上海凯泉

Leading the Rise of Chinese Pump Industry

Generation-2 WQ/S Series Mincing Submersible Sewage Pump

Strong Mincing Ability

Uniquely double blade impeller can cut fiber objects, plastic bags, cotton linen and other objects and smoothly discharge, can completely avoid the pump and pipeline blocked by sundries, do not need to set up expensive pollution stop and removal device

Extremely Resistant to Wear and Tear

Impeller and pump cashing cover cutting edge has enough hardness, and corrosion resistance, can keep sharp for a long time

Unique Scraping Groove Structure

Scraping groove is arranged between the over-current rotating part and the fixed part, which can scrape the squeezed debris to avoid the increase of pump power or blocking rotation

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

A design / production / sales of pumps, water supply equipment and pump control equipment in one

Large comprehensive pump industry group

With 5 industrial parks and 23 sales branches

Products are used in construction (including heat and air conditioning), municipalities, nuclear power, thermal power, petrochemicals, large water conservancy and other fields

Continuously create new value for customers

上海凯泉泵业(集团)有限公司

SHANGHAI KAIQUAN PUMP (GROUP) CO., LTD.

Catalogue

WQ/S Series Mincing Submersible Sewage Pump Characteristics and Using Advantages

The submersible sewage pump has many advantages, the most prominent is that it can be directly put into the sewage for use. However, in the absence of setting or inconvenient setting of sewage barriers, small diameter submersible sewage pump pump and pipeline is often blocked by large debris in sewage phenomenon, causing trouble to users.

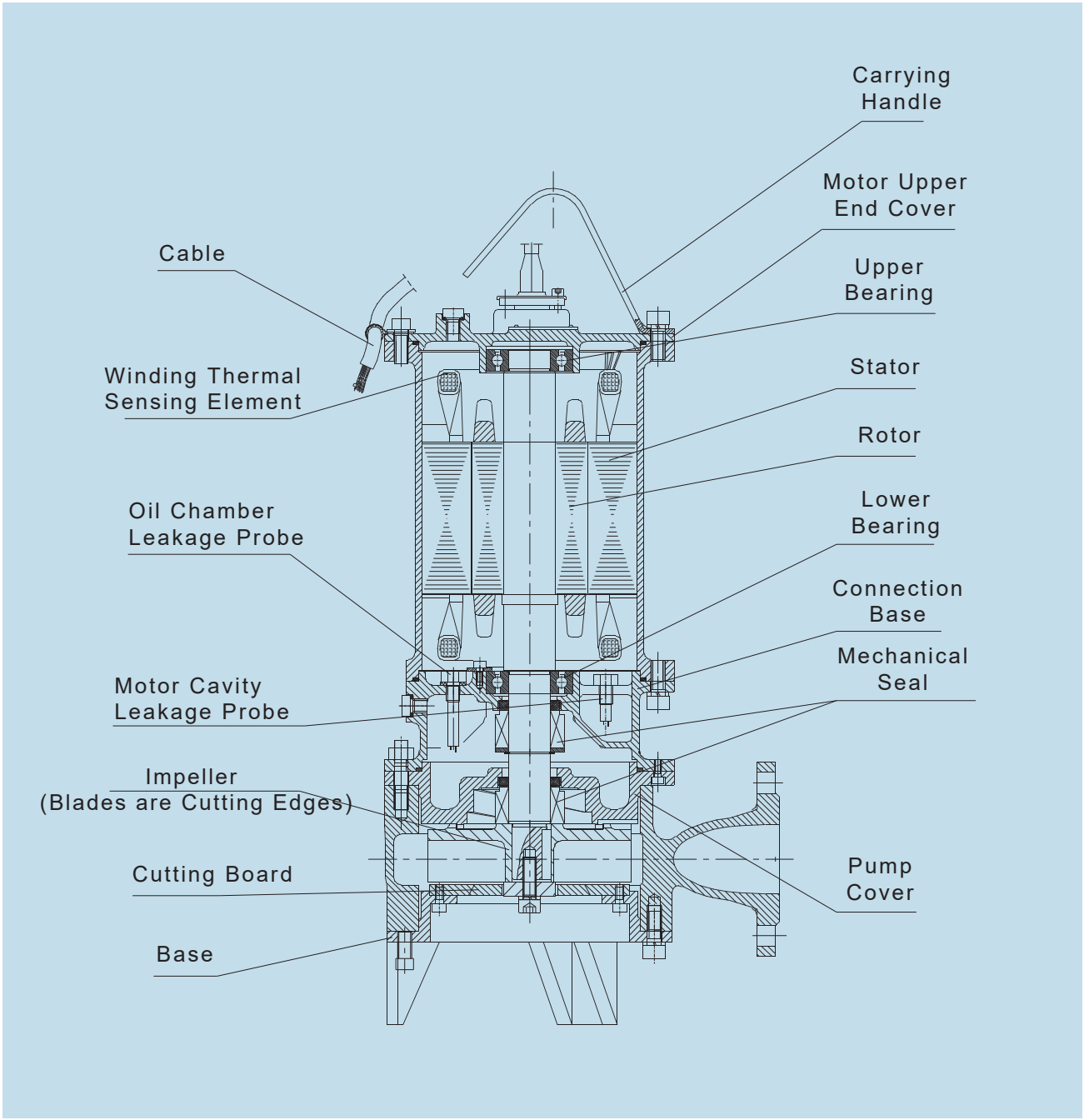
To solve this headache, our company developed a 50, 65, 80, 100 mm chopped type submersible sewage pump, the pump not only has all the advantages of the submersible sewage pump, usually also has the following unique advantages:

1. It can chop up sack, plastic woven bag, canvas gloves, leather gloves, cotton woven gloves, and daily plastic bags, cloth, toilet paper, sanitary napkins, cotton yarn and other objects and send them smoothly; even wooden strips A class of objects can be easily shredded as long as they can enter from the suction port. It can completely prevent the pump and pipeline from being blocked by the debris in the sewage, and there is no need to set up expensive dirt blocking and decontamination devices during use.
2. Impeller and pump cover with corrosion-resistant materials and after heat treatment, impeller and pump cover on the cutting edge has enough hardness, and corrosion resistance, so very abrasion resistance, can keep sharp for a long time.
3. The impeller channel size and the casing channel size match perfectly, so that the debris can be cut through smoothly.
4. The unique bearing and mechanical seal arrangement, so that the shaft cantilever is very short, the stiffness and strength of the shaft is very high, so that the vibration of the shaft is very small, so that the mechanical seal leakage is greatly reduced;Shaft can withstand large impact load, even in the pump from time to time shredded hard objects under heavy load working conditions, still has a very long life.
5. Pump side and motor side are equipped with mechanical seal, to achieve the motor's reliable double submersible shaft seal protection. The oil in the oil chamber fully lubricates and cools the mechanical seal. The pump side mechanical seal area is provided with a structure of shredding and driving away sundries, so that sundries can not be accumulated or deposited in the mechanical seal chamber, so as to avoid its influence on the normal operation of the mechanical seal.
6. Scratching groove is arranged between all the over-current rotating parts and the fixed parts, which can scrape the thin and tough debris squeezed between the over-current rotating parts and the fixed parts, so as to avoid increasing the pump power or blocking the rotation.

Structural Description

Take the mincing submersible sewage pump of 7.5kW and below as an example for illustration. The basic pumps structure of 11kW and above is the same.

Kaiquan Mincing Submersible Sewage Pump Structural Diagram



Motor Protection

In order to achieve reliable protection of submersible motors, our WQ/S series shredded submersible pumps use 0-shaped seals to achieve static sealing, and use two independent sets of mechanical seals to achieve dual dynamic sealing of the shaft. The pump side mechanical seal that is in contact with sewage is the first shaft seal of the motor. The friction pair is silicon carbide-silicon carbide or silicon carbide-tungsten carbide, which has extremely high hardness and is very wear-resistant, and the friction pair uses oil The oil in the chamber is cooled and lubricated; the mechanical seal on the motor side, that is, the second shaft seal of the motor, is completely in the oil chamber. Under normal circumstances, it does not come into contact with sewage or impurities, and the operating conditions are better. The friction coefficient is adopted for the friction pair. Very low graphite-silicon carbide pairing has a long service life. However, no matter how good the mechanical seal is, it is inevitable that there will be slight leakage. In order to ensure the high reliability of the motor, a water leakage probe is set in the oil chamber. The two electrodes of the water leakage probe are connected to the special electric control cabinet of the submersible pump through a cable. , When the pump has been running for a long time, and the water leaking into the oil chamber from the pump side mechanical seal reaches a certain level, the water leakage probe can alarm through the electric control cabinet (the indicator light is on) to remind the operator to change the oil and restore the two sets of mechanical seals to normal If there are frequent alarms, the operator can perform maintenance. A water leakage probe is also set on the lower side of the motor cavity. The lead of the water leakage probe is connected to the special electric control cabinet of the submersible sewage pump through a cable. Once the liquid leaking from the mechanical seal on the motor side enters the water leakage probe cavity, the water leakage probe can alarm through the electric control cabinet (he indicator light is on) and the pump is stopped, prompting the operator to inspect and repair in time. During the inspection, not only the mechanical seal, but also the insulation of the motor should be checked.

A thermal element is embedded in each of the three windings of the motor, and the three thermal elements are connected in series, and are connected to the cable and the special electric control cabinet of the submersible sewage pump through two wires. Under abnormal operating conditions, when the winding temperature reaches the set point When the value is set, any one of the three components will alarm through the special electric control cabinet of the submersible sewage pump (the indicator light is on) and stop the pump to protect the winding from overheating. Since only one of the three thermal elements is effective, it will play a protective role, and the probability of failure of all three elements is extremely low, so the reliability of the winding overheating protection is extremely high.

The protection of the motor in the case of short circuit, phase loss, and overload is a function that any electric control cabinet must have, and of course it is also a function of the special electric control cabinet for submersible sewage pumps. It should be pointed out that lack of phase is the biggest killer of the motor. Without a good electric control cabinet, it is impossible to prevent the motor from being burnt due to lack of phase. As for switching with a knife, it is even more inadequate and more than a failure for a three-phase motor. The water leakage protection element and thermal element set in the pump can't function even if they leave the special electric control cabinet for the submersible sewage pump. The electric control cabinet can also realize unattended and automatic control. Therefore, for the submersible sewage pump, because its working environment is worse than ordinary pumps, it is very necessary to configure a special electric control cabinet for the submersible sewage pump; **as for the mincing submersible pump, its working environment is worse than the general submersible sewage pump. It should also be equipped with a dedicated electric control cabinet for the submersible sewage pump.** For example, when encountering debris that is difficult to chop and stalling occurs (the so-called "stuffy car"), if the electric control cabinet dedicated to the submersible sewage pump is not equipped, the motor will be burned; and if it is configured, the inside of the cabinet will be burned. The circuit breaker or thermal relay will automatically cut off the power and stop, prompting the user to check and eliminate the problem to avoid burning the motor.

Our special electric control cabinet for submersible sewage pump is equipped with a certain quantity of float switches according to the quantity of control pumps. When the electric control cabinet is set to automatic control, the pump can be controlled by the float switch according to the level of the liquid. Start and stop. The minimum liquid level is set to ensure the heat dissipation of the motor during continuous operation for a long time, and to avoid vibration, noise and even cavitation damage to the impeller due to the suction of air by the pump.

