

Operator's Manual

High Pressure Breathing Air Compressor



Model: AC100

MANUFACTURER

Muskwell Safety is dedicated to providing innovative safety solutions tailored to meet the evolving needs of various industries. Our mission is to ensure the well-being of workers and the protection of assets by delivering high-quality safety products and services.

Our Offerings:

- Personal Protective Equipment (PPE)
- Workplace Safety Training Programs
- Safety Audits and Compliance Consulting
- Emergency Response Planning

Why Choose Muskwell Safety:

- Expertise: Our team comprises seasoned professionals with extensive experience in occupational safety.
- Quality: We prioritize the highest standards in our products and services to ensure maximum protection.
- Customer-Centric: We work closely with our clients to develop customized safety solutions that align with their specific requirements.

At Muskwell Safety, we believe that a safe workplace is a productive workplace. Our commitment is to partner with organizations to foster environments where safety is ingrained in the culture.

IMPORTANT

BEFORE USING THE COMPRESSOR READ THIS MANUAL CAREFULLY

INSTRUCTION

This manual contains general information and instructions to operate high pressure breathing air compressor units.

Before taking the compressor into operation it is essential to study the instruction manual of that compressor.

All instructions should be observed and carried out in the order laid down to prevent damage and premature wear to the equipment and the units served by it.

While every effort is made to ensure the accuracy of the particulars contained in this manual, the manufacturing company will not, under any circumstances, be held liable for any inaccuracies or the consequences thereof.

WARNING

The breathing air produced with this high pressure compressor is subject to strict quality standards. Ignoring the operating and maintenance instructions can lead to severe injury or in serious cases even death.

We reserve the right to make changes to the technology of our compressors as well as to this accompanying documentation in accordance to technical progress.

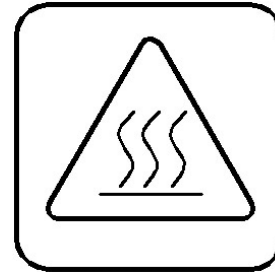
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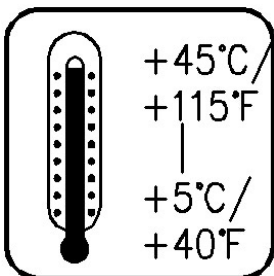
Brief Description of the Warning Icons



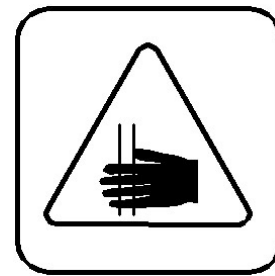
Read the manual before operating



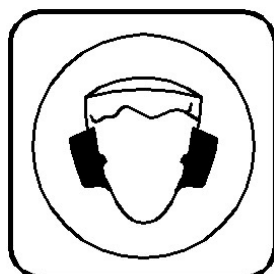
Keep away from hot surfaces



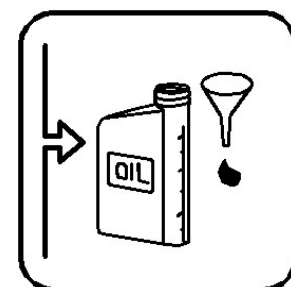
The operating temperature range



No touch when machine is running



Wear PPE when operating



Check oil level before operating

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1. General

1.1. Introduce

This Manual is focus on provide installation guide, safety operation, maintenance and repair instructions.

This manual belong to Muskwell Safety Tech Co., Ltd, please do not change any information without the approval of our company.

Type: Breathing Air Compressor

Series: AC100

1.2. Design and mode of operation

The compressor unit comprises the following major assemblies:

- Compressor block
- Drive motor
- Filter set
- Fan cover components
- Base and frame assembly
- Electric control system
- Filling hose and connectors

Operation mode

Air route details see the 2.1 basic information

1.3 Important keys

This manual include the necessary operation and maintenance process when using Muskwell compressor. We suggest that all the users should read carefully and strictly operate the machine according to the manual. Any equipment damages against the operation manual, will not belong to the maintenance range.

