Screw Air Compressors

Instruction manual

Directory

Preface

Welcome to screw air compressors. Our products have been strictly inspected before leaving the factory, in order to ensure the best use effect of this machine, please read this instruction manual carefully before the unit is running.

1. Scope of application of this instruction manual

This instruction manual is suitable for the screw air compressor series. Please be sure to keep this instruction manual properly until the unit is scrapped.

2. The purpose of this instruction manual

This instruction manual can be used as an operation guide for on-site operators, and can also be used as a manual for engineering designers to select and design air compressor stations.

3. Knowledge required to read this instruction manual

If you have some mechanical and electrical knowledge, you will be able to better understand the contents of this manual and perform air compressor maintenance.

Safety precautions

1. Qualified operators

Only systematically trained operators can operate air compressors.

2. Safety precautions

2.1 The inlet power cable of the air compressor must match the power of the supporting motor of the air compressor, and a motor protection circuit breaker should be installed. In order to ensure the reliability and completeness of the equipment, it is necessary to have a reliable grounding device.

2.2 Before starting the machine, make sure that there is no one in the unit, check whether there are any items and tools left, and close the door. When turning on, the people around the unit should be notified to pay attention to safety.

2.3 Compressed air and electrical appliances are dangerous, and during maintenance or maintenance, it should be confirmed that the power supply has been cut off and warning signs such as "maintenance" or "no closing" should be hung at the power supply.

2.4 When the power is turned on for the first time or the power line changes, attention must be paid to whether the unit steering is running in the direction indicated by the arrow.

2.5 It should not work at a higher exhaust pressure than the exhaust pressure specified by the nameplate of the air compressor, otherwise it will cause the motor to overload and burn out.

2.6 When the air compressor fails or there are unsafe factors, do not force it to start, at this time, the power supply should be cut off, and a conspicuous mark should be made.

2.7 Fingers and clothes should be kept away from rotating fans and heat-generating parts such as oil and gas separators, pipelines, etc. All kinds of caps, parts and parts must not be removed when the machine is running, and the high temperature liquid and pressure air in the machine will cause serious personal injury and even death.

2.8 During shutdown and maintenance, it must be confirmed that the compressed air in the unit has been released, and the unit has been isolated from other air sources; Confirm that the unit is cooled.

2.9 When cleaning unit parts, non-corrosive safety solvents should be used, and flammable, explosive and volatile cleaning agents should be strictly prohibited.

2.10 The assembly of the compressor main engine requires highly skilled professionals and special tools. The user shall not disassemble and maintain the compressor host by himself. If the main unit fails, please contact our customer service center.

2.11 The parts of the compressor must be provided by the regular factory, and the special oil for the screw machine must be the oil specified by the company, and it is strictly forbidden to mix them, otherwise it will cause major accidents caused by carbon deposition in the system.

2.12 When the compressor is out of use in winter, the condensate in the cooler must be completely discharged to prevent rust and frost cracking.

2.13 Do not use compressed air in closed rooms and tunnels, and it is forbidden to use compressed air for breathing purposes.

⚠ Precautions for the use of air compressors

1. Please do not press stop when the machine is loaded, but press stop in the unloading state.
2. After the shutdown, you need to wait for the inverter fan to stop (about 2-3 minutes) before turning off the power (otherwise the inverter module is not sufficiently cooled and may fail).
3. In non-emergency state, the emergency stop button cannot be pressed or the power is suddenly turned off, which will lead to oil injection or unexpected failure of the main unit.
4. Be sure to install a ball valve between the gas tank and the whole machine.
5. The oil level should not be higher than the L position of the oil scope during operation, and the oil level should be the highest level of the oil scope H during refueling.
6. The temperature of the components in the machine often exceeds 100 degrees, please check the temperature before operation to avoid burns.

Chapter 1 Product Overview

1.1 Product introduction

Screw air compressor, is a kind of air compressor, there are two types of single and double screws, twin screw air compressor overcomes the shortcomings of single screw air compressor imbalance, bearing is vulnerable, has the advantages of long life, low noise, more energy saving, screw air compressor has simple structure, small size, no wearing parts, reliable work, long life, simple maintenance and other advantages.

Screw air compressors are light-load starting, resistant to impurities and liquid compression, highly reliable, and have the following advantages:

a.The main engine of the screw compressor has high efficiency and significant energy saving.

b. Smooth operation and low noise.

c .High reliability, long life, low fuel consumption, and low maintenance costs.

D. has a compact structure, reasonable layout and beautiful appearance.

e.adopts an integrated microcomputer controller, equipped with communication and remote control interfaces, high degree of integration, simple operation.

It is widely used in industry, agriculture, transportation, medical machinery, food, pharmaceutical, construction, textile and other sectors and other occasions that require compressed air.

1.2 Working principle

1. Inhalation process:

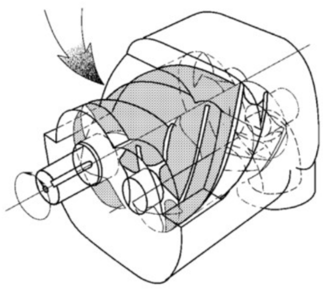
When the rotor begins to rotate, due to the gradual disengagement of one end of the tooth, the interdental volume is formed The expansion of the interdental volume forms a certain vacuum inside it, and this interdental volume is only connected with the suction port, so the air flows into it under the action of pressure difference, and in the subsequent rotation process of the rotor, the male rotor teeth continue to detach from the alveolar groove of the negative rotor, and the interdental volume will not increase again, and the interdental volume is disconnected from the suction port here, the air is closed between the teeth, and the suction process ends.

2. Compression process:

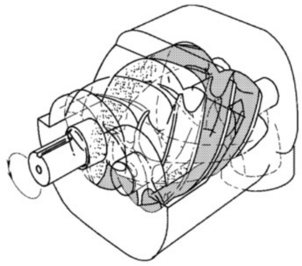
As the rotor rotates, the interdental volume decreases due to the meshing of the rotating teeth. The volume occupied by the air enclosed in the interdental volume also decreases, resulting in an increase in pressure that enables the compression process of the air.

3. Exhaust process:

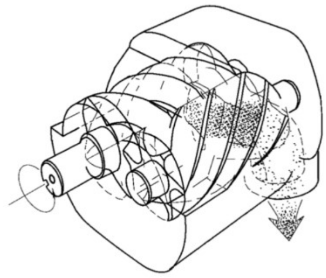
As the volume between the teeth continues to shrink, the gas with exhaust pressure is continuously transported to the exhaust orifice and discharged, and this process continues until the profile at the end is fully meshed. At this time, the compressed air in the interdental volume is completely discharged through the exhaust orifice, and the volume of the closed interdental volume becomes zero, and the exhaust process is completed.



