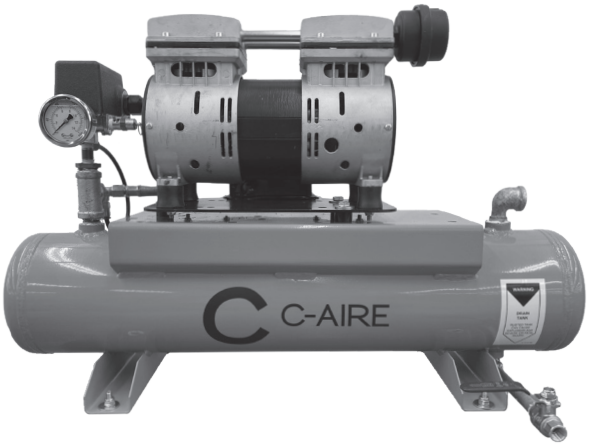
C-AIRE®

COMPRESSORS

MODELS

S275



S550

S715

S950

Fire Protection Air Compressor Owner's Manual

LL QUIET MANUAL
REV. D - Jun/04/25

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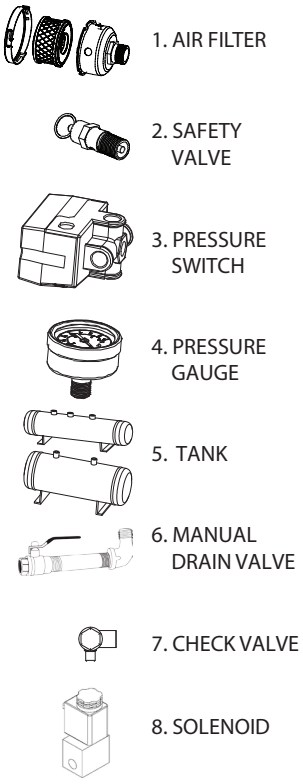
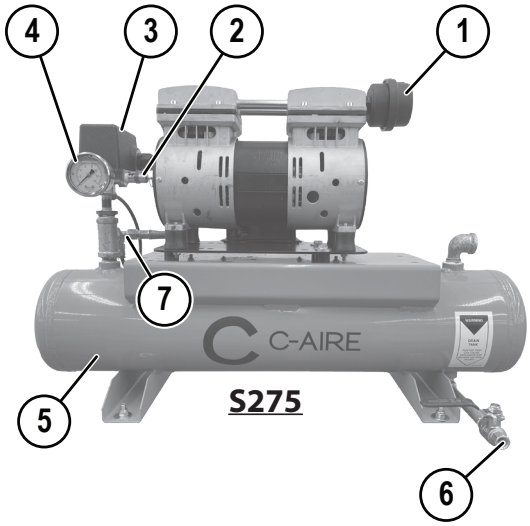
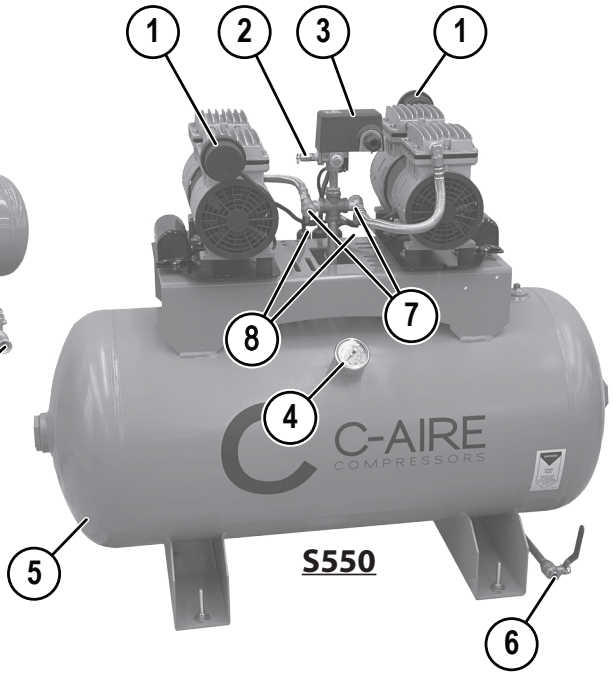
PARTS IDENTIFICATION



1. AIR FILTER
2. SAFETY VALVE
3. PRESSURE SWITCH
4. PRESSURE GAUGE
5. TANK
6. MANUAL DRAIN VALVE
7. CHECK VALVE
8. SOLENOID



