Kalstein

Multi-purpose Water-circulating Vacuum Pump

YR05158

User's Manual

Thank you very much for purchasing our **Multi-purpose Water-circulating Vacuum Pump** YR05158.

Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the "Warranty" at a hand place for future reference.

 Warning: Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.

OUR SERVICES

Benefits and Support

In Kalstein France, we take care of the full satisfaction of our customers, that is why we provide value-added services of the highest level based on our experience.

Online Inductions and Trainings

In any part of the world, receive your induction or training from our specialized team of engineers

Quick Response

Our work team is always available to response all your consults or questions, in order to support you in any situation.

#Letsgivemore

Thanks to your purchase, a donation will be made to a non-profit foundation that fights against breast cancer and helps most vulnerable communities.

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Enjoy of personalized advice for the correct preventive and corrective maintenance of your equipment, thanks to Kalstein's manuals and articles, special catalogues and video tutorials.

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We take care of all the necessary logistics for the dispatch of your goods, whether is by sea, land or.air.

Kalstein Worldwide

With more than 25 years growing with our customers, Kalstein's multiformat and modern content, is now present in more than 10 countries and increasing.

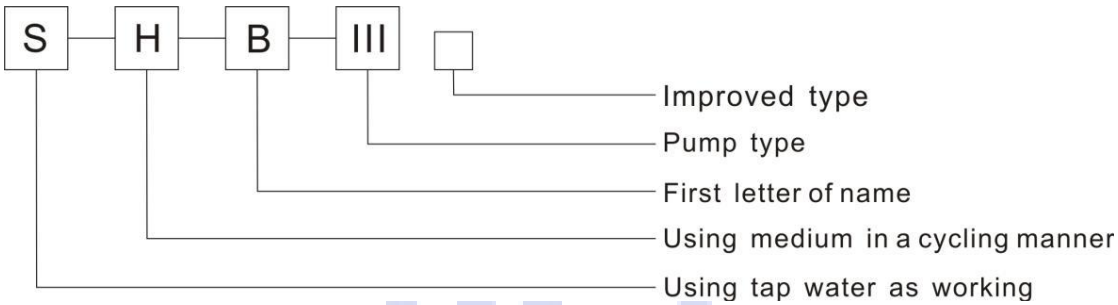
Name and model

Multi-purpose Water-circulating Vacuum Pump YR05158.

Function and Application

Kalstein´s Multi-purpose water-circulating vacuum pump uses circulating water as working fluid and uses negative pressure produced by fluid jet flow for jetting. It can provide vacuum condition for evaporation, distillation, crystallization, drying, sublimation, filtration under diminished pressure, degassing and other processes, which is particularly suitable for universities & colleges, scientific research institutions in chemical, pharmaceutical, biochemical, food, pesticides, agricultural engineering, biological engineering and other industries.

Model Description



Product Features

- Use water in a cycling manner, which saves precious water resource.
- Save more than 35% of electricity than vacuum pump of other type.
- It has tailoring fluid silencer. It can reduce noise and gases in the water and improve degree of vacuum, and reduce friction between gas and fluid;
- It has double taps and two meters which can use singly or doubly.
- It is acid-resisting, alkali-resisting and solvent-resisting.
- Use motor manufactured by well-known manufacturer ODM; use viton seal to prevent corrosive gas intruding into the motor.

- Change water in the water tank regularly in order to ensure pure water quality, high degree of vacuum and avoid dirty stain.

- It can be used to extract corrosive gases, but its water-changing period shall be shortened.

    - SHB-III: housing, water tank, ejector, tee joint, check valve and air-pumping spout are made of PP material; pump body and vane wheel (6 runners; double sealing) are made of pressed stainless steel plate in line with ANSI standard.

    - SHB-IIIA: ejector and air-pumping spout are made of stainless steel (ANSI standard); others are same with that of SHB-III.

    - SHB-IIIS: pump body is made of PP material more suitable for extracting acid gases; others are same with that of SHB-III.

