

INSTRUCTION MANUAL

OIL FREE VACUUM PUMP STATION



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Product overview

First of all, thank you for choosing our oil-free vacuum pump

Youcheng oil-free vacuum pump series is the introduction of the latest international technology for the company, carefully designed by professionals. and other similar products Compared with the advantages of oil-free and maintenance-free, high vacuum, low maintenance rate, low noise and low vibration. In order to ensure that the vacuum pump can be reliable and safe To ensure its longest service life, please be sure to take a little time out of your busy schedule to read this manual in detail Accurate use and maintenance.

Product introduction

1. The motor of the oil-free vacuum pump is optimized by the advanced design system to ensure that the vacuum pump achieves low input power, high efficiency, Low energy consumption.
2. The piston ring (leather bowl) of the oil-free vacuum pump is designed with a new type of environmentally friendly material, and the friction coefficient is small. The self-lubricating properties replace the conventional vacuum The inconvenience of oil lubrication of the pump makes the vacuum pump truly oil-free during operation.
3. The cylinder of the oil-free vacuum pump adopts the surface hardening treatment process, which effectively improves the surface wear resistance and reduces the friction coefficient, so as to prolong Service life.
4. The inlet and exhaust valve plates of the oil-free vacuum pump are made of precision valve steel strips and processed through special processes. The oil-free vacuum pump is controlled by a microcomputer chip to achieve overload protection and automatic control functions.

Oil-free vacuum pumps are widely used in vacuum blister molding, vacuum filling, vacuum suction cups, food processing, pharmaceutical and chemical industries, etc.

Technical Parameter

(As shown on the following page)