Pls notice this below points:

- Never exceed the container pressure grades
- Maintenance of the filtration system
- Avoid any polluted air enter into the intake
- Never exceed the highest working pressure

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- Only professional person could operate the compressor
- Do not place any object on the compressor during working
- Make ensure that no body or object touch machine during working
- Ensure the inlet air is clear without any harm gas
- Maintenance work can only be carried out after unplugging the wire and reliving the pressure
- Regularly check the air or oil leakage
- Never weld any damaged high pressure pipes
- The dummy pipe should be in good working condition, paying special attention to the connecting parts
- Put in felt pads before operating the equipment
- Use CE-certified electronic control equipment

1.4. Maintenance terms

We promise a one-year warranty, and the warranty period is based on the payment date. During the warranty period, the company provides equipment storage and replacement services and we will not responsible for any human-caused costs.

We will not responsible for guiding, keeping equipment or distinguished impedance remote controls. At the same time, the company does not bear the repair costs for failures and damages caused by unauthorized personnel.

We promise that all routers with strict design, craftsmanship and all accessories will enjoy a one-year warranty from the date of delivery. Customers should note: within two months of discovering the problem, the company's after-sales department should be informed immediately, otherwise the company will not undertake warranty services. Customers should follow the guidance of the product manual for appearance and regular warranty.

The scope does not include serious damage caused by improper use, open-air occupation (such as rain, etc.) or transportation. Material fatigue and repair parts that need to be replaced regularly are not covered by the warranty, and customers need to purchase warranty by themselves. The radiator that is modified by itself must be agreed by the company, and this clause will be automatically replaced.

First, the repair will be carried out at the customer's headquarters, and the travel expenses of the company's after-sales personnel will be borne by the customer.

During the warranty period, the company is responsible for repairs and replacements, and the warranty period will not be automatically extended.

The company is not responsible for damages caused to others directly or indirectly by the sponsor, unless there is conclusive evidence that we have borne the loss.

1.5 Type approval

We suggest the customer use the standard parts from Muskwell Safety Tech Co., Ltd.

1.6 Muskwell after-sales service:

If you have any technical questions about maintenance and repairs, please contact our after-sales service: windy@muskwell.com

