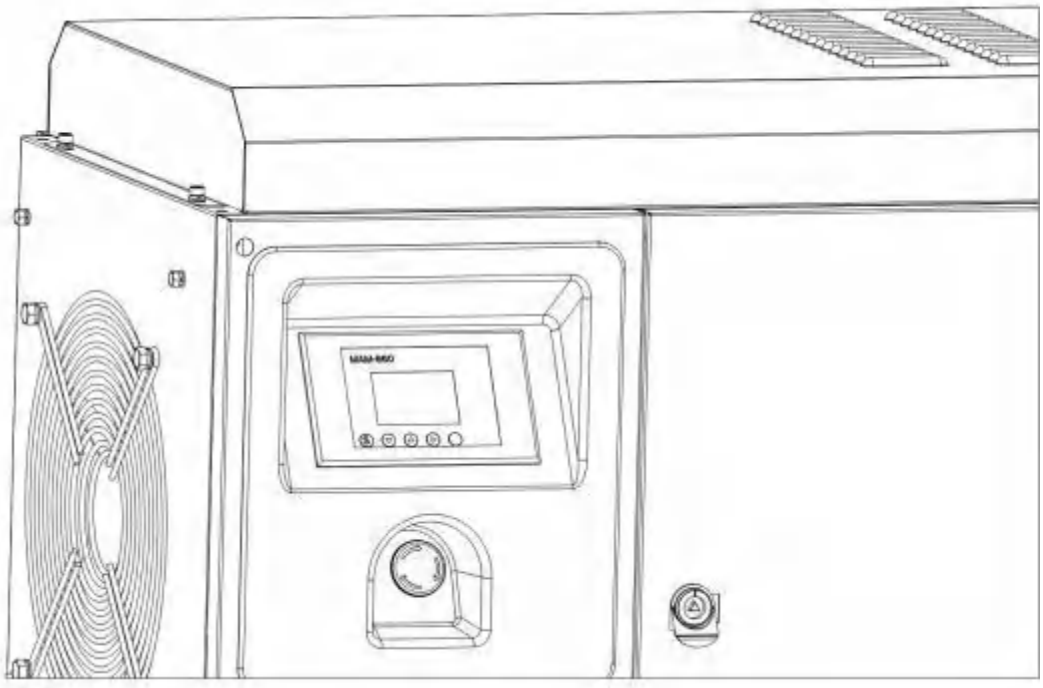
Permanent Magnet Variable Frequency Screw Air Compressor

Operating Manual



Foreword

This operation manual describes in detail the safety precautions of the screw air compressor, the structure and function of each system and component, and the operation and maintenance methods.

The operator should read this manual carefully, and only after fully understanding the structure, function and safety precautions of each system and component of the unit, can the unit be operated and maintained. Except as stated in this book, if the user does not operate and maintain according to the operation and maintenance procedures of this book, or disassemble and modify the machine by himself, or use oil and parts not specified by manufacturer, you will lose the right to claim.

This operating manual does not provide you with an illustrated catalog of parts. If you need to order parts from the manufacturer, please refer to the relevant unit parts manual. What needs to be reminded is that manufacturer continues to develop and improve its products. After a certain period, the content of the parts manual may differ from the actual situation of the product. Before you order parts, please check with manufacturer 's service department.

This manual gives a general introduction to the motor and electrical system and maintenance, but before you use and maintain this unit, if you have any questions, please contact the manufacturer.

Special reminderfor threefilter and oil maintenance cycle

Serial number	Project	Time	Maintenance content	Remark
1	First maintenance	The new machine runs for 500 hours or 1 month (whichever comes first)	Change the lubricating oil Replace the oil filter Replace the air filter Replace the oil fine separator	
2	Routine maintenance	Run for 2000 hours or half a year (whichever comes first)	Change the lubricating oil Replace the oil filter Replace the air filter Replace the oil fine separator	

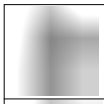
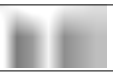
★Note: The maintenance period should be shortened appropriately under severe working conditions.

Table of content

Chapter 1 Safety Rules

Safety warning signs

In this manual, the operations and matters involving safety are defined and classified according to the severity of damage to the machine and the degree of personal injury that the operation may cause, and the following signs are used to express and explain in bold.

	"Warning" means that you must confirm that it is properly grounded before starting the machine.
	"Caution" indicates unsafe factors that may cause general damage to the machine or personal injury.
	"Warning" indicates unsafe factors that may cause property damage or personal injury.
	"Warning" means electrical equipment, and only qualified personnel can operate in accordance with the specifications.
	"Warning" means that the unit will restart automatically, which may cause serious injury to the human body and equipment.
	"Warning" means do not touch the surface of hot objects. To prevent burns, please do not approach this surface.
	"Warning" means that moving parts can cause serious injury to the body. Do not operate the equipment without a protective cover or when the protective cover is damaged.
	"Danger" refers to unsafe factors that can cause major accidents or personal injury.
	"Danger" means an unsafe factor that can cause serious personal injury or death with a voltage exceeding the safety level. All electrical work must be done by a qualified electrician.
	"Dangerous" means that it is used for breathing and food handling. The compressed air must comply with the standards OSHA 29CFR1910.134 and FDA 21CFR178.3570, otherwise it will cause human injury and even death.
	"Dangerous" means that the pressurized air will cause serious damage to the human body, equipment and property, or even death.
	"Caution" means unsafe factors that may cause property damage or personal injury to hot surfaces.
	"Attention" indicates important installation, operation and maintenance information.

Safety warning

Please be sure to read carefully before operating and using the compressor

warn

Compressed air and compressed air systems are dangerous!

Failure to comply with the operating procedures and safety precautions of this operating manual may cause accidents and cause the possibility of injury or death to yourself or other personnel!

Before operating and maintaining the compressor, you must carefully read and understand this operation manual!

Before the machine leaves the factory, obvious warning decals have been affixed to dangerous places and places that require attention.

Before performing any operation and maintenance on the unit, you must read and understand this operation manual.

1. The unit must not be operated on an exhaust pressure higher than the rated exhaust pressure of the unit, otherwise the motor will be damaged due to overload.

2. When the unit leaves the factory, various protection controls are set up intact, and the control components of the unit must not be changed or dismantled at will, otherwise it will cause serious equipment and personal accidents

3. When the unit is running, never disassemble or loosen any pipeline components, joints, plugs and couplings, and do not pull the safety valve. The unit is full of hot working fluids under pressure, which can cause serious personal injury accidents.

4. Before performing any maintenance work on the unit, you must confirm:
   The unit has stopped.
   The internal pressure of the unit has been completely vented;
   The power is turned off.

5. Only safe solutions can be used to clean the compressor and auxiliary equipment of the unit.

6. Once any part fails, it must be replaced immediately, otherwise it may cause immeasurable losses.

7. This machine is for indoor use and cannot be used in the open air. Must be grounded ★★★

The safety measures and safety precautions listed below are only part of the matters that must be observed when using the compressor and compressed air system, but not all them.

△ **warn**

Failure to observe the following safety measures will result in personal injury or death, property damage or compressor damage.

Only trained and authorized people can operate the compressor. Before any work, you should read this operation manual carefully and fully understand its contents. Failure to follow the operation and maintenance procedures and safety rules in the operation manual may cause accidents and personal injury.

Never start the unit under unsafe conditions; if there is a problem with the unit, do not try to start it. The power supply should be cut off and an obvious sign should be made to prevent unknowing people from mis operation.

Compressed air is dangerous, and the unit can be repaired and maintained only when the compressed air in the entire compressor system has been emptied.

Do not change the internal structure and control method of the unit unless it is approved in writing by us.

If it is a unit with movable wheels, please make sure that the wheels have been secured by effective measures before starting the machine.

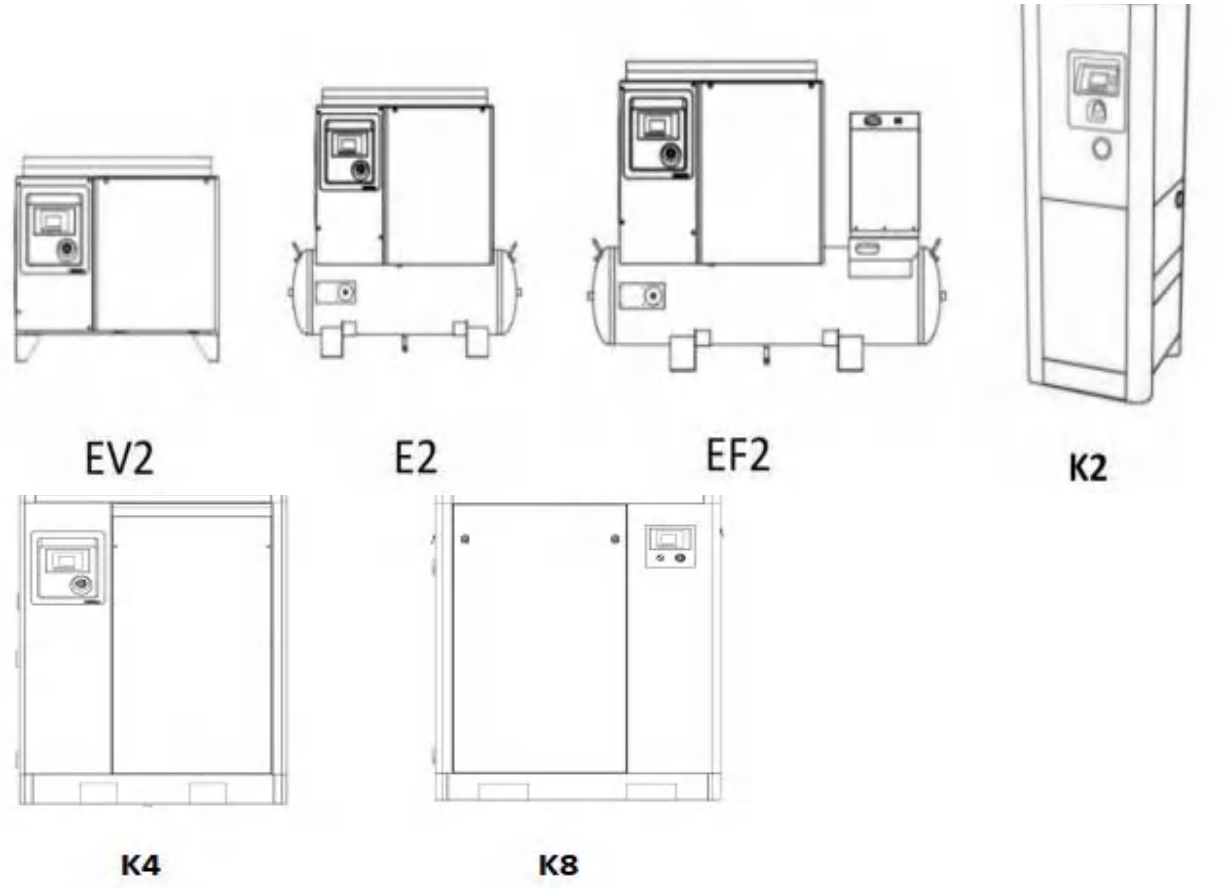
Do daily maintenance and maintenance. The unit should be carefully checked every day to see if there is any leakage, loose parts, damage, adjustment failure or missing parts, etc., and deal with problems in time.

Chapter 2 System Function Introduction

2.1 Introduction

The permanent magnet inverter compressor is a positive displacement, oil-injected twin-screw compressor. The motor and the male rotor of the compressor airend are integrated to drive the compressor to rotate. The unit has good power, economy and reliability.

This series has reasonable layout, complete functions, simple operation and maintenance, and beautiful appearance. All instruments, indicators and control devices are concentrated on the control panel, which is easy to operate and can run stably and reliably for a long time, see Figure 2-1. In order to keep the screw compressor unit, you have purchased or used in the best operating condition, please read Chapter 5 Maintenance in this operation manual carefully.



2.2 Compressor airend and compression cycle

Compressor air end. Refer to Figure 2-2. When working, air enters the casing through the air inlet at the power input end. When the rotor turns over the edge of the suction orifice on the casing, a part of the sucked air is enclosed in the female and male rotors and in the enclosed volume of the screw groove formed by the casing, the enclosed volume of the screw groove changes continuously with the meshing movement of the female and male rotors, so as to realize a continuous working cycle of suction, sealing, compression and exhaust.
The compressed air passes through the exhaust port. Exhaust into the air oil separator tank.

1. Inhalation process 2. Closed and conveyed 3. Compression and fuel injection stroke 4. Exhaust process

Figure 2-2 Compression cycle

2.2.1 Air intake system

Refer to Figure 2-3. The function of the air intake system of the compressor unit is to provide clean air to the compressor. It includes an air filter and an air intake valve.

Figure 2-3 Air intake system

2.2.2 Compressor exhaust system

The exhaust system of the compressor unit is mainly composed of air oil separator tanks, air tanks, combination valves, oil separators, safety valves, etc.

The air oil separator tank part can realize the phase separation of the mixture of oil and air compress. An oil fine separator is installed above the air oil separator tank. The compressed air after the oil and air separation contains only a few PPM (usually below 3PPM) of lubricating oil. The air tank is located under the machine to store air.

The combined valve integrates the oil fine separator seat, the oil filter seat, the pressure maintaining valve, and the safety valve interface. The function of the pressure maintenance valve is to ensure that the compressor establishes a minimum tank pressure in the system during normal operation to ensure the normal operation of the lubricating oil circuit. When the unit is shut down, the pressure maintaining valve is a check valve to prevent the compressed air from returning. The opening pressure of the pressure maintenance valve is 4.0±0.34bar (60±5psi), which has been preset before leaving the factory.

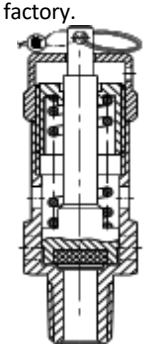


Figure 2-5 Safety value

There is a safety valve for the air oil separator tank and the air tank on the barrel. When the air pressure in the tank exceeds the set pressure of the safety valve, the safety valve will open automatically. The opening pressure of the safety valve has been set before leaving the factory, please do not change it without authorization.

warn

- When the compressor is running or under pressure, do not disassemble nuts, oil plugs and other parts. Shutdown and release all internal pressure before maintenance operations.
- It is not allowed to replace and use other types of safety valves.

2.2.3 Compressor cooling and lubrication system

The compressor cooling and lubrication system consists of an air oil separator tank, an oil cooler, a combination valve, an oil filter and an oil pipeline, etc.

The oil filter consists of a filter seat and a replaceable spin-on filter element with a built-in bypass valve. When the filter element is dirty or the oil viscosity is too high, it can ensure the smooth flow of the oil path and the normal operation of the compressor.

Oil cooler: The cooler is an aluminum plate-fin structure. The cooling fan forces air to flow through the cooler fins to cool the lubricating oil in the cooler pipe. In daily maintenance, the surface of the cooler should be cleaned regularly, and if necessary, it can be flushed with high-temperature pressure water not greater than 3.5 Bar.

2.2.4 Compressor air volume adjustment and control system

This series is equipped with a standard automatic control system.

After the machine is turned on, it runs at no-load and enters the loading state after 10 seconds. The motor frequency is adjusted according to the pressure of the back-end pipe network. When the system reaches the unloading stop pressure, the solenoid valve closes the intake valve, the compressed air in the oil-air separator is emptied, and the screw compressor runs without load for 600 seconds (set value). If there is no use of air, the air compressor enters asleep state. After the pressure is lower than the set value, the screw compressor restarts and runs reciprocating Ly so that the user's air pressure is not lower than the set value.

The air volume adjustment and control system of the compressor unit is mainly composed of the following components:

Intake control valve, pressure regulating valve, discharge valve, orifice, and pipe fittings and joints connecting various components.

The operation of the machine mainly has three states: A. Start load operation condition; B. Stop condition; C standby state.

Under normal circumstances, the air volume adjustment and control system of the compressor unit has been set at the factory, and the user does not need to make adjustments. If you really need to adjust, you should refer to the controller instruction manual.

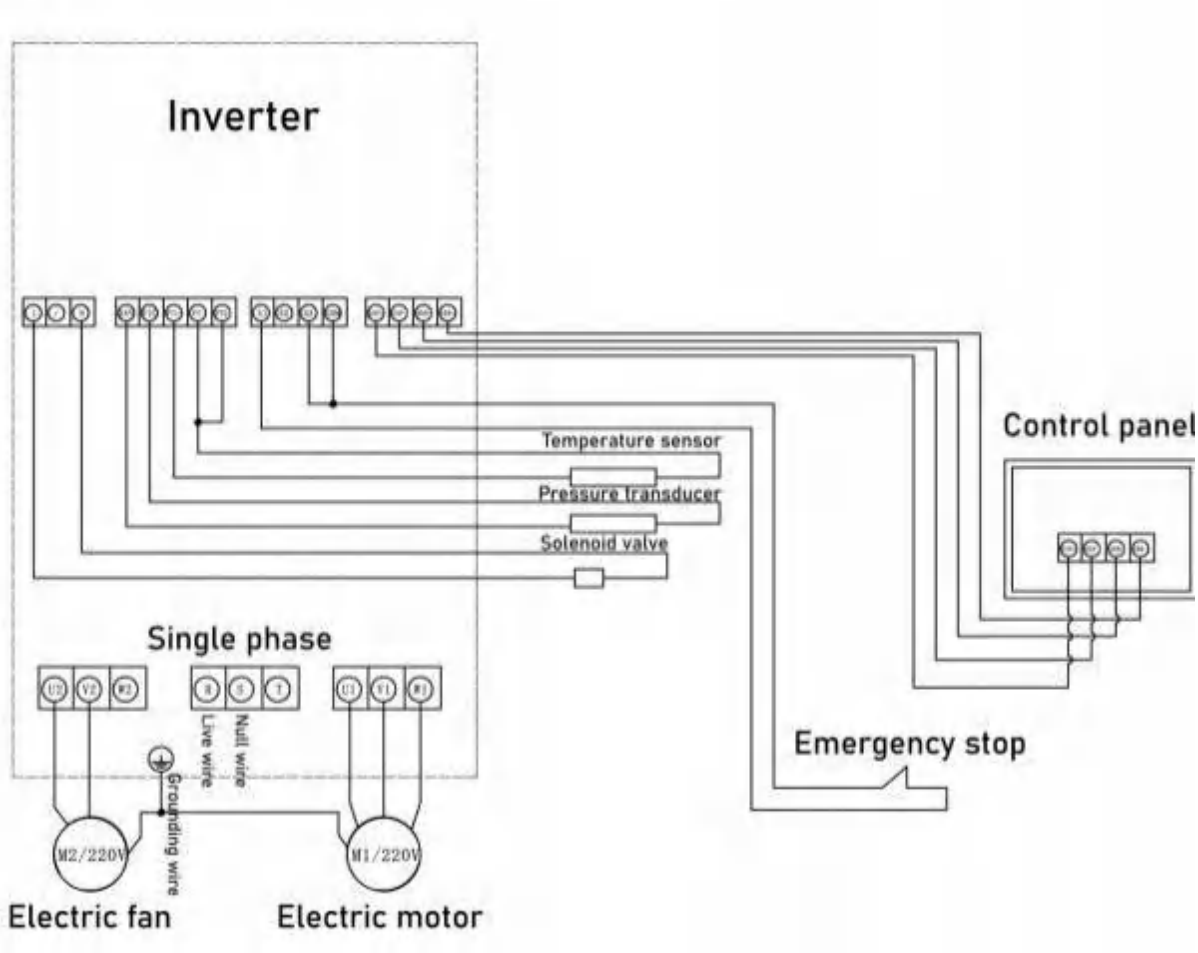
The unit adopts the air volume adjustment method of air intake throttling, that is, by controlling the opening of the intake valve to control the air volume of the compressor, to achieve the purpose of air volume adjustment. The unit has four working conditions: A. Starting conditions; B. Load operating conditions; C. Frequency conversion regulating operating conditions; D. Standby conditions. The following takes a model with a rated pressure of 8 bar (116 psi) as an example to introduce its working principle, and the work of units with other rated pressures can be deduced by analogy.

