

SWB(50Hz)
Stainless Steel Horizontal Single-stage Centrifugal Pump

Operation Manual



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Read this manual carefully before install, start the pump.

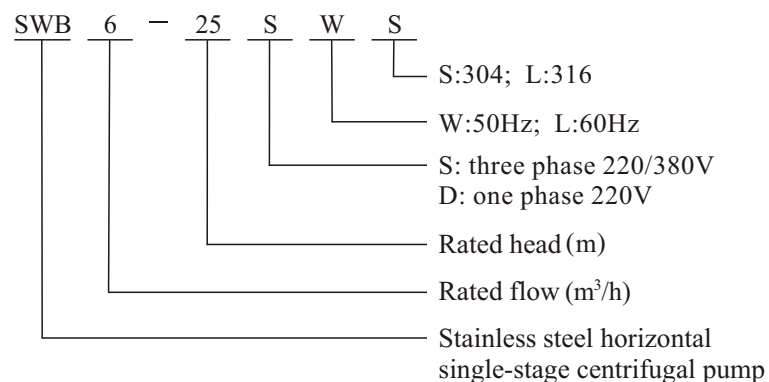
I. General

SWB stainless steel single stage centrifugal pump is a light and easy installation centrifugal pump. Its wet parts are pressed and welded by stainless steel plate. Its flow passage is smooth with efficient hydraulic. Motor shell is made of cast aluminium alloy. The advantages of the pump is small volume, light weight and smooth operation, and it owns the merits of easy and reliable installation. It is widely applied to household and industrial water supply, washing, irrigating system as well as boosting system, etc.

1.Features

- 1)Made of high quality stainless steel 304 materials, compact structure, robustness;
- 2)Composed of TEFC motor. Single phase motor is equipped with overheat and overload protector; Easy and safe to operate.
- 3)Coaxial complete machine and floating neck ring structure increased mechanical efficiency and volumetric efficiency;
- 4)Used screwed suction and discharge, quick and easy installation;
- 5)Low maintainance, easy to service if required.

2.Model definition



II. Installation type and operating conditions

SWB stainless steel horizontal single stage centrifugal pump has its own screw thread joints for the inlet and outlet parts. The pump can be jointed by either screw thread pipeline or screw thread flange pipeline. The pump base is fixed by bolts.

a. The pumped liquid should have the characters of thin, clean, non-solid particles and fibers, non-corrosive, non-crystallizable and chemical neutral. And its performance should be close to water.

b. Liquid temperature: $-15^{\circ}\text{C} \sim +80^{\circ}\text{C}$

c. Max. ambient temperature: $+40^{\circ}\text{C}$

d. Max. working pressure is 0.8Mpa;