S275



S550

INTRODUCTION

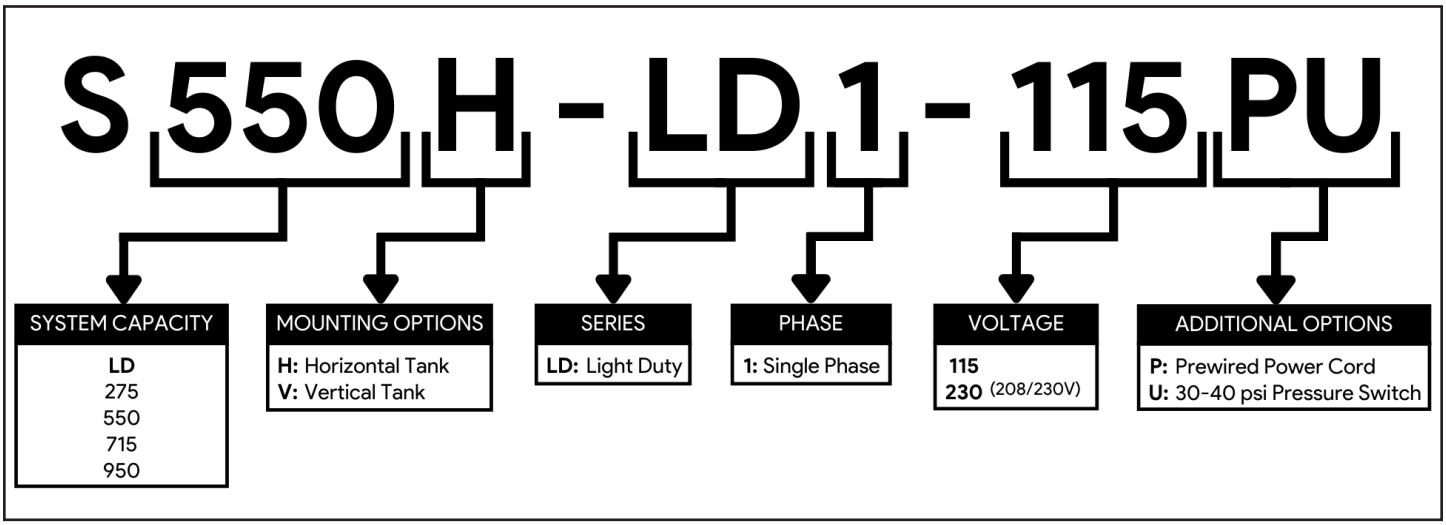
The compressor you have purchased is a combination of nearly 100 different components, all of which have been carefully designed, engineered, and assembled to ensure a long, dependable, trouble-free life. The product has been fully tested at the factory and has gone through quality-control inspection prior to shipping.

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 void the warranty of the entire unit. We ask you take the time to read this manual to ensure the dependable service you can expect from your C-Aire compressor.

Failure to do so can cause serious injury and may void all warranties.

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

PRODUCT NUMBERING SYSTEM



■ IDEAL FOR QUIET SETTINGS

- Nursing Homes
- Apartments
- Churches

WARNING: Refer to the authority having jurisdiction regarding hard wiring requirements.

■ AVAILABLE ACCESSORIES

ACCESSORY	PART NUMBER
INSTALL KIT	100-FIRE
VIBRATION PADS	FR 1003
METAL FLEX HOSE 30 INCH	DT 3005 H*
RUBBER FLEX HOSE 36 INCH	DT 3605 H*
RUBBER FLEX HOSE 48 INCH	DT 4805 H*
RUBBER FLEX HOSE 72 INCH	DT 7205 H*

*All hoses available in five packs by adding "-5PK" to the end of the individual part number. EX: DT 3005 H-5PK

Listings:
Pressure Switch: USA: UL 508 Canada: C22.2 No. 14
Compressor: USA: UL 1450 – 3rd Edition
Canada: C22.2 No. 68-92

SPECIFICATIONS	S275	S550	S715	S950
HP	1	2	3	4
SYSTEM CAPACITY	40 PSI 313 Gal	40 PSI 627 Gal	40 PSI 830 Gal	40 PSI 1114 Gal
	18 PSI 696 Gal	18 PSI 1393 Gal	18 PSI 1845 Gal	18 PSI 2476 Gal
	10 PSI 1253 Gal	10 PSI 2507 Gal	10 PSI 3322 Gal	10 PSI 4457 Gal
PRESSURE SWITCH	NON-ADJUSTABLE 50-100 PSI REQUIRES AIR MAINTENANCE DEVICE			
CFM	3.8 @ 10 PSI	7.6 @ 10 PSI	10.07 @ 10 PSI	13.51 @ 10 PSI
PUMP TYPE	2-CYLINDER OIL-LESS			
PUMP/MOTORS	1	2	3	4
CYLINDERS	CERAMIC COMPOSITE			
VOLTS	115/230*	115/230*	230	230
PHASE	1	1	1	1
FULL LOAD AMPS	8.5/3.9	17/7.8	11.7	15.6
BREAKER SIZE	15 AMP	30/15 AMP	20 AMP	25 AMP
DIMENSIONS	27" x 12" x 18"	40" x 18" x 32"	40" x 18" x 38"	40" x 18" x 38"
WEIGHT	48 LBS	193 LBS	305 LBS	330 LBS
TANK SIZE	3 GALLON	30 GALLON	30 GALLON	30 GALLON

*Correct voltage must be specified upon ordering. Voltage can not be changed after initial build.