FVN-180V



FVN-200V



FVN-300V



FVN-500V-1



FVN-180V-
Double headed



FVN-400V-
Double headed



FVN-500V-
Double headed



FVN-600V-
Double headed

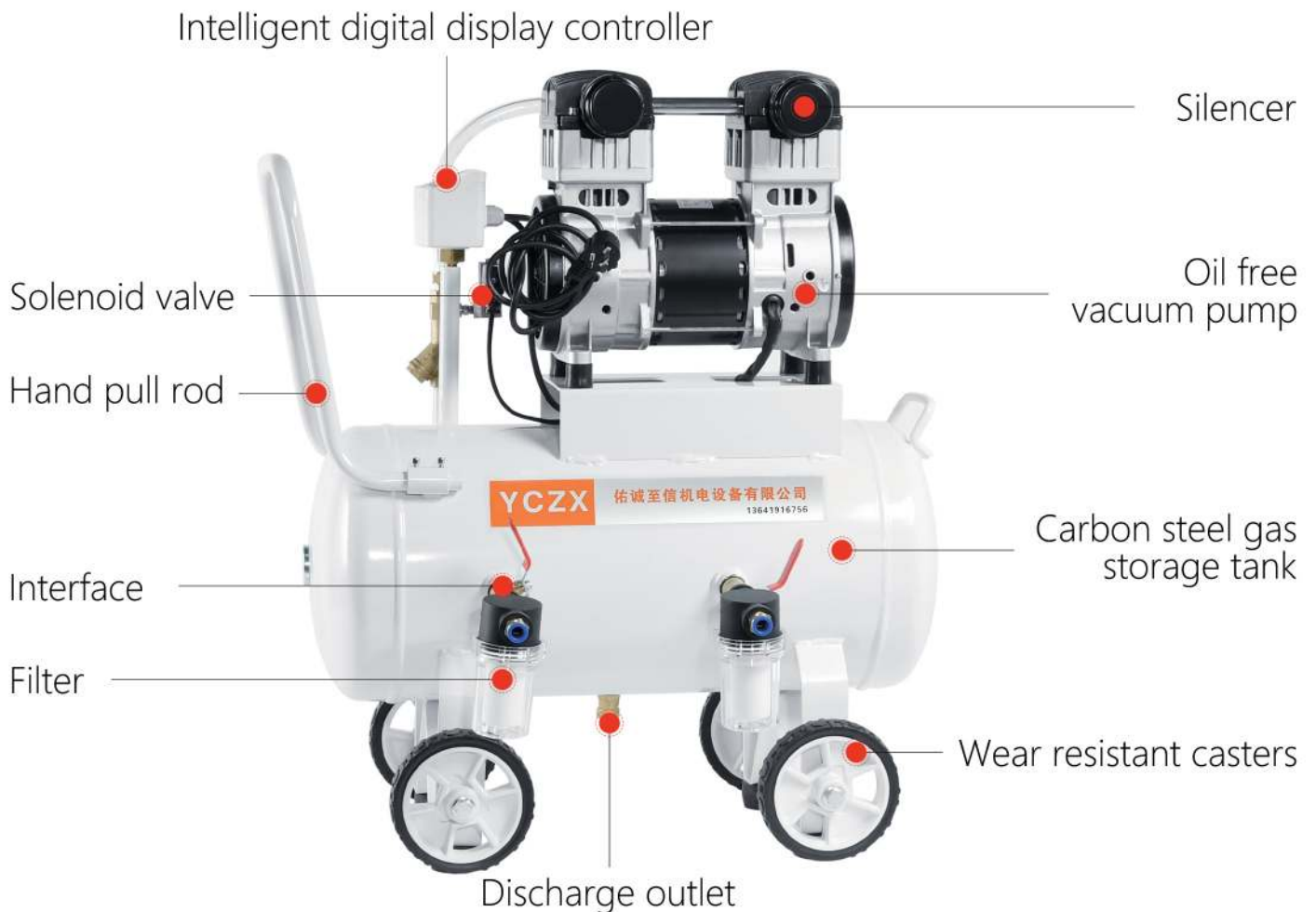
Model	Frequency (Hz)	Internet traffic (L/min)	Voltage (V)	Power (W)	Ultimate vacuum (-Kpa)	Weight (Kg)	Air receiver (L)	Noise (dB)	Dimensions (LxWxH cm)
FVN-180V	50/60	160	220	600	91	≤26	20	≤58	59x31.2x68
FVN-180H	50/60	120	220	600	98	≤42	20	≤58	54x30x61
FVN-180V-Double headed	50/60	320	220	1200	91	≤49	65	≤62	69x34x63
FVN-200V	50/60	200	220	1000	91	≤40	40	≤60	73x32x69
FVN-200H	50/60	150	220	1000	98	≤42	40	≤60	68x35x73
FVN-400V-Double headed	50/60	400	220	2000	91	≤80	65	≤63	100x38x76
FVN-300V	50/60	300	220	1500	91	≤40	40	≤60	73x32x69
FVN-300H	50/60	200	220	1500	98	≤42	40	≤60	68x35x74
FVN-600V-Double headed	50/60	600	220	3000	91	≤80	65	≤63	100x38x76
FVN-500-1	50/60	480	220	800	93	≤45	40	≤60	65x36x71
FVN-500-Double headed	50/60	960	220	1600	93	≤70	65	≤63	98x43x80

The above vacuum pumps are some of our company's products. If you want to learn more about our products and technical parameters, please visit our official website for more information.

Company official website address: <http://www.ycchuqiguan.com>

Note: The above technical parameters and product images are for reference only. If there are any upgrades, no further notice will be given. The actual product shall prevail!

Installation Instructions for Single Head Vacuum Pump



(Diagram 1- This example diagram shows FVN-200V)



Debugging
video



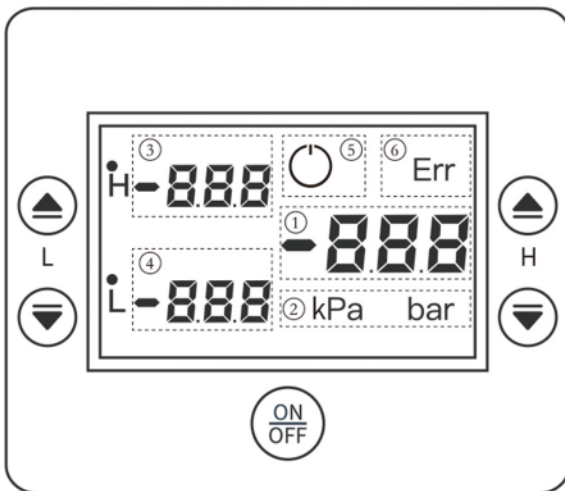
Installation
Video

Installation steps for single head pump unit:

