

# Quick Start Manual for OIL SEALED ROTARY VACUUM PUMP VD30,VD40, VD60, VD90

**«For safe use»**  
 This quick start manual is prepared to help users to quickly understand the product's operating method and display content. Please read the instruction manual beforehand for detailed usage, caution on product use, and safety information to use the pump correctly.  
 You can download the instruction manual from Ulvac website.  
<https://showcase.ulvac.co.jp/ja>

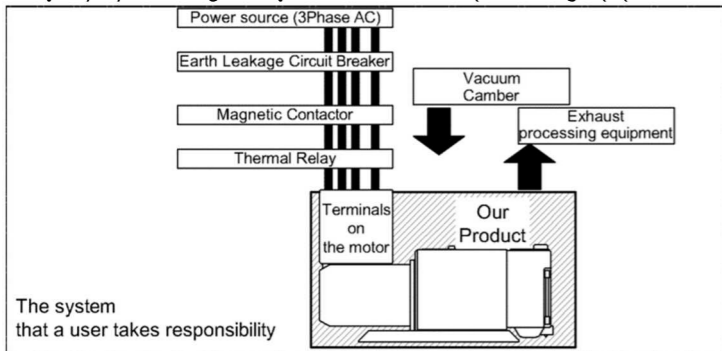
## 1. Setting

Upon delivery of this product, check first that the delivered is exactly what you have ordered and there is no break or damage through transport or the like.

Oil one time portion	ULVOIL R-72	1set
Quick Start Manual		1copy

## 2. System Flow

Power supply is required.  
 And you prepare wiring, safety circuit and exhaust processing equipment, etc.



Location of vacuum pump in host device

## 3. Ambient Condition for Storage, Install and Operation

As precise clearances are provided with this machine, be sure to fulfill the following for its storage, install and operation;

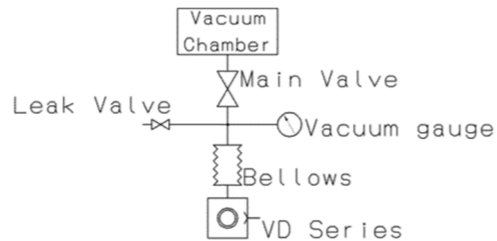
- ① Ambient temperature and humidity for storage :  
 -10°C to 50°C, less than 95%RH
- ② Ambient temperature and humidity for operation :  
 4°C to 40°C, less than 80%RH
- ③ Height (for both storage and operation) :  
 Lower than 1,000 meters altitude
- ④ External vibration (for both storage and operation) :  
 Vibration acceleration less than 114dB (0.5G)
- ⑤ Miscellaneous (for both storage and operation)
  - a. There shall be no corrosion behavior or explosive gas.
  - b. There shall be no freeze or dew formation.
  - c. There shall be no dust.
  - d. It shall be in house.
  - e. Another pump shall not be put on the Pump.  
 The Pump shall not be laid down nor put touching its motor edge face or oil gauge edge face with the ground.
  - f. There shall be no direct sun beam.
  - g. Heat source shall be put away from the Pump.

Install the machine horizontal to a place where there are less dust and humidity. Make a layout taking into consideration of works such as setting, removal, check, cleaning and so on.

Model	Foot print	Bolt	Anti-vibration Rubber mount
VD30 VD40 VD60	 4-Ø11 The Pump has four holes. The Pump is fixed with four bolts.	More than "M8 x 20mm"	Kurashiki Kako., Ltd.  Model: KLB-3560(Recommended) * NOT included
VD90	 8-Ø11 The Pump has eight holes. The Pump is fixed with four bolts: Four places of outside or center side of the Pump.		

## 4. Inlet port Piping

Provide main valve, vacuum gauge and leak valve between the vacuum chamber and pump, as shown in Fig.



Use the flange for connection between the Pump Inlet and the piping.

MODEL	Flange at the pipe	
VD30	VF40	JIS B 2290:1998
VD40	VF40	Vacuum technology-Flange dimensions; Attachment book (Reference)
VD60	VF50	Attachment book (Reference)
VD90	VF50	Flange dimensions for maintenance

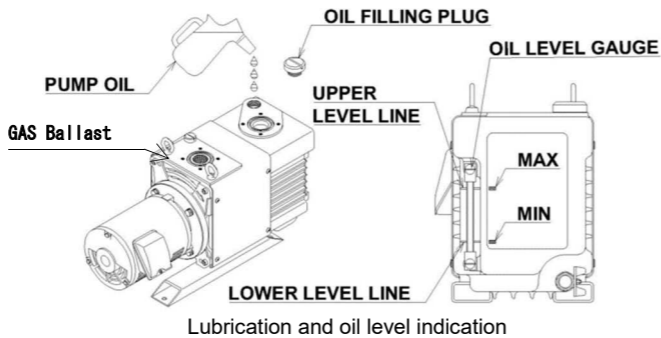
## 5. Outlet port Piping

Use the flange for connection between the Pump Outlet and the piping. It is recommended to provide an oil mist trap to reduce oil consumption and to trap oil mist.