List of Motor Protection Components Installed in the Pump:

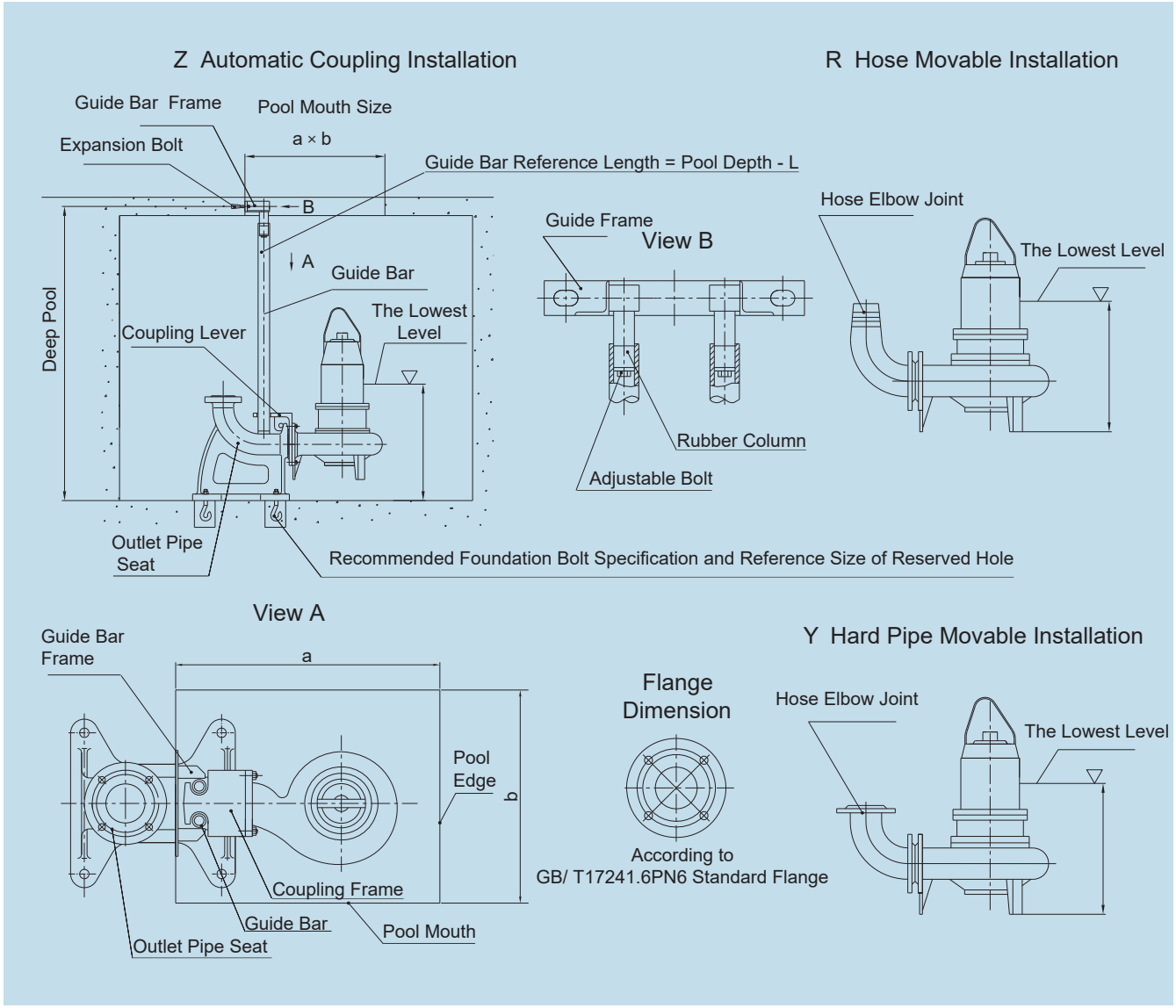
Power (kW)	Oil Chamber Leak Probe	Motor cavity oil water probe	Winding Thermal Sensing Element
1.5-37	When the water content of the oil chamber exceeds the limit, make the electric control cabinet light up to alarm and stop the pump	When water enters the motor chamber, the electric control cabinet lights up to alarm and stop the pump	When the winding overheats, the electric control cabinet will light up to alarm and stop the pump

List of Motor Protection Devices Installed in the Electric Control Cabinet:

Protection Device	Function
Special protector matching with motor protection components in the pump	The motor protection component installed in the pump will trigger the electric control cabinet to light up and alarm, or light up to alarm and stop the pump, prompting the user to check and maintain
Thermal relay	Power off and shutdown in case of phase loss and overload (including blocking)
Automatic air breaker (Air switch)	Power off and stop when short circuit, serious overload (including blocking)

Installation Method Description

WQ/S type pump has three installation methods: automatic coupling installation (Z), hose movable installation (R) and hard pipe movable installation (Y). The movable installation of the hose and the movable installation of the hard tube are very simple and need not be detailed.
The following is an introduction to the automatic coupling installation:



Automatic coupling installation does not require conventional fasteners to connect pumps and pipes. The coupling device only has four things: the outlet pipe seat, the guide bar, the guide bar holder, and the coupling holder. The guide bar only plays a guide bar, and is not stressed. It is enough to cut the required length with ordinary water pipes or steel pipes according to the depth of the pool, so users can prepare by themselves. When installing, install the outlet pipe seat, guide bar and guide bar frame, install the coupling frame on the casing, lift the pump, penetrate the semicircular hole on the coupling frame into the guide bar, and slide the pump down along the guide bar at the end, the coupling frame will be aligned and fastened with the outlet pipe seat. When the pump needs to be repaired, just lift the pump up and the pump and the outlet pipe seat will be disconnected. This installation method is very convenient for pump maintenance.

Since the coupling device and the pump are relatively independent, if your pumping station needs to be replaced with a low-head or high-head pump of the same caliber due to changes in conditions, you can still use the original coupling device.

Automatic coupling installation of related hose dimension
Movable installation of hose dimension
Units: mm except inches

Project \ Pump Discharge Diameter	40	50	65		80	100
Guiding bar	1 "Water Pipe /32×3.5 Seamless Steel Tube					
Guiding bar length	Deep Pool-300		Deep Pool-305		Deep Pool-425	Deep Pool-410
Quantity and specification of foundation bolts	4-M16×220				4-M20×300	
Quantity and specification of expansion bolts	2-M16×150 I					
Foundation bolts reserved hole dimension	80×80×270				100×100×350	
Specification for hose elbow joints to be fitted	40-6	50-6	50×65-6	65-6	80-6	100-6
The inner diameter of the hose when the hose is installed	64	64	76	76	89	102

Technical Description

Model Description

For example：65WQ/S205-7.5-Z(R, Y)

Among them：

65—Pump outlet diameter, mm

WQ/S—Mincing submersible sewage pump

205—Pump serial number, the first digit represents the number of motor pole

7.5—Motor rated power，K W Z(R, Y)—Installation method

Z：Automaic coupling installation

R：Vertical base installation of the hose

Y：Vertical base installation of the hard pipe

Rated Voltage, Rated Frequency

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

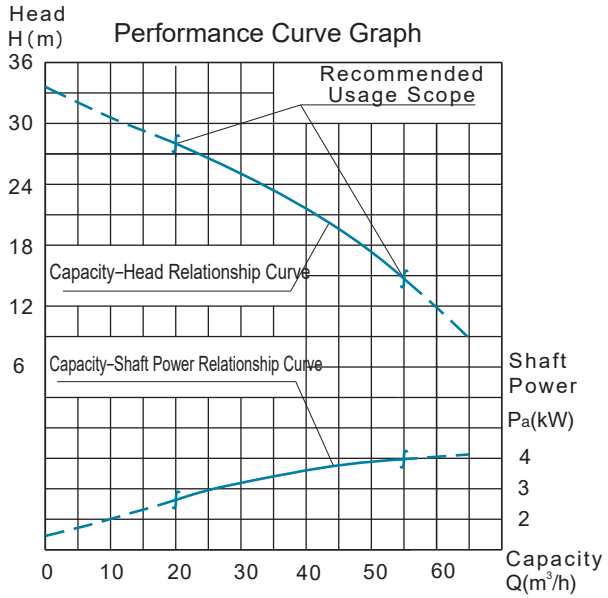
The Connection Method Lead Wire of Motor Winding

Star (Y) connection is used for 4kw and below, and triangle (△) connection is used for 5.5kW and above. When the pump leaves the factory, the rotation direction has been connected according to this in the junction box.

Rotation Direction

Seen from the pump inlet, the impeller rotates counterclockwise.

Performance Curve and Main Parameter Explanation



Main Parameter

Pump Model	Rated Motor Power (kW)	Rotation Speed (r/min)	Weight (kg)
65WQ/S205-7.5	7.5	2920	90
65WQ/S206-5.5	5.5	2920	80

Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency (%)	Block Torque / Rated Torque
15	0.88	86.2	2.0
11	0.88	85.5	2.0

Capacity-Head (m³/h-m)		
Small Capacity Point	Middle Capacity Point	Huge Capacity Point
25-30	50-24	75-15
21-25	40-21	63-13

The solid line of the curve on the figure shows the recommended range of the pump. Out of range, pump efficiency is very low or there is a danger of motor overload. This kind of pump as shown in the figure, the shaft power rises steeply with the increase of capacity. If the capacity of the pump exceeds the capacity limit on the right, the shaft power will exceed the rated power of the motor. When the medium temperature is high or the motor is not sufficiently cooled, the motor can not work for a long time.

For all submersible pump, when the capacity is less than the limit on the left, the shaft power of the pump is far below the rated power of the motor, and the unit efficiency is very low. It is not economical to use the pump under this working condition.

Pump weight does not include the weight of accessories for various installation methods, such as coupling device, base, elbow joint, hose elbow, hose direct head, tapered pipe.

Pump Main Parts Material

Parts	Impeller, Underneath Pump Cover	Other Parts	Shaft	Mechanical Seal Material			
				Motor Side Mechanical Seal Friction Pair	Pump Side Mechanical Seal Friction Pair	Spring	Rubber Parts
Material	Stainless Steel Heat Treatment	HT200 HT250	2Cr13 Heat Treatment	Silicon Carbide	Silicon Carbide Tungsten Carbide	Stainless Steel	Nitrile Rubber

Special Electric Control Cabinet for Submersible Sewage Pump

The submersible sewage pump is equipped with various motor protection devices, and the electric control cabinet of the submersible sewage pump must be matched with these protection devices, and the electric control cabinet of the submersible sewage pump must also be equipped with a float switch that controls the start and stop of the pump by the liquid level. Therefore, the electric control cabinet of submersible sewage pump is special and has specificity. The special electric control cabinet for subsurface sewage pump of our company is matched with the protection device of the pump, and the electric control cabinet is equipped with a certain quantity of floating ball switches according to the control mode selected by the user when it is delivered from the factory. It also has the protection function of short circuit, overload and phase loss in the main circuit, and the electric control cabinet above 15KW also has the function of auto-step-down start or electronic soft start. When the electric control cabinet controlled by main and standby is working normally, the main and standby pump alternate modes are: manual alternating, automatic alternating (continuous operation occasions), automatic alternating (intermittent operation occasions);In case of failure, all the main and standby control cabinets have the function of automatic shutdown of the fault pump and automatic operation of the standby pump (self-feeding of the standby pump).If users are using our electric control cabinet connection is disconnected with the pump protection device, or the user should bring along their own protection device of the electric control cabinet and pump do not form a complete set, or is not set the primary loop short-circuit, overload, open phase protection function, is inevitably fail not alarm, pump, so users don't repair, the end result is burning motor. Therefore, when purchasing submersible sewage pump, special electric control cabinet for submersible sewage pump should be purchased as far as possible. When purchasing shredded submersible sewage pump, special electric control cabinet for submersible sewage pump should be purchased at the same time.

7.5KW and Below Control Cabinet Model Naming Method

KQK / T – 2 Ac B – 3 – 001

- 001 — Other auxiliary functions: interface reservation, etc
- 3 — Motor power: 3kW
- B — Control features: B—Submersible pump (with protective signal wire)
- Ac — Main and spare pump operation mode:
  - AC—Automatic alternate or cycle
  - As—Timing alternate or cycle
  - H—Manual selection of main and spare pump
- 2 — Pump control quantity: two
- T — Main component configuration: T - General configuration G - High grade configuration
- KQK — Kaiquan Electric Control Cabinet Code

7.5KW and Below Control Cabinet Model Selection

Table1

Supporting WQ/S Series Mincing Submersible Sewage Pump (One Control One)				
No.	Power (kW)	Control Cabinet Model		Cabinet Dimension (Height × Width × Thickness)
		General Configuration	High Grade Configuration	
1	1.5	KQK/T–1B–1.5	KQK/G–1B–1.5	400×300×200
2	2.2	KQK/T–1B–2.2	KQK/G–1B–2.2	400×300×200
3	3	KQK/T–1B–3	KQK/G–1B–3	400×300×200
4	4	KQK/T–1B–4	KQK/G–1B–4	400×300×200
5	5.5	KQK/T–1B–5.5	KQK/G–1B–5.5	400×300×200
6	7.5	KQK/T–1B–7.5	KQK/G–1B–7.5	400×300×200

