

series injection screw air compressor

Use Maintenance Instructions

Before the speech

This company produces the / G series injection screw air compressor, the factory has a strict quality control and testing, but in order to ensure the machine is safe and reliable operation, please read this instruction manual before installation commissioning, such as the contents of this manual have not understand place, please contact our company's service units, must serve you wholeheartedly!

Directory

The first chapter of screw air compressor products specification.....	1
The second chapter, the general principles of the screw air compressor.....	3
A brief introduction, injection screw air compressor.....	3
Second, the injection screw air compressor body structure.....	3
Three, the working principle of the injection screw air compressor (see figure 1).....	4
The third chapter the installation of air compressor.....	6
A, the installation place.....	6
Second, the foundation of the piping, and cooling system.....	6
Three, electrical standards and safety norms in general.....	7
The fourth chapter the system process and the function components.....	9
A, system flow chart.....	9
Second, the system process.....	10
1, main components of gas path function.....	10
2, lubricating oil process.....	11
Third, pneumatic control system.....	13
Fourth, the microcomputer controller.....	15
The fifth chapter operation.....	43
A ,commissioning.....	43
Second, the daily operation.....	44
Three, the processing method of long-term outage.....	44
The sixth chapter maintenance and inspection.....	46
A specification, lubricating oil and the use of maintenance.....	46
Second, the maintenance of the air cleaner.....	47
Three, the oil filter replacement.....	47
Four, fine oil separator of replacement.....	47
Five, the maintenance cycle and content.....	48
Chapter vii. Daily maintenance and troubleshooting.....	4952
Troubleshooting table.....	52
/ G screw air compressor running record.....	52

Security considerations

Compressed air and electricity have dangerous positions. The operator must follow the following safety measures:

1, the compressor is placed the maxillary flat on the ground, and not for the soft soil ground.

2, power distribution, choose the correct stitch size, and confirm the correctness of the voltage. On the power supply circuit, must be installed air switch, fuse safety device, etc. In order to ensure the reliability of electrical equipment, please according to the relevant provisions of the electrical installation, the earth wire connected to the right, well set aside the necessary maintenance space around the machine.

3, director of piping and piping must be 1° - 2° slope downward.

4, for the first time boot, or the power cord when there is a change you have to check the motor rotation direction is correct, in case the head loss of oil burning.

5, when the unit is running, don't loose, pull down any pipeline fittings, joints and devices. Unit filled with high pressure high temperature liquid, can cause serious personal injury accidents.

6, on the compressor maintenance (such as oil), before the repair work, must:

A) the unit stop,

B) to cut off the power supply, ensure the power of the compressor;

C) to make sure that the system has no pressure compressor.

7, may be higher than the compressor running under the exhaust pressure of compressor set forth nameplate.

8, the relief valve installed in the oil separator seat, once the gas pressure in the system more than set pressure, the gas will be released through this valve, at this point it is important to check XuanChao pressure.

9, have to use my company recommended by the specified screw air compressor for oil, it is forbidden to mix different type of lubricating oil.

10, compressor motor, temperature sensor, pressure transmitter, electric cabinet, wire, oil and gas separator filter components should be checked regularly, such components as long neglected maintenance may cause fire accidents

11, compressor assembly need to be highly skilled professionals. Users shall not remove compressor host itself. If you suspect the host fails, please contact our customer service center.

The first chapter of / G screw air compressor products specification

model	Exhaust pressure MPa	Exhaust pressure m ³ /min	The motor power kW	The exhaust interface	Weight kg	Overall dimensions mm
-10A	0.8	1.2	7.5	G3/4"	320	780*680*800
-10A	1.0	1.0				
-10A	1.3	0.84				
-15A	0.8	1.7	11	G1	370	1020*820*1150
-15A	1.0	1.5				
-15A	1.3	1.2				
-20A	0.8	2.4	15	G1	380	1020*820*1150
-20A	1.0	2.2				
-20A	1.3	1.7				
-25A	0.8	3	18.5	G1	500	1080*880*1235
-25A	1:0	2.7				
-25A	1.3	2.3				
-30A	0.8	3.6	22	G1	540	1080*880*1235
-30A	1.0	3.2				
-30A	1.3	2.7				
-40A	0.8	5.0	30	G11/2	650	1120*930*1290
-40A	1.0	4.4				
-40A	1.3	3.6				
-50A	0.8	6.0	37	G11/2	730	1240*1030*1435
-50A	1.0	5.5				
-50A	1.3	4.6				
-60A	0.8	7.1	45	G11/2	820	1240*1030*1595
-60A	1.0	6.5				
-60A	1.3	5.6				

-75A	0.8	9.5	55	G11/2	1200	1540*1200*1470
-75A	1.0	8.5				
-75A	1.3	7.4				
-30A	0.8	3.6	22	G1	590	1440*900*1130
-50A	0.8	6.0	37	G11/2	790	1540*930*1240
-60A	0.8	7.1	45	G11/4	970	1700*1050*1255
-75A	0.8	10	55	RP11/2	1180	1790*1150*1360
-100A	0.8	13	75	G2	1470	2000*1200*1500
-120A	0.8	16	90	G2	1520	2000*1200*1500
-150A	0.8	20	110	DN65	2210	2410*1300*1670
-160A	0.8	22	132	DN65	2370	2410*1300*1670

Note:

☆ The company to product research, continual improvement, such as technical parameters change and not in conformity with product sign, is the product sign shall prevail.

☆ The company take special specifications of the order.

The second chapter, the general principles of the screw air compressor

A brief introduction, injection screw air compressor

Injection screw air compressor has become a main developing trend of the air compressor in the world, is extremely advantageous and reliable performance, little vibration, low noise, less wearing parts, with a piston compressor (equal) exhaust pressure incomparable performance advantages. Yin and Yang between rotor and rotor with the host asked shell and precision with reduced reflow leaked, to improve the efficiency; Only the rotor mesh with each other, without the reciprocating movement of the cylinder, reducing the vibration and noise; Unique lubrication method have many advantages:

1, by understanding the pressure difference generated by itself, continuously injected into the compression chamber and the bearing lubricating oil, simplifies the complicated mechanical structure.

2, the injection of lubricating oil in the oil film formed between the rotor and the main rotor can directly drive the rotor rotation, without the aid of synchronous gear with high precision.

3, injection of lubricating oil can increase the tightness.

4, lubricating oil to absorb a large number of compression heat, as a result, even if the compression ratio for 16, the nose can still control in general carbon lubricating oil and the degradation temperature below, also won't because of the different expansion coefficient between rotor and closed and friction.

5, lubricating oil to reduce the noise produced by high frequency compression.

6, trace of oil into the compressed air, has certain lubrication to the pneumatic tools.

Second, the injection screw air compressor body structure

1, the basic structure of

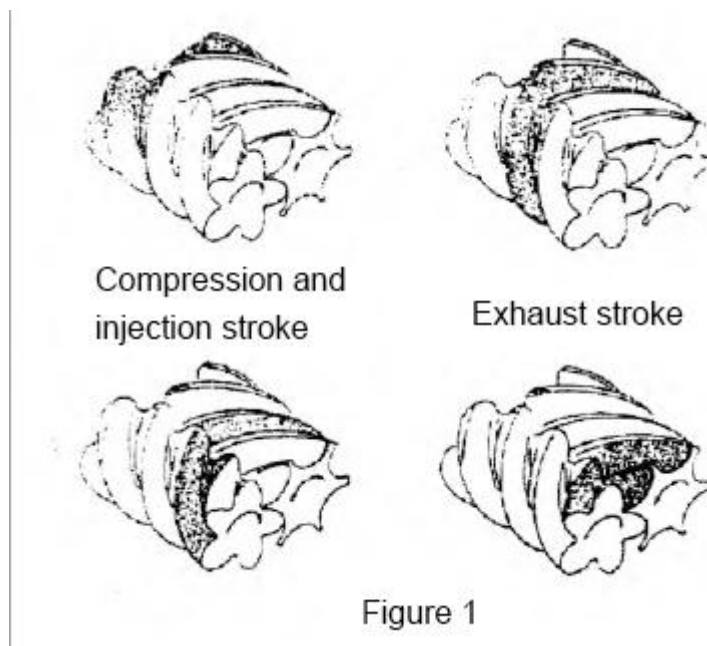
This company produces the series injection screw air compressor, is a kind of biaxial positive displacement compressor back to transformation. Air inlet opening in the casing side, above the vent opening in lower part, two main rotor with high precision, horizontal and parallel installed within the cabinet. There are five main rotor tooth, which turns to have six tooth; And the diameter of the main rotor, rotor diameter smaller. Tooth form a spiral, surrounding the rotor outer edge, the two teeth Each engagement. Main and deputy rotor is supported by bearings. Body methods for transmission belt transmission type or coupling straight league.

2, mesh

A motor to drive the main rotor rotates. Cooling and lubricating oil by the lower part of the compressor casing by direct injection nozzle rotor between meshing, and mixed with air and take away because of the

heat generated by the compression, forming oil film at the same time, on the one hand, to prevent the rotor direct contact between the metal and metal, on the other hand, the sealing between the rotor and the gaps between the rotor and the casing. Injection of lubricating oil can reduce noise generated by high speed compression. Because of the different exhaust pressure, fuel injection weight is about 5 to 10 times the weight of the air.

Three, the working principle of the injection screw air compressor (see figure 1)



1, the suction process:

Screw compressor inlet and exhaust valve group, intake by a valve opening and closing of regulation. When the main deputy of rotor tooth groove space to casing inlet end wall openings, its space is the largest, the rotor at the bottom of the tooth groove space and liberty in the inlet air are interlinked, because when the exhaust out tooth groove the air is full of education, the tooth groove in the vacuum state, when transferred to the air intake ", outside air is inhaled, andAlong the axial flow main rotor tooth groove. When the air is filled with the whole tooth ditch ", the inlet side of the end face of the rotor is turned away from the chassis of the air inlet and air between the tooth groove is closed, the above for the admission process.

2, closed and transportation process:

Breathe in inches, the end of main rotor tooth summit with casing seal, no longer outflow of air inside the tooth groove, this is known as "closed" process. Two rotor continues to turn, the teeth with tooth groove on the suction side, consistent surface gradually moving to the exhaust end, this is known as

"process".

3, compression and injection process:

In the process of conveying, mating surface gradually moving to the exhaust end, tooth groove between the meshing surface and vent space gradually reduce, tooth groove inside air is compressed, pressure p gradually rise, this is known as "the compression process. And compression at the same time, the lubricating oil injection compression because of the action of pressure difference also indoor mixture with air.

4, exhaust process:

When the rotor outlet end face with casing (the highest pressure of the compressed air), the compressed air began to discharge, until the teeth with tooth groove of the mating surface moved to the exhaust end of the casing end face, at this time between the mating surface of the rotor and the casing vent tooth groove space is zero, the exhaust process is completed. Meanwhile inches, between the mating surface of the rotor and the casing inlet \square tooth groove and achieve the longest length, thus to open Starting a new compression cycle.

The third chapter the installation of air compressor

A, the installation place

Appropriate installation site is a precondition for the proper use of air compressor system. Installation site should be selected to ensure that the air compressor in the future convenient maintenance, avoid the environment is not ideal, leading to abnormal running air compressor.

1, the installation site requirements daylighting is good, have enough lighting, operation and maintenance.

2, small relative humidity, no corrosion, no metal scrap, less dust, clean air and ventilation is good.

3, if the factory environment is poor, dust, should be equipped with a ventilation duct, the air inlet end to the air cleaner. Conduit installation must be easy to tear open outfit, maintenance, installation size reference external air compressor size.

4, air compressor must keep enough to make the other parts in and out of the space around the air compressor at least 1.5 meters from the wall; The top of the air compressor from space distance more than 2 meters.

5, such as air compressor installed inside a sealed air compressor machine room, must be set exhauster, make the gas emitted after heat exchange.

6, such as environmental temperature is too high (more than 40°C), suggest that cooling measures, such as to avoid direct sunlight, open doors and Windows, etc.), high temperature in order to avoid unnecessary downtime; Such as environmental temperature is low (less than 0°C), must prevent the lubricating oil condensation on startup.

Second, the foundation of the piping, and cooling system

1, piping

(1) piping ", and shall not impose additional force on after cooler. It is forbidden to welding spark into air compressor, avoid damage to items within the air compressor.