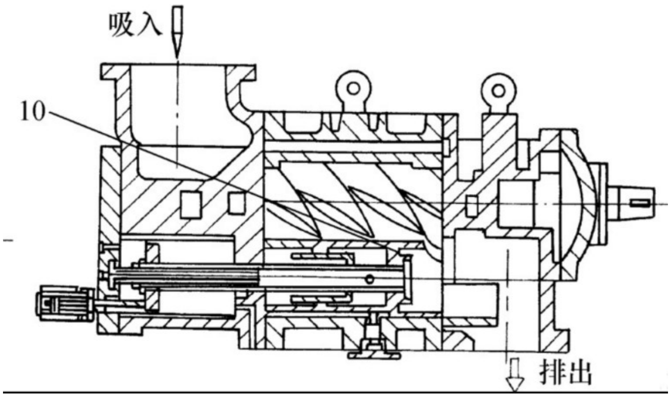
Inspiratory process

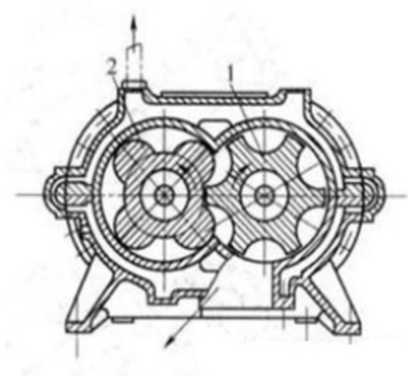


Compression process

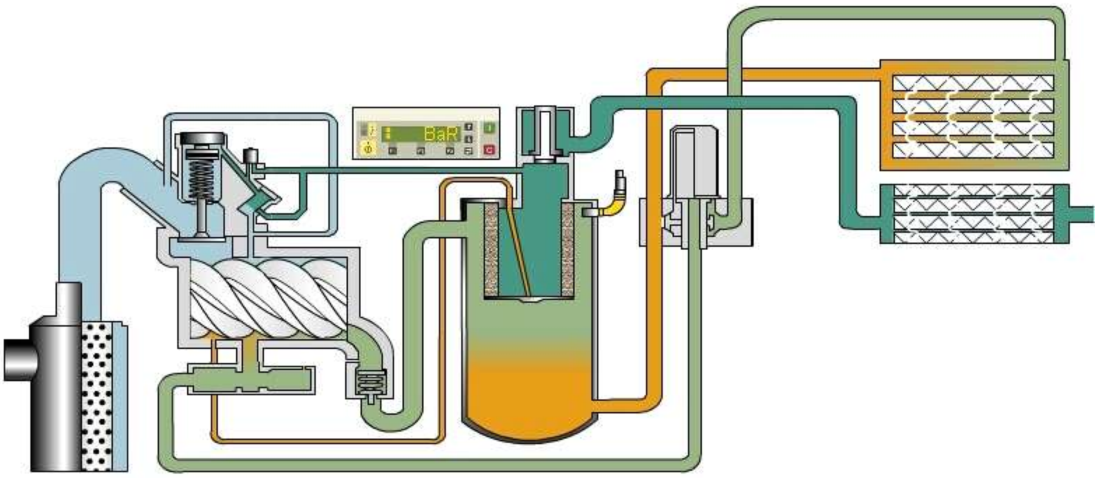


Exhaust process

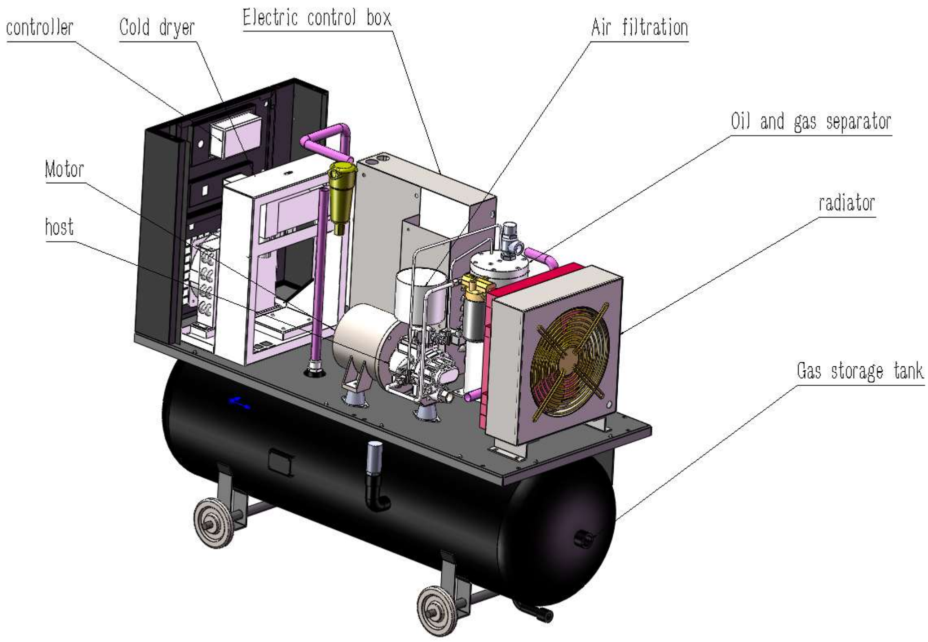




1.3 Product system flow chart



1.4 Schematic diagram of the position of each component



Chapter 2 Equipment Installation

2.1 Precautions before use

2.1.1 Arrival inspection

When the user receives the air compressor, he should open the box to check the following items, if you find that the product has problems and does not meet the order requirements, please contact the manufacturer or dealer.

1) Check the power supply voltage on the nameplate of the air compressor to confirm the specifications you ordered.

2) Visual inspection During transportation, whether electrical components are damaged or parts fall off

2.1.2 Handling

The control panel LCD display is fragile, so please pay attention to protect the control panel when handling it to avoid being damaged.

2.1.3 Custody

2.1.3.1Short-term storage

1) Environmental conditions for short-term storage

project	Storage requirements	
Ambient temperature	-10 ~ +50℃	Do not store in places where condensation and freezing occur due to drastic changes in temperature
Storage temperature	-40 ~ +65℃	
relative humidity	5 ~ 95%	
Environmental requirements	No direct sunlight, no dust, no corrosive gas, no combustible gas, steam, dripping water, vibration environment.	

If there is a damp effect, change the desiccant regularly.

2) The condensate of the oil and gas separator should be discharged after a few days of shutdown.

2.1.3.2 Long-term storage

1) Long-term storage must first meet the requirements of short-term storage.

2) In order to prevent the influence of humid gas, it should be strictly encapsulated, and desiccant should be put in to make the relative humidity in the encapsulation below 75%.

3) For long-term storage, use a 500V or 1000V megaohm meter to measure the insulation resistance of the motor winding before starting, and its value should not be less than 1 megaohm. If it is not satisfied, the motor should be dried.

2.2 Installation site requirements and suggestions

1) The air compressor should be installed in a clean, well-lit and well-ventilated room, and it is strictly forbidden to use it outdoors if it does not meet the protection standards, and it is strictly forbidden to use it in environments with exposure to sunlight or rain, steam, humidity or corrosive gases, explosive gases and large dust content.

2) The ambient temperature of the air compressor room should be lower than 40°C and higher. High ambient

temperature can easily cause the unit to stop at high temperature and affect the exhaust volume of the compressor. The temperature must be higher than and controlled above the freezing point temperature of water and lubricating oil.0℃0℃

3) The distance between the air compressor body and the wall and ceiling should be more than 600mm, and sufficient space should be reserved for future maintenance.

4) Installed on a solid, level foundation. An uneven foundation can lead to increased noise and vibration in the air compressor.

2.3 Pipeline installation

1) When the main pipeline is piped, the pipeline must have a slope of 1°-2°, which is conducive to the discharge of condensate in the pipeline.

2) Minimize the use of elbows and various valves in the pipeline to reduce pressure loss.

3) The pipeline used for installation should meet the high-pressure use standards.

2.4 Electrical installation

2.4.1 Power supply specification reference table

Motor power (kW)	Voltage (V)	Current (A)	Cable section (mm^2)	Circuit Breaker Capacity (A)
3	240	23	6×2+PE 240V/220V	63

2.4.2 Selection of circuit breaker

1) The low-voltage circuit breaker is mainly used to cut off the main power supply of the air compressor and protect the motor.

