the medium should be less than the discharge outlet diameter of the pump.

Features and Advantages

1. Unique non overload hydraulic design, innovative technology of sewage treatment pump

Innovative high efficiency non overload hydraulic model design concept, while taking into account the capacity of sewage pump design. Completely solve the operation of the pump worries.

No overload hydraulic model technical characteristics, the maximum power point appears in the high efficiency area, smooth operation, no vibration.

Impeller capacity:The impeller has undergone a large number of CFO research, analysis and testing, so that the impeller blades and the solid passing capacity have achieved the best balance. The unique design of the flow component ensures the passing of solids and the anti-winding of fibers.

2. Excellent mechanical seal

The imported Bergman mechanical seal is adopted, and the material of pump head mechanical seal is silicon carbide and tungsten carbide, providing the maximum anti-wear ability. The designed service life of mechanical seal is 15000 hours.

3. Self cleaning technology of mechanical seal

Two single face mechanical seals are installed in series, and special spiral grooves or small gaps are used at the pump cover to prevent solid particles from depositing on the mechanical seal at the pump side, so as to achieve the self-cleaning function of the mechanical seal and prolong the service life of the mechanical seal.

4. Short shaft extension design

The short shaft extension design can significantly eliminate the eccentricity error of the shaft. Reduce the center of gravity of the pump, reduce the running vibration of the pump, extend the service life of the mechanical seal and bearing.

5. Bearing design

The bearing is designed according to the minimum service life of 100000 hours to ensure the normal operation of the pump.

6. Reliability design of submersible motor

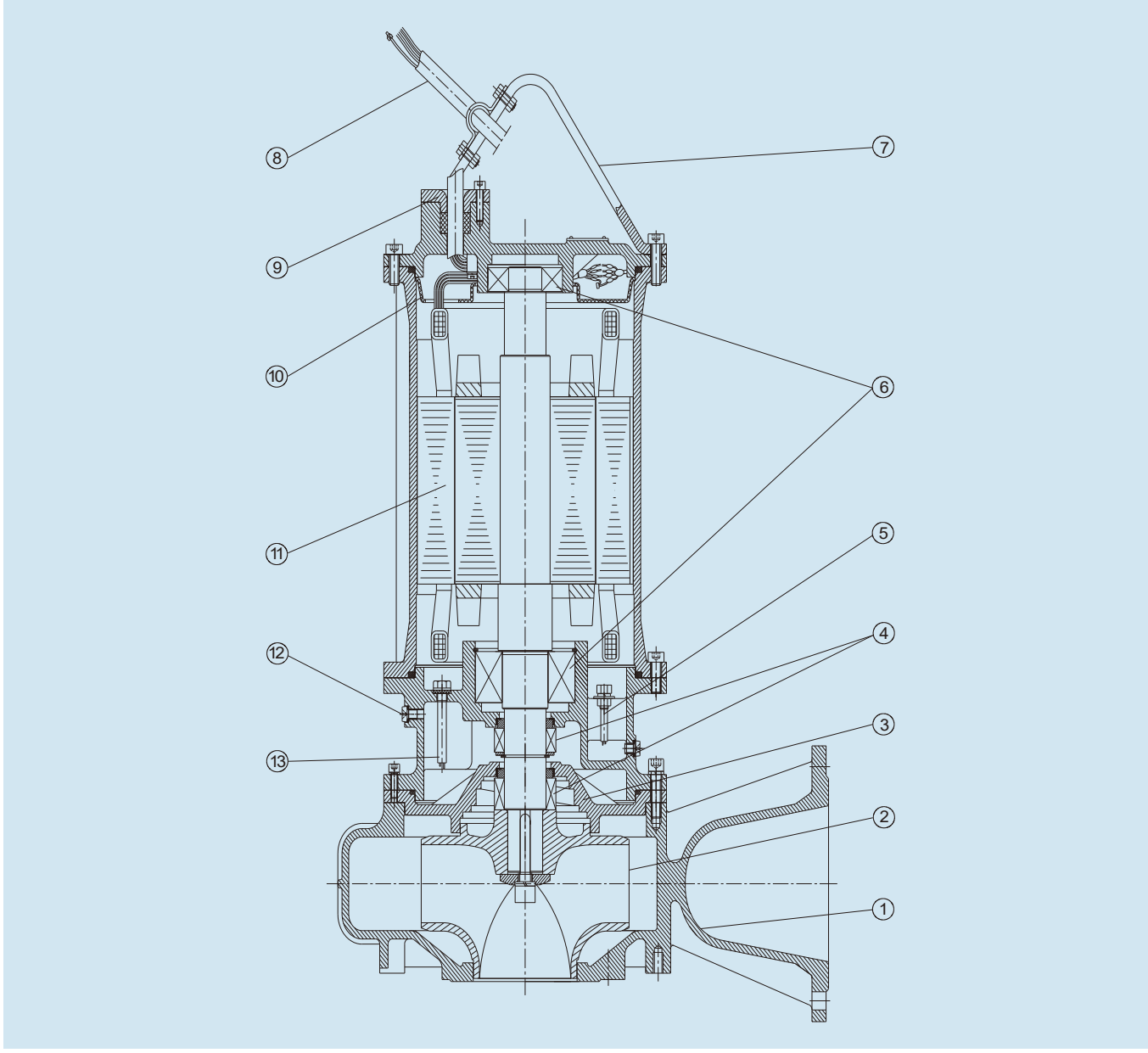
The insulation grade of the motor is grade H, and the maximum allowable temperature is 180 ℃. Compared with grade F, the motor can withstand higher temperature and is more durable.

7. General pump installation design

There are various installation methods, including automatic coupling installation. The pump and the outlet pipe are connected through the outlet pipe seat of the coupling device, without conventional fasteners. When the pump and the outlet pipe seat are connected or disconnected, it only needs to simply put down and lift the pump along the guide bar, which is very convenient, trouble-saving and time-saving.

Structure and Technical Description

WQ(11-22KW) Series Submersible Sewage Pump Structural Diagram



1. Cashing 2. Impeller 3. Cashing Cover 4. Mechanical Seal 5. Leakage Probe 6. Bearing 7. Handle 8. Cable 9. Cable Seal 10. Wiring Board 11. Motor 12. Screw Plug and Oil Filling Port 13. Hydrophobic Probe

Technical Description

Casing and Impeller

Optimized design using CFD technology, adopts wide-outlet high-efficiency non-overload impeller, non-overload hydraulic design and the best balance of high passing capacity, wide flow channel, and the best dirt pass ability. The impeller undergoes strict dynamic balance testing to minimize vibration and maximize the life of bearings and mechanical seals.

Casing Cover

The design of self-cleaning technology is adopted. The pump cover has a ring-shaped spiral groove structure. When the medium particles rotate at the pump cover, they are thrown outward by centrifugal force, which can avoid the particles gathering in the sealing cavity and achieve the self-cleaning effect of the mechanical seal.

Motor

The submersible motor is specially designed and manufactured, the protection grade is IP68, the stator winding is H-class insulation, the limit working temperature of the insulation material is 180℃, and the overheating protection element is embedded in the winding to protect the motor through the electric control cabinet.

Cooling of Motor

The motor is cooled by the pumped medium through the heat sink on the stator shell. The medium needs to submerge the motor. The lowest pump stop position should not be lower than the liquid level marked with "▽" in the installation dimension drawing.

The electric pump can be specially equipped with a 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, he should specify in the order whether to use the pumped medium cooling or the external cooling water cooling. When the cooling medium is pumped, the structure of the pump can prevent large particles from entering the cooling channel. After a long period of operation, small particles may deposit in the sleeve, which can be flushed by external flushing fluid through the pipe joint on the cooling sleeve.

Mechanical Seal

Borgmann mechanical seal is used. The mechanical seal is made of low friction and wear-resistant friction materials. The rubber parts are oil-resistant nitrile rubber, and the metal parts are stainless steel. The pump side mechanical seal is matched with silicon carbide/tungsten carbide, and the designed service life is 15,000 hours. mechanical seal is used. The mechanical seal is made of low friction and wear-resistant friction materials. The rubber parts are oil-resistant nitrile rubber, and the metal parts are stainless steel. The pump side mechanical seal is matched with silicon carbide/tungsten carbide, and the designed service life is 15,000 hours.

Oil Chamber

The oil in the oil chamber adopts 32# anti-wear hydraulic oil, and the executive standard is 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 leakage probe. When the medium on the pump side leaks into the oil chamber, the leakage probe will stop the pump through the electric control cabinet to remind the operator of maintenance.

The oil filling amount is to overflow oil from the oil filling hole, and it can ensure that there is a certain volume of air in the oil chamber, so that the pressure in the oil chamber will not rise significantly after the oil temperature rises, so as to avoid excessive wear or leakage of the mechanical seal.

Bearing

SKF Bearing imported from the original is adopted as the standard configuration of the whole system. The upper bearing is deep groove ball bearing or cylindrical roller bearing, which is used to bear radial force. The lower bearing is used to bear the radial force and axial force. According to the radial force and axial force, some pumps are designed as a double row angular contact ball bearing, some as a diagonal contact ball bearing plus a cylindrical roller bearing, all of which have sufficient load margin. The designed service life of the bearing is 100000 hours, and it is lubricated with 3# lithium grease.

Cable and Motor Seal

Heavy duty rubber sheathed flexible cable with sewage resistance is selected, which has superior mechanical strength and oil resistance. The cross-sectional area and current carrying capacity of cable conductor are selected according to the condition of long-term continuous operation at ambient temperature of 40℃. Therefore, under normal service conditions, the current carrying capacity of cable has sufficient margin and longer service life.

The cable gland compresses the cable sealing ring to realize reliable sealing between the cable and the wiring cavity. Fix the cable to prevent it from pulling off. The cable adopts color mark and digital mark, which makes the identification and connection of the cable easier. The motor wiring cavity and the electric control cabinet are equipped with grounding marks and grounding fasteners, and the cables are strictly grounded, which is safe and reliable.

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

Protector

The water pump is equipped with motor winding overheating protection element, motor cavity oil water probe, oil chamber leakage probe. In order to ensure the safe and reliable operation of your pump, especially in order to prevent the burning of the motor, it is recommended to use our company's special electric control cabinet for submersible pump. When the user provides the electric control cabinet by himself, please contact the professional team of the electric control cabinet of the company for any electrical technical problems, especially the electrical technical problems of the protection device.

Protective Devices Description

Overheat Protection Element

The overheat protection element is a temperature-controlled electric appliance embedded in the stator windings of the motor. Under the condition of abnormal operation, when the temperature of the winding reaches the set value of the overheat protection element, the overheat protection element makes the "overheat" indicator light up through the electric control cabinet and automatically stops the motor, reminding the operator to check and find out the cause of the overheat of the motor.

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

Leak Detector

The oil-water probe is used for water or oil leakage detection.

The water leakage probe in the oil chamber is referred to as the oil probe. When the turbomachinery seal is damaged and the water in the leakage chamber reaches a certain level, the two electrodes of the leakage probe are connected, and the alarm signal (indicator light is on) is sent out through the electric control cabinet to remind the operator to check the mechanical seal or replace the oil in the oil chamber in time.

The leakage probe in the motor cavity is called water probe for short. It is installed in the cavity under the motor cavity and beside the bearing, and the cavity is communicated with the bearing chamber through a hole. When the mechanical seal of the motor fails, the oil in the oil chamber enters into the cavity through the bearing chamber, or the water flowing into the motor enters into the cavity, the two electrodes of the water leakage probe will be connected, and the alarm signal (indicator light on) will be sent out through the electric control cabinet, and the pump will stop running automatically to remind the operator to repair the pump.

Lifting Device

The lifting frame of the pump is made of 304 material, and it is designed with large space, which is convenient for the hook to hang in, making the lifting convenient and durable.

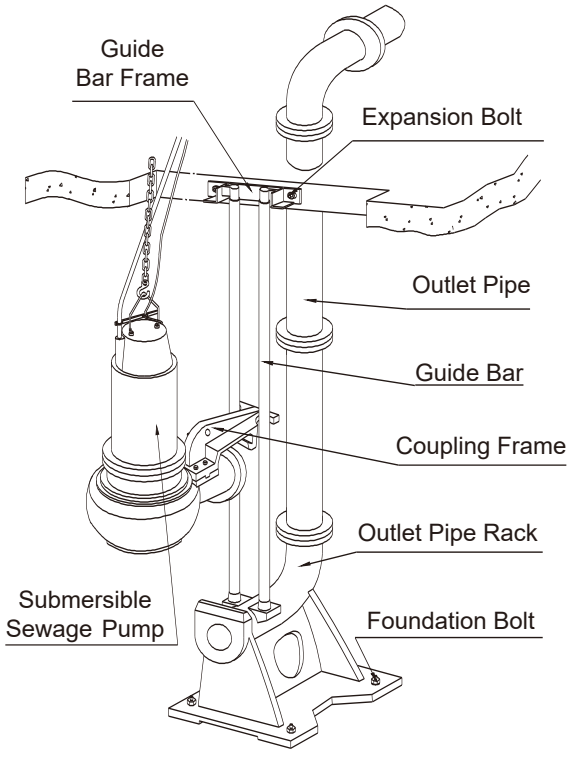
Main Parts Material

No.	Name		Material
1	Impeller, casing cover		QT500
2	Casing, terminal box cover, connection base		HT250
3	Shaft		2Cr13
4	Motor insulation		180℃ class h insulation
5	Bearing brand		SKF
6	Mechanical seal	Brand	Burgmannn
		Motor side friction pair	Graphite / Silicon Carbide
		Pump side friction pair	Silicon Carbide / Tungsten Carbide
7	O-ring		Nitrile 40
8	Cable sealing ring		

Installation Methods

WQ series submersible sewage pump has automatic coupling installation (Z), fixed base installation (P), fixed base installation (F), hose movable installation (R) and hard pipe movable installation (Y). It's easy to install either way. The following are respectively introduced.

Automatic Coupling Installation (Z)

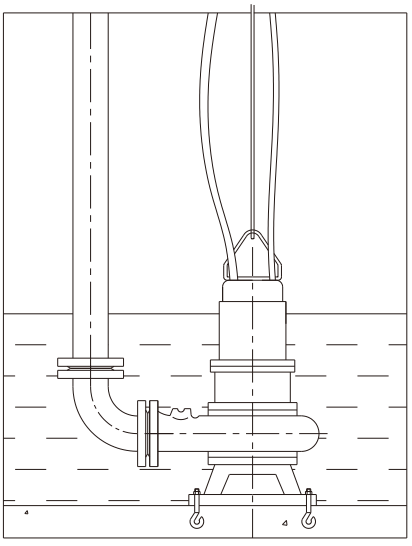


Automatic coupling installation is actually using coupling device to connect pump and pipeline. With the coupling device, the pump and the outlet pipe are independent of each other, and there is no need to connect with conventional fasteners, so the connection and separation of the pump and the outlet pipe are very easy. In fact, the coupling device is very simple. There are only such things as outlet pipe seat, guide bar frame and coupling frame. The guide bar only plays a guide bar and does not bear any force. It is OK to use ordinary water pipe or steel pipe. The user can provide it by himself, and it can be easily cut into the required length according to the depth of the pool. When installing, install the outlet pipe seat, guide bar and guide bar frame, install the coupling frame on the pump body, lift the pump, put the semicircular orifice on the coupling frame into the guide bar, and slide the pump down to the bottom along the guide bar, the coupling frame will fasten the pump body and outlet pipe seat, at the same time, the outlet of the pump body and the inlet of the outlet pipe seat will be aligned automatically, and the flange end face will be attached automatically. When the pump needs to be repaired, just lift the pump up, and the pump body and outlet pipe seat will be separated. This installation method is really easy, labor-saving and trouble-free.

