1. FUNCTIONS AND APPLICATION

1.1 No oil lubricating and low noise air compressor (compressor later for abbr.) belongs to reciprocating piston chest type compressor unit.

1.2 All moving components are made of self-lubricating materials and it can work without adding any lubricating oil. The compressed air does not contact with the lubricating oil, so it owns higher purity and will not pollute the environment and the machine.

Owing to its unique low noise efficiency, this series is widely used in process of grain and oil, medicine and health, cigarettes and wine making, aquiculture, mechanical, petrochemical, industry, electron instruments, traffic and telecommunications, scientific research institution etc., where high pure air source is required. It is more suitable for general air source.

1.3 Not suitable for the place need higher pressure than its rated discharge pressure.

1.4 The compressed medium of compressor is air and it is prohibited to use mephitic, corrosive, combustible and explosive gas.

2. TYPE OF NO OIL LUBRICATING AND LOW NOISE AIR COMPRESSOR:

2.1 Type: [ ]

3. WORKING PRINCIPLE AND STRUCTURE

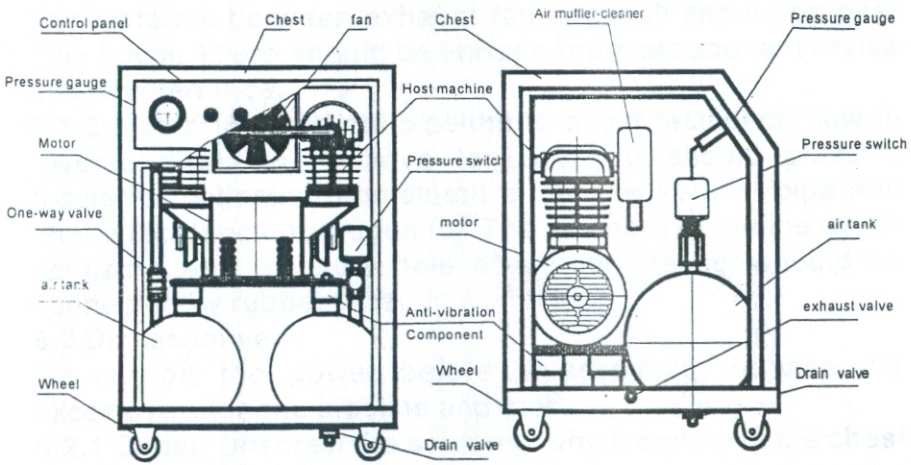
3.1.1 This series compressor consists of host machine, motor, air tank and electrical-control components. The connecting rod and piston are driven directly by the host machine and motor, which improves transmission efficiently, reduces its volume. They are all laid on anti-vibration parts to reduce the vibration. Four wheels are fixed at the bottom of the chest, flexible and convenient.

3.1.2 When working, the output shaft of motor directly drives the crankshaft to rotate. Then the connecting rod passes its rotation to piston to make it reciprocate. At the same time, the volume in cylinder is changing in result of the pressure changing. Free-state air is taken in through noise filter. Compressed air enters into the tank for use from discharge valve and pipeline.

3.1.3 For big air capacity, the tank and the chest are separated.

3.1.4 Flame-resistant and noise-deadening sponge is used on the surface inside of the chest, as well as unique muffle and muffling air discharging path, accordingly the compressor possesses super performance of noise deadening and heat-cooling.

3.2 The main structure shown as below:



Structure drawing

4. THE ADJUSTING SYSTEM

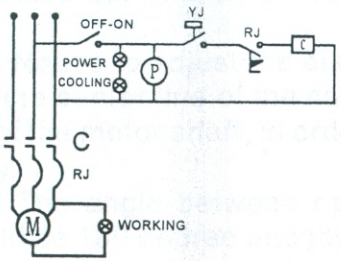
4.1 The pressure switch adjusting

Once the pressure in the tank reaches the rated pressure, the pressure switch will cut the control circuit of magnetized starter and the starter will work to cut the electricity of motor in order to make the compressor stop working. When the pressure in tank is reduced to the value of working pressure, the pressure switch will connect the circuit of magnetized starter and the starter will work to connect the electricity, the motor will start working again. For single-phase compressor, the pressure switch controls the motor directly.