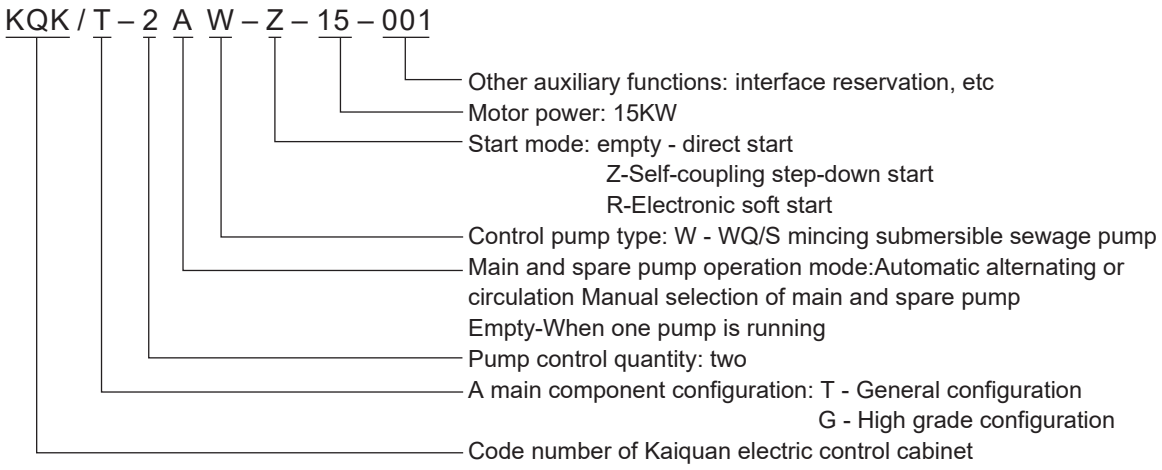
Table2

Supporting WQ/S Series Mincing Submersible Sewage Pump (One Control Two)				
No.	Power (kW)	Control Cabinet Model		Cabinet Dimension (Height × Width × Thickness)
		General Configuration	High Grade Configuration	
1	1.5	KQK/T–2AcB–1.5	KQK/G–2AcB–1.5	500×400×200
2	2.2	KQK/T–2AcB–2.2	KQK/G–2AcB–2.2	500×400×200
3	3	KQK/T–2AcB–3	KQK/G–2AcB–3	500×400×200
4	4	KQK/T–2AcB–4	KQK/G–2AcB–4	500×400×200
5	5.5	KQK/T–2AcB–5.5	KQK/G–2AcB–5.5	500×400×200
6	7.5	KQK/T–2AcB–7.5	KQK/G–2AcB–7.5	500×400×200

Table3

Supporting WQ/S Series Mincing Submersible Sewage Pump (One Control Three)				
No.	Power (kW)	Control Cabinet Model		Cabinet Dimension (Height × Width × Thickness)
		General Configuration	High Grade Configuration	
1	1.5	KQK/T–3AcB–1.5	KQK/G–3AcB–1.5	800×600×200
2	2.2	KQK/T–3AcB–2.2	KQK/G–3AcB–2.2	800×600×200
3	3	KQK/T–3AcB–3	KQK/G–3AcB–3	800×600×200
4	4	KQK/T–3AcB–4	KQK/G–3AcB–4	800×600×200
5	5.5	KQK/T–3AcB–5.5	KQK/G–3AcB–5.5	800×600×200
6	7.5	KQK/T–3AcB–7.5	KQK/G–3AcB–7.5	800×600×200

11KW and Below Control Cabinet Model Naming Method



11kW and Below Control Cabinet Model Selection

Direct Start

The Following Table Lists the Control Cabinet Model and Box Dimension for Direct Startof the Supporting Submersible Sewage Pump

Supporting WQ/S Series Mincing Submersible Sewage Pump(One Control One)—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–1W–11	KQK/G–1W–11	500 × 400 × 200	15
2		4 Poles	23				
3	15	2 Poles	29	KQK/T–1W–15	KQK/G–1W–15	500 × 400 × 200	20
4		4 Poles	30				

Notice: A in the list refers to automatic alternating or circulating, which can be changed to H to manually select the main and spare pumps.

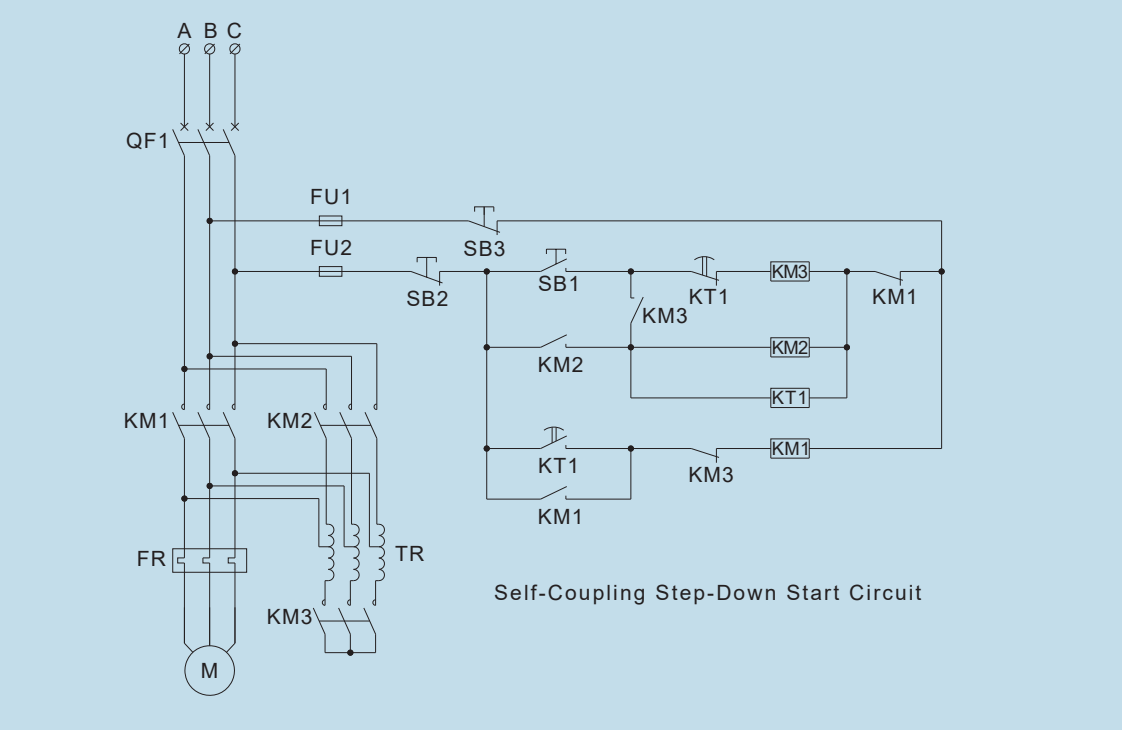
Supporting WQ/S Series Mincing Submersible Sewage Pump(One Control One)—Direct Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height x Width x Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	11	2 Poles	22	KQK/T–2AW–11	KQK/G–2AW–11	600 × 400 × 200	20
2		4 Poles	23				
3	15	2 Poles	29	KQK/T–2AW–15	KQK/G–2AW–15	600 × 400 × 200	25
4		4 Poles	30				

Supporting WQ/S Series Mincing Submersible Sewage Pump(One Control One)—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–3AW–11	KQK/G–3AW–11	800 × 600 × 250	27
2		4 Poles	23				
3	15	2 Poles	29	KQK/T–3AW–15	KQK/G–3AW–15	800 × 600 × 250	35
4		4 Poles	30				

Notice: A in the list refers to automatic alternating or circulating, which can be changed to H to manually select the main and spare pumps.

Self-Coupling Step-Down Start

It refers to the use of an autotransformer to reduce the voltage applied to the stator winding of the motor when starting. After the motor starts, 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 Control Cabinet Model and Box Dimension for Self-Coupling Step-Down Start of the Supporting Submersible Sewage Pump

Supporting WQ/S Series Mincing 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 × Width × Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T−1W−Z15	KQK/G−1W−Z15	1200 × 600 × 400	100
2		4 Poles	30				
3	18.5	4 Poles	36	KQK/T−1W−Z18.5	KQK/G−1W−Z18.5	1200 × 600 × 400	110
4	22	4 Poles	40	KQK/T−1W−Z22	KQK/G−1W−Z22	1200 × 600 × 400	120
5	30	4 Poles	58	KQK/T−1W−Z30	KQK/G−1W−Z30	1400 × 600 × 400	130
6	37	4 Poles	70	KQK/T−1W−Z37	KQK/G−1W−Z37	1400 × 600 × 400	130

Supporting WQ/S Series Mincing 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 × Width × Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T−2AW−Z15	KQK/G−2AW−Z15	1400 × 600 × 400	130
2		4 Poles	30				
3	18.5	4 Poles	36	KQK/T−2AW−Z18.5	KQK/G−2AW−Z18.5	1400 × 600 × 400	145
4	22	4 Poles	40	KQK/T−2AW−Z22	KQK/G−2AW−Z22	1400 × 600 × 400	155
5	30	4 Poles	58	KQK/T−2AW−Z30	KQK/G−2AW−Z30	1700 × 700 × 500	170
6	37	4 Poles	70	KQK/T−2AW−Z37	KQK/G−2AW−Z37	1700 × 700 × 500	170

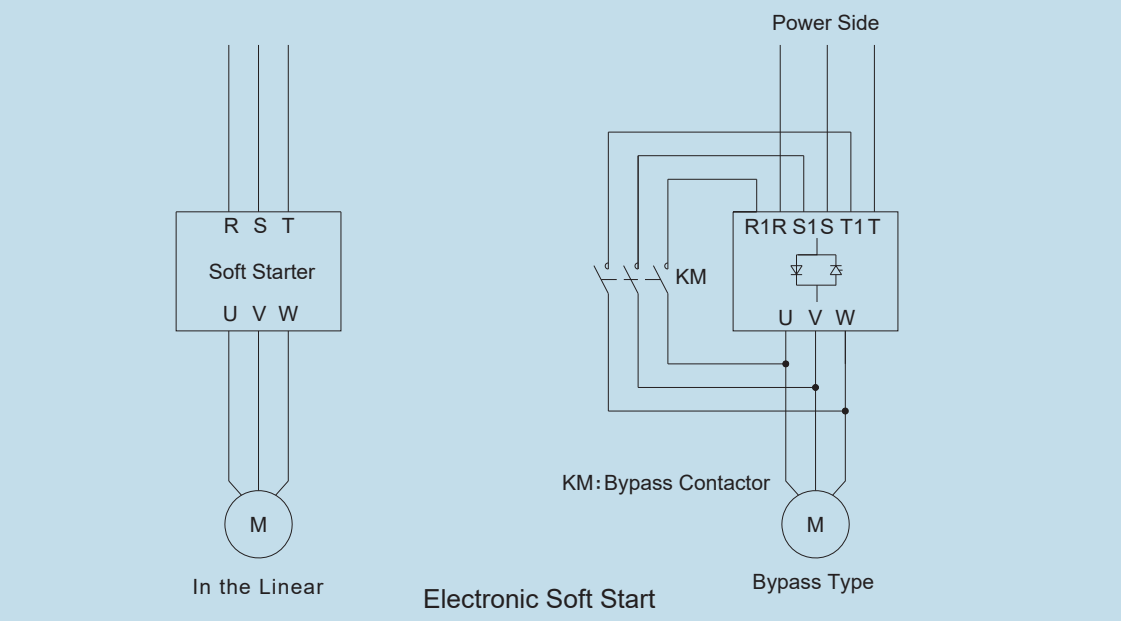
Notice: A in the list refers to automatic alternating or circulating, which can be changed to H to manually select the main and spare pumps.

Supporting WQ/S Series Mincing 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 × Width × Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T−3AW−Z15	KQK/G−3AW−Z15	1700 × 700 × 500	175
2		4 Poles	30				
3	18.5	4 Poles	36	KQK/T−3AW−Z18.5	KQK/G−3AW−Z18.5	1700 × 700 × 500	195
4	22	4 Poles	40	KQK/T−3AW−Z22	KQK/G−3AW−Z22	1700 × 700 × 500	210
5	30	4 Poles	58	KQK/T−3AW−Z30	KQK/G−3AW−Z30	1800 × 800 × 500	230
6	37	4 Poles	70	KQK/T−3AW−Z37	KQK/G−3AW−Z37	1800 × 800 × 500	230

Notice: A in the list refers to automatic alternating or circulating, which can be changed to H to manually select the main and spare pumps.

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.