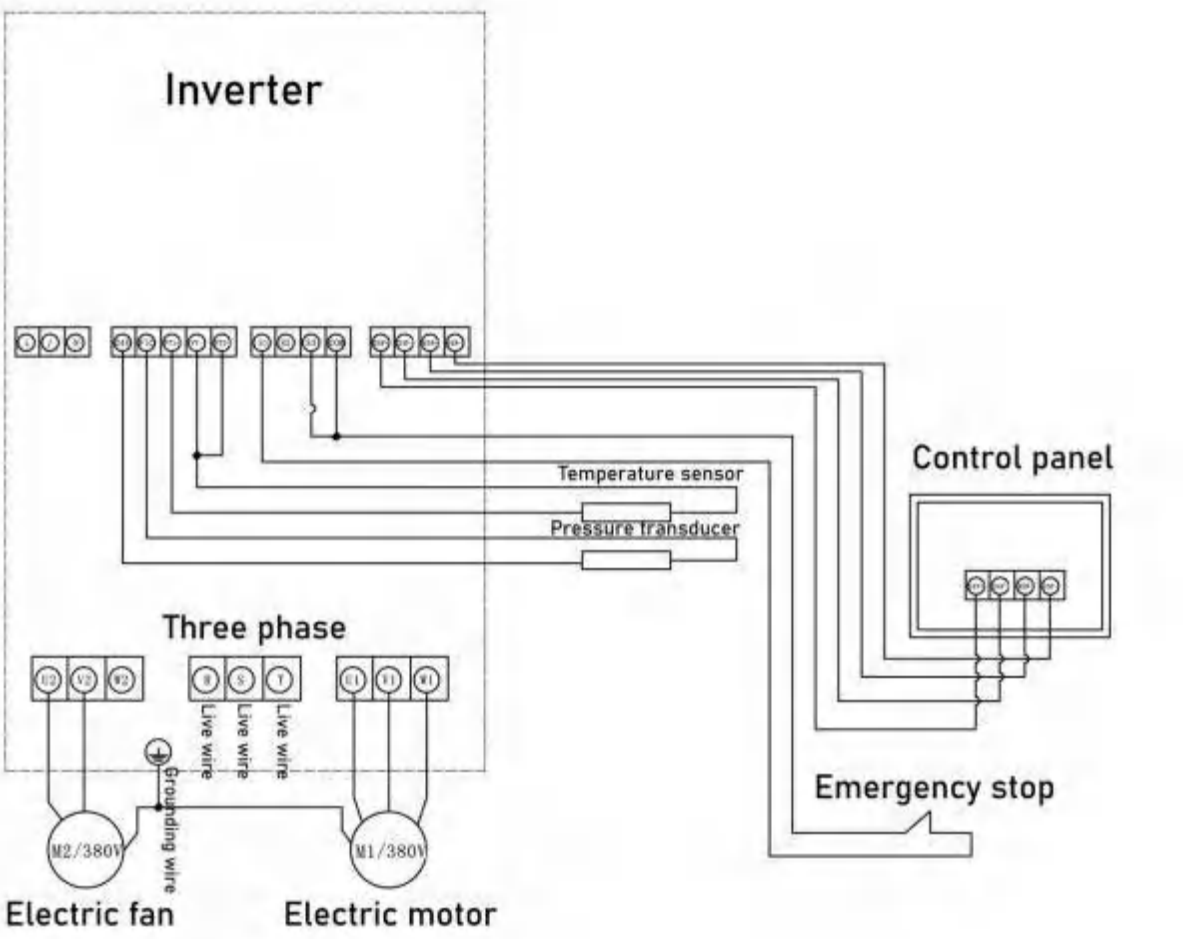
warn

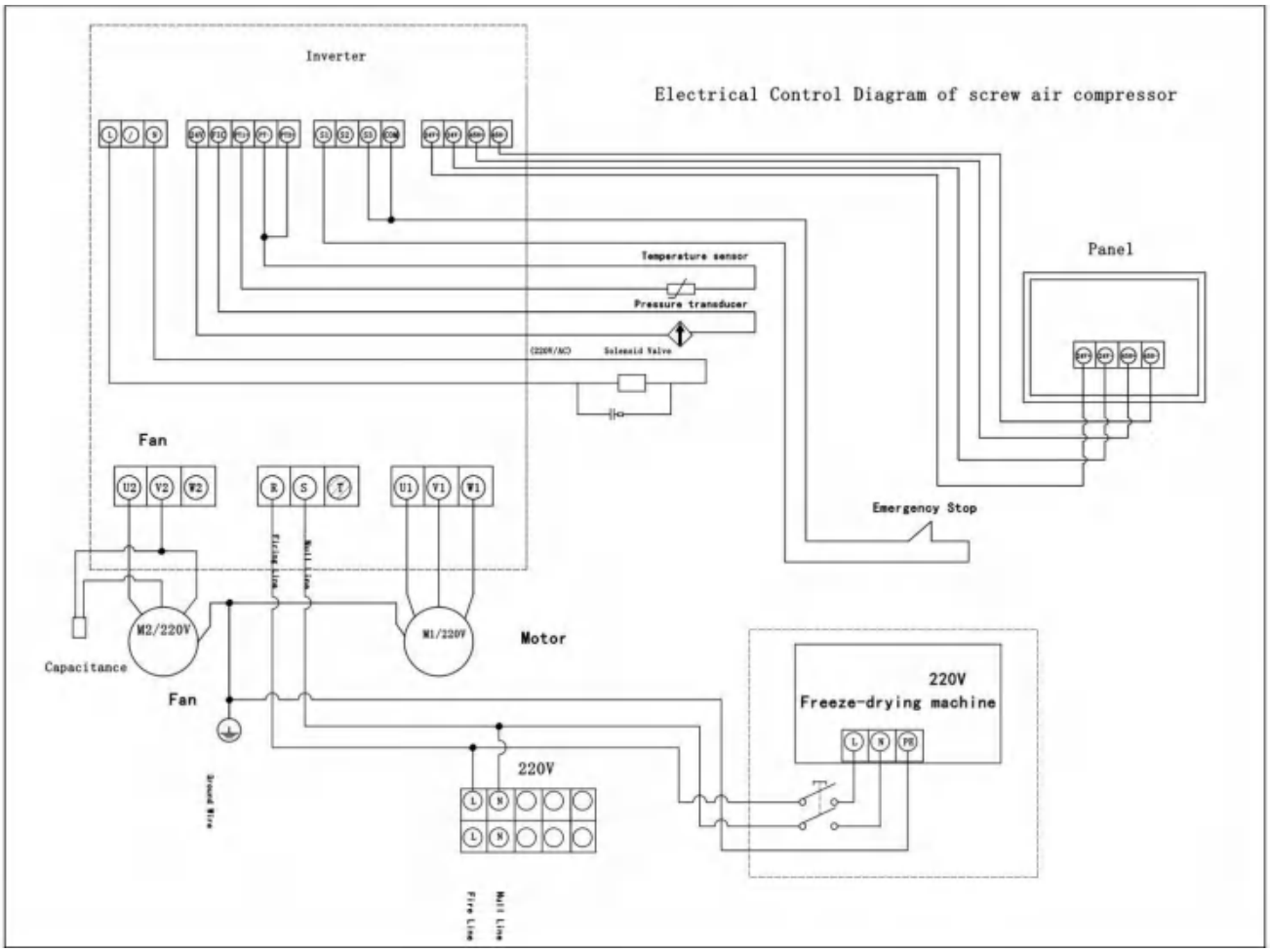
Do not think that the compressor is not running, and it is safe to perform maintenance operations on it. The compressor may be in a "waiting" state and may start at any time. Please strictly follow all relevant regulations in the "Repair and Maintenance Regulations".

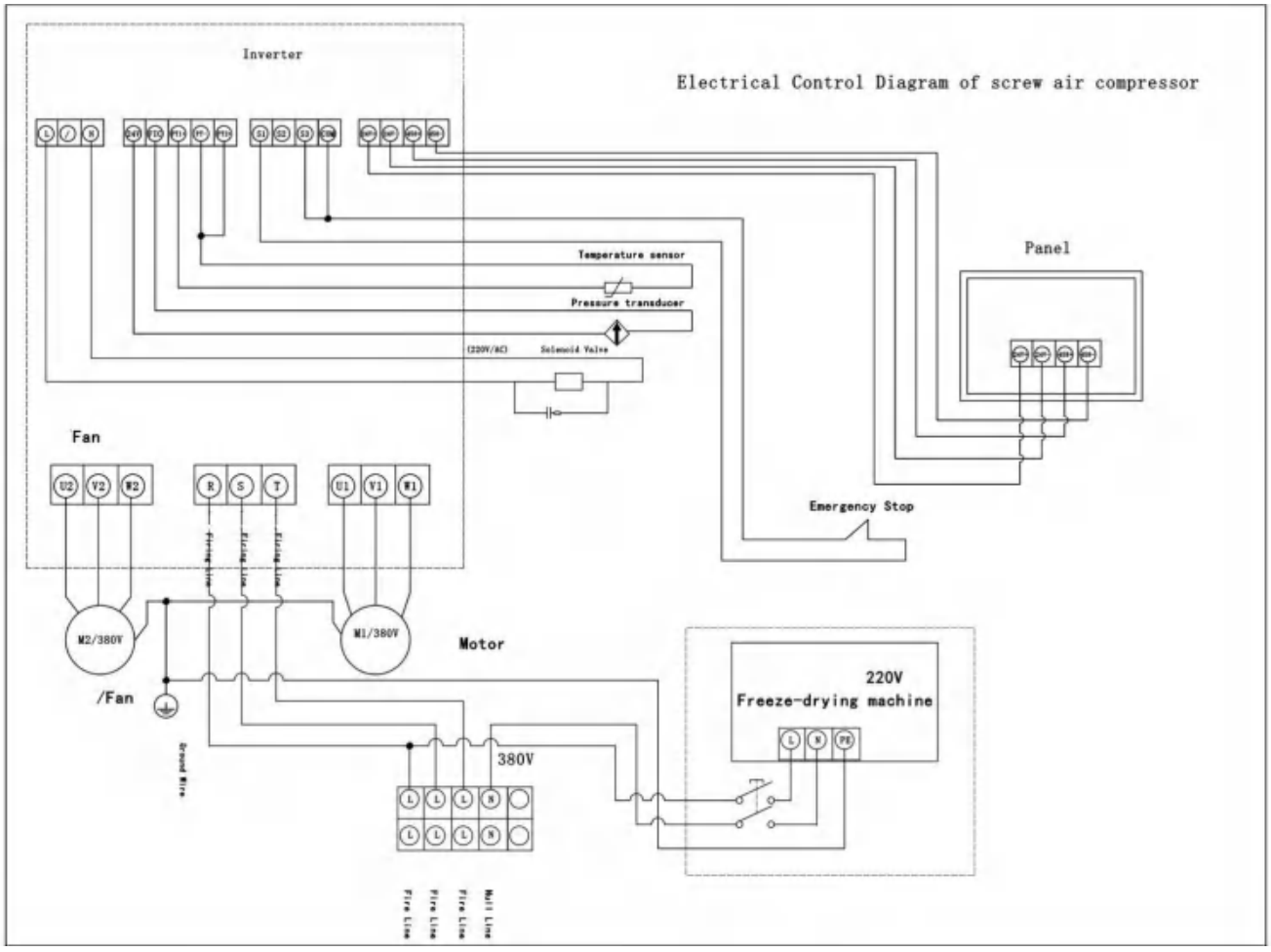
2.3 Electrical control

2.3.1 Electrical schematic diagram

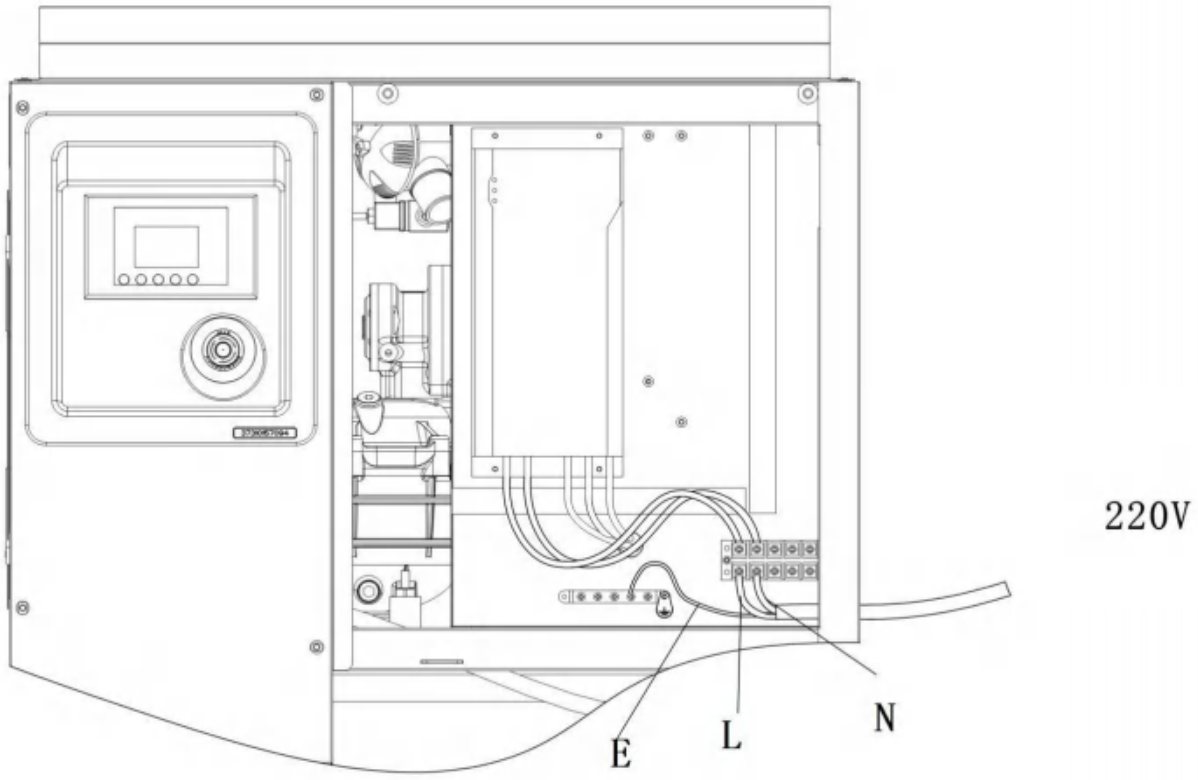


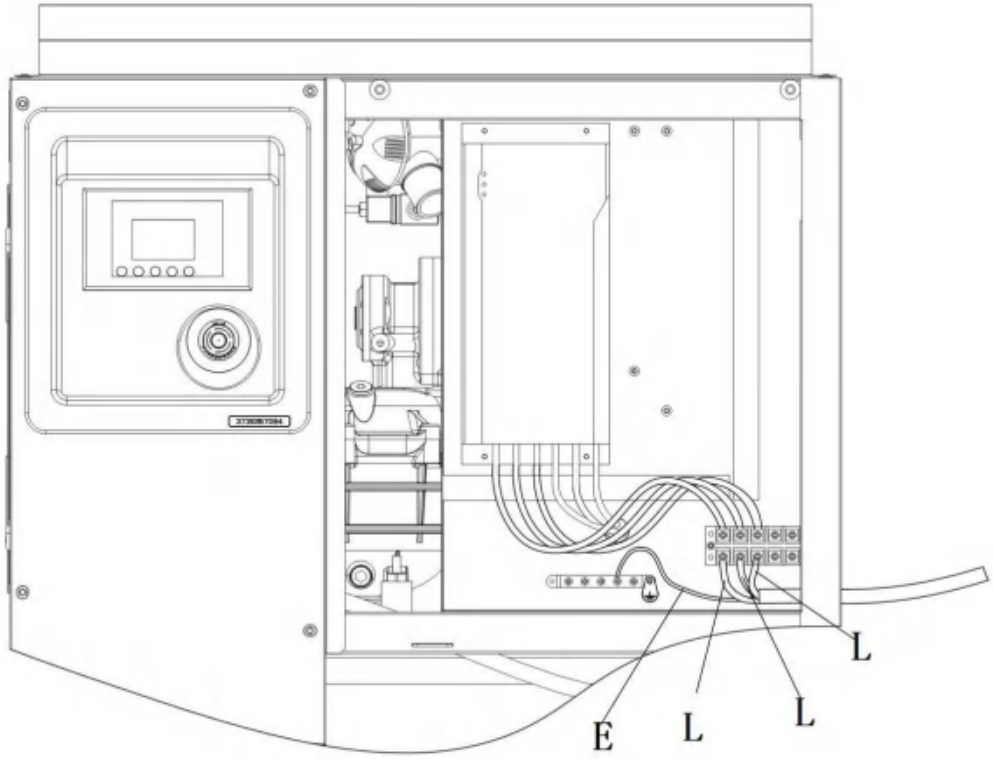

Inverter
Temperature sensor
Pressure transducer
Control panel
Three phase
Live wire
Live wire
Live wire
Grounding wire
Emergency stop
M2/380V
M1/380V
Electric fan
Electric motor


Inverter
Electrical Control Diagram of screw air compressor
Temperature sensor
Pressure transducer
Solenoid Valve
Panel
Fan
Emergency Stop
M2/220V
M1/220V
Motor
Capacitance
Fan
220V
Freeze-drying machine
220V
Ground Wire
Fire Line
Null Line

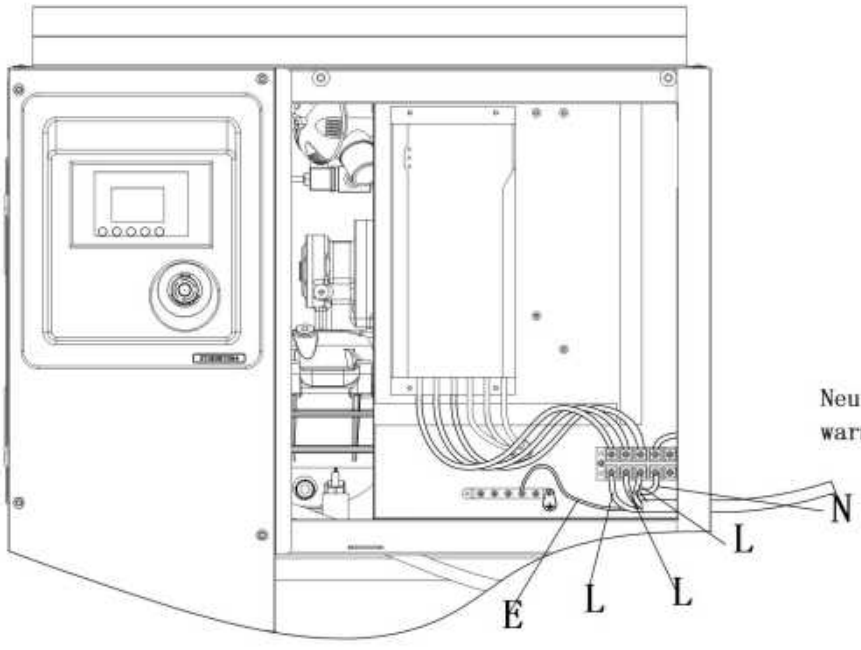


2.3.2 Wiring intention of inverter users





380V



380V

Neutral wire (for cold dryer or warmer)

2.4 Controller and function parameter table

2.4.1 Controller Key Description

——activation key：

1. When the air compressor is in standby mode, press this button to start the air compressor running.

——Stop button/reset button:

1.When the air compressor is in a running state, press this key to stop the air compressor running.