Choose the appropriate circuit breaker according to the rated current of the main motor, and the circuit breaker must have the function of motor overcurrent protection and automatic disconnection of leakage.

2) The circuit breaker equipped must be a motor protection type circuit breaker, and its instantaneous action setting value is 8-15 times the rated current of the motor. Avoid using power distribution circuit breakers. If a power distribution circuit breaker is used, its instantaneous action setting value should be 14 times the rated current of the motor, otherwise the circuit breaker will malfunction when the motor starts.

3) The circuit breaker should be installed next to the air compressor unit to facilitate the maintenance of the air compressor. Installation should comply with corresponding safety protocols.

2.4.3 Cable selection

The appropriate cable should be selected according to the rated voltage and rated current of the air compressor, and it should also be determined according to factors such as environmental conditions, laying method and product technical data. Its selection and installation are generally considered according to the following principles:

1) The cable should be buried or buried through the pipe as much as possible to reduce the damage of the cable by external pressure. Plastic sheathed cables should be laid through pipes.

2) The low-voltage power cable should be selected as a five-core power cable, and the sheath method of the cable should be selected according to the laying method.

3) The cable section should be appropriately increased when the ambient temperature is high, and the cross-section must be increased to reduce the voltage drop when the laying distance is long.

4) The low-voltage cable in the table is a BV type PVC insulated cable. If you choose other cable models, please follow the above principles to choose the appropriate cable. If the user has no experience in cable selection, he can consult the cable manufacturer.

2.4.4 Power supply requirements

The user's incoming power supply should be consistent with the rated voltage and frequency of the air compressor.

Power supply voltage requirements:

1) The voltage fluctuation should not be too large, and the voltage fluctuation is -10%~+10% of the rated voltage of the motor.

2) The voltage imbalance should not be too large, and the imbalance of the voltage of a single power supply should not exceed 5%. If the fluctuation is too large, a voltage regulator must be installed or the power grid must be rectified.

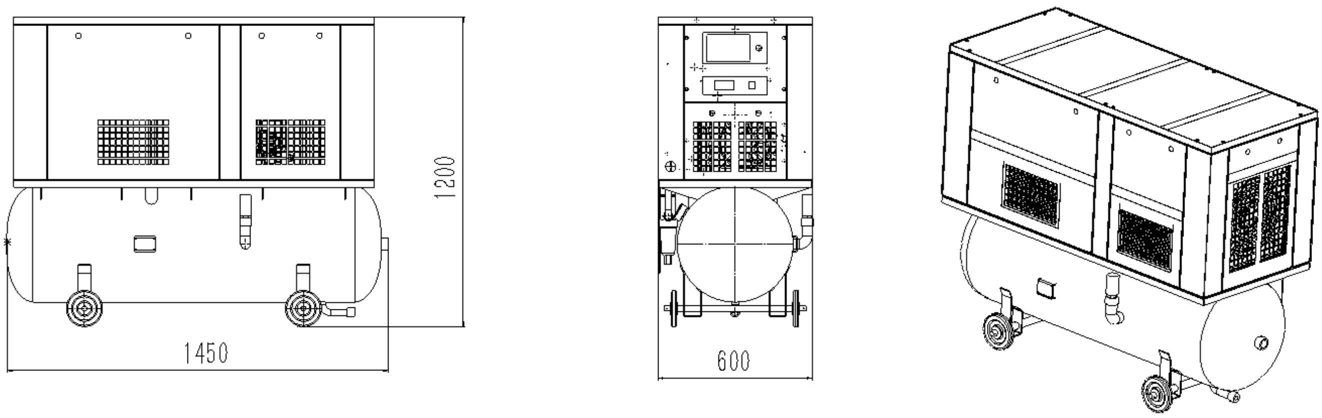
3) The capacity of the power grid meets the starting requirements of the motor, otherwise it is difficult to start the motor and even cause the circuit breaker to trip.

4) It is best to use a separate power system for air compressors, which is easy to maintain.

2.4.5 Grounding requirements

The body and motor shell of the air compressor should be reliably grounded to prevent static electricity from causing oil and gas separator fire and leakage hazards. Use 2.5mm2 yellow and green two-color PE wire to connect the grounding terminal in the air compressor control box to the grounding body. After the grounding is completed, the grounding resistance should be measured with a grounding resistance measuring instrument, and the grounding resistance should be less than 4 ohms.

2.5 Product dimensions
2.5.1 Dimensions of stand-alone products



Chapter 3 Operation Operations
3.1 Trial operation of new machines

If the new machine is debugged, the downtime is too long, or it is moved to another location for use, the test run procedure must be executed before the boot is turned on.

3.1.1 Check whether the pipeline joints, instruments, circuit connection joints, etc. are loose, falling off or damaged due to transportation, installation, etc. If so, please tighten or replace it in time; Check if the exhaust valve is open.

3.1.2 Connect the power cord and ground wire, test whether the power supply voltage is correct, and whether the single-phase power supply is wrong.

3.1.3 Check whether the oil level pointer in the oil and gas separator is within the safety line. If not, please increase the lubricating oil appropriately.

3.1.4 Check the cooling system.

3.1.5 Check whether the safety valve and the relief valve are damaged.

3.1.6 After rotating the emergency stop button to reset, press the start button and the air compressor starts running.

3.1.7 Observe whether the display screen has abnormal indications, whether the unit can be loaded normally, and press the stop button immediately if there are abnormal sounds, vibrations, water leakage, oil leakage and other abnormal phenomena, and check after stopping.

3.1.8 Observe whether the unit can automatically stop when the exhaust pressure rises to the unloading pressure set value, and whether it starts running when the pressure drops to the loading pressure set value.

3.1.9 Whether the stop button is normally stopped.

3.2 Pre-operation inspection

In order to make the unit operate stably and reliably, please do the following checks before starting the unit.

3.2.1 Confirm that the pressure of the oil and gas separator is 0Mpa, slightly open the oil drain valve at the bottom of the oil and gas separator, drain the condensate in the oil and gas separator, and close the oil drain valve.

3.2.2 Observe the oil level to ensure that the lubricating oil level is within the safety line of the oil level gauge when the unit is running. If there is too much lubricating oil, some oil should be removed, and if there is too little lubricating oil, oil should be replenished.

3.2.3 Close the power supply, open the exhaust valve, and confirm that the pressure in the system is 0Mpa

3.3 Operation operation

This unit is controlled by microcomputer, with a high degree of automation, and has perfect safety protection, and generally does not need to be supervised by personnel.

3.3.1 Start

Press the "start" button, the main motor starts, the frequency converter is preloaded, the venting solenoid valve is closed, the preloading is completed, the air enters the compressor from the air filter, and the unit pressure gradually increases.

3.3.2 Operation

When the pressure increases to the set value of "unloading pressure", the unit runs to the highest set pressure, reaches the maximum set pressure, the inlet valve is closed, and the system pressure in the unit gradually drops to 0MPa. When the pressure drops to the "loading pressure" set value, the unit starts automatically, the inlet valve opens, and the unit pressure gradually increases.

3.3.3 Shutdown

Press the "stop" button, the system enters the shutdown countdown, the main motor runs the frequency conversion, the intake valve is closed, and when the countdown is 0, the motor stops.

3.3.4 Start after stopping

After the shutdown countdown is completed, the running status is displayed (restart delay) and a countdown is performed, and when the countdown reaches 00, the start button can be pressed again to start.