Electronic Soft Start

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

Supporting WQ/S Series Mincing 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−1W−R15	KQK/G−1W−R15	800 × 600 × 250	35
2		4 Poles	30				
3	18.5	4 Poles	36	KQK/T−1W−R18.5	KQK/G−1W−R18.5	800 × 600 × 250	40
4	22	4 Poles	40	KQK/T−1W−R22	KQK/G−1W−R22	800 × 600 × 250	40
5	30	4 Poles	58	KQK/T−1W−R30	KQK/G−1W−R30	1600 × 600 × 400	75
6	37	4 Poles	70	KQK/T−1W−R37	KQK/G−1W−R37	1600 × 600 × 400	75

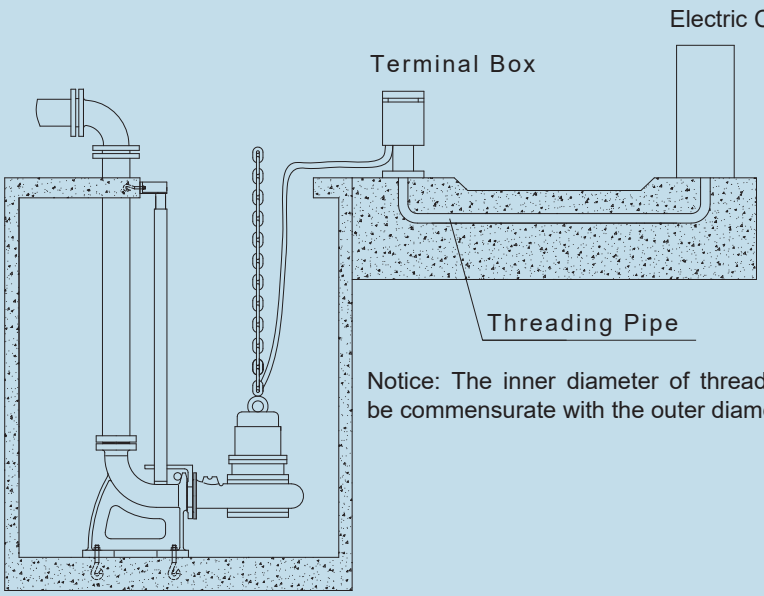
Supporting WQ/S Series Mincing Submersible Sewage Pump(One Control Two)—Electronic Soft Start							
No.	Power (kW)	Motor Pole Number	Current (A)	Control Cabinet Mode		Cabinet Dimension (Height x Width x Thickness)	Weight (kg)
				General Configuration	High Grade Configuration		
1	15	2 Poles	29	KQK/T-2AW-R15	KQK/G-2AW-R15	1600×600×400	50
2		4 Poles	30				
3	18.5	4 Poles	36	KQK/T-2AW-R18.5	KQK/G-2AW-R18.5	1600×600×400	55
4	22	4 Poles	40	KQK/T-2AW-R22	KQK/G-2AW-R22	1600×600×400	55
5	30	4 Poles	58	KQK/T-2AW-R30	KQK/G-2AW-R30	1800×800×500	105
6	37	4 Poles	70	KQK/T-2AW-R37	KQK/G-2AW-R37	1800×800×500	105

Notice: A in the list refers to automatic alternating or circulating, which can be changed to H to manually select the main and spare pumps.

Supporting WQ/S Series Mincing Submersible Sewage Pump(One Control Three)—Electronic Soft 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-3AW-R15	KQK/G-3AW-R15	1700 × 700 × 500	70
2		4 Poles	30				
3	18.5	4 Poles	36	KQK/T-3AW-R18.5	KQK/G-3AW-R18.5	1700 × 700 × 500	80
4	22	4 Poles	40	KQK/T-3AW-R22	KQK/G-3AW-R22	1700 × 700 × 500	80
5	30	4 Poles	58	KQK/T-3AW-R30	KQK/G-3AW-R30	1800 × 800 × 500	145
6	37	4 Poles	70	KQK/T-3AW-R37	KQK/G-3AW-R37	1800 × 800 × 500	145

Notice: A in the list refers to automatic alternating or circulating, which can be changed to H to manually select the main and spare pumps.

Terminal Box and Threading Tube



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

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

This diagram is suggestive only and does not represent a design specification. The design and installation of the pump station should be handled according to the relevant standards and specifications when the threader needs to be set from the terminal box to the electric control cabinet (the threader is provided by the user), the inner diameter of the threader should be determined according to the outer diameter of the cable, and note that the inner diameter of the threader should be large enough at the turn, and the bending radius of the threader should be large enough. If a special cable for submersible pump is used from the terminal box to the electric control cabinet, the outer diameter of the cable is shown in the table below.

Pump Power (kW)	Cable			
	Cable Type		Cable Outside Diameter (mm)	
≤4	YVC3 × 1.5+4 × 1		11.5	
5.5、7.5	YVC3 × 2.5+4 × 1.5		14	
11	YVC 3 × 4+1 × 2.5+4 × 1		18	
15	YVC 3 × 6+1 × 4+4 × 1		19	
18.5、22	YCW3 × 10+1 × 6+4 × 1.5		28	
Pump Power (kW)	Main Cable		Control Cable	
	Main Cable Type	Outside Diameter (mm)	Control Cable Type	Outside Diameter (mm)
30、37	YCW3 × 16+1 × 6	28	YVC5 × 1.5	12

Ordering Instructions

1. In order to make the pump you choose more suitable, you are warmly welcome to consult the submersible pump group of our technical center for technical problems.
2. When ordering, please indicate the pump model (including installation method) according to the "Model Description" in the "Technical Instructions" above.
3. All shredded submersible pumps can be installed by automatic coupling type, vertical base installation connected with hard pipe or hose.
4. In general, if the standard cable of water pump motor is 10 meters, other lengths are required by users, it should be explained when ordering.
5. The "complete supply" parts in the "Supply List" below are supplied according to the installation mode selected by the user.

"Supply according to the purchase requirements of the order" parts by the user according to their own needs to order. In particular, it should be noted that:

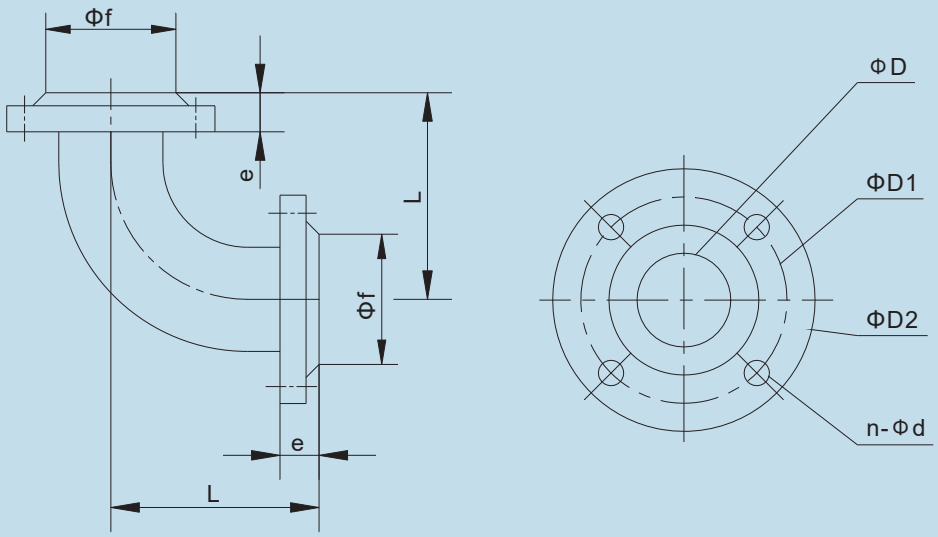
The guide bar in the coupling device only needs to be cut to the required length with ordinary water pipe or steel pipe, and no other processing is required. We have indicated the specifications and length calculation formula and data of the water pipe or steel pipe used as the guide bar in the automatic coupling installation size chart of each pump in the sample. Users only need to purchase the water pipe or steel pipe by themselves and cut it into the required length to use it. Because it is easy to prepare and inconvenient to transport, the guide bar is not included in the coupling device of our company. If we need to supply the guide bar, we must order it separately.

Supply list

Supply Mode	Goods Name	Installation		
		Automatic Coupling Installation	Vertical Base Mounting	
		Z	Connect the Hose	Connect the Hard Pipe
			R	Y
Complete sets of supply	Main Pump	○	○	○
	Automatic Coupling Device	○		
	Hose Elbow Joint (1)		○	
	Elbow Joint (1)			○ The same Caliber as Pump
	Base		○	○
	Taper Pipe			
Supply According to Purchase Order	Electric Control Cabinet	○	○	○
	Terminal Box	○	○	○
	Elbow Joint	○ The same Caliber as Pump		○ The same Caliber as Pump
	Gate Valve	○ The same Caliber as Pump		○ The same Caliber as Pump
	Check Valve	○ The same Caliber as Pump		○ The same Caliber as Pump
	Guide Bar	○		
	Foundation Bolts Set for Outlet Pipe Hose	○		
	Hose		○	
	Chain Link	○	○	○
	Spare Wheel	○	○	○
	Spare Mechanical Seal Set	○	○	○
	Spare Bearing Set	○	○	○
	Spare O-ring Set	○	○	○

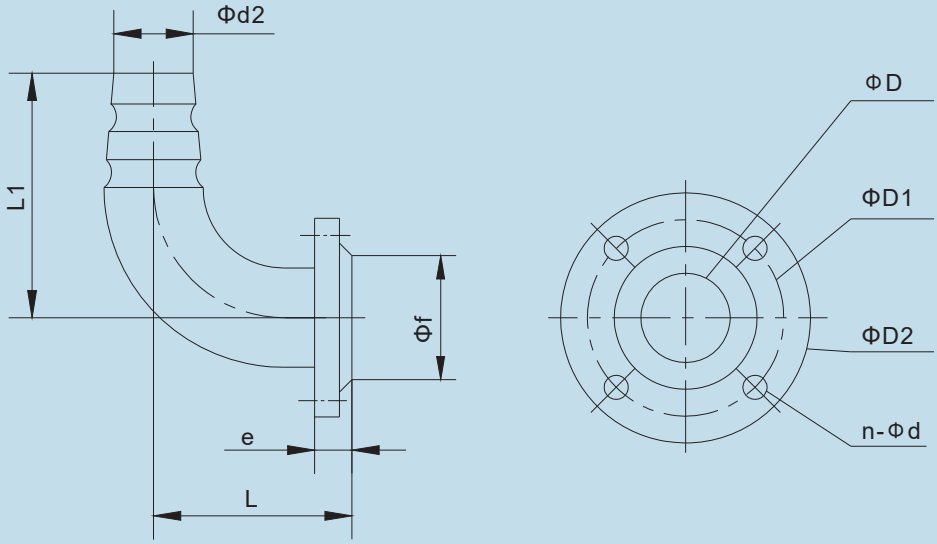
Accessory Diagram and Dimensions

Hose Elbow Joint



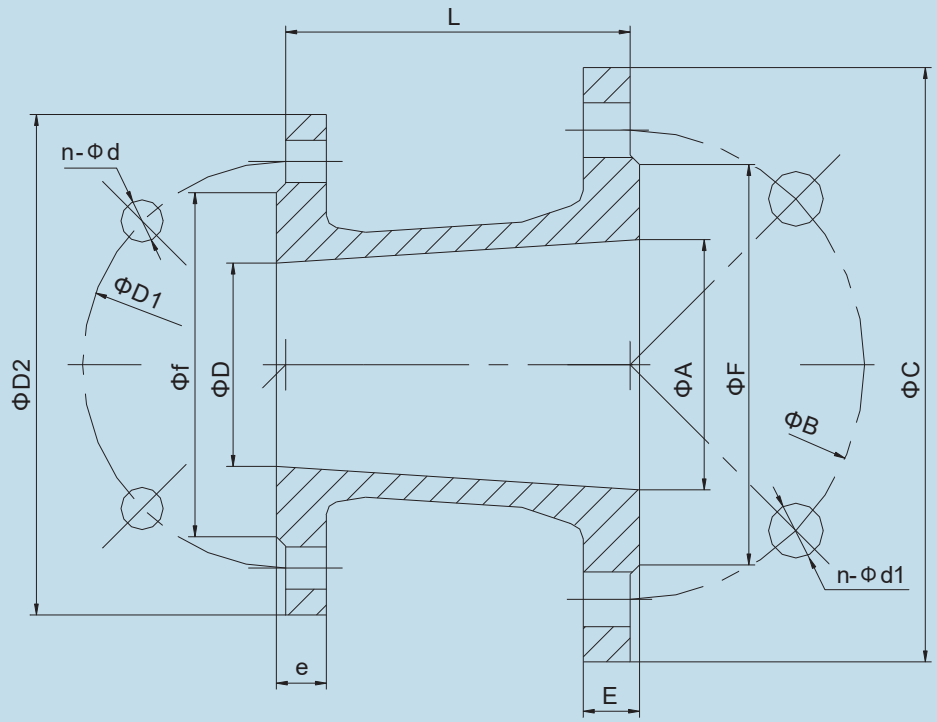
Diameter ΦD	ΦD1	ΦD2	n-Φd	L	e	Φf
50	110	140	4-13.5	105	16	90
65	130	160	4-13.5	130	16	110
80	150	190	4-17.5	155	18	128
100	170	210	4-17.5	160	18	148
150	225	265	8-17.5	220	20	202

