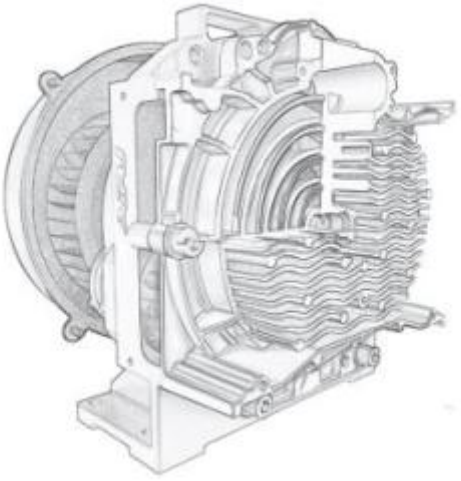
Oil-free scroll air compressor

Operation and use instructions



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● Please carefully read these instructions before operation. ●Please keep them in a safe place for future reference

Safe operation

◆ You must read the use instructions carefully before use in order to learn to use the air compressor correctly.
◆ The gas discharged from the air compressor contains dust in the atmosphere, worn particles of moving parts, water, etc.
◆ When maintaining the air compressor, the operator must cut off the power supply of the air compressor first, and take effective measures to prevent others from starting the air compressor due to negligence or accident.
◆ No flammable solvent should be used to clean the air compressor, and it is strictly prohibited to put any inflammable, explosive and other dangerous products around the air compressor.
◆ The main unit, motor and the exhaust pipe section of the air compressor are in high temperature when the air compressor is running or just after it has stopped, so, please do not touch it and be careful of scalding.
◆ The maintenance and service of the air compressor should be carried out by professional personnel.
◆ During the inspection and maintenance of the air compressor, the pressure of the air compressor must have been completely released, and it is ensured there is no pressure, then the inspection and maintenance can be commenced.

Explanation of safety signs

Warning

This mark indicates that if a wrong operation is carried out regardless of the warning content, it may cause serious consequences such as personal injury or death.

Attention

This mark indicates that if a wrong operation is carried out regardless of the attention content, it may cause such consequences as personal injury or property loss.

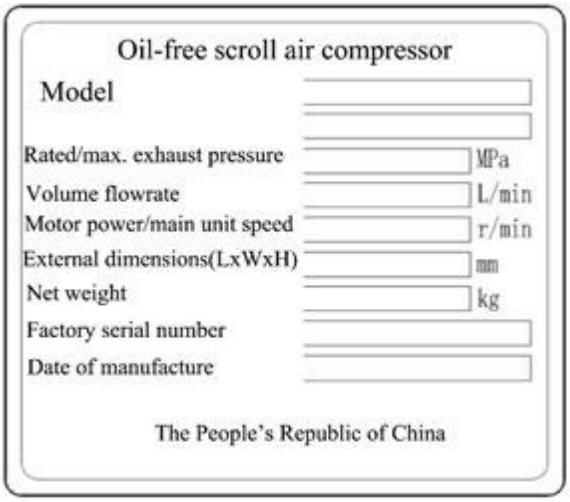
※ For any loss and damage caused by operations ignoring the warning and attention identifiers, our company is not responsible for it, please understand.

Service environment

◆ Ambient temperature: 2℃~40℃
◆ Relative humidity: 10%~95%
◆ Please avoid the place of direct sunshine.
◆ There should be no flammable or explosive gas and organic solvent, etc. nearby.
◆ Please avoid places where the compressor may get wet in the rain or where there may be dust or flocs.
◆ When multiple compressors are running, they should be spaced by more than600 mm.
◆ Make sure there is enough space for maintenance around the air compressor.

Attention

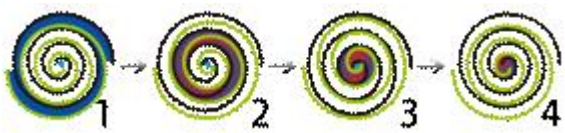
It is strictly forbidden to use the machine in an environment where there are flammable and explosive materials, rain, various types of dust, and flocculent flying objects!



