螺杆空压机
Screw Air Compressor

使
用
手
册
User Manual

安装使用前请详细阅读说明书

Please read the instructions before installation and use.

Verdes (Guangzhou) Technology Co., Ltd

--Professional You Can Trust Us!---

Thank you for selecting VERDES COMPRESSOR screw air compressor!

The company has the right to change the design of the product and has no obligation to make change and improvement for delivered products. No further notice will be given for the possible change of product specification or components in the future.

Description:

1. **The pressure indicated in the book is gauge pressure unless otherwise specified.**
2. **The following items should be provided when users contact our company for maintenance and service concerning the compressor.**
   - ① **Machine number:**
   - ② **Machine head number:**
   - ③ **Motor nameplate:**
   - ④ **The accessory image for replacement due to failure:**
   - ⑤ **Date of startup and commissioning:**

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Ⅰ. Installation rules of air compressors

1.1 Installation

The selection of installation site is the item that is most neglected by the workers. It is the usual condition that the air compressor is used immediately after purchase and placed at a random place with pipes equipped. There is no prior planning at all. They don't know that the hasty decision will become the reasons for failure, repair and bad quality of the air compressor in the future. Therefore, the selection of favorable installation is the precondition for correct use of air compressor system.

1.1.1 It requires a wide place with good lighting so as to facilitate operation and repair.

1.1.2. It is suitable for the relative humidity of the air is low with less dust. The air is clean with good ventilation.

1.1.3. The environment temperature should be lower than 46°C. The higher the enjoinment temperature is, the less the compressor outputs the air.

1.1.4. If the factory has poor environment and much dust, the prepositioned filtering device should be added.

1.1.5 Reserve the overhead road and place for installation of crane (especially for air compressor) to make it convenient for repair.

1.1.6 Reserve the maintenance space. The distance from the air compressor to the wall should be 70cm at least.

1.1.7 The distance from the compressor to the top should be more than 1 meter.

1.2. Considerations for pipes, foundation and the cooling system

1.2.1. Considerations for pipes of the air circuit

1.2.1.1 When pipe are equipped for the main circuit, the circuit should have a 1°-2°gradient to facilitate drain of condensation water in the circuit.

1.2.1.2 The pressure of the pipe circuit should not exceed 5% of the set pressure of the air compressor. As a result, it had better select pipes with large diameter.

1.2.1.3 The branch pipe circuit must be connected out from the top of the main pipe circuit to avoid that the condensation water in the pipes flow to the work machinery or back to the air compressor. The air outlet pipes of the air compressor should be installed with one-way valve.

1.2.1.4 The tools requiring lubricating should be installed with triple combination (air water filter, pressure regulator and oil feeder) to maintain the service life of the tools.

1.2.1.5. Don't reduce the main circuit at will. If it is necessary to narrow or enlarge the pipe circuit, the reducing pipe is required. Otherwise, the condition of mixed flow will take place at the joint. This will result in large pressure loss. It will also affect the service life of the pipe at the same time.

1.2.1.6. After the air compressor is installed, if purifying and buffering facilities such as air storage tank and drying machine are equipped, the ideal pipes should be air compressor+ air storage tank + drying machine. In such a way, the air storage tank may filter some condensation water. In addition, the air storage tank has the function to reduce the exhaust gas temperature. When the low temperature air or with less content of water enters the drying machine, it may reduce the load of the drying machine. If the air quality is required highly, multiple filters may be added (0.001-0.003 at the inlet is best).

1.2.1.7. If the system consumes a lot of air within a short time, it had better install an air storage tank for the purpose of buffer. In such way, it will decrease the times of empty and load of the air compressor (increase or decrease the load) so as to increase the service life of the air compressor.

1.2.1.8. For the compressed air with the system pressure is under 1.5MPa, the flow speed inside the delivery pipe should be under 15m/sec to avoid excessive pressure drop.

1.2.1.9. The elbows and all types of valves should be reduced for use as possible in the circuit to reduce the pressure loss.

1.2.1.10. The ideal pipe is that the main circuit encircles the whole factory building so that the compressed air from two sides can be obtained at any position. When one branch line consumes more air, this will reduces pressure drop. Equip proper valve on the circular main circuit to cut off for the convenience of repair.

1.2.2. Considerations for installation of air compressor

1.2.2.1. The foundation should be built on hard soil. The basic foundation should be ground flatly before installation to avoid large noise caused by vibration of the air compressor.

