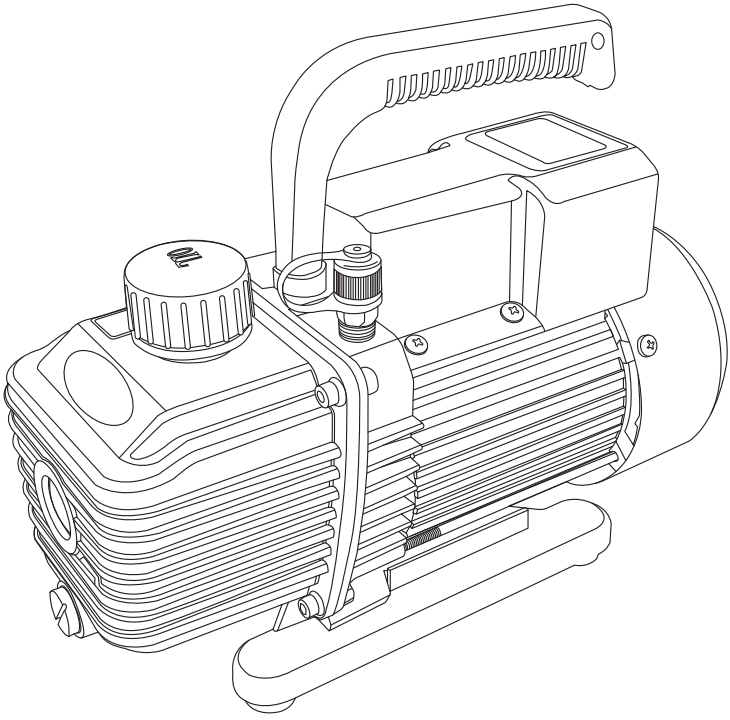
21x14.3cm

USALAB

VACUUM PUMP

OPERATING MANUAL



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Thank you for purchasing our product!

Please read the operation manual carefully before you use the product. It will give you great help in installing and applying the product. If you resell or sell it with your product series, please provide this operation manual together with the product so that the end user may learn application method and cautions.

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As an electromechanical manufacturer,our company has been attempting to provide high-quality product to meet clients' needs. We have adopted new design and technique and our product series are characterized by energy saving, low noise, high durability and environment protection, especially the thoughtful design for air exhaust. Extraordinary design and manufacture will certainly bring more convenience for you.

I. Range of Usage

VP series single and two stage oil-circulation spiral slice vacuum pumps are basic equipment to vacuate air-tighted vessel. They are applicable to refrigerating service (for F12, F22, R134a refrigerant), printing machinery, medical machinery, vacuum packaging, gas analysis, thermoplastic molding and other industries. They can also serve as primary pump for various fine vacuum equipment.

Two-stage oil-circulation spiral slice vacuum pump is to vacuate on the basis of single stage pump and it can realize most vacuums.

II. Features

Anti-oil-returning design

Special air passage is designed to prevent pump oil from returning to contaminate vacuum vessel and pipeline after the pump stops.

Environment protection design

The built-in two-tier oil-gas separator is designed specially which can eliminate oil mist and keep them from polluting .

Aluminum alloy motor casing

Motor adopts aluminum alloy to make its casing, which has high rate of heat emission and can guarantee . continuous normal operation. Its appearance is also good looking.

Integrating design

The motor and pump are integrated to make product compact, simple and rational.