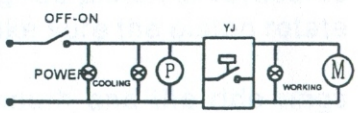
The pressure to cut the electricity has been adjusted before it is taken out of the factory. However, if needed, it can be adjusted as follows: Open the front door of the chest, start the compressor, adjust the quincunx bolt on the pressure switch according to the value on the pressure gauge. The value became lower to " — " direction, while higher to "+" direction. It is all right until it reaches the predetermined value and cut off the electricity.

4.2 The pressure to cut the electricity should not preponderate over 1.05 times of the rated pressure.

4.3 Electricity principle, shown in the figure.



Three phase electricity principle



Single phase electricity principle

5. SAFETY VALVE

5.1 Safety valve is a device that guarantees the compressor to work safely. When the adjusting system loses its function and the pressure in the tank is 1.1 times more than rated pressure, the rod would be pushed off by the compressed air and discharge out the excessive air to assure the pressure in the tank not higher any more. This can make compressor work safely and remind operator to adjust or replace corresponding components of the adjusting system.

5.2 The discharge pressure of safety valve is pre-adjusted and should not adjust it freely. If it doesn't work normally, please replace it to assure the compressor work safely.

6. ASSEMBLE AND DISASSEMBLE

6.1 Assemble

6.1.1 Air compressor should be placed where ventilation is good and the ambient temperature under 40°C, the relative humidity is 95%. It should avoid direct sunshine and rain. The distance between exhaust fan and wall should be over than 30cm. There should be enough room around for service and maintenance.

6.1.2 Not to use vertical pipeline to avoid feculence flow in reverse direction. If have to use, you should place a feculence collective equipment under the vertical pipe and let the feculence out regularly. The discharge pipeline which connects with the vent hole of air compressor should be connected by rubber tube.

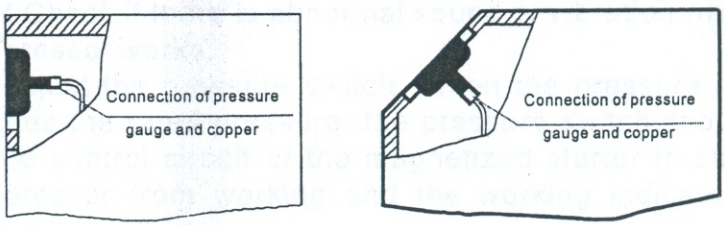
6.2 Disassemble

Do cut off the power before disassemble, release the excessive air in the pipeline and tank.

6.2.1 Chest: Unscrew the setscrew which connects the chest and the base, then demount the front door, take out the electrical control circuit and the connecting wire of the electrical source on the chest;

According to the following sketch map, unscrew the setscrews which connect the back-end of the pressure gauge and the copper pipe, so that the gauge and copper pipe are separated (This point is very important.) The chest of air compressor can be carried off finally.

6.2.2 Disassemble the compressor in order.



The sketch map of chest disassembly

6.2.3 The assembly of air compressor should be operated under the reverse direction of disassembly.

6.3 The notice items of assembly and disassembly

6.3.1 Make sure the copper pipe is separated from the pressure gauge before carrying off the chest.

6.3.2 The operation side of a part should not be injured when assembling and disassembling, especially the seal surface of valve seat, valve plate, should be paid more attention to.

6.3.3 All the parts should be cleaned and dried before assembly. The rolling-needle bear at the small side of connecting rod should be equipped with over-heating endurable oil. The oil should be 1/3 of inner face of rolling bear.

6.3.4 Notice to adjust the distance of the crankshaft to make sure the center line of the connecting rod piston is vertical to that of the motor shaft, in order to make sure the piston rotate freely.

6.3.5 The angle between opened mouth and the ride rings should be 180 degree and the direction of open mouth should vertices the piston pin. The opened mouth of piston rings should be angled, too.

6.3.6 Notice to adjust the bush under the cylinder when assemble. When the piston lies in the top side, the distance between the piston's top face and valve seat should be kept 0.3mm-0.6mm to avoid accident.

7. THE OPERATION OF AIR COMPRESSOR

7.1 The compressor can be rotated after assembled and according with the assembly and operation requirements. The rotation is divided into two steps: idle rotation and working rotation.