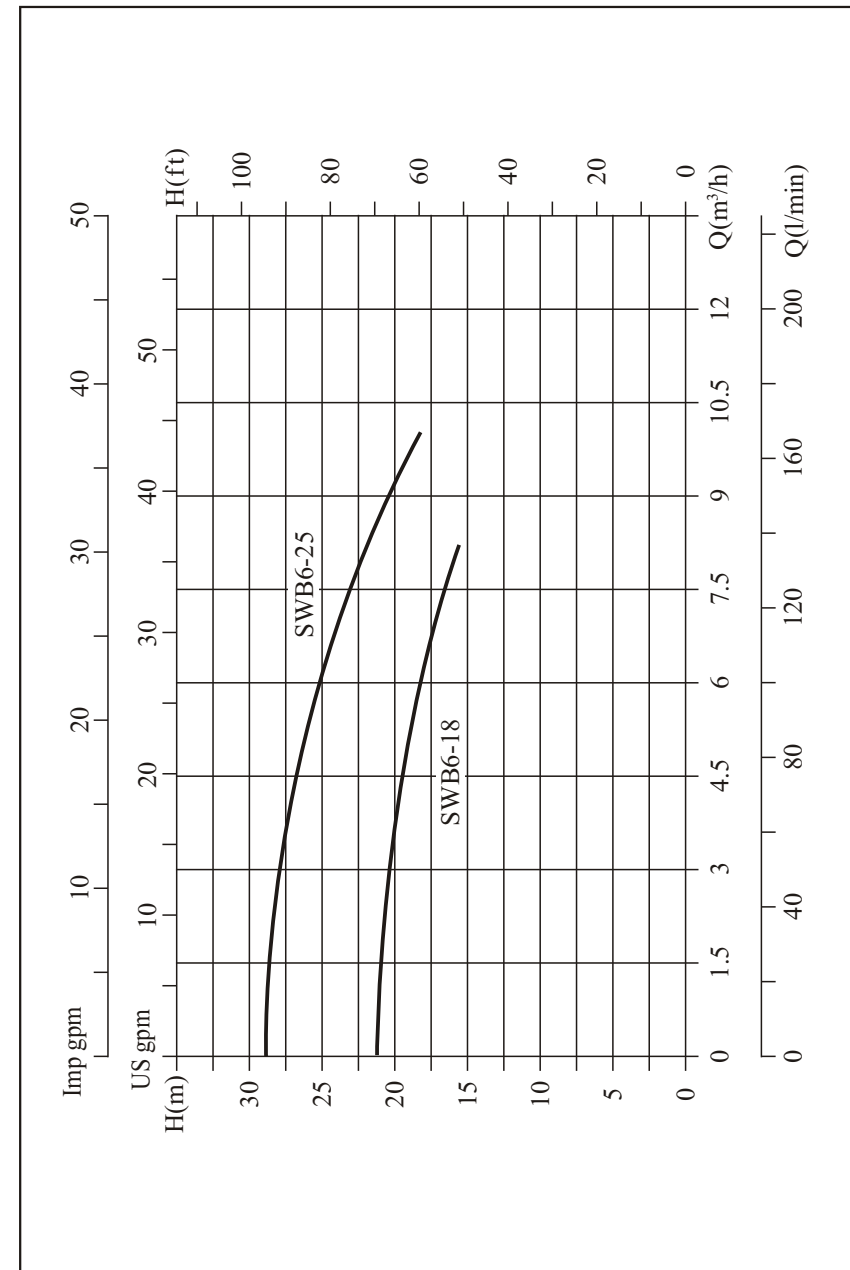
e. Min. inlet pressure

For the liquid that is similar to water physically, the min. inlet pressure is as follows when pump runs in large flow on the standard atmospheric pressure.

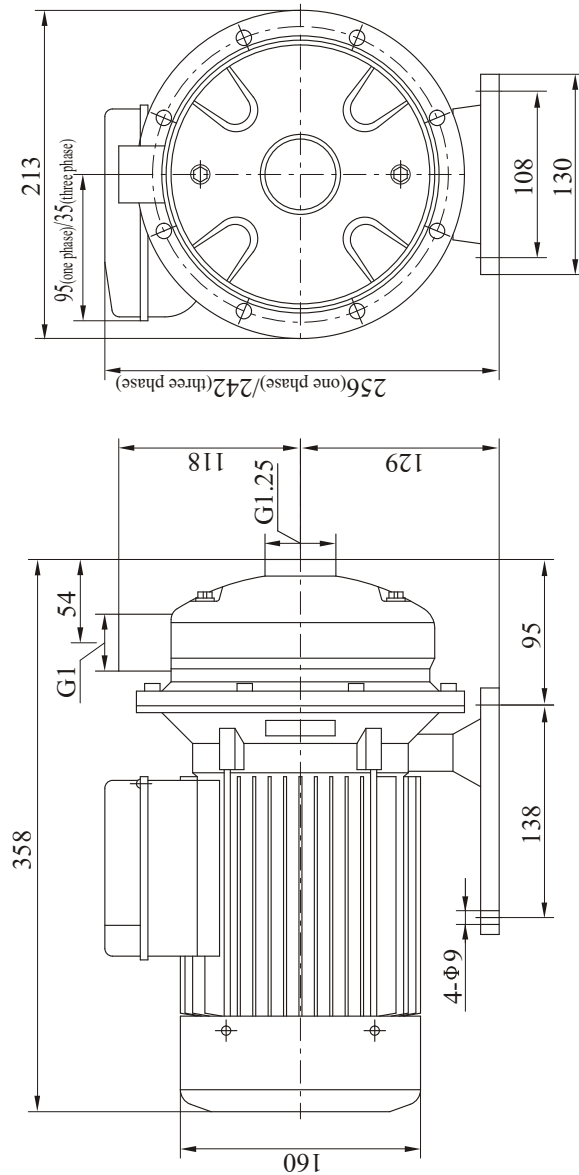
Model	Suction head (m)			
	20°C	40°C	55°C	80°C
SWB6-25	4.1	3.6	2.7	0.4*
SWB6-18	4.1	3.6	2.7	0.4*