Attention

1. Please check whether the information on the nameplate is consistent with the product you ordered.
2. Please confirm whether there is any damage or deformation of the machine due to the causes during the transportation.

Operating principle



Operating principle of oil-free scroll air compressor: The rotary scroll rotates in the order of 1-2-3-4 as shown in the diagram, the air is sucked into the space between the rotary scroll and the stationary scroll, the volume of crescent compression chamber gradually decreases, and then the air is discharged from the exhaust port at the center of the stationary scroll after being compressed;

Installation instructions

Installation check

◆ Open the package, check whether the machine is in good condition, and check whether the accessories and documents supplied with the machine are complete according to the packing list.

◆ Check whether the power supply voltage and frequency marked on the nameplate of the machine are consistent with the actual power supply.

◆ Please remove the fixed metal parts and bottom bracket for transportation.

Installation requirements

◆ Oil-free scroll air compressor is a high-precision equipment, in the process of loading and unloading, moving and installation, it is necessary to use a forklift to carry it from the bottom of the box or the machine, and to ensure that the forklift arms all extend from the fork mouth of the chassis (as shown in the figure below). If you use the lifting method to handle it, you should use a special spreader to lift it from the bottom fork mouth (as shown in the figure below), and it is forbidden to make the rope or steel cable pressed on the door panel, otherwise the door panel will be deformed. It is strictly forbidden to handle the box under force at the air outlet pipe.

◆ Please install according to the "Precautions" attached next to the chassis operation panel.

◆The air compressor must be installed on a level ground.

◆ Please refer to Table 1-1, and make sure there is enough space for maintenance around the air compressor.

◆ Ensure that all valves open and close flexibly, and make them in the correct open and close state.

◆ As the air compressor generates a lot of heat during operation, please ensure that the installation space is well ventilated. When the ambient temperature exceeds 40℃, ventilation fans must be used for forced ventilation, please refer to Table 1-1 to select the appropriate ventilation volume.

◆ For users with a large amount of air consumption, in order to reduce the times of starting of the air compressor and prolong the service life of the air compressor, please equip an external air receiver by referring to Table 1-1.

Attention

For the parameters of installation conditions such as power supply, indoor ventilation, minimum installation spacing, copper cable cross-sectional area, external air receiver, and air switch, see Table 1-1 for details.

Installation conditions

Motor power Kw	Power supply V/Hz	Indoor ventilation m^3/min	Min. installation spacing in	Cross-sectional area of copper cable mm^2	Air switch A
1.5	220/50	20	500	4	16
1.5	380/50	20	500	2.5	16
2.2	220/50	25	500	4	25
2.2	380/50	25	500	2.5	16
3.7	380/50	40	500	2.5	16
5.5	380/50	55	700	4	32
7.5	380/50	75	700	6	32
11	380/50	110	700	6	32
15	380/50	150	700	10	63
18.5	380/50	190	700	10	63
22	380/50	220	1000	16	63
30	380/50	300	1000	16	80
37	380/50	400	1000	25	100
45	380/50	450	1000	25	120

Table 1-1

Warning

1. The main power supply must be turned off when conducting inspections and electrical operations!
2.The electrical installation of the air compressor must be operated by a professional electrician!
3. The ground wire of the air compressor must be connected to the ground wire of the power supply!

Attention

The air compressor must be rotated strictly in accordance with the direction marked on the machine headstock. If a newly installed air compressor is running in reverse direction, it must be stopped immediately, cut off the power supply and exchange any two of the three live wires connected, and then adjust the phase sequence of the power supply.

