ULVAC

YK13-0013-CI-005-00

Mechanical Booster Pumping Unit YMV-01A/03A/06A/12A/18A Quick Manual

Introduction

This quick manual is for quick check of operation and display of the product. Please refer to instruction manual attached in advan ce for detailed information about operation, precautions,safety an d Warranty Terms for proper use.https://showcase.ulvac.co.jp/ja

1.Setting

Upon receipt of the instrument, unpack it and check it to see that it is not damaged in transit and that accessories are supplied as specified

Product name	Qty
Seismic fixing jig	4
Quick manual	1

2. Ambient Condition for Storage, Install and Operation

*Refer to the instruction manual of each pump for the surrounding conditions during storage and operation.

3.Installation

Place this product on a horizontal surface and jack it up with four adjuster feet so that the casters attached to the gantry do not work. After that, fix it firmly with four seismic fixing jigs.

To prevent cracking of the bellows joint due to vibration during transportation, there are two fixing jigs for transportation diagonally to the anti-vibration rubber part of the oil rotary vacuum pump. Remove them.



Fig.1 Fixing with a seismic fixing jig

4.Connection with Vacuum System

Install a vacuum chamber valve, pressure gauge and leak valve between the

Fig.2 Removal of transport fixing jig



5.Water Piping

*Refer to the instruction manual of each pump for the cooling water piping. *Make sure that the amount of cooling water is greater than or equal to the amount indicated in the "Performance Specifications" described in the instruction manual for each pump.

6.Electrical Connection

*Refer to the instruction manual of each pump for electrical wiring. *Install and operate in accordance with the safety rules and regulations (for example, Fire Service Act, electrical wiring regulations, etc.) of the country or region where you can use the product.

*For the rated current value of the standard motor, refer to the attached VD, VS, PMB or PRC instruction manual.

*If you have ordered a motor other than the standard motor, please check the rated current value on the name plate attached to the motor.

7.**Cooling water flow sensor (optional)**

When operating this product, cooling water must be run. For the amount of cooling water, refer to "Performance Specifications" in the instruction manual of each pump. The cooling water flow sensor monitors the amount of cooling water and outputs an error signal (switch off) when the amount falls below the specified amount.

If you have purchased the optional cooling water flow sensor, wire it so that the pump stops when the amount of cooling water decreases and an error signal (switch off) is output. The applied voltage is DC24V. The equipment has polarity, so be careful when wiring. Wire + to the brown lead wire and-to the blue lead wire (if you have a control panel, it is already wired). The amount of cooling water is set as shown in the table below. Be sure to use the alarm signal from "AL1" before wiring.

Model	AL1	AL2
PMB300D+VD401	2.0L/min	3.0L/min
PMB600D+VD601	2.0L/min	3.0L/min
PMB600D+VD901	2.0L/min	3.0L/min
PRC-003A+VD401	2.0L/min	3.0L/min
PRC-006A+VD601	2.0L/min	3.0L/min
PRC-006A+VD901	2.0L/min	3.0L/min
PMB600D+VS1501	4.0L/min	5.0L/min
PMB600D+VS2401	5.0L/min	6.0L/min
PMB1200D+VS1501	4.0L/min	5.0L/min
PMB1200D+VS2401	5.0L/min	6.0L/min
PRC-006A+VS1501	4.0L/min	5.0L/min
PRC-006A+VS2401	5.0L/min	6.0L/min
PRC-012A+VS1501	4.0L/min	5.0L/min
PRC-012A+VS2401	5.0L/min	6.0L/min

8. Delayed vacuum solenoid valve wiring

There is a concern that oil may rise from the intake side of the oil rotary vacuum pump to the mechanical booster pump or chamber side due to an unexpected power failure or forgetting to open the atmosphere. Delayed vacuum solenoid valves are used to prevent these oils from rising, and break the vacuum (introduce the atmosphere) at intervals of several seconds after the power is stopped. The interval time is set to about 5 seconds, but if the voltage is AC, it can be set from 0 to 8 seconds, and if it is DC, it can be set from 0 to 10 seconds. It is possible to set the ADJ.] Part by turning it with a driver.