- 1、 Install casters and handlebars
- 2、 Install the muffler at the outlet of the vacuum pump (EXHAUST)
- 3、 Install filters at the interface (球阀+过滤器)

User Manual for Intelligent Pressure Controller

Interface Introduction



(Different versions may result in differences in display. The actual product shall prevail)

1.Main display: ①Display current pressure

②Display the current pressure unit

③Display the upper limit value of pressure setting

④Display the lower limit value of pressure setting

⑤Display switch indicator light

⑥Abnormal operation of display switch pressure and communication failure

2.Keypad:

As a start stop key in operation, perform a shift operation when setting the upper and lower values

Upward: add number

Downward: Reduce numbers

3.Pilot lamp: Indicator lights on H and L

Normal operation steps

1.Instrument powered on → screen display

Red H value (The factory value is -80) → To stop the pressure value

Yellow L value (The factory value is -60) → To activate the pressure value

White Real time pressure value

White Unit (Factory produced in kPa)

2.To adjust the start pressure and stop pressure, it is necessary to first turn off the automatic working mode

2.1 Press on

Adjust the stop pressure reference value (factory -80kPa), short press to adjust one position, long press for 2 seconds to adjust ten positions

2.2 Press on

Adjust the starting pressure reference value (factory set to -60kPa), short press to adjust one position, long press for 2 seconds to adjust ten positions

2.3 Press control the built-in relay to enter automatic working mode

Press once, it will light up in red, indicating the operation of the pressure switch

Press and hold again, it will darken, indicating that the pressure switch has stopped running

2.4 Adjust the set pressure value in the later stage, and adjust the set value after closing the switch operation mode

3.Reset setting, automatic working mode needs to be turned off first

3.1 Simultaneously press and hold + both sides for 5 seconds,

The pressure switch enters the reset mode

3.2 Then, press the , when the pressure setting lower limit area displays "000", it indicates successful zeroing

Attention: If the reset is successful, press the again, and the pressure setting lower limit area will change from "000" to "---",

indicates not cleared to zero; need to continue resetting to zero,

short press the

3.3 Simultaneously press and hold and for 5 seconds, the pressure switch will exit the reset setting and return to the main interface

Installation Instructions for Double ended Vacuum Pump



Carbon steel gas storage tank
(Diagram 2- Front - This example diagram shows FVN-400V)



(Diagram 2- Reverse- This example diagram shows FVN-400V)

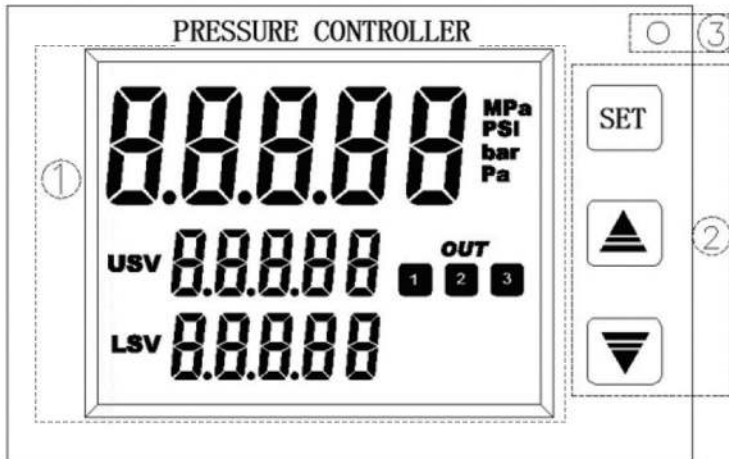


Installation steps for dual head pump assembly:

- 1、 Install casters
- 2、 Install a filter at the intake port (Ball valve+filter)

User Manual for Double ended Electric Control Box

A dual head electrical control box is an intelligent control instrument that integrates pressure measurement, display, and control. The instrument can automatically turn on/off relay output according to the pressure status inside the container to ensure the pressure condition inside the container. It has the characteristics of simple operation, clear display, anti vibration, high control accuracy, and long service life.