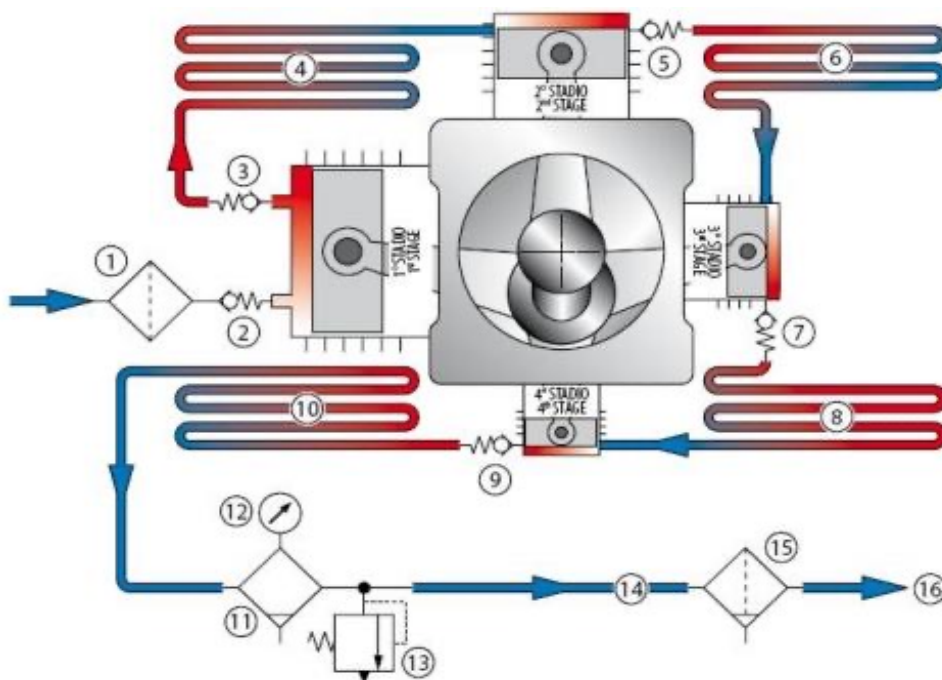
2. Technical Specifications

2.1. Basic information

This equipment produced by Muskwell Safety Tech Co., Ltd mainly used for high pressure air filling, high quality of compressor and high compressed air which meet the highest EN12021 standard.

Working Principle

AC100 series high pressure air filling pump (four grad condense)mainly include chassis, subject, driver master and filter system and its working principle as below:



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The pure Air through Air filter (1)after filtration then (2)First stage cylinder inlet valve enter into the first stage cylinder ,from (3) first stage cylinder discharging valve to ④ Primary cooling pipe, cooled air enter the second stage cylinder ,the compressed gas through the (5) to the (6)second stage condenser the cooling air enter into the three stage cylinder ,and after condense then go though (7) to (8) three stage condenser ,cooled air enter to the four stage cylinder ,and condense the air ,push it from (9) to (10) the four stage condenser ,condense ad cooled air go to the (11)water oil separator, then enter into (15)active carbon molecular sieve purification filter ,After filtration ,the pure gas can discharged through the (16)hose (12) Pressure gauge (13) safety valve (14) Connection pipe

Note: Do not touch the machine during operation, as the temperature is too higher!

2.2 Technical Data Single Phase electric motor 220V

Tech data	
Model	AC100
Type	Cooled air, lubricating oil, standard type
Driver	Single phase electric motor 220V 50Hz
Power	2.2kw
Motor speed	2840rpm
IP Grade	IP55
Filling time	6.8L 300bar/21min 12L 200bar/25min
Displacement	3.5CFM
Working pressure	225 Bar / 3300 Psi 300 Bar / 4300 Psi
Grade	Four stage compressed
Medium	air, nitrogen, natural gas etc.
Intake temperaure range	5 ~ 45°C
Operation temperature range	60 ~ 90°C
Cooling gas requirments	706CFM
Lubricating oil	compressor own oil/Rui Fu food grade
Lubricating filling amount	300 cc / 10 FL. OZ
Host speed	2300rpm
Noise	< 78 dB(A)
N.W	45kgs
Oil-water separator	The last stage of oil-water separator
Filter	Active carbon and molecular sieve filters
Breathing air standard	EN12021 EN standard