3.3.5 Emergency stop

3.3.5.1 Fault protection emergency stop

When major faults such as motor overload and exhaust overtemperature occur, the unit protects emergency stop, locks the fault alarm, and cannot start by pressing the "start" button. After troubleshooting, the reset controller is ready for operation.

3.3.5.2 Use the "emergency stop button" to park

When there is an emergency during the operation of the unit, the "emergency stop button" must be pressed to stop. After pressing the "emergency stop button", the main motor and fan will stop immediately.

Note: When the unit is operating normally, do not press the emergency stop button to stop. When the unit has abnormal noises, vibrations, smells and other abnormal phenomena, the emergency stop button should be pressed immediately to stop the emergency stop. Pressing the emergency stop button may cause the system to spray oil, which can be resumed once the pressure has stabilized.

3.4 Safety protection

3.4.1 Motor overload protection

The unit has the functions of overcurrent protection unloading of the main motor and overload protection of the main motor and fan motor.

3.4.2 Exhaust temperature is too high protection

The over-temperature warning temperature setting value is 105 °C, and when the exhaust temperature is higher than this set value, the alarm will not stop. When the exhaust temperature is higher than 108°C, the overtemperature alarm and stop the machine.

3.4.3 Protection against low ambient temperature

The ambient temperature is below -15°C and the equipment cannot be started.

3.4.4 Exhaust pressure overpressure protection

Safety valve: When the pressure in the control panel is improperly set or malfunctions, causing the pressure at the oil and gas separator outlet to exceed the rated exhaust pressure by 1.1 times, the safety valve will jump out of the pressure relief.

Bleed valve: When the oil and gas separation filter element has reached its service life or is blocked due to a large pressure difference, and the pressure in the oil and gas separator has exceeded a certain value of the rated exhaust pressure (the opening pressure of the bleed valve is the rated discharge pressure + 0.15MPa), the bleed valve will jump out of the pressure relief. When the bleed valve is in action, the oil-gas separation filter element must be replaced.

The safety valve and release valve have been adjusted before leaving the factory, please do not adjust them arbitrarily and send them for inspection regularly.

3.4.5 Alarm prompt for the service life of lubricating oil and consumable parts

The service life time of lubricating oil, air filter, oil filter, and oil-gas separation filter element prompts the shutdown to tell the user to replace the lubricating oil and replace the loss parts.

3.4.6 Loss parts blocking alarm prompt

Air filter, oil filter, oil-gas separation filter element blockage alarm. The user must replace it in the shortest possible time, otherwise it will affect the performance and safe operation of the air compressor.

Chapter 4 Electrical Operation

4.1 Controller

The following applies to MAM6080 controllers, MAM6070 MAM6090 references

4.1.1 Key instructions

——Start/stop button:

- When the air compressor is in standby mode, press this button to start the air compressor operation;
- When the communication mode is set to linkage and the communication address is 1, press this button to start the operation of the air compressor and start the linkage control function at the same time。
- When the air compressor is running, press this button to stop the air compressor running;
- When the communication mode is set to linkage and the communication address is 1, press the stop button to stop the operation of the air compressor, and stop the linkage control function at the same time, and the host will no longer send commands to the slave。

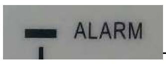
4.1.2 Indicator light description

——power supply:

The indicator light turns on when the controller is powered on.

——run:

When the air compressor motor is running, the operation indicator light is on.



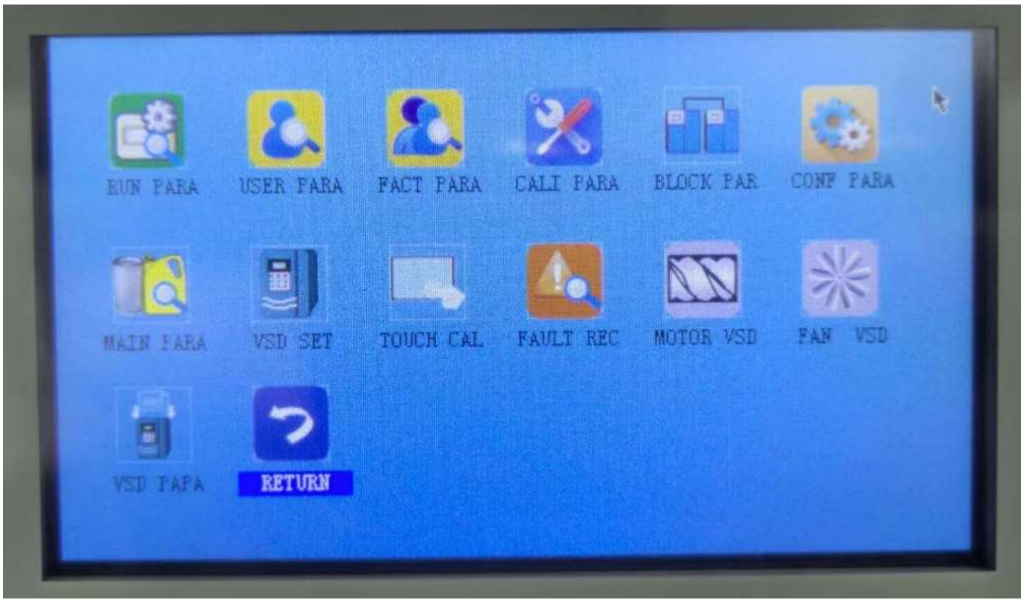
——fault:

During early warning, the fault light flashes; When the fault is stopped, the fault light is always on, the fault is cleared, and it is extinguished after resetting.

4.1.3 Status display and operation

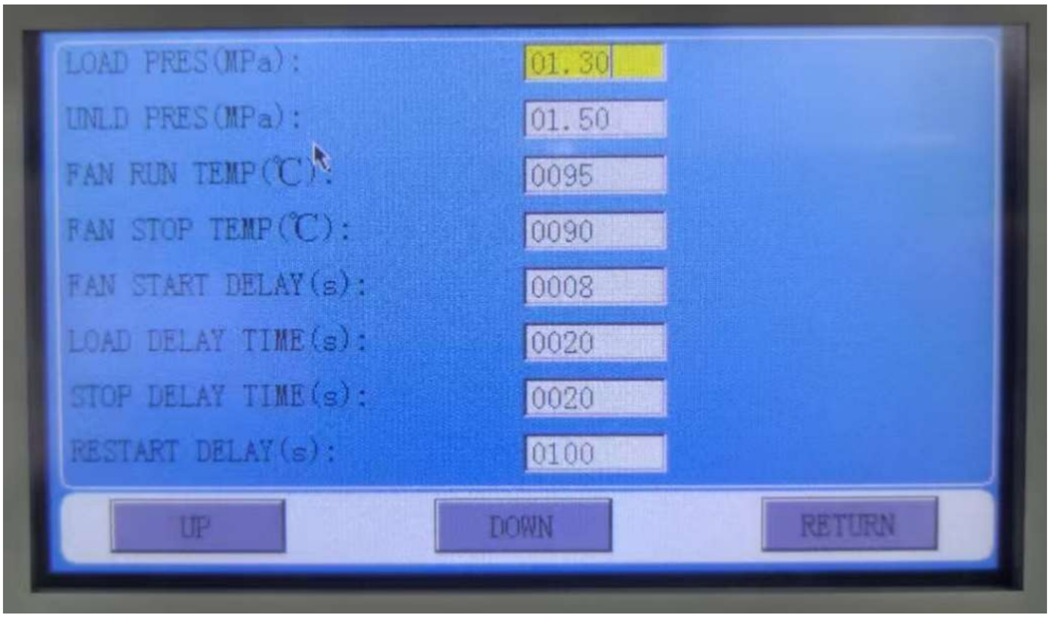
The touch screen displays the controller "MAM-6080" after powering on, and after a delay of 5 seconds, the following interface is displayed

Users can click the "Menu" button on the display interface, or press it > Enter the following menu selection interface, through which the user enters the corresponding parameter viewing and setting interface.