Display interface of electric control box

① Display

Display current pressure: Display prompt when setting parameters
 Display setting parameters
 Display output status "OUT"

② Keypad

SET: Determination of parameters for switching and setting. Press and hold the SET key to enter settings and stop running.
Press up: increase number
Press down: decrease the number
Pressing several keys simultaneously has the function of combining keys

③ Pilot lamp

Prompt for system overvoltage, overload, leakage and other abnormal conditions

Controller operation method

Adjust the starting pressure and stopping pressure Pilot lamp

Press SET to poll and adjust the stop pressure (USV) and start pressure (LSV).
 Stop pressure absolute value > Start pressure absolute value.

Press **SET** to adjust USV

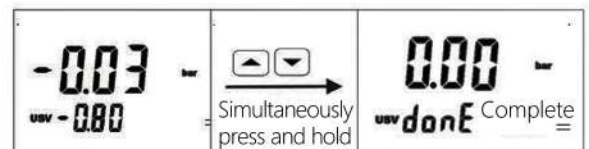
USV - 0.00 ▲ ▼ Adjust the USV benchmark value, long press to quickly adjust

LSV - 0.50 Press **SET** again to adjust LSV

 ▲ ▼ Adjust the LSV benchmark value, long press to quickly adjust

Zero calibration function

The zero calibration function refers to the function that forces the pressure value to be displayed as 0 when the pressure hole is at atmospheric pressure



MENU

Enter the function settings, long press set for about 2 seconds, and the function description is shown in the table below

Function symbol	Operation method	Describe
F1 Unit switching	Press ▲ or ▼ to select, unit MPa, PSI/Bar, Pa Press SET to enter F2	You can choose one of the three units MPa/PSI/Bar/Pa as the actual pressure Default: Pa(note)
F2 Protection function	Press ▲ or ▼ to select, "Pon" or "PoFF" press SET confirm and return to the main operating state	"Pon" Turn on protection function "PoFF" Turn off protection function(default)

Abnormal prompt function

Exception Name	Exception prompt	Exception Description	Solution
Residual pressure error	Err1	Excessive pressure during school hours	At zero time, the pressure at the pressure hole should be atmospheric pressure
Set abnormal pressure	UP	Setting has reached the upper limit	Adjust the USV value (maximum voltage)
	DOWM	Set to reach the lower limit or stop The pressure is lower than the starting pressure	Adjust the LSV value (minimum voltage)
High Pressure	FULL	Exceeding the sensor range	Reduced pressure
Overvoltage	The indicator light stays on (Note 1)	Pressure greater than USV	Reduced pressure
Lack of voltage protection	The indicator light is flashing (Note 2)	Malfunctions such as low pressure and air leakage	Check the sealing of the air circuit or the operation of the load

Note 1: When the controller detects that the pressure is greater than USV, it will continue to run for about 1 second before turning off. At this time, the pressure will be slightly higher than USV, so the indicator light will light up. If it stays on for a long time, please pay attention to checking the equipment.

Note 2: If the protection function is turned on and the relay is closed, if the controller detects no change in pressure, it will turn off after 7 minutes and the indicator light will flash. The controller will stop running after troubleshooting. Press SET to resume operation.

Precautions

- 1、 This product is developed and manufactured for use in industrial environments.
- 2、 To ensure the long-term good use of the product, it is necessary to add air filters and other objects to the air circuit.
- 3、 Please use within the rated voltage range; Do not exceed the pressure resistance value, otherwise it may damage the product and safety.
- 4、 Please confirm that the wiring is done with the power turned off.
- 5、 Incorrect wiring can cause malfunctions or affect personal safety.
- 6、 If the device starts frequently, please check the difference between the set maximum and minimum voltage and adjust it appropriately.
- 7、 Please do not disassemble the machine without authorization, as there is high voltage inside and only professional personnel can repair it.

Maintenance

Before all maintenance work, cut off the power and exhaust the air pressure

- 1、 Keep the machine clean and regularly clean and maintain it.
- 2、 Clean the filter every 500 hours of use.
- 3、 Replace the cup and cylinder liner with new ones every 5000 hours of use.
- 4、 The gas storage tank should be pressure tested every 2 years.