1.2.2.2. The air compressor is installed upstairs, anti-vibration treatment must be made properly to prevent transfer of vibration to downstairs or generation of resonance. Otherwise, the air compressor and the building will have potential safety hazard.

1.2.3. Cooing system

The series machine is cooling type air compressor. Pay special attention to the ventilation environment. Don't place the air compressor at the machinery with high temperature or a place with poor ventilation or confined space to avoid that the compressor stops due to excessively high exhaust gas temperature. When it is used in usual confined space, the air pumping equipment should be used to facilitate air circulation. Generally speaking, the separate air volume of air pumping should be larger than the air exhaust for heat dissipation.

1.3. General electric specification and safety specification

1.3.1 According to the power of the air compressor, select the correct power supply path. The wire with too small diameter should not be used. Otherwise, the power cord is easy to produce danger due to high temperature burning.

1.3.2 It had better that the air compressor use a set of electric system. Especially, it should avoid use with other electric consumption systems in parallel. When it is used in parallel, the air compressor may run overload due to excessively voltage drop or imbalance of three-phase current to cause the protective device to trip. Special attention should be paid to this item for air compressor with large power.

1.3.3 Proper NFB (no-fuse switch) should be equipped according to the power of the air compressor to maintain the electricity use system and the safety of maintenance and repair.

1.3.4 The correctness of the voltage should be confirmed when the air compressor is paired.

1.3.5 The earth wire of the air compressor must be grounded firmly to prevent danger caused by electric leakage. In addition, the earth wire should not be connected on the air delivery pipe or cooling water pipes.

1.3.6 If the three-phase current is not balanced, the difference value of the phase of the lowest current with the phase of the highest current should not exceed 50%. If the power supply has voltage drop, the voltage drop should not be lower than 5% of the rated voltage.

2. The work principle, advantage and disadvantage of screw air compressor

2.1 Basic structure of screw air compressor

The screw compressors mentioned usually mean double-screw rod compressor. In the machine body of the compressor, the spiral rotors that engage mutually are equipped in parallel.

The rotor with bulging teeth outside of the pitch circle is called male rotor or male screw usually. The rotor with bulging teeth inside of the pitch circle is called female rotor or female screw. The male rotor is connected with the original electric

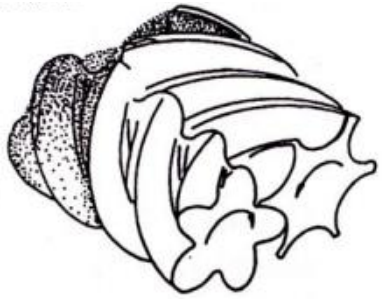
motor generally. The male rotor drives the female rotor to rotate. The last pair of bearing on the rotor performs axial positioning and bears the axial force inside the air compressor.The cylinder roller bearing at two ends of the rotor can perform radial positioning and bears the radial force inside the air compressor.

At two ends of the compressor body, orifices of certain shape of size are open separately. One is used for air sucking and called air inlet; another is used for air exhaust and called air outlet.

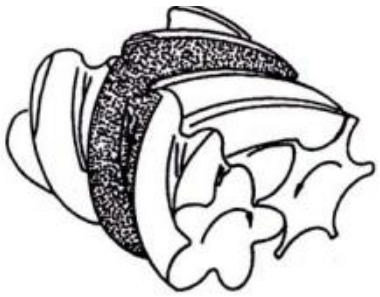
2.2. Working principle

The work cycle of screw air compressor is divided into four links: air suck, sealing and delivery, compressing and air exhaust. Along with the rotation of the rotor, every pair of engaging teeth complete the same work cycle in succession.

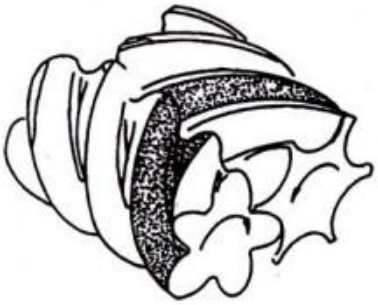
2. The air sucking process



1. The sealing and transportation process



4. The travel process of compressor spray



3. Air exhaust process

2.2.1. The air sucking process

When the rotor rotates, when the teeth groove of the male and female rotors rotate to the opening of air inlet end wall, the space is the largest. At the moment, the teeth groove space of the rotor is connected with the air inlet. The air in the teeth groove is discharged completely. The teeth groove is at the vacuum state when air exhaust is completed. When it rotates to the air inlet, the external air is sucked in and enters the teeth groove of the male and female along the axial direction. When the air is full of the whole teeth groove, the end of air inlet side of the rotor rotates away from the air inlet of the enclosure. The air in the teeth groove is sealed.