4.1.4 User parameters

The user parameters are used to store the relevant data of the air compressor user settings, and the user needs to verify the user password to modify the user parameters



4.2 Alarm and fault

The controller will alarm when it detects the following faults, and the LCD screen will display the corresponding fault name. And the LCD backlight flashes, the buzzer sounds, and the display returns to normal after the fault is eliminated.

List of minor faults

serial number	Warning fault name	Examples of processing methods	Examples of fault causes
1	The air filter is used overdue	Replace the filter and set the filter usage time to zero	The use time of the controller exceeds the set allowable usage time
2	The oil and gas separator is used overdue	Replace the separator and set the oil and gas separator usage time to zero	The use time of the controller exceeds the set allowable usage time
3	The oil filter is used overdue	Replace the filter and set the oil filter usage time to zero	The use time of the controller exceeds the set allowable usage time
4	Lubricating oil is used overdue	Replace the lubricating oil and set the lubricating oil usage time to zero	The use time of the controller exceeds the set allowable usage time
5	High exhaust temperature (warning)	The ambient temperature is ultra-high, and there is a shortage of oil? Fan damage?	The corresponding input point of the controller opens

Shutdown when the following faults are detected. The LCD screen displays the corresponding fault name. And the buzzer sounded. After the fault is eliminated, the display returns to normal, the buzzer continues to chirp, press F2 to reset, and the buzzer stops chirping.