MODEL	Flange at the pipe	
VD30	VF40	JIS B 2290:1998
VD40	VF40	Vacuum technology-Flange dimensions; Attachment book (Reference)
VD60	VF40	Attachment book (Reference)
VD90	VF40	Flange dimensions for maintenance

## 6. Lubrication

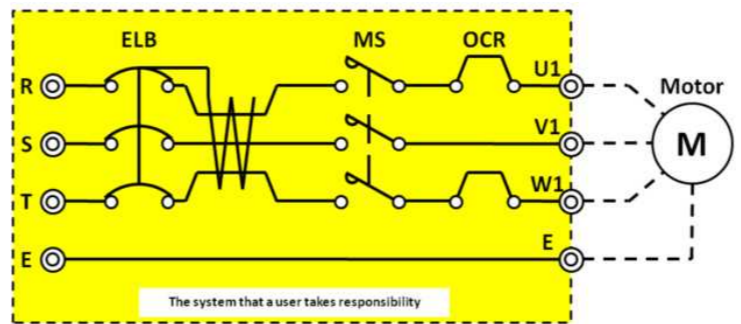
Remove oil filling plug, and fill the Pump with oil until oil level should be between the two level lines (MAX and MIN on the Pump case) on the oil level gauge.  
 When the oil level is between the two level lines, the Pump is allowed to start.



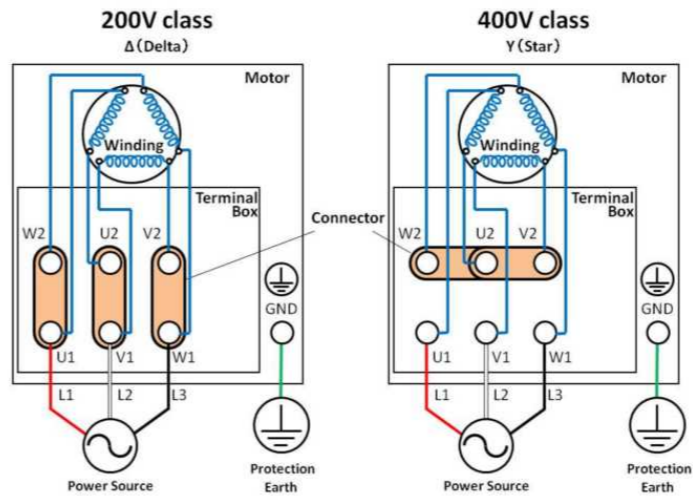
Lubrication and oil level indication

## 7. Electrical Connection

Conduct the electrical connection referring to the Fig. and Table. Without changing motor, it is possible to run the Pumps both with 200V and 400V class utilities by changing wire connection in the motor terminal box because multi voltage motor, for both 200V and 400V classes, is used for this pump.



Recommended connection diagram



Electrical wiring diagram

## 8. Operation

### 8-1. Operation Start

- Before starting the Pump, check the following again.
- (1) Piping and wire connection are completed.
  - (2) Checking the oil level  
 Ensure that the oil level is between the two level lines on the oil level gauge.
  - (3) Checking the rotating direction  
 Close the main valve on the Inlet side, open the leak valve, and run the Pump for two to three seconds to check the rotating direction of the motor.  
 If the motor is rotating in the correct direction (Clockwise as viewed from the motor side), pressure will drop. If it is reversed, interchange two of the three wires shown in Fig. Electrical wiring diagram.
  - (4) After checking (1), (2) and (3) above, close the leak valve and run the Pump. Here, ensure that the vacuum gauge between the main valve and the Pump indicates a pressure close to the ultimate pressure.

### 8-2. Operation Stop

- (1) Close the main valve on the Inlet side, open the leak valve to vent the Pump to atmosphere, and stop the Pump.
- (2) Open the Suction leak valve to make atmospheric pressure inside the Pump.

### 8-3. Gas Ballast Function

This product is installed with the Gas ballast function as standard. It is applicable to breathe in the condensed gas such as the steam and solution vapor.  
 If introduced the air or dry nitrogen through the Gas ballast valve just before the Pump compression process, the condensed gas is not liquefied but exhausted with the air through the Exhaust valve.

8-4. Vacuum Pump Oil For cold district  
 Starting the Pump operation might become difficult in winter season or in the cold district.  
 This is the overload phenomenon caused by increased viscosity of the pump oil. To make sure, you should confirm that the capacity of the motor overload protective device conforms to the motor rated value, the pump is not broken and the cable does not have abnormality. Then, warm up the Pump oil or replace the oil with the Vacuum pump oil ULVOIL R-42 having lower viscosity.  
 Recommended type of oil:  
 1) ULVOIL R-72 (standard oil)  
 2) ULVOIL R-42 (Cold area or winter time)

ULVAC SHOWCASE



You can download the instruction manual from here.