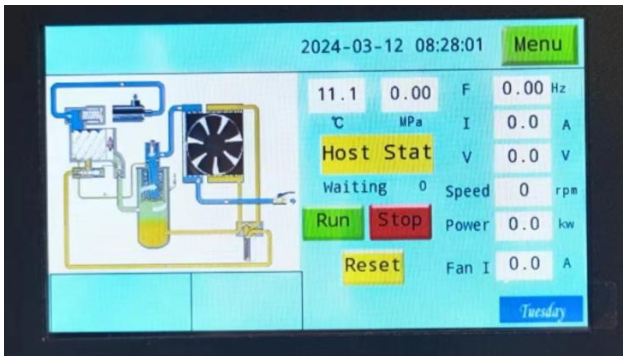
Warning

The air compressor must be rotated strictly in the direction marked by the machine headstock. If it runs in reverse direction, it may be damaged!

Warning

It is strictly forbidden to cover the air inlet and outlet of the machine case to prevent fire and overheating accidents!

Instructions for use (integrated controller)



Air compressor operation

After turning on the power, the indicator lights on the operation panel will light up normally. When there is no fault alarm, it will automatically enter the login system platform interface.

This interface mainly includes: input voltage, slave station number (displayed as master station: number of slave stations, maximum support for three slave station devices), exhaust pressure, start pressure, running time, start button, stop button, function status display, and function area button.

◆**Start:** Click the start button to start the air compressor according to the system's set time logic sequence. The status of the air compressor changes to: running standby and loading; When the compressor is in automatic standby mode, the display shows running standby; When the compressor is in operation, the display shows loading。

◆**Stop:** Click the stop button to stop the air compressor according to the system's set time logic sequence. After stopping, the air compressor enters a standby state.

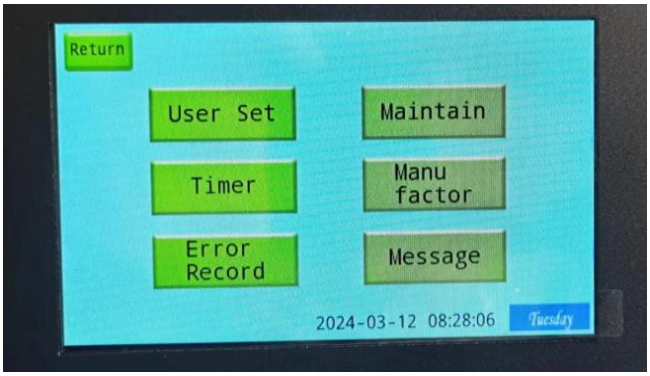
◆**Operating status:** Indicates the operating status of the air compressor.

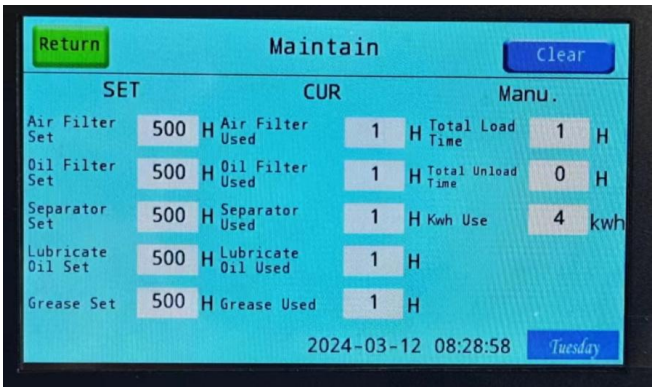
◆**Exhaust pressure:** It refers to the reduction pressure of the air compressor, which will cause a reduction action when reaching the set value.

shut down when it reaches the set pressure value.

◆**Starting pressure:** refers to the loading pressure of the air compressor, which will start the loading action when the set value is reached.

◆**Running time:** The cumulative running time of each air compressor.





Click the Run Data interface button, and the page will automatically jump to the Run Data interface; This interface mainly provides users with operating data of the air compressor, including temperature data and operating time data of the air compressor head, as well as the number of starts and stops of the head.

Click the parameter setting button, and the page will automatically jump to the parameter setting interface; This interface is mainly used to set the operating parameters and protection maintenance parameters of the

air compressor.

◆**Start interval :** The interval time between starting each air compressor when clicking the start button.