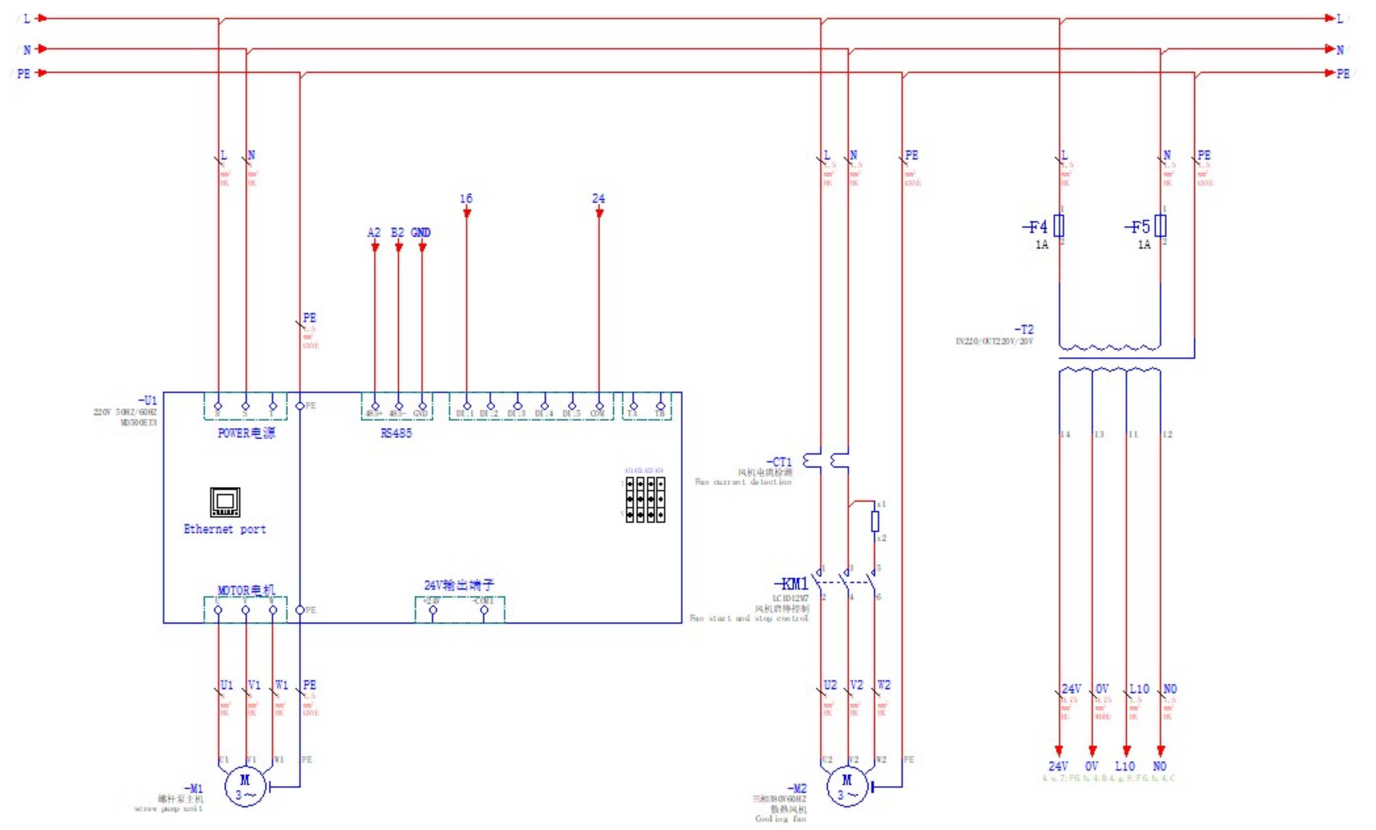
List of major failures

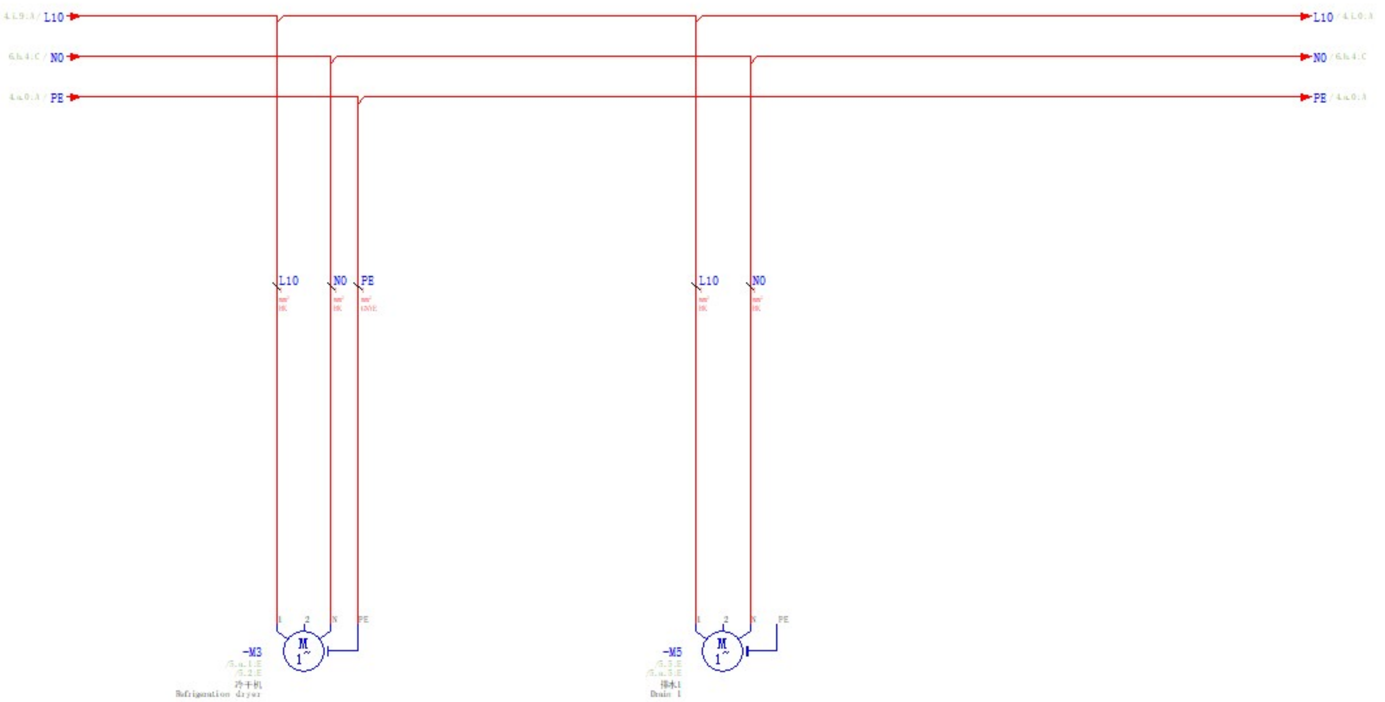
serial number	Shutdown fault name	Examples of processing methods	Examples of fault causes
1	High exhaust pressure	Refer to the air compressor manual troubleshooting table	Pressure above maximum pressure detected/pressure sensor failure/pressure sensor drift not calibrated
2	High exhaust temperature	Refer to the air compressor manual troubleshooting table	Temperature above maximum temperature / overtemperature protection contact is detected open
3	The main current is overloaded	Refer to the troubleshooting table of the air compressor manual to check and troubleshoot, and then start again for observation	The current exceeds the rated current and continues for a period of time
4	Fan current overload	Refer to the troubleshooting table of the air compressor manual to check and troubleshoot, and then start again for observation	The current exceeds the rated current and continues for a period of time
5	Missing phase	The current in phase A and B is zero	Check the motor and wiring, such as contactor contacts, whether they are on
6	Faulty temperature sensor	Whether the temperature sensor is short-circuited, the circuit is open	Replace the sensor
7	The temperature jumps greatly	Whether the temperature sensor signal line is shorted to the shield	Replace the sensor
8	Faulty pressure sensor	Whether the pressure sensor is short-circuited and open-circuited	Replace the sensor
9	The running time is overdue	Procedural issues	Consult the manufacturer

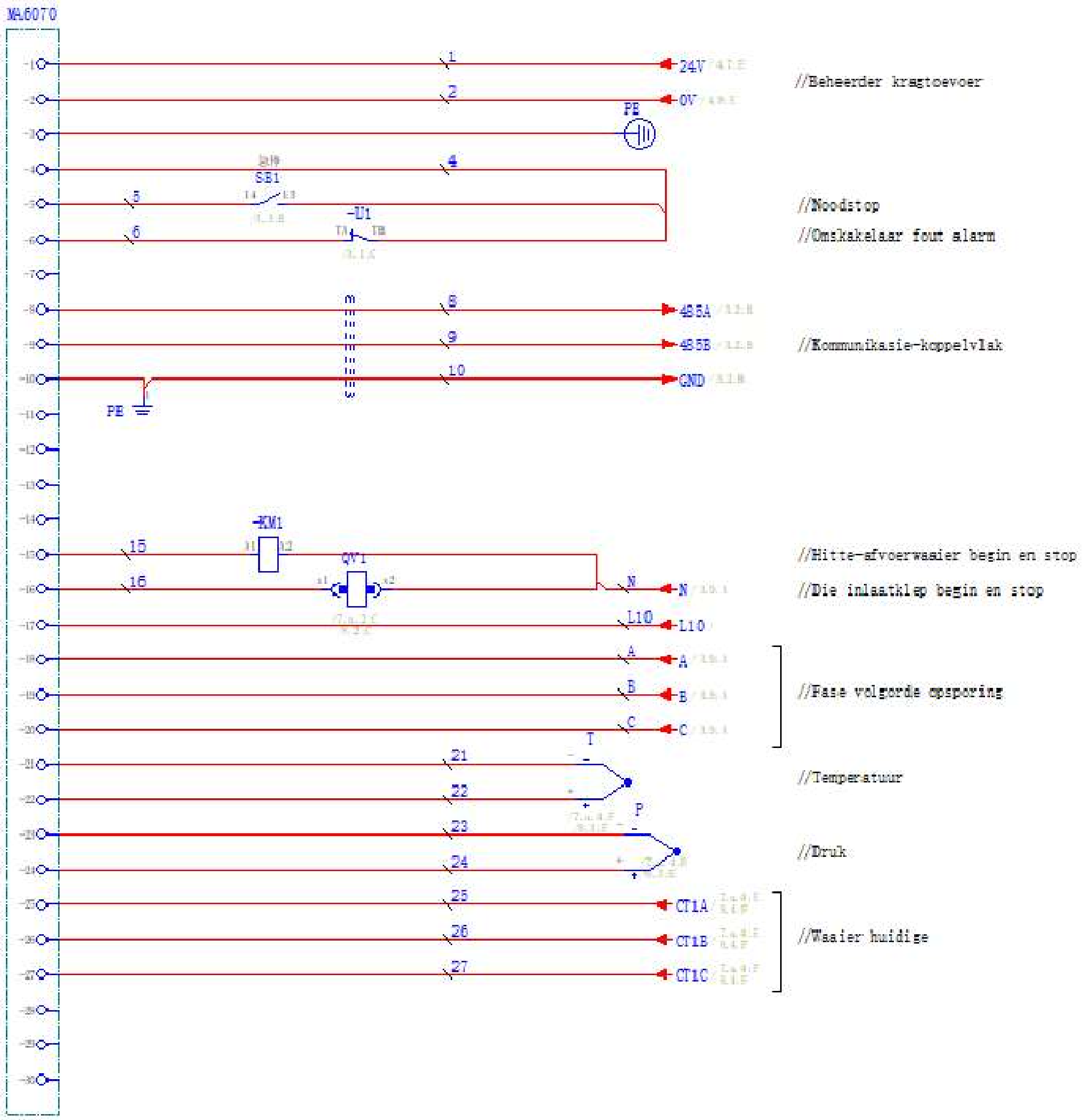
After alarming, if the buzzer sounds for more than 10 minutes, stop chirping.

4.3 Electrical schematic diagram

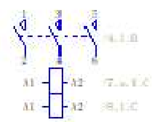
main circuit







MA6070
24V
0V
PE
SB1
-U1
485A
485B
GND
PE
-KM1
QV1
N
L10
A
B
C
T
P
CT1A
CT1B
CT1C
//Beheerder kragtoevoer
//Noodstop
//Omskakelaar fout alarm
//Kommunikasie-koppelvlak
//Hitte-afvoerwaaier begin en stop
//Die inlaatklep begin en stop
//Fase volgorde opsporing
//Temperatuur
//Druk
//Waaier huidige



Chapter 5 Maintenance and troubleshooting

5.1 Safety measures to be taken during maintenance and repair

Maintenance personnel must have certain mechatronics knowledge and operation skills, have a certain understanding of air compressors, and must carefully read all the contents of the instruction manual before maintenance. Unit maintenance is dangerous, and it is recommended not to carry out maintenance without authorization unless necessary to avoid system damage and personal injury.