    - SHB-IIIG: multi-purpose water-circulating vacuum pump uses the latest technologies with a long life, antiseptic property; it is more reliable. Its basic materials are same with that of SHB-IIIA. Ejector and air-pumping spout are coated with Teflon (PTFE). Gas pipeline is made of viton.

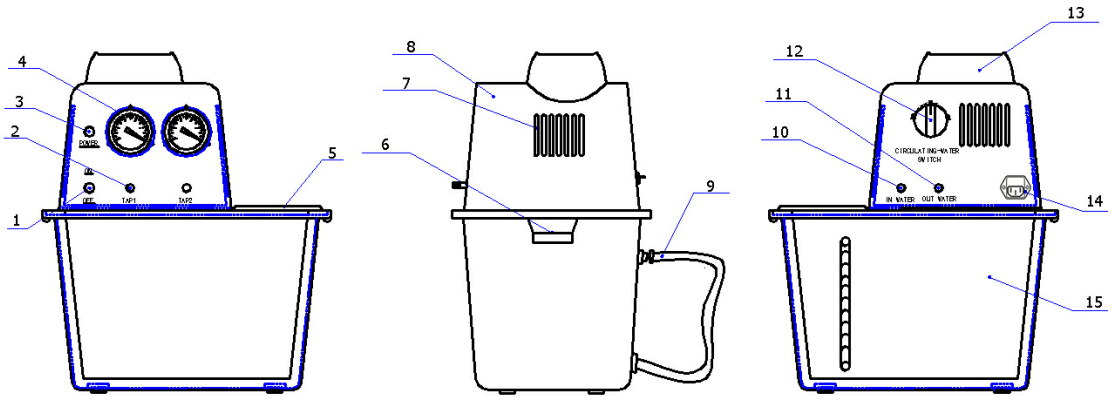
Technical Descrption

Degree of vacuum: 0.098 Mpa（2kPa）(a standard atmosphere pressure; circulating water temperature: 6~25℃)

Single tap air sucking amount: 10L/min	Flow：80L/min
Capacity of water storage tank: 15L	Power of motor: 180W
Power supply : 220-240V～，50Hz	Noise：＜50dB
Dimension（mm）：385W×280D×420H	Weight：15 kg

Using Methods (please see attached figure for reference)

1. Preparation work; put this machine on working table. If it is used for the first time, open cover of water tank and add pure water (you can use hose for drainage to add water). Stop adding when water level reaches to the height just under overflowing mouth on the back of water tank; Do not need to add water again if restart machine. Change the water at lease once a week. If the water is serious polluted or used frequently, the water-changing period shall be shortened in order to keep water in the tank clean.
2. Vacuumizing operation; tightly wear air-pumping sleeve of device required for vacuumization on air-pumping mouth of this machine. Close the circulation switch, connect power supply and switch on power switch; then vacuumizing operation begins. Through vacuum meter related to corresponding air-pumping mouth, you can get the degree of vacuum.
3. When this machine is needed to work continuously for a long time, the temperature of water in the tank will rise, which may affect the degree of vacuum. At this time, connect hose for drainage with water source (tap water) and use overflowing mouth as drainage outlet; meanwhile, control water flow of tap water properly; in this way, prevent the temperature of water in the tank from rising and maintain the degree of vacuum steady.
4. When reaction unit is needed to provide circulating cooling water, based on above 3 operations, connect water inlet hose and water outlet hose of device required for cooling with the circulating water outlet mouth and circulating water inlet mouth on the back of this machine separately, turn the circulating water switch in ON state; then get circulating cooling water.