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

Fixed Base Installation (P)

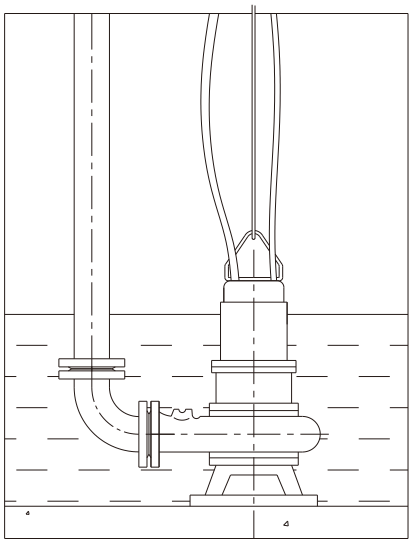
Fix the support base on the foundation and connect the outlet pipe to run. The base needs to be fixed with foundation bolts.

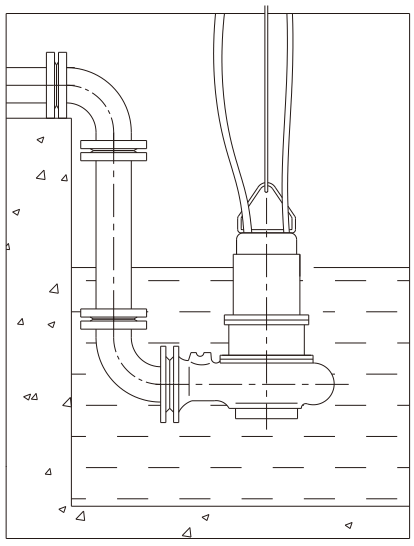


P

Movable Installation (R, Y)

It is supported by a base, and it can work when connected to a water outlet hose or a hard tube. This method is mainly used for emergency rescue or maintenance and construction needs. When connecting hard pipes, if the pipes have sufficient rigidity, the pump can also be suspended using pipes.


R


Y

Technical Specifications

Model Description

65 WQ 50 – 46 – 15 – Z(Y、R、P)

- Installation Methods Z: Automatic coupling installation
  Y: Hard pipe movable installation
  R: Hose movable installation
  P: Fixed base installation
- Supporting motor power 15KW
- Head 46 m
- Capacity 50 m³/h
- WQ (11-22KW) series submersible sewage pump
- Discharge Caliber is 65m

Rated Voltage, Rated Frequency

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

Connection Method

The connection method of motor winding wiring:

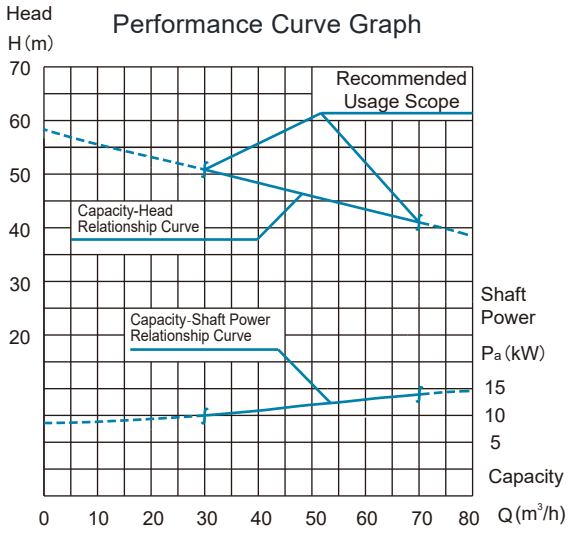
The pump adopts triangle (△) connection method. When the pump leaves the factory, the connecting cavity has been connected according to this. According to the field conditions, direct start, auto-step-down start or external electronic soft starter can be used.

Rotation Direction

Seen from the pump inlet, the impeller rotates counterclockwise.

Performance Curve and Main Parameter Explanation

Performance Curve Graph



Main Parameter

Outlet Diameter 65mm

New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
65WQ50-46-15	WQ2210-2112	Rectangle 38	2940	136
Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
15	29	0. 9	88.8	2.4

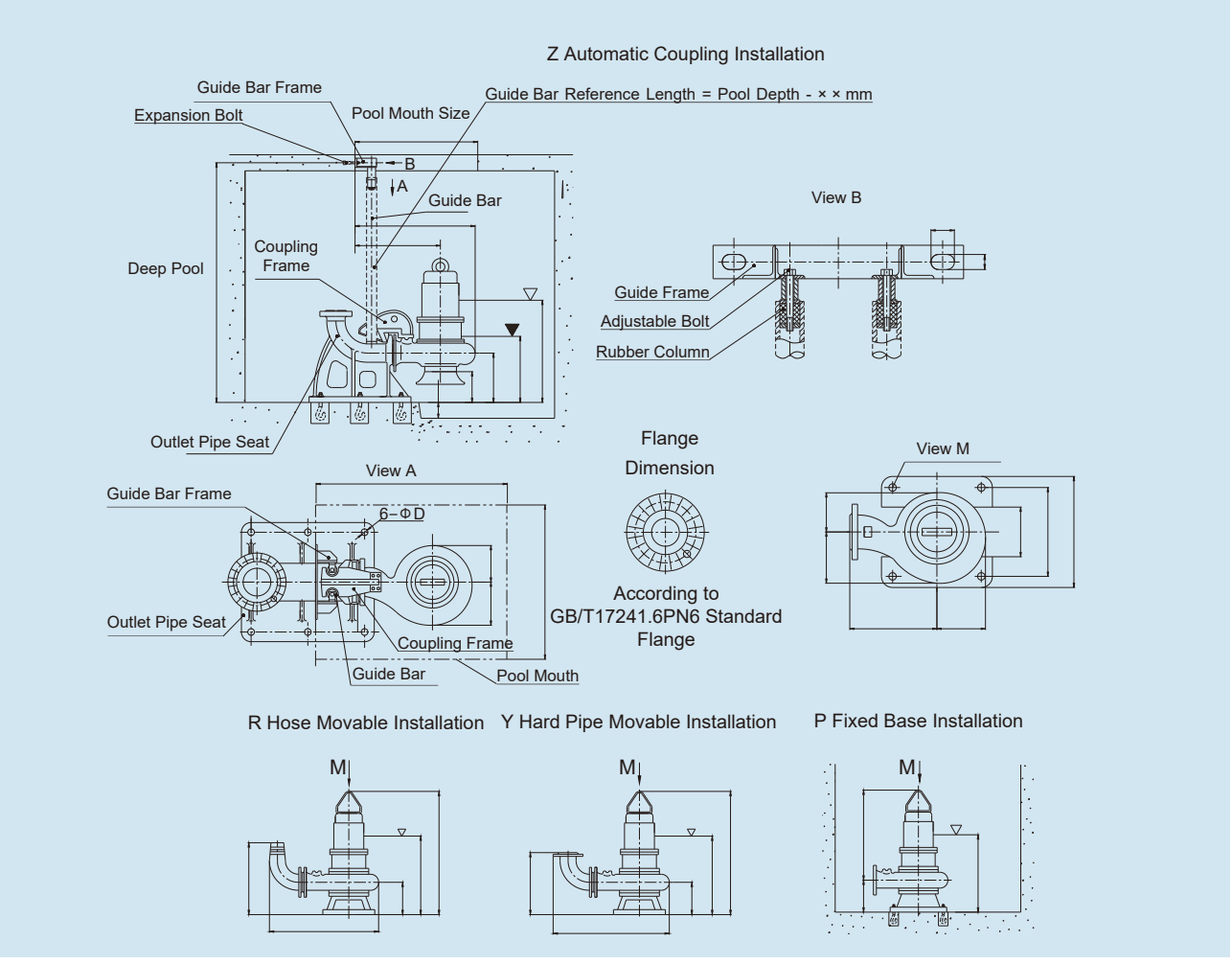
The solid part of the curve on the graph indicates the recommended application range of the pump. When the shaft power increases to a certain value, it will not increase. Generally, there is no danger of overload for non overload pump. Even if there is a little overload occasionally, it is limited. Therefore, the motor of such pump is safe when it is used under any flow. However, it is better to use it within the recommended range, because the efficiency of the pump is higher within the recommended range, and it is more economical to use the pump. When the flow is less than the left limit, the efficiency of the unit is very low, resulting in large radial force, leading to rolling key and shaft breaking. When the flow is greater than the right limit, the pump will produce vibration, noise and other problems.

Refer to "performance parameter table of WQ (11-22kw) series submersible sewage pump" for the maximum size of solids.

The new model corresponds to the prototype number, and the name plate is made according to the customer's needs.

The weight of the pump does not include accessories of various installation methods, such as coupling device, base, elbow joint, hose elbow joint, etc.

Installation Dimension Diagram Description



1.All the guide bars can be fixed with the M16×150 I expansion bolts. Expansion bolts are easy to purchase and can be supplied or ordered from our company.
Function of the rubber column on the guide bar frame: tightening the regulating bolt of the rubber column can make the rubber column tighten the inner hole of the guide bar, make the guide bar stable, and avoid the vibration and sound of the guide bar.
2.The length of the guide bar shall be calculated according to the "pool depth" shown on the diagram. Information on guide bars is shown in Schedule 1.
3.No water inlet horn pipe pump coupling installation, the bottom of the pool made flat, the height of the outlet pipe seat can ensure that the pump suction inlet to the bottom of the pool has enough height, so that the pump has good suction conditions, so there is no need to make concrete boss for the outlet pipe seat, so that you can save the trouble in construction.
Coupling installation of pumps with inlet horn tube. In order to ensure sufficient height of horn tube to the bottom of the pool, concrete lugs with certain strength should be made for the outlet pipe base. The minimum height of lugs is given in the installation dimension diagram of each pump.
4."▽" means the lowest liquid level at which the pump operates. The liquid level of the pump should be higher than the lowest liquid level. It is best to submerge the pump completely so that the motor can be fully cooled. The lowest liquid level can be controlled by a float switch. Our submersible sewage pump special electric control cabinets are liquid level control type, are equipped with a certain number of float switches.
5. Movable installation pump, hose elbow or elbow are provided by our company. For hose movable installation , the inner diameter of applicable hose for pumps with various diameters is shown in Table 2.
6.For the same type of pump, the fixed base installation and the movable base installation are the same. The shape and dimensions of the base are shown in the M direction view.
7.Flange size refers to the outlet flange of the pump and the outlet pipe seat flange. The flange dimension of GB/TL72416-2008/XGI - 2011 standard.

Table 1 Specifications and Dimensions of Pump Guide Bar

Pump Discharge Diameter (mm)	Guide Bar Specification (GB/T17395-2008) Water Pipe/Seamless Steel Pipe	Guide Bar Reference Length = (Pool Depth - L) ±15mm The Following are 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

Table 2 Pump Hose

Pump Discharge Diameter (mm)	50		65	80	100	150
Specification for Hose Elbow Joints	50-6	50×65-6	65-6	80-6	100-6	150-6
Inner Diameter of Hose (mm)	64	76	76	89	102	152

Table 3 Foundation Bolts for Self-Coupling Installation of Outlet Pipe Seat

Pump Discharge Diameter (mm)	Foundation Bolts (GB/T799-1988)		
	Specifications	Quantity	Reserve Holes for Reference Dimensions Length × Width × Depth (mm)
50	M16×220	4	80×80×270
65			
80	M20×300		100×100×350
100			
150			
200	M24×300		
250	M30×400		160×160×450
300			
350		6	

Table 4 Foundation Bolts for Pump Fixed Base Installation

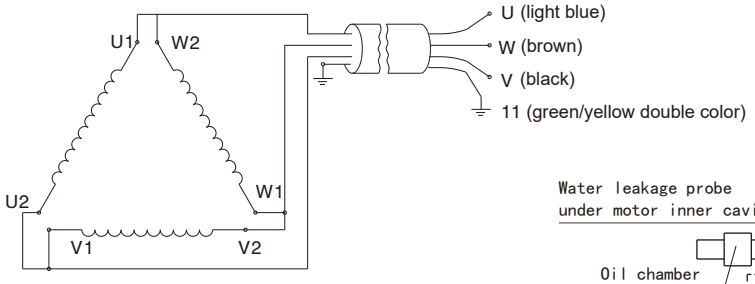
Hole Diameter of Base	Foundation Bolts (GB/T799-1988)	
	Specifications	Reserve Holes for Reference Dimensions Length × Width × Depth (mm)
Φ18、Φ20	M16×220	80×80×270
Φ25、Φ26	M20×300	100×100×350
Φ30	M24×300	

Table 5 Coupling Device Weight Table

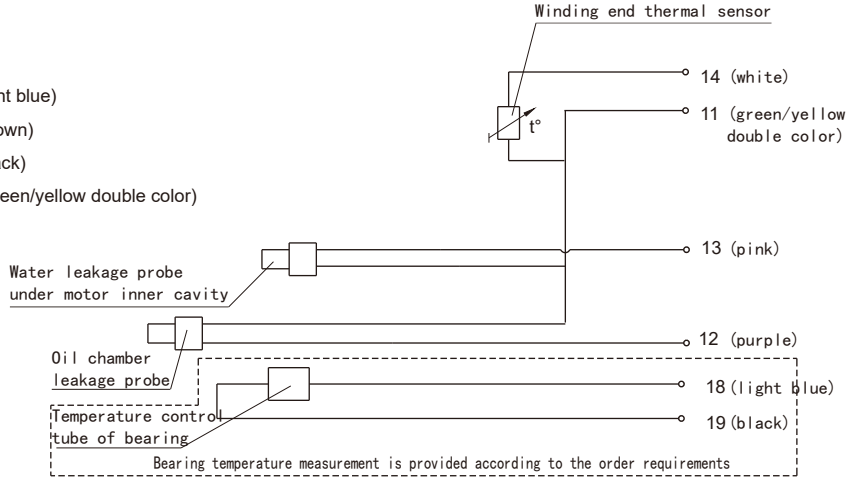
Pump Caliber (mm)	Coupling Device		
	Base of Outlet Pipe (kg)	Coupling Frame(kg)	Guide Bar
50	21.5	6	2.45kg/m
65	27.5	7.1	
80	41.3	8.1	
100	37	9.3	
150	74.3	20	6.78kg/m
200	119	24	
250	232	46	
300	334	64	10.36kg/m
350	428	106	

Main and Control Cables Standard Wiring Diagram

Wiring diagram of stator outgoing line and main cable (i.e. internal triangle connection)



Wiring diagram of submersible motor control cable



Motor Protection System Components Monitoring Performance Comparison Table

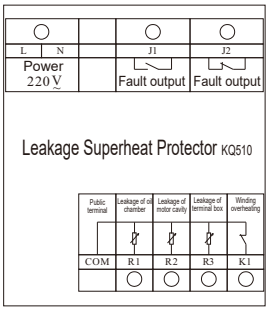
Protection Element Name	Winding Thermistor (120℃)	Motor Lumen Bottom Leak Probe	Oil Chamber Leak Probe	Bearing Temperature pt100
Control cable label	11-14	11-13	11-12	18-19
Normal state (Ω)	0	≥30kΩ	≥15kΩ	When 0℃, about 100Ω
Fault status (Ω)	∝	<30kΩ	<15kΩ	When 95℃, about 136Ω

Introduction of Special Leakage Super Thermal Protector

KQ510 Water Leakage Super Thermal Protector

KQ510 type water leakage and super heat protector can realize the detection and fault output of oil chamber water leakage, motor cavity water leakage, junction box water leakage and winding super heat; three groups of water leakage signal inputs have the function of return difference.

Power supply: AC220 V, 50 Hz, input power 5 W.
Operating environment: temperature - 20 ℃ ~ + 50 ℃, relative humidity ≤ 85% RH.
Relay contact capacity: 5A 250VAC
The following is the panel and physical control:



Signal Input

COM and R1 are the input terminals of oil chamber leakage;
COM and R2 are the input terminals of the motor cavity;
COM and R3 are the input terminals of the junction box;
COM and K1 are the input terminals of motor winding overheating.