2.2.2 The sealing and transportation process

When the air is full of the whole teeth groove, the end of air inlet side of the rotor rotates away from the air inlet of the enclosure. The air in the teeth groove is sealed.

2.2.3. The travel process of compressor spray

The teeth groove space between the meshing plane and air outlet become small gradually. The air inside the teeth groove is compressed so that the pressure is increased.

2.2.3. Air exhaust process

When the meshing end of the rotor rotates to connect with the exhaust port of the enclosure, the compressed is begun to discharge until the meshing plane of the teeth tip and teeth groove moves to the exhaust air end. At such condition, the space between the meshing plane of the male and female rotors and the exhaust port of the meshing plane is 0. The exhaust air process is completed. The teeth groove length between the meshing plane of the rotor and the air inlet of the enclosure reaches the maximum length. The air intake process begins again.

The above work principle indicates that the screw compressor is a type of positive displacement air compressing machinery by making rotational motion with working volume. The air compression is implemented by depending on the change of the volume. The change of volume is realized by rotational motion of a pair of rotor in the enclosure of the compressor.

2.3. Advantages of screw air compressor

2.3.1 High reliability: the screw compressor has a small amount of parts and components and has no quick wear parts. Therefore, it runs reliably, has long service life. The interval of overhaul may reach 40000-80000 hours.

2.3.2. Convenient operation and maintenance: the operators do not need accept professional training to perform unmanned operation.

2.3.3. Good power balance: The screw compressor does not produce unbalanced inertia force. The machine can work with high speed stably to perform groundless operation.

2.3.4. Strong adaptability: the screw compressor has the characteristics of forced air delivery. The gas displacement is not affected by the discharge pressure so as to ensure high efficiency in a wide scope.

2.3.5. Multi-phase mixed transfer: the rotor teeth face of the screw compressor has gap actually. Therefore, it can resist liquid impact and can deliver gas containing liquid, gas containing dust and easily polymerized gas, etc.

2.4. Disadvantages of screw air compressor

2.4.1. High cost

The rotor teeth plane is a spatial curved surface. It needs special tool to make machine on the expensive special equipment. In addition, high requirements are put forward for machining precision of screw compressor.

2.4.2. Unsuitable for occasions with high pressure

Limited by the rotor rigidity and bearing service life and other aspects, the screw compressors are only applicable to low pressure scope. The discharge pressure does not exceed 3.0Mpa generally.

2.4.3. Unable to make into mini type

The screw compressor seals the gas by depending on the gap. At present, only when the volume flow is larger than 0.2m^3/min, the screw compressor has excellent performance.

3. Safety measures during the operation process.

3.1. Preventive measures

3.1.1. Don't play with the compressor air. Don't make the air touch your skin or aim it at others. Don't use compressed air to clean dirt on the clothes. When the compressor air is used to clean the equipment, ensure to be careful and wear protective glass.

3.1.2． The operators must abide by the safe operation rules as well as all local relevant requirements and stipulations with respect to work safety.

3.1.3. The installation, operation, maintenance and repair are only implemented by professional who are authorized and have received training.

3.1.4． The air produced by the compressor is not deemed to reach the breathing quality.

3.1.5. Before any maintenance, repair, adjustment or any other unconventional inspection are made, please stop running the compressor. Press the emergency stop button. Cut off the power supply and decrease pressure of the compressor. In addition, the power supply isolating switch must be opened and locked.

3.2. Preventive measures during the operation process

3.2.1The personnel who open the power supply of remote control machine should adopt sufficient preventive measures to ensure that nobody inspects or operate the machine. Therefore, the remote starting equipment should be stuck with corresponding notice.

3.2.2. Use correct hose and pipe joint and size for connection. When air is discharged through hose or air circuit, ensure that the open end is fixed properly. If the open end is placed at will, it will move suddenly to cause injury. Before hose connection is disconnected, ensure that the hose is depressurized completely.

