

As a specialized enterprise in making vacuum pumps. We are always devoting ourselves to satisfying users' need of high-qualified products. We adopt the latest design and technique, to make sure that our products not only cost less energy, produce less noise and last well, but also are the best design for environment protecting and less pumped gas pollution. Excellent design and making will bring you more convenience.

### I. Usable Range

This single stage series of the single-stroke oil-rotating-vane vacuum pumps and two stage series of the double-stroke oil-rotating-vane vacuum pumps are the equipments for obtaining vacuum by pumping the gases from sealed containers, especially suitable for the pumping work for cold-producing maintenance (for the vacuum pumping with R12, R22, or R134a as cold-producing medium), medical appliances printing machinery, vacuum packing, gas-analysis and hot-forming plastics. And they can also be used as the fore-stroke pumps of all kinds of high-vacuum equipments.

### II. Features

#### Preventing oil--returning design

The passage for gas entering is specially designed, which can prevent the oil flowing back and so prevent the pumped container and tubes from being polluted.

#### Environment-protecting design

- 1 -

### V. User's Manual

- Examine the oil-level before using to make sure the oil-level is not lower than the oil-level line. If lower than that it should be oiled without delay (This pump uses high-speed vacuum oil of HFV 32)
- Take down the gas-filling cap and connect the pumped container. And the pipe should be short, sealed and there should't be any drip.
- Take down the exhaust cap, plug the power supply plug and switch on. And you can operate now.
- Pull out the plug after using, remove the connecting pipes and cover the exhaust cap and the oil plug.

### VI. Cautions

- Don't pump inflammable, explosive and poisonous gases.
- Don't pump gases which can corrode metals and can exert chemical changes with the pump oil.
- Don't pump gases containing pellet dust and gases with plenty of steam.
- The temperature of the pumped gas shouldn't be over 80°C, and the environment temperature should be -5°C~60°C.
- Don't use it as a compression pump or a conveyer pump.
- It can't run without oil.
- The voltage is 192~248V, 50HZ; the socket should be in ground connection.
- Hold the plug when pulling it out. Don't pull the wire off the outlet.
- Don't put heavy weights on the wire to avoid being extruded.
- Don't use damaged plug or outlet.
- Don't plug or pull out the plug with your wet hand.
- Don't plug or pull out the plug or tap on the switch where there is any kind of leak of coal gas.

- 4 -

The tank is separated, and there are separating devices at the exhaust port, it can avoid oil-spraying and reduce pollution.

### Alloy aluminium casing

Alloy aluminium casing is used in this kind of electric machinery, it has high heat-scattering efficiency, which can keep the pump running normally, long-lasting. And it has better outer-figure quality.

### Overall design

The electric machinery and the pump are wholly designed and direct drive, which makes the product more compact, lighter and more rational.

### Great starting moment

The design of great starting moment is easy for starting and high in efficiency, which can keep it running normally even in lower temperature environment and lower volt.

### Forced-feed lubrication system (dual-stage vacuum pump)

The products incorporate the lubrication system designed to provide clean, filtered oil to all internal bearings and wear surface, regardless of the pump operating pressure. Cleaner oil means reduced maintenance and lower operating costs.

### Low noise and vibration

An elastomeric coupling insert between the motor and module results in extremely quiet, smooth-running operation

- 2 -

### VII. Installation

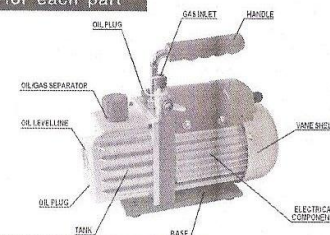
- When in use, the pump should be horizontally put where it is dry, ventilating and clean. The distance to the periphery should be over 2 cm and the space distance between the front and back should be at least 5 cm. When installing it onto the equipment, make sure of the normal air entering at the side of the vane shell.
- The gas-entering mouth can be connected according to the screw thread of it, and it can also be plugged with a leather pipe.
- Installation onto a complete set: remove the rubber base from the bottom base. Connect with ST4.2 screw nail. If you have special equipment of installation, welcome to contact with our company.
- If the pumped gases are harmful to one's health or have bad effect on the environment, you can extend pipes from the exhaust mouth to the outside or deal with it in a way of environmental protection.
- If specially needed, an electromagnetic valve can be installed at the gas-entering mouth.