Fault Output

J1 is the fault output, open when there is no fault, close when there is fault, and the switch value is zero;
J2 is the fault output, closed when there is no fault, open when there is fault, switch value.

Fault Detection

When the oil chamber leaks the probe detects the resistance value. When 15K, the corresponding indicator light, fault output relay action;When the resistance & gt;At 20K, the fault disappears and the protector returns to its initial state (i.e., the return characteristic).The input has a delay of 1s to 5s. The smaller the input resistance, the shorter the delay time, and vice versa.

When the motor cavity leaks the probe detects the resistance value.30K, the corresponding indicator light, fault output relay action;When the resistance & gt;At 35K, the fault disappears and the protector returns to its initial state (i.e., return characteristic).The input has a delay of 1s to 5s. The smaller the input resistance, the shorter the delay time, and vice versa.

When the junction box leaks the probe, the resistance value is detected.30K, the corresponding indicator light, fault output relay action;When the resistance & gt;When 35K, the fault disappears and the protector returns to its initial state (i.e., return characteristic).The input has a delay of 1s to 5s. The smaller the input resistance, the shorter the delay time, and vice versa.

When the winding overheating probe detects that the temperature exceeds the specified temperature (determined by the overheating probe selected by the user) and disconnects, the corresponding indicator light and fault output relay will act. When the temperature resumes below the specified temperature and closes, the fault will disappear and the protector will return to the initial state. The input has a delay of 1s to 2s.

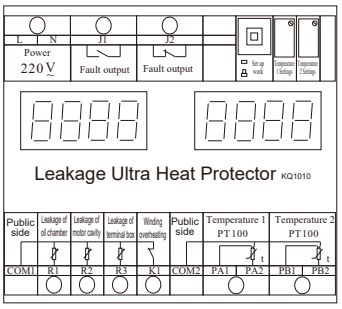
KQ1010 Water Leakage Super Thermal Protector

KQ1010 type water leakage and super heat protector can realize the detection and fault output of oil chamber water leakage, motor cavity water leakage, junction box water leakage and winding super heat, and can realize two-way PTI temperature acquisition and display, alarm temperature setting, fault output and other functions.

Power supply: AC220 V, 50 Hz, input power 5 W.
Operating environment: temperature - 20 ℃ ~ + 50 ℃, relative humidity ≤ 85% RH.
Relay contact capacity: 5A 250VAC
PT100 temperature display range: - 199.9 ℃ ~ + 199.9 ℃
The following is the panel and physical control:

Signal Input

COM1 and R1 are the input terminals of oil chamber leakage;
COM1 and R2 are the input terminals of the motor cavity;
COM1 and R3 are the input terminals of the junction box;
COM1 and K1 are the input terminals of motor winding overheating;
Com2, PA1 and pa2 are PT100 input terminals of temperature 1, and three wire connection method is adopted (two lines with the same color in PT100 are respectively connected to com2, PA1 and the other line is connected to pa2);
Com2, PB1 and Pb2 are PT100 input terminals of temperature 2, and three wire connection method is adopted (two lines with the same color in PT100 are connected to com2, PB1 respectively, and the other line is connected to PB2).



Fault Output

J1 is the fault output, disconnected when there is no fault, closed when there is fault, switching quantity;
J2 is the fault output, closed when there is no fault, disconnected when there is fault, switching quantity.
Temperature alarm setting
Release the button display shows the detection temperature of two PT100;
Press the button to display the set alarm temperature;
Temperature 1 potentiometer can change the alarm temperature set by PT100 in the first way;
Temperature 2 potentiometer can change the alarm temperature set by PT100 of the second circuit.

Fault Detection

When the oil chamber leakage probe detects that the resistance value is <15K, the corresponding indicator light is on, and the fault output relay moves; When the resistance >20K, the fault disappeared, the protector returned to the initial state (that is, the return characteristic).The input has a delay of 1s to 5s. The smaller the input resistance, the shorter the delay time, and vice versa.

When the motor cavity leakage probe detects the resistance value <30K, the corresponding indicator light is on, fault output relay action; When the resistance >35K, the fault disappeared and the protector returned to the initial state (that is, the return characteristic).The input has a delay of 1s to 5s. The smaller the input resistance, the shorter the delay time, and vice versa.

When the junction box leaks the probe and detects the resistance value <30K, the corresponding indicator light will light up and the fault output relay will operate; When the resistance >35K, the fault disappeared and the protector returned to the initial state (that is, the return characteristic).The input has a delay of 1s to 5s. The smaller the input resistance, the shorter the delay time, and vice versa.

When the winding overheating probe is detected beyond the specified temperature (the temperature value is determined by the overheating probe selected by the user) and disconnected, the corresponding indicator light is on, and the fault output relay acts. When the temperature reaches the specified temperature and closes, the fault disappears and the protector reaches the initial state. The input has a delay of 1s to 2s.

PT100 temperature detection

The protector is designed with double PT100 input. In order to eliminate the influence of PT100 lead length on temperature, a three-wire design is adopted. The detection range of temperature is -199.9℃-+199.9℃, and it is displayed in the display window. When the detected temperature exceeds the set alarm value, the corresponding indicator light will light up and the fault output relay will act. When the detected temperature is lower than the set alarm value, the fault will disappear and the protector will return to the initial state.

PT100 alarm temperature setting

The two-way PT100 alarm temperature value can be set. Press the alarm temperature setting button and the display window will switch to the display of alarm temperature setting value. Two alarm temperature setting potentiometers can be adjusted separately to change the alarm temperature value. After setting, press the alarm temperature setting button again, and the display window will switch to the display of PT100 acquisition temperature value.

Special Electric Control Cabinet Product Introduction and Selection

Special Electric Control Cabinet for Submersible Sewage Pump

The KQK-B control cabinet matched with the submersible sewage pump is an economical, safe, reliable, and easy-to-maintain automatic control system. The control cabinet uses low-voltage electrical appliances and liquid level sensors of well-known brands at home and abroad, which have the protection functions of short circuit, phase loss, overload, motor cavity leakage, oil chamber leakage and winding overheating. The control cabinet can be equipped with various liquid level sensors such as float level switch, throw-in or ultrasonic, and can automatically control the start and stop of the water pump according to the level of the liquid when unattended. Except for single-control products, all products with main and standby pump control have the function of automatically shutting down the faulty pump and automatically turning on the standby pump. The two-pump and three-pump control cabinet can realize automatic alternate or cyclic operation to realize the equal running time of each pump.

Commonly configured control cabinet components are mainly domestic well-known brands such as Tianzheng, Chint and Delixi; high-end configuration control cabinet components are mainly internationally renowned brands such as Schneider, Siemens, and ABB.

KQK / T - 2AC B - JYZ - 22

- 22 — Matching power: 22KW
- JYZ — Start mode: empty: direct start, JYZ: Self-Coupling Step-Down Start, R: Electronic Soft Start Sewage pump
- B — Control cabinet: type B
- 2AC — Control the quantity of pumps and automatic alternating control: 1,2AC, 3AC
- T — Main original device configuration: T - General configuration, G - High grade configuration
- KQK — Code number of Kaiquan electric control cabinet: KQK

Special Electric Control Cabinet Product Selection and Description

Direct Start

The following table lists the type and dimension of the control cabinet for direct start of the supporting submersible sewage pump

WQ(11-22KW) Series Submersible Sewage Pump(One Control One)-Direct Start

No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height × Width × Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	11	2 Poles	22	KQK/T–1B–11	KQK/G–1B–11	500 × 400 × 200	15
2		4 Poles	23				
3	15	2 Poles	29	KQK/T–1B–15	KQK/G–1B–15	500 × 400 × 200	20
4		4 Poles	30				
5		6 Poles	31				
6		8 Poles	35	KQK/T–1B–18.5	KQK/G–1B–18.5	500 × 400 × 200	20

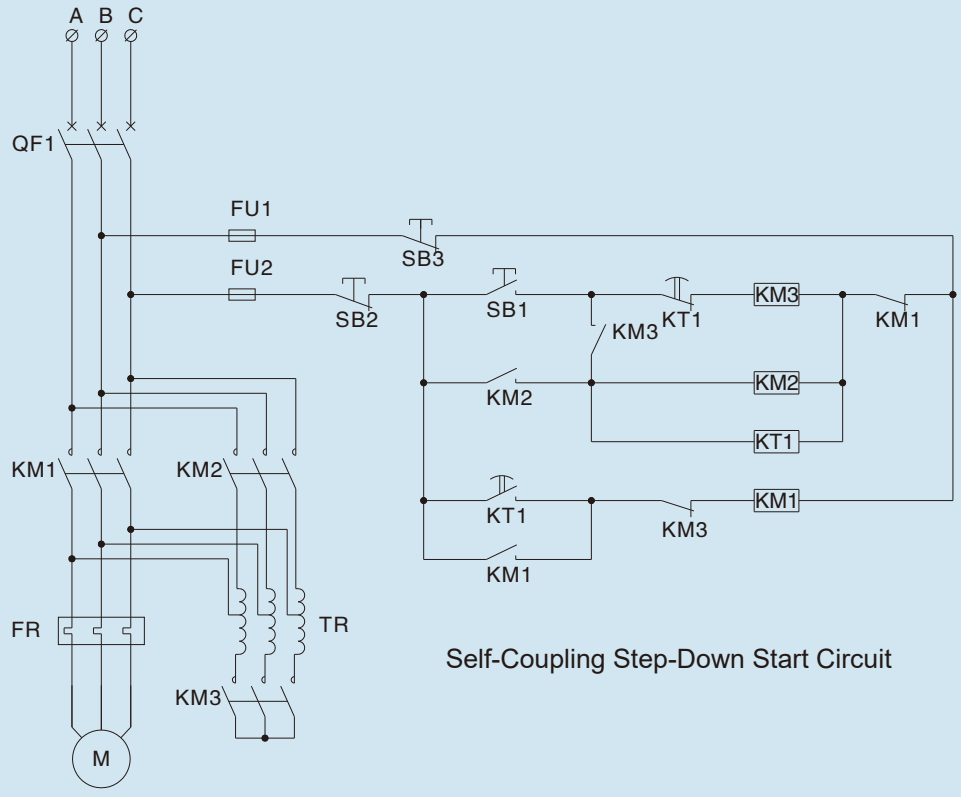
WQ(11-22KW) Series Submersible Sewage Pump(One Control Two)-Direct Start

No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height × Width × Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	11	2 Poles	22	KQK/T–2ACB–11	KQK/G–2ACB–11	600 × 400 × 200	20
2		4 Poles	23				
3	15	2 Poles	29	KQK/T–2ACB–15	KQK/G–2ACB–15	600 × 400 × 200	25
4		4 Poles	30				
5		6 Poles	31				
6		8 Poles	35	KQK/T–2ACB–18.5	KQK/G–2ACB–18.5	600 × 400 × 200	25

WQ(11-22KW) Series Submersible Sewage Pump(One Control Three)-Direct Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height x Width x Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	11	2 Poles	22	KQK/T-3ACB-11	KQK/G-3ACB-11	800 × 600 × 250	27
2		4 Poles	23				
3	15	2 Poles	29	KQK/T-3ACB-15	KQK/G-3ACB-15	800 × 600 × 250	35
4		4 Poles	30				
5		6 Poles	31				
6		8 Poles	35	KQK/T-3ACB-18.5	KQK/G-3ACB-18.5	800 × 600 × 250	35

Self-Coupling Step-Down Start

It refers to the use of an autotransformer to reduce the starting voltage applied to the stator winding of the motor when starting. After the motor starts,then the motor is separated from the autotransformer, so as to run normally under full pressure.



Self-Coupling Step-Down Start Circuit

The different taps of the autotransformer can be selected according to the allowable starting current and the required starting torque to achieve step-down start, and it can be used regardless of the stator winding of the motor using Y or △ connection method.

The following table lists the type and dimension of the control cabinet for the self coupling step-down start of the submersible sewage pump

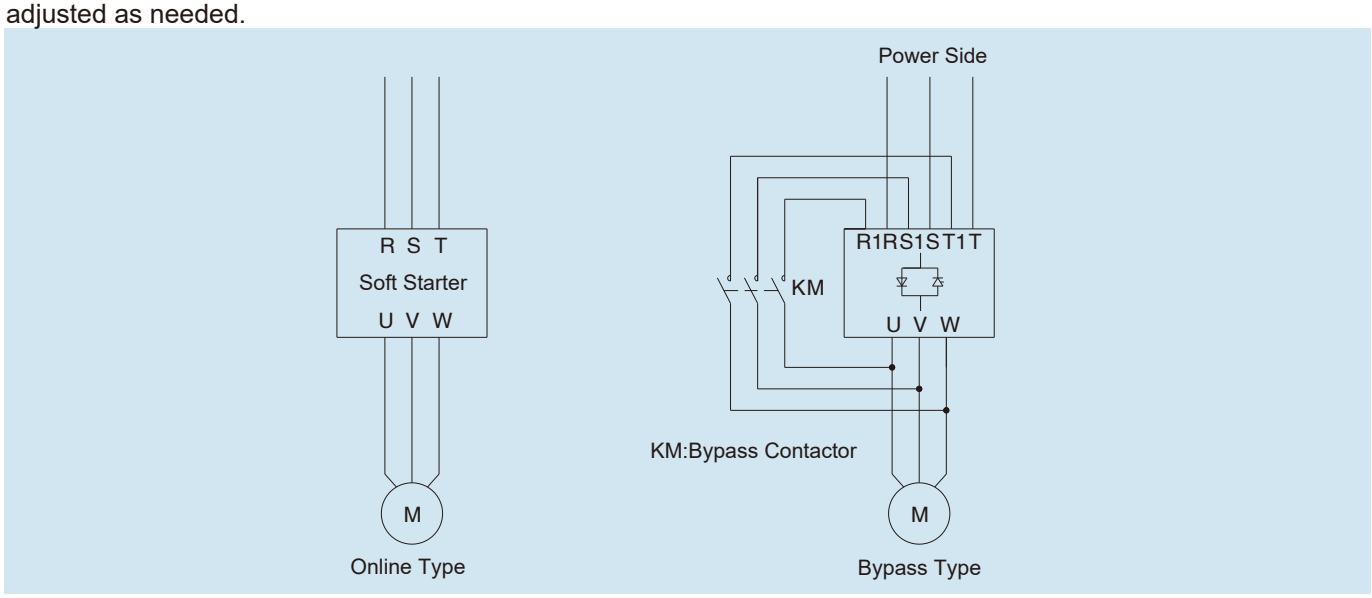
WQ(11-22KW) Series Submersible Sewage Pump(One Control One)-Self-Coupling Step-Down Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height x Width x Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T-1B-JYZ-15	KQK/G-1B-JYZ-15	1200×600×400	100
2		4 Poles	30				
3		6 Poles	31				
4		8 Poles	35	KQK/T-1B-JYZ-18.5	KQK/G-1B-JYZ-18.5	1200×600×400	110
5	18.5	2 Poles	35	KQK/T-1B-JYZ-18.5	KQK/G-1B-JYZ-18.5	1200×600×400	110
6		4 Poles	36				
7		6 Poles	38				
8		8 Poles	40				
9	22	2 Poles	41	KQK/T-1B-JYZ-22	KQK/G-1B-JYZ-22	1200×600×400	120
10		4 Poles	40				
11		6 Poles	45				
12		8 Poles	47				

WQ(11-22KW) Series Submersible Sewage Pump(One Control Two)-Self-Coupling Step-Down Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height x Width x Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T-2ACB-JYZ-15	KQK/G-2ACB-JYZ-15	1400 × 600 × 400	130
2		4 Poles	30				
3		6 Poles	31				
4		8 Poles	35	KQK/T-2ACB-JYZ-18.5	KQK/G-2ACB-JYZ-18.5	1400 × 600 × 400	145
5	18.5	2 Poles	35	KQK/T-2ACB-JYZ-18.5	KQK/G-2ACB-JYZ-18.5	1400 × 600 × 400	145
6		4 Poles	36				
7		6 Poles	38				
8		8 Poles	40				
9	22	2 Poles	41	KQK/T-2ACB-JYZ-22	KQK/G-2ACB-JYZ-22	1400 × 600 × 400	155
10		4 Poles	40				
11		6 Poles	45				
12		8 Poles	47				

WQ(11-22KW) Series Submersible Sewage Pump(One Control Three)-Self-Coupling Step-Down Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height x Width x Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T-3ACB-JYZ-15	KQK/G-3ACB-JYZ-15	1700 × 700 × 500	175
2		4 Poles	30				
3		6 Poles	31				
4		8 Poles	35	KQK/T-3ACB-JYZ-18.5	KQK/G-3ACB-JYZ-18.5	1700 × 700 × 500	195
5	18.5	2 Poles	35	KQK/T-3ACB-JYZ-18.5	KQK/G-3ACB-JYZ-18.5	1700 × 700 × 500	195
6		4 Poles	36				
7		6 Poles	38				
8		8 Poles	40				
9	22	2 Poles	41	KQK/T-3ACB-JYZ-22	KQK/G-3ACB-JYZ-22	1700 × 700 × 500	210
10		4 Poles	40				
11		6 Poles	45				
12		8 Poles	47				

Electronic Soft Start

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 input voltage of the motor gradually rises from zero in a preset function until the end of start-up, 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 process of starting can be controlled from the past overload impulse current which can not be controlled and the size of the starting current can be adjusted as needed.