(2) must have a competent road $1^{\circ} \sim 2^{\circ}$ slope downward, and condensed water discharge pipeline, pipe screw plug that should have regular emission).

(3) the pipe diameter should be greater than or equal to the compressor exhaust pipe diameter. To minimize the use of elbow and all types of valves in pipeline, in order to reduce the pressure loss.

(4) the competent road don't any narrow or too, if you must use when must be reduced or enlarged reducer, otherwise there will be a turbulent flow in tapping, result in great pressure 力 loss, due to the impact pressure of the gas at the same time, will shorten the life of a pipeline.

(5) the feeder line must be from the top of the head of road leads, avoid head of condensed water in the road along the pipeline flow to the machine.

(6) is recommended in the unit equipped with propane tanks, which can reduce air compressor number of loading and unloading conversion, prolong the service life of parts and electrical.

(7) after such as air compressor air tank, dryer at buffer facilities, such as the ideal piping should be empty machine + gas storage yao + dry machine. Propane tanks can reduce the temperature of exhaust gas, remove most of the water, low temperature and water cut less air again into the drying machine, can reduce the load of dryer.

(8) is less than 1.5 Mpa compressed air, the flow rate must be below 15 m/s, in order to avoid excessive pressure drop in the pipeline.

(9) the ideal piping is competent line around the entire plant, and properly configured on ring main valve. So, in any factory location of the feeder line, two directions of compressed air can be obtained, if a regional gas suddenly raised, not cause obvious pressure drop; And maintenance, the valve can be used to cut off the line.

2, basic

(1) based on hard soil rid or cement ground, and guarantee the smooth plane, avoid the tilt caused additional vibration.

(2) air compressor, such as in the upstairs, shall make good vibration-proof treatment (such as cushion layer 10 mm thick rubber), in case of vibration transfer and resonance.

3, the cooling system

Three, electrical standards and safety norms in general

1, according to the size of the air compressor power, the right to choose the power cord diameter and air switch. Shall not use small wire diameter, or the power cord easily because of high temperature and lead to danger.

2, the air compressor is best to use a set of electric power system, especially to avoid with other parallel use different electricity consumption. Such as parallel use, may be due to the excessive voltage drop or unbalanced three phase current form air compressor overload and make the protection device to jump machine, high-power air compressor must pay special attention to.

3, air compressor, power distribution, must confirm the power supply voltage and rated voltage of the motor.

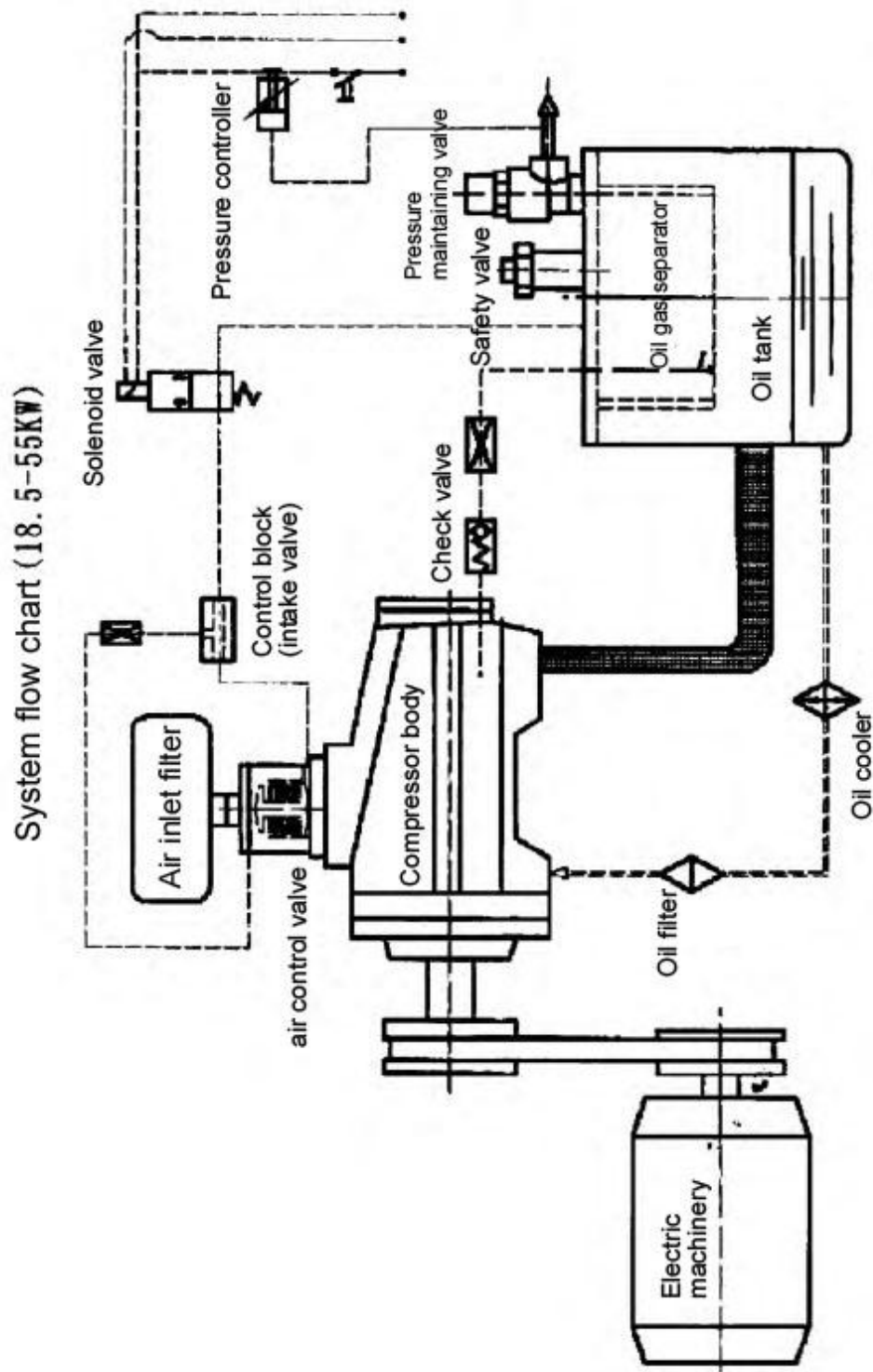
4, must set up the motor or system grounding line, to prevent the danger caused by the leakage, and

grounding wire shall not directly on the air duct.

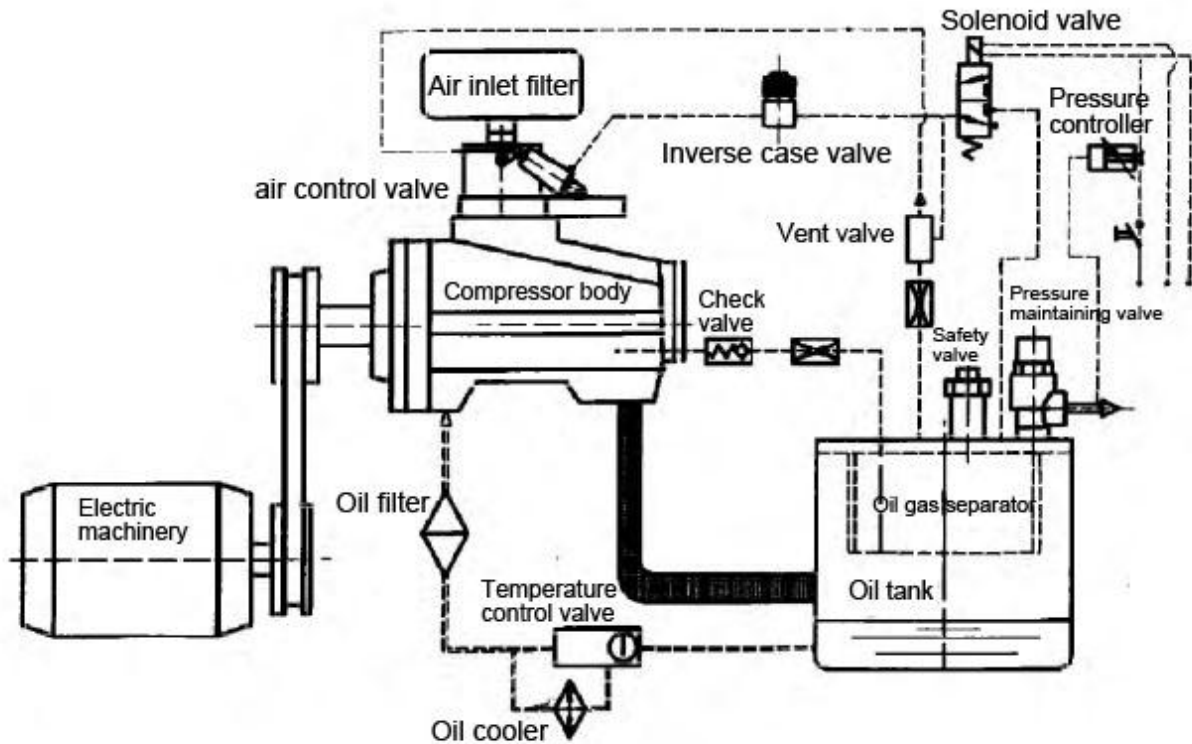
During the running of motor power supply voltage and rating of deviation is not more than $+ / - 5\%$; Frequency and deviation is not more than plus or minus 1% rating; Three phase current of motor three-phase average with any deviation is not more than three phase average $+ / - 10\%$.

The fourth chapter the system process and the function components

A, system flow chart



System flow chart (75KW及以上)



Second, the system process

Outside air from the air cleaner filter to dust, the unloading valve at the inlet into the host compression chamber, mixed with oil for compression. Compressed gas mixture of oil and gas to the rotating barrel for most of the lubricating oil was isolated, and the fine oil separator filter residual oil, clean compressed air cooler after the minimum pressure valve, input used in the system.

1, main components of gas path function

Air cleaner

A bunch of type paper filter, air filter to filter the pores around 10 um. Its main function is to filter the dust in the air, early to avoid the screw rotor premature wear, fine oil filter and oil separator blockage.

Air intake unloading valve B

Intake unloading valve is a very key components, it through the ways of controlling air inflow into the compressor of the host, achieve the goal of controlling displacement. Unloading valve by the air inlet, the outlet and the valve, inlet throttle holes, etc. System pressure through empty heavy car solenoid valve, such as inverse proportion valve on the cylinder, the control valve open, close and close, which changes the size of the air intake, control the volume. The air compressor gas within a certain range to realize stepless adjustment, reduce the power consumption.

Oil and gas tong C

Barrels of oil and gas storage in oil and gas separation and two kinds of function. Compressed gas mixture to the oil and gas tong, can not be rotated in the barrels of oil and gas can be isolated from most of the lubricating oil; Store more lubricating oil, to avoid just separated the hot oil immediately involved in the next cycle, is helpful to reduce the exhaust temperature. Barrels of oil and gas side is equipped with oil level indicator. Barrel on one oil-way, for refueling.

D fine oil separator

Details please refer to the "oil process" section details about the fine oil separator.

E the minimum pressure valve

And the oil separator exports is linked together, the opening pressure is set to 0.4 ~ 0.5 Mpa, the minimum pressure valve has the following functions:

A. when starting to build up the lubricating oil required cycle pressure, ensure the lubrication of the machine.

B. barrels of oil and gas pressure of the air inside 力 after more than 40 mpa to open, can reduce the air velocity through the fine oil separator, to ensure that the oil and gas separation effect, and applying a segmentation f device from damage due to pressure difference is too big.

C. check function: when the outage barrels of oil and gas pressure drop in inches, prevent the reverse flow of compressed air pipeline.

F after cooler

cooler made into an organic whole, its structure is same, all is fin type. After the cooling fan will air pumped in, blow the cooler fin. After cooling the compressed air temperature in the environment temperature in general+ 15 ° C below.

G temperature sensor

It USES PT100 twinkle for sensitive resistance, good linear, high precision. In the oil, oil shortage, loss and poor cooling case, are likely to lead to main engine exhaust temperature is too high. When the measured temperature of exhaust temperature set by PLC controller, automatic stop, air compressor. According to different models, has put down before they go out temperature setting at 110 ° C, please do not adjust.

