

SHZ-DIII

Water Circulating Vacuum Pump

Operation Manual



IMPORTANT

PLEASE READ CAREFULLY BEFORE INSTALLING OR OPERATING THIS EQUIPMENT

I. Function and usage

The pump use circulating water as working liquid, negative pressure produced by jet technology and a design of new type of vacuum pumping air pump. It is not only a vacuum suction device, and also to provide cooling circulating water to the reactor.

This pump is widely used for evaporation, distillation, crystal filter, decompression sublimation and other operation, it is the ideal instrument for major and medium colleges and universities in environmental protection, biochemistry, medical service, chemical industry and scientific research.

II. Features

1) Water-saving effect is significant.

Adding water once can use repeatedly, it's especially suitable for the high floor laboratory that is lack of water or low water pressure.

2) Multi-functional lab equipment.

First functional is as the vacuum pump, there have two vacuum port, which can work independently or work in parallel. Second functional is as the circulating pump to provide cooling circulating water to the reactor. The inlet port connected with the tap water, the outlet port connect reactor, then open the tap and circulate switch can operate continually circulating water for a long time and keep the temperature no rising. Because the water temperature will not rise, the vacuum will not decrease.

3) Corrosion-resistant, non-polluting.

The Pump spindle adopts stainless steel material. Key parts such as pump head, impeller, jet flow and so on adopts acid and alkali resistance, solution corrosion resistance A.B.C project plastic, copper, plastic ring and other kind of material. The water tank is entire plastic. Doesn't influenced by the acids, alkali solution and other corrosive substances. And it has no oil to pollute the laboratory.

4) Novel appearance, easy to operate.

The pump head dips into the water directly, to reduce the complex of water diversion devices. The upper part adopts moving cover that is easy to add water, ice, and maintenance.

5) Low noise, stable performance.

Operating with low noise and the pump equipped with a check valve on the exhaust pipe, which can prevent accidental shutdown, the water back to the vacuum equipment.

III. Technical data

Model		SHZ - DIII
Motor performance	Power	180W
	Pumpage	80L/Min
	Lift	10m
	Body material	Anti-corrosion
	Voltage	220V/50HZ
Function 1	Sucking rate	10L/Min *2
	Maximum vacuum	0.098Mpa (98KPa,735mmHg, 0.98bar, 735Torr)
	Tank capacity	15L
	Vacuum port no.	2Pcs
Function 2	As circulating pump	Circulating water temperature: 0~25°C
Dimensions		400*280*420mm
Packing size		480*380*560mm
Net weight		15KG
Noise		<50dB
Shell material		PP

IV. Operation

1) Add Enough Circulating Water.

Put the machine smoothly on the working place. When first use, open the lid and fill the tank with cooling water. Once added water can be reused, but to change the water at least once a week.

2) Connect Tube

Find the “Y” three-way pipe in the package, corresponds to two vacuum ports to install it with the match equipment.

3) Power On To Made Vacuum Operation

Before power on, need checking the circulating switch is closed, then press the power switch on the vacuum pump can working for vacuum, the vacuum degree can view the vacuum meter.

4) As Circulating Pump

Connect the vacuum device to the inlet and outlet corresponding, rotating the circulating witch to “ON”, can operate continually circulating water to reactor.

5) Improve Vacuum

When the machine needs long time operation, in order to guarantee water temperature in the water tank not rising, the vacuum degree not reduce, and not affect the experimental operation, you can connect the water hose with water source (or tap water), forming a natural outside circulation status, and it can remain the water temperature inside not rise, and the vacuum not reduce.

V. Common faults and maintenance methods

Fault Phenomena	Fault Cause	Maintenance Methods
No vacuum	<ol style="list-style-type: none"> 1. Vacuum taps blocked by sundries. 2. The filter at the bottom blocked by sundries. 3. Vacuum taps coil buckling loose 	<ol style="list-style-type: none"> 1. Eliminates the nozzle sundries. 2. Eliminates the filter sundries, keep the water clean. 3. Tighten the coil by hand.
Vacuum meters hands do not move or swing	<ol style="list-style-type: none"> 1. Ventilation keyway of sealing screws behind the meters blocked. 2. Meter hands swing, because of the backwater valve or the vacuum nozzle leaks air. 	<ol style="list-style-type: none"> 1. Remove the vacuum meters, clean the ventilation keyway. 2. Tighten the rubber hose connection plug, check the backwater valve pad, clean the backwater valves, tighten the vacuum nozzle.
Do not start or leakage	<ol style="list-style-type: none"> 1. After power, the motor humming but not start is for the fan blade is out of work. 2. The motor suddenly stopped was because line outage or the fuse explodes. 3. The cover hemp hand, mainly because of the wire connect the shell or the plug without earth wire. 	<ol style="list-style-type: none"> 1. Cut off the power, use water prod the blades inside the motor cover to help move a few laps and then turn it on again. 2. Check the circuit, Replace the fuse and dredge the circuit. 3. Exclude shell connect, add the earth wire.
Matters need attention	Because the pump with mechanical seal, start only after adding water, but empty running is strictly prohibited, in case the mechanical seal part damaged.	