3.2.3. Don't run the machine when inflammable or poisonous gas, steam or particles are inhaled.

3.2.4. Don't run the machine when lower or higher than the rated value.

3.2.5. All doors of the box should be closed during the operation process. These doors cannot be opened for a while unless routine inspection and other operation are made. Please wear the ear protector when the machine door is opened.

3.2.6. Personnel staying at the environment or in the house with sound pressure level reaching or exceeding 90db should wear ear protector.

3.2.7. Please make regular inspection:

3.2.7.1. All devices should be installed in place and fixed safely;

3.2.7.2. All hoses and pipes inside the machine should be in good condition, safe, reliable and wear free.

3.2.7.3. No leakage.

3.2.7.4. When use exceeds 2000 hours, all fastening parts should be tightened regularly, including electric wire.

3.2.7.5. All electrical lead should be safe.

3.2.7.6. The safety valves and other pressure relief devices are not blocked by dirt or paint.

3.2.7.7. The air outlet valve and air pipe network (namely pipes, coupling, divided manifold, valve and hose, etc) should be repaired carefully without wear or misuse.

3.2.8. Don’t dismantle or modify the safety device, protective device or isolator of the machine.

3.2.9 After the shutdown time of the machine exceeds 8 hours, pay attention to the condensate water in the oil- air tank at the time of starting.

3.3. Preventive measures during the maintenance and repair process

3.3.1. Always wear protective glasses.

3.3.2. Use correct tools to implement maintenance and repair work.

3.3.3. Use original spare parts.

3.3.4. All maintenance should be done under the condition that the machine is cooled without pressure.

3.3.5. The starting equipment should be stuck with warning label such as “under working, no starting”

3.3.6. The personnel who open the power supply of remote control machine should adopt sufficient preventive measures to ensure that nobody inspects or operates the machine.

3.3.7. Before the pipes are disconnected or connected, the air outlet valve of the compressor should be closed first.

3.3.8. Before any pressurized components are dismantled, the machine should be isolated from the pressure sources effectively and discharge the pressure of the whole system.

3.3.9. Don't use flammable solvent or carbon tetrachloride to clean the parts. Please take safety measures to prevent that the cleaning liquid may give out poisonous gas.

3.3.10. Please check the cleaning condition of the machine carefully when care and maintenance is made. Cover a piece of clean cloth, paper or adhesive tape on the part or the opening to prevent sticking dirt.

3.3.11. Don't make welding or carry out other operation giving out heating near the lubricating oil system.

3.3.12. Whenever the trace indicates that or you suspect that certain component of the machine is overheated, the machine should stop running. You should not open the cove to make inspection unless sufficient cooling time passes. In this way, it may avoid the danger of spontaneous combustion of oil steam when the air enters.

3.3.13. Don't use open fire source to check the inside of the machine, pressure container.

3.3.14. Ensure that no tools, loose parts or cloths are left inside or on the machine.

3.3.15. Maintenance should be made for all adjusting and safety device regularly to ensure that they can work normally. These devices should not have failure.

3.3.16. When the filter element of the separator is replaced every time, please check the condition of carbon deposit inside the discharge pipe and the container of the oil-gas separator. If the carbon deposits too much, it should be cleaned.

3.3.17. Protect the electric motor, air filter, electronic elements and adjusting components, etc to prevent entry of water such as derusting cleaning at the time of steam cleaning.

3.3.18. Ensure that all acoustic insulating materials (such as the materials of the case as well as that of the air inlet and outlet of the air compressor) are in good condition. If there is damage, replacement should be made with original materials provided by the manufacturer to prevent increase of the sound pressure level.

3.3.19. Don’t use corrosive solution that may damage the air pipe network (such as Makrolon base).

3.3.20Please pay special attention to the following safety measures when the cooling liquid is handled:

3.3.20.1. Don’t inhale the steam of the cooling liquid. 1. Please check whether the working area is ventilated properly; if necessary, please use respiratory protection devices.

3.3.20.2**.** Always wear special glasses.If the cooling liquid contacts the skin, please wash with water. If the liquid state cooling liquid contacts the skin through the clothes, don’t take off or remove the clothes in a rush. Use plenty of water to wash the clothes until all cooling liquid are washed away. Then seek medical first aid.