5.1.1 Maintenance work must be carried out when the machine is stopped, the shut-off valve is closed, and the power supply is cut off.

5.1.2 Before disassembling any pressurized element, it must be determined that the pressure in the system has dropped to zero.

5.1.3 Some components in the system have a high temperature when they are just stopped, so be careful to avoid burns during operation.

5.1.4 After maintenance, it must be confirmed that no tools, parts, rags, etc. are left in the compressor.

5.2 Unit maintenance items

5.2.1 Cleaning and replacement of air filter elements

The operating environment determines the maintenance interval of the air filter element.

1) Clean the air filter element

Regularly clean the air filter element according to the operating environment to ensure that the air compressor is running in the best condition.

Remove the air filter element and use compressed air to blow away the dirt from the inside out.

2) Replacement method

a. Remove the air filter cover after rotating the air filter cover about 20° in the OPEN direction indicated on the cover.

b. Remove the air filter element and replace it with a new air filter element.

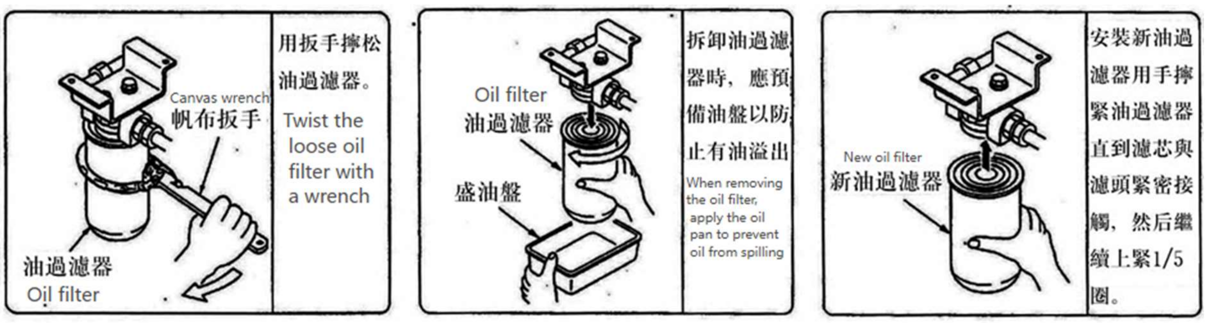
c. Press the air filter cap.

Air filter (housing, filter element, and cover from bottom to top)

5.2.2 Replacement of oil filter

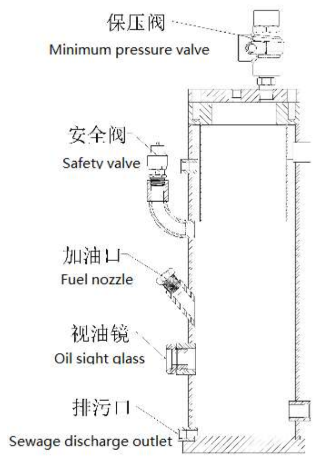
1) Schematic diagram of oil filter replacement

2) After the replacement is completed, turn on the machine to check whether there is oil leakage, and if there is no oil leakage, the replacement is completed.



Schematic diagram of oil filter replacement

5.2.3 Replacement of oil-gas separation filter element
1) The replacement steps of the oil and gas separation filter element are as follows:
a. After the air compressor is stopped, close the air outlet to confirm that there is no pressure in the system.
b. Use special tools to disassemble the external oil and gas separator.
5.2.4 Replacement of lubricating oil
3) The oil change steps are as follows:
a. Make sure the unit is completely shut down and ensure that there is no air pressure in the oil and gas separator. Disconnect the main circuit, mark and disconnect the power supply of the starter, and hang the maintenance operation sign to prevent secondary closing.
b. Thoroughly drain the lubricating oil in the system:
disconnect the low point and drain oil from the pipe;
Drain oil from the oil and gas separator drain valve;
Pour out the oil from the filter; and reinstall the used oil filter.
c. Inject 50% new oil into the system:
Start the compressor and watch it run.
Run for 5 minutes or until the exhaust temperature stabilizes, then shut down.
d. Drain the oil in the air compressor thoroughly.
e. Replace a new oil filter, oil-gas separation filter element (replacement is synchronized with oil change).
f. Fill the system with new oil and reinstall the filler plug.



Schematic diagram of oil and gas separator

warn	Pressurized air and oil can cause serious personal injury or death. Before removing valves, nuts, plugs, mounting screws, and filters, turn off the compressor and release all pressure in the system, disconnect the main circuit, make marks, and disconnect the starter from power. Non-professionals are prohibited from performing unit maintenance!!!
dangerous	During and after operation, the compressor, oil and gas separator and all pipelines can be at high temperatures. High temperature can easily cause burns!!!

5.2.5 Cleaning of the cooler

Dust accumulation in air-cooled coolers will affect the heat dissipation effect of the air compressor and can easily cause overtemperature of the exhaust. The heat exchanger must be cleaned regularly to maintain efficient heat dissipation.

5.2.6 Oil and gas separator drainage

1) Excessive water can easily cause the lubricating oil to emulsify and deteriorate, and even cause the main engine to fail. The condensate in the machine must be removed before the next day is started, and the unit with the optional electronic drain valve ensures that the setting time is drained 2-3 times a day

2) If the air humidity is high and the air compressor is not running continuously, water should be put in three times a week, and the air should be deflated manually to ensure that the cooling fan is started at least once every two days.

3) When the pressure in the oil and gas separator is confirmed to be zero, the condensate at the bottom of the oil and gas separator can be discharged by slightly opening the blowdown valve at the bottom of the oil and gas separator.

Tips: For specific maintenance cycles and maintenance items, please refer to the random belt maintenance schedule

5.4 Common troubleshooting

Therefore, obstacles	Causes	Elimination method
1.Won't start	(1) Tripping of small circuit breakers. (2) The control panel connector is not plugged in. (3) The power supply is reversed in sequence. (4) Poor contact with the run button. (5) The emergency stop button is not reset. (6) Motor failure. (7) Loose electrical wiring. (8) Read the error message from the control panel. (9) Host failure.	(1) The electrical personnel overhaul the control circuit and close the gate. (2) Electrical personnel inspection. (3) Electrical personnel adjust the power supply phase sequence. (4) Electrical personnel maintenance and replacement. (5) Reset emergency stop button. (6) Electrical personnel maintenance and replacement. (7) Electrical personnel are overhauled and connected. (8) Take appropriate measures with reference to the manual. (9) If you cannot rotate the main unit manually, please contact our customer service center.
2.The running current is too high, the main motor is overloaded, and the fuse is blown out	(1) Exhaust pressure is too high. (2) The lubricating oil specification is incorrect. (3) The oil and gas separation filter element is blocked. (4) Abnormal power supply voltage. (5) There is a strong shock vibration nearby. (6) Host failure. (7) Poor contact with AC contactor.	(1) Look at the pressure gauge and adjust the pressure setting. (2) Check the oil number and change the oil. (3) Replace the oil-gas separation filter. (4) Electrical personnel adjust the power system. (5) Stay away from vibration sources or take vibration reduction measures. (6) If you cannot rotate the main unit manually, please contact our customer service center. (7) Electrical personnel maintenance.
3. The exhaust temperature is often too high	(1) Insufficient lubricating oil. (2) Clogged oil cooler. (3) Dust filter is clogged. (4) The lubricating oil specification is incorrect. (5) Oil filter blockage. Fan failure. The temperature sensor cable is loose. The throttle plug of the oil return pipe is blocked.	Check the oil level gauge pointer, which should be in the green zone. Overhaul oil cooler. Cleaning, dusting. Check the oil number and replace the oil. Replace the oil filter. Electrical personnel overhaul and replace fans. Electrical personnel overhaul or replace the corresponding devices. Clean the plug.
4. Cannot start normally at low pressure	(1) The pressure in the control panel is not set correctly. (2) Control pipeline obstruction. (3) Failure of the discharge pipeline. (4) Failure of the pressure sensor. (5) Serious leakage of control	Check and reset. Clean the control lines. Adjust the discharge flow. Check the pressure sensor. Check the leak location and lock it. Overhaul, adjustment, replacement of