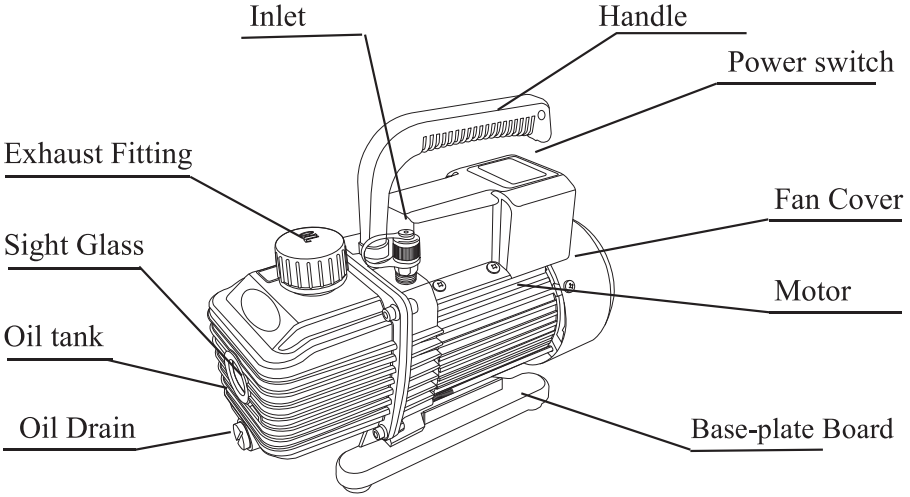
Large starting torque

This product is specially designed for low temperature and low voltage condition to guarantee a normal starting in winter (≥5°C temperature) and rated voltage ±10%.

Oil circulation design

The product runs with extremely high ultimate vacuum and low noise.

III. Pump components



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IV. Technical Parameters

VPD series **Single Stage Technical Specifications**

Model	VPD-115	VPD-130	VPD-145	VPD-165	VPD-180	VPD-1100
Voltage	110V/60Hz	110V/60Hz	110V/60Hz	110V/60Hz	110V/60Hz	110V/60Hz
Ultimate	75 Micron	75 Micron	75 Micron	75Micron	75Micron	75Micron
Vacuum	10pa	10pa	10pa	10Pa	10Pa	10Pa
Power	200W	300W	380W	550W	600W	650W
Motor Speed	1720 r/m	3440 r/m	3440 r/m	3440 r/m	3440 r/m	3440 r/m
Oil Capacity	400 ml	400 ml	450 ml	480 ml	730 ml	730 ml
Dimensions	321x122x245 mm		342x135x255 mm		378x143.5x270 mm	
Net Weight	6.5 Kg	6.3 Kg	8.3 Kg	8.5 Kg	11 Kg	11.3 Kg

VPD series **Two Stage Technical Specifications**

Model	VPD-215	VPD-230	VPD-245	VPD-265	VPD-280	VPD-2100
Voltage	110V/60Hz	110V/60Hz	110V/60Hz	110V/60Hz	110V/60Hz	110V/60Hz
Ultimate	15 Micron	15 Micron	15 Micron	15 Micron	15 Micron	15 Micron
Vacuum	2 pa	2 pa	2 pa	2 Pa	2 Pa	2 Pa
Power	250W	450W	500W	550W	650W	800W
Motor Speed	1720 r/m	3440 r/m	3440 r/m	3440 r/m	3440 r/m	3440 r/m
Oil Capacity	350 ml	400 ml	400 ml	380 ml	610 ml	580 ml
Dimensions	321x122x245 mm		342x135x255 mm		378x143.5x270 mm	
Net Weight	8.2 Kg	8.2 Kg	10.2 Kg	10.5 Kg	13.6 Kg	14 Kg

V.How to Use

Check oil level before using and ensure oil level to be above oil base line, or else refill oil (high-speed vacuum pump oil adopted, or optional common engine oil).

Remove air inlet cap and connect to vacuum vessel. Pipe used shall be short and reliably sealed without leakage.

Remove air outlet cap, insert in power plug and turn on the pump.

After using, pull out power plug, remove connecting pipe and tighten air inlet cap.

VI.Cautions

1、**Warning:**

1) Do not vacuate combustible, explosive or poisonous gases;
2) Do not vacuate the gases that corrode metal or react chemically with pump oil;
3) Do not vacuate the gases that contain particle dust and much steam;
4) Running with connection between air inlet and atmosphere shall not exceed 3 minutes;
5) The temperature of gas sucked shall not exceed 80 ° C and ambient temperature shall be +5 ° C ~60°C;

6) Do not serve as compression pump or transfer pump;
7) Do not operate without oil;
8) Do not touch the hot surface of machine at operation to avoid burning danger;
9) Do not block air outlet when pump works;

2、Caution:

To reduce the danger of electric shock, keep the machine indoor and do not expose it in rain.

