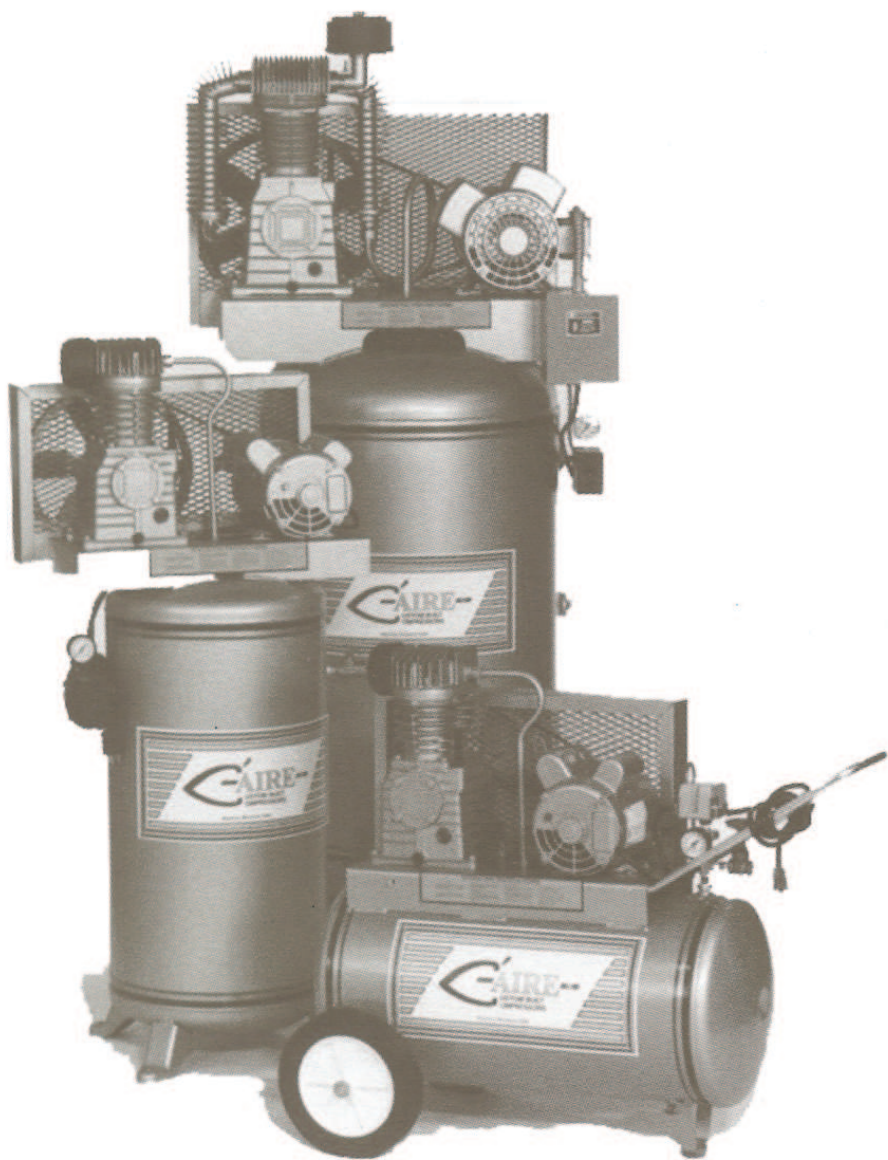

C-AIRE[®] INC.

Custom Built
Compressors

Assembly, operating instructions, and parts list for all C-Aire custom built units with single and two stage pumps.



Keep the booklet in a safe place so you can refer to it at any time in the future.

Familiarize yourself with the information contained in this manual to ensure the maximum trouble free service this unit can deliver.

Introduction

The compressor you have purchased is a combination of nearly 100 different components, all which have been carefully designed, engineered, and assembled to ensure long, dependable, trouble free life.

Like any mechanical piece of equipment, it is necessary to fully understand the proper use of its operation and application. Misuse of this valuable and helpful air power source may shorten its expected life as well as possibly voiding the warranty of the entire unit.

We ask you to please take the time to read the following manual to ensure the dependable service you can expect from this air compressor.

Please take special notice of the safety precautions and safety information contained in this manual. Compressed air, like electricity, is very helpful and necessary tool today. However, compressed air can be extremely dangerous and harmful when it is not understood or misused.