In the whole starting process, no impact torque, smooth start motor, according to the characteristics of the motor load to adjust various parameters in the starting process, such as current limit value, start time, etc. Soft parking can also be achieved. Due to the use of semiconductor converter technology, there will be high order harmonic generation, causing pollution to the power grid.

The following table lists the type and dimension of the control cabinet selected for the electronic soft start of the supporting submersible sewage pump

WQ(11-22KW) Series Submersible Sewage Pump(One Control One)-Electronic Soft Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height × Width × Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T–1B–R1-15	KQK/G–1B–R1-15	800 × 600 × 250	35
2		4 Poles	30				
3		6 Poles	31				
4		8 Poles	35	KQK/T–1B–R1-18.5	KQK/G–1B–R1-18.5	800 × 600 × 250	40
5	18.5	2 Poles	35	KQK/T–1B–R1-18.5	KQK/G–1B–R1-18.5	800 × 600 × 250	40
6		4 Poles	36				
7		6 Poles	38				
8		8 Poles	40				
9	22	2 Poles	41	KQK/T–1B–R1-22	KQK/G–1B–R1-22	800 × 600 × 250	40
10		4 Poles	40				
11		6 Poles	45				
12		8 Poles	47				

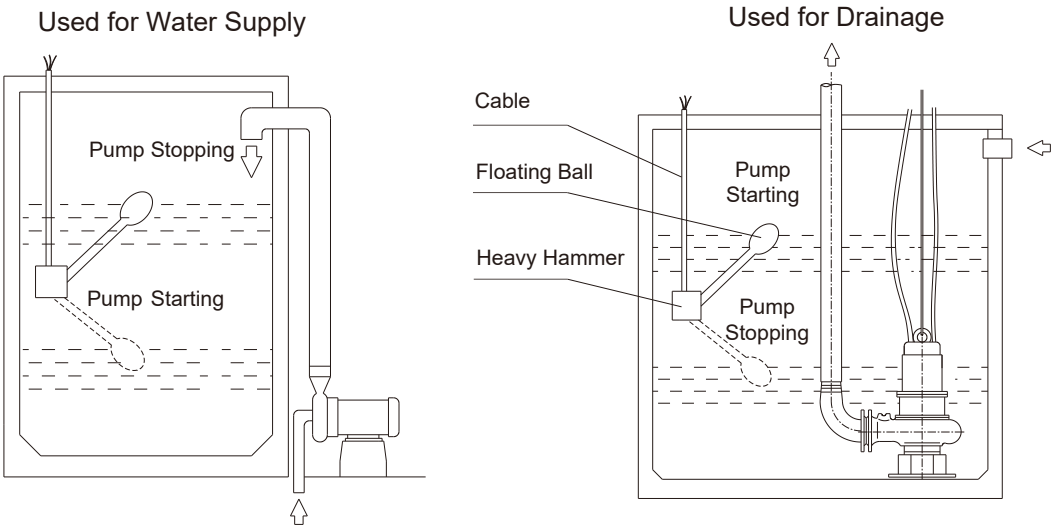
WQ(11-22KW) Series Submersible Sewage Pump(One Control Two)-Electronic Soft Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height × Width × Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T–2ACB–R2–15	KQK/G–2ACB–R2–15	1600 × 600 × 400	50
2		4 Poles	30				
3		6 Poles	31				
4		8 Poles	35	KQK/T–2ACB–R2–18.5	KQK/G–2ACB–R2–18.5	1600 × 600 × 400	55
5	18.5	2 Poles	35	KQK/T–2ACB–R2–18.5	KQK/G–2ACB–R2–18.5	1600 × 600 × 400	55
6		4 Poles	36				
7		6 Poles	38				
8		8 Poles	40				
9	22	2 Poles	41	KQK/T–2ACB–R2–22	KQK/G–2ACB–R2–22	1600 × 600 × 400	55
10		4 Poles	40				
11		6 Poles	45				
12		8 Poles	47				

WQ(11-22KW) Series Submersible Sewage Pump(One Control Three)-Electronic Soft Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height × Width × Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T-3ACB-R3-15	KQK/G-3ACB-R3-15	1700×700×500	70
2		4 Poles	30				
3		6 Poles	31				
4		8 Poles	35	KQK/T-3ACB-R3-18.5	KQK/G-3ACB-R3-18.5	1700×700×500	80
5	18.5	2 Poles	35	KQK/T-3ACB-R3-18.5	KQK/G-3ACB-R3-18.5	1700×700×500	80
6		4 Poles	36				
7		6 Poles	38				
8		8 Poles	40				
9	22	2 Poles	41	KQK/T-3ACB-R3-22	KQK/G-3ACB-R3-22	1700×700×500	80
10		4 Poles	40				
11		6 Poles	45				
12		8 Poles	47				

(Liquid Level) Float Switch, Terminal Box, Threading Pipe and Cable Models

(Liquid Level) Float Switch

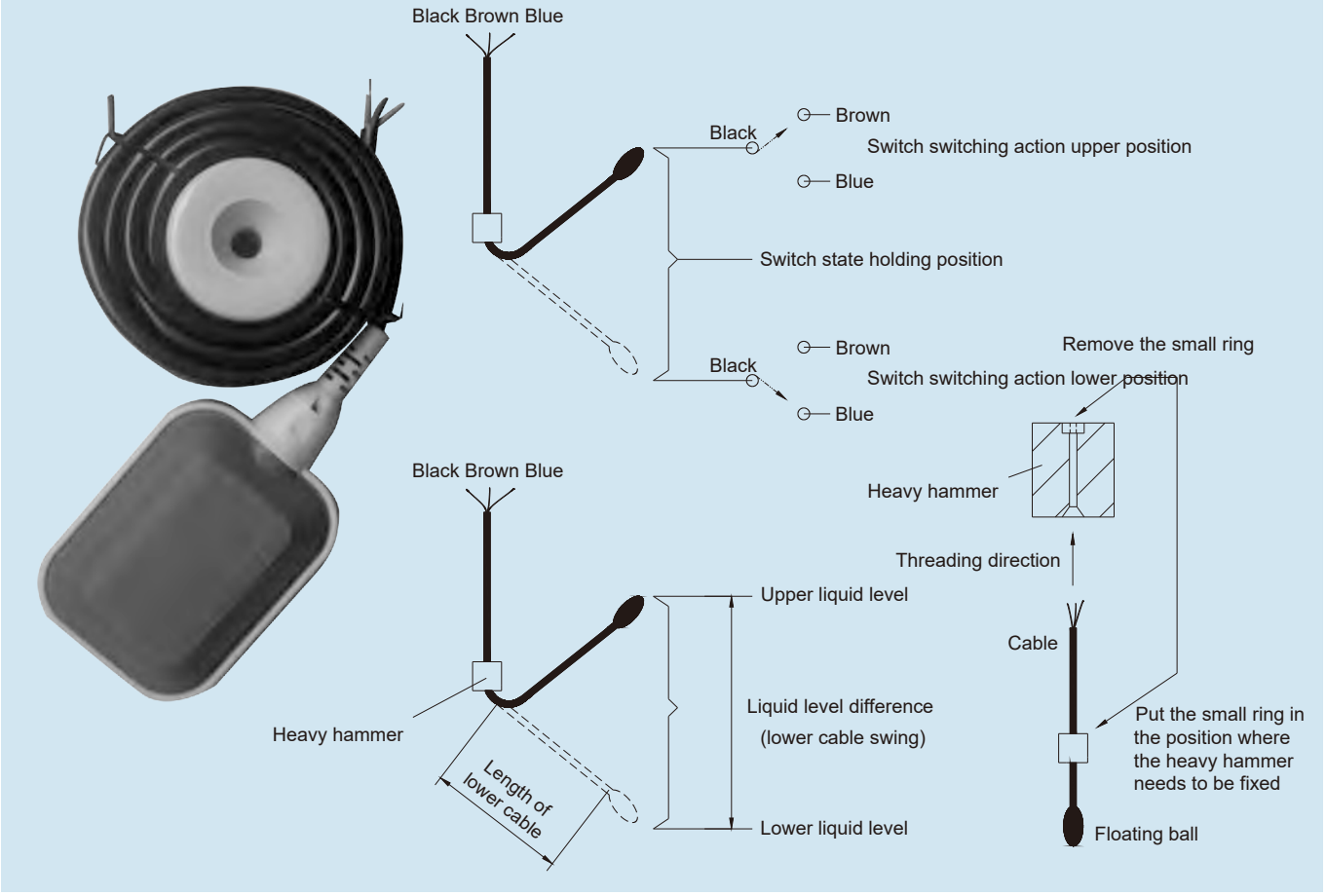
(Liquid Level) Schematic Diagram of Float Switch



The minimum liquid level is indicated on the sample and instruction manual of submersible sewage pump. "▽" means that half of the liquid level of the stator part of the motor is submerged by the medium.

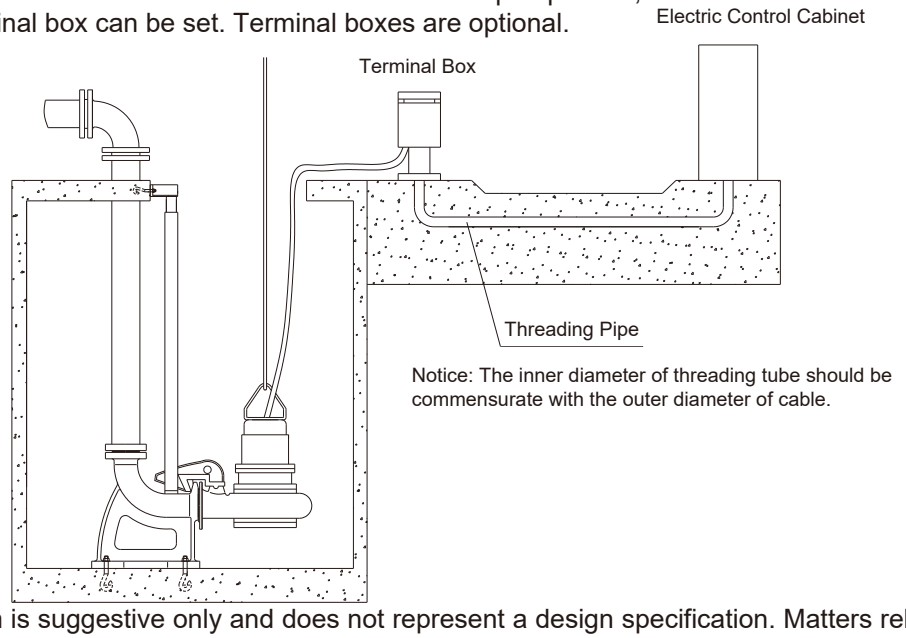
The liquid level float switch is used when the electric control cabinet is in the automatic position.

Wiring and setting of liquid level float switch: there are black, brown and blue cores in the cable of liquid level float switch. When the floating ball floats, the internal contact of the floating ball connects the black and brown cores and disconnects the black and blue cores; when the floating ball droops, on the contrary, the internal contact connects the black and blue cores and disconnects the black and brown cores. When the float ball is in the middle position, the internal switch is in the original position. Only when the float and droop positions are shown in the figure, the internal switch will change action. In the case of drainage, the black and brown cores must be connected to the electric control cabinet, and the blue core must be wrapped and insulated; in the case of water supply, the black and blue cores must be connected to the electric control cabinet, and the brown core must be wrapped and insulated. If a float switch is used to control the two liquid levels of starting and stopping the pump, the position of re sleeping on the cable can be adjusted, and the liquid level difference between starting and closing the pump can be determined. Therefore, in principle, a float switch can realize the starting and stopping control of a group of up and down liquid levels. However, if the liquid level difference is large, the length of floating ball swing arm will increase, and the dead weight of the cable from heavy sleep to floating ball will affect the accuracy of liquid level control. Therefore, our special electric control cabinet for submersible sewage pump is equipped with floating ball switch as follows: for the main pump or large pump, two floating ball switches are used to control the starting and stopping liquid level respectively; for small pump or extra high water level standby pump, one floating ball switch is used Switch to control the pump, stop the pump two levels. When users need more than the specified number of float switches or do not order our special electric control cabinet for submersible sewage pump, they can also order float switches from us.



Terminal Box and Threading Tube

When the electric control cabinet is far from the pump room, the terminal box can be set. Terminal boxes are optional.



Notice: The inner diameter of threading tube should be commensurate with the outer diameter of cable.

This diagram is suggestive only and does not represent a design specification. Matters relating to pump station design and safety shall be dealt with in accordance with relevant standards and codes.

When the threading pipe is to be installed (the threading pipe is provided by the user), the inner diameter of the threading pipe should be determined according to the outer diameter of the cable.

Choose the threading pipe according to the size and installation quantity in the table below.

WQ (11-22kw) Series Submersible Sewage Pump Cable Model and Dimension Table						
No.	Casing No.	Motor Model	Main Cable	Control Cable	Outer diameter of single main cable /mm	Outer diameter of control cable / mm
1	Y210	WQ/E11-2P	1 piece of YVC3×4+1×2.5+4×1		18	/
2		WQ/E15-2P	1 piece of YVC3×6+1×4+4×1		19	
3	Y260	WQ/E11-4P	1 piece of YVC3×4+1×2.5+4×1		18	
4		WQ/E15-4P	1 piece of YVC3×6+1×4+4×1		19	
5		WQ/E18. 5-2P	1 piece of 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 piece of YCW3×10+1×6	Yvc5×1.5 cable: (Yvc7×1 cable is used for temperature measurement with lower bearing)	25	13. 5
10		WQ/E18.5-6P				
11		WQ/E22-6P				
12	Y368	WQ/E15-8P				
13		WQ/E18.5-8P				
14		WQ/E22-8P				
Notice: If the temperature measurement of the lower bearing is added to the motor of Y210 and Y260, a separate control cable YVC7X1 with an outer diameter of 13.5mm is needed						

Ordering Instructions

In order to make the pump you choose more suitable, we warmly welcome users to consult our company's technical department for technical questions.

1. Please specify when ordering: serial number, impeller number, material of flow-through parts, installation method, and outlet diameter.