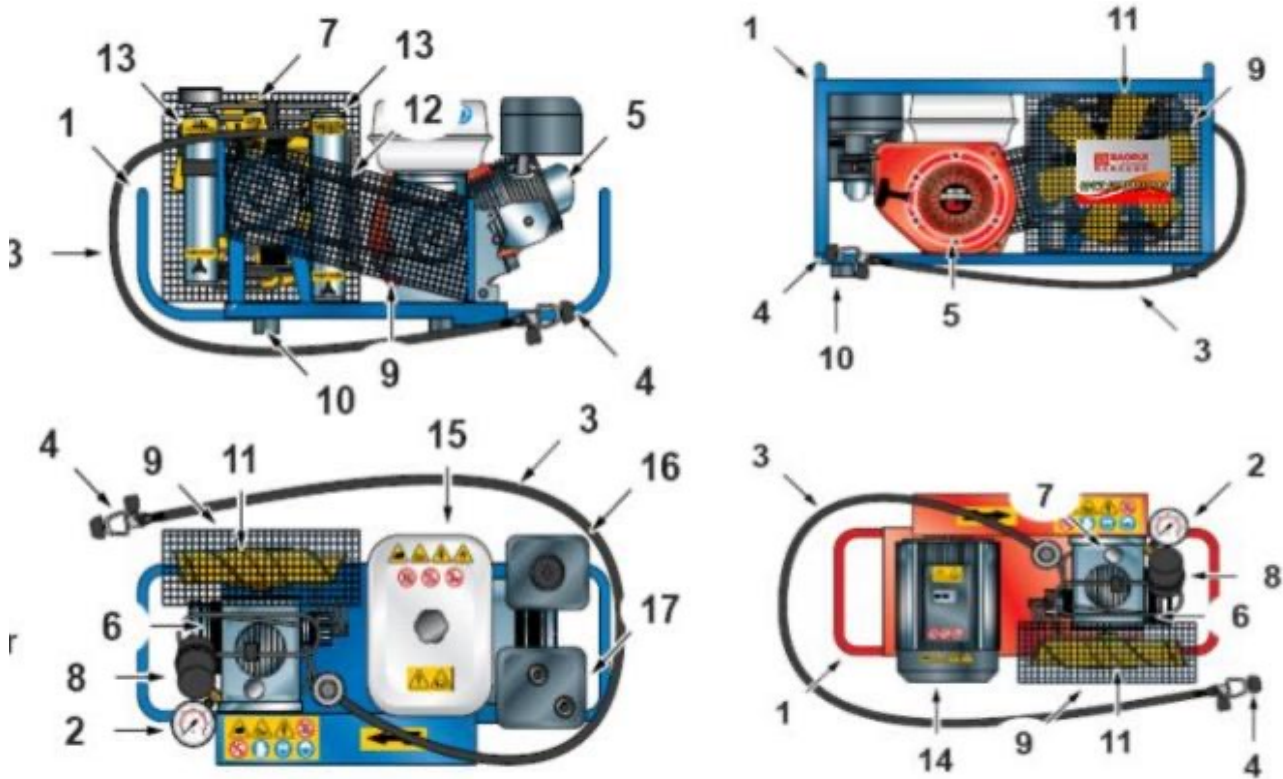
Three Phase electric motor 220V

Charging rate:	100L/min – 6m ³ /h – 3,5 CFM
Filling time cylinder:	6.8L 0-300bar/20.4min 12L 0-200bar/24min
Working pressure:	225 Bar / 3300 Psi 300 Bar / 4300 Psi
Full load Amp:	6,7A (400V-50/60Hz)
Driven by:	Three-phase electric motor 380V
Power:	2.2 Kw/3KW
Dimensions:	H35*W65*D39cm
Dry weight:	45 Kg / 85 lbs
Noise pressure:	79 dB
Number of stages and cylinders:	4
Lubricating oil capacity:	300 cc (0,3 L) / 10 FL. OZ.
Lubricant:	CE 750
Oil/moisture separator:	After last stage
Filtration:	Filter cartridge activated carbon and molecular sieve
Suction filter:	2 micron paper - 25 micron polyester
Breathing air:	EN 12021

Honda Gasoline Engine

Charging rate:	100 L/min - 6 m ³ /h - 3,5 CFM
Filling time cylinder:	6.8L 0-300bar/20.4min 12L 0-200bar/24min
Working pressure:	225 Bar / 3300 Psi 300 Bar / 4300 Psi
Rpm pumping unit:	2300
Driven by:	Honda petrol engine
Power:	3.06, Kw / 4HP @ 3600 rpm
Dimensions:	H39*W68*D36cm
Dry weight:	43 Kg
Noise pressure:	80,5 dB
Number of stages and cylinders:	4
Lubricating oil capacity:	350 cc (0,35 L)
Lubricant:	CE 750
Oil/mosture separator:	After last stage
Filtration:	Filter cartridge activated carbon and molecular sieve
Suction filter:	2 micron paper - 25 micron polyester
Breathing air:	EN 12021