2.When the fault stops, press this key to reset the fault.

——Add and unload keys/confirmation keys:

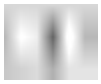
1.This key is used as a key for loading and unloading when the air compressor is running.

2.In setting mode, press this key to confirm and save the input data;

——Downward key/decrement key:

1.When viewing parameters, press this key to move down the scroll bar.

2. When modifying data, press this key to decrement the current blinking position data.



——Shift up/increment key；

1.When viewing parameters, press this key to move up the scroll bar;

2.When modifying data, press this key to increment the current position data.

——Shift key/entry key:

1. When modifying data, the key acts as a shift key to move the cursor to the next data position;

2. Press this key during menu selection to enter the next level of the current menu. —

—Return key/reset key:

1. When in setup mode, press this key to exit setup mode.

2. When in parameter view mode, press this key to return to the previous menu;

2.4.2 Indicator light description

Power: The indicator light is on when the controller gets power.
Running: when the air compressor motor is running, the running indicator light is on.
Failure: When there is a failure, the failure lamp is always on;

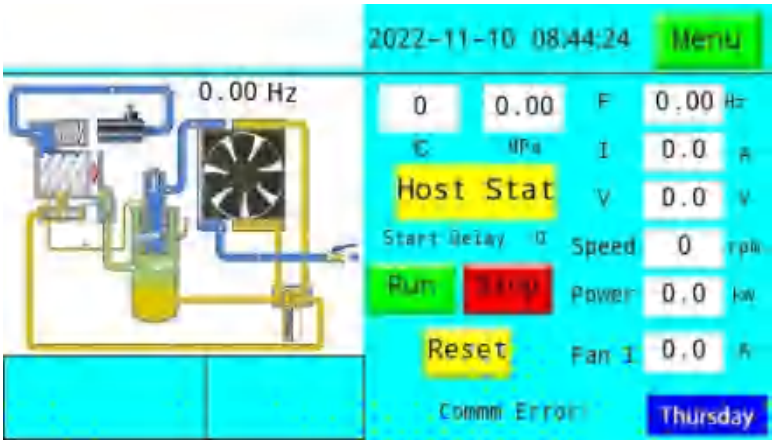
2.4.3 User parameter tables and functions

Level 1 menu	secondary menu	Set initial value	functional role
Pressure, temperature preset	Preset Pressure	00.70MPa	Target Pressure set during frequency control.
	Loading pressure	00.60MPa	1, automatic loading mode, the pressure is lower than the value of the controller automatically loaded 2, Standby mode, the pressure is lower than this value, the operating conditions are available, the controller will start automatically.
	unloading pressure	00.80MPa	1, the pressure is higher than this value, the controller automatically unloading 2, This value should be less than or equal to the "unloading high limit".
	Fan start temperature	0080℃	The fan operates when the exhaust air temperature is higher than the value set here.
	Fan stop temperature	0070℃	When the exhaust temperature falls below the value set here, the fan stops.
Start-stop delay preset	Start-up delay	0010 s	Motor running delay time
	Loading delay	0002 s	Delayed loading time after corner operation (applicable to industrial frequency control)
	Unloading delay	0600 s	The longest continuous no-load running time allowed for air compressor, exceeding
	Shutdown delay	0010 s	After this time, it will stop automatically.
	Restart delay	0100 s	When the air compressor receives the order to stop, it will turn to no-load operation, and after the no-load operation exceeds the time set here, it will stop automatically.
Maintenance parameter reset	Oil filter used	0000 hours	The oil filter accumulates the time already used, and after replacing the oil filter with a new one, the Zero manually
	Oil separator used	0000 hours	Zero the oil filter manually.
	Air filter used	0000 hours	The oil separator accumulates the used time and is replaced with a new oil separator.
	Lubricating oil used	0000 hours	The oil separator has been used for a total of time and is manually cleared after a new oil separator is replaced.
	Grease used	0000 hours	The air filter has accumulated the time used, and after replacing it with a new one, it is manually zeroed.
Maximum usage time preset	Oil filter preset	500 hours	The air filter is manually zeroed.
	Oil separator preset	500 hours	The lubricant accumulates the time used and is manually zeroed after replacing the lubricant with a new one.
	Air filter preset	500 hours	Zero manually.
	Lubricant preset	500 hours	1, The controller will warn you when the accumulated use time of lubricant exceeds the value set here; 2, When "0000" is set, the lubricant warning function is disabled.
	Grease preset	500 hours	The oil filter is manually zeroed after replacing the grease.
user password	****	****	Modifiable user password: can be reset with old user password or factory reset with the old user password or factory password

3.4.2 Touch Screen HMI-600T

3.4.2.1 The system starts

Supply power to the touch screen, the power supply is DC24V, wait for a few seconds to complete the system data loading, and enter the main interface,As shown in the following figure:



Main interface of the system

3.4.2.2 System settings

（1）The system main interface

① System startup is completed, enter the main interface, main show air compressor running commands (start, stop, and reset), running parameters (temperature, pressure, output frequency,output current, output voltage, output speed and output power, electricity, fan current ,operating time , motor temp and motor temperature.).

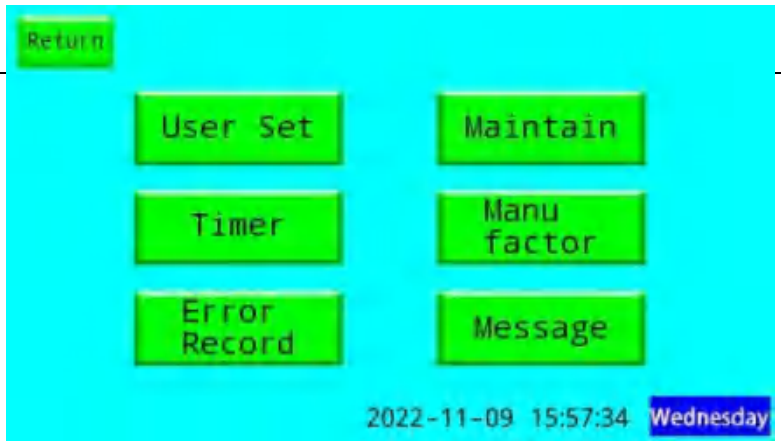
② The lower left corner has multiple fault display functions. When the communication between the touch screen and the frequency converter is interrupted, the communication fault is displayed at the lower end of the reset button.

③ Current time display, the lower right corner display includes the current year, month, day and week display, long press "year" display for 3 seconds, can enter the time adjustment mode.

（2）System to the main menu

Click "menu" option, a pop-up in the main menu including user parameters, timing control, fault records, maintenance parameter，ptions such as manufacturer parameters and manufacturer information.

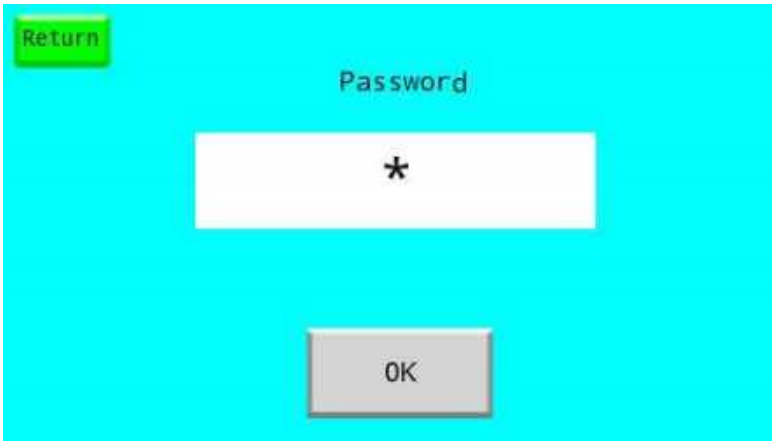
Into the part of the menu to enter the password in the interface, including the "users" parameters "timing control" "maintenance parameters" parameters "manufacturer" as shown in the following figure:



The main menu

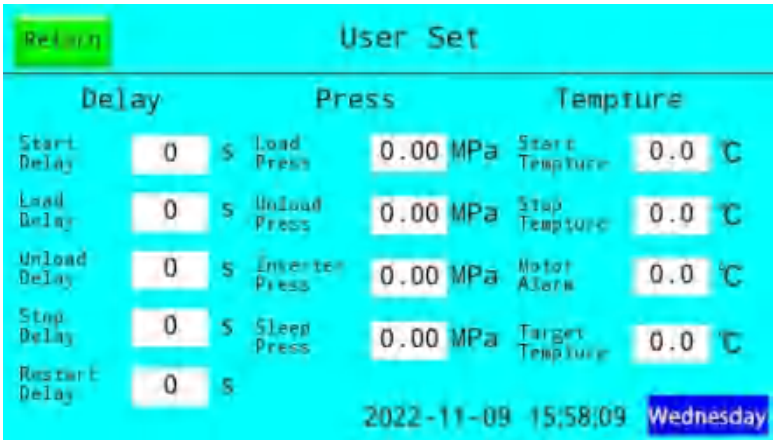
（3）User Set

Click on the "user set" option, "password" interface, enter the password to enter parameter interface, as shown in the following figure：



The password input

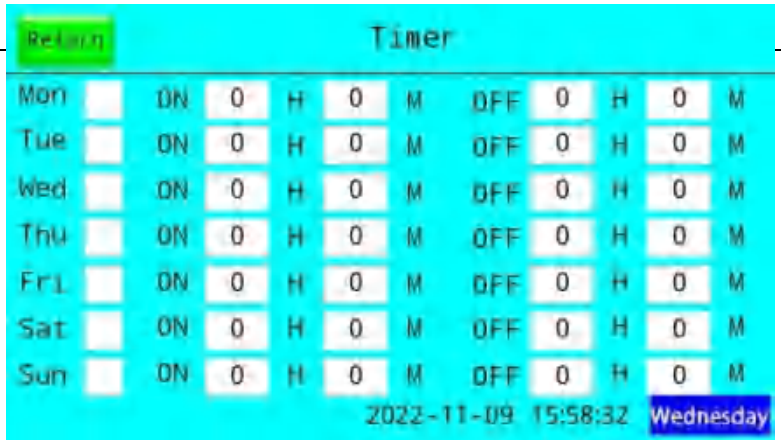
Enter a password to enter the "user parameters" interface, users can set in the "user preferences" delay, pressure and fan control parameters, as shown in the following figure：



User Set

（4）Timing control

"Timing control" function can be set up the system in week timing boot and shutdown time, realize the automatic operation of the system. In the corresponding input box input time Settings, click the corresponding "tick" set to complete; Do not use this function, all the "tick" no choice; As shown in the following figure：



Timing control

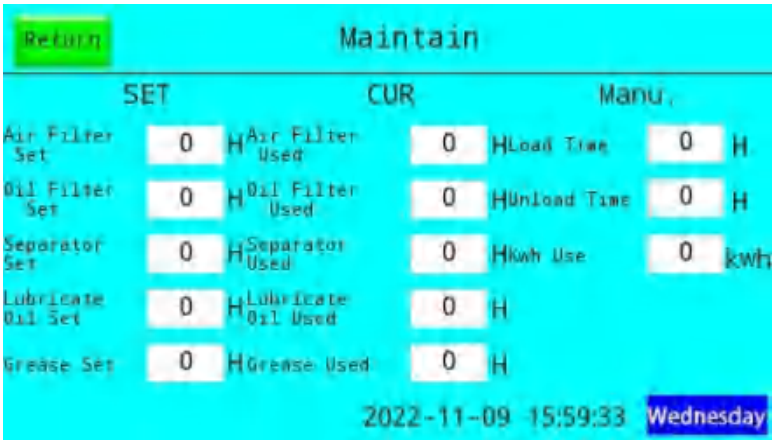
（5）Fault record query

Click on the "failure record" "fault record" interface, real record system fault type and fault time, As shown in the following figure：

Fault record query

（6）Maintain parameter

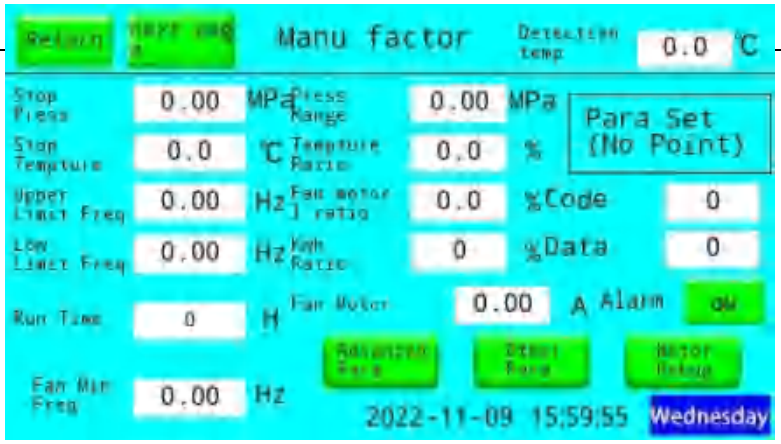
Click on the "maintenance parameter" option, "password" interface, enter the password to enter parameter interface, as shown in the following figure :



Maintain parameter

（7）Manufacturer of parameters

Click on the "manufacturer" parameters, the pop-up interface "password", enter the password to enter parameter interface, as shown in the following figure:

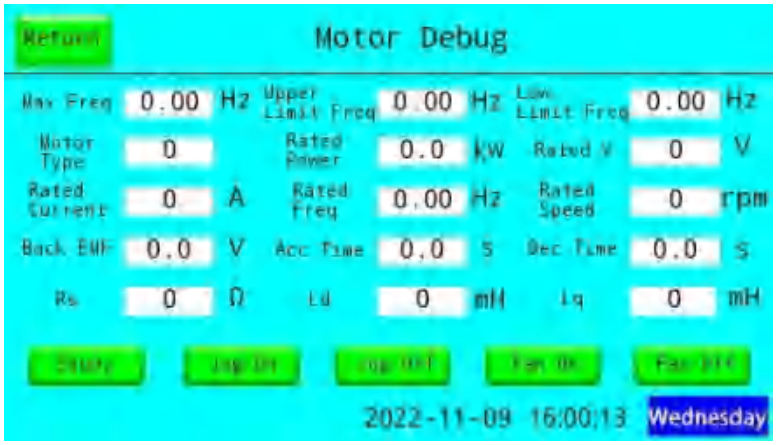


Manufacturer of parameters

Main features include: motor debugging, the function parameter Settings, analog keyboard and information.

① Motor Debugging

Click "motor debugging", "Motor debugging" into the interface as shown in the following figure:



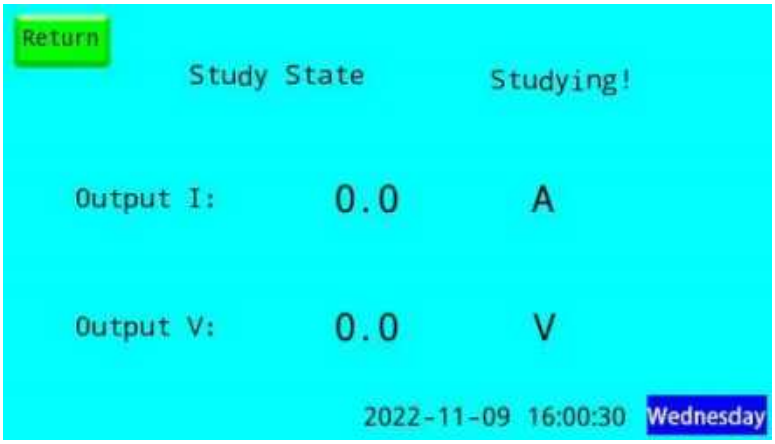
The motor parameters

Main features include: set motor related parameters, self-learning, inching commissioning and fan start-stop control.

② Motor since the study

Click "study", and under the conditions of machine downtime, system of motor, automatically self learning, learning is completed, the system prompt "studying", if learning fails, then the system prompt "study error", the interface is shown in the following figure :

Motor since the study



Learning success and then click the back button, enter the machine debugging interface, inching test used to test the motor steering, the default run at 10 Hz, observe the motor turned to whether it is right, such as steering error in time click on the "point move to stop" button, change the motor line, debug step motor to appeal.

Fan, debugging, and click "run" fan, fan to observe whether it is right, such as working properly, then stop running, back to the main interface, such as reverse operation is changing any two fan thread.

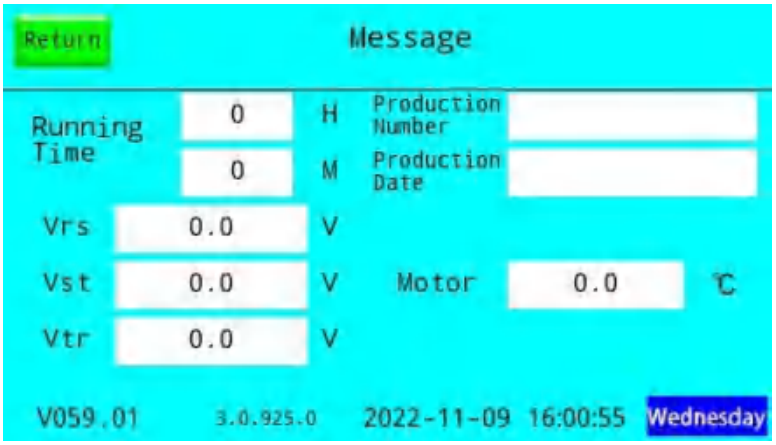
③Information

Click on "information" button, enter the interface system parameters, the password used for manufacturer and user password change, as shown in the following figure:

Information

（8）Information

Click on the "Information", "Information" into the interface, as shown in the following figure :



Information

Note: the above function if you have deviation with the actual use, is the function of the software version upgrades, please refer to use.