2, lubricating oil process

1) lube oil process

The pressure within the barrel of oil and gas, the lubricating oil pressure within the barrel of oil and gas, the temperature control valve, oil cooler, cooling and then through the oil filter to remove impurity

particles, and then divided into two road, all the way from the bottom body spray into the compression chamber, compressed air cooling; Another leads to the body at both ends, lubrication bearing group. Then at the bottom of the lubricating oil of each part and then gathered in the compression chamber, by exhaust reduction. After mixed with oil in the compressed air into the barrels of oil and gas, Most of the oil deposit in the bottom of the oil pump, the rest of the oil mist after air oil separator, further filter under the remaining oil, and participate in the next cycle.

2) control the fuel injection quantity

Injection by air compressor oil in addition to the lubrication, mainly used to eliminate the heat generated in the compressed air, the amount of fuel injection quantity directly influence the performance of the air compressor. Fuel injection quantity before the factory has already set a good by our technician, so please don't change it. If the nose is low or too high exhaust temperature need to be adjusted, please contact our customer service center in advance, so as to avoid damage to the compressor.

3) oil major components function description

A temperature control valve

The main function of the temperature control valve is by controlling the spray into the nose of the lubricating oil temperature to control the exhaust temperature of compressor, in order to avoid the water vapor condensation in barrels of oil and gas in the air and emulsified oil. Just boot ", low oil temperature, temperature control valve closed, cold oil without oil cooler and spray directly into the body. If high oil temperature rise to more than 70°C , the temperature control valve gradually open to the access of the oil cooler, to 76°C when fully open, The oil is all through the oil cooler cooling and then into the body. Some models do not set temperature control valve, but through the stalling of the fan motor control to control the oil temperature. When the exhaust temperature rose to 85°C ", the fan to operate; When the exhaust temperature below 75°C , the fan automatically shut down, keep the temperature within a certain range.

B oil cooler

After the oil cooler and cooler into an organic whole. When installation to ensure that oil cooler 2 meters distance barrier, the cooling air flow unimpeded. Fin easily affected by the dust cover and cooling effect, can lead to exhaust temperature is too high and downtime. So every once in a while the cleaning to ensure its cooling effect.

C oil filter

Oil filter is a kind of filter paper, filter accuracy between $10 \sim 15 \mu\text{m}$. Its function is to remove the

impurity in the oil, such as metal particles, dust, oil, such as the inferior substances to protect the normal operation of the bearing and rotor. If oil filter blocking, may lead to lack of fuel injection quantity affect host bearing service life, the nose exhaust temperature (and even stop).

D fine oil separator

Fine oil separator filter used special multilayer fine fiber, mist lubricating oil contained in the compressed air after fine oil separator can be almost completely filter. Under the oil particle size can be controlled at 0.1 um, oil content is less than 3 PPM.

E oil return check valve

Fine oil separator filter of oil residue, focused on the filter in the center of the small round ridge, the return pipe to host, avoid lubricating oil has been separated again with compressed air. To prevent indoor host compression reverse flow of oil (differential pressure) when unloading, after the return pipe set a one-way valve. If the machine in the operation of the fuel consumption suddenly raised, check the check valve throttle hole is blocked.

Third, pneumatic control system

1, general operation

1) start

Before starting, inlet unloading valve and load solenoid valves are closed. After starting, a small amount of air from the air intake of the unloading valve throttle hole suction, due to the role of the minimum pressure valve, oil cylinder, slowly build up pressure lubrication to ensure lubricating oil into the body.

2) the load operation

Delay for a few seconds, after the completion of star Angle step-down starting time, loading electromagnetic valve to open, the pressure in the oil cylinder is passed, inlet unloading valve is opened gradually, compressor into the load running state. When pressure is greater than 0.4 Mpa, the minimum pressure valve is opened, the compressed air output. When the system pressure reaches the inverse proportion valve set pressure, the inverse proportion valve to start work, automatically adjust the compressor gas, Make gas and the gas consumption balance, this gas is stepless regulating function.

3) the unloading operation

When the gas is small or not ", exhaust pressure will reach the upper limit of microcomputer controller set. When loading the solenoid valve closed losing electricity, on the one hand, this makes out of control pressure inlet valve automatically shut down, on the other hand make the exhaust valve opens, the pressure of oil and gas tank gradually release () to the inlet port, compressor into the unloading operation

state. Unloading operation duration to set value ", the machine automatically stop. When the system pressure to a microcomputer control the lower limit set, reload the running machine. After work, press the stop button, the machine enter the unloading operation state, delay tens of seconds after automatic stop.

2 pneumatic control components function

A loaded electromagnetic valve

For the two normally closed electromagnetic valves. Through the electromagnetic valve, the gain and loss of electricity control of gas path, broken state, realize the function of loading and unloading.

Vent valve B

When unloading run or stop the inch, the valve is open, release the pressure inside the barrel of oil and gas, compressor of low load operation, or guarantee in the case of no load starting afresh.

C. inversely proportional valve

More than the adjustment of the set pressure works. At this point, the proportional valve input pressure exhaust pressure) (that is, the system is higher, the output control of the lower pressure. And control the lower the pressure, inlet with the telescopic cylinder control unloading valve disc of the smaller opening, compressor air inflow is less, make the gas compressor and gas consumption balance, realize stepless capacity regulating function.

Set to adjust pressure method is: up and black cap of inverse proportion valve and rotation, clockwise pressure good big, counter-clockwise is reduced. After set, press down blocks to prevent it due to the vibration and rotation on its own. Value generally should be less than the rated exhaust pressure, if higher than that of microcomputer controller set uninstall pressure, only empty heavy car without capacity.

D safety valve

The relief valve is a safety components. When the air conditioning system failure and the barrels of oil and gas in gas pressure is about 5% higher than the rated pressure exhaust 力 , pressure relief valve automatic takeoff, the pressure drop below exhaust pressure rating. Relief valve had been adjusted before the factory, please do not adjust. If I found the relief valve opens ", should stop to check the reason, timely troubleshooting.

The relief valve should be check regularly. Inspection method is in the compressor load rating (at or near the exhaust pressure), gently pull TAB at the top of the relief valve, if at this time the relief valve to exhaust outward, is regarded as normal.

E pressure transducer pressure sensor

measuring the exhaust pressure after the fine oil separator, and displayed in the dashboard. According to

measured the size of the exhaust pressure, the maximum pressure, pressure by microcomputer controller lower limit value, make loading electromagnetic valve electric or losing electricity, the transition of loading and unloading state.

F pressure gauge

Pressure gauge measuring pressure before the fine oil inside the pump oil separator. Because of fine oil separator, the minimum pressure valve and pipeline there is resistance and pressure drop, the pressure of the pressure gauge shows higher than shown on the dashboard of exhaust pressure (when unloading may be lower). Often should compare the pressure difference, when the pressure difference exceeds 0.12 Mpa, to timely replace the oil separator filter.

Fourth, the microcomputer controller

(a) button

1, MAM - 980 controller

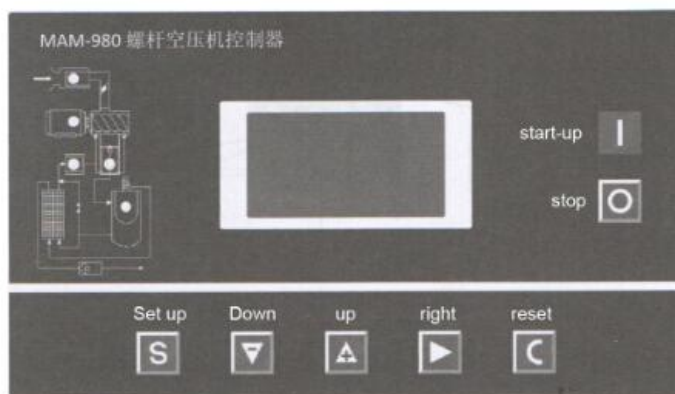



Figure 1.1.1


I — Start button: air compressor is in standby mode, press this button to start the air compressor to run; Linkage control function is set up correctly ", if the air compressor machine for 1 and is set to the host, press the start key to start the air compressor, at the same time start the linkage control function.


O — Stop button: when the air compressor is in operation, click this button to stop the air compressor to run; Linkage control Settings, if air compressor machine for 1 and set as the host, press the stop button to stop the air compressor run, stop the linkage control function at the same time; Equipment are in a state of shutdown, long press the stop key, switch to display software version.


S — Add, uninstall key/confirm button: air compressor during this button as addition, uninstall

button, control the operation of air compressor load or unload operation; In setting mode, the data after modify the data, click this button to confirm the data input; Input password, click this button to confirm the password input, and verify that the password is correct.

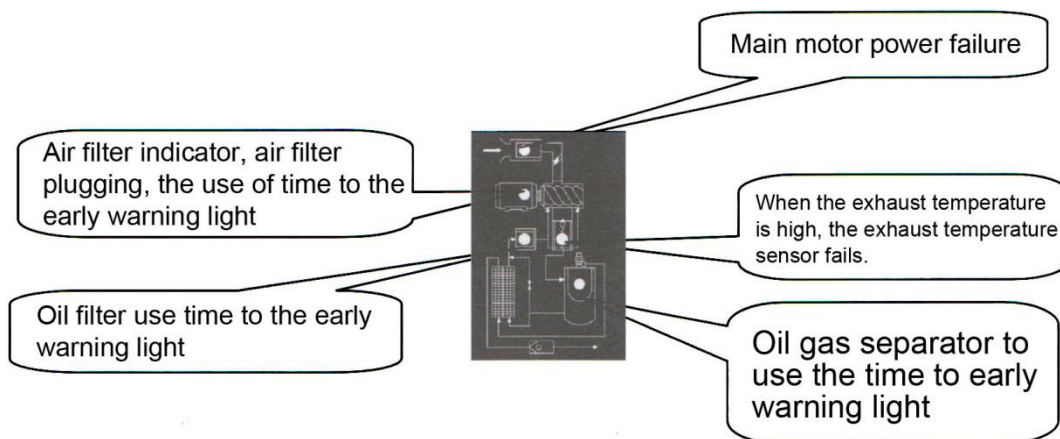
 — — Diminishing down key/button: "view parameters, click this button down the scroll bar; Modify the data, click this button degressive current location data.

 — — Increasing up key/button: "view parameters, click this button up the scroll bar; Modify the data, click this button increases the current location data.

 — — Shift key/enter key: modify the data, the key as the shift key, move the cursor to the flashes a data; Click this button when menu selection, enter the current menu of the next level, if the current menu without the next level, then enter the current menu Settings mode, the current menu data appear flashing cursor.

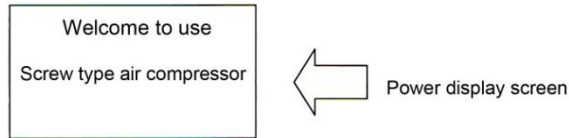
 — — Return the key/reset button: in the Settings mode ", press this key to exit the setup mode, the parameter view mode ", click this button to return to the menu at the next higher level; Downtime ", long press this key to reset the fault.

2, indicator light

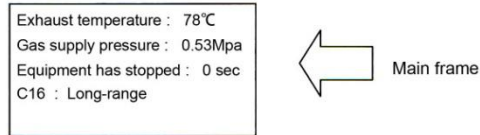


3, status display and operation

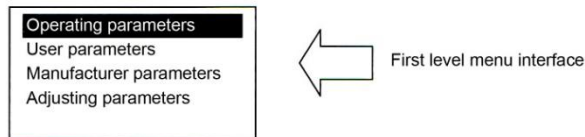
After the power unit shows the following interface :



5 seconds after the delay, the following interface :

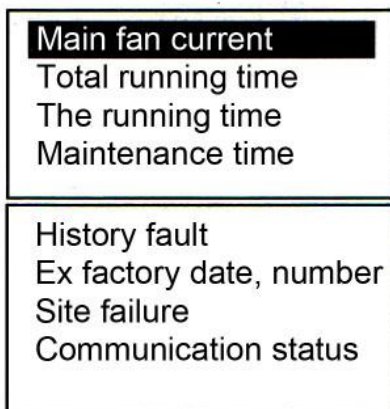


Press down to enter the following menu selection interface :



4, operation parameters and the menu

Press down key mobile black scroll bar to the running parameters menu, press the enter key after the switch to the next level menu:



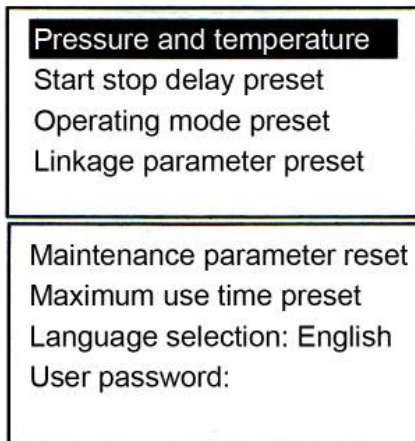
Move the scroll bar to the corresponding menu item, press the enter key to check the specific parameters, such as view "Lord, fan current" move the scroll bar to the main, fan current menu item and press the enter key to switch to the main interface, fan current value.