◆**Shutdown interval:** When the stop button is clicked, the interval time between each air compressor stops.

◆**Pressure reduction:** When the air compressor reaches the set pressure, it gradually decreases according to the pressure value.

◆ **Increase pressure:** The air compressor gradually increases according to the pressure value when it reaches the set pressure.

◆**Warning shutdown pressure：** The air compressor will automatically Click on the function selection interface to enter the interface shown in the figure:

◆**Stop fan TEMP:** When the machine head drops to the set temperature, the fan starts and stops running.

◆**Alarm TEMP:** The alarm temperature at which the head temperature of the air compressor is too high.

◆ **Stop TEMP:** When the head temperature of the air compressor reaches the set value, the air compressor will be protected from shutdown.

◆**Polling time:** When one air compressor is balanced and loaded, when the timer reaches the set time, one resting air compressor will be turned on that the time

◆**Stop time:** When one air compressor is balanced and loaded, when the timer reaches the set time, one resting air compressor will be turned on that the time

◆ **Boost protection pressure:** After the backend pressure drops to the boost pressure, start the air compressors one by one. After reaching the boost protection pressure, the air compressors will no longer be put into the machine head for loading. The protection pressure for the machine must be greater than the machine pressure and less than the shutdown pressure by 0.85 Mpa .

◆ **Scroll number:**The system contains the maximum number of units

◆**Intake filter** : Set the maintenance interval for the intake filter element

◆**Bearing grease:** Set the maintenance cycle for

required. Select the operator, enter the password 88,enter and then click on parameter settings again to directly bearing grease

◆**Belt:** Set the maintenance cycle for the belt

◆**Sealing ring:** Set the maintenance cycle for the sealing ring

◆**Phase voltage:** Set the phase sequence protection voltage value, which has been set by the manufacturer at the factory. If there is an alarm abnormal due to voltage fluctuation on site, it can be manually modified

◆**Phase failure voltage:** Set the detection value of phase loss voltage, which has been set by the manufacturer before leaving the factory. If there is an abnormal alarm caused by voltage fluctuation on site, it can be manually modified

◆ **Alarm frequency:** If the number of loads on the same machine head of the device exceeds the set value

1 minute, an alarm will be triggered. Used to prevent machine damage caused by frequent machine starts and stops.

◆ **COM1 station number:** slave communication station number.When the device is a slave, the communication station number of the device's slave is displayed.

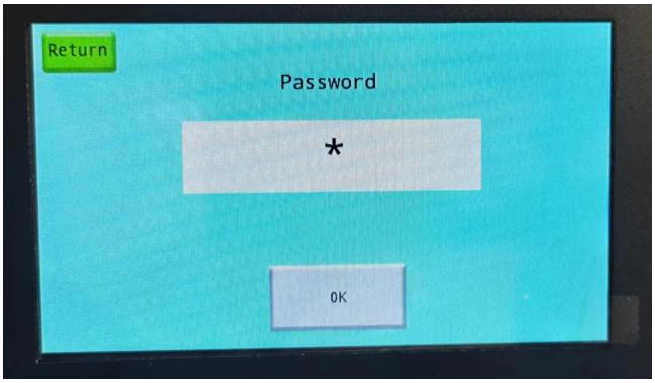
◆ **COM2 station number:** When the device is a host, the polling station number for communication with the slave is displayed.

◆ **Main startup pressure:** effective when the device is the main unit, set as the startup pressure of one in use and multiple backup units.

◆**Main reducing pressure:** effective when the equipment is the main unit, set as the reducing pressure of one in use and multiple backup main units.

◆**Starting pressure:** When the device is the host, it is effective and set to the starting pressure of one in use and multiple backup slave machines.