Chapter 3 Installation and Acceptance

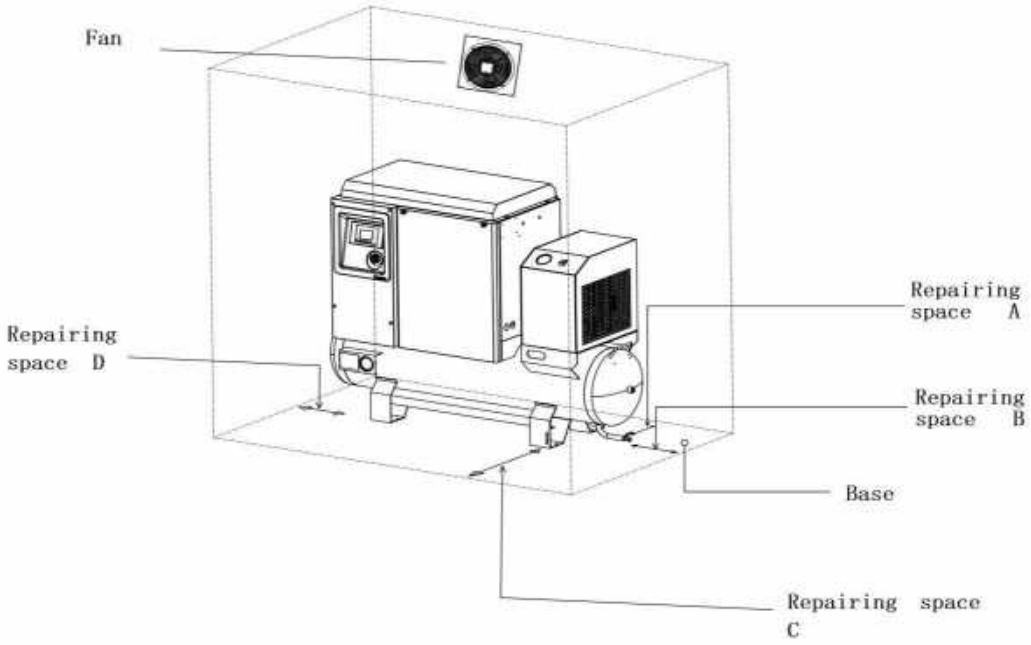
3.1 Installation, acceptance, and storage:

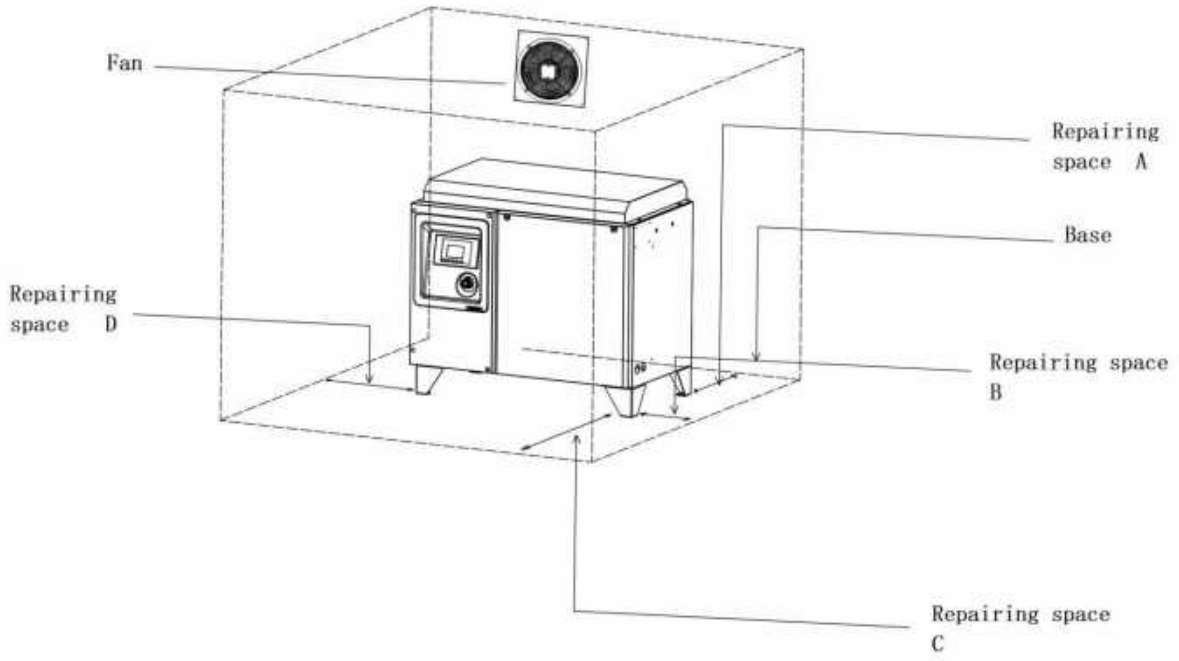
The machine is transported from the factory to the site to be installed in place. The shutdown maintenance and correct maintenance are related to the integrity and normal use of the equipment. Therefore, after receiving the machine, you should immediately check whether there is any damage caused by transportation. If damage is found, the carrier can be asked to sign the shipping documents and make a damage report. If you did not find it in time at that time, but found concealed damage afterwards, please inform the carrier within 15 days after receiving the goods and ask the carrier to make a damage report. A detailed report is very important for the handling of losses (claims).

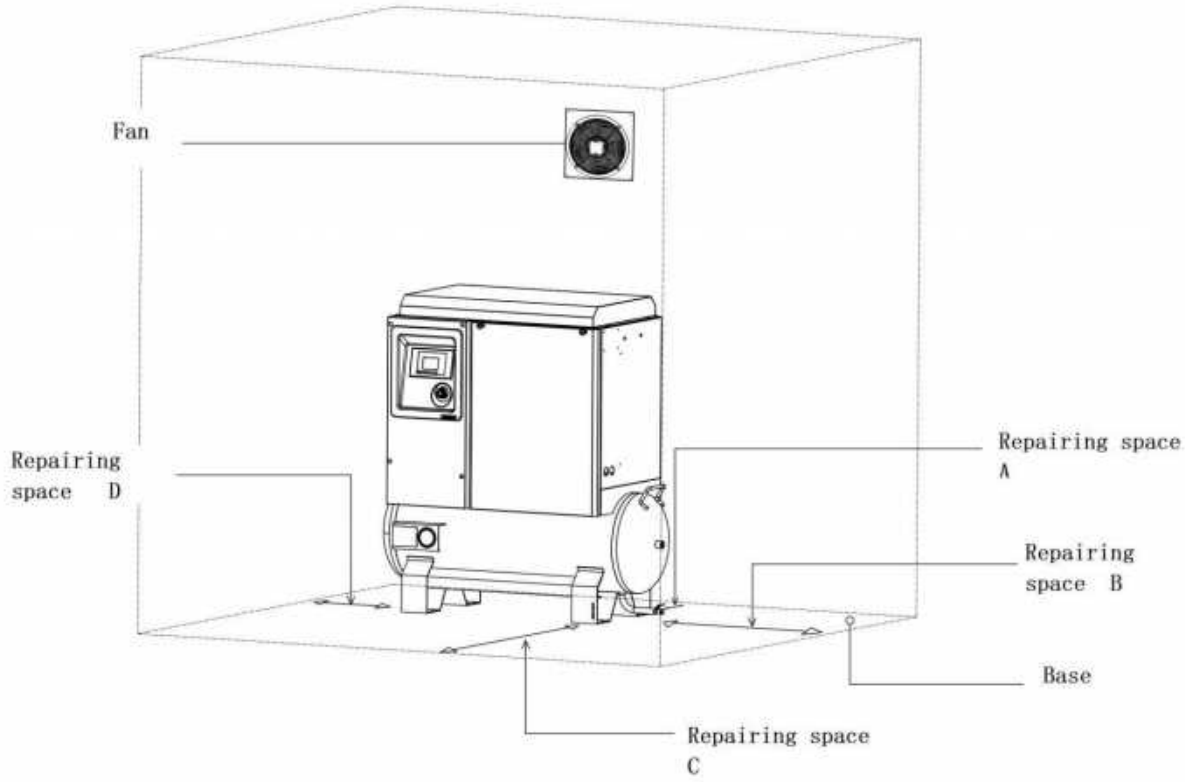
Check the nameplate of the compressor to determine whether the machine is the model and specification you have ordered, and whether the options are included. At the same time, check the air oil separator tank and safety valve to confirm whether the design or set pressure is correct. For the unit that is temporarily not installed or will not operate for a long time, a protection and maintenance plan must be set to ensure the normal operation of the unit, especially the main engine airend.

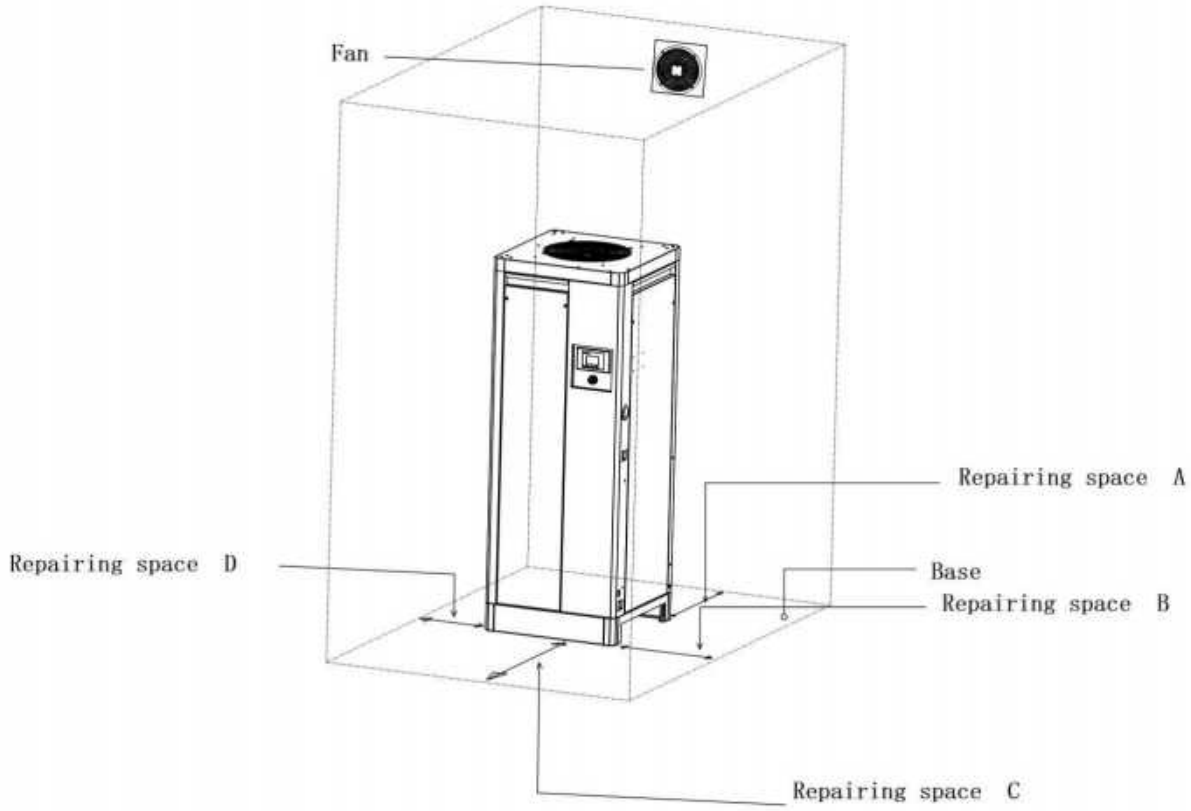
3.2 Installation and positioning

This series is used in indoor environments. The compressor should be placed in a clean and well-ventilated environment. The foundation should be firm. For safety and ease of maintenance and daily inspections, there must be enough space around the machine (in the vicinity of the compressor and Reserve at least 1.2 meters of space at the top, see Figure 3-2).




Fan
Repairing space A
Base
Repairing space D
Repairing space B
Repairing space C


Fan
Repairing space D
Repairing space A
Repairing space B
Base
Repairing space C


Fan
Repairing space A
Repairing space D
Base
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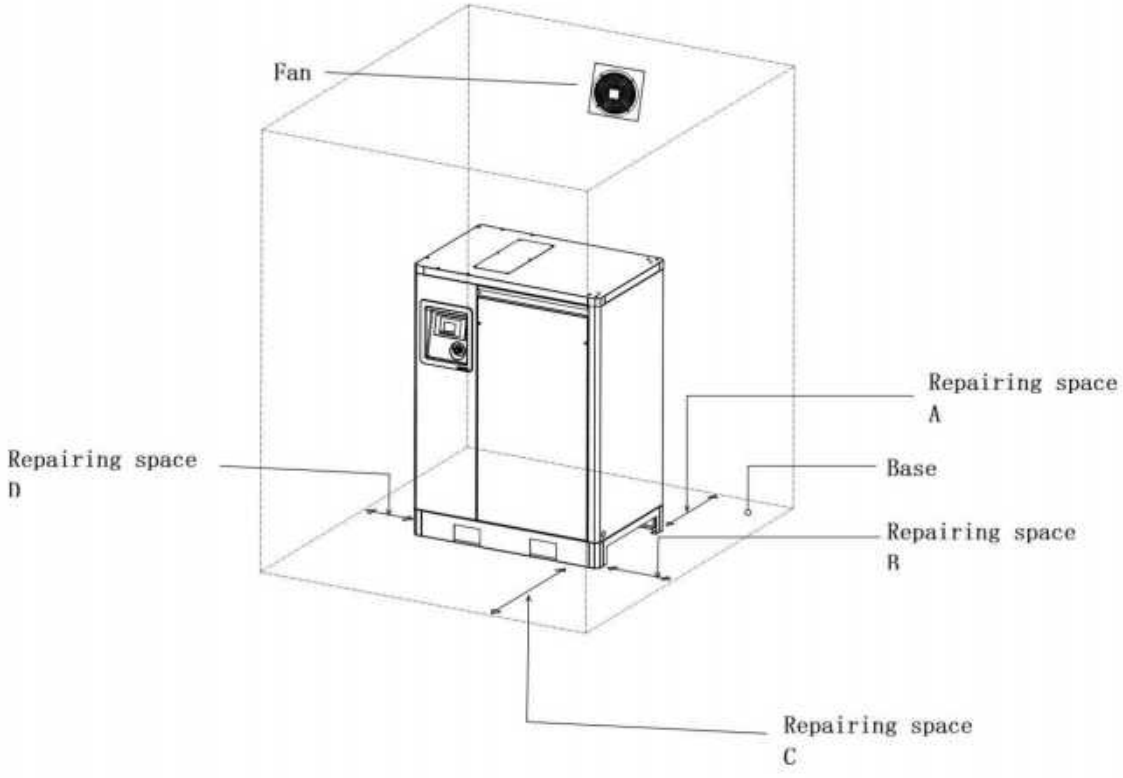
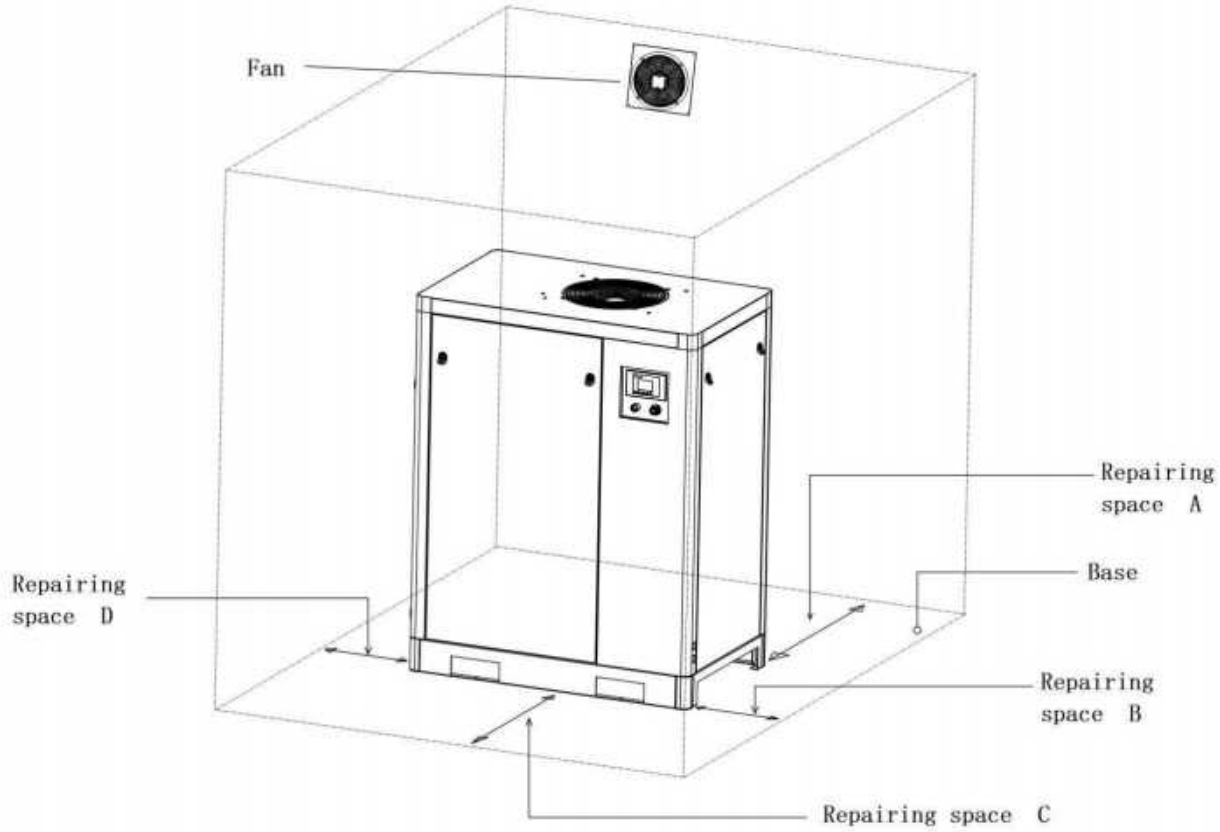
Repairing space C


Fan
Repairing space A
Repairing space D
Base
Repairing space B
Repairing space C


Fan
Repairing space A
Base
Repairing space D
Repairing space B
Repairing space C

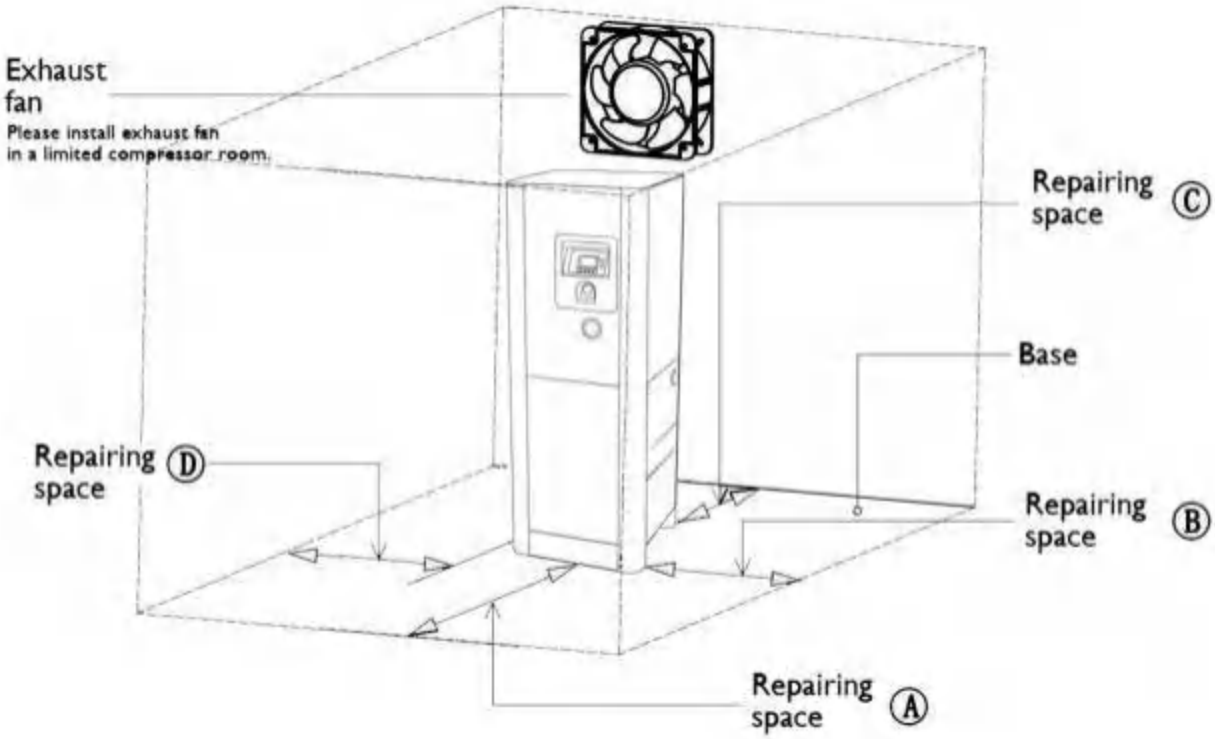

Exhaust fan
Please install exhaust fan in a limited compressor room.
Repairing space C
Base
Repairing space D
Repairing space B
Repairing space A

Figure 3-2 Installation space

The ambient temperature of the compressor should not exceed 40°C (104°F). Prevent the hot air discharged by the cooling fan from circulating in the machine room and causing the ambient temperature to rise. In principle, all the fixed screw compressors of we are for indoor installation. After modification, they can also be installed outdoors in some places. Rain, snow, and freezing should be avoided.For special environments and working conditions, please consult the manufacturer.