3.3.21. Protect hands to avoid being scalded by touching scalding machine parts such as during the process of oil discharge.

4. Maintenance and care during the operation process

4.1 Preventive and repair plan

The following operation should be implemented before maintenance, repair or adjustment is made:

·Stop operation of the compressors.

·Press the emergency stop button.

·Close the air outlet valve and open the condensate water manual blow-down valve

·For compressor equipped with electric pollutant discharge, please press the test button on the top of electric pollutant discharge until the air system between the air storage tank and the outlet valve is depressurized completely.

·Cut off the power supply.

·Open and lock isolating switch

4.1.1. Note

·Only Use parts and components authorized and recognized by the manufacturer;

·The manufacturer will not be liable for warranty for any damage or fault caused by failure to use the parts and components authorized and recognized by the manufacturer;

4.1.2 General information

All dismantled washers, O-shaped rings and gaskets should be replaced at the time of maintenance and care.

4.1.3. Preventive maintenance plan

4.1.3.1. Every shift checks the readings on the display screen.

4.1.3.2. Check whether the condensate water is discharged before the load process.

4.1.3.3. Every shift should check the oil level. Before starting, the oil level should be at the red line of the oil level glass.

4.1.3.4. Clean the compressor every three months (500 hours);

4.1.3.5. Check the possible leakage every three months (500 hours);

4.1.3.6. Check the cooler every three months (500 hours); if necessary, please clean it.

4.1.3.7. Tighten all electric circuit one time every three months (3000 hours);

4.1.3.8. When the consumable materials alarm, implement the maintenance operation according to the displayed maintenance plan.

4.2. Change oil

4.2.1. Run the compressor until it gets heat. Stop running the compressor; close the air outlet valve and cut off the power supply. Please wait for several minutes. Then loosen one circle of the screw of the oil port to discharge the system pressure to realize the purpose of depressurization.

4.2.2. Loosen the oil drainage end cap at the top of the oil coolers.

4.2.3. Take off the drain plug to discharge the oil.
The following components are equipped with drain plug:Air storage tank

- Oil cut-off valve
- One-way valve
- Gear box
- Oil cooler
- Water cooler

4.2.4. Tighten and close the drain plug or oil drain valve and take off the oil filling screw. Add oil to the oil-air tank until the oil level reaches three fourths of the oil viewing glass. Re-install and tighten the screw plug of the oil port. Take out the air

filter assembly. Add a proper amount of cooling liquid towards the air inlet of the air inlet valve.

4.2.5. Load and run the compressor for several minutes (the temperature needs to reach 90℃ if temperature control valve is equipped) and then check whether the oil level at running is at the middle of the second red line.

4.2.6. If the oil level is not reached, loosen one circle of the screw of the oil port to discharge the system pressure to depressurize the system. Dismantle the plug screw. Add oil to the oil-air tank until the oil level reaches two thirds of the oil viewing glass. Tighten the oil plug screw.

4.2.7 After all maintenance in the relevant "maintenance plan" is implemented, please carry out maintenance for alarm according to the following reset.

Enter user parameter→ maintenance parameter. Reset all replaced consumables to "0".

After the first maintenance, it needs to enter the preset parameters of the maximum use time to adjust the time of all consumables to 2500H.

4.3. Replacement of oil filter

4.3.1. Stop running the compressor; close the air outlet valve and cut off the power supply. Please wait for several minutes. Then loose one circle of the screw of the oil port to discharge the system pressure to realize the object of depressurization.

4.3.2. Use oil receiver to avoid overflow of oil**.** Loosen one circle of the oil filter and wait for several minutes to make the oil in the filter into the oil-air tank. Then dismantle the oil filter.

4.3.3. Clean the base of multi filters. Apply oil on the gasket of the new filter. Rotate the filter to the proper position until the washer touches the base. Then tighten manually.

4.3.4. Tighten the plug screw.

4.4. Care and maintenance of oil filters

The air filter is the component to remove dust and pollutant in the air. The filtered clean air enters the compression chamber of the screw rotor for compression. The internal gap of the screw compressor only permits the particles within 15u to be filtered out. If the air filter is blocked and damaged, plenty of particles larger than 15u

enter the inside of the screw compressor for circulation. This will not only reduce the service life of the engine oil filter and oil fine separation filter significantly but also results in that plenty of particles enters the bearing chamber directly. This will quicken wearing of the bearing and enlarge the rotor gap to reduce the compression efficiency or even that the rotor will become dull and seized.