Components of Air Compressor



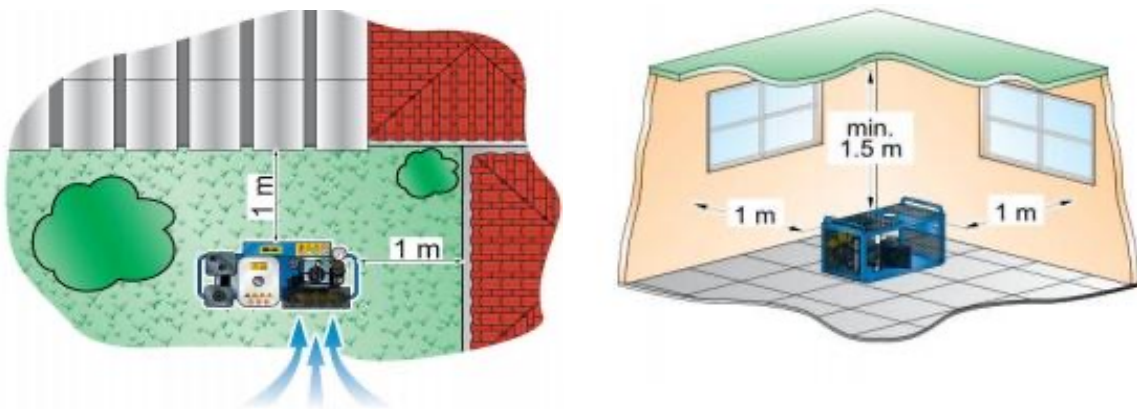
1. frame	2. pressure gauge	3. filling hose	4. filling connector
5. engine drive motor	6. compressor main body	7. oiling port	8. filter
9. fan safety cover	10. shock resistant foot	11. cooling fan	12. V belt
13. active carbon molecular sieve filter	14. driver	15. drive motor diesel fuel tank	16. drive motor diesel intake filter
17. drive motor diesel escape pipe			

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3. Installation, operation

3.1 Installation of compressor

- Place the warehouse on a level surface, and the router should not be tilted more than 5 degrees from the ground.
- Make sure the installation area can ensure that the controller operates under good ventilation and cooling conditions.
- Make sure that there is no obvious, corrosion and fire risk in the installation area.
- When the CPU operating temperature exceeds 40 degrees, use air conditioning to cool the space.
- Make sure the distance between the host and the wall is about 1 meter.
- Make sure the distance between the base station and the platform is greater than 1.5 meters.
- Make sure the installation area is well lit and all components and labels are clearly visible.



3.2 C

The compressor power: single phase 110V

Note: If the voltage is too low, the motor will slow down or fail to start. If the voltage is too high, the motor will easily burn out, so please make sure the motor is normal before use.



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Warning: Before plugging in the power plug, check the power supply according to national standards.

Danger: Check whether the power supply properties are compatible with the router.

Danger: Before performing this operation, turn off the power supply of the router.

3.3 Operation ways

Add lubricating oil and check the oil level

Before using the compressor, check the oil level and add 0.3L of lubricating oil. The normal oil level is between the two points of the oil needle.

When the oil level is lower than the default oil level, do not use it. Add a small amount of lubricating oil until the oil needle is at the current line before continuing to use it. The added oil cannot exceed the default oil level line, otherwise it will cause valve blockage.

- Carefully open the oil filler cap
- Remove the dipstick and use a funnel to absorb the oil into the concentrated oil (special lubricant is recommended).
- Do not overfill.
- Check the oil level with the dipstick.
- Check the O-ring on the dipstick and put it back into the oil pipe.



Add oil here

Oil level checking

Note:

Before working, check the oil level.

The optimum oil level is the position indicated by the top of the dipstick.

When the oil level is below the minimum mark, the compressor should be refilled.

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3.4 Connect the cylinder

Connect the T and gas cylinder TOT and the black inflatable tower base, tighten IT and secure the closet and gas cylinder valves.



Pay attention to check the high-voltage tower to confirm whether there are creases, gaps, gaps, or gaps.