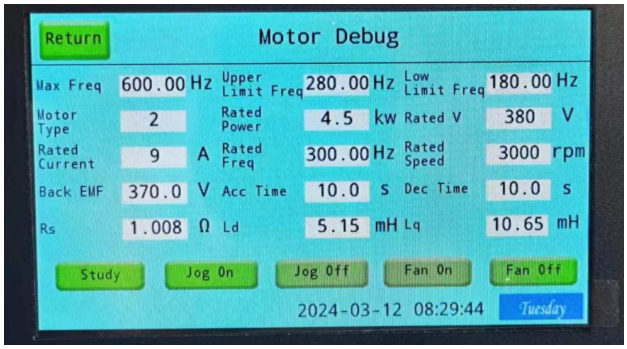
◆ **From reducing engine pressure:** When the device is the host, it is set to reduce the pressure of one in use and multiple backup slave machines.



Click on parameter settings: Permission management is

Attention

When the air compressor body is overheated or the motor is overloaded, the system will automatically stop and the fault indicator lamp will be turned on!



Clicking on manual debugging will enter the manual operation interface, as shown in the figure. After turning on the manual switch, any air compressor and fan can be started separately to debug the air compressor. If debugging is completed, the manual switch needs to be

Attention

When the air compressor runs for the first time, it must run at 0 pressure for 5 minutes. After it is normal, it can run it at increase pressure!

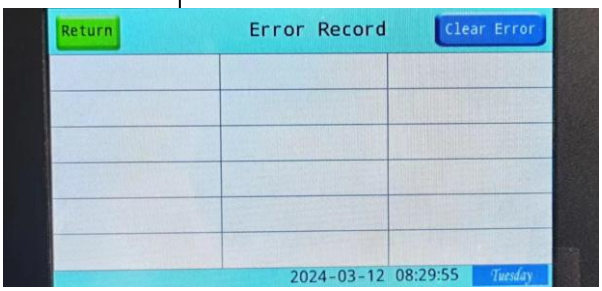
Warning

It is strictly forbidden to remove or short-circuit the temperature protector to prevent the air compressor from losing its protection and being damaged!

It is strictly prohibited to set the upper limit of the gas supply pressure above the value marked on the nameplate, and the pressure difference must not be less than 0.85 Mpa!

Warning

It is strictly forbidden to set the upper limit of air supply pressure above the value marked on the nameplate, and the pressure difference is strictly forbidden to be lower than 14.5 Psi!



Alarm

When clicking the alarm button, the interface you will see is as shown in the figure:

In this screen, the user will be intuitively informed of the reason for the sudden shutdown of the air compressor without human intervention. The fault displayformatis:month/day/year/hour/minute/second,With fault information for convenient and quick maintenance.

When the following situations occur, the air compressor should be immediately shut down for inspection. After identifying the cause and troubleshooting, the air compressor can be started and operated:

◆Air leakage, electric leakage, or abnormal temperature rise, with abnormal noise;

◆ The pressure suddenly increases, and the pressure indication exceeds the set pressure;

◆ When the air compressor stops working, the motor reverses;

◆When the air compressor is working, the exhaust fan on the top of the chassis does not work.

◆ **Address of slave station 3:** Set the communication address of the third slave station

◆ **Language:** Support for switching between English and Chinese operating interfaces. If you need to customize other languages, please contact our company

◆ **Dryer:** default to none, and can choose between cold drying machine and suction drying machine. Different control logic corresponds to Y0 point output to control the start and stop of the rear drying machine.

◆ **Manufacturer information:** You can choose the startup screen and manufacturer contact information

Fault handling

When an abnormality occurs in the air compressor, the fault indicator light lights up. Firstly, the fault must be identified Only through comprehensive analysis can effective solutions be found. You can proceed according to the table below Troubleshooting and handling. If the reason cannot be found and it is difficult to handle, please contact the dealer or our company for assistancePost service personnel.