4.4.1 It had better clean the air filter once a week. Unscrew the screw cover of the air filter to take out the air filter. Use compressed air of 0.2-0.4Mpa to blow the dust and particles on surface of the air filter outwards from the internal chamber of the air filter. Use clean duster cloth to wipe the dirt on the inner wall of the air filter clean. Install back the air filter. Pay attention that the sealing ring on the front end of the air filter should cling to the end face of the air filter closely. The maintenance of air inlet filter of the diesel engine of the screw compressor with diesel oil as the power should be carried with that of the air filter of the air compressor synchronously. 4**.4.2**The air filter should be replaced once per 1000-1500 hours at normal conditions. For application site with severe environment such as mining, ceramics factory, cotton mill, etc, it is suggested to replace the air filter per 500 hours.

4**.4.3**When the filter element is cleaned or replaced, the components must be checked one by one to prevent falling of foreign body into the air inlet valve.

4**.4.4**Check whether the air inlet expansion pipe is damaged, sucked flat usually and check whether the connector between the expansion and air filter air inlet valve come loose or leaks air. If found, make repair and replacement in time.

5. Troubleshooting

5.1 Troubleshooting table

Item	Fault condition	Possible causes	Remove the reasons
(I)	Unable to start (The current is unbalanced or loss of phase)	1. Whether the three-phase voltage is balanced. 2. Check whether wire connection of the mutual inductor is poor. 3. Dismantle the main wire of the electric motor. At the time of starting, use multimeter to measure the output voltage of the contactor and check whether it is consistent with the input value. 4. The motor malfunctions. 5. The controller detection has problems.	1. The maintenance personnel make repair and replacement. 2. The maintenance personnel make repair and replacement. 3. The maintenance personnel make repair and replacement. 4. The maintenance personnel make repair and replacement. 5. Check the power supply and connection point.
(II)	The current is too high during running. Report failure.	1. The voltage is too low. 2. The pressure is too high. 3. The oil-gas separator is blocked. 4. The body of the compressor has failure (electric motor or machine head).	1. Ask maintenance personnel to make repair. 2. Pressure setting of the controller. It needs adjustment if setting too high. 3. Replace oil-gas separator. 4. Please contact the service unit of the company.

Item	Fault condition	Possible causes	Remove the reasons
(III)	The exhaust gas temperature is lower than normal temperature (lower than 75℃).	1. The environment temperature is too low. 2. The exhaust gas temperature gauge is not correct. 3. The thermal control valve malfunctions.	1. Reduce the heat radiating area of the controller. 2. Replace the exhaust gas gauge. 3. Replace the thermal control valve.
(IV)	The exhaust gas temperature is too high and the air compressor trips automatically. The exhaust gas high temperature indicator light is on (exceed the set value 100℃).	1. The cooling liquid is insufficient. 2. Environmental temperature is too high. 3. The lubricating oil specification is not correct. 4. The thermal control valve malfunctions. 5. The air filter is not clean. 6. The oil filter is blocked. 7. The cooling fan malfunctions. 8. The air duct of air cooling cooler is blocked. 9. The temperature sensor malfunctions.	1. Check the liquid level, if it is lower than the “bottom red line”, please stop. Add lubricating oil to the “top red line”. 2. Increase exhaust air and reduce the room temperature. 3. Check the lubrication oil mark and replace the liquid product. 4. Check whether the oil is cooled through oil cooler. If not so, replace the thermal control valve. 5. Clean the air filter with low pressure air. 6. Replace the filter. 7. Replace the cooling fan. 8. Clean the cooler with low pressure air. 9. Replace the temperature sensor.