Hose Elbow Joint



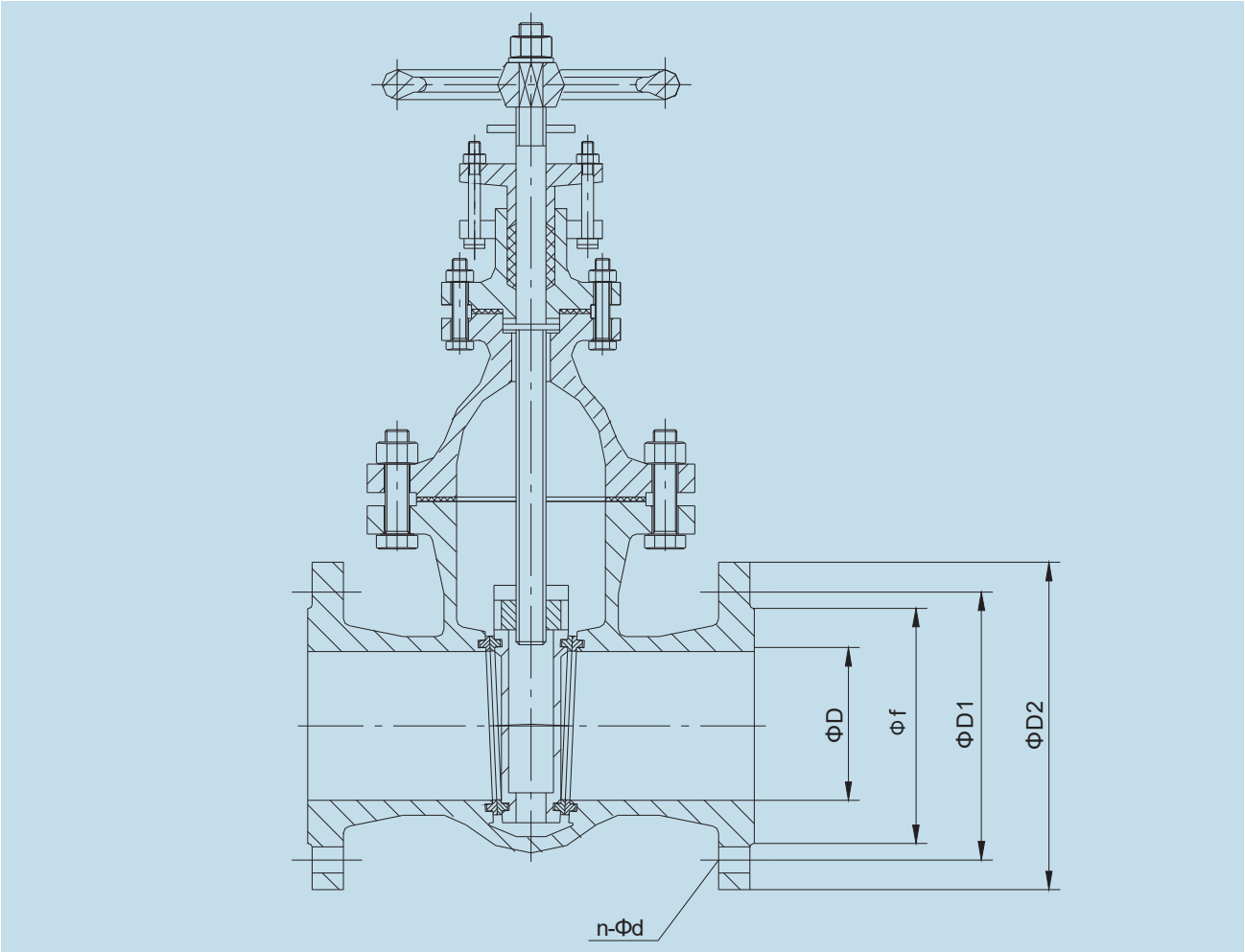
Diameter ΦD	ΦD1	ΦD2	n-Φd	L	L1	e	Φf	Φd2	Inner Diameter of the Rubber Tube
50	110	140	4-13.5	120	140	16	90	60	64
65	130	160	4-13.5	130	160	16	110	74	76
80	150	190	4-17.5	135	190	18	128	86	89
100	170	210	4-175	160	240	18	148	100	102
150	225	265	8-17.5	220	320	20	202	150	152

Taper Pipe



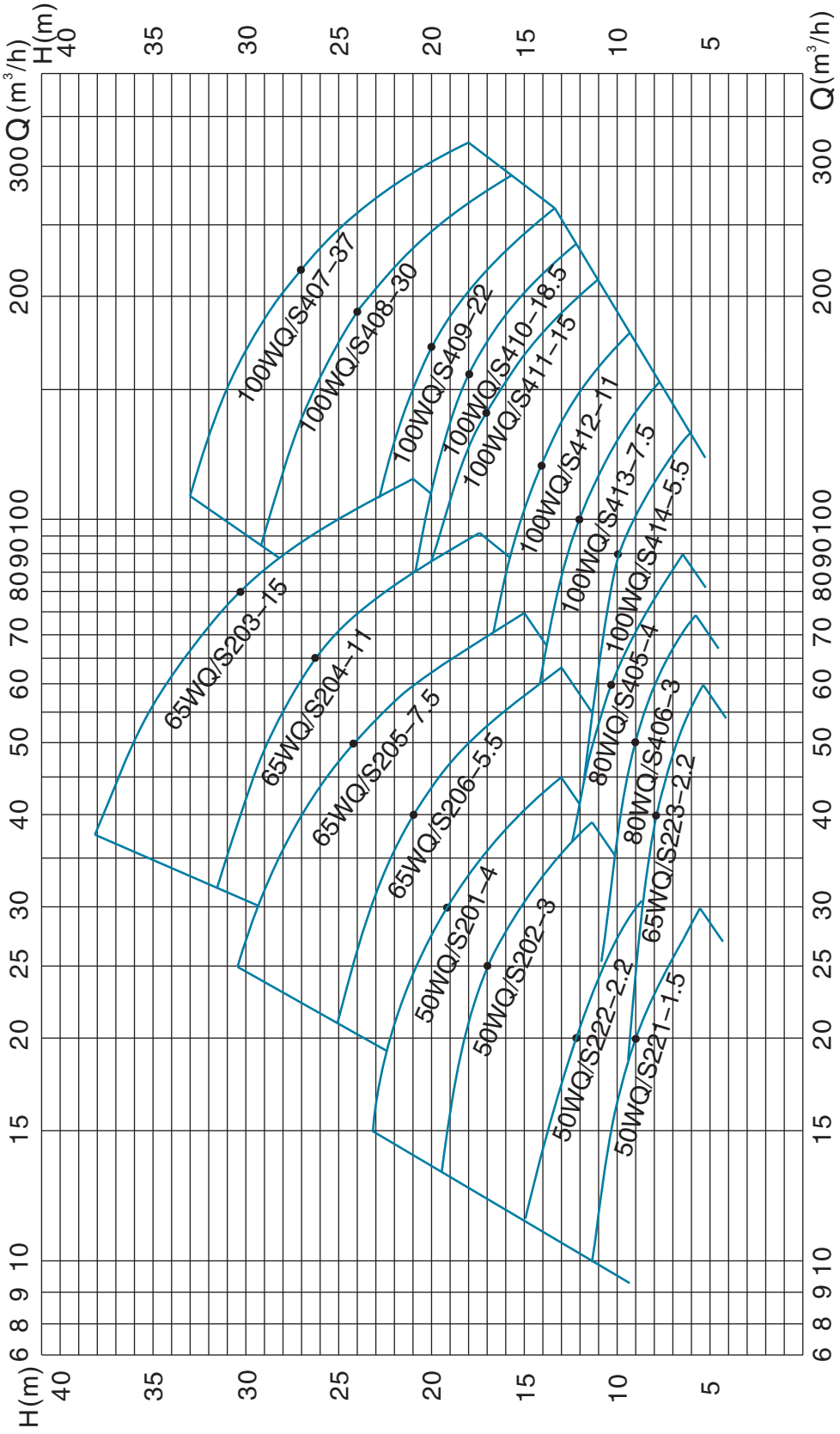
ΦD	ΦD1	ΦD2	n-Φd	Φf	e	ΦA	ΦB	ΦC	n-Φd1	ΦF	E	L
50	110	140	4-13.5	90	16	65	130	160	4-13.5	110	16	100
65	130	160	4-13.5	110	16	80	150	190	4-17.5	128	18	100
80	150	190	4-17.5	128	18	100	170	210	4-17.5	148	18	150
100	170	210	4-17.5	148	18	150	225	265	8-17.5	202	20	250

Gate Valve



Nominal Pressure (Mpa)	Nominal Diameter D (mm)	Flange Dimensions (mm)			
		Φf	ΦD1	ΦD2	n-Φd
1.0	50	102	125	165	4-Φ17.5
	65	122	145	185	4-Φ17.5
	80	133	160	200	8-Φ17.5
	100	158	180	220	8-Φ17.5
	150	212	240	285	8-Φ22

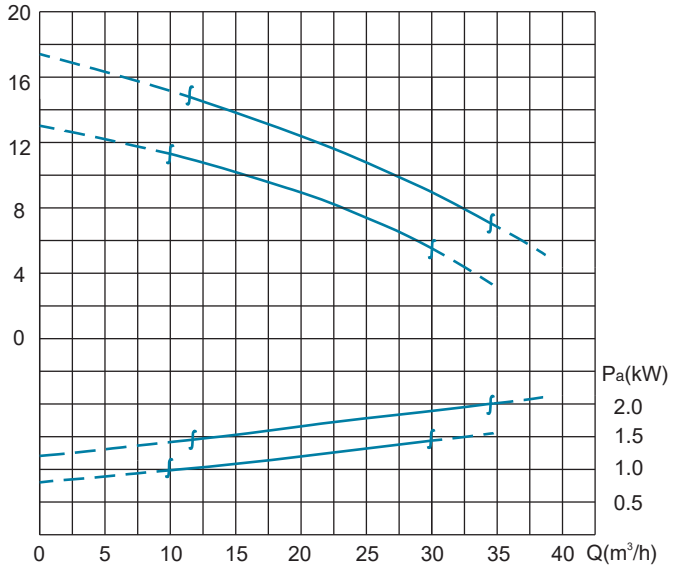
WQ/S Series Mincing Submersible Sewage Pump Comprehensive Characteristic Curve Charts



Performance Curve Graph, Main Parameter Table and Installation Dimension Diagram of Each Pump

50WQ/S221-1.5 50WQ/S222-2.2 Outlet Diameter: 50mm

Performance Curve



Main Parameter

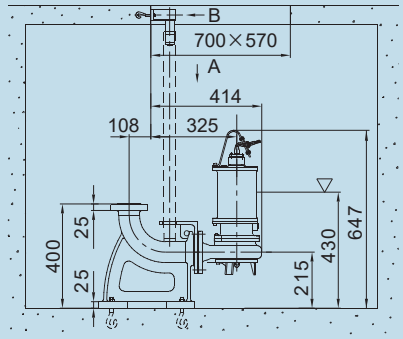
Pump Model	Rated Motor Power(kW)	Rotation Speed (r/min)	Weight (kg)
50WQ/S222-2.2	2.2	2840	36
50WQ/S221-1.5	1.5	2840	32

Rated Current	Motor Power Factor cos φ	Motor Efficiency(%)	Block Torque / Rated Torque
4.7	0.86	82	2.2
3.4	0.85	78	2.2

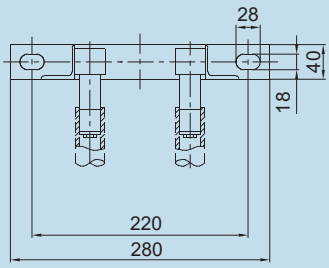
Capacity-Head (m³/h-m)		
Small Capacity Point	Middle Capacity Point	Huge Capacity Point
12-15	20-12	34-7
10-11	20-9	30-5.5

Installation Dimension Diagram

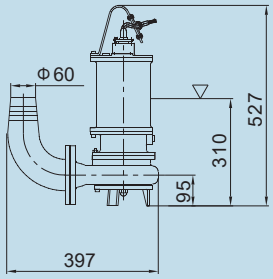
Z Automatic Coupling Installation



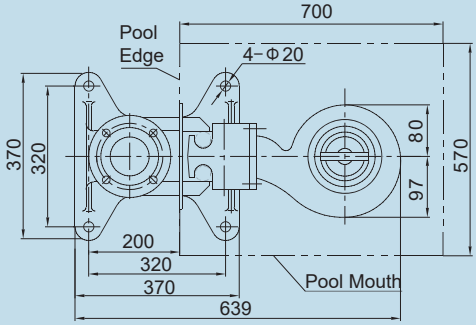
View B



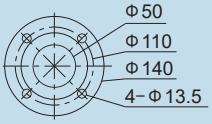
R Hose Movable Installation



View A

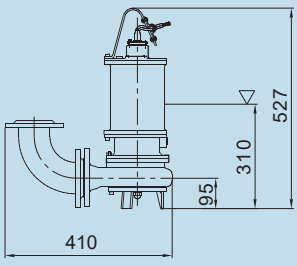


Flange Dimension



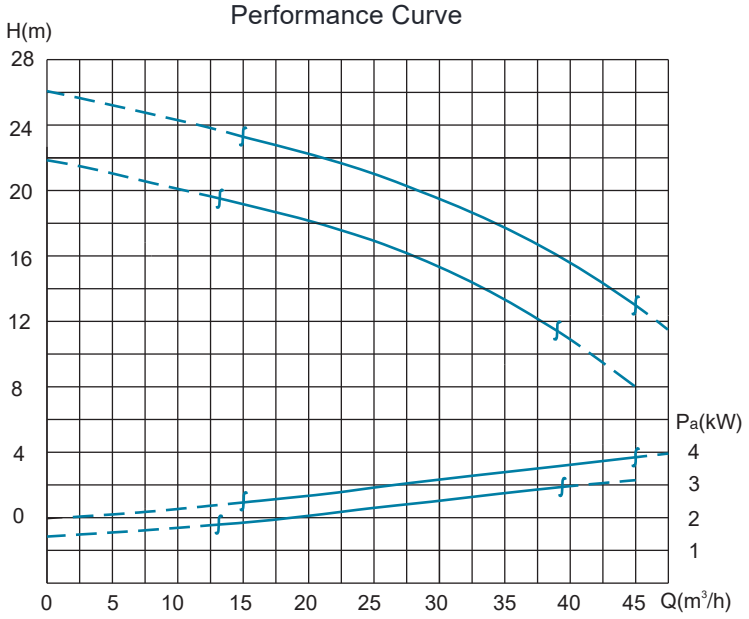
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