phenomenon	cause analysis	cure
The air compressor is not running	Not plugged in	Plug in the power supply
	The power supply is not properly connected	Properly connected
	The fuse of the circuit is broken	Replace the fuse
	Poor starting switch	Replace switch
	motor fault	Contact the dealer for replacement
	Excessive current, thermal relay protector open	Stop the machine and open the chassis to reset the thermal relay protector
	The head temperature is too high, and the temperature protector is working	Stop the machine and turn on the chassis for heat dissipation
The air pressure cannot rise	There is a leak in the pipeline	Contact the dealer for replacement
	Reverse operation of air compressor	Change the phase sequence of the power supply
	Abnormal pressure setting value	Readjust
	Suction filter clogged	Clean or replace
Leakage of safety valve	Poor safety valve	replace
	Poor pressure setting value	Readjust
Abnormal sound	Running	After confirming the running direction, change the phase sequence
	Host exception	Inspect, repair, or replace
	Belt sliding	Confirm elasticity and re tighten
	Abnormal motor	Inspect, repair, or replace
	Poor contact of cooling fan	Inspect, repair
	Loose screws, etc	Inspect, repair
The temperature of the main engine rises sharply	Suction port, suction metal mesh blocked	Clean the suction port and suction metal mesh
	Blocked exhaust port	Clean the exhaust port
	Poor exhaust fan, blocked	Clean or replace the ventilation fan
	The ambient temperature is high and ventilation is not ideal	Add exhaust fans and forced ventilation in the environment
During shutdown, the motor reverses direction	Damaged one-way valve	Immediately change the check valve

After-sale service

Installation and training

The company provides installation guidance and operation training to user operators through phone calls or on-site personnel. The training content includes routine operations, daily maintenance, troubleshooting, etc.

⚠Attention **When repairing and maintaining, please be sure to use our company's genuine components!**

⚠Warning **It is prohibited to modify this air compressor equipment, otherwise it will lose its warranty qualification!**

Warranty coverage!

1. Under normal use, for any malfunctions that occur during the warranty period, we willprovide free repair of the product and replacement of components.

2. During the warranty period, if one of the following situations occurs, free repair services will not be available:

◆Failure to use according to the instructions resulting in abnormal operation, malfunction, and damage;

◆We did not use our company's genuine components during maintenance and repair.◆Faults and damages caused by abnormal circumstances such as force majeure.

3. Outside the warranty scope and beyond the warranty period, our company provides lifelong paid repair and maintenance services at a reasonable price.

Air compressor maintenance

Daily maintenance of oil-free vortex air compressors is essential. Proper use and maintenance not only meet the requirements of the compressor, but also extend its lifespan. The oil-free vortex air compressor has been tested and its functions have been verified before leaving the factory. Daily maintenance should be carried out as listed in the following table:

Inspection items	Inspection content	Maintenance Time						
		day	200 hours ~ 1 month	1200 hours ~ 6 month	2500 hours ~ 1 year	5000 hours ~2 years	10000 hours ~ 4 years	Notes
Air storage tank drainage	Open the drain valve	○						
Abnormal noise	Any abnormal noise	○						
Abnormal vibration	Any abnormal vibration	○						
Ventilator	Whether the rotation is normal	○						
Air intake core	Is it blocked		○		●			Replace when dirt is severe
Aspiration filter screen	Clean		○					Replace when dirt is severe
Safety valve	Action check		○					
Belt	Check the tension condition			○			●	Replace when severely worn
Pressure controller	Check				○			Replace in case of abnormalities
Motor	Check				○			
Pulley	Check					○		
Temperature sensor	Action check					○		
One-way valve	Replace					●		
Main engine bearing grease	Fill					●		
Host sealing strip Dust ring	Replace						●	

○ Marked for inspection ● Marked for replacement

★ The above maintenance cycle is based on the first arrival. If there are abnormalities such as high ambient temperature and excessive suspended solids in the air, timely maintenance should be carried out;

★ The intake filter element is a consumable item and is paid for service even during the warranty period. It is recommended to prepare it in advance for timely replacement.

Warranty Information

Product model:_____ Product number:_____

Purchase date:_____ Distribution unit:_____

User Name:_____ Contact information:_____

Warranty records

Warranty date	Fault and handling situation	Customer signature	notes