Host(A)	Fan (A)
A 50.1	2.1
B 50.1	2.1
C 50.1	2.1

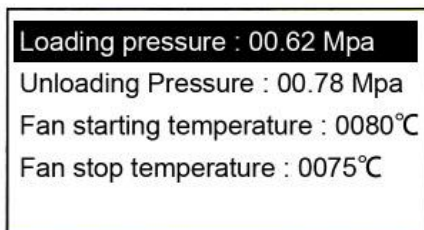
Press the return key to return to the superior or main menu interface. As an interface to stop operation, in 60 seconds automatically return to the home screen.

5, view and modify user parameters

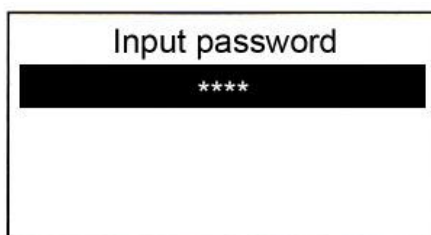
In the previous menu, press up or down key mobile black color after the scroll bar to the user preferences menu, press the enter key after switch to the following menus:



Move the cursor to the "preset pressure, temperature, and then determine the key switch to:



Position black scroll bars to the load pressure menu, and then press the enter key, switch to the following interface is required to enter your user password:



Shows this interface, flickers, press increasing or decreasing, modify the current scintillation location data, password is equal to the first data, press the shift key flashing cursor will be moved to the next data bits, modify the current scintillation password data is equal to the second data, in accordance with the above method to modify the third and fourth data, finally according to the confirmation key input, the system verification password correctly, switch to the following interface:

Loading pressure : 00.62 Mpa *
 Unloading Pressure : 00.78 Mpa
 Fan starting temperature : 0080°C
 Fan stop temperature : 0075°C

The upper right corner of the "*" display, the system has been verified by password

In the interface as shown above, press the shift key, loading pressure 力 first data start flashing, the user can press increasing or decreasing, modify the current scintillation after data is equal to the target, press the shift key and move the cursor to the flashes a data bits, continue to modify the data according to the above method is equal to the target, all the data bits are modified, press the confirmation key, set for user data. After the success of the parameter Settings, controller buzzer issued a short beep.

6, user parameter list and functionality

Level 1 menu	The secondary menu	Set the initial value	functions
Pressure, temperature presets	Load pressure	**.**MPa	Load pressure value, set to run automatically ", after startup, when the pressure below the set value ", if the unloading operation of the air compressor, controller to control the air compressor load running, if the air compressor in the air long downtime, control air compressor.
	Discharge pressure	**.**MPa	After startup, when the pressure is greater than the set value, the controller control the operation of air compressor discharge.
	Fan qi temperature	0080 ° C	When the exhaust temperature is higher than the set value ", start the fan operation.
	The fan stop temperature	0070 ° C	When the exhaust temperature is less than the set value, the stop fan operation.
Rev. Stop delay presets	The host delay	0008s	Set the starting time of main motor, the host timing starts when starting, in this period of time, for overload protection, avoid shock current motor star

	Fan delay	0006s	Set the starting time of fan, the fan starts to plan ", in this period of time, for overload protection, avoid shock current motor start
	Star Angle delay	0006s	Star Angle step-down start delay time
	Loading time delay	0002s	Angle after the operation, the time delay loading time
	Idle time delay	0600s	Empty continuous running time, beyond which stop running air compressor to empty long period of time.
	Stop delay	0010s	When stop, air compressor to no-load running, run empty delay the time stop.
	Start the time delay	0100s	After downtime, empty too long downtime, downtime, need to delay here to set a time to restart the air compressor.
Operating mode preset	Stop-start way	Local/remote	Set to the local ", remote switch cannot stop air compressor, set to the remote ", remote and local switch can start or stop the air compressor.
	Loading way	Automatic/manual	"Set to manual operation, air compressor after startup, add, uninstall need manual operation; When set to automatic, air compressor starting according to pressure 力 automatic, after unloading.
	Communication methods	Ban/computer/link age	"Set to manual operation, air compressor after startup, add, uninstall need manual operation; When set to automatic, air compressor starting according to pressure automatic, after unloading.
	Communication coding	0001	Used for linkage or communicate with PC, set the address. Linkage when allowed to set the range of 0-16, and PC communication allows

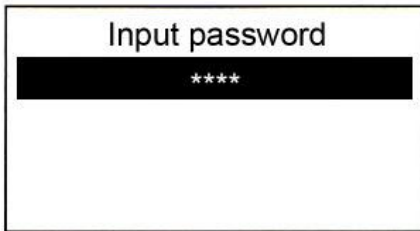
			setting van take 0-99.
Linkage parameters preset	Linkage state	Host/slave	Many sets of machine joint running as a "host" or "machine" host according to the gas supply pressure 力 control from the machine, stop, and uninstall.
	The rotation time	0099 hours	Spreading ", in the range of allowable pressure 力 set machine working here set time after being rested
	Number of interlocking machine	0000	Spreading operation ", spreading network hollow pressure machine number.
	AI pressure lower limit	**.**MPa	Spreading operation ", the host pressure 力 inches below the set pressure, from spreading into the network to find a machine load or boot
	AI pressure limit	**.**MPa	Spreading operation ", the host 力 pressure is higher than the set pressure ", from spreading on the Internet, looking for a machine unload or downtime
	Linkage delay	0050s	0050 s spreading operation ", the host two consecutive waiting time by sending control command.
Maintain parameter reset	Oil filter	0000hours	Oil filter cumulative time, replace the new oil filter, zero here.
	The oil separator	0000hours	Use time cumulative oil separator, replace oil separator, zero here.
	Empty filter	0000hours	Empty filter cumulative time, replace the new air filter, zero here.
	Lubricating oil	0000hours	Lubricating oil total use 1 time, after the oil change, zero here.
	grease	0000hours	Grease the cumulative time, replace the

			grease, zero here.
	The belt	0000hours	Belt cumulative when using j company, change a new belt, zero here.
The largest use time device	Oil filter	****hours	Oil filter the cumulative use time more than the set value, warning prompt; When set to "0000", oil filter using time warning doesn't work.
	The oil separator	****hours	Cumulative oil separator using time more than the set value, the early-warning prompt; Is "0000", using the oil separator warning time doesn't work
	Empty filter	****hours	Empty filter cumulative time over here after setting values, warning prompt; Set to "0000", the empty filter using time warning doesn't work.
	Lubricating oil	****小时	The accumulative time over here to set the value of lubricating oil, warning prompt; When set to "0000", lubricating oil use time warning doesn't work.
	grease	****小时	After grease total use time more than the set value, warning prompt; When set to "Of100", grease can't afford to use time warning for rejection.
	The belt	****小时	Belt cumulative bar when using more than after setting here, warning prompt; When set to "0000", belt use time warning doesn't work.
	Language selection	Chinese/English	Chinese

The user password	****	****	The user or manufacturer after verification authority, can modify the user password here
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7, factory parameter check and modification

Manufacturers parameters are used to store air compressor vendors would set up the related data, check the manufacturer parameters, password need to verify the manufacturer, in the primary menu, press up or down key mobile black color scroll bar to the parameter "manufacturer" menu, press the enter key after the switch to the following interface:



After confirmation of the user input the correct password, switch to the interface as shown in the following manufacturer parameters,

Host current : 100.0A
 Fan current : 010.0A
 Exhaust temperature warning : 0105°C
 Exhaust temperature shutdown : 0110°C

Down pressure : 00.90MPa
 Unloading high limit : 00.85MPa
 Running time : 001234H
 Load time : 001001H

Parameters see more manufacturers parameter list, modify parameters method to modify the user, manufacturer in the parameters "running time" and "phase sequence protection", "frequency selection and time limit should be by super password changing.

8, manufacturer parameter table and function

Parameters of the item	Set the initial value	Function and role
The host current	Motor allows maximum overload / 1.2	Host after the start time delay, when the motor current is greater than the value of more than 1.2 times, according to the delay jump machine overload characteristics.

		(overload characteristics are shown in table 2. 1. 1)
Fan current	Fan allow maximum overload / 1.2	After the start time delay, when the motor current is greater than the value of more than 1.2 times, according to the delay jump machine overload characteristics
Exhaust temperature warning	105°C	When they tested the exhaust temperature is higher than the set temperature, the warning prompt
Exhaust temperature downtime	110°C	When they tested the exhaust temperature is higher than the set temperature, the downtime
Stop pressure	1.00MPa	When detected gas supply pressure is higher than the set pressure, the downtime
Uninstall the high limit	0.80MPa	For manufacturer to restrict users to set the maximum allowable discharge pressure, discharge pressure here or less value
The elapsed time	*****hours	Modify the operation of the air compressor total time
The load time	*****hours	Modify the total time of air compressor load
Historical fault reset	****	Input "8888", and confirmed to remove failure record history
The current imbalance degree	0006	When the (maximum current/minimum phase current) (1 + (value / 10) or higher), imbalance protection action stop. Set up 15, imbalance protection doesn't work
Open phase protection	002.0S	Phase failure protection time setting 2 0 seconds or more inches, open phase protection function does not work. If unbalance protection work, imbalance protection action.
The date of	* * * * on * * * *	Records of air compressor out of date
Factory number	*****	Manufacturer factory number of input devices
Phase sequence protection	Prohibited/open	Used to select whether the phase sequence protection function.
Frequency selective	50Hz/60Hz	Choose air compressor; As power frequency setting error, there will be deviation detection current value.

Linkage way	Senior/compatible	Set to compatible mode, spreading way and my company other compatible model controller linkage control mode; Spreading and MAM8 * 0 controller, can be set to advanced mode, spreading function more powerful.
The voltage is too high	****V	Controller detection voltage is higher than the set value, the outage protection, the voltage is too high. Set to 0000, the high voltage function is invalid.
The voltage is too low	****V	Controller detection voltage is below the set value ", the outage protection, the voltage is too high, is set to 0000, when the voltage is too low function is invalid.
Low temperature protection	-0005°C	Controller to detect exhaust gas temperature is lower than this value ", show the temperature is too low, are not allowed to start the air compressor.
Time limit	0000hours	Air compressor total running time is greater than the set time, to stop "using the wrong"; Time limit is set to 0000, the function does not work
Warning stop	0010hours	Controller to detect oil filter, air filter, oil separator, oil, grease, belt use longer than their biggest use time plus ilfe Settings, "warning too long downtime.
Communication preset parameters	On/off	The standby
Parameter 1	****	Users to enter the factory parameters, set this value, save, after the next value view by typing here set to all manufacturers parameters and modify parts factory.