: "warn"

The compressor cannot work in an environment below 0°C (32°F) or above the upper limit of the maximum operating temperature.For special environments and working conditions, please consult the manufacturer.


: " Notice "

The compressor needs enough clean air for normal operation


: " Notice "

Removal or modification of the soundproof cover will generate high noise and endanger human health.


: "warn"

Do not install or expose the compressor to toxic, volatile, or corrosive air, and do not store substances of similar nature near it, otherwise it will cause serious casualties and property losses.

For the design, installation, and use of the compressor room, please refer to GBJ29-90 "Code for Design of Compressed Air Station".

3.3 Storage and maintenance of the whole machine

When the unit is placed for a long time or stops operating for a long time, you must first ensure that the installation environment is clean and dry. Check the main components and joints of the unit, clean to ensure that there is no leakage or rust, and run for at least 60 minutes every month to ensure the safe lubrication of the main unit airend; secondly, check carefully before starting up, and replace the unit if necessary, lubricating oil, perform a 2 -hour full-load operation test on the unit, record the data, and ask a qualified professional service engineer for guidance.

3.4 Installation, piping, and electrical wiring

In any case, the pipe size should not be smaller than the connecting size of the compressor discharge pipe.

For the compressor, the air filter is indispensable, and the air source that can provide clean air should be selected.

3.5 Precautions for piping, foundation, and cooling system

3.5.1 Precautions for air pipe piping

1) When piping the pipeline, the pipeline must have an inclination of 1-2 degrees to facilitate the drainage of condensed water in the pipeline.

2) The pressure drop of the piping should not exceed 5% of the set pressure of the air compressor, and it is better to choose a larger pipe diameter than the design value.

3) The branch pipeline must be connected from the top of the main pipeline to prevent the condensed water in the pipeline from flowing into the working machine or returning to the air compressor.

4) Do not reduce the main pipeline arbitrarily. If necessary, reduce or enlarge the pipeline, use a reducer.

When the air flows in the pipe, frictional resistance is generated in the straight pipe section: local esistance is generated at the valve, tee, elbow, reducer, etc., which leads to air pressure loss. The pressure drop within a length of pipeline can be checked from Table 3-1:

Table 3-1: Flow rate-piping pressure drop Kg/cm²-(100m)

Flow m^3/ min	Diameter (mm)					
	DN15	DN20	DN25	DN32	DN40	DN50
0.8	5.87	1.23	0.339	0.0858	0.038	
1.0	9.18	1.92	0.53	0.134	0.059	0.0157
1.6	23.5	4.9	1.36	0.343	0.152	0.0428
2.0		7.66	2.12	0.536	0.237	0.0668

Instruction:

1. The actual pressure drop of straight pipe section = table value x pipe length/ (100compress ratio). (Compression ratio=gauge pressure+1)

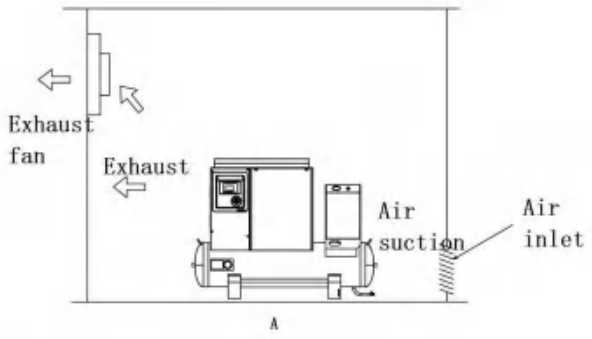
2. Part of the pressure drop in the pipeline should also be added to the partial pressure loss produced by elbows, reducers, tee joints, valves, etc. These values can be checked from the relevant manuals.

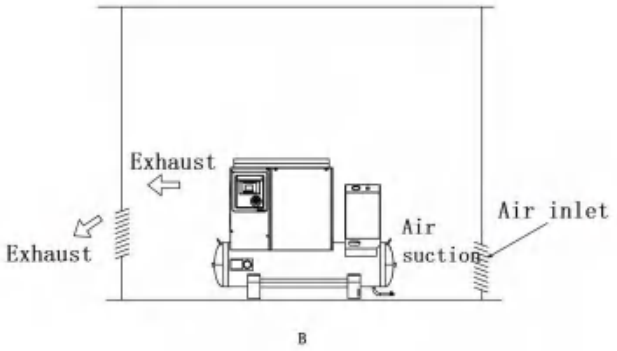
3. For the selection of air compressor post-processing equipment (cold dryer, suction dryer, filter), see Table 3-2. Precision filter, C series centrifugal oil-water separator, T series mainline filter, A series micro-oil mist

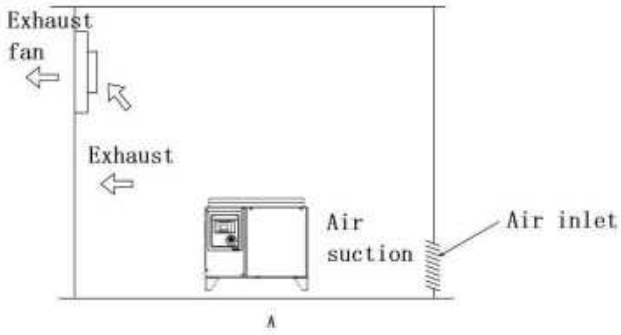
filter. H series of active adsorption filters are mainly used in food, medicine, and pharmaceutical factories. 4. For compressed air with system pressure below 1.5MPa, the flow velocity in the delivery pipe must be below 15m/sec to avoid excessive pressure drop.

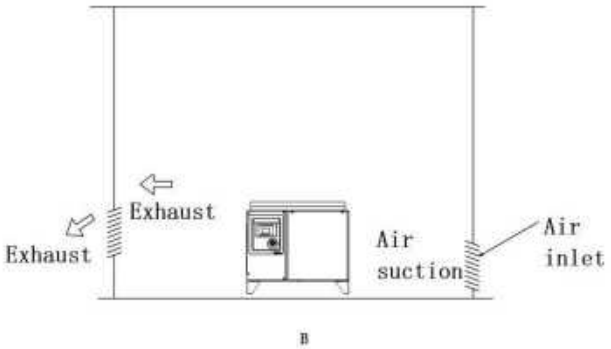
5. Minimize the use of elbows and various valves in the pipeline to reduce pressure loss.

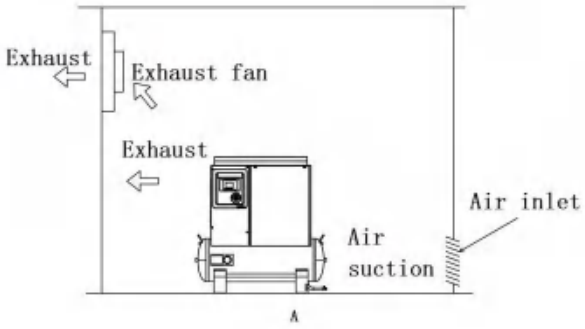
3.5.2 Precautions for air compressor room ventilation

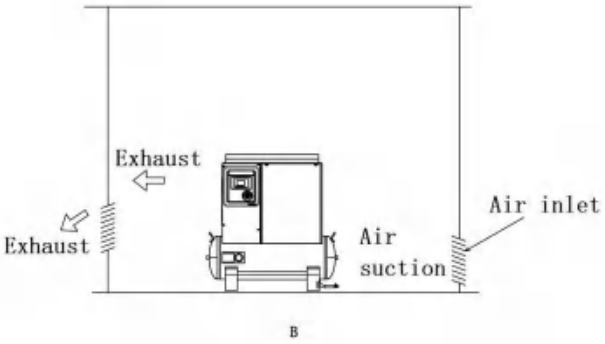


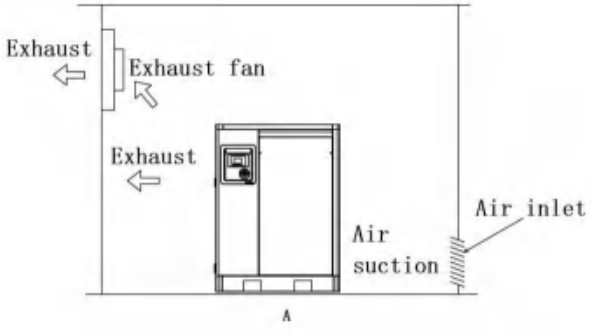


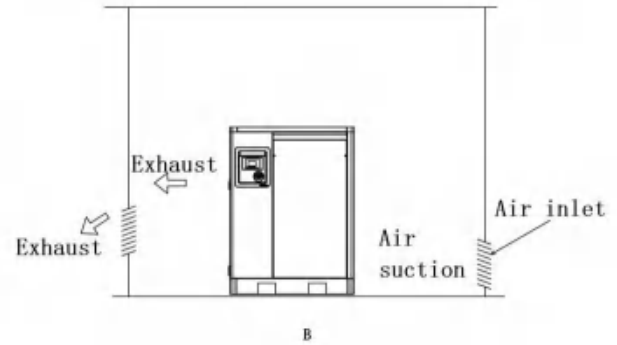


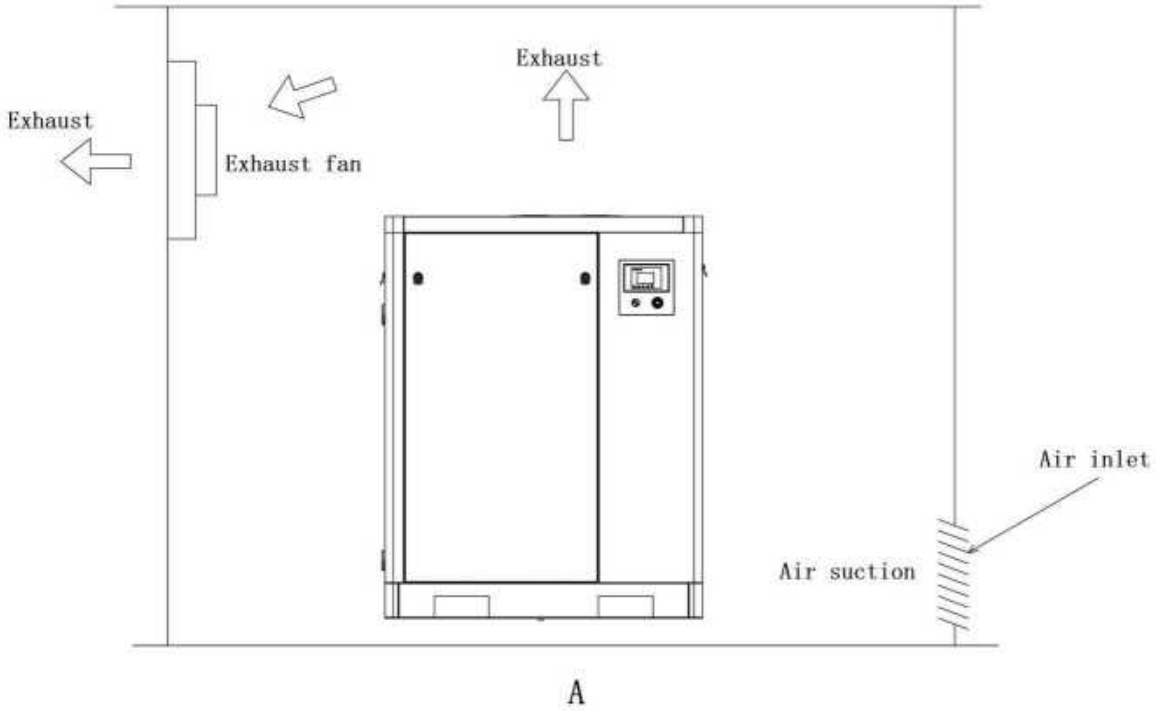




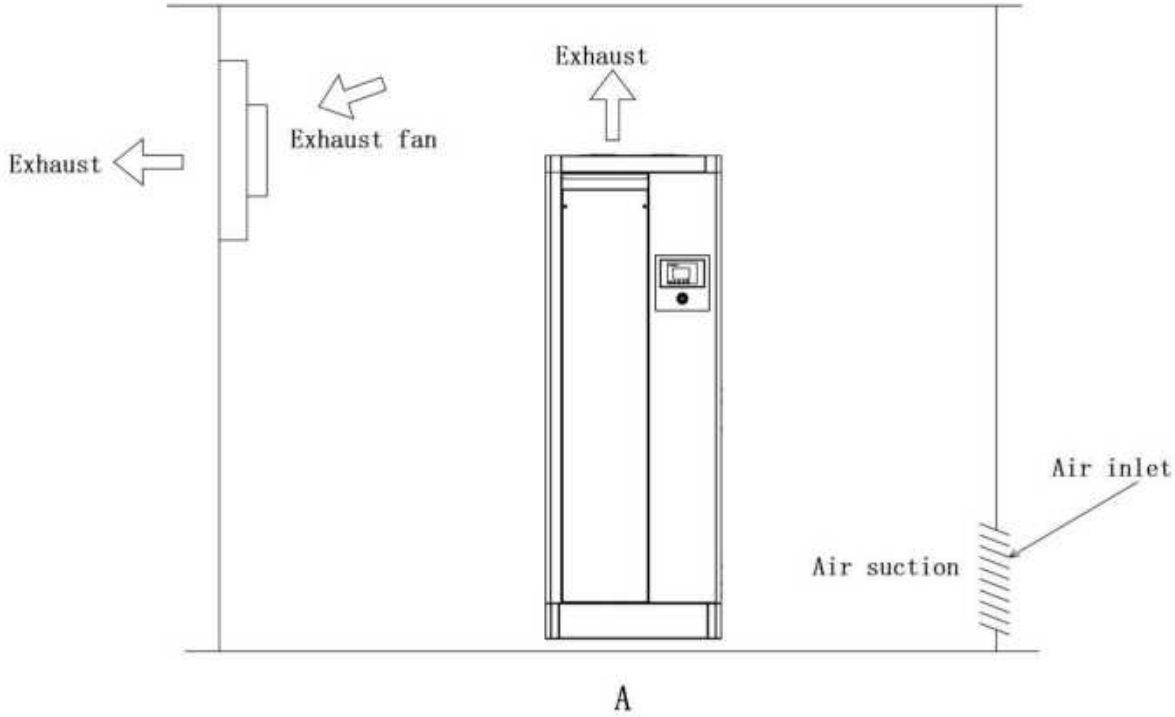








A



A

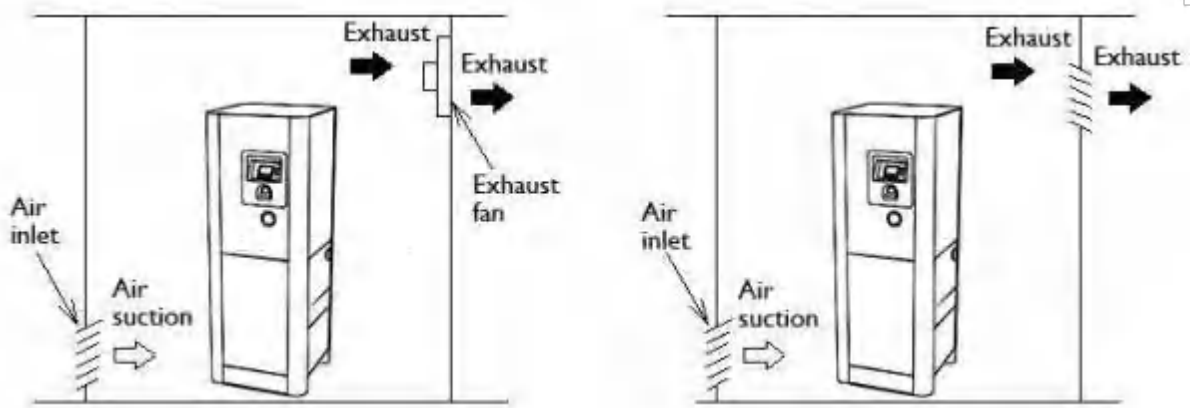


Figure 3-3 Indoor ventilation

When the compressor room is narrow, please install an exhaust fan higher than the side wall of the compressor exhaust port and set the air intake port at a low place on the intake side wall (see Figure 3-3 A). When the compressor is installed in a spacious workshop, please choose a well-ventilated location for installation (see Figure 3-3 B).

3.6 Installation of safety facilities

3.6.1 Safety valve (pressure relief valve)

The safety valve is a pressure relief device used to protect the system. It has been set at the factory. You cannot change its pressure setting or block this valve at will. Only safety valve manufacturers or qualified agents can carry out this work. The air discharged from the safety valve should be led to a safe place away from the crowd.


: "warn"

It is not allowed to change, weld, repair or reprocess GB (or ASME) pressure vessels, and it is not allowed to use them under conditions exceeding the rating of the nameplate, otherwise it will affect the insurance clauses and cause serious personal injuries and property losses.