3、Danger:

1) Operating voltage is rated voltage ± 10% with earthing socket; Receptacle shall be well earthed, or else electric shock may be caused. Should power cord or plug be required to repair or replace, do not connect earthed wire lead to any of flat adapter connector. If its surface is green, with or without yellow stripe, the insulation wire is earthing wire. If you cannot fully understand earth instructions and have doubt whether correct earthing is made, check shall be conducted together with professional electrician or service man. Do not change the structure of attached adapter connector. If the adapter connector does not match with receptacle, professional electrician shall be called to install proper receptacle.

2) When pulling out power plug, make sure to grip the plug rather than the wire;
3) Do not place heavy matter on power wire or let power wire be squeezed;
4) Do not use broken plug or socket;
5) Do not pull out power plug with wet hand;
6) Do not pull out or insert power plug or turn power switch where coal gas leaks.

VII Installation

Vacuum pump shall be placed in dry, ventilated clean site in operation. Surrounding distance shall be at least 2cm and especially 5cm for the front and rear ends. When equipped with other machinery, normal air inlet shall be guaranteed at fan blade casing.

Installation with other machinery: remove rubber feet on the bottom and connect with M4 tapping screws. For special requirement, please contact us.

Air inlet may be connected according to relevant thread requirement or using leather hose.

Should the air exhausted be harmful to human body or working environment, connect pipeline at air outlet to lead the exhaust outside the work site or treat with environment protection measures.

In case of special requirement, install an electric magnetic valve at air inlet of the pump.

If the air sucked contains much steam or particle dust,

or with overhigh temperature, install a cooler, filter or concerned device in the pipeline of air inlet to keep pump performing normally.

VIII Trouble Shooting

Phenomenon of trouble	Possible reason	Way to eliminate
Low degree of vacuum	1. Oil insufficient	Add oil to center line of oil scale
	2. Pump oil emulsified, not clean	Replace with new oil
	3. Oil inlet blocked or oil feeding inadequate	Clean oil inlet and filtering screen
	4. Pump pipeline or vessel leak	Check pipeline and vessel for leakage and repair
	5. Improper pump chosen	Check the size of vessel sucked and re-compute the pump to choose
	6. Too long service life, parts worn, clearance enlarged	Repair or replace with a new pump
	7. There is foreign matter on the sealing face of exhaust valve	Check and eliminate the foreign matter
Oil leakage	1. Oil seal damaged	Replace with a new oil seal
	2. Oil tank joint loosen or damaged	Tighten screws or replace O-type ring
Oil injection	1. Too much oil	Discharge oil to oil base line
	2. Inlet pressure too high for a long time	Chose proper model pump
Difficult starting	1. Too low oil temperature	Lead air inlet to atmosphere, start motor interruptedly, heat pump oil
	2. Motor or power supply trouble	Check and repair
	3. Foreign matter falling in the pump	Check and eliminate the foreign matter

IX Maintenance and Service

If overload stop is stalled in this product, the whole product system will be shut off by it. When overload stop is under work, first turn off the machine and let in atmosphere from air inlet. Restart the machine after five minutes. (If manual reset overload stop is installed in this product, first press RESET button.) Should overload stop continuous work for many times, turn off the machine and shoot the trouble according to “8. Trouble shooting -- Difficult starting”. Restart the machine only after eliminating the trouble.

Keep pump clean and avoid foreign matter from falling in the pump.

Keep oil level and do not run the pump without oil.

Observe oil cleanness. If oil turns dirty and turbid or has some water or other volatile matter so that ultimate vacuum is affected, replace pump oil in time. When replacing oil, first run the pump for 30 minutes to thin down the oil, stop the pump and discharge oil, then run 1-2 minutes with air inlet open and add a little clean pump oil from air inlet to replace the residual oil in pump cavity. Repeat the steps for several times until the pump is clean. Replace oil discharging screw plug and refill clean pump oil to oil base line.

If the pump is not to use for a long time, mount the air outlet cap and place the pump in dry place, keeping the

pump dampproof and antirust.

If disassembly is needed for repair, only qualified and experienced persons can do the repairing. You can also contact with us.