50WQ/S202-3 50WQ/S201-4 Outlet Diameter：50mm

Performance Curve



Main Parameter

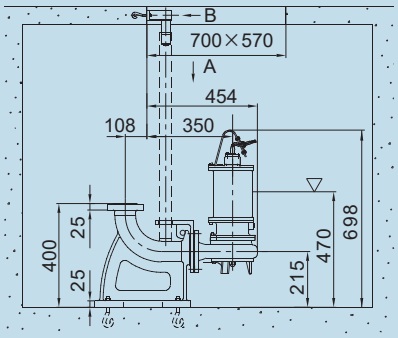
Pump Model	Rated Motor Power (kW)	Rotation Speed (r/min)	Weight (kg)
50WQ/S201-4	4	2890	56
50WQ/S202-3	3	2880	52

Rated Current	Motor Power Factor cos ϕ	Motor Efficiency(%)	Block Torque / Rated Torque
8.2	0.87	85.5	2.2
6.4	0.87	82	2.2

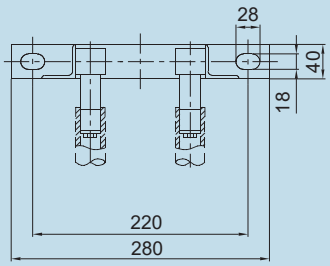
Capacity-Head (m³/h-m)		
Small Capacity Point	Middle Capacity Point	Huge Capacity Point
15-23	30-19	45-13
13-19.5	25-17	38-11

Installation Dimension Diagram

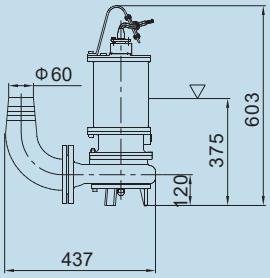
Z Automatic Coupling Installation



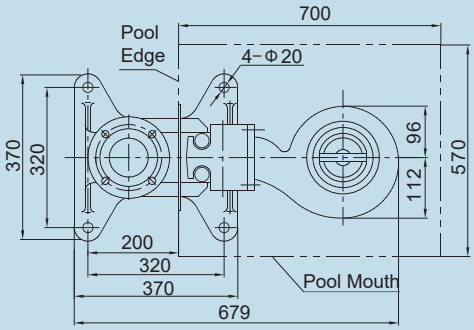
View B



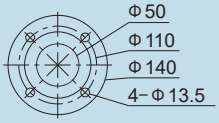
R Hose Movable Installation



View A

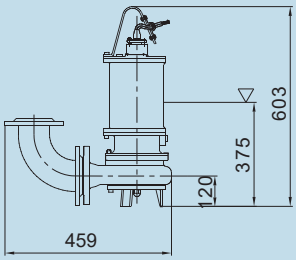


Flange Dimension



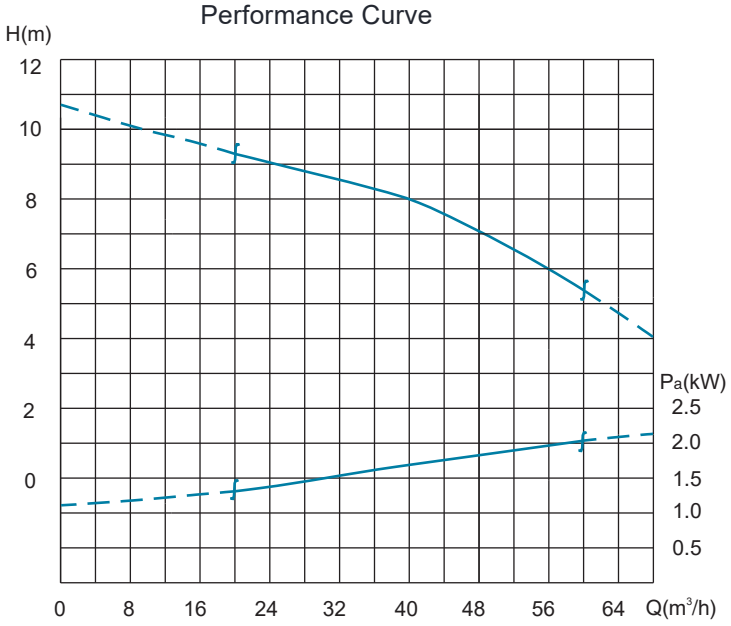
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



65WQ/S223-2.2　　Outlet Diameter：65mm

Performance Curve



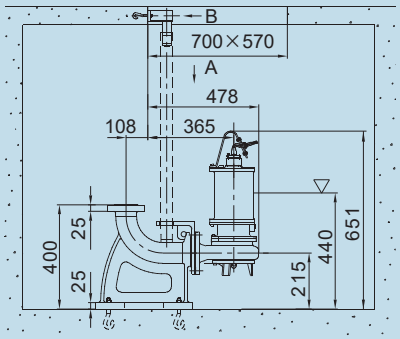
Main Parameter

Pump Model	Rated Motor Power (kW)	Rotation Speed (r/min)	Weight (kg)
65WQ/S223-2.2	2.2	2840	46
Rated Current	**Motor Power Factor cos φ**	**Motor Efficiency(%)**	**Block Torque / Rated Torque**
4.7	0.86	82	2.2

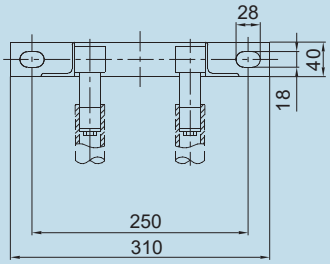
Capacity-Head (m³/h-m)		
Small Capacity Point	Middle Capacity Point	Huge Capacity Point
20-9.5	40-8	60-5.5

Installation Dimension Diagram

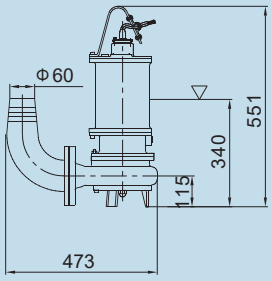
Z Automatic Coupling Installation



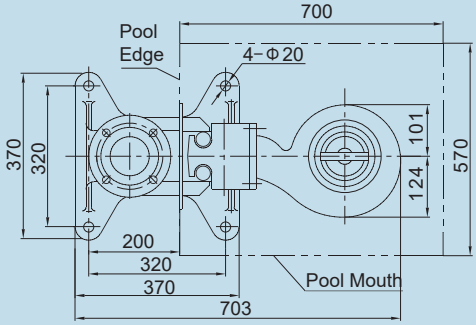
View B



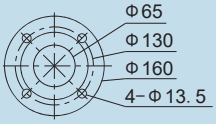
R Hose Movable Installation



View A

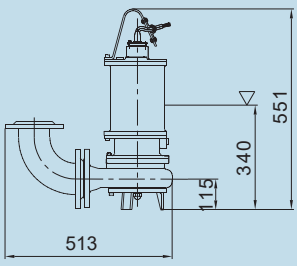


Flange Dimension



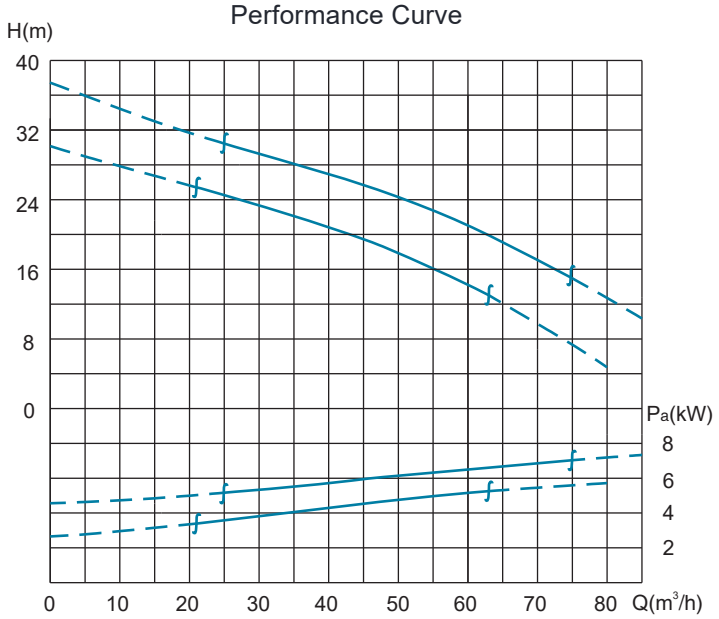
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



65WQ/S206-5.5 65WQ/S205-7.5 Outlet Diameter：65mm

Performance Curve



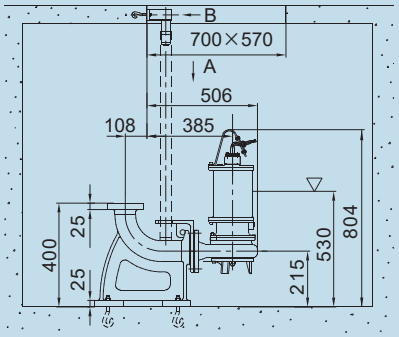
Main Parameter

Pump Model	Rated Motor Power (kW)	Rotation Speed (r/min)	Weight (kg)
65WQ/S205-7.5	7.5	2920	90
65WQ/S206-5.5	5.5	2920	80
Rated Current	Motor Power Factor cos ϕ	Motor Efficiency(%)	Block Torque / Rated Torque
15	0.88	86.2	2.0
11	0.88	85.5	2.0

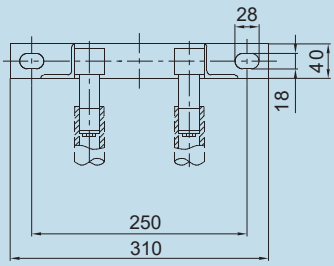
Capacity-Head (m³/h-m)		
Small Capacity Point	Middle Capacity Point	Huge Capacity Point
25-30	50-24	75-15
21-25	40-21	63-13

Installation Dimension Diagram

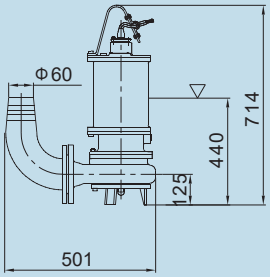
Z Automatic Coupling Installation



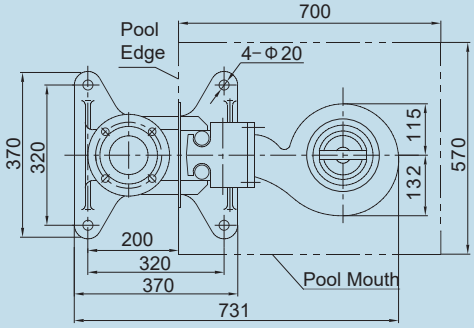
View B



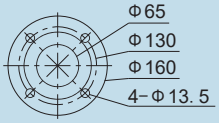
R Hose Movable Installation



View A

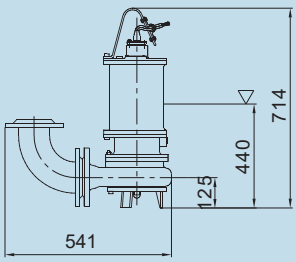


Flange Dimension



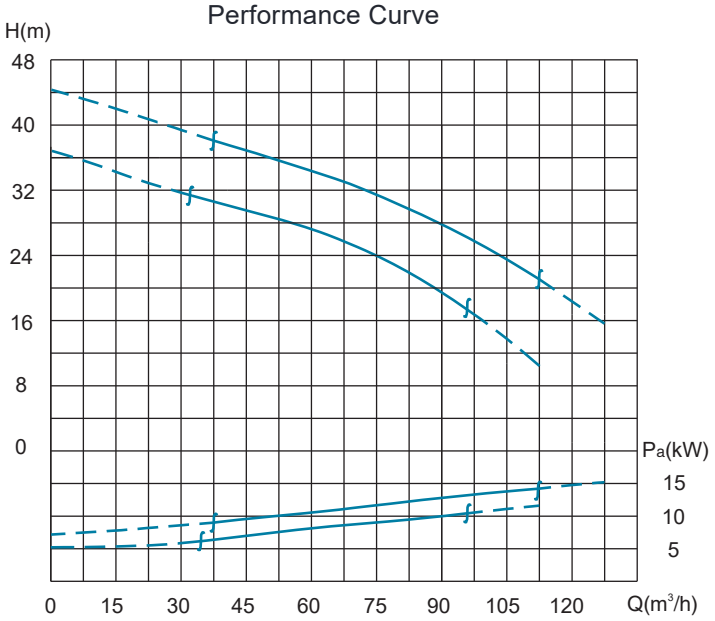
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