7.2 Open the outlet cock on the tank, connect the electricity and press the control-button on the panel to start the compressor. The electrical source, cooling fan and working indicator light can work normally. Check the fan to make sure it is able to rotate and discharge air. The compressor should run stably. If the check is OK, let the compressor rotate over 10 minutes without loading and then close the outlet cock and the pressure in the tank will increase.

7.3 When the pressure in the tank increases to the rated pressure. The pressure switch should work and cut the control circuit of magnetized starter and the motor stops rotating. The pressure in the tank will not increase any longer. At the same time, the working indicator light (green light)goes out, but the fan continues to work.

7.4 When the work is finished or there is accidentally no electricity in the circuit, you must cut the electrical source of compressor and discharge all the air left in the air tank, so the compressor will be started normally next time.

8. MAINTENANCE AND CHECK

8.1 Daily check three clauses before use

8.1.1 The fan can work normally and exhaust heat.

8.1.2 The hand of pressure gauge can move smoothly and when the pressure in the tank is zero, the hand should exactly point to zero.

8.1.3 Discharge the feculence: When the discharge pressure

Is 0.05mpa-0.1mpa, turn on the discharge valve under the air tank and discharge the feculence. The discharge valve locates on the right under the bottom of the air tank, screwing the nut clockwise can discharge the feculence, when finished, make sure that the discharge valve has been turned off tightly, then can be used to work.

8.1.4 Check if there is abnormal sound or vibration when the compressor works.

8.2 Adjust the pressure switch. When the pressure in tank reaches the rated pressure, the pressure switch should cut off the control circuit of the magnetized starter to stop the compressor from working and the working indicator light goes out.

8.3 High temperature-resistant lubricating oil should be added to the rolling bear after the compressor working per 2500h-3000h.

9. GENERAL TROUBLE AND TROUBLE SHOOTING

9.1 The pressure doesn't increase or increases too slowly.

9.1.1 The intake valve or discharge valve is damaged or air leaked, replace it with a new one.

9.1.2 The valve bush or cylinder head bush is air leaked, tight it. If it is damaged, replace it.

9.1.3 The drain cock is loose, stop the compressor to tight it.

9.1.4 There is dust near the intake and discharge valve which disturb the normal work, clean the dust.

9.1.5 The pressure gauge is out of control; replace it with a new one.

9.1.6 The discharge pipe system is air leaked, repair it.

9.1.7 The muffler is jammed, replace it.

9.1.8 The piston ring or cylinder is severely attrited or air leaked, replace them.

9.1.9 The power and voltage is too small or the wire is too long and its section is too small, results in the rotate speed of the motor slows down badly.

9.2 Abnormal sound
9.2.1 The assembly is not proper. It must be stable and the four wheels must be on the ground.
9.2.2 The piston contacts with the valve; replace the air spring and adjust the interspaces on the top of piston.
9.2.3 The bearing is damaged. Replace it with a new one.
9.2.4 There is obstruction in the cylinder, wipe it.
9.2.5 The power and voltage is too small to start the motor normally.
9.2.6 The setscrews on the anti-vibration part are loose, tight it.
9.3 The air discharge temperature is too high.
9.3.1 The inside of cylinder is destroyed by obstruction or the distance between the piston ring and cylinder is too short.
9.3.2 The pressure is higher than rated pressure. Operate it under the rated pressure.
9.4 Motor stops working
9.4.1 Check the fuse or the electrical source wire and connect it correctly.
9.4.2 The power and voltage is too small or the wire is too long and its section is too small to rotate the motor.
9.4.3 Magnetized starter not connect. Check it, and repair or replace it.(For single-phase compressor,shuld check if the motor capacitor is broken.)
9.4.4 The pressure in tank is higher than the start pressure of pressure switch, so the pressure switch doesn't work. Discharge the air in tank to reduce the pressure so that the pressure switch will be closed to work.
9.4.5 The electrical source is suddenly cut off; the discharge pipe of the pressure switch is not able to discharge the excessive air.
9.4.6 The motor is damaged. Replace it.

Welcome to use our no oil lubricating and low noies air Compressor , if any quality or other problems are found in the operating process, please contact us in time with your Suggestion,we will serve you with all our heart.