If you have any questions or require any information regarding this unit you may write or call the following:

C-Aire Inc
26549 Fallbrook Ave.
Wyoming MN, 55092
(651) 762-2247 or (800) 762-2247

In some cases this unit may have been manufactured to your retailer's specifications or components and accessories of their choosing; so in the event of requiring parts or components of this unit it is recommended you contact your supplier first. It is also necessary to supply them or the factory with the Model Number, Serial Number, and Manufacturing Number from the silver decal located on the tank mounting top plate directly below the compressor pump.

PLEASE CALL C-AIRE IF YOU HAVE ANY QUESTIONS.

651-462-3440 or (800)762-2247.

Installation instructions:

PROPER INSTALLATION IS VERY IMPORTANT TO THE SAFETY AND LONGEVITY OF OPERATION. PLEASE READ AND FOLLOW THE BELOW INSTRUCTIONS CAREFULLY!

1. This product has been pre-tested at the factory and has gone through quality control inspection prior to shipping.
2. Shipping damage – Carefully inspect the unit for damage that may have occurred during shipping. If damage has occurred, it should be noted on the freight carrier’s bill of lading. The manufacturer of this product is in no way responsible for damage or losses resulting from damage during shipping. All claims must be filed through the carrier’s claims department.
3. Electrical requirements - Ensure the unit’s electrical requirements are compatible with your electricity source (volts, phase, hertz, circuit breaker).
4. Mounting to surface –
 - a. DO NOT OPERATE THE UNIT ON ITS SHIPPING PALLET! Remove the unit from its shipping pallet.
 - b. All units must be anchored.
 - c. Vibration pads – When mounting the unit directly to the floor, vibration pads must be used under the air storage tank mounting legs. Vibration pads are available from your local C-Aire distributor.
 - d. Equal leg contact to floor surface – The unit’s legs may need to be shimmed to assure equal contact to the mounting surface. **(Uneven mounting legs drawn tightly to a surface will cause severe vibrations resulting in stress to the air tank and compressor unit. Damage or rupture will eventually occur.)** Mounting bolts should not be over tightened and it is recommended to leave one bolt loose.
 - e. Level mounting – Operation of your compressor in any unlevelled manner may result in insufficient lubrication, and severe damage. Do not move the unit while it is operating for numerous reasons, including risk of non-level operation and insufficient lubrication.
 - f. Location – Your compressor is air cooled. To avoid overheating and inefficient operation, the compressor should never be operated any closer than 18” away from a wall or obstruction that may restrict proper air flow. Also, ideally place the unit as close as possible to the point where compressed air is being used.
 - g. Dusty environment – When operating your compressor in a dusty environment, C-Aire highly recommends the inlet filter be plumbed to fresh, clean air. This will improve your compressor’s efficiency and longevity.
 - h. Steel braided flex hose – C-Aire recommends using flexible hosing between the air tank outlet and the facility’s air system piping to prevent stress or breakage.
5. Electrical – The wiring connections should be completed by a qualified electrician. BE SURE TO SUPPLY ADEQUATE POWER.
6. Air system evaluation – The most common cause of air tool failure is moisture/water in the line. Your local C-Aire distributor can help you with a complete air system evaluation to ensure your compressed air is clean and dry as needed for your application.

Operation instructions:

WHEN OPERATING THE COMPRESSOR FOR THE FIRST TIME, ENSURE THE FOLLOWING:

1. Oil level - Check oil level before each start up. The oil level should be maintained to the center of the sight glass unless there is an oil level mark on the sight glass to indicate otherwise.
2. Moving parts inspection - Perform a thorough inspection of the compressor to ensure there are no obstructions that might interfere with moving parts.
3. Pressure switch to "off" – As applicable, move the knob or lever of the pressure switch to the "off" position before plugging in unit or turning power on via circuit breaker.
4. Direction of rotation – While facing the oil sight glass, the flywheel should rotate clockwise to properly cool the pump. Improper rotation will cause overheating and pump failure.
5. Start – Move pressure switch to "on" position. There is no need to "break-in" your compressor. It has been tested at the factory by qualified personnel.
6. Electrical inspection – using a voltmeter, a qualified electrician must check the voltage during start-up and operation to make sure adequate power is reaching the motor. **Failure to supply adequate power will reduce motor life to just a few months and will void the warranty!**
7. Re-torque - After ten (10) hours of use re-torque head bolts and check all electrical connections.