3.6.2 Protective cover

All mechanical movements have different degrees of danger, so a protective cover should be provided. This series of units is fully equipped with necessary protective facilities in accordance with national and industry standards. Users should check and maintain them regularly and cannot be changed or dismantled at will.

3.6.3 Manual vent valve and shut-off valve

It is recommended to install a manual vent valve in the customer's air system. The purpose of installing the manual vent valve is to discharge the air in the compressor and its exhaust pipe to the atmosphere. When the system air tank is only used with a single compressor, the vent valve can be installed on the air tank. If a shut-off valve is installed in the system, the manual vent valve should be installed upstream of the shut-off valve. This configuration ensures maintenance and personnel, and equipment are in a safe state during maintenance.

If it is only to isolate the compressor from the system for maintenance, please be careful not to replace the stop valve with a check valve.


: "warn"

The manual vent valve must be opened before servicing the machine to vent the pressure in the compressor and the system. Negligence in reducing the pressure of the system may cause serious personal injury, death, and property damage.

3.7 Electrical installation

Before installation, check whether the power supply, power cord, and transformer capacity are consistent. Appropriate fuses or circuit breakers should be equipped during installation. The unbalance between voltage phases must be limited to less than 5% to prevent overcurrent caused by low voltage. User power cord and air switch selection, see Table 3-3 for details, user air switch current specifications are selected at 1.5-2 times the total current. The compressor must be well grounded, see electrical wiring diagram.

Table 3-3: User Power cord and air switch selection

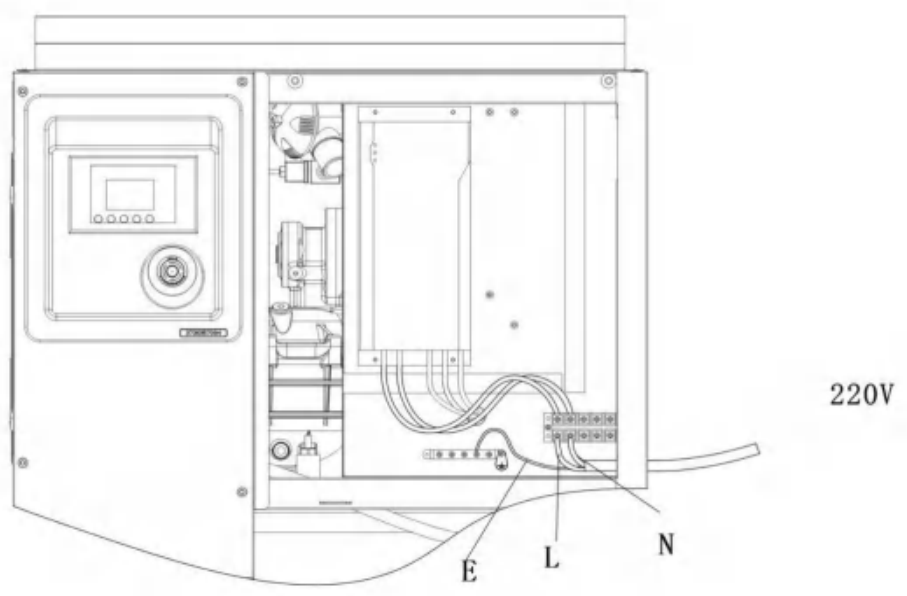
Voltage (V)	Rated power (kW)	Line current (A)	Calculation of current-carrying capacity of customer power cord diameter at 40℃	User air switch specifications are not less than the following current (A)
380	3	6	2.5mm²	16
220	3	20	4mm²	32
380	3.7	8	2.5 mm²	20
220	3.7	27	4 mm²	40
380	5.5	11	2.5 mm²	25
220	5.5	35	6 mm²	50
380	7.5	14	4 mm²	32
220	7.5	55	10 mm²	100
380	9	17	4	32
380	11	21	4	32

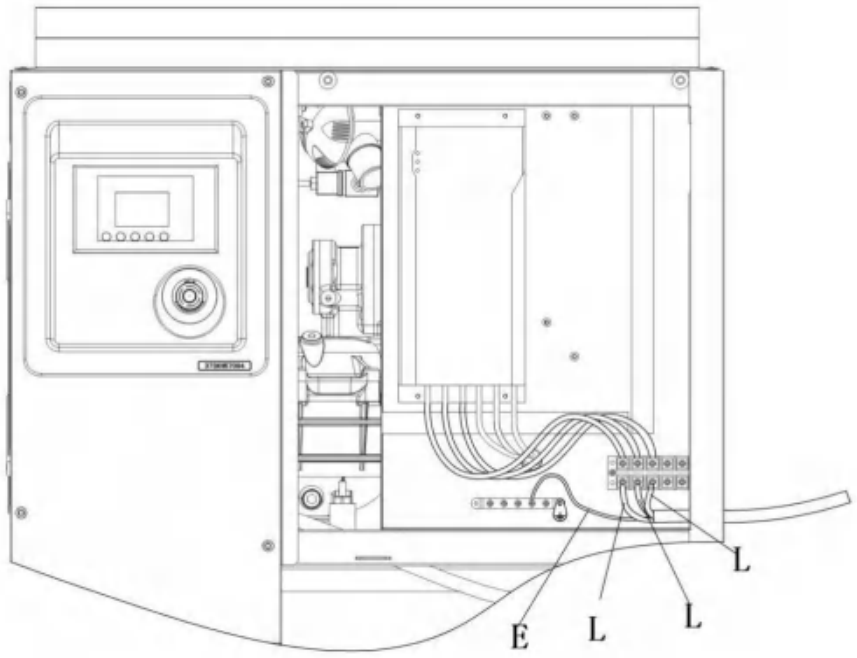
Note: 1. For3.7kW/single-phase models, it is recommended to use a power cord with a wire diameter of not less than 3*2.5 mm².

2. If the power distribution cabinet is far away from the air compressor, the wire diameter needs to be increased accordingly to prevent excessive voltage drop from affecting the operation of the machine.

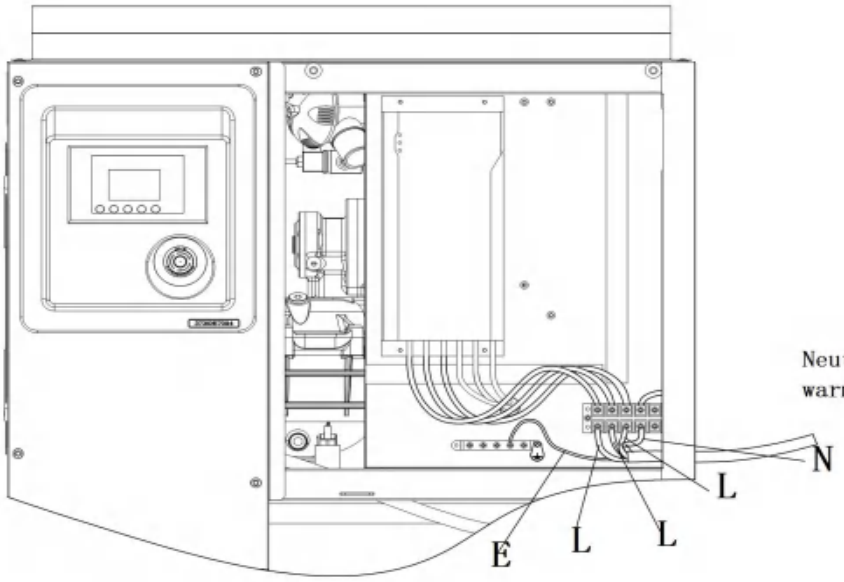
Power inlet wiring

3.8 Wiring diagram





380V



380V

Neutral wire (for cold dryer or warmer)

Chapter 4 Operating Rules

4.1 Overview

This series of screw compressor units are equipped with a series of control elements and display/indicating elements. To ensure the normal operation of the unit, the operator needs to be able to operate the machine correctly, and it is also required that the operator can make correct judgments on the operating status or fault conditions of the unit based on the displayed/indicated values or conditions. Before starting the unit, the operator should be familiar with the position, function and usage of the control/control elements and display/indication elements. Refer to the controller manual for details.

4.2 Ready to start

1) Remove the debris and tools around the compressor.

2) Remove the bolts or devices for transportation and fixation.

3) Check the oil level to make sure it is in the normal position (see Lubricants section).

4) Check the fan to make sure it is installed firmly.

5) Check whether all pressure pipe joints are firm and not loose.

6) Open the air supply valve.

7) Check and make sure that the safety valve is installed in place.

8) Check whether all cover plates and protective devices are safe and firm.

9) Check whether the current setting of the fuse, circuit breaker or controller is suitable and whether the setting is correct.

10) Check whether the air filter is installed reliably.

11) Turn on the power switch, the screen light is on. Jog the start button to ensure that the compressor steering is consistent with the prescribed steering.

12) Please turn on the switch of the cooling and drying machine

4.3 Routine start-up steps

1) Open the shut-off valve leading to the air supply system.

2) Press the start button after presetting the control parameters.

3) Observe whether the compressor has abnormal vibration, noise, or air /oil leakage after starting. If any problem is found, please stop it immediately and make corrections.

4) Close all the soundproof cover doors to control the noise of the unit and ensure the normal flow of cooling air.

5) Slowly close the air supply shut-off valve and check whether the unit is unloaded according to the setting. Refer to Chapter 6 Working Condition Parameter Setting and Adjustment.

6) Check whether the indicated value of each status parameter is normal.

7) Please carefully observe the operation of the compressor during the first hour of operation and observe it at any time for the next seven hours. If there is any abnormality, please shut down for maintenance.

8) After the initial operation, shut down according to the shutdown procedure, and check whether the oil tank needs to be filled with lubricating oil; check whether the connections are loose  "Notice"：

①Drain the condensed water at the bottom of the air oil separator tank regularly. The operation of discharging condensate should be carried out before starting the unit.

②Drain the condensate at the bottom of the control line filter regularly (weekly). The operation of discharging condensate should be carried out before starting the unit.

4.4 Shutdown procedure

4.4.1 Press the stop button.

4.4.2 Close the shut-off valve leading to the air supply system.

4.4.3 Turnoff the power switch.

 "Caution": Closing the shut-off valve during shutdown can prevent the compressed air of the air supply system from flowing back to the compressor due to the damage of the check valve, causing leakage and damage to the mechanical parts.

1. Emergency stop: In abnormal conditions, press the emergency stop/reset switch to stop, and cut off the power switch.

Chapter 5 Maintenance

5.1 Preparation before maintenance

To ensure the normal operation and long service life of the unit, good maintenance is the key. Therefore, the maintenance procedures for screw compressor units must be carefully implemented. Before proceeding with maintenance, please carefully read the safety rules in Chapter 1 of this manual, and make at least the following preparations:

1) Cut off the power of the host and hang a sign on the power switch.

2) Close the shut-off valve leading to the air supply system to prevent the compressed air from flowing back to the repaired part.

3) Open the manual vent valve to vent the pressure in the system and keep the vent valve in an open state. 4) Ensure that the compressor unit is cooled to prevent scalds and burns.

5) Wipe off oil and water marks on the ground to prevent slippage.

△ **warn**

- Don't think that the machine is shut down, just think that it can be overhauled and maintenance work, the automatic control system of the machine will start the compressor at any time.
- Poor maintenance not only affects the normal operation of the unit, but may also affect the safety of operators.
- When the compressor is running or under pressure, do not disassemble nuts, filler plugs and other parts.
- Do not use flammable solvents such as air oline or kerosene to clean the air filter or other parts. Safe solvents should be used according to the instructions.

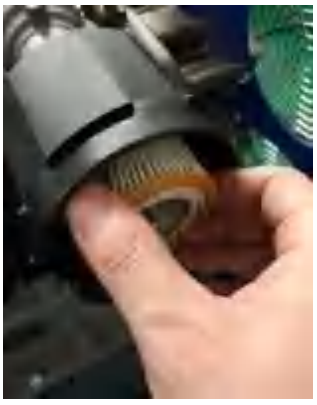
5.2 Maintenance of screw compressor

 "Attention": Only trained and qualified maintenance personnel are qualified to perform maintenance on the machin

5.2.1 Replacement of air filter element:

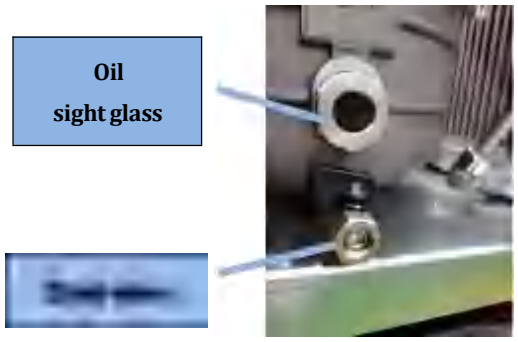
1. Unscrew the dovetail screw on the top of the air filter housing

1. Unscrew the dovetail screw on the top of the air filter housing

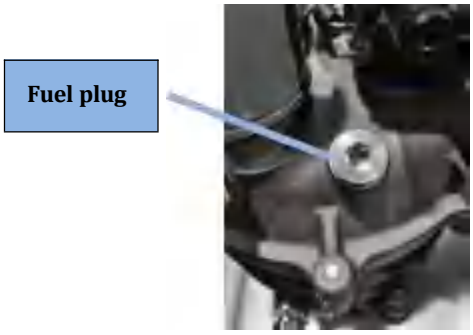


5.2.2 Cooling oil replacement:

1. Prepare the container, remove the oil drain plug and release the old cooling oil



2. Open the refueling plug and add special cooling oil, Recover the plug after reaching the 2/3 to 3/4 position of the oil sight glass



5.2.3 Replacement of oil filter and oil-air separator:

1. Use a belt wrench or special wrench to remove the old product

5.3 Maintenance tips and update setting method after maintenance:

Modify the "used time" on the control panel, it can be cleared after this maintenance, and the system will automatically restart timing.

5.4 Air tanks need to be drained regularly

It is recommended to open the blowdown valve every week for blowdown (there is no air pressure in the air tank).

5.5 Maintenance plan

Period (number of hours)	Recommended actions	Spare parts set
100 (Or weekly)	Check the oil level Clean the air filter Clean the radiator (exterior) Air tank blowdown Cleaning and dust removal inside the screw machine	maintenance
500 hours or 1 month First guarantee	Replace the special lubricating oil for screw machine Replace the oil filter Replace the oil fine separator Replace the air filter element Check the control switch cable screw Check the seal (each joint, air pipe) Clean the radiator (exterior) Air tank blowdown Cleaning and dust removal inside the screw machine	Consult the manufacturer for spare parts
Run for 2000 hours or half a year	Replace the special lubricating oil for screw machine Replace the oil filter Replace the oil fine separator Replace the air filter element Check the control switch cable screw Check the seal (each joint, air pipe) Clean the radiator (exterior) Air tank blowdown Cleaning and dust removal inside the screw machine	Consult the manufacturer for spare parts
8000	（In addition to maintenance items every 2000 hours） Replace the main engine shaft seal Clean oil and air separator oil Clean the oil, return check valve （Replace if necessary） Clean the intake valve（Replace if necessary） Clean the intake valve（Replace if necessary） control（Finally changed） Motor bearing Clean the radiator （Inside and outside）	Consult the manufacturer for spare parts
20000	（In addition to maintenance items every 8000 hours） Replace the main engine bearing	Consult the manufacturer for spare parts

This maintenance plan is based on all installation and operating parameters recommended by the manufacturer. The manufacturer recommends setting up a compressor maintenance work log for later maintenance.

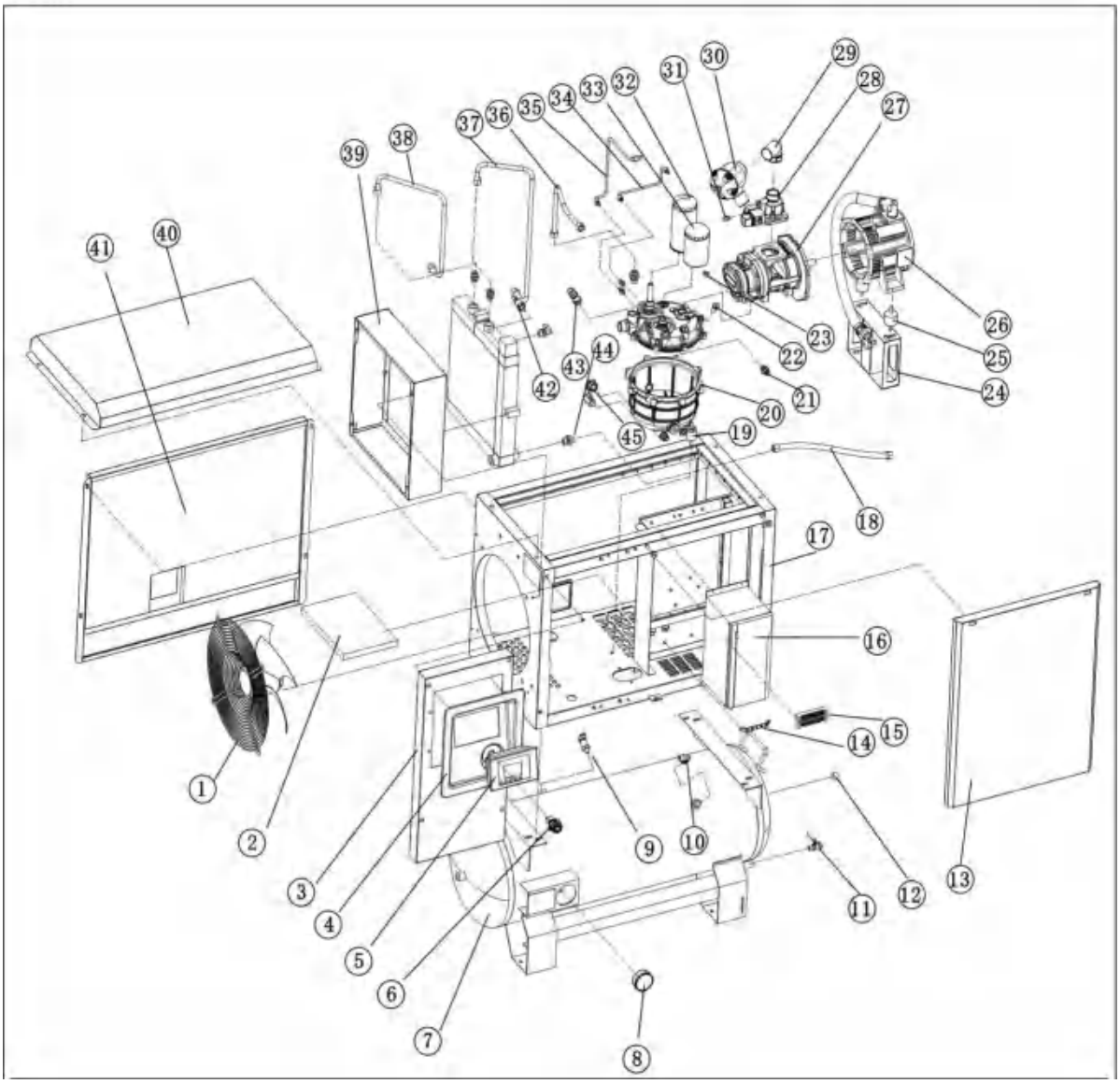
The operating hours shown in the table refer to the best use of the machine and may vary depending on the workplace and the number of cycles.