### VIII. Breakdown Fixing

Forms of breakdown	Causes of breakdown	Removing ways
Low degree of vacuum	1. Lack of oil	Oil to above the oil-level line
	2. The pumping oil is emulsified or not clean	Change the oil
	3. The oil-entering mouth is blocked up or it is short of oil	Clear the oil-entering mouth/wash the filter net
	4. The connecting pipes drain	Check the connecting pipes
	5. The pump is not suitable	Pumped container, recalculates suitable one
Oil drain	1. The oil-sealer is damaged	Change it
	2. The tank is loose or worn out	Screw it and change the o-shaped ring
Oil spray	1. Too much oil	Oil to the oil-level line
	2. The pressure of the gas-entering mouth is too high or it has pumped much	Choose a bigger pump
Difficulty in starting	1. The oil temperature is too low	Start the machinery several times or heat the oil
	2. There is some breakdown in the electrical machinery	Check and fix it
	3. Some foreign matter is in the pump	Check to remove it

- 5 -

### III. Illustration for each part



### IV. Main technique parameters

Single stage double frequency double voltage vacuum pump									
Model	Electrical Specs	Free Air Displacement	Ultimate Vacuum	Motor	Pump Speed	Intake Fitting	Oil Capacity	Dimension (mm)	Net Weight
DAR099 VP-1.5	220V/60HZ 110V/60HZ	1.2CFM	10Pa	1/8HP	1720RPM	1/4SAE X1/2ADN	160ml	240x115x230	6kg
DAR100 VP-5-1	220V/60HZ 110V/60HZ	4.8CFM	10Pa	1/3HP	1720RPM	1/4SAE X1/2ADN	250ml	315x125x240	8.8kg
Double stage double frequency double voltage vacuum pump									
Model	Electrical Specs	Free Air Displacement	Ultimate Vacuum	Motor	Pump Speed	Intake Fitting	Oil Capacity	Dimension (mm)	Net Weight
VP-3	220V/60HZ 110V/60HZ	2.5CFM	5x10 <sup>-2</sup> Pa	1/3HP	1720RPM	1/4SAE X1/2ADN	250ml	315x125x240	9kg
VP-5	220V/60HZ 110V/60HZ	5CFM	5x10 <sup>-2</sup> Pa	1/2HP	1720RPM	1/4SAE X1/2ADN	280ml	340x135x260	10kg
VP-8	220V/60HZ 110V/60HZ	9.6CFM	5x10 <sup>-2</sup> Pa	3/4HP	1720RPM	1/4SAE X1/2ADN	650ml	425x155x280	17kg
VP-8V-2	220V/60HZ 110V/60HZ	5.5CFM	5x10 <sup>-2</sup> Pa	1/3HP	1720RPM	1/4SAE X1/2ADN	250ml	315x125x240	9kg
VP-12V-2	220V/60HZ 110V/60HZ	13.2CFM	5x10 <sup>-2</sup> Pa	3/4HP	1720RPM	1/4SAE X1/2ADN	650ml	425x155x280	17kg

- 3 -

### IX. Maintenance

- Keep the pump clean and prevent foreign matter from entering it.
- Keep the oil level; Don't keep it running without oil.
- Keep the oil clean. If it becomes dirty, muddy, or has water or other volatile substances, which affect limit vacuum, the oil should be replaced. Before replacing the oil, start the pump and have it run about 30 minutes to make the oil thin, and then stop it and let out the oil from the oil-outing mouth. Then, have it run 1-2 minutes with the gas-entering mouth open. During this time, add a small quantity of clean oil from the gas-entering mouth so as to replace the re-maining oil in the pump. Do it repeatedly. After making sure the pump is clean, put on the oil-outing screw plug and then fill clean pump oil to the oil-level line from the oiling mouth.
- If it is not in use for long, cover the oiling cap and exhaust cap and put it in a dry place. Meanwhile, dampproof and antirust should be considered
- If it needs removing and fixing, be sure to have an experienced one do it.

- 6 -