9, adjust the parameters

Relevant data is used to set the parameters controller, without manufacturer does not allow authorized users to view and modify. Users to view parameters before, need to verify password. Adjust parameters modification operation method with the user modification method. Main function and role to see the table below:

Parameters of the item		Set the initial value	Function and role
Host A phase	The standard current	0000	Standard calibration is used to host A phase current, input current value, the controller based on user input values divided by the current detected current value, calculate the current coefficient and save the current coefficient, standard current value is not saved, only used to calculate the coefficient.
	The coefficient of	1.000	Calibration current, input coefficient. Controller according to current value = sampling value coefficient of x
	The current	****.*A	Show the current sampling controller, and after calibration by a current value. This value is real value, cannot be set.
Host B phase	The standard current	0000	Host B phase current used for calibration, standard input current value, the controller based on user input values divided by the current detected current value, calculate the current coefficient and save the current coefficient, standard current value is not saved, only used to calculate the coefficient.
	The coefficient of	1.000	"Calibration current, input coefficient. Controller according to current value = sampling value coefficient of x
	The current	****.*A	Show the current sampling controller, and after calibration by a current value. This value is real value, cannot be set.
Host C phase	The standard current	0000	Host C phase current used for calibration, standard input current value, the controller based on user input values divided by the current detected current value, calculate the

			current coefficient and save the current coefficient, standard current value is not saved, only used to calculate the coefficient.
	The coefficient of	1.000	Calibration current, input coefficient. Controller according to current value = sampling value coefficient of x
	The current	****.*A	Show the current sampling controller, and after calibration by a current value. This value is real value, cannot be set.
Fan is A phase	The standard current	0000	A phase current fan ", used for calibration standard input current value, the controller based on user input values divided by the current detected current value, calculate the current coefficient and save the current coefficient, standard current value is not saved, only used to calculate the coefficient.
	The coefficient of	1.000	"Calibration current, input coefficient. Controller according to current value = sampling value coefficient of x
	The current	****.*A	Show the current sampling controller, and after calibration by a current value. This value is real value, cannot be set.
Fan B phase	The standard current	0000	Used for calibration fan B phase current "; Standard input current value, the controller based on user input values divided by the current detected current value, calculate the current coefficient and save the current coefficient, a standard current value is not saved, only used to calculate the coefficient.
	The coefficient of	1.000	Calibration current, input coefficient. Controller according to current value =

			sampling value coefficient of x
	The current	****.*A	According to the current controller sampling and after calibration by a current value. This value is real value, cannot be set.
Fan facies C	The standard current	0000	Fan is used for calibration C phase current, standard input current value, the controller based on user input values divided by the current detected current value, calculate the current coefficient and save the current coefficient, standard current value is not saved, only used to calculate the coefficient.
	The coefficient of	1.000	"Calibration current, input coefficient. Controller according to current value = sampling value coefficient of X
	The current	****.*A	Show the current sampling controller, and after calibration by a current value. This value is real value, cannot be set.

10, operation permissions and password management

Controller provides multiple passwords and rights management, according to the different levels of password, provide different levels of operating rights, different level password and permissions are as follows:

1) operator user password: factory fixed as follows:

Permissions: allows modifications to load pressure, discharge pressure, fan about temperature and fan stop temperature, rev. Stop mode, loading mode, communication mode, communication coding and linkage related parameters.

2) user password: can be set up, the factory is set to:

Jurisdiction: allowed to modify all the user parameters.

3) manufacturer sales password: can be set up, the factory is set to:

Permissions: allowed to modify all the user parameters, the user password, and some manufacturers, factory sales password.

4) manufacturer factory fixed for _____

Permissions: allowed to modify all the user parameters, the user password, and some manufacturers, factory sales password.

5) calibration password: factory fixed as follows:

Jurisdiction: allowed to modify parameters of the current related Settings

6) super password: manufacturer factory fixed as follows:

Permissions: manufacturer in the parameters "running time", "phase sequence protection", "frequency selection" and "time" to enter the factory parameters, user can modify after super password again to verify.

(2) the controller function and technical parameters

1) the switch quantity: 3 way switch quantity input, 5 road relay switch output.

2) analog: Pt100 temperature input, all the way along the 4 ~ 20 mA 力 signal input, two groups of three phase current type (CT).

3) the phase sequence input voltage: 380 v / 220 v three-phase.

4) controller working power supply: AC20V, 5 va 10 va (recommended).

5) show small range

(1) the exhaust temperature to 50 ~ 150 ° C, the precision of + / - 1 °C.

(2) run time: 0 ~ 999999 hours.

(3) current display range: 0 ~ 999.9 A.

(4) pressure: 0 ~ 1.60 MPa. Precision; 0.0 1MPa.

6) phase sequence protection: air compressor stop state, phase sequence error is detected, the action time for 2 seconds or less.

7) motor controller of main motor are lack of phase, imbalance, overload, low voltage, high voltage protection function, the fan has overload protection function.

(1) open phase protection: when any phase power lacks ", the action time is equal to the set time; When open phase protection time setting is greater than 2 0 seconds, open phase protection doesn't work.

(2) balance protection: no more than two interphase current ratio imbalance degree, the action time of 5 seconds.

(3) overload inverse time protection features (in seconds), as shown in the table below (table 2.1.1). Multiple real/I = 1 set, when the motor running current is greater than or equal thousand setting current of 1.2 times to 3.0 times according to the following table of the overload ratio and action time delay action.

Time parameter \ $I_{\text{real}}/I_{\text{set up}}$	≥ 1.2	≥ 1.3	≥ 1.5	≥ 1.6	≥ 2.0	≥ 3.0
Movement time(s)	60	48	24	8	5	<u>1</u>

Table 2.1.1、 Time limit curve of motor protection

(4) air compressor working voltage is too low, too high protection, low voltage, high voltage value can be set up.

8) temperature protection: when detect the actual temperature is greater than the set temperature, movement time S2s.

9) relay contact output capacity: 250 v, 5 a; Contact life 500000 times.

10) current display error less than 1.0%.

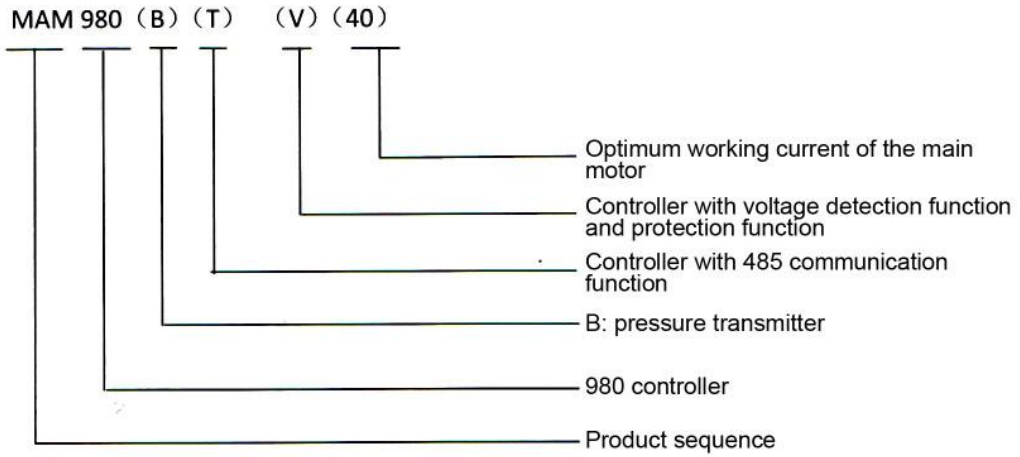
11) RS485 communication interface, can be set up according to the user, and spreading into other air compressor operation, or press the MODBUS RTU protocol, as from machine communications with external devices, from machine, baud rate 9600 BPS, 1 start bit, 8 data bits, stop bits and parity.

12) remote air compressor start-stop, start-stop mode is set to the remote, birds users can remote switch, stop air compressor.

13) remote and local start spreading function.

(3) specifications

1, the model shows that



2、 Motor power specification sheet

parameter	Current range (A)	Adapter main motor power(KW)	Remarks	Explain
MAM980 (20)	8~20	4~10		Fan current 0.2~0.5A file, 1~5A file,4~10A file Three specifications are determined according to fan current
MAM980 (40)	16~40	8~20		
MAM980 (100)	30~100	15~50		
MAM980 (200)	80~200	40~100		
MAM980 (400)	160~400	80~200		
MAM980 (600/5)	100~600	50~300	Connect to external CT	

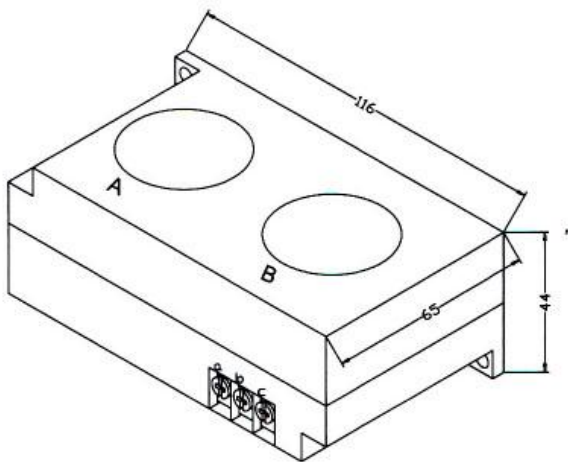
Table 3. 2. 1 Motor power specification sheet

(4) the installation

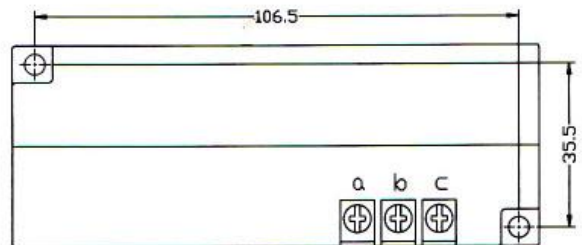
1, mechanical installation

(1), transformer installation

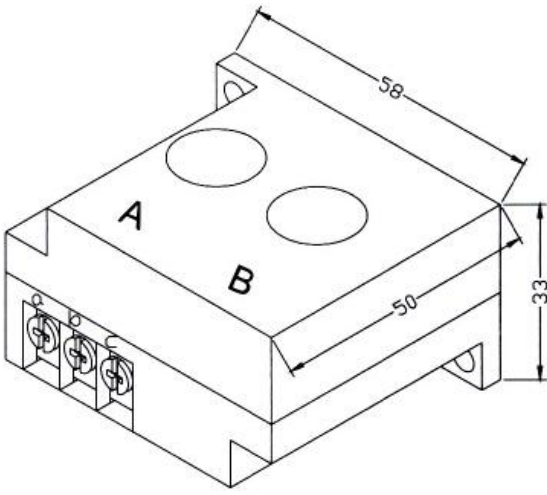
Line current transformer installation position should be able to measure motor (rated current), such controller when setting can be set according to the motor nameplate. The specific installation dimensions are as follows:



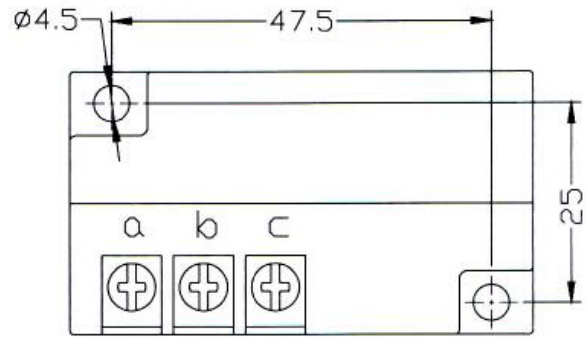
4. 1. 1、 CT1 structure size (ϕ 36 per)



4. 1. 2、 CT1 Installation size chart



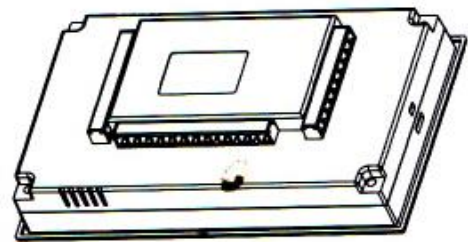
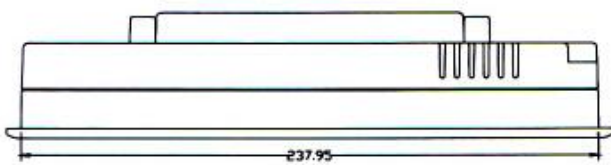
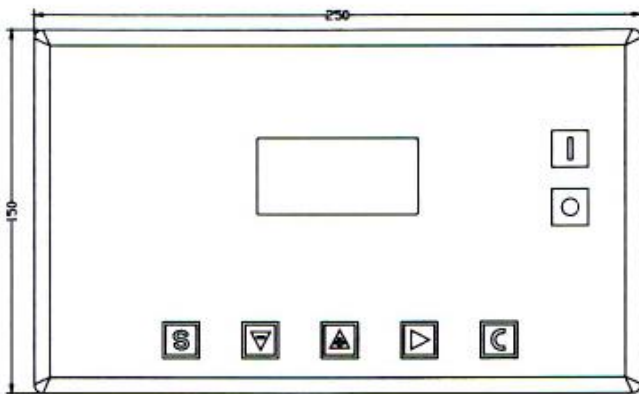
4. 1. 3CT2 structure size ($\phi 10$ per)