Important Safety Notes:

1. Never assume a compressor is safe to work on simply because it is not running. Ensure power has been turned off.
2. Allow unit to cool before performing service. Some surface temperatures may reach 375 degrees during operation.
3. Thermal overload protector - Your compressor is equipped with a thermal overload protector to prevent motor burn out due to improper installation or voltage. If the motor overheats and stops, let it cool for approximately 15 minutes. To restart, press the reset button located on motor or starter. If the problem continues, consult with a qualified electrician concerning a possible voltage problem.

Most common causes for failure:

1. Check valve will not seal properly - The check valve holds the air in the tank where the pump discharge pipe connects to the air tank. If the check valve becomes clogged or for some reason is unable to close completely, pressurized air will leak back into the compressor pump, and out the unloader valve.
 - a. Symptom – you will hear a constant hissing noise as the air leaking out the unloader valve at the pressure switch.
 - b. Problem – upon restart, the motor will strain to start the pump with high pressured cylinders, SEVERLY REDUCING MOTOR LIFE TO JUST A FEW HOURS OR DAYS.
 - c. Solution – Immediately replace the check valve. (DRAIN ALL AIR FROM TANK BEFORE REMOVING CHECK VALVE.)
2. Improper mounting – Be sure you do not force the legs to an uneven surface by over-tightening bolts and without shimming. Also, use vibration pads.
3. Wiring – Units mounted a significant distance from the electrical source may need the next larger gage wire than normal. Failure to do so will cause an insufficient supply of voltage, resulting in loss of power, overheating and premature motor failure.

Maintenance:

Daily Maintenance:

1. Drain moisture from your air compressor's tank on a daily basis. Bleed most of the air pressure from the tanks before opening the drain valves, allowing all moisture to drain from the tanks. This reduces the moisture in your air lines and also helps reduce the risk of rust developing inside the tank.
2. Check oil level in sight glass.
3. Listen for any unusual noise, vibration, or permanent leaks out of the unloader valve.
4. Each night turn off power and shut ball valve.

Weekly Maintenance:

1. Clean the air intake vents, and remove any obstructions. If your air compressor utilizes an air filter, clean the air filter weekly, and replace when necessary.
2. Clean external parts of compressor.
3. Check your electrical cords and hoses for any damage. Do not use your compressor if your electrical cord is damaged.
4. Check safety valve for sticking. It should open and relieve air pressure and re-seat properly when closed with no leaks.

Monthly Maintenance:

1. Inspect air system for leaks.
2. Inspect for oil contamination.
3. Check belt tension and wear.

Quarterly Maintenance:

1. Change oil – Use a non-detergent, high temperature reciprocating compressor oil. C-Aire offers both a mineral based or synthetic oil.
2. Check air inlet filters – Replace as necessary.
3. Check pump for any oil leaks.

Bi-Annual Maintenance:

1. Check all gauges for correct readings and all fittings for any leaks.
2. Tighten connectors if needed.
3. Re-torque all bolts on pump and side covers if present.
4. Check mounting bolts on pump and motor, tighten if necessary.
5. Check and tighten all electrical connections.

PLEASE CALL C-AIRE IF YOU HAVE ANY QUESTIONS.

651-462-3440 or (800)762-2247.