65WQ/S204-11 65WQ/S203-15 Outlet Diameter：65mm

Performance Curve



Main Parameter

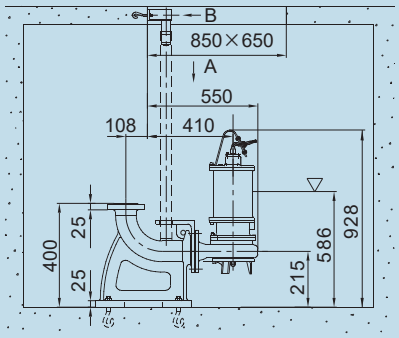
Pump Model	Rated Motor Power (kW)	Rotation Speed (r/min)	Weight (kg)
65WQ/S203-15	15	2935	136
65WQ/S204-11	11	2935	128

Rated Current	Motor Power Factor cos ϕ	Motor Efficiency(%)	Block Torque / Rated Torque
29	0.90	88.8	2.4
22	0.89	87.6	2.3

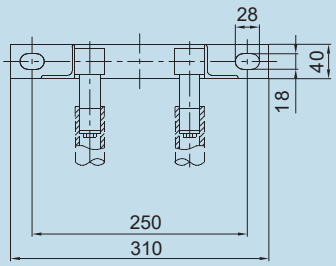
Capacity-Head (m³/h-m)		
Small Capacity Point	Middle Capacity Point	Huge Capacity Point
37-38	80-30	112-21.5
32-31	65-26	95-17

Installation Dimension Diagram

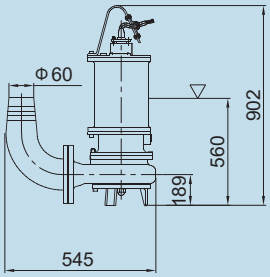
Z Automatic Coupling Installation



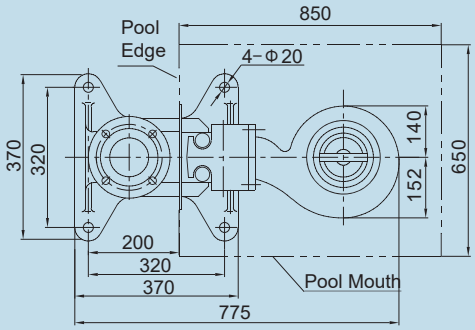
View B



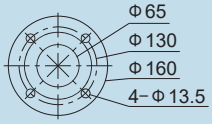
R Hose Movable Installation



View A

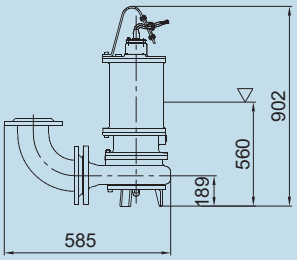


Flange Dimension



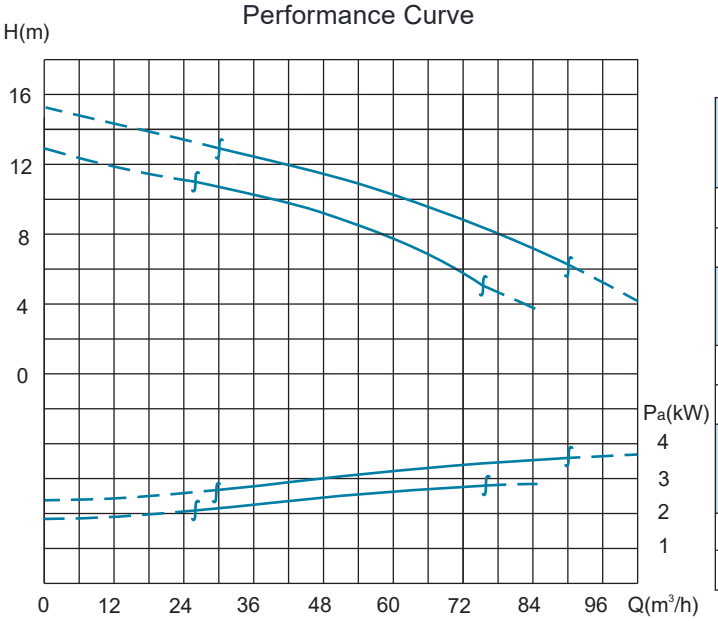
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



80WQ/S406-3 80WQ/S405-4 Outlet Diameter：80mm

Performance Curve



Main Parameter

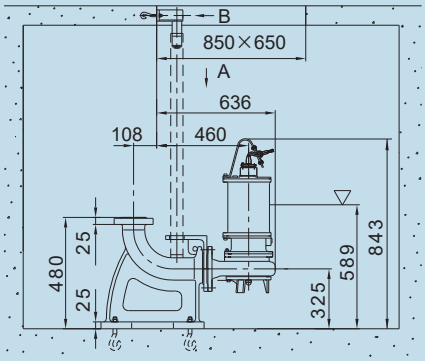
No.	Pump Model	Rated Motor Power(kW)	Rotation Speed (r/min)	Weight (kg)
1	80WQ/S405-4	4	1410	120
2	80WQ/S406-3	3	1410	115

No.	Rated Current	Motor Power Factor cos ϕ	Motor Efficiency(%)	Block Torque / Rated Torque
1	8.8	0.82	84.5	2.2
2	6.8	0.81	82.5	2.2

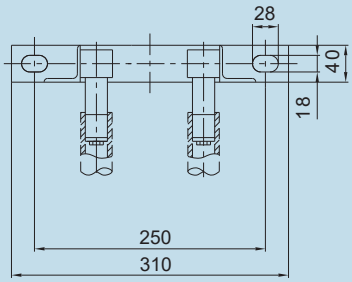
No.	Capacity-Head (m³/h-m)		
	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	30-13	60-10	90-6
2	26-11	50-9	78-5

Installation Dimension Diagram

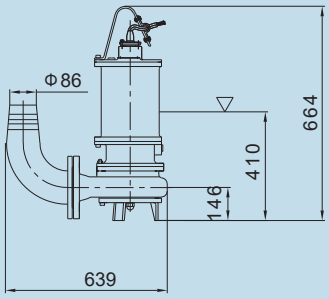
Z Automatic Coupling Installation



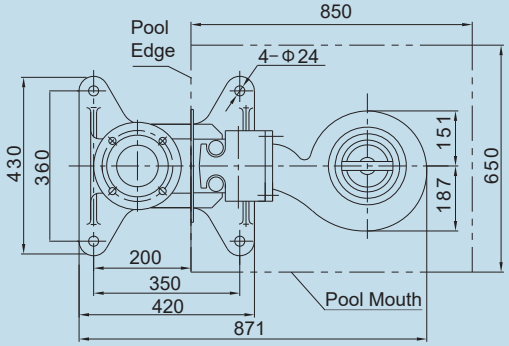
View B



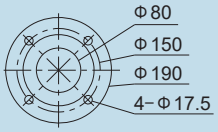
R Hose Movable Installation



View A

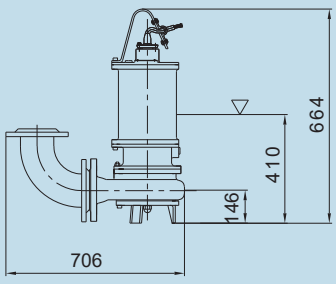


Flange Dimension



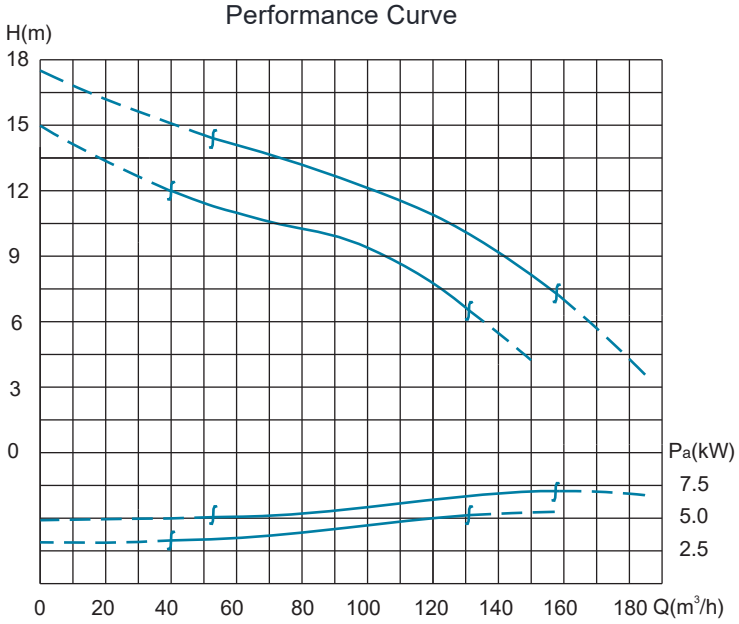
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



100WQ/S414-5.5 100WQ/S413-7.5 Outlet Diameter：100mm

Performance Curve



Main Parameter

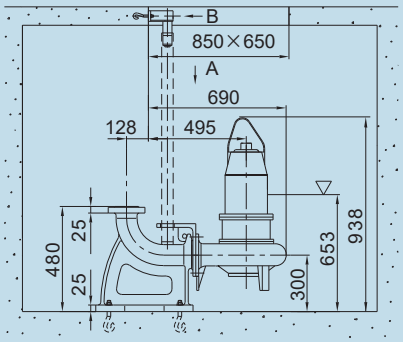
No.	Pump Model	Rated Motor Power(kW)	Rotation Speed (r/min)	Weight (kg)
1	100WQ/S413-7.5	7.5	1445	160
2	100WQ/S414-5.5	5.5	1445	150

No.	Rated Current	Motor Power Factor cos ϕ	Motor Efficiency(%)	Block Torque / Rated Torque
1	15.4	0.85	87	2.2
2	11.6	0.84	85.5	2.2

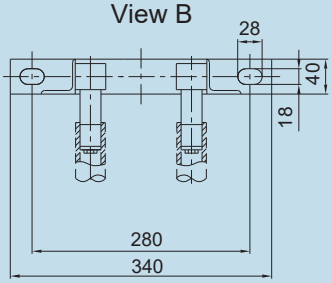
No.	Capacity-Head (m³/h-m)		
	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	52-14.5	100-12	158-7
2	40-12	90-10	132-6.5

Installation Dimension Diagram

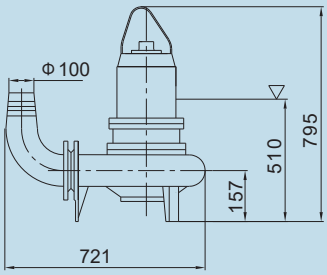
Z Automatic Coupling Installation



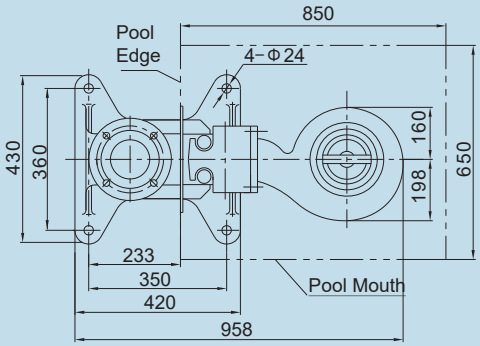
View B



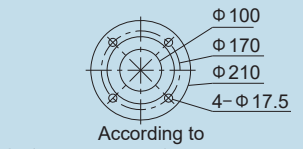
R Hose Movable Installation



View A

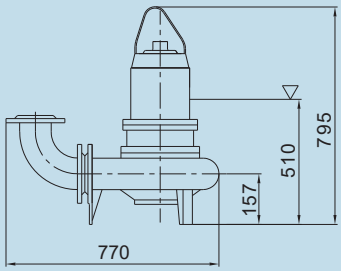


Flange Dimension



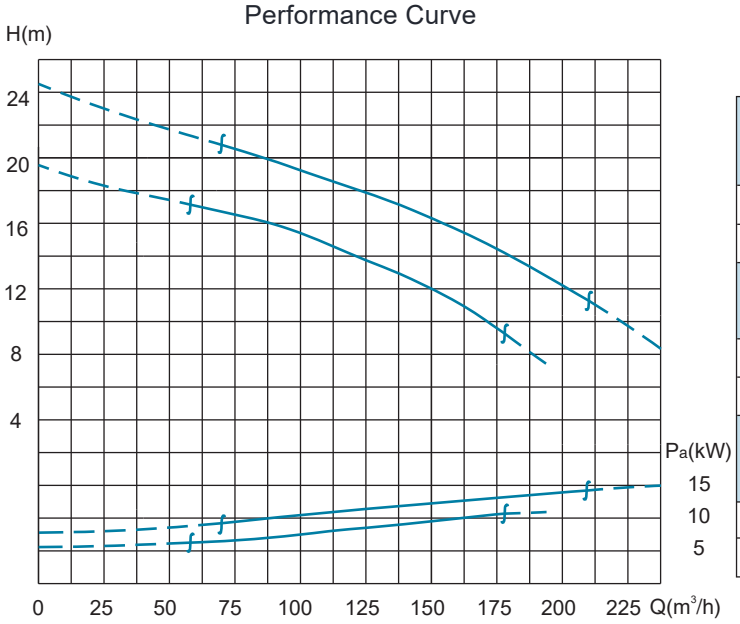
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