2. The installation method of the water pump is subject to the installation drawing on the sample.

3. Due to the excellent design of the coupling frame in the coupling device, the guide bar only needs to use general water pipes or steel pipes. We have provided the specification and length calculation method of the water pipe or steel pipe used as the guide bar in the sample. The user only needs to purchase the water pipe or steel pipe by himself and cut it to the required length for use. Therefore, the guide bar is not included in the coupling device.

4. This series of water pumps are not equipped with a motor cooling system. If a cooling sleeve is required, it is a special order and the delivery time is extended.

5. Standard configuration, motor cable is provided at 10 meters. When the user needs other lengths, it should be noted on the order.

6. The complete set of supply parts is supplied according to the installation method selected by the user.

7. Users of optional parts and spare parts need to order separately.

8. For rigid pipe mobile installation Y, one elbow joint is supplied as a complete set for each pump; for flexible hose installation R, one elbow joint is supplied as a complete set for each pump. When a mobile-mounted pump requires more than one elbow joint or hose elbow joint, it must be ordered separately.

9. The diameters of elbow joints are: 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600.

10. The diameters of hose elbow joints are: 50 (with 64 hose), 50×65 (with 76 hose), 65 (with 76 hose), 80 (with 89 hose), 100 (With 102 hose), 150 (with 152 hose).

11. The tapered tube is an optional part, and its two port diameters are: 50×65, 50×80, 65×80, 80×100, 100×150, 150×200, 200×250, 250×300, 300×350, 350×400, 400×450, 450×500, 500×600. The tapered tube installed on the discharge line should be used for diffusion, not for contraction.

12. When the taper pipe and elbow joint on the discharge pipeline are connected with each other, the diameter of the elbow joint should be consistent with the diameter of the big end of the taper pipe, that is, the principle of "diffusion first and then turn" should be followed, so that the pipeline loss is less than "turn first and then spread".

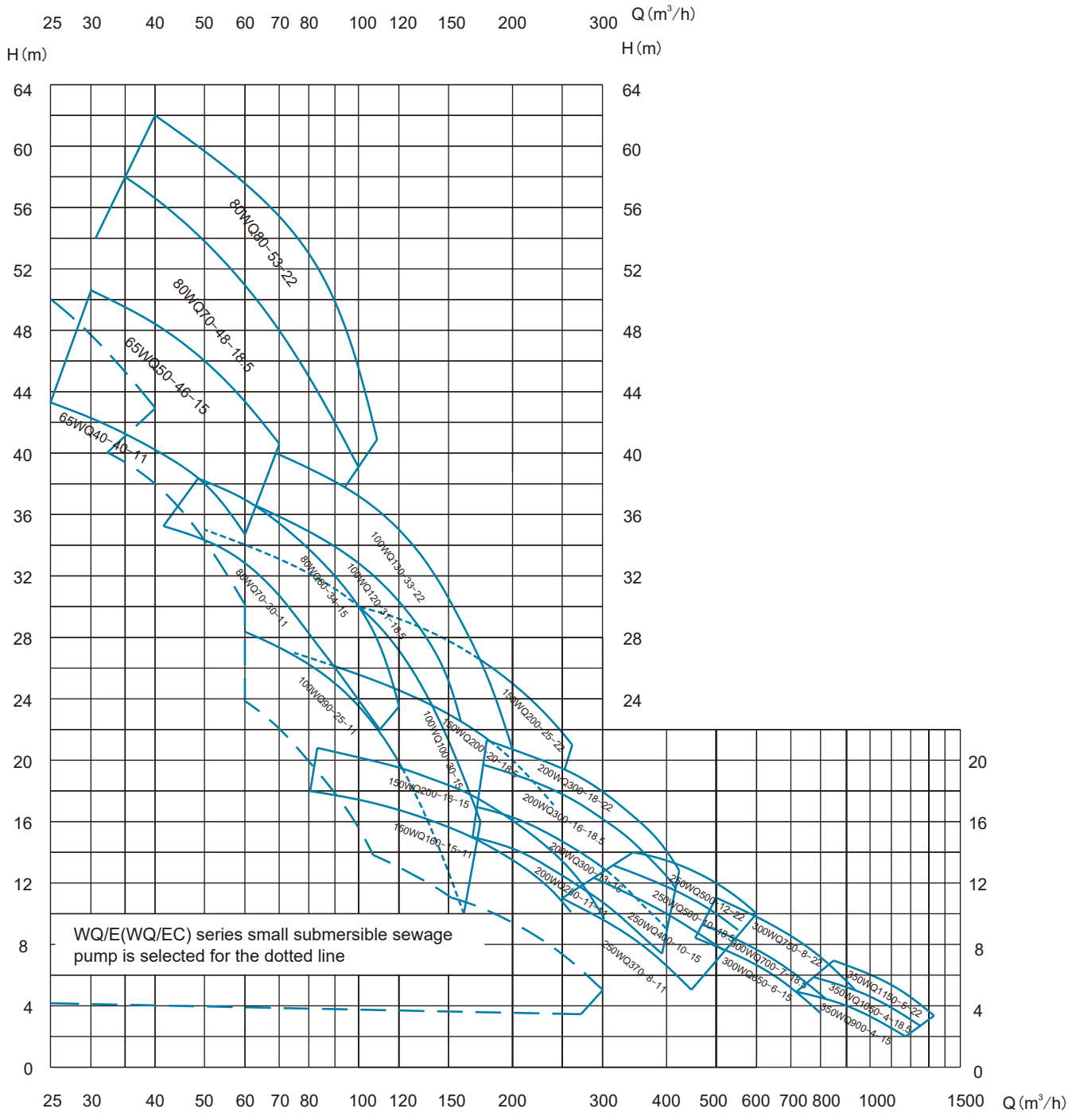
13. For coupled pumps, if the diameter of the discharge pipe is larger than that of the pump, a taper pipe can be installed on the outlet pipe seat. The small head diameter of the taper pipe should be the same as that of the outlet pipe seat, that is, the diameter of the pump.

14. Specifications, nominal pressure and dimensions of elbow joints, hose elbow joints and tapered pipes are shown in the "Annex Instructions" at the end of the sample.

Supply List

Supply Selection / Installation Methods / Supply Model			Wet Installation				
			Automatic Coupling Installation Z	Fixed Base Installation P	Hose Movable Installation R	Hard Pipe Movable Installation Y	Single Pump
Package supply	Main pump (10m cable length)		✔	✔	✔	✔	✔
	Automatic coupling device	Outlet pipe seat	✔				
		Coupling frame	✔				
		Positioning plate	✔				
	Base			✔	✔	✔	
	Elbow joint + connecting accessories					✔	
	Hose Elbow joint + connecting accessories				✔		
Essential	Guide bar		✔				
	Expansion bolts		✔				
	Foundation bolts		✔	✔			
Options	Elbow joint + connecting accessories			✔			
	Hose bend joint + connecting accessories			✔			
	Stainless steel lifting rope and clamp for lifting pump		✔	✔	✔	✔	✔
	Chain and shackle for lifting pump		✔	✔	✔	✔	✔
	Taper Pipe		✔	✔		✔	✔
	Mating flange		✔	✔		✔	✔
Optional spare parts	Impeller		✔	✔	✔	✔	✔
	Pump cover		✔	✔	✔	✔	✔
	Bearing		✔	✔	✔	✔	✔
	Mechanical seal		✔	✔	✔	✔	✔
	O-ring		✔	✔	✔	✔	✔
	Seal ring		✔	✔	✔	✔	✔

Comprehensive Characteristic Curve Charts



Comprehensive Characteristic Curve Charts Description:

1. In order to make the Comprehensive Characteristic Curve Charts clean, the Comprehensive Characteristic Curve Charts lists the general range of most models, which can be used for preliminary selection. However, the complete pump curve and parameters must refer to the single page performance curve described later.
2. For details of WQ/E and WQ/EC Series in the graph, please refer to the samples of WQ/E series small submersible sewage pump and WQ/EC series small submersible sewage pump.

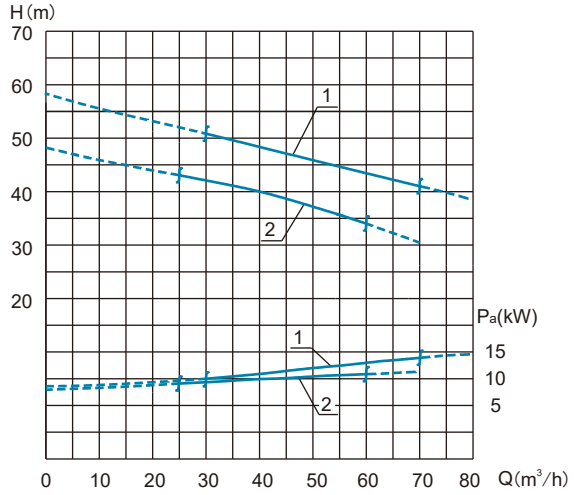
Performance Parameters Table

WQ(11-22KW) Series Submersible Sewage Pump Performance Parameters Table									
No.	New Model	Original Model	Caliber	Capacity	Head	Speed	Matching Power	Maximum Pass Particle	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	100WQ90-25-11	WQ2210-2121-100	100	90	25	2940	11	42	140
8	100WQ100-30-15	WQ2210-2122-100		100	30	2940	15	42	150
9	100WQ120-31-18.5	WQ2260-2123-100	100	120	31	2940	18.5	44	222
10	100WQ130-33-22	WQ2260-2124-100		130	33	2940	22	44	236
11	150WQ160-15-11	WQ2260-4125-150	150	160	15	1460	11	60	226
12	150WQ200-16-15	WQ2260-4138-150		200	16	1460	15	60	242
13	150WQ200-20-18.5	WQ2260-4127A-150	150	200	20	1460	18.5	65	295
14	150WQ200-25-22	WQ2260-4127-150		200	25	1460	22	65	305
15	200WQ280-11-11	WQ2260-4128-200	200	280	11	1460	11	70	258
16	200WQ300-13-15	WQ2260-4129-200		300	13	1460	15	70	274
17	200WQ300-16-18.5	WQ2260-4130-200		300	16	1470	18.5	70	294
18	200WQ300-18-22	WQ2260-4131-200		300	18	1470	22	70	306
19	200WQ380-7-11	WQ2260-4154-200	200	380	7	1460	11	80	254
20	200WQ400-8-15	WQ2260-4155-200		400	8	1460	15	80	270
21	200WQ500-8-18.5	WQ2260-4156-200		500	8	1470	18.5	80	286
22	200WQ520-10-22	WQ2260-4157-200		520	10	1470	22	80	298
23	250WQ370-8-11	WQ2260-4158A-250	250	370	8	1470	11	100	290
24	250WQ400-10-15	WQ2260-4158-250		400	10	1470	15	100	310
25	250WQ500-10-18.5	WQ2260-4159A-250		500	10	1470	18.5	100	325
26	250WQ500-12-22	WQ2260-4159-250		500	12	1470	22	100	350
27	300WQ650-6-15	WQ2290-6155-300	300	650	6	980	15	90	530
28	300WQ700-7-18.5	WQ2290-6156-300		700	7	980	18.5	90	550
29	300WQ750-8-22	WQ2290-6157-300		750	8	980	22	90	570
30	350WQ900-4-15	WQ2368-8152-350	350	900	4	730	15	70	760
31	350WQ1050-4-18.5	WQ2368-8153-350		1050	4	730	18.5	70	780
32	350WQ1150-5-22	WQ2368-8154-350		1150	5	730	22	70	800

Notice: there is a one-to-one correspondence between the new model and the original name

Performance Curves, Parameter Data, Installation Dimension Diagrams

Performance Curve Graph



Main Parameter

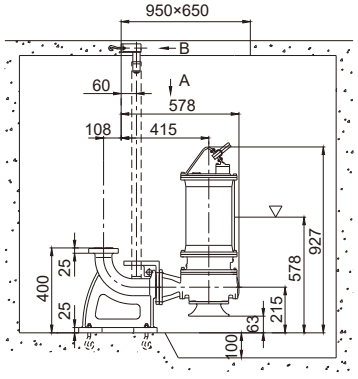
Outlet Diameter 65mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	65WQ50-46-15	WQ2210-2112	Rectangle 38	2940	136
2	65WQ40-40-11	WQ2210-2111	Rectangle 38	2940	128

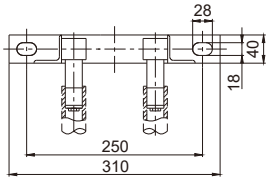
No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	15	29	0.90	88.8	2.4
2	11	22	0.89	87.6	2.3

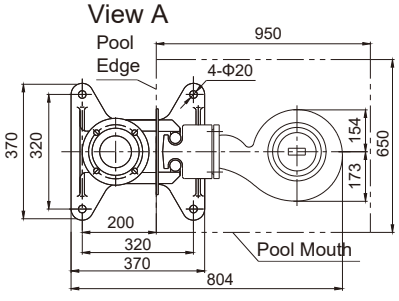
	Capacity–Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	30-51	50-46	70-41
2		25-43	40-40	60-34

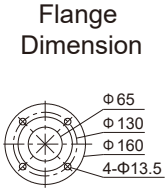
Installation Dimension Diagram



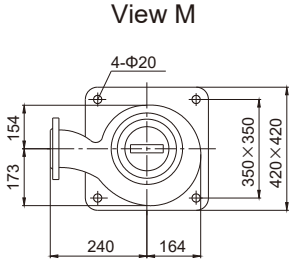
Z Automatic Coupling Installation



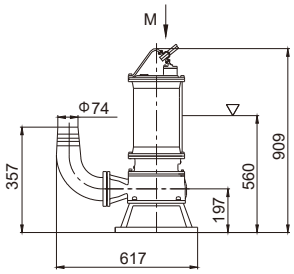




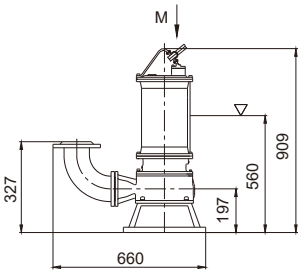
According to GB/T17241.6PN6 Standard Flange



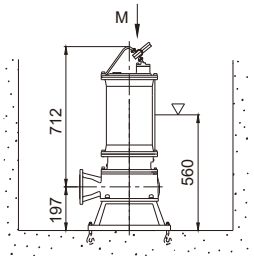
R Hose Movable Installation



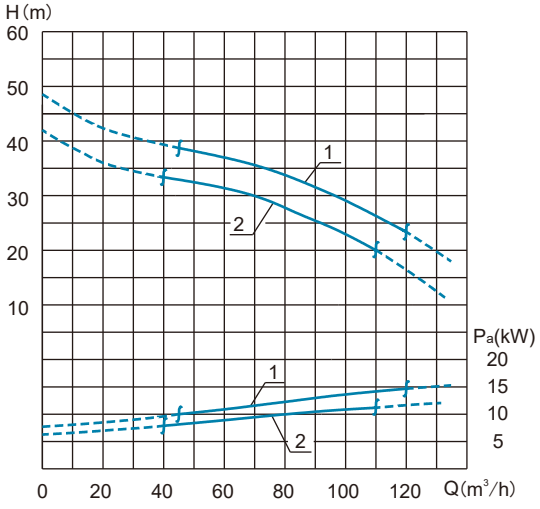
Y Hard Pipe Movable Installation



P Fixed Base Installation



Performance Curve Graph



Main Parameter

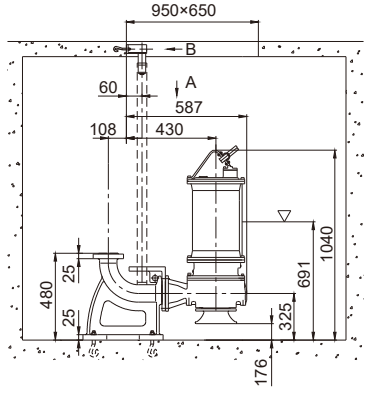
Outlet Diameter 80mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	80WQ80-34-15	WQ2210-2116	Rectangle 45	2935	138
2	80WQ70-30-11	WQ2210-2115	Rectangle 45	2935	128