Remark: '*' means the head is inverse pouring head

III. Performance curve



IV. Outline and dimensions



V. Electrical data

Model	Power (kW)	Voltage(V)/Current(A)		Frequency (Hz)	Rated speed (rpm)	Protection class
		1PH	3PH			
SWB6-25	1.1	220/6.42	220/4.3 380/2.48	50	2900	IP55
SWB6-18	0.75	220/4.45	220/2.84 380/1.64			

VI. Overall weight

Model	1PH (kg)	3PH (kg)
SWB6-25	13.6	14.2
SWB6-18	13.5	14.1

VII. Installation

1、Inspect products data

You can first check the data such as installation dimension in the manual, then determine the installation wiring, location and connection.

2、Connect the inlet and outlet pipeline

Use the appropriate pipe joint and pipeline according to the screw thread models of inlet and outlet joint. Cut the tube in appropriate length according to the installation location. When connect screw thread joint, please seal it with Teflon tape or similar hermetical material. When install the inlet and outlet pipe, please make sure that the casing will not receive large hard tube torque and inner stress. Please be sure that the base is smoothly installed and the pump should be avoided hanging in the air.

The diameter and length of the inlet and outlet pipe should be calculated to guarantee the pump operates in high efficiency.

Keep the pipelines and casing clean without dirty.

3、Fix pump base.

Bolts which match with holes in the pump base should be chosen to fix the pump base in order to reduce the vibration caused by the pump starting.

4、 External cables

To figure out the right diameter and length of cable according to the electrical data such as phase of the electrical, current and voltage and also start-up modes.

Connect cables according to the wiring diagram instructed in the connection box. Elicit the outlet end of the cable from the screw thread hole which is in the side of terminal box.

In addition, the connector of motor external electrical cable should be fully sealed and insulated and should have a certain intensity.

5、 Check the connection of the power supply and electric controller.

The power cable and electronic control instrumentation wiring should be connected before the operation of pump. Please also check voltage, frequency, etc. Pump unit should be grounded, leakproof. Electronic devices should ensure that the whole pump not be lack of phase, voltage instability and damaged, such as overload.

VIII. Start & operation

1. The pump shall be connected correctly, make sure pump and pipe are filled with water fully. Otherwise, when pump starts, unscrew air vent screw to vent air in the pump and pipe. Turn off the outlet valve or open it a little, then start the pump to avoid excessive startup current.

2、 Switch on the power supply and view the rotary direction by viewing the motor fan. Arrow on the pump head indicates the correct direction of rotation. That is, from the motor end, pump shall run counter-clockwise. If the arrow and fan run in the reversed direction, please cut off electricity, then change the two-phase wiring of the power supply.

3、 Please keep the valve of the inlet pipe completely open and adjust the valve of the outlet pipe. Observe the performance data from flowmeter or pressure instrument when pump is operating. When the value is arrived to the expected value and it is stable, then pump can operate normally.