5.6 Common troubleshooting table（Power and air must be cut off during manual inspection）

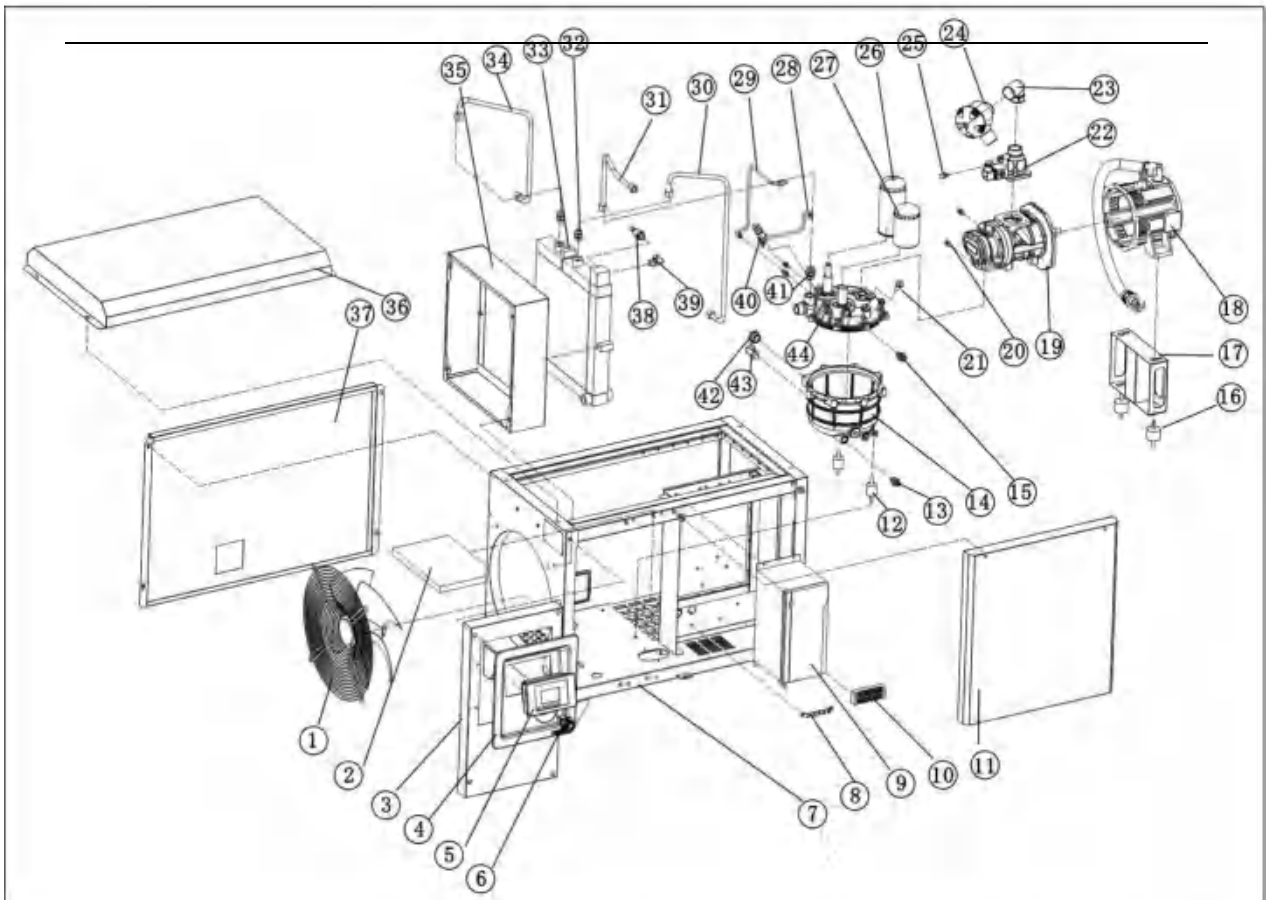
problem	reason	solution
Too high oil temperature causes shutdown	The exhaust temperature of the body is too high (maximum 105℃)	- Check the oil level. - Check the cleanliness of the cooler - Check if the fan is working properly - Check whether the temperature sensor is working properly The reset button must be pressed before restarting the machine. If high temperature occurs repeatedly, please Contact the service center
Motor overheated causing shutdown	- The voltage is too low. - Motor temperature is too high - Power consumption is too high	- If the machine is turned on when a fault occurs, check whether the phase sequence is stable. - If the fault occurs, the machine is running, confirm the internal pressure and replace the oil separator - If the current of the motor is higher than the rated current, please contact the technical staff of the service center. -Don't force start, so as not to cause more damage to the compressor control board. -Check whether the voltage and frequency match
Safety valve open	-Pressure sensor failure -The set pressure exceeds the set value of the safety valve -Oil fine separator blocked	- Check whether the pressure sensor and barometer parameters are normal - Check whether the setting value of the control panel matches the safety valve parameter - Replace the safety valve - Remove and replace the oil fine separator
The compressor is running, But the pressure is too low	- The intake valve is not open. - Pressure cannot be increased due to leakage - Transmission element blocking	-When the air compressor is stopped and the internal pressure is safe, remove the air filter and check whether the valve can move - Check the pipeline for leaks - Check carefully whether the motor is running but the body is not running. - Contact the service center

Air filter injection	-Oil level is too high -The oil-returning sight glass is dirty - Oil fine separator failure - The intake valve bleeds too fast	-Drain the excess oil during shutdown and check the oil level。 - Remove the oil, return sight glass and clean it and replace it if necessary. -Replace the oil fine separator and clean the core tube。
Main motor overload	- Low voltage - Power phase loss - High pressure in air oil separator tanks	- Confirm input power - Check whether the three-phase input of the power supply is close to the value and whether it is reliably connected to the terminal - Check the cable for damage - Check whether the ventilation of the main motor is unobstructed. - If the motor has only two-phase input, it should be checked by a qualified technician. (If necessary, replace or repair the motor) - If the pressure difference of the air oil separator tank is greater than 1 bar, it will cause high energy consumption of the system. Check the system by a qualified technician. - The ambient temperature is too high: ventilation - Restart the machine and press the reset switch on the control panel
Excessive fuel consumption	- The faulty oil of the oil Fine separator is not suitable for the compressor. -Worn or defective air/oil separator element. - Oil level is too high.	- Change the oil and fill the machine with the oil specified by the manufacturer. - Replace the oil fine separator. - Clean or replace the oil return sight glass. -Replenish oil until the oil level reaches the correct position specified in the manual

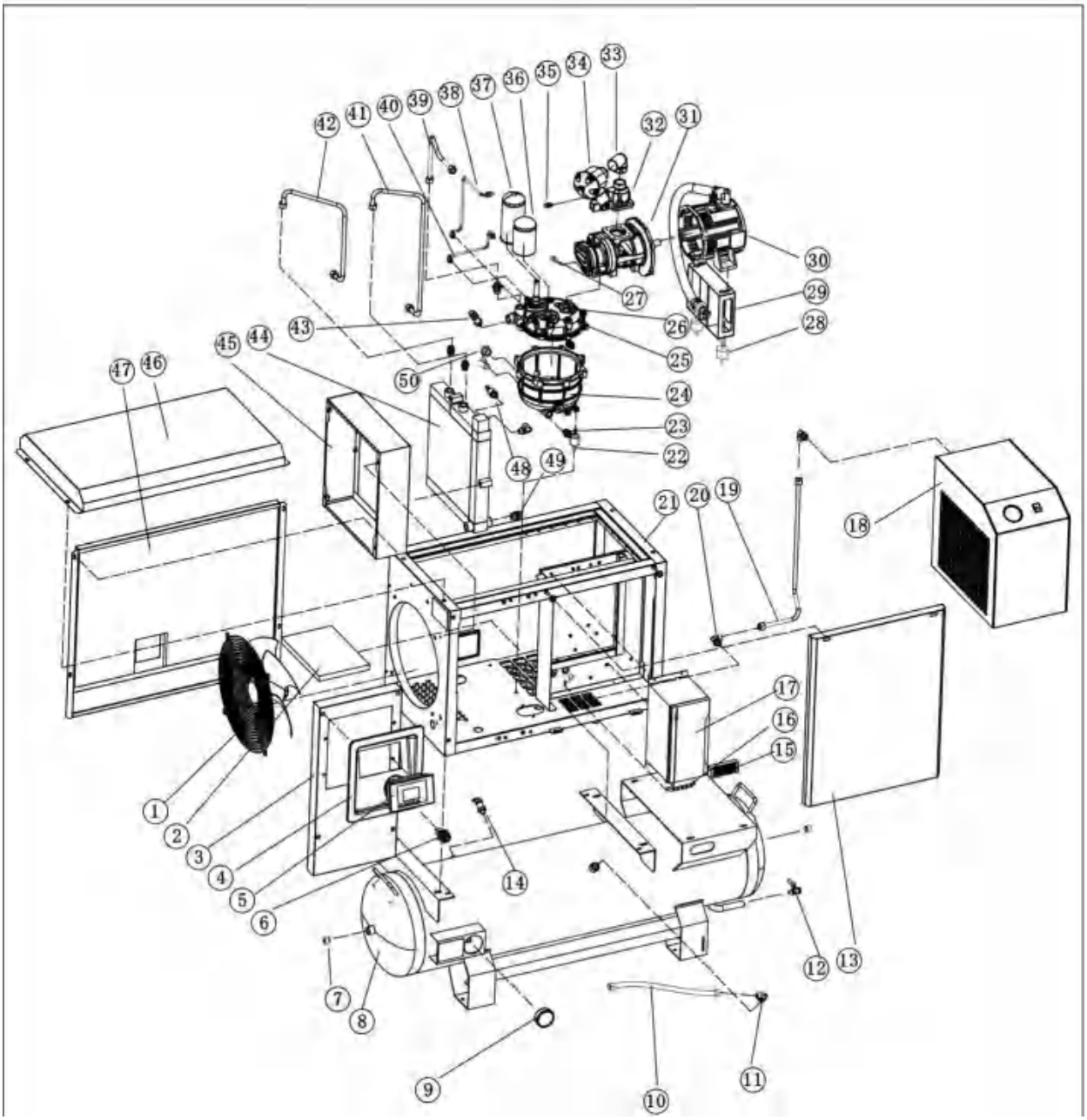
5.7 Schematic diagram of screw fitting explosion



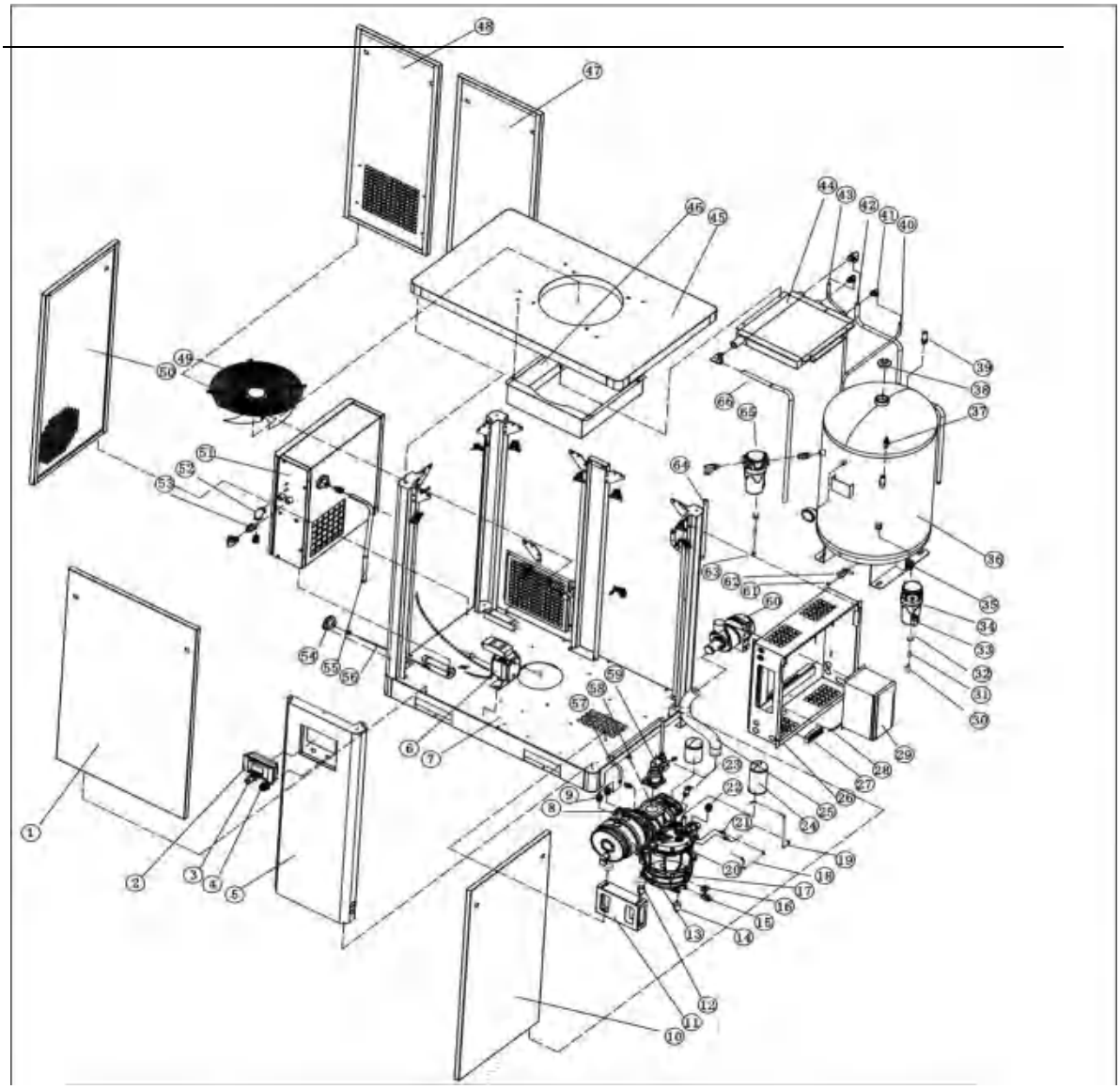
Serial No.	Part Name	quantity	Serial No.	Part Name	quantity	Serial No.	Part Name	quantity
1	Cooling Fan	1	16	Inverter	1	31	Fitting G1/8-M12X1.5	4
2	Filter Foam	1	17	Cabinet frames	1	32	Oil Separator	1
3	Front Left Door Panel	1	18	Cooler outlet hose	1	33	Oil filter	1
4	Panel frame	1	19	Oil drum shock pads	2	34	Secondary oil return	1
5	Operation Panel	1	20	Oil drum lower Rod	1	35	Unloading pipe	1
6	Emergency stop	1	21	Fitting G1/8-M18X1.5	1	36	Cooler inlet pipe	1
7	Gas Tank	1	22	Oil filler plug	1	37	Oil outlet pipe	1
8	Pressure gauge	1	23	Temperature sensor	1	38	Oil outlet pipe	1
9	Safety valve for gas	1	24	Motor bracket	1	39	Air guide cover	1
10	Elbow G1/2-M26X1.5	2	25	Motor shock pad	2	40	Top cover	1
11	Drain valve	2	26	Mirror	1	41	Rear Door Panel	1
12	Plug G1/2	1	27	Main Body	1	42	Pressure Sensor	1
13	Front right door panel	1	28	Intake Valve	1	43	Oil drum safety valve	1
14	Ground line	1	29	Air filter elbow	1	44	Fitting G1/2-M26X1.5	1
15	Wiring loom	1	30	Air Filter assembly	1	45	Oil mirror	1



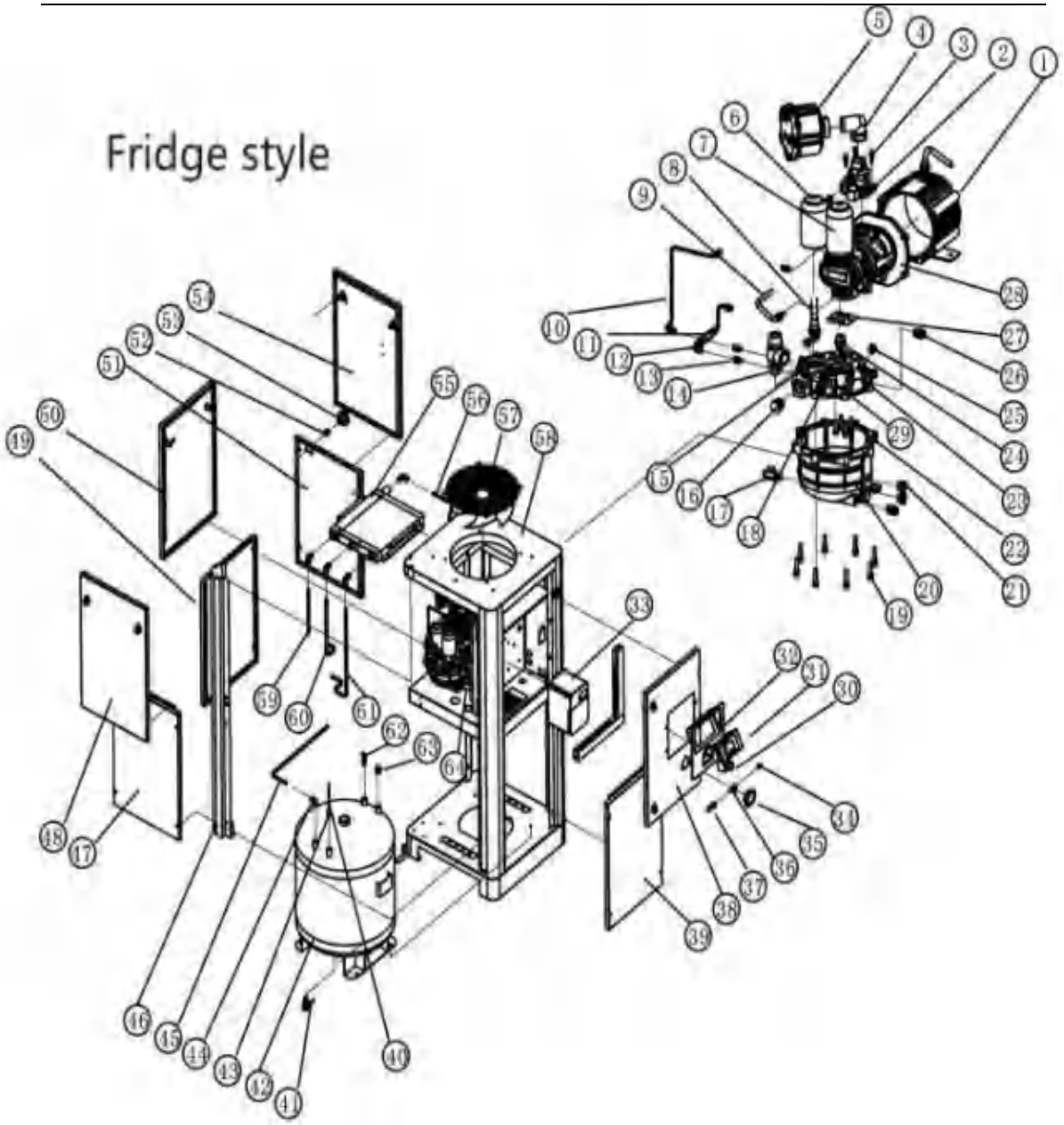
Serial No.	Part Name	quantity	Serial No.	Part Name	quantity	Serial No.	Part Name	quantity
1	Fan	1	16	Motor vibration damping pads	2	31	Cooler inlet pipe	1
2	Filter cotton	1	17	Motor Bracket	1	32	Fitting G3/8-M18X1.5	3
3	Front left door panel	1	18	electrical machinery	1	33	Cooler	1
4	Fascia	1	19	hosts	1	34	Cooler outlet pipe	1
5	Operation panel	1	20	temperature sensor	1	35	Air guide cover	1
6	Emergency stop	1	21	oil filler plug	1	36	Top cover	1
7	Cabinet frame	1	22	inlet valve	1	37	Rear door panel	1
8	Ground line	1	23	Air filter elbow	1	38	Pressure Sensor	1
9	converter	1	24	Air filter assembly	1	39	Elbow G1/2-M26X1.5	1
10	junction box	1	25	FittingG1/8-M12X1.5	4	40	Safety valve	1
11	Front right door panel	1	26	oil and gas separator	1	41	Fitting G1/2-M26X1.5	1
12	Oil drum shock pads	2	27	Oil filter	1	42	Oil mirror	1
13	FittingG3/8-M18X1.5	1	28	Secondary oil return pipe	1	43	Drain valve	1
14	oil drum underbody	1	29	Unloading pipe	1	44	Oil drum top cover	1
15	FittingG3/8-M18X1.5	1	30	Cooler oil inlet pipe	1			