No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	15	29	0.90	88.8	2.4
2	11	22	0.89	87.6	2.3

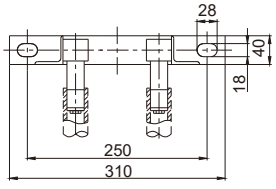
	Capacity–Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	45-38	80-34	120-23
2		40-33	70-30	110-20

Installation Dimension Diagram

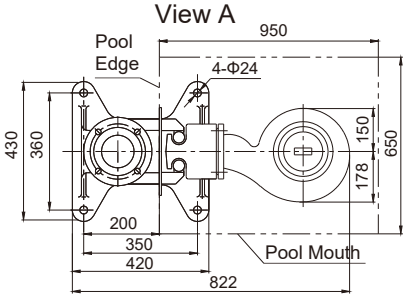


Z Automatic Coupling Installation

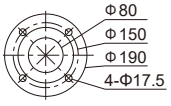
View B



View A

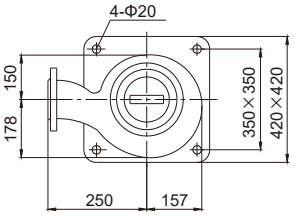


Flange Dimension

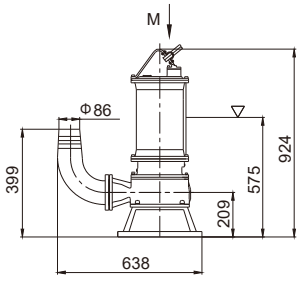


According to GB/T17241.6PN6 Standard Flange

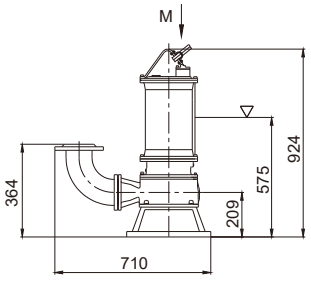
View M



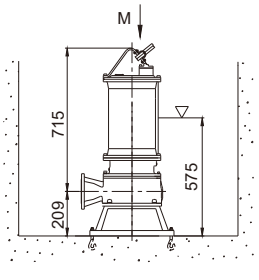
R Hose Movable Installation



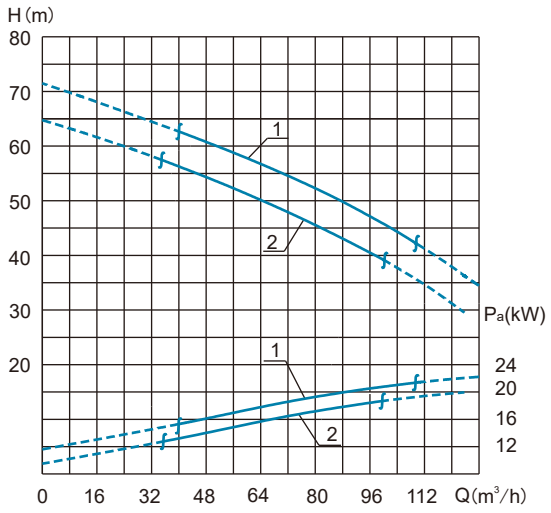
Y Hard Pipe Movable Installation



P Fixed Base Installation



Performance Curve Graph



Main Parameter

Outlet Diameter 80mm

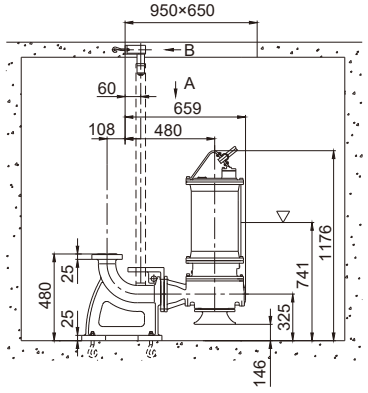
No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	80WQ80-53-22	WQ2260-2118	40	2935	200
2	80WQ70-48-18.5	WQ2260-2117	40	2935	185

No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	22	41	0.90	90.5	2.0
2	18.5	35	0.91	90	2.7

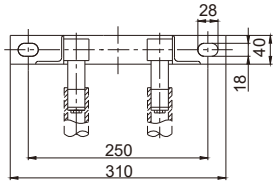
	Capacity–Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	40-62	80-53	108-41
2		35-58	70-48	100-39

Installation Dimension Diagram

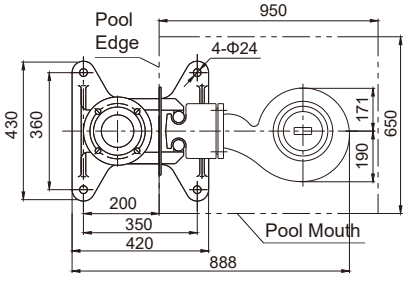
Z Automatic Coupling Installation



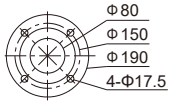
View B



View A

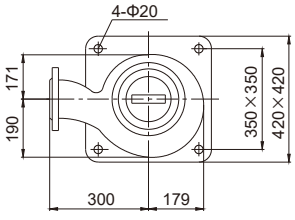


Flange Dimension

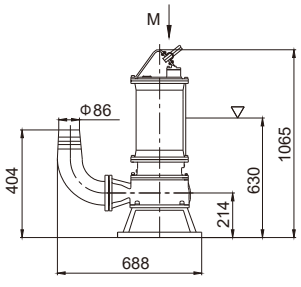


According to GB/T17241.6PN6 Standard Flange

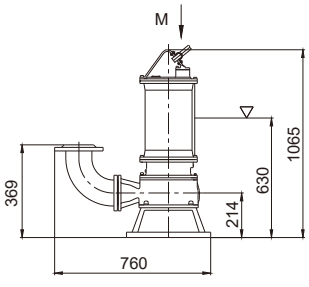
View M



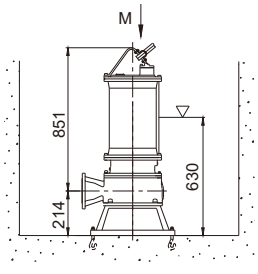
R Hose Movable Installation



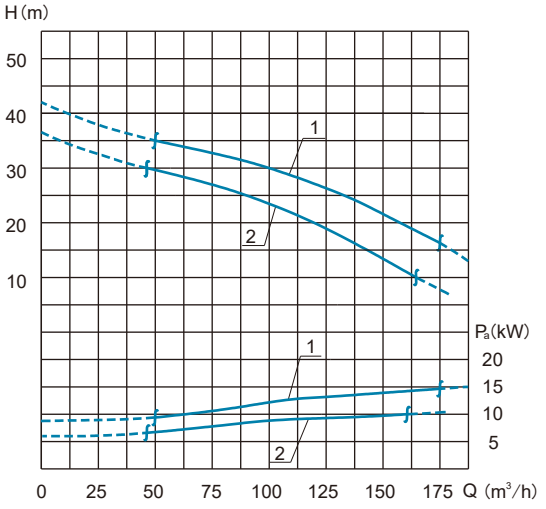
Y Hard Pipe Movable Installation



P Fixed Base Installation



Performance Curve Graph



Main Parameter

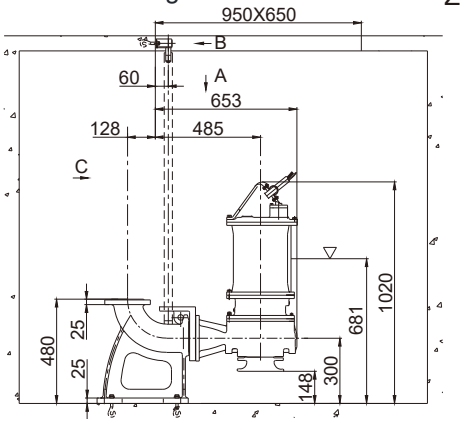
Outlet Diameter 100mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	100WQ100-30-15	WQ2210-2122	Rectangle 52	2935	150
2	100WQ90-25-11	WQ2210-2121	Rectangle 52	2935	140

No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	15	29	0. 90	88. 8	2. 4
2	11	22	0. 89	87. 6	2. 3

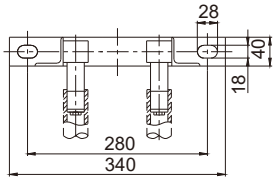
	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	50-35	100-30	175-16
2		45-30	90-25	160-10

Installation Dimension Diagram

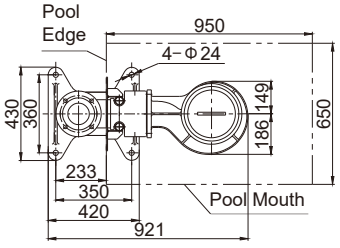


Z Automatic Coupling Installation

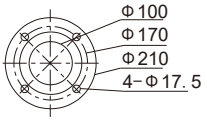
View B



View A

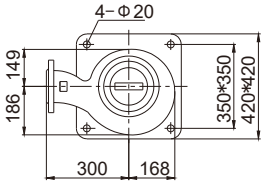


Flange Dimension

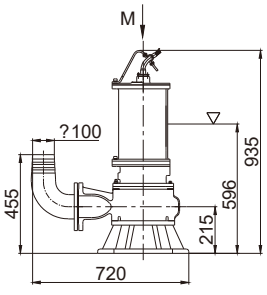


According to GB/T17241.6PN6 Standard Flange

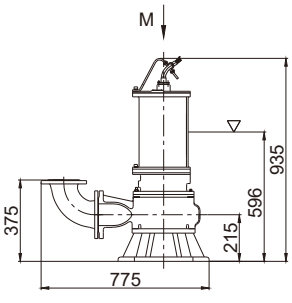
View M



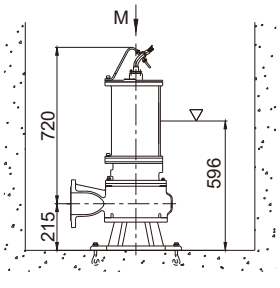
R Hose Movable Installation



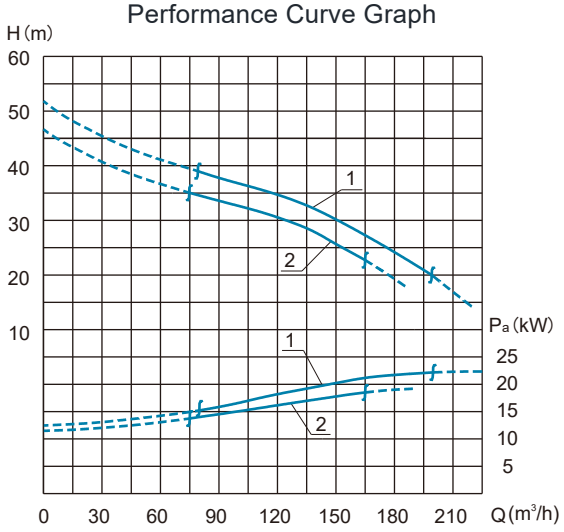
Y Hard Pipe Movable Installation



P Fixed Base Installation



Performance Curve Graph



Main Parameter

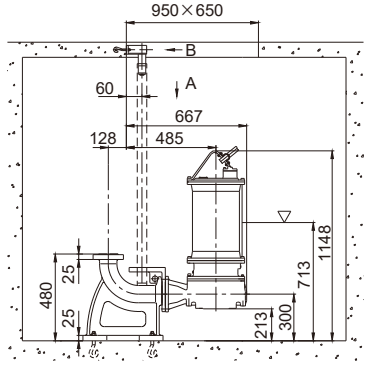
Outlet Diameter 100mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	100WQ130-33-22	WQ2260-2124	Rectangle 55	2940	236
2	100WQ120-31-18.5	WQ2260-2123	Rectangle 55	2940	222

No.	Rated Motor Power(kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	22	41	0. 90	90. 5	2. 0
2	18. 5	35	0. 91	90	2. 7

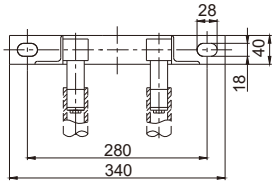
	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	80-39	130-33	200-20
2		75-35	120-31	160-22

Installation Dimension Diagram

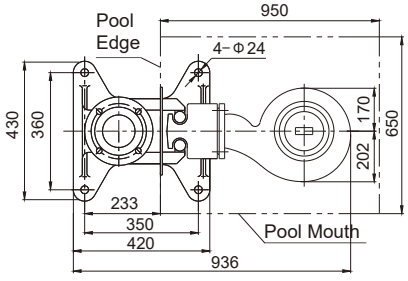


Z Automatic Coupling Installation

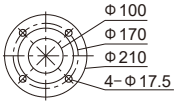
View B



View A

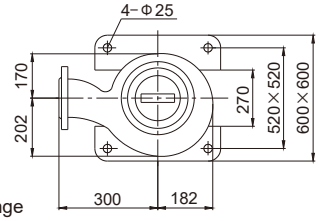


Flange Dimension

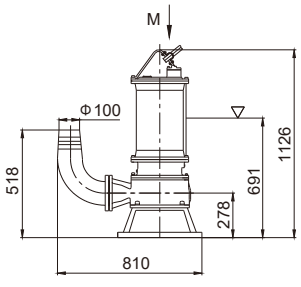


According to GB/T17241.6PN6 Standard Flange

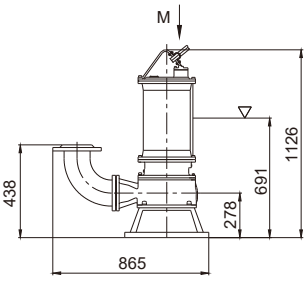
View M



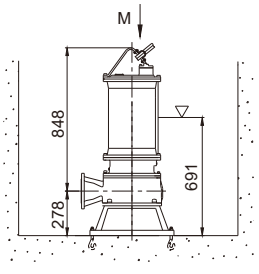
R Hose Movable Installation



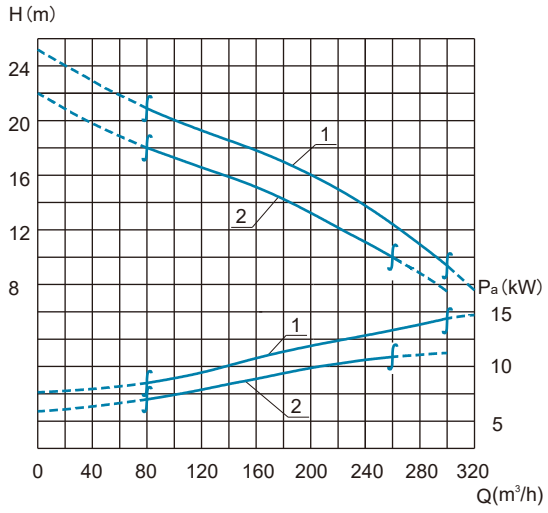
Y Hard Pipe Movable Installation



P Fixed Base Installation



Performance Curve Graph



Main Parameter

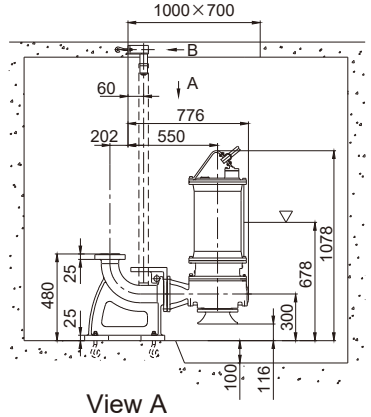
Outlet Diameter 150mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	150WQ200-16-15	WQ2260-4138	Oval 77×79	1460	242
2	150WQ160-15-11	WQ2260-4125	Oval 77×79	1460	226