Common faults and troubleshooting methods

Fault phenomenon	Possible causes	Solution
The motor cannot be rotated There was no sound	<ol style="list-style-type: none"> 1. There is no power 2. The fuse blows 3. Overload protector in protected state 4. The electronic windings of the motor are burned 5. The negative pressure design of the controller is too high 6. The vacuum machine controller is damaged 	<ol style="list-style-type: none"> 1. Check the plug and switch 2. Replace the fuse 3. Wait for the motor to cool down before starting 4. Replace the stator 5. Reduce the starting pressure of the controller 6. Replace the vacuum machine controller
The motor has an electric current sound but Doesn't work or rotates very slowly	<ol style="list-style-type: none"> 1. The voltage is too low 2. The motor coil is short-circuited or open-circuited 	<ol style="list-style-type: none"> 1. Check the voltage 2. Contact the service center
Overload protector Cut off the power supply repeatedly	<ol style="list-style-type: none"> 1. The voltage is too low 2. The temperature of the vacuum pump is too high 	<ol style="list-style-type: none"> 1. Check the voltage 2. Improve the ventilation environment of the vacuum pump
After cutting off the power to the vacuum pump The vacuum level drops rapidly	<ol style="list-style-type: none"> 1. The gas connection is loose and there is leakage 2. Solenoid valve leakage 3. Check valve leakage 	<ol style="list-style-type: none"> 1. Check the gas path and rule out leakage 2. Clean or replace the solenoid valve 3. Clean or replace the check valve
The vacuum level is not reached Specify the negative pressure value	<ol style="list-style-type: none"> 1. The gas connection is loose and there is leakage 2. Solenoid valve leakage 3. Drain valve leakage 4. The piston ring (leather bowl) is seriously worn 5. There is a foreign substance in the valve plate that causes internal leakage 	<ol style="list-style-type: none"> 1. Check the gas path and rule out leakage 2. Clean or replace the solenoid valve 3. Clean or replace the drain valve 4. Replace the piston ring (leather bowl) 5. Clean or replace the valve plate
Vacuum pumps cannot Automatic shutdown	<ol style="list-style-type: none"> 1. The gas connection is loose and there is leakage 2. Solenoid valve leakage 3. Drain valve leakage 4. The piston ring (leather bowl) is seriously worn 5. There is a foreign substance in the valve plate that causes internal leakage 6. The negative pressure design of the controller shutdown is too high 	<ol style="list-style-type: none"> 1. Check the gas path and rule out leakage 2. Clean or replace the solenoid valve 3. Clean or replace the drain valve 4. Replace the piston ring (leather bowl) 5. Clean or replace the valve plate 6. Reduce the pressure of controller shutdown
The vacuum pump vibrates too much	<ol style="list-style-type: none"> 1. Loose fasteners 2. The support foot pad is damaged 	<ol style="list-style-type: none"> 1. Check and exclude 2. Replace the support foot pads

After sales warranty card

1. Please fill in this card carefully to purchase this product and carefully read the following warranty terms to ensure that the product is effectively warranted

1. The user should carefully keep this card when purchasing the product, and ask the seller to seal and confirm.
2. This warranty card must be provided at the same time as the warranty.
3. The information filled in this warranty card is true, otherwise it will be invalid.
4. The warranty period of the product is one year, and if the product fails during the warranty period, it is a poor quality or production problem of the original device, and it will be repaired free of charge and component replacement.

2. The product cannot be used normally due to damage caused by the following reasons, which is not covered by the warranty

1. Damage caused by failure to use and install in accordance with the manual.
2. All man-made or accidental product damage.
3. Maintenance, modification or cracked product sealing sticker without the approval of the company.
4. Aging, bruising and scratches on the surface shell of the product.

3. After the expiration of the warranty period, the user can still get the maintenance service provided by the company, but the corresponding fee must be paid

User Profile

Product name		Product model	
Product number		Quantity purchased	
Date of purchase		Purchase a unit	
Customer's name		Contact	

Warranty records

Warranty date	How to handle the troubleshooting	Completion date	Customer's signature



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