Item	Fault condition	Possible causes	Remove the reasons
(V)	The oil content in the air is high. The lubricating oil addition cycle is short. The filter smokes if there is no load.	1. The liquid level is too high. 2. The limiting hole of the oil return pipe is blocked. 3. The exhaust gas pressure is low. 4. The oil-gas separator is damaged. 5. The pressure sustaining valve is fatigue.	1. Check the liquid and discharge until the level is between the "top red line" and "bottom red line". 2. Dismantle to clean. 3. Increase the exhaust gas pressure (adjust the pressure switch to the set value). 4. Replace with a new product. 5. Replace the spring.
(VI)	Unable to run with full load.	1. The pressure sensor malfunctions. 2. The air inlet valve acts improperly. 3. The pressure sustaining valve acts improperly. 4. The control pipe leaks.	1. Replace with a new product. 2. Add lubricating grease after dismantling for washing. 3. After dismantling, check whether the valve seat and check valve plate is damaged. If so, replace it. 4. Repair or replace if necessary.
(VII)	Unable to idle. When running without load, the gauge pressure maintains work pressure or	1. The pressure sensor malfunctions. 2. The air inlet valve acts improperly. 3. The draining solenoid valve malfunctions (coil	1. Cleaning or Replace. 2. Add lubricating grease after dismantling for washing. 3. Repair or replace if necessary.

	continues to increase. The safety valve acts.	is burnt). 4. The air amount adjustment plate is damaged. 5. The discharge amount is too small. 6. The computer version goes wrong.	4. Repair or replace 5. Adjust the discharge flow rate. 6. Replace
(VIII)	The blast capacity of the compressor is lower than the normal value.	1. The pressure sensor malfunctions. 2. The air inlet valve acts improperly. 3. The pressure sustaining valve acts improperly. 4. The oil-gas separator is blocked. 5. The draining solenoid valve leaks.	1. Replace with a new product. 2. Add lubricating grease after dismantling for washing. 3. After dismantling, check whether the valve seat and check valve plate is damaged. If so, replace it. If the spring is fatigue, replace it. 4. Repair or replace if necessary. 5. Repair or replace if necessary.
(IX)	Frequent load and empty	1. The pipeline leaks. 2. The pressure difference value for load and unload is too small. 3. The air consumption is not stable. 4. The pressure sustaining valve element is not sealed tightly. The spring is fatigue.	1. Check the leakage position and tighten. 2. Reset (the pressure difference is 0.2MPA) generally. 3. Increase the capacity of the air storage tank. 4. Repair or replace valve element and spring.

Item	Fault condition	Possible causes	Remove the reasons
(X)	The oil mist bursts out from the air filter when stopping the machine.	1. The gas bleed valve malfunctions. 2. Shutdown with load. 3. Electronic circuit goes wrong. 4. The pressure sustaining valve leaks. 5. The discharge valve does not discharge. 6. The oil-gas separator is damaged.	1. Check whether the inlet valve is blocked. If blocked, dismantle to wash and then add lubricating grease. 2. Avoid shutdown with load. 3. Ask maintenance personnel to make repair and replacement. 4. Repair or replace if necessary. 5. Check the discharge valve and replace when necessary. 6. Replace

6.1. The general procedure for change of lubricating oil of screw compressor

When the screw air compressor works, the lubricating oil and high temperature and high pressure air inside it at the highly mixed state, it will cause that the lubricating oil get oxidized constantly. At the same time, the oil-gas tank may deposit water, which will emulsify the lubricating oil so as to reduce service life of the lubricating oil. Therefore, users are required to replace the lubrication oil inside the air compressor within the specified time. Moreover, when the application environment of the machine is bad, the specified service life of the lubrication oil will shorten accordingly. The cycle for change of the lubricating oil we specified refers to the service life when the exhaust gas temperature is below 85℃.

Before the lubricating oil is changed, if the main performance index of the lubricating oil inside the machine does not exceed the limited index of the lubricating oil, the following procedure may be observed to change the lubricating oil:

1. Start the compressor and run it normally for about one hour. Stop it. Discharge the lubricating oil inside the machine completely while it is hot (note: the lubricating oil at the cooler, oil filter, machine head, system pipes should be discharged completely as possible).
2. Add the lubricating oil that is one third of the normal filling quantity. After starting to run for 20 minutes, (note that the exhaust gas temperature needs to be below 95℃), then stop the machine. Discharge the lubricating oil completely while it is hot (note: the lubricating oil at the cooler, oil filter, machine head, system pipes should be discharged completely as possible).
3. Replace oil-gas separator and oil filter.
4. After adding the normal amount of lubricating oil, the replacement of lubricating oil of the machine is completed.

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Verdes (Guangzhou) Technology Co., Ltd

Cellphone / Wechat / Whatsapp: +86-13924170405
E-mail: sam@vdcompresor.com
Youtube: Verdes Compressor
Facebook: Verdes Compressor
Ins: verdescompressor