It is advised to close the relative electricity control instrument and protector before stopping operation.

IX. Important Notes

1. Customers will not be advised if this manual is updated.

2. Pump will be guaranteed for one year under normal operation with the correct model. Wearing part is not included.

3. Users shall be responsible for the damage if they disassemble the pumps by themselves in guaranteed period.

X. Trouble shooting guide

Phenomena	Cause	Solution
Pump runs but gives no water	(1) Inlet and outlet valve is not open; inlet and outlet tubes are blocked; impeller or venturi flow passage is blocked.	(1) Check and remove the obstruction.
	(2) The rotary direction of motor is wrong or rotary speed is slow when motor is lack of phase.	(2) Adjust motor rotary direction and fasten motor wire.
	(3) Leakage in inlet pipe.	(3) Tighten every surface of seals, vent the air.
	(4) Pump is not filled with liquid fully, there is air in the casing.	(4) Vent air.
	(5) Insufficient water supply in the inlet tube, and pressure is too low.	(5) Reduce the water loss of inlet tube or heighten the liquid level of inlet.
Pump with inadequate flow	(1) First check pump according to cause 1.	(1) First, try to solve according to cause 1.
	(2) Tube and flow passage are partly blocked; valve is not completely open.	(2) Remove impurities blocked; Adjust valve.
	(3) Voltage is too low.	(3) Stabilize voltage.
	(4) Impeller is wearing.	(4) Replace impeller.
Motor over heat	(1) Too big flow, overload operation.	(1) Decrease flow, close valve a little.
	(2) Rotator deflection.	(2) Switch off motor and check.
Abnormal vibration or noise from pump	(1) Tube is not stably supported.	(1) Stabilize tube.
	(2) There is air in the liquid.	(2) Increase suction pressure.
	(3) Cavitation comes out.	(3) Decrease the height of suction.
water leakage	(1) Mechanical seal is not installed well.	(1) Re-install mechanical seal correctly.
	(2) Mechanical seal is frayed or damaged.	(2) Change mechanical seal.

XI. Maintenance & service

When pumps need to be repaired because of disorder or some other kinds of fault. Please do as following:

1、 General inspection

A. Please check if the surface of pump is mechanically damaged; if the shell of the motor and pump is seriously corrosive and damaged: if the joint of the cable is short circuit or connector is loose.

B. Please check if there is leakage or inspiration, etc. with pump and pipes.

2、 Motor inspection and pump disassembly

Follow the below steps for pump assembly, disassembly and maintenance.

A. Close inlet and outlet valve and discharge all the liquid in the casing. Loosen the screw thread joint, pipe which is connected with pump and also loosen the bolt for base fixup. Then you can move out pump. Unscrew the socket head cap screw that connects the casing with the terminal box cover of the motor and take out the casing. Then check whether there is fibre or impurities in the casing; whether the lock nut of the impeller is loose or separated; whether the O ring is broken, separated or dropped.

B. Turn impeller manually. Check the outer edge of the impeller and radial-beating jump. If jump is obvious, impeller or motor shaft extension requires straightening treatment.

C. Loosen and take out impeller nut. Use flat head screwdriver or catch plate to fixup axis body. Loosen and demount impeller, take out the rotary ring of the mechanical seal. The stationary ring of mechanical seal can be taken together with lining of pump head. Please check the surface of the stationary ring to see if it's attrite, scratched, and elastomer is elastic deformation or worn.

D. Check whether the shaft extension of the motor is bended. In case that diameter bounce of the shaft extension is obvious, take alignment measures. Check whether the moving of the neck ring on the water inlet end of the pump is smooth; Otherwise, check whether there is dirt in the ring groove. If necessary, dismount the neck ring cover and take out the ring. After cleaning, mount it again.

When assemble pump, please wipe all parts and components clean, and clean the two parts of mechanical seals with soft clean cloth. Reverse the process above can assemble a pump.

XII. Sketch of structure