100WQ/S412−11 100WQ/S411−15 Outlet Diameter：100mm

Performance Curve



Main Parameter

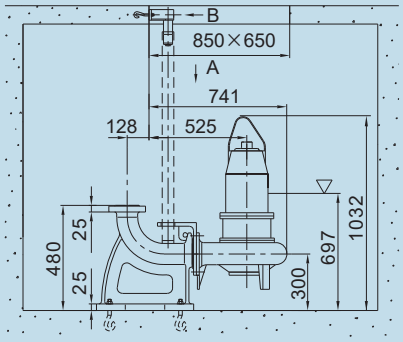
No.	Pump Model	Rated Motor Power(kW)	Rotation Speed (r/min)	Weight (kg)
1	100WQ/S411−15	15	1460	245
2	100WQ/S412−11	11	1460	225

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

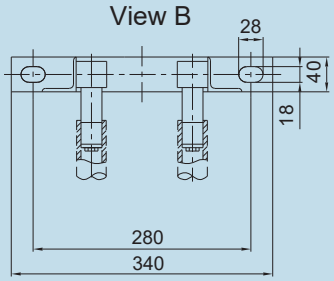
No.	Capacity−Head (m³/h-m)		
	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	70−21	140−17	210−11
2	58−17	120−14	178−9

Installation Dimension Diagram

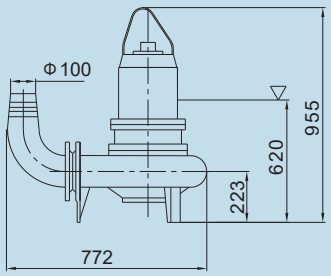
Z Automatic Coupling Installation



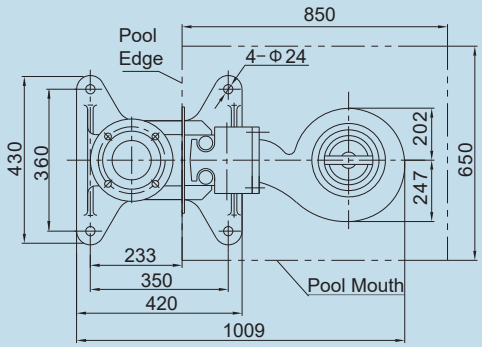
View B



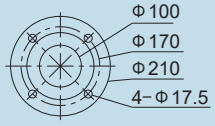
R Hose Movable Installation



View A

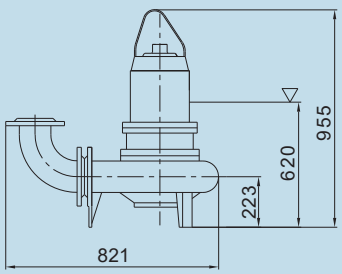


Flange Dimension



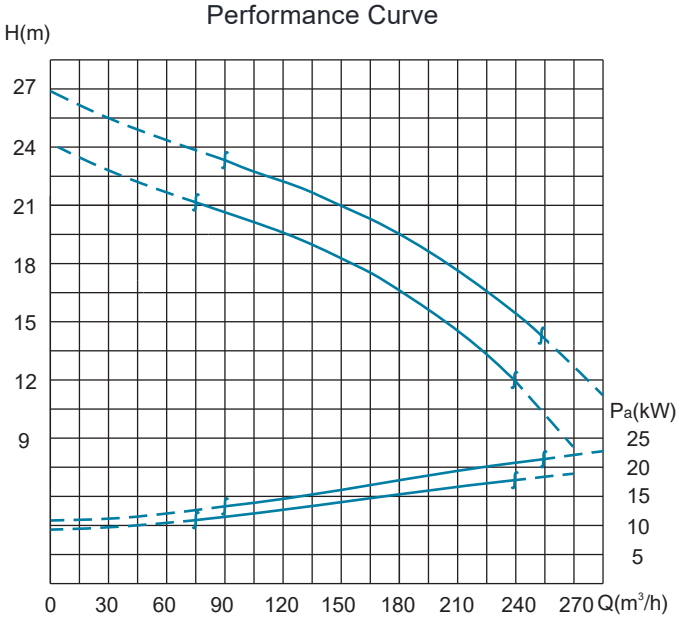
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



100WQ/S410-18.5 100WQ/S409-22 Outlet Diameter：100mm

Performance Curve



Main Parameter

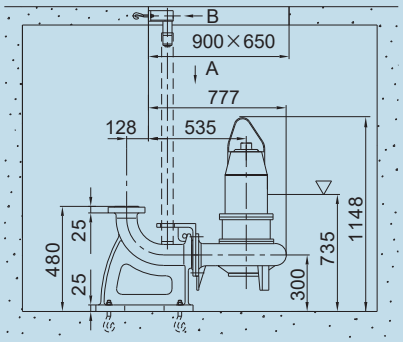
No.	Pump Model	Rated Motor Power (kW)	Rotation Speed (r/min)	Weight (kg)
1	100WQ/S409-22	22	1470	308
2	100WQ/S410-18.5	18.5	1470	294

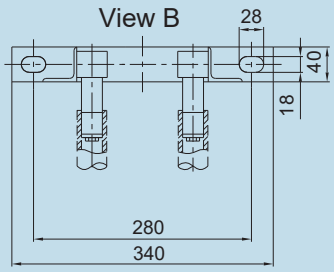
No.	Rated Current	Motor Power Factor cos ϕ	Motor Efficiency(%)	Block Torque / Rated Torque
1	42	0.87	91.2	2.2
2	36	0.87	90.7	2.2

No.	Capacity-Head (m³/h-m)		
	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	90-23	170-20	250-13
2	75-21	160-18	240-12

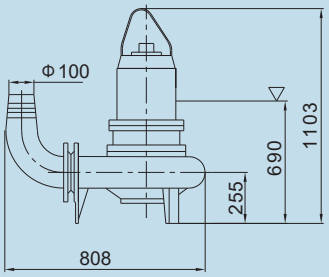
Installation Dimension Diagram

Z Automatic Coupling Installation

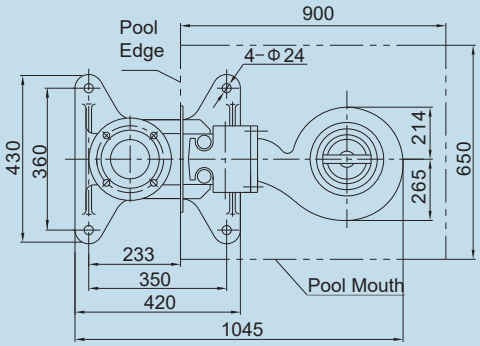




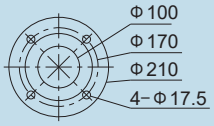
R Hose Movable Installation



View A

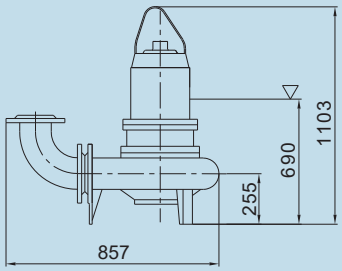


Flange Dimension



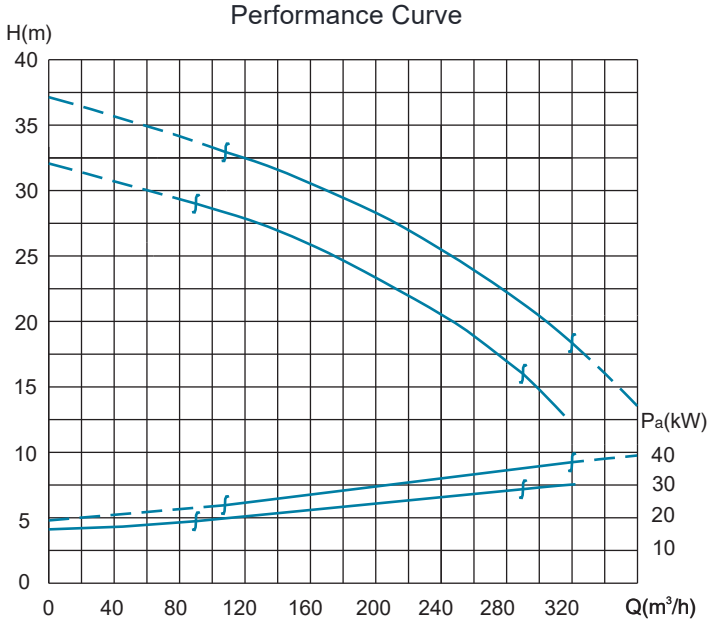
According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



100WQ/S408-30 100WQ/S407-37 Outlet Diameter: 100mm

Performance Curve



Main Parameter

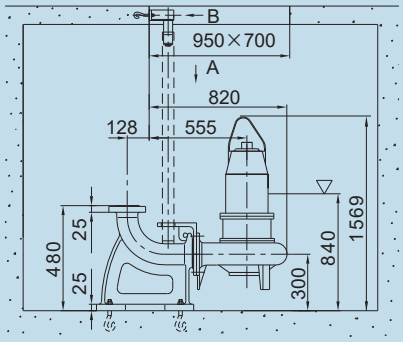
No.	Pump Model	Rated Motor Power (kW)	Rotation Speed (r/min)	Weight (kg)
1	100WQ/S408-37	37	1475	452
2	100WQ/S407-30	30	1475	428

No.	Rated Current (A)	Motor Power Factor cos ϕ	Motor Efficiency(%)	Block Torque / Rated Torque
1	70	0.87	92.5	2.2
2	58	0.86	92	2.2

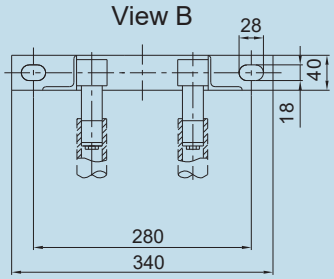
No.	Capacity-Head (m³/h-m)		
	Small Capacity Point	Middle Capacity Point	Huge Capacity Point
1	110-33	220-27	320-18
2	90-29	190-24	290-16

Installation Dimension Diagram

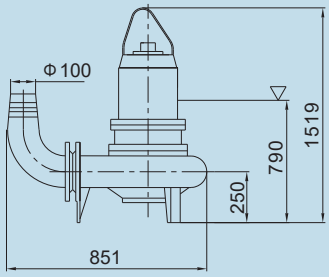
Z Automatic Coupling Installation



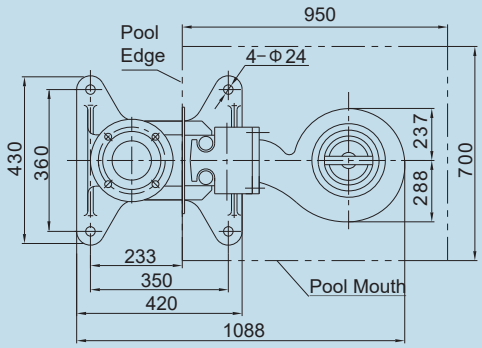
View B



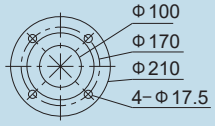
R Hose Movable Installation



View A

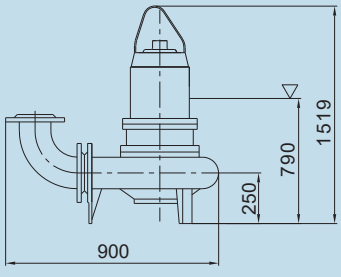


Flange Dimension



According to GB/T17241.6PN6 Standard Flange

Y Hard Pipe Movable Installation



Leading the Rise of Chinese Pump Industry

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