Start and stop of the counter

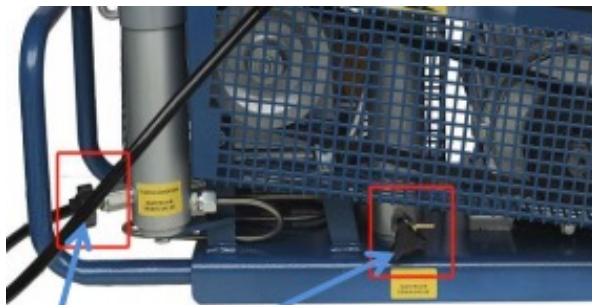
After all the preparations are completed, we can start the compressor valve. First open the drain, press the button, and then close the drain valve, at this time the pressure gauge will rise. When the pressure reaches 225/300 bar, the safety valve will exhaust, and the pressure gauge indicator will stay at 225/300 bar. Due to the safety protection of the valve, the pressure will not rise. Open the gas cylinder valve, the gas will enter the gas tank, at this time the pressure will drop to 0, and then rise again, when the pressure reaches 225/300 bar, the safety valve will exhaust the gas, and then the gas cylinder will be full. At this time, close the gas cylinder valve first, then turn off the power, open the drain valve to release the pressure, and finally when the pressure gauge shows 0, take out the gas cylinder.

Note:

Open the pressure relief valve every 15 minutes to create an animation.

Take a break every 60 minutes and restart after the server box cools down.

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Drain valve switch



3.5 Safety valve and pressure setting

The safety valve can be set according to your needs, as shown in the red part of the figure.

Rotating it to the right indicates air pressure, and rotating it to the left indicates boost pressure.

The minimum pressure must not be less than 150 bar, and the maximum pressure must not exceed 330 bar (please adjust according to the pressure gauge).

The pressure switch can adjust the lower pressure.

Note:

It needs to be pre-set for 3-5 minutes before use.

Never modify the safety valves.



Safety Valve

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4. Maintenance

4.1 Maintenance sheet

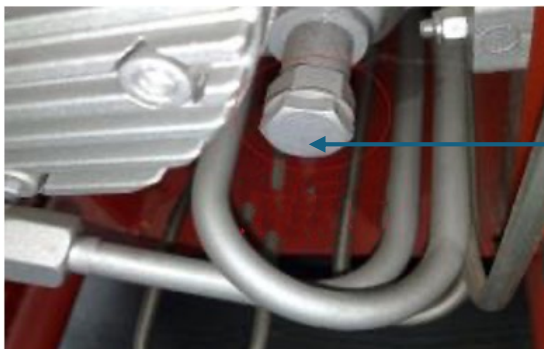
	filling	every 5h	every 25h	every 30h	every 100h	every 1000h	every year
oil level checking			△		◆		◆
transmission belt wear and tightness				△			
intake filter			△		◆		◆
interface/hose leakage checking			△				
safety valve checking	△						checking
hose checking	△					◆	

△ Check and Clean

◆ Replacement

4.2 Replace of lubricated oil

When the compressor during running -in, after working 30 hours need to first replace the lubricating oil, and later every 300 hours replace one time . If the machine is not used for a long time, it should be run every 3 months. The lubricating oil of the transformer will become ineffective after long-term use and needs to be replaced every year or according to seasonal changes. Use ordinary lubricating oil (such as automotive lubricating oil, etc.), otherwise it will cause serious damage to the compressor. In addition, ordinary lubricating oil will produce highly toxic gas due to high temperature. Before each oil change, the compressor should be run at zero pressure for 2-3 minutes to allow the compressor to fully stir and release sediment.



Pull out the oil here

Noted: Every time replace the oil, around 300ml

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4.3 Replace of filter

Filter system have air filter and active carbon oil water filter. **Air filter located in the air intake parts, and the compressor need to be checked every 50 hours just in case of the intake part blocked due to any dusts.** We can use the clean water and abluent to wash if there is too much dusts, and after air-dry we could go ahead. Bu if cannot use again we should must replace it.