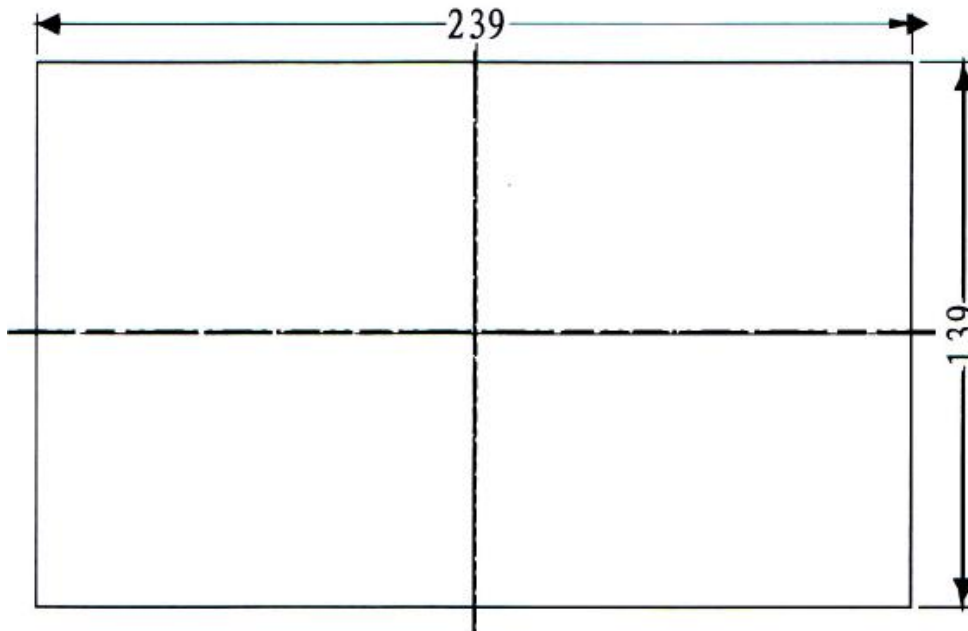
4. 1. 4、CT2 Installation size chart

(2) the controller installed

Controller for the plate mounted installation, the controller should have a certain space around convenient wiring. Specific size is as follow

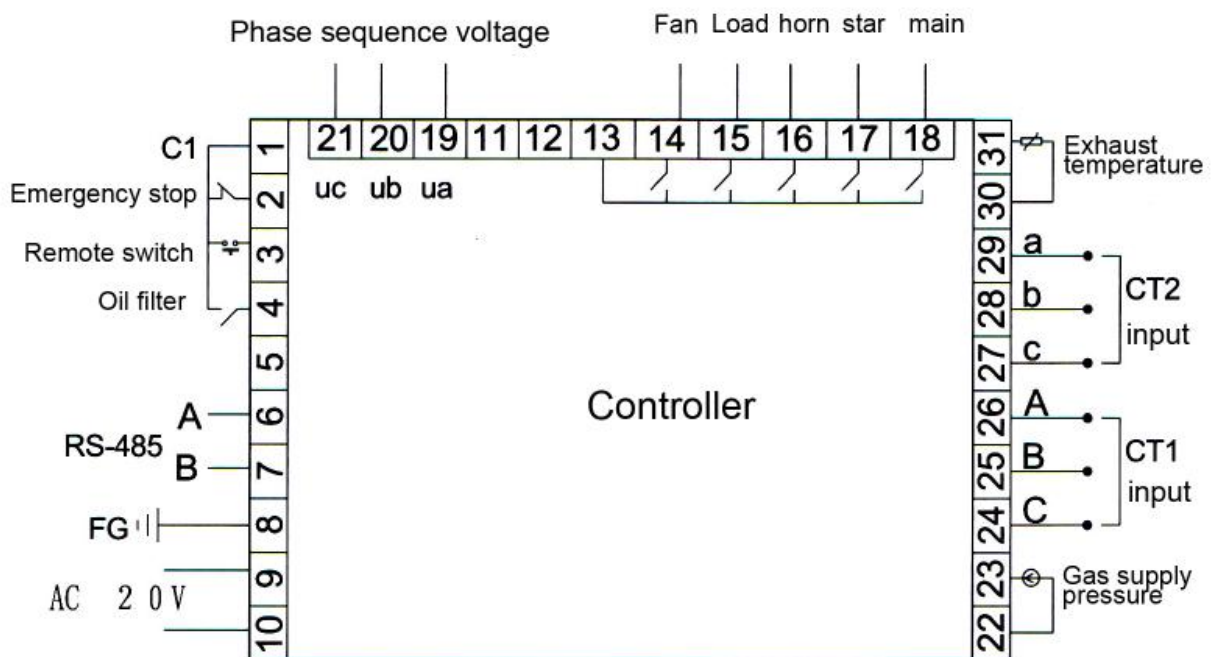


4. 1. 5 Master unit structure



4.1.7 Opening size

2, electrical wiring installation



4.2.1 Terminal arrangement diagram

The controller terminals:

1 is the switch quantity input public terminals; 2 for urgent stop switch input terminal; 3 for remote stop switch quantity input terminal; 4 for the oil filter switch quantity input terminal; 6, 7 for RS485 communication signal input terminal; Connect the earth; 9, 10 20 V AC power supply; 22, 23 力 gas pressure sensor; 24, 25, 26 main motor transformers signal; 27, 28, 29 fan transformer signal; 30, 31 for

exhaust temperature, 19, 20, 21 for phase sequence and the voltage signal detection input terminal; 13 for a public switch output terminals; 14 to control fan operation; 15 loading control valve; The control Angle of contactor; 17 control star contactor; 18 main contactor control.

Note: the wiring, the electromagnetic coil need to pick up to the nearest surge absorber.

(5) control process

1, the single machine running

(1), press the start key starting: (Y - delta starting)

Controller to electricity self-inspection after 5 seconds, press the start key can't start the air compressor. Press the start key after self-checking, host began to start. Host for the starting process: 18 terminal closure, electric KM2, 17 closed terminal KM3 to electricity, the host star running, start time, star Angle delay time arrives, 17 output terminal disconnection, KM3 lost electricity, 16 output terminal closure, KM1 electricity, the host Angle, (KM1, KM3 interlock)

(2), automatic operation control:

Host Angle after the operation, start ", after loading delay time to, if the system detects that the gas supply pressure is less than the unloading, 15 closed terminal load electric valve, air compressor load running, began to tank gas supply, when the system detects that the gas pressure is higher than the unloading pressure value set, 15 child disconnect, loading electromagnetic valve losing electricity, air compressor running light. And begin to total no-load running time, air compressor running light, gas supply pressure drop, if in the no-load delay time, load system detects pressure below the set pressure value, 15 terminal closure, loading electric valve, air compressor and to load running, if light the light of the running time is set more than delay time, 16 terminal disconnection, 18 terminal disconnection, Angle of contactor, main contactor lose electric, air compressor long downtime to empty, empty after long downtime, when the system detects that the gas supply pressure is lower than the load pressure, allowed to start again, and the air compressor controller automatically restart the air compressor according to the starting process, so the reciprocating cycle.

(3), in the condition of automatic manual loading and unloading

In the automatic state, equipment in unloading condition, click on the add loading, unloading key, if the unloading pressure is higher than the set pressure value, loading electromagnetic valve point move back to unloading state; If the pressure is below the set of the discharge pressure value, loading electromagnetic valve to electricity until the gas supply pressure is greater than unloading pressure value, back to the unloading state. When the load operation of the equipment, if the gas supply pressure is greater than the

set of load pressure value, click the add, uninstall button, air compressor unloading operation, if the pressure is higher than the unloading, loading electromagnetic valve until the gas supply pressure is less than the load value after losing electricity, loading electromagnetic valve electric, air compressor to load running state; Auto run ", if the pressure is lower than the load, the uninstall button, can't let air compressor discharge operation.

(4), normal downtime:

Press down, loading electromagnetic valve, losing electricity delay after a period of time (stop time delay), the main contactor, losing electricity Angle of contactor, losing electricity host and stop of the motor.

(5), frequent starting control

Press down down, empty too long downtime, after downtime, not immediately start motor, need to delay for a period of time (restart delay "), to restart the air compressor.

Diction, remote automatic control (start-stop method: remote; loading ways: automatic remote automatic control and automatic control, i-hsiang, local is closed by the remote switch point movable equipment start-up, disconnect, complete control.

(3), a local manual control (start-stop way: local; loading ways: manual)

As wide only start-stop control and automatic control equipment after the start, in the unloading operation. Press add, unloading, air compressor load, when the gas supply pressure is greater than the discharge pressure, automatic unloading equipment, if no buttons, uninstall button, plant, equipment unloading operation until empty too long downtime. In the process of unloading, press add, unload load; In the process of loading, the press, and uninstall unloading.

2, networked control

(1) when the controller is connected to the Internet communication is set to "computer" from the machine, according to the MODBUS protocol communication with the upper machine.

(2) when the communication controller is set to "linkage" between controller and the controller network control can be realized, but the host can only make the equipment

Code of 01 air compressor.

3, fan operation

When the temperature of the exhaust gas temperature is greater than the strating inches, the controller to start the fan operation, when the temperature of the exhaust temperature is less than the fan stop ", stop running fan motor.

(6) warning and reminder

1, air filter warning instructions to filter using time, text display hints "between the air filter used to".

2, oil filter warning instructions

(1), with a switch signal detection of early warning

Controller by detecting oil filter differential pressure switch is closed, the text display hints "oil filter resistance".

(2), set oil filter using time early warning

Use time to the oil filter, text display prompts "oil filter used to time".

3, oil separator warning instructions

Use time to oil separator, text display hints to use time to "" oil separator.

4, lubricating oil warning instructions

Lubricating oil to use time, text display hints "lubricating oil use time to"

5, grease warning instructions

Grease to use time, text display prompts "grease to use time to"

6, belt use time to warnings

Belt use to the time, the text display hints "belt use time to"

7, high exhaust temperature early warning

Parameters set in the system detects that the exhaust temperature more than manufacturer of temperature "warning" value, the text display hints "high exhaust temperature.

(7) security protection

1, the protection of motor

MAM980 air compressor controller of main motor with overload, open phase, imbalance protection, high voltage and low voltage protection, overload protection function of the fan.

Electrical fault	Fault display	Cause the reason
overload	Field failure shows "host or fan overload"	Heavy load, bearing wear, other mechanical failure
Lack of phase	Field failure show "host lacks"	Heavy load, bearing wear, other mechanical failure
unbalanced	Unbalanced field failure shows "host"	Contactors poor contact, motor open loop
The voltage is too high	Field failure shows "high voltage"	High power supply voltage

The voltage is too low	Field failure shows that the voltage is too low	Low power supply voltage
------------------------	---	--------------------------

2, exhaust overtemperature protection

High exhaust temperature is higher than the set temperature range, the controller alarm shutdown, fault show that the high exhaust temperature gauge field.

3, air compressor writers reverse protection

Press down inches, phase sequence mistake "is detected, the field failure shows" phase sequence errors "are not allowed to start the air compressor. At this time only arbitrary switching to the power cord and see motor.

4, gas supply pressure to overpressure protection

Inches, high exhaust pressure is higher than the set pressure 力 range controller alarm downtime, field failure shows "力 high exhaust pressure".

5, sensor failure protection

When the pressure sensors or temperature sensor ", open controller alarm stop. Field failure display "** * sensor failure".

6, low temperature protection

Air compressor boot after 2 minutes, the system detected manufacturer of exhaust gas temperature is lower than the parameters set in the low temperature protection value, the controller alarm downtime, field failure shows "exhaust temperature sensor failure".

(8) the processing of common failures

1, to check the field failure

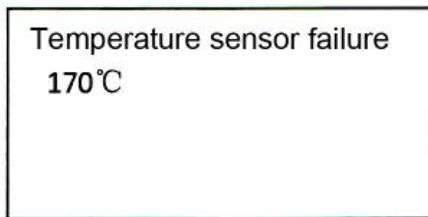
Caused by the controller external device downtime, can through the query site failure or historical failure found out the cause of the problem, eliminate outside faults. The specific method is as follows:

In the main interface press down key mobile black color after the scroll bar to the running parameters menu, and then press the enter key, switch to the next level menu:

Main fan current
Total running time
The running time
Maintenance parameters

History fault
Ex factory date, number
Site failure
Communication status

Moving the scroll bar to the scene of the "fault" menu, and then press the enter key, switch the interface (failure) as follows:



According to the user's fault information, troubleshooting.