TROUBLESHOOTING

Problem	Possible Cause	Solution/Corrective Action
1. Compressor will not operate.	<ol style="list-style-type: none"> 1. No electrical power. 2. Low oil level. 3. Pressure switch not making contact. 	<ol style="list-style-type: none"> 1 Turn on power. 2. Check oil level. 3. See pressure switch adjustment.
2. Knock occurs while compressor is loading.	<ol style="list-style-type: none"> 1. Connection rod bearings. 2. Wrist pins, wrist pin bearings. 3. Loose connecting rod nut. 	<ol style="list-style-type: none"> 1. Replace rod. 2. Replace complete piston assembly. 3. Tighten.
4. Milky oil in oil reservoir.	1. Water entering oil reservoir due to compressor operating in high humidity environments.	1. Pipe air intake to less humid air source.
5. Compressor vibrates.	<ol style="list-style-type: none"> 1. Mounting bolts loose. 2. Compressor not mounted properly. 3. Pulley and flywheel misaligned. 4. Belt loose. 5. Bent Crankshaft. 	<ol style="list-style-type: none"> 1. Tighten. 2. Level or shim compressor so that all feet touch the floor before tightening down. 3. Realign. 4. Tighten belts. 5. Replace crankshaft.
6. Air blowing out of inlet.	1. Broken first stage inlet valve.	1. Replace inlet valve.
7. Receiver does not hold pressure when compressor is turned off.	1. Faulty check valve.	<ol style="list-style-type: none"> 1. WARNING: Bleed tank. Disassemble check valve assembly, clean or replace faulty parts. DANGER: Do not disassemble check valve with air in tank.
8. Excessive discharge air temperature.	<ol style="list-style-type: none"> 1. Dirty cooling surfaces. 2. Poor ventilation. 3. Blown head gasket. 4. Restricted air intake. 5. Worn valves. 	<ol style="list-style-type: none"> 1. Clean cooling surface of cylinder, intercooler, and discharge tube. 2. Improve ventilation or relocate. 3. Replace head gasket. 4. Clean or replace air filter element. 5. Repair or replace valves.
9. Receiver pressure builds up slowly.	<ol style="list-style-type: none"> 1. Dirty air filter. 2. Blown cylinder head gasket. 3. Worn or broken low pressure intake or discharge valves. 4. Air leaks. 5. Loose belts. 	<ol style="list-style-type: none"> 1. Clean or replace filter element. 2. Install new gasket. 3. Install new valve strips. 4. Tighten joints. 5. Tighten belts.
10. Reset mechanism cuts out repeatedly; fuses of proper size blow.	<ol style="list-style-type: none"> 1. Motor overload. 2. Malfunctioning or improperly adjusted pressure switch or pilot valve. 3. High ambient temperature. 	<ol style="list-style-type: none"> 1. Shut down immediately to avoid damage. 2. Adjust or replace. 3. Provide ventilation.
11. Fuses or breaker trip repeatedly.	1. Wrong size fuses.	1. Check to make sure that fuses are the proper ampere rating.

Notes

Limited Warranty

C-Aire, Inc. (the company) warrants its products to be free of defects in material or workmanship to the original purchaser for a period of one (1) year from the date of purchase. For this warranty to be effective, this product must be installed, used, and maintained by the original purchaser in accordance with good industry standards. This warranty does not cover normal wear, tear, and erosion from use, mis-use, abuse or corrosion.

In the event of failure it shall be the responsibility of the original purchaser to notify the company either in writing or by telephone to make arrangements for the correction of the problem. The purchaser shall be responsible for the transportation charges connected with the return, exchange or repair of parts. Returns found defective upon inspection by our warranty department or authorized warranty service agent will be replaced or repaired free of charge.

The company shall not be liable for any labor cost connected with the replacement of the equipment, the replacement of the parts, or adjustments to the equipment by the purchaser or their contractor without the company's prior written approval.

The company, as the exclusive remedy under this warranty, shall at its option repair or replace defective items or if agreed upon refund the purchase price less reasonable allowance for depreciation in exchange for the product.

THE COMPANY MAKES NO OTHER WARRANTIES AND ALL IMPLIED OR EXPRESSED WARRANTIES AND REPRESENTATIONS, EXCEPT THAT OF TITLE, ARE DISCLAIMED. ALL IMPLIED WARRANTIES INCLUDING MERCHANT ABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR USE BUT NOT LIMITED TO JUST THOSE ARE DISCLAIMED. LIABILITY FOR CONSEQUENTIAL, INCIDENTAL, OR SPECIAL DAMAGES AND LOSSES UNDER ANY AND ALL WARRANTIES WHETHER IN CONTRACT, TORT, OR OTHERWISE ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

MODEL

SERIAL NO.

MFG. NO.

When ordering parts requiring information concerning your compressor, you can call the telephone number and/or write to the address listed below for fast, prompt, and courteous service.

For your assistance and record keeping it is suggested you enter the information from the silver serial number tag located on the mounting base of your unit. Be sure to always reference this information when inquiring about your compressor.

C-Aire, Inc., Box 129 Wyoming, MN 55092
(651) 462-3440