	pipelines. (6) The minimum pressure valve is not working well.	new products.
5. Cannot stop automatically at high pressure	(1) The pressure in the control panel is not set correctly. (2) Control pipeline obstruction. (3) Pressure sensor failure. (4) Fault of the bleed solenoid valve	Check and reset. Clean the control lines. Check the pressure sensor. Replace the solenoid.
6. High oil content in the air	(1) The oil in the oil and gas separator is too full. (2) The return pipe is blocked, damaged, or loose. (3) The oil and gas separation filter element is broken. (4) Loose assembly. (5) The minimum pressure valve does not work. (6) Operate at high exhaust temperatures. (7). Using the wrong oil.	Drain excess oil from the system. Clean the return pipe fittings/plugs and replace the damaged wires. Replacement. Fastening all devices and pads. Clean replace. Eliminate the fault of high exhaust temperature. "Screw compressor special oil" should be used”.
7. When the main engine is running, the current exceeds 10~20%, and the main engine suction valve makes abnormal noise	(1) When the main engine starts, the pressure in the oil and gas separator is not released or the pressure is high (greater than 0.4MPa). (2) The minimum pressure valve is not tightly sealed, and the pressure of the gas storage tank is backed back into the oil and gas separator. (3) Fault of the venting solenoid valve.	Make sure that the pressure in the oil and gas separator is released before starting the main engine. Replace or overhaul the minimum pressure valve. Replace the venting solenoid.

Chapter 6 Maintenance Operations

6.1 Maintenance of electronic drain valve

1. Press TEST regularly to check the drain valve

Set the appropriate time according to the displacement, the left knob sets the discharge time, the right knob sets the interval time, which can be twisted by hand or rotated from a small character.

2 . Filter cleaning

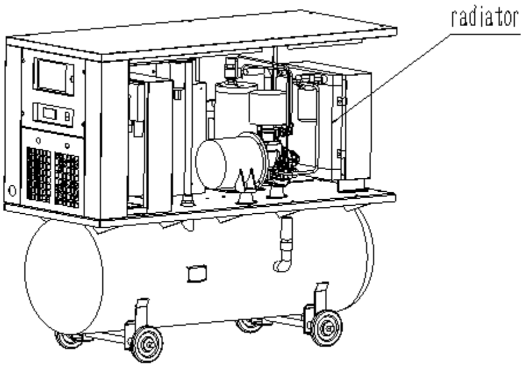
When the electronic timed drain valve discharges, only a small amount of water or no water is discharged, it is likely that the filter is blocked, and the filter needs to be cleaned. The filter should be cleaned once a month. Close the manual ball valve, press the TEST button to drain the pressure, unscrew the filter plug, and remove the filter for cleaning.

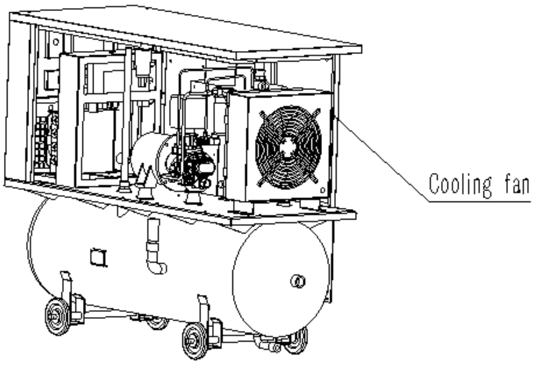
3. Valve spool cleaning

In the case of no damage to the parts, the solenoid valve cannot be opened (not drained) or closed (air leakage), the reason may be that a large amount of powder in the condensate drills the filter screen, enters the gap between the valve core and the sheath, and traps the valve core, and the valve core needs to be cleaned at this time.

(a) Close the manual ball valve and press the TEST button to drain the pressure.  	(b) Cut off the power supply and remove the electrical assembly. As long as the coil leaves the valve stem, it must be powered off, otherwise the empty energized coil will be burned. 	(c) Disassemble the spool, clean it up, and check whether the sealant head is worn. 

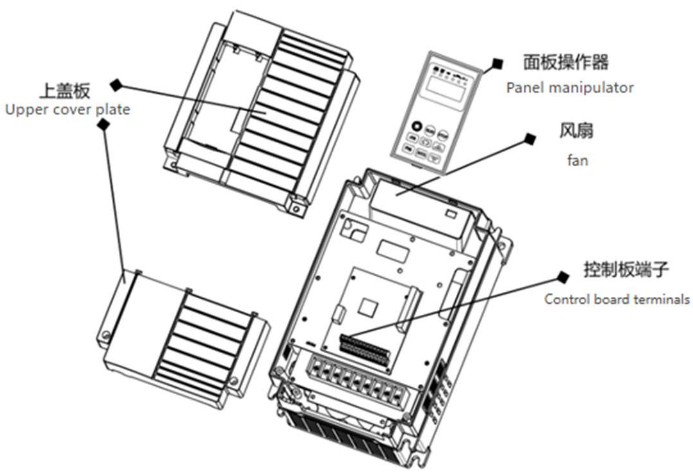
6.2 Radiator dust removal





6.2.1 Before dusting
6.2.1.1 Disconnect the power supply and open the door panel of the unit, and cover the electric control box and motor with wrapping film/clean cloth to prevent dust from entering and causing damage.
6.2.1.2 Remove the cooling fan placed at the lower part of the radiator (fixed by four bolts around the fan) and place it properly.
6.2.2 The radiator dust removal should be done from the bottom to the top, from the top to the bottom, and the pressure of 0.6Mpa~1.2Mpa compressed air should be used to blow dust.
6.2.3 Wear protective masks and goggles with a filtration accuracy of not less than KN95 to prevent personal injury caused by dust or debris.
6.2.4 Dust removal should be carried out in a wide area or ventilated environment, and it is forbidden to use open flames and electronic ignition devices during the dust removal process to prevent dust explosion.
6.2.5 After dust removal is completed, the unit should be restored to the normal state according to 6.2.1.1-6.2.1.2.

6.3 Frequency converter dust removal



6.3.1 Before dusting
6.3.1.1 Disconnect the power supply and open the door panel of the unit.
6.3.2 Use compressed air with a pressure of 0.6Mpa~1.2Mpa to blow dust on the fan part shown in the figure above.
6.3.3 Protective masks and goggles with filtration accuracy not lower than KN95 should be worn to prevent personal injury caused by dust or debris.
6.3.4 Dust removal should be carried out in a wide area or ventilated environment, and it is forbidden to use open flames and electronic ignition devices during the dust removal process to prevent dust explosion.
6.3.5 After dust removal, close the door panel of the unit to restore the unit to the normal state.