1. Power switch
2. Sucking tap
3. Power indicator lamp
4. Vacuum meter
5. Water tank's small cover
6. Water tank's attacker
7. Heat dissipation hole
8. Above Caps
9. Draining off water hose
10. Circulating-water entering water tap
11. Circulating-water coming out water tap
12. Circulating-water switch
13. Wind covers the electrical machinery
14. Appliance input socket
15. Water tank

Common Failures and Elimination Methods

No	Common failure	Cause of failure	Elimination methods
1.	Do not produce vacuum or the vacuum meter is not accurate.	1. The revolving speed of motor is not fast enough or the voltage is too low.	Check if the voltage is steady.
		2. Dirt in the vacuum flask or check valve blocks or corrode.	Clear inner dirt out or replace a new bottle or new valve plug.
		3. Water inlet mouth or tube-filtering screen are blocked.	Clean it and clear out dirt inside.
		4. Vane wheel falls off.	Change vane wheel.
		5.Water inflows into vacuum meter or air leakage occurs.	Throw away water in the meter and return needle to zero or change a new meter.
		6. Vacuum line are blocked or cracked.	Clean vacuum line or change new pipeline.
2.	Motor does not work.	1. Protective tube burns out.	Change a new protective tube.
		2. Operating capacitance is broken-down.	Replace it with a new one of same voltage.
		3. Motor winding is burned out.	Change a new motor.
		4. Bearing is worn and serious struck.	Replace a new bearing.
		5. Vane wheel is blocked or struck.	Clean away foreign matters and calibrate the position of vane wheel.
		6. The soldering of thread end is insufficient or line clamp is loosen.	Weld it firmly and clamp it firmly.
3.	Motor produce heat and has over-loud noise.	1. Bearing is worn.	Change new bearing.
		2. Vane wheel is worn or deformed.	Replace new vane wheel.
		3. Voltage is not steady or too low.	Check the circuit if there is overload or low-voltage phenomena.
4.	Water in tank writhe.	1.The water-draining direction of drainer is not correct.	Adjust water-draining direction.
		2. The water level is too low.	Add water up to overflowing mouth.
5.	Leak water.	1.Overflowing mouth of water tank is loosen or seal ring is aging.	Tight up the overflowing mouth or change seal ring.
		2. Water tank is broken.	Change a new water tank.

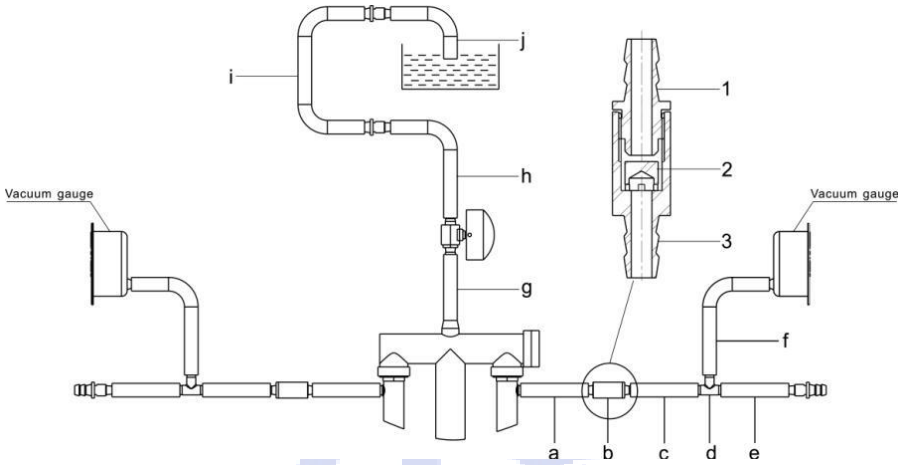
Vacuum Performance under Different Temperature

Temperature	6	8	10	15	20	25	30
Vacuum （MPa）	~0.099	~0.099	~0.099	~0.099	0.097	0.096	0.095
mmHg	~750	~750	~748	~746	736	732	724

Description of Repair of Pumping System

1. Remove the four bolts on side face of cover and then cover can be removed; you can system parts shown in the figure below. Beside b is the check valve.

2. Structure chart of check valve : 1 is valve plug. Use waterproof abrasive paper abrade it after dismantling, clean it up; and then reassemble it; you can hear sound when shaking the check valve with hand. 2 can be twisted off and valve plug can be taken out.



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