If you have purchased the optional delayed vacuum solenoid valve, wire it so that it works with the oil rotary vacuum pump. Apply the same voltage as the voltage of the purchased delayed vacuum solenoid valve. If you have purchased a delay vacuum solenoid valve with a voltage different from the motor voltage, be careful when wiring it (if it has a control panel, it has already been wired). Check if there are any problems with the connection method between this product and the dry pump and the electrical wiring.

9.Terminal block BOX (optional)

The connection to the terminal block BOX is "Table 9-1. Electrical wiring to the terminal block BOX (delayed vacuum solenoid valve: other than DC24V)" or "Table 9-2. Electrical wiring to the terminal block BOX (delayed vacuum solenoid valve: Please refer to "DC24V)".

9-1.No delay vacuum solenoidvalve&other thanDC24V

Applications	Oil rotary vacuum pump			Mecha	anical booster pump			
Terminal BOX	U1	V1	W1	Е	U2	V2	W2	E
	Ť	Ť	Ť	Ŷ	Ť	Ť	Ŷ	↑
Electrical	R1	S1	T1	GN	R2	S2	T2	GN
Connection				D				D
Applications	Optional						Λ	
	Valve Water flow sw			itch				
Terminal BOX	P24	E	P24	AL1	AL2	Е		
	Ŷ	î	î	Ŷ	Ť	Ť		

 Power
 R1
 S1
 +
 *1
 *1

 * 1: For the alarm set value of the cooling water flow rate, refer to "7. Cooling water alarm set value". Be sure to use the alarm signal from "AL1" before wiring.



9-2.delay vacuum solenoid valve & DC24V

Applications	Oil rotary vacuum pump			Mecha	anical bo	ooster p	ump	
Terminal BOX	U1	V1	W1	E	U2	V2	W2	E
	Ŷ	Ŷ	Ŷ	↑ (↑ (Ŷ	Ŷ	Ŷ
Power	R1	S1	T1	GN	R2	S2	T2	GN
				D				D
Applications	Optior	Optional						/
	Valve		Water	flow sw	vitch			
Terminal BOX	P24	Е	P24	AL1	AL2	Е	/	
	Ŷ	Ŷ	Ŷ	↑ (↑ (Ŷ		
Power	+	-	+	*1	*1	-		



10.Control panel (optional)







Fig.5 Control panel (front)

Remove the panel on the left side of the control panel





Fig.6 Control panel (inside)

There is a terminal block as shown in Fig. 6, so attach the wiring R, S, T, and E on the primary side to it.

Use the holes on the lower side of the control panel to pull the wiring on the primary side into the control panel.

11.Lubrication

Since this product is refueled at the time of shipment, it is not necessary for the customer to refuel, but be sure to check the amount of oil before operation. How to reduce the amount of oil differs depending on the operation method, but if the amount of oil drops and falls below the lower limit level, refer to the instruction manual of each pump to refuel.

12.Operation Start

(1) Run cooling water (water-cooled pump only).

(2) Mechanical booster pump Close the main valve and leak valve on the intake side, start the oil rotary vacuum pump, and exhaust the inside of the pipe.

(3) Open the main valve on the intake side of the mechanical booster pump and exhaust the inside of the vacuum vessel.

(4) Start when the inside of the vacuum vessel is exhausted below the maximum suction pressure of the mechanical booster pump.

13.Operation Stop

(1) Close the main valve on the intake side of the mechanical booster pump to stop the mechanical booster pump.

(2) The mechanical booster pump is rotating for a while due to the inertial force of the rotor. Make sure that the rotation has stopped as seen from the oil level gauge, and then stop the oil rotary vacuum pump.

(3) At the same time as stopping the oil rotary vacuum pump, open the leak valve on the intake side of the mechanical booster pump to bring the inside of the mechanical booster pump and the oil rotary vacuum pump to atmospheric pressure.

(4) Allow the pump to cool to the touch, and then stop the cooling water (watercooled pump only).

(5) If the ambient temperature drops below 5 ° C while the operation is stopped, drain the water inside the pump / cooling water pipe (without closing the cooling water outlet side, 0 from the cooling water inlet side. 3 MPaG (gauge pressure) compressed air flows). If water is accumulated, freezing may cause cracks in the pump / cooling water pipe.

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You can download the instruction manual from here.

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