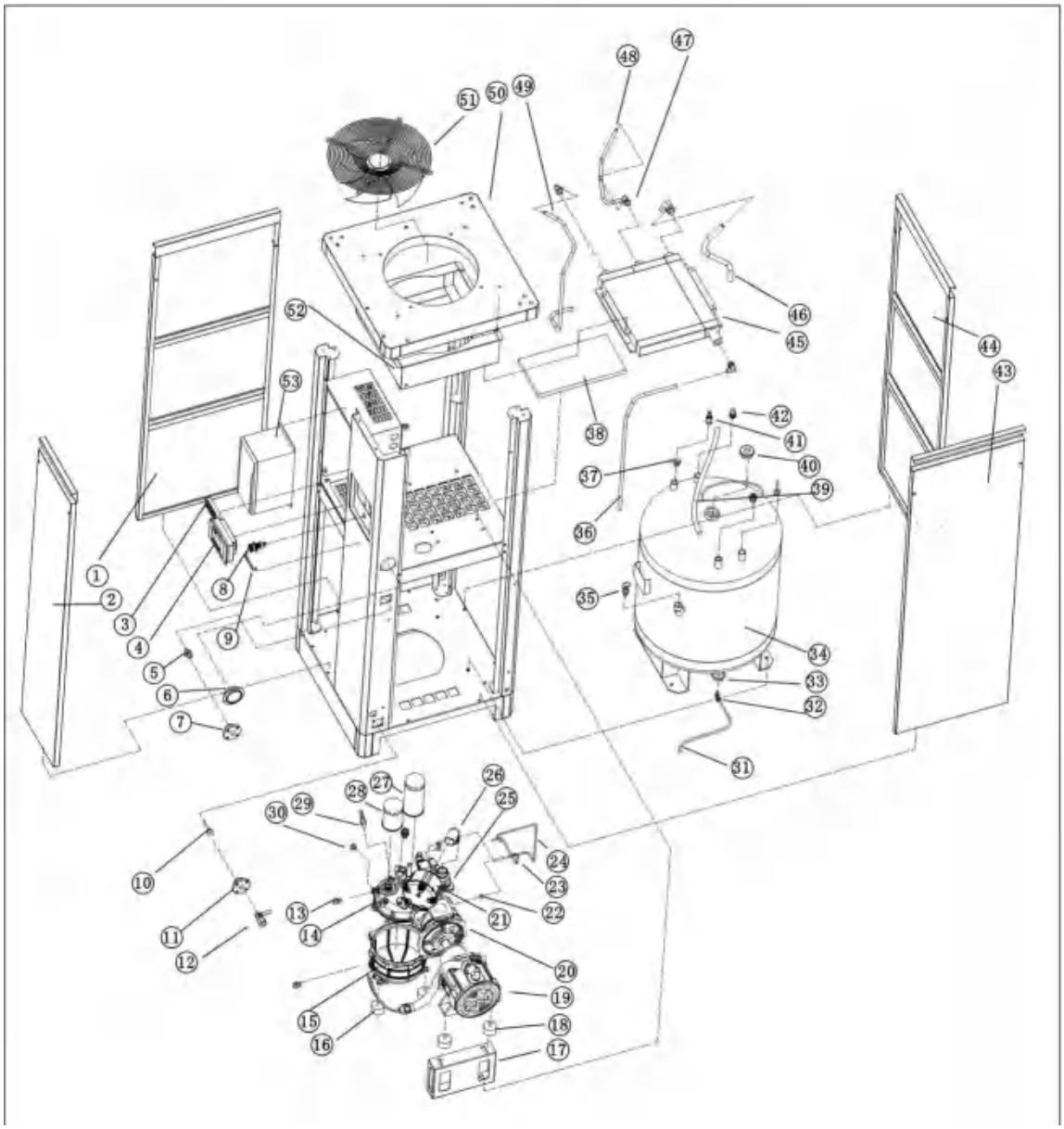
Serial No.	Part Name	quantity	Serial No.	Part Name	quantity	Serial No.	Part Name	quantity
1	Fans	1	18	Cold dryers	1	35	Fitting G1/8-M12X1.5	4
2	Filter Foam	1	19	Air outlet pipe for gas storage tank	1	36	Oil Filter	1
3	Front Left Door Panel	1	20	Elbow G1/2-M18X1.5	2	37	Oil-air separator	1
4	Panel frame	1	21	Box cabinet frame	1	38	Unloading pipe	1
5	Operation panel	1	22	Oil drum shock pad	7	39	Cooler inlet pipe	1
6	Emergency stop	1	23	Joint G3/8-M18X1.5	4	40	Secondary oil return pipe	1
7	Plug G1/2	1	24	Oil drum lower body	1	41	Cooler inlet pipe	1
8	Gas storage tank	1	25	Oil drum upper cover	1	42	Cooler discharge pipe	1
9	Pressure gauge	1	26	Filling plug	1	43	Oil drum safety valve	1
10	Cooler outlet hose	1	27	Temperature sensor	1	44	Cooler	1
11	Elbow G1/2-M26X1.5	2	28	Motor mount shock pad	1	45	Air guide cover	1
12	Drain valve	2	29	Motor mounts	1	46	Top cover	1
13	Front right door panel	1	30	Motor	1	47	Rear Door Panel	1
14	Safety valve for gas storage tank	1	31	Main Engine	1	48	Pressure Sensor	1
15	Wiring terminal block	1	32	Intake Valve	1	49	Fitting G1/2-M26X1.5	2
16	Grounding row	1	33	Air filter elbow	1	50	Oil Viewing Mirror	1
17	Inverter	1	34	Air filter assembly	1	51		



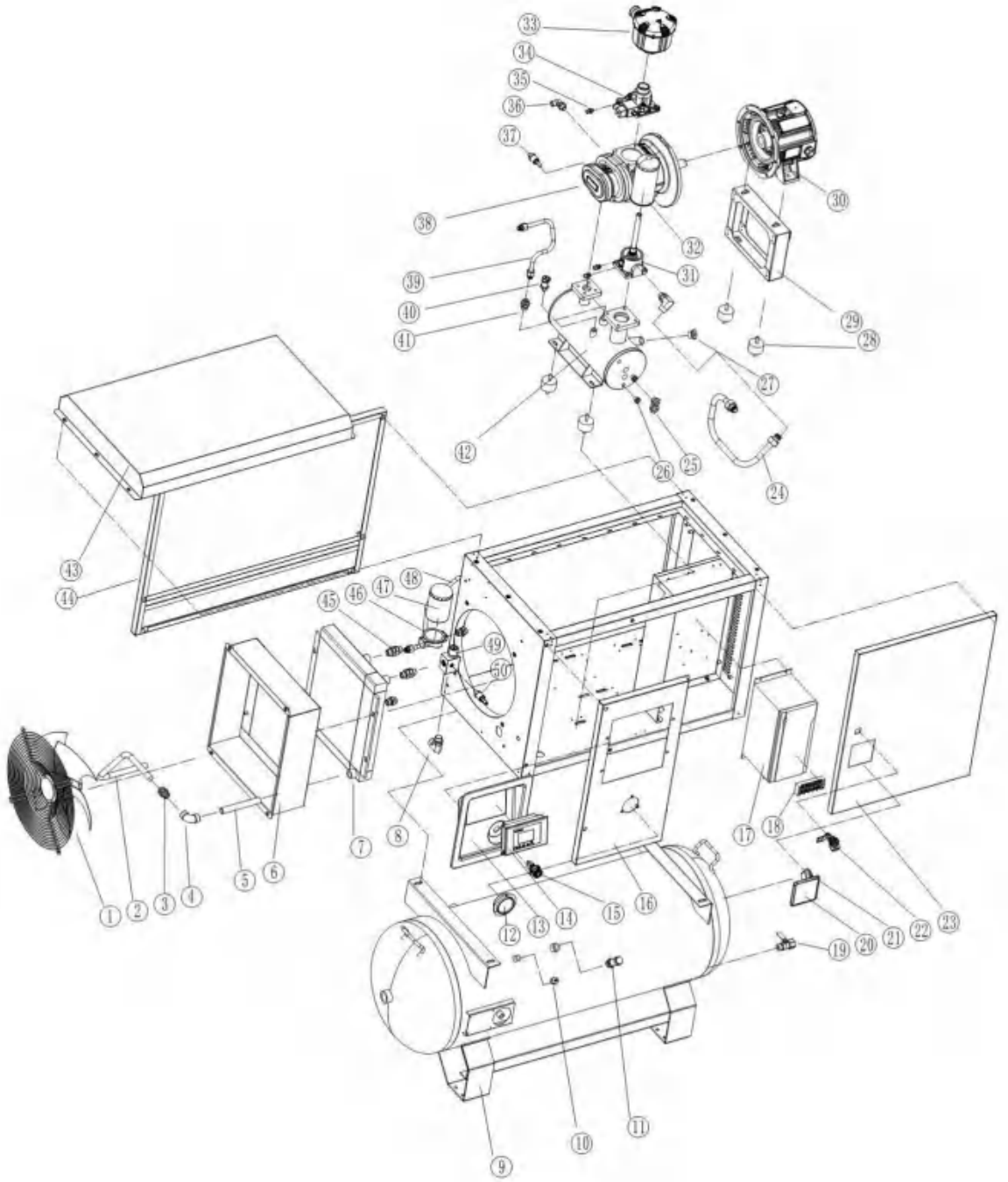
Serial No.	Part Name	quantity	Serial No.	Part Name	quantity	Serial No.	Part Name	quantity
1	Front Door Panel	1	24	Oil and gas separator	1	47	Rear Right Door Panel	1
2	Operation Panel	1	25	Air filter tube	1	48	Rear Left door panel	1
3	Cold dryer switch	1	26	Electrical Box	1	49	Fan	1
4	Emergency stop switch	1	27	Wiring Harness	1	50	Left door panel	1
5	Panel column	1	28	Ground Connector	1	51	Cold dryer	1
6	Drainer	1	29	Inverter	1	52	Elbow G1/2	1
7	Cabinet base	1	30	Quick plug-G1/4-6 side two	1	53	Double Female Fitting G1/2	1
8	Main unit	1	31	One way valve	1	54	G1/2 flange	2
9	Connector G1/2-M18X1.5	2	32	Double male connector R1/2-R1/4	2	55	Cold dryer outlet pipe	1
10	Right door panel	1	33	Elbow R1/2-M26X1.5	3	56	Transparent tube	1
11	Motor bracket	1	34	Water vapor separator	1	57	Oil cooler motor outlet pipe	1
12	Motor shock pad	1	35	Double Male Fitting R1/2	1	58	Oil filling plug	1
13	Oil-cooled motor	1	36	Gas storage tanks	1	59	Air inlet valve	1
14	Oil drum shock pad	1	37	Pressure sensor	1	60	Air filter assembly	1
15	Oil drum drain valve	1	38	Plug G1-1/4	1	61	Quick plug GI/2-6	1
16	Oil mirror	1	39	Safety valve for gas storage tank	1	62	Tank Drain Valve	1
17	Oil Drum Lower Body	1	40	Cooler inlet pipe	1	63	Quick plug GI/4-6	1
18	Secondary oil return pipe	1	41	Elbow G1/2-M18X1.5	3	64	Cold dryer inlet pipe	1
19	Unloading pipe	1	42	Cooler inlet pipe	1	65	Precision filter C	1
20	Oil drum cover	1	43	Cooler oil outlet pipe	1	66	Cooler outlet pipe	1
21	Fitting G1/2-M12X1.5	4	44	Cooler	1	67		
22	Fitting G1/2-M26X1.5	4	45	Top cover	1	68		
23	Tank safety valve	1	46	Air guide cover	1	69		


Fridge style

Part No.	Description	Qty	Part No.	Description	Qty	Part No.	Description	Qty
1	Motor assembly	1	23	Oil drum upper cover	1	45	Exhaust pipe-Flange	1
2	Inlet valve	1	24	Oil filter adaptor	1	46	Movable pillar	1
3	M6*25 bolt	4	25	G3/4 Oil end cap	2	47	Bottom door	1
4	Elbow	1	26	Adaptor G3/8-M18X1.5	1	48	Upper door	1
5	C10 Air filter	1	27	Gasket	1	49	Bottom door	1
6	C5 Oil separator	1	28	Air end	1	50	Upper door	1
7	C5 Oil filter	1	29	Elbow G3/8-M18X1.5	1	51	Bottom door	1
8	Oil separator rod	1	30	Emergency stop switch	1	52	Adaptor G1/2-M18X1.5	1
9	Temperature sensor	1	31	Panel	1	53	Exhaust flange	1
10	Unloading tube	1	32	Panel frame	1	54	Upper door	1
11	Oil return Check valve	1	33	Frequency converter	1	55	Cooler C10PV	1
12	Second oil return pipe	1	34	Quick plug-8	1	56	Exhaust pipe-tank	1
13	Adaptor G1/8-M12X1.5	8	35	Pressure gauge	1	57	350-Fan	1
14	Minimum pressure valve	1	36	3-path G1/4	1	58	Frame	1
15	1. 3MPa Safety valve	1	37	Pressure sensor	1	59	Exhaust-Cooler	1
16	G3/4 End cap	1	38	Upper door	1	60	Oil inlet	1
17	G1/4 Drain valve	1	39	Bottom door	1	61	Oil outlet	1
18	G1/4 End cap	2	40	Gas hose-6	1	62	G1/2 Safety valve	1
19	M8X45 bolt	8	41	G1/2 Drain valve	1	63	Adaptor G1/2-M18X1.5	1
20	Oil drum bottom	1	42	Tank-160L	1	64	Shock pad	4
21	G1/2 Oil sight glass	2	43	Quick plug G1/2-6	1			
22	M8X25 bolt	4	44	Elbow G1/2-M18X1.5	5			



Serial No.	Part Name	quantity	Serial No.	Part Name	quantity	Serial No.	Part Name	quantity
1	Left door panel	1	21	Air filter assembly	1	41	Pressure transducer	1
2	Front Door Panel	1	22	Fitting G1/8-M12X1.5	1	42	Elbow G1/2-M26X1.5	3
3	Terminal Blocks	1	23	Secondary oil return pipe	1	43	Right door panel	1
4	Operation panel	1	24	Unloading pipe	1	44	Rear door panel	1
5	Connector G1/2-M26X1.5	3	25	Air inlet valve	1	45	Cooler	1
6	Tank air pressure gauge	1	26	Air filter elbow	1	46	Cooler inlet pipe	1
7	Exhaust flange (drain)	1	27	Oil separator	1	47	Elbow G1/2-M18X1.5	2
8	Emergency stop	1	28	Oil filter	1	48	Cooler oil outlet pipe	1
9	Wire line	1	29	Oil Tank Safety Valve	1	49	Cooler oil inlet pipe	1
10	Quick plug (straight) G1/2-6	2	30	Fuel filler plug	1	50	Top cover	1
11	Exhaust Flange (Discharge)	1	31	Drain hose	1	51	Fan	1
12	Discharge ball valve G1/2	1	32	Quick plug (head) G4/2-6	1	52	Air guide cover	1
13	Fitting G3/8-M18X1.5	2	33	Refill core G1-1/4-G1/2	1	53	Inverter	1
14	Oil drum upper cover	1	34	Gas storage tank	1	54		
15	Oil drum lower body	1	35	Gas storage tank safety valve	1	55		
16	Oil drum shock pad	2	36	Cooler outlet pipe	1	56		
17	Motor bracket	1	37	Refill core G1/2-G1/4	1	57		
18	Motor shock pad	1	38	Filter cotton	1	58		
19	Motor	1	39	Gas storage tank outlet pipe	1	59		
20	Main body	1	40	Plug G1-1/4	1	60		



PartNO.	Part Name	QTY	PartNO.	Part Name	QTY	PartNO.	Part Name	QTY
1	Fan	1	18	Wiring Harness	1	35	Fitting G1/8-M12X1.5	4
2	Cooler outlet pipe	1	19	Drain valve	1	36	Elbow G3/8-M18X1.5	1
3	Fitting R1/2-M26X1.5	1	20	See-through window	1	37	Temperature Sensor	1
4	Elbow double inner wire R1/2	1	21	Plug G1	1	38	Main unit	1
5	Double outer wire outlet pipe	1	22	Door lock	1	39	Cooler oil inlet pipe	1
6	Air guide cover	1	23	Front right door panel	1	40	Oil drum safety valve	1
7	Cooler	1	24	Cooler inlet pipe	1	41	Fitting G1/2-M18X1.5	3
8	Elbow G1/2-M26X1.5	1	25	Oil mirror	2	42	Horizontal oil drum	1
9	Air Reservoir	1	26	Plug G1/4	2	43	Top cover	1
10	Quick plug R1/4-6	1	27	Plug G1/2	1	44	Rear door panel	1
11	Safety valve for gas storage tank	1	28	Shock absorber pad	4	45	cable outer wire connecto	2
12	Pressure gauge	1	29	Motor mount	1	46	Oil filter holder	1
13	Panel frame	1	30	Motor	1	47	Oil filter	1
14	Operation panel	1	31	Oil separator	1	48	Cooler outlet pipe	1
15	Emergency stop	1	32	Oil separator	1	49	Maximum pressure valve	1
16	Front left door panel	1	33	Air filter assembly	1	50	Pressure Sensor	1
17	Inverter	1	34	Intake Valve	1	51		