2, common failure and the reason

The fault	Cause the reason	Processing method
The exhaust temperature	Bad heat dissipation, less oil, etc	Check amount of ventilation, lubricating oil and so on
Temperature sensor failure	Bolt, PT100 bad, etc	Check the wiring and PT100
Ultra high pressure	The actual pressure high, sensor is not accurate	Check the machine pressure and pressure sensors
Pressure sensor failure	Sensor circuit disconnection, bad, the line by the sensor	Check the wiring and pressure transmitter
Lack of phase	Link up the phase indicator, contactor contact bad, etc	Check the power supply, the contactor
overload	Voltage is too low, pipe blockage, bearing wear, other mechanical failure, setting the wrong data	Check set data, check voltage, bearing, piping and other mechanical failure
unbalanced	Power imbalance, contactor contact bad, motor internal ring opening, etc	Check the power supply, contactor, motor

Phase sequence fault	Phase sequence counter, phase failure	Check the line
The host appeared in the process of start overload fault	Host set start time is less than the star Angle of delay time	To reset the main phase is greater than the dynamic time (star Angle delay + 2) seconds
Main contactor often action	Stop button is loose; The disturbance of controller reset	Check the connection; Whether or not the output coil has been the surge absorber.

(9) linkage control, network communication

(1), spreading description:

MAM980 controller, but with my MAM with communication function series air compressor controller linkage operation. Maximum spreading into 16 sets of air compressor operation. Linkage control wiring diagram as shown in the figure below

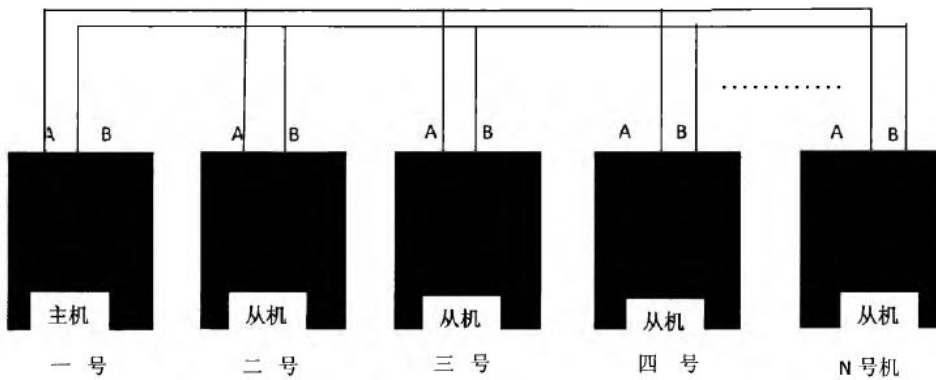


图 9. 1. 1

In the network communication coding for 0001 air compressor for the host, for the rest of the air compressor from the machine, any a MAM series air compressor controller can be set to the host or from the machine.

(2), spreading Settings:

1. Set to host:

In the main interface, press the down key, enter the menu options, select the user parameters, press the enter key, switch to the following interface:

Pressure and temperature
Start stop delay preset
Operating mode preset
Linkage parameter preset

Move the scroll bar to the "operating mode preset" press the enter key, switch to the following interface:

Start stop mode: Remote
Load mode: automatic
Communication mode: linkage
Communication code: 001

Set for "linkage" communication mode, communication code is set to "0001", return to the superior directory, move the scroll bar to the linkage parameters preset, press the enter key to switch to the following interface

Linkage state: host
Rotation time: 0002H
Linkage number: 0004
Joint pressure lower limit:
00.62Mpa
Joint pressure upper limit:
00.78Mpa
Linkage delay: 0020 seconds

According to user requirements, set the state of "linkage" to the host, "rotation time", "number of interlocking machine", "al pressure lower limit", "the Associated Press cap", "linkage delay" based on user Settings. After the success of the relevant parameter Settings, the controller needs to power restart, to give the Settings to take effect.

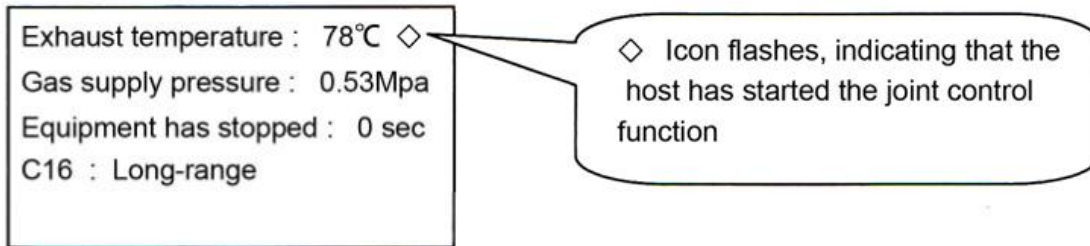
2. As from the machine:

MAM880 controller as inches from the machine, need to set up the "communication" as the linkage, "communication code" according to user's air compressor machine number is 2-1 6 range can be set up, the order number, "linkage" set as from the machine.

(3), start, stop, spreading into:

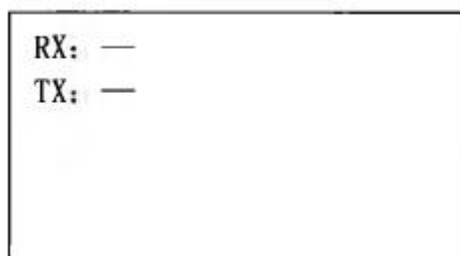
Confirmation from spreading telecommunication lines connected correctly, spreading air compressor

after parameter is set correctly, start the host 1 and host according to the detected gas supply pressure, automatic control network hollow press operation. Manual stop after the host 1, linkage control to stop. Host 1 no longer send control commands to networked air compressor. Spreading starts, the host of the main interface corner will have a prismatic icon flashing, prompt the user has started from spreading.



(4), spreading communication receive and send data view:

Controller through the RS485 communication port to receive and send data, but through corresponding letter state indicator display interface, convenient for the user in spreading or communication ", confirm whether the controller have received data, and response to the data. Instructions to switch to the communication interface method is as follows: in the main interface press down key, enter the menu selection interface, select operation parameters menu, scroll down to the communication status menu, press the enter key to switch to the state of communication interface, as shown below

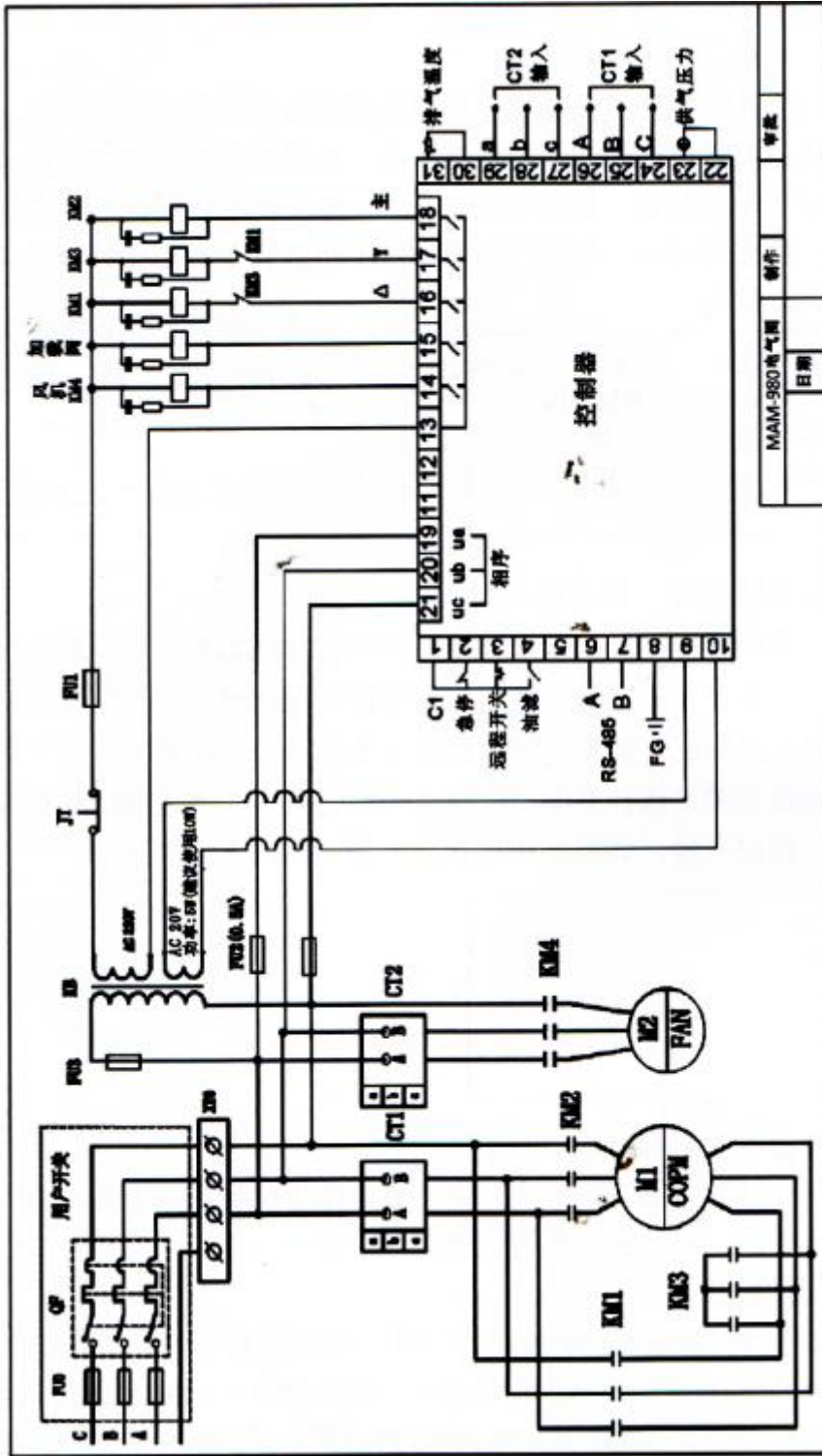


Controller receives the data, the R X: after the corresponding instructions alternates between "-" and "*", send data, TX: after alternates between "-" and "*", joint control or communication with the upper machine ", but by looking at the interface, confirm that communication has been established.

2, network communication

MAM980 controller, support MODBUSRTU agreement, as from machine, communications and other equipment, support of 3, 6, 1 6 MODBUS commands. Communication baud rate: 9600 BPS, 1 start bit, 8 data bits, stop bits and parity. MODBUS register address table to see the MODBUS communication manual. Started from spreading.

Ten, electrical wiring diagram



审核	制作	MAM-980电气图
日期		

The fifth chapter operation

A commissioning

1, after its pipelines, according to the requirement to ensure pipeline flow, avoid pressure-out after switch on the air pressure rise rapidly.

2, check the machine, pipe joint, meter connector, wire etc. If there is a loose due to reasons such as transportation, installation, or fall off, if yes, please tighten.

3, check whether the oil level in barrels of oil and gas in the oil level gauge between two scribed line, after the operation shall be carried out after the downtime for 10 minutes. When oil flows through the system back into oil and gas tong. Run the CPC may be a stop Machine oil level slightly lower. If not enough, please promptly added.

4, before the test, should from the inlet valve inside to join around half a litre of lubricating oil, turn the air compressor and hand turn number, prevent the starting time and space compressor for oil and burning, please pay special attention to not let foreign bodies fall into compression indoor, so as to avoid damage to the nose.

5, check the power installation is correct, if the three-phase power phase sequence is wrong or owe phase, the controller will display fault information. At this time should be adjusted phase sequence, exchange of any two phase power cord.

6, in spite of the phase sequence protection, still should check the host. Method is: press the start button for 2 seconds later, immediately press the stop button, confirm the host to the nose end face the direction of arrow (shaft extension end).

7, press the start button to start running.

8, observe whether the pressure and temperature rise, normal monitor whether there are abnormal. If there is abnormal indication, according to "stop button" stop check immediately.

9, check whether the machine can normal load, if found to have abnormal sound, abnormal vibration or the phenomenon such as oil, according to "stop button" stop check immediately.

10, check the unloading function. When the exhaust pressure reaches the upper limit of microcomputer controller set, the machine should be able to automatically unload; When the system pressure to the lower limit set, the machine should be able to automatically load operation.