No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	15	30	0. 85	89. 4	2. 6
2	11	23	0. 85	88	2. 4

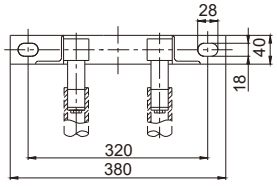
	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	$m^3/h-m$	80-21	200-16	300-9
2		80-18	160-15	260-10

Installation Dimension Diagram

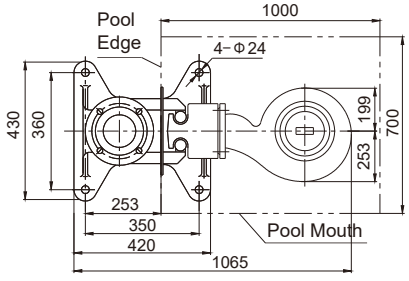


Z Automatic Coupling Installation

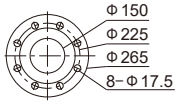
View B



View A

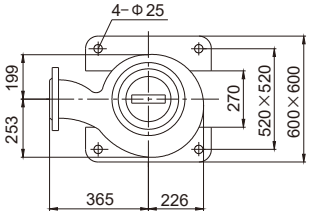


Flange Dimension

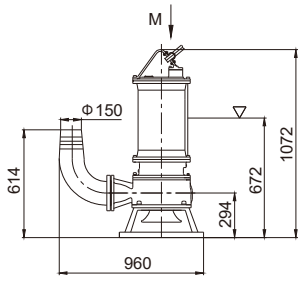


According to GB/T17241.6PN6 Standard Flange

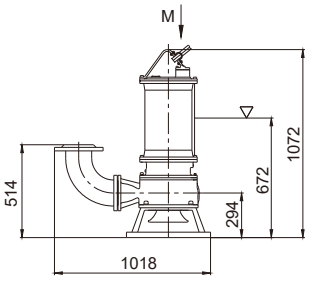
View M



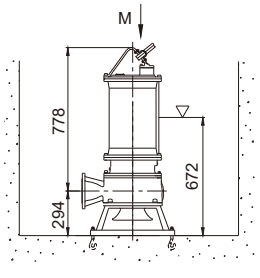
R Hose Movable Installation



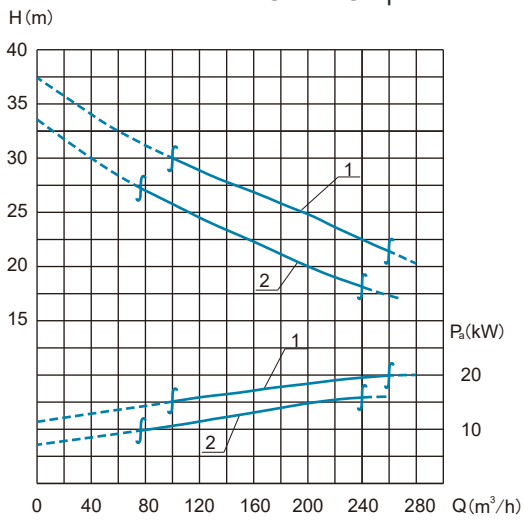
Y Hard Pipe Movable Installation



P Fixed Base Installation



Performance Curve Graph



Main Parameter

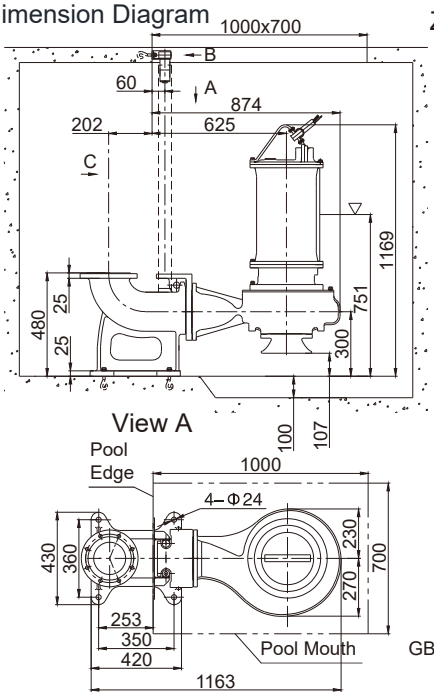
Outlet Diameter 150mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	150WQ200-25-22	WQ2260-4127	Oval 72×90	1470	305
2	150WQ200-20-18.5	WQ2260-4127A	Oval 72×90	1470	295

No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	22	40	0.87	91.2	2.2
2	18.5	36	0.87	90.7	2.2

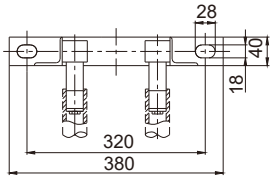
	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	100-30	200-25	260-21
2		75-27	200-20	240-17

Installation Dimension Diagram



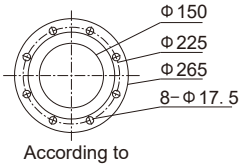
Z Automatic Coupling Installation

View B



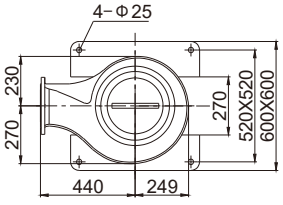
View A

Flange Dimension

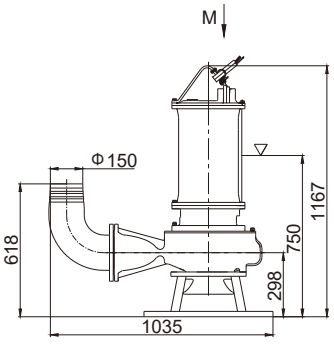


According to GB/T17241.6PN6 Standard Flange

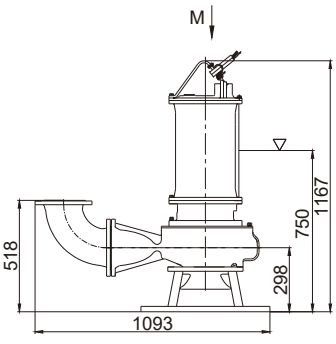
View M



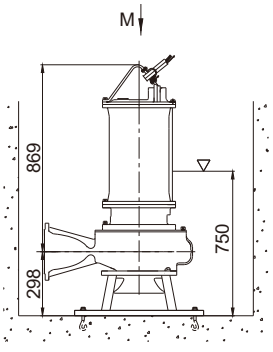
R Hose Movable Installation



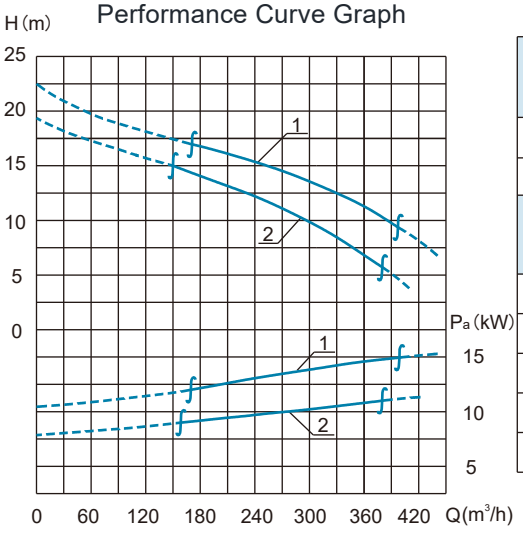
Y Hard Pipe Movable Installation



P Fixed Base Installation



Performance Curve Graph



Main Parameter

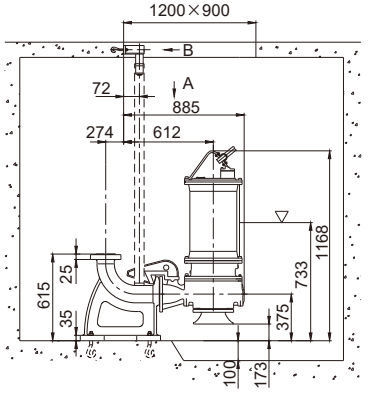
Outlet Diameter 200mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	200WQ300-13-15	WQ2260-4129	Oval 85×93	1460	274
2	200WQ280-11-11	WQ2260-4128	Oval 85×93	1460	258

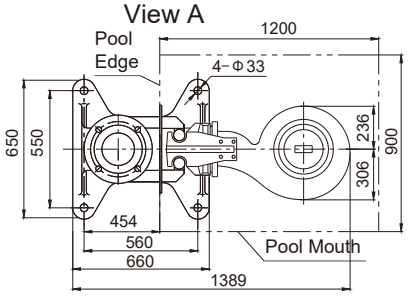
No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos φ	Motor Efficiency(%)	Rated Torque Block Torque /
1	15	30	0. 85	89. 4	2. 6
2	11	23	0. 85	88	2. 4

	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	$m^3/h-m$	170-17	300-13	400-9
2		150-15	280-11	380-6

Installation Dimension Diagram

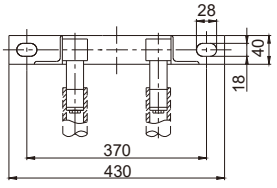


View A

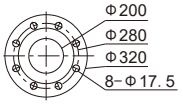


Z Automatic Coupling Installation

View B

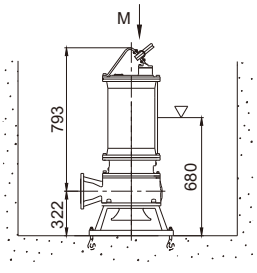


Flange Dimension

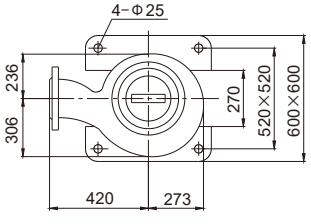


According to
GB/T17241.6PN6 Standard Flange

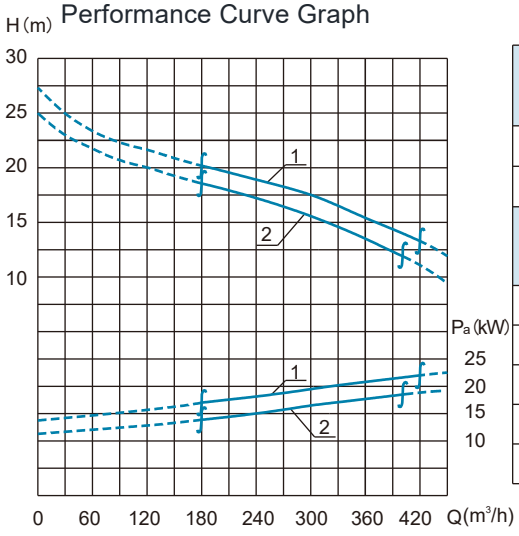
P Fixed Base Installation



View M



Performance Curve Graph



Main Parameter

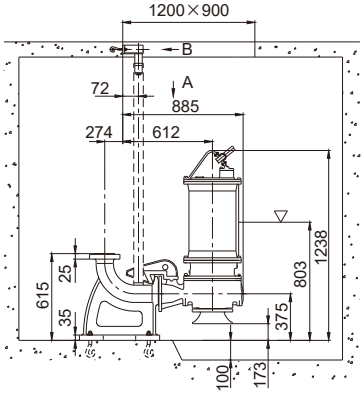
Outlet Diameter 200mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	200WQ300-18-22	WQ2260-4131	Oval 85×93	1470	306
2	200WQ300-16-18.5	WQ2260-4130	Oval 85×93	1470	294

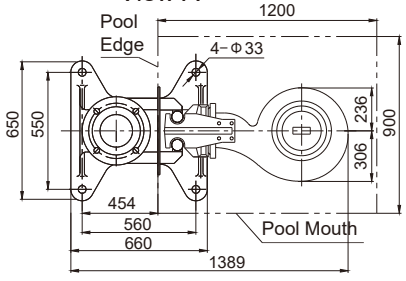
No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos φ	Motor Efficiency(%)	Rated Torque Block Torque /
1	22	40	0.87	91.2	2.2
2	18.5	36	0.87	90.7	2.2

	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	180-20	300-18	420-13
2		180-18.5	300-16	400-12

Installation Dimension Diagram

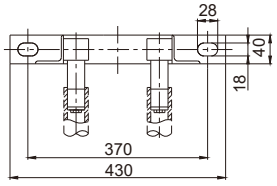


View A

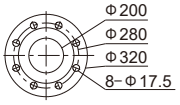


Z Automatic Coupling Installation

View B

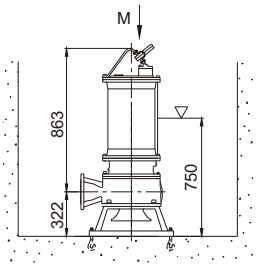


Flange Dimension

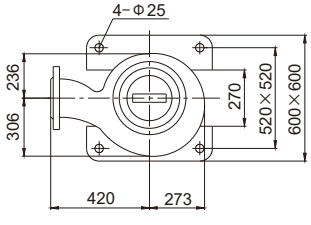


According to GB/T17241.6PN6 Standard Flange

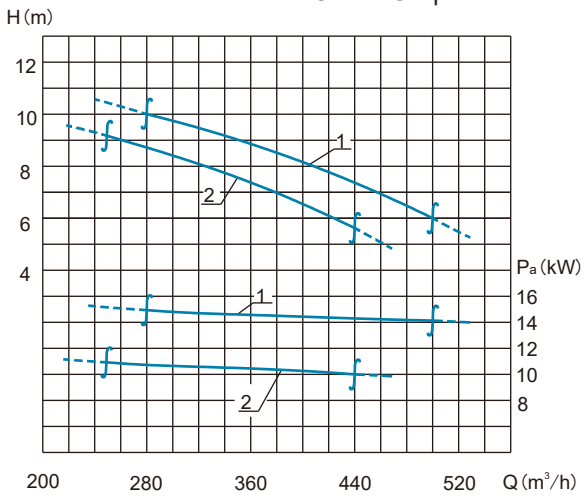
P Fixed Base Installation



View M



Performance Curve Graph



Main Parameter

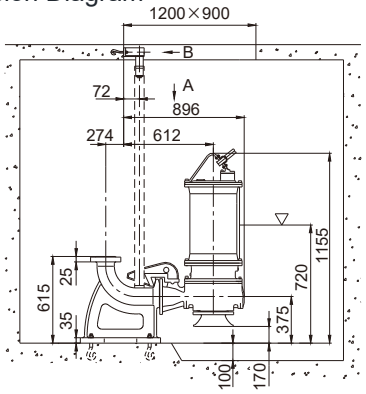
Outlet Diameter 200mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	200WQ400-8-15	WQ2260-4155	100	1460	270
2	200WQ380-7-11	WQ2260-4154	100	1460	254

No.	Rated Motor Power(kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	15	30	0.85	89. 4	2. 6
2	11	23	0.85	88	2. 4

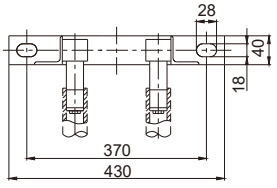
	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	280-10	400-8	500-6
2		250-9	380-7	440-5. 5