Active carbon oil-water filter need the compressor working every 25 hours to make a replace, and if long time without replacement, the active carbon cannot filter well and then the compressed air shall have very peculiar smell gas which is harmful to our body. Long time can even lead the oil filters damages, thus can final lead the damages of compressor.



How to replace the filter:

Counterclockwise the cover of the air filter A and replace with new filter.



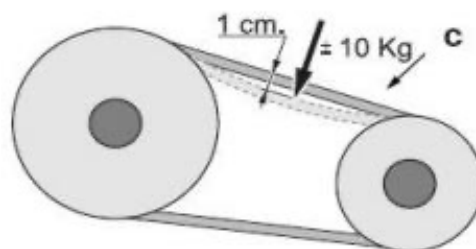
Replace the molecular sieve filter measurements:

Release the air of the compressor, counterclockwise use an adjustable wrench to take out A, take out the old molecular sieve filter B, enter a new molecular sieve filter, check the o-ring C if it is well.

4.4 Tightness of the triangle belt

The start of the compressor is driven by a triangular belt, and every 25 hours need to check its tightness. when the central belt bear 10kg pressures, the maximum deviation not more then 10mm. Too loose belt will cause the compressor suppress too slow.

And this need to according to the original belt type to replace a new one, then the machine can work regular. See the below pictures:



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5. Products failure and measurements

Failure Phenomena	Reason analysis	Measurements
Cannot filling to the standard pressure and automaticall y close down	<ol style="list-style-type: none"> 1、 check the voltage if too lower the frequency if is enough and the power line if too long thus can the voltage and frequency too lower 2、 Check the EM if loss of capacity or capacity becomes low 3、 Check the power line if it is connect right ,and stage wire and ground line if on the right location 	<p>Replace the incoming wire or contact with the electric supplier departments and require correct wiring</p> <p>Replace the capacitor</p> <p>According the manual to correct wiring</p>
Can not start	<ol style="list-style-type: none"> 1、 check the voltage if it is too low 2、 check the attaching plug if it is connect okay 3、 Check and start the capacitors or EM if loss of capacity , or capacity becomes low 4、 If can use hand to touch the fan, if can, then re turn to the factory to repair 5、 check the power line if it is connect wrong and stage wire and ground line if right 6、 the cylinder lock 	
filling slowly ,or cannot reach the standard pressure	<ol style="list-style-type: none"> 1、 check the two pcs drain valve if close well 2、 check the safety valve if not reach the standard pressure but start to release gas 3、 check if have leakage of every connector 4、 check the cylinder valve if it is leakage 5、 check if the oil filter if blocked 6、 check if the intake filter if blocked 7、 machine internal fault 8、 pressure gauge failure or not allowed 9、 the belt is loose 	<p>Tighten the drain valve Re-setting</p> <p>Tighten the connector</p> <p>The connector if right Replace</p> <p>Replace</p> <p>Depot repair</p> <p>Change the pressure gauge Tighten the belt</p>

6. Maintenance record

Product info	Product name	High pressure air compressor	product type	
	Product series		Manufacturer date	
Users infos	Use name		contact number	
	contact address			

Maintenance terms

The below situations not included in the guarantee ranges ,pls kindly notice:

Failure to use, maintain, and store the product in accordance with the instructions, resulting in product failure or damage.

Expiration of the warranty period.

The serial number or model on the product warranty card does not match the product itself. This must be set when the user repairs, repairs, or replaces the product. Damage caused by accidents or human behavior, such as: inputting inappropriate voltage, water ingress, breaking, failure to add lubricating oil, etc.

Damage caused by transportation, loading, etc. when the customer returns the product for repair.

Damage caused by non-human factors, such as: earthquake, fire, flood, lightning strike.

Special instructions

- The scope of maintenance only includes the main valve and the type of connecting pipes and connecting wires. Pressure gauges, drain valves, sealing rings and other consumables are not within the scope of maintenance.
- The quality assurance period of this product is 12 months after leaving the factory.
- The final right of interpretation and modification of the contents of this maintenance card belongs to our company.

Maintenance Record

Date		Record	
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