11 and check whether the exhaust temperature is below 95 ° C.

12, press the "stop" button, can check the compressor normal delay stop.

13, if everything is ok, press the "stop button", check the compressor can be emergency stop.

Second, the daily operation

1, before each boot, slightly below the open barrels of oil and gas drainage ball valve, to eliminate barrels of oil and gas in the condensed water (for water than heavy oil, sedimentation on the bottom), once saw oil flow out, quickly shut down. In high heat and humidity environment, the continuous operation of air compressor, please be sure to stop more than 10 hours in at least once a week, in order to discharge the condensate oil, to avoid oil emulsification. Pressure on environment in cold shrink machine, should ensure that lubricating oil not condense.

2, check the oil level static, when should be added. Refueling, should confirm there is no pressure in the system when can open the filler cap. It is forbidden to mix different type of lubricating oil, a mixture of different grades or substandard lubricating oil, may have raised fuel consumption, and even cause the nose stuck serious consequences.

3, turn the air compressor by hand, should move freely, if there are any card lag phenomenon, should check the reason.

4, close the total power supply, open the valve.

5, press the start button, the compressor started to run automatically.

6, the compressor high degree of automation, with perfect security protection function, generally do not need to guard. But in order to ensure safety, the runtime should be regularly check and record the exhaust pressure, ambient temperature and exhaust temperature, oil level, parameters, such as reference for future maintenance.

7, Oil system, run time, filled with high temperature and high pressure liquid, do not loosen the line or in other dangerous operation. If there is an abnormal sound, vibration, etc. It should be according to "stop button" stop check immediately.

8, work has been completed, press the "stop" button, the compressor into normal shutdown procedures, discharge delay shutdown after internal pressure. Note that only in an emergency can press "stop button" downtime.

9, close the cut-off valve, to cut off the total power.

Three, the processing method of long-term outage

Down "for a long time, should strictly follow the following methods processing, especially in the temperature is below 0 ° C and high humidity season or region.

1, down more than 1 months

1) set the controller, such as electrical distribution box, wrapped in plastic paper or paper, to prevent

moisture intrusion.

- 2) the oil cooler, after cooler completely discharge the water in the clean, avoid frost crack of the cooler.
 - 3) if you have any fault, should be ruled out, for future use.
 - 4) in two or three days and then barrels of oil and gas, oil cooler, after cooler water discharge.
- 2, down more than 3 months of treatment

Apart from the above procedures, the other to do the following:

- 1) will be all openings closed to prevent moisture, dust entering.
- 2) before the outage replacement lubricating oil, and running 30 minutes, in two or three days out of barrels of oil and gas and oil cooling

In the condensate.

- 3) will completely discharge the condensate.
 - 4) as far as possible will machine move to less dust, air dry storage.
- 3, restart the application
- 1) remove the air compressor machine all plastic paper or oiled paper.
 - 2) to measure the insulation resistance of the motor, should be in more than one mq.
 - 3) other procedures as stated in test steps.

The sixth chapter maintenance and inspection

A specification, lubricating oil and the use of maintenance

1, lubricating oil

Lubricating oil on the performance of the injection screw air compressor has a decisive influence, if use undeserved or mistake, will result in serious damage air compressor body. Please use the factory designated recommended screw machine for oil.

2 and the influencing factors of oil change period

- 1) poor ventilation, the environment temperature is too high;
- 2) the environment moral high humidity;
- 3) the environmental dust.

3, oil change steps

- 1) will air compressor running a bit of time, the oil temperature rise, reduce oil viscosity, good emissions.
- 2) press stop button, and downtime.
- 3) when a barrel of oil and gas are o. 1 mpa pressure, open the tong oil drain valve at the bottom of the oil and gas. Due to the pressure, oil drain quickly, easily, you should be slowly opened, so as to avoid oil flowed. After the oil drain, close the drain valve. Note: you must put a net to all of the lubricating oil system, including piping, cooler, barrels of oil and gas, etc.
- 4) open the oil plug, inject new oil.

4, lubricating oil use

1) the scrap of the oil and change depending on the machine of the old and new, using the environment temperature, humidity, dust and ever acid-base gas in the air, in general, the first time the new air compressor used 500 hours after change new oil, oil change for the second time 1000 hours, according to normal in the third oil once every 2000 hours. The continuous operation of air compressor oil should be timely change.

2) don't let the oil over the service life of oil, oil should be replaced on time, otherwise the oil quality decline, poor lubricity, reduce the nose bearing life. Easy to cause high temperature downtime phenomenon; At the same time because the oil's flash point drop, also easy cause oil combustion, lead to burn down compressor.

3) the air compressor in the use of two years later, had better use oil lubricating oil for a "clean" system, its approach is to replace the new lubricating oil, let air compressor operation. After six to eight hours, immediately replace lubricating oil again, thoroughly cleaned originally remaining in the system of various

kinds of organic compounds, so replace lubricating oil has a longer service life.

4) oil should be added when the same brand of lubricating oil, it is forbidden to different type of lubricating oil to mix.

Second, the maintenance of the air cleaner

1) when the monitor prompt or each running 500 hours should clean air filter. Remove the filter, using low pressure air blow dust from inside to outside.

2) after every run of 2000 hours should replace the air filter cartridge.

3) note: conditions should be shortened when cleaning or replacement cycle.

4) note: clean or replace, protected from foreign bodies fall into the inlet valve, in order to avoid the host card dead burned.

Three, the oil filter replacement

1) the new model should be replaced after the first run of 500 hours.

2) after each run 2000 hours should be replaced.

3) oil change when had better change the oil filter.

4) note: conditions should shorten the replacement cycle.

5) note: replacement shall be carried out after the outage pressure relief. Change with the help of the tool along the counterclockwise spin out oil filter. Turn the process to prevent the lubricating oil flow to the stand. Install the new filter, tighten by hand. Change is completed, should check whether the oil boot.

Four, fine oil separator of replacement

1) under normal operation, fine oil separator can work about 3000 small ", but the product of the lubricating oil and pollution to the environment

Life. If the environment pollution is serious, can consider to add front air filter.

In general, the fine oil separator can by the following method to determine whether the damage:

The oil content rights to add in a air line;

B fine oil separator pressure difference before and after more than 0.12 Mpa;

C current is raised.

2) security note: change after downtime, confirmed cases there is no pressure in the system.

1) a type of fine oil separator outside replacement method is the same as the replacement of oil filter method.

2) built-in fine oil separator replacement method:

A line of barrels of oil and gas will cover (including the minimum pressure valve between exports and

after cooler pipeline)

Apart:

Remove the oil and gas barrel cover all fastening screws.

C taking cover on barrels of oil and gas.

D to take out the oil separator, change new oil separator.

E will barrel of oil and gas well in the open instead of order.

3) note: the flange and each has a fine oil separator asbestos gaskets, gasket with staples such as metal belongs to the conductive film, prevent the formation of fine oil separator electrostatic. When replacement, as-is staples on the nail.

4) note: the installation, make sure air into the oil tank of the return pipe to the base of fine oil separator in 2 ~ 3 m m distance.

5) note: the change in the process of fine oil separator to prevent dirty items fall into barrels of oil and gas.

6) change is completed, should check whether the oil boot.

Five, the maintenance cycle and content

The maintenance cycle	Maintenance content
Daily/boot every time	Discharge of condensed water in oil pump
	Check the oil level
Every 3 months / 500 hours	Clean air filter
	New change oil filter after the first run of 500 hours
	New oil change after the first run - time 500 hours
	Check the oil, gas, circuit connection is loose
	Tension belt
	Check the safety valve discharge function
Every 6 months / 2000 hours	Replace lubricating oil
	Replace the air filter cartridge
	Replace the oil filter
	Replace the fine oil separator filter
	Clean oil, gas cooler
4000 hours/every 12 months	Clean oil, gas cooler

Chapter vii. Daily maintenance and troubleshooting

If you have something wrong with the air compressor, please check under the orders of the text display, or refer to the following table try to rule out. If you still cannot deal with these problems, please contact our company's service units.

Troubleshooting table

Failure case	Possible reasons for	Elimination method
Unable to start	<ol style="list-style-type: none"> 1, the fuse burned 2, the voltage is too low, 3, the power phase sequence is wrong 4, start button poor contact 5, abrupt stop button does not reset 6 motor fault 7, gas line fault 8, air compressor host failure 	<ol style="list-style-type: none"> 1, the amount of lubricating oil 2, lubricating oil specification is wrong 3, high ambient temperature 4, the oil filter blocking 5, oil cooler internal blockage 6, cooler surface dust 7, fan start temperature setting is too high 8, temperature sensor failure 9, loose wires
Current is too high, Compressor stop on its own	<ol style="list-style-type: none"> 1, the voltage is too low 2, exhaust pressure is too high 3, lubricating oil specification not IE indeed 4, thin oil separator blockage, high internal pressure 5, air compressor host failure 	<ol style="list-style-type: none"> 1, please electrical repair replacement. 2, view to unload the pressure setting and adjustment. 3, check the oil, replace oil. 4, replace the oil separator. 5, rotating rotor body with the hand, if not turns, <p>Please contact service units.</p>
Working current is lower than normal	<ol style="list-style-type: none"> 1, the gas is too big 2, air filter clogging 3, intake valve movement, such as jam, etc 4, the inverse proportion valve improper adjustment 	<ol style="list-style-type: none"> 1, check the gas use, if necessary, add a compressor. 2 clean or replace 3, check the inlet valve cylinder, piston movement is normal. 4, adjust the Settings.

<p>The nose exhaust temperature Below normal</p>	<ol style="list-style-type: none"> 1, low environmental temperature 2, no-load running time is too long 3, temperature sensor failure 	<ol style="list-style-type: none"> 1, raised fan starting temperature. 2, raised large gas, or set a by-pass valve. 3, change of temperature sensor.
<p>The nose high exhaust temperature Air compressor to jump</p>	<ol style="list-style-type: none"> 1, the amount of lubricating oil 2, lubricating oil specification is wrong 3, high ambient temperature 4, the oil filter blocking 5, oil cooler internal blockage 6, cooler surface dust 7, fan start temperature setting is too high 8, temperature sensor failure 9, loose wires 	<ol style="list-style-type: none"> 1, the oil level. 2, check the oil, and replace the oil. 3, rights and exhaust and reduce the room temperature. 4, replace the oil filter. 5, after remove the cleaning agents. 6, clean the cooler fin. 7, adjustment. 8, replacement Wen sensor. 9 and maintenance
<p>Unable to load operation</p>	<ol style="list-style-type: none"> 1, loading electromagnetic rich fault 2, pipeline leak 3, proportional valve failure 4, inlet valve, a cylinder 5, minimum pressure valve action 	<ol style="list-style-type: none"> 1, the replacement product. 2, troubleshooting. 3, clean or replace. 4, repair or replacement. 5, remove after check seat and check for wear, such as wear and tear is replaced.
<p>Unable to uninstall, working pressure continues to rise to the relief valve discharge</p>	<ol style="list-style-type: none"> 1, the pressure is set too high 2, loading electromagnetic valve failure 3, the inlet valve cylinder diaphragm rupture 4, discharge limit flow rate is too small 5, pressure sensor failure 6, the microcomputer controller failure 	<ol style="list-style-type: none"> 1, the adjustment. 2, change. 3, replacement. 4, moderately increase the discharge limit traffic. 5, replacement. 6, maintenance and repair, replace if necessary.

<p>Air compressor exhaust below normal</p>	<p>1, air filter clogging 2, intake valve movement 3, oil separator blockage 4, improper inverse proportion valve setting 5, loading electromagnetic valve failure 6, the relief valve or other pipeline leakage</p>	<p>1, clean or replace. 2, maintenance, cleaning, add grease. 3, maintenance, will the ginger 1 replacement. 4, adjust the Settings. 5, repair, replace if necessary. 6, maintenance</p>
<p>Loading and unloading Frequent conversion</p>	<p>1, pipeline leak 2, loading and unloading pressure 力 of differential pressure is too small 3, air consumption is not stable</p>	<p>1, the maintenance and repair. 2, reset (generally for 0.1 Mpa above). 3, good air tank volume.</p>
<p>When stop oil mist from the air filter</p>	<p>1, the air valve leakage 2, heavy car stop</p>	<p>1, the check valve seat and valve disc for wear, rupture, if Is the replacement. 2, check whether the intake valve is stuck.</p>