Installation Dimension Diagram

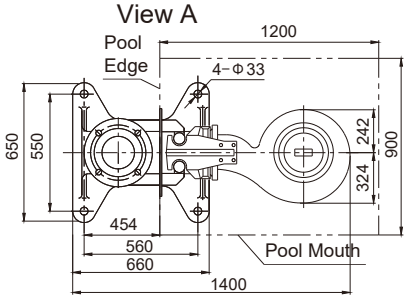


Z Automatic Coupling Installation

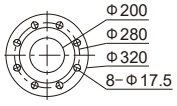
View B



View A

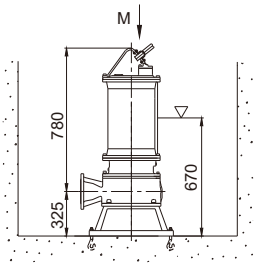


Flange Dimension

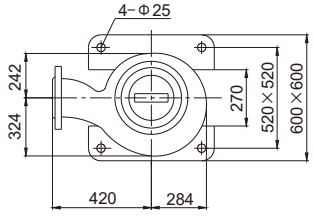


According to GB/T17241.6PN6 Standard Flange

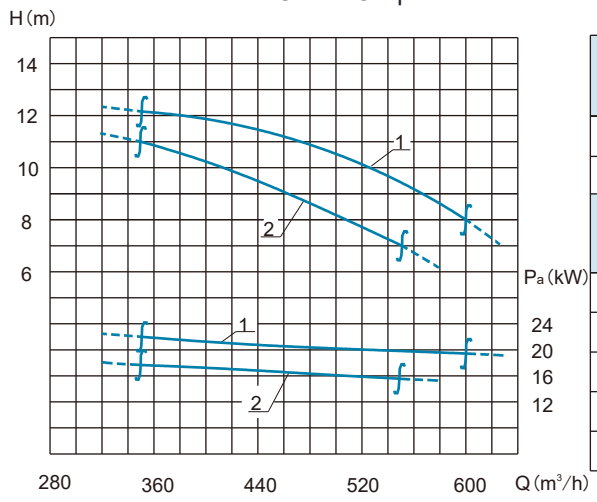
P Fixed Base Installation



View M



Performance Curve Graph



Main Parameter

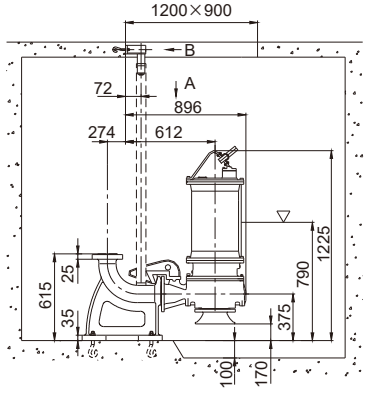
Outlet Diameter 200mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation 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.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos φ	Motor Efficiency(%)	Rated Torque Block Torque /
1	22	42	0.87	91.2	2.2
2	18.5	36	0.87	90.7	2.2

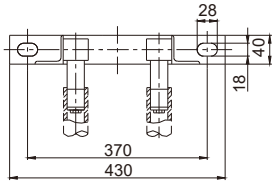
	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	350-12	520-10	600-8
2		350-11	500-8	550-7

Installation Dimension Diagram

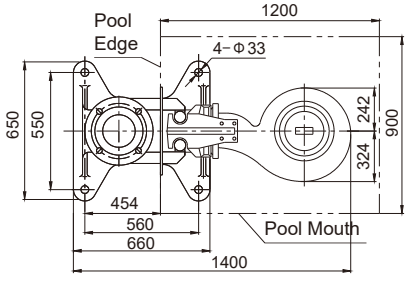


Z Automatic Coupling Installation

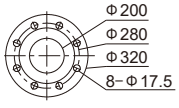
View B



View A

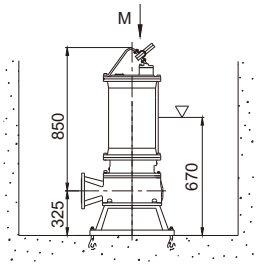


Flange Dimension

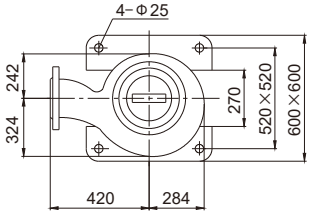


According to
GB/T17241.6PN6 Standard Flange

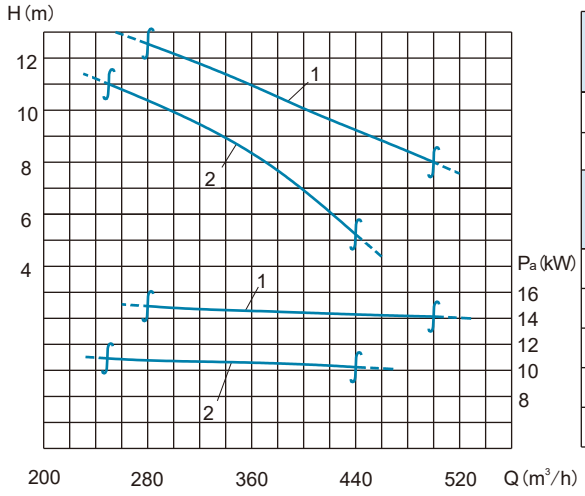
P Fixed Base Installation



View M



Performance Curve Graph



Main Parameter

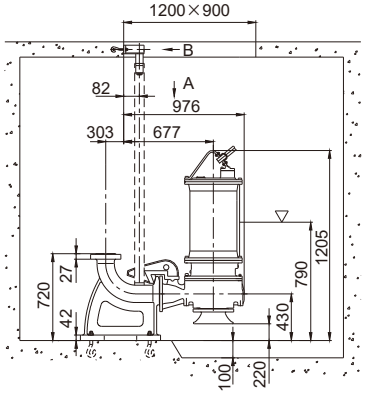
Outlet Diameter 250mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation Speed (r/min)	Weight (kg)
1	250WQ400-10-15	WQ2260-4158	100	1460	310
2	250WQ370-8-11	WQ2260-4158A	100	1460	290

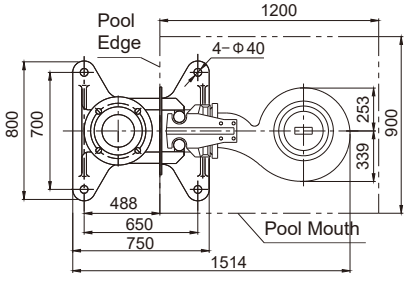
No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	15	30	0.85	89.4	2.6
2	11	23	0.85	88	2.4

	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	280-12.5	400-10	500-8
2		250-11	370-8	440-5.2

Installation Dimension Diagram

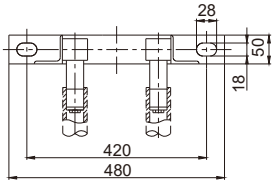


View A

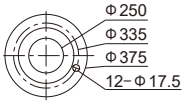


Z Automatic Coupling Installation

View B

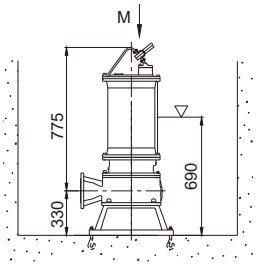


Flange Dimension

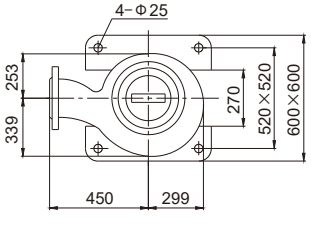


According to GB/T17241.6PN6 Standard Flange

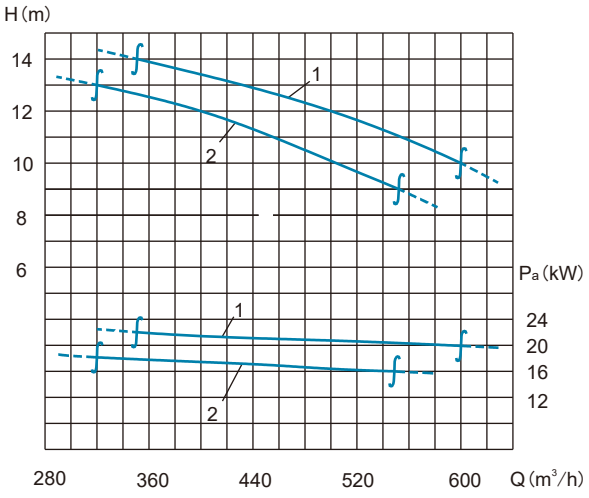
P Fixed Base Installation



View M



Performance Curve Graph



Main Parameter

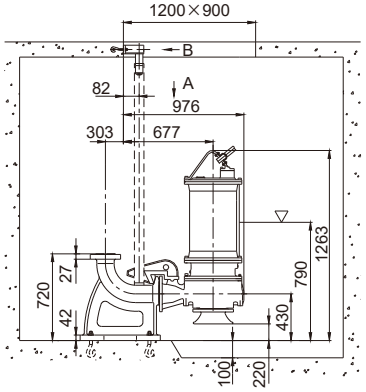
Outlet Diameter 250mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation 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.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos φ	Motor Efficiency(%)	Rated Torque Block Torque /
1	22	42	0.87	91.2	2.2
2	18.5	36	0.87	90.7	2.2

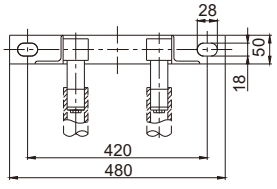
	Capacity-Head	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	m^3/h-m	350-14	500-12	600-10
2		320-13	500-10	550-9

Installation Dimension Diagram

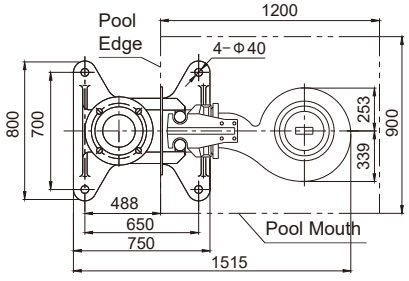


Z Automatic Coupling Installation

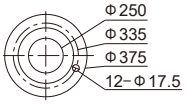
View B



View A

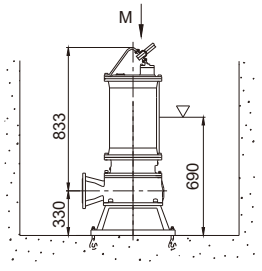


Flange Dimension

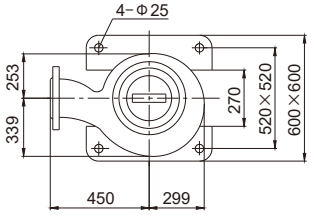


According to GB/T17241.6PN6 Standard Flange

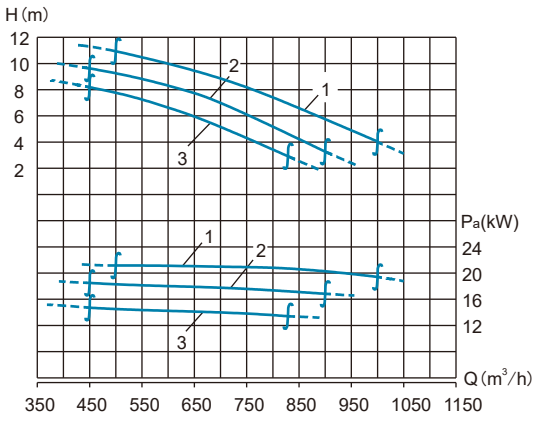
P Fixed Base Installation



View M



Performance Curve Graph



Main Parameter

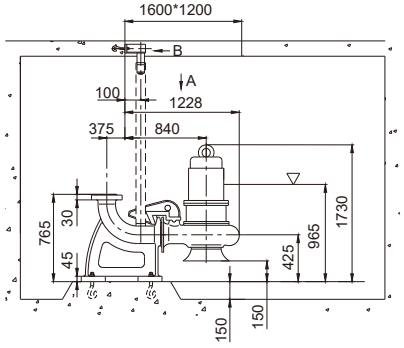
Outlet Diameter 300mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation 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

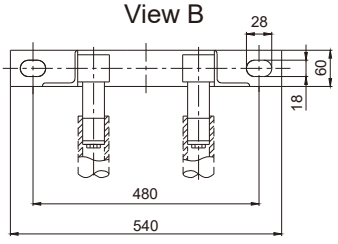
No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	22	45	0.83	90.5	2.1
2	18.5	38	0.82	90	2.1
3	15	31	0.83	90	2.1

Installation Dimension Diagram

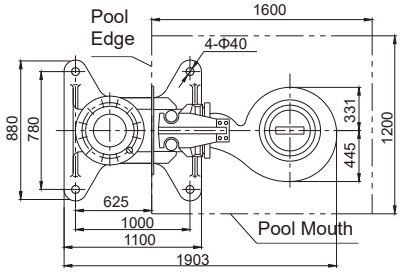
Z Automatic Coupling Installation



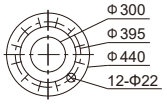
View B



View A

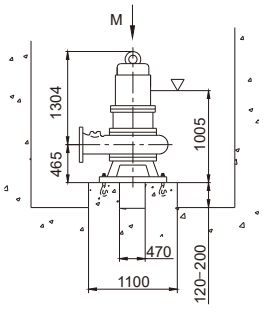


Flange Dimension

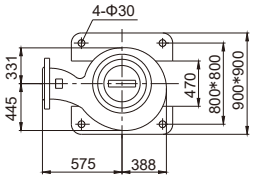


According to
GB/T17241.6PN6 Standard Flange

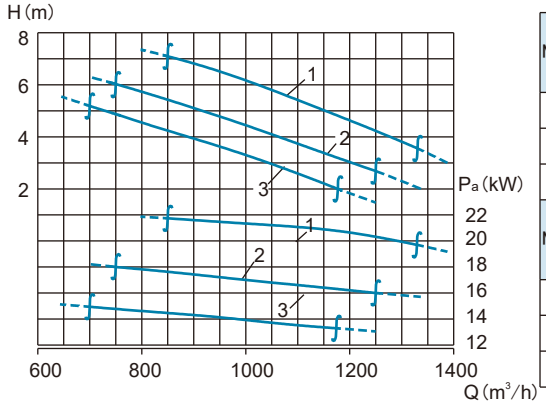
P Fixed Base Installation



View M



Performance Curve Graph



Main Parameter

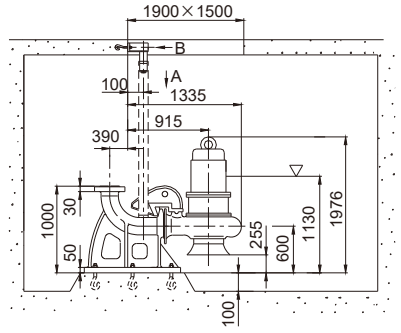
Outlet Diameter 350mm

No.	New Model	Original Model	Flow Channel Dimension (mm)	Rotation 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

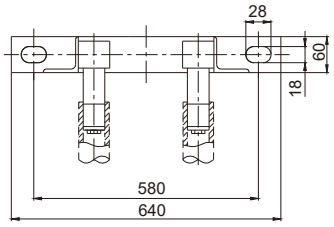
No.	Rated Motor Power (kW)	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Rated Torque Block Torque /
1	22	47	0.8	90.7	2.0
2	18.5	40	0.77	90.1	2.0
3	15	35	0.76	88.5	2.0

Installation Dimension Diagram

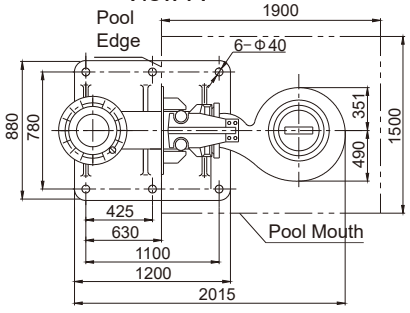
Z Automatic Coupling Installation



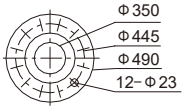
View B



View A

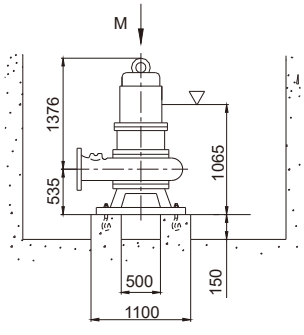


Flange Dimension



According to
GB/T17241.6PN6 Standard Flange

P Fixed Base Installation



View M