SAFETY

DEFINITIONS

⚠ **DANGER**: Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠ **WARNING**: Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ **CAUTION**: Indicates a situation that will or could cause minor injury or property damage.

GENERAL PRECAUTIONS

Read the Owner's Manual before operating.

⚠ **DANGER**:

Do not use compressed air for breathing air applications.
Beware of high voltage: disconnect lockout/tagout electric supply before servicing.
Ground compressor per codes.

⚠ **WARNING**:

Beware of high-pressure air: do not bypass, modify, or remove safety/relief valves.
Beware of hot surfaces: allow unit to cool before servicing.
Do not operate with safety guards removed.

⚠ **CAUTION**:

Never operate the compressor near flammable liquids or vapors.
Do not direct the air stream at body.
Drain tank air weekly to decrease risk of bursting.

NOTE: Per UL 1450:46.17 C-Aire recommends a maximum of 70% duty cycle for its compressors.

INSTALLATION

SELECTING A LOCATION:

C-Aire compressors are to be installed and operated in a clean, dry, well-lighted, and well-ventilated area.

Provide at least 200 cubic feet of fresh air per 1 hp.

Ideal operating temperatures are between 32°F and 100°F.

Avoid excessively humid areas, as moisture may form in the pump, producing sludge and causing moving parts to wear prematurely.

NOTE: The dry pipe/sprinkler system compressor is to be installed in accordance with the Standard for Installation of Sprinkler Systems, NFPA 13.

⚠ **CAUTION**: If temperatures consistently drop below 32° F, install the compressor in a heated area.

⚠ **CAUTION**: Never operate the compressor in temperatures below 20°F or above 104°F.

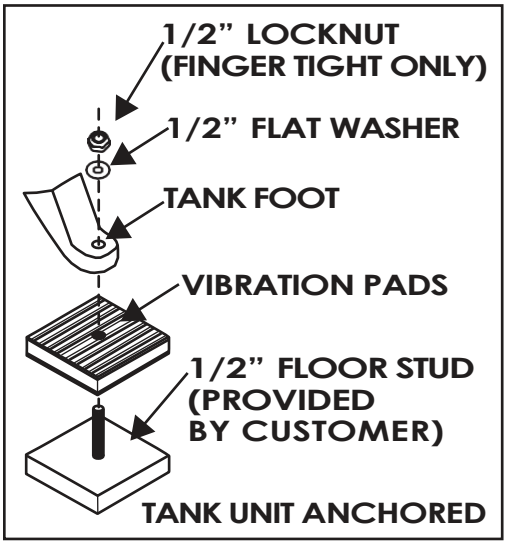
⚠ **WARNING**: A compressor should never be used in an area where toxic, corrosive, or volatile agents may be present.

(INSTALLATION CONTINUED ON NEXT PAGE)

MOUNTING THE COMPRESSOR

⚠ **CAUTION**: Remove the compressor from the shipping packaging before mounting.

ANTI-VIBRATION INSTALLATION



Be sure your C-Aire compressor is mounted on a level, concrete floor, preferably using anti-vibration pads.

NOTE: When installing anchor bolts from your installation kit, all anchor bolts should be finger tight only.

⚠ **CAUTION**: Over-tightening bolts or mounting to an uneven surface could cause damage to the compressor.

NOTE: For S275 units; remove rubber bumper feet when mounting the unit.

⚠ **CAUTION**: All vertical tank units must be safely anchored.

⚠ **CAUTION**: Never operate this unit more than 15 degrees off level, and never move it while it is operational.

NOTE: The dry pipe/sprinkler system compressor is to be installed in accordance with the Standard for Installation of Sprinkler Systems, NFPA 13.

INLET AND DISCHARGE PIPING

⚠ **CAUTION**: Do not operate unit without inlet-air filtration.

If the air is dirty, pipe the filter to a source of clean air.

Do not install piping with a diameter lower than that of the pump intake.

⚠ **CAUTION**: Do not use PVC plastic in the discharge line.

Use hand-welded or threaded steel or copper pipes and cast-iron fittings that are safe for the discharge pressure and temperature.

ELECTRICAL

⚠ **WARNING**: Compressor installation must be performed by a qualified electrician in accordance with the National Electrical Code (NEC) or the Canadian Electrical Code (CEC), the National Electrical Safety Code (NESC) OSHA code, and/or any local or state codes having precedence.

Be sure of proper wire sizing and that the circuit breaker and the distance from the breaker is within suggested range. Confirm your electrical-supply voltage matches what is required for the motor.

⚠ **WARNING**: The compressor must be grounded. Grounding reduces the risk of electric shock. Certain C-Aire Models are equipped with a cord that has a grounding wire with a grounding plug. The plug must be plugged into an outlet that is installed and grounded in accordance with all local codes and ordinances.

⚠ **WARNING**: Improper installation of the grounding plug will result in a risk of electric shock. When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat-blade terminal. The insulated wire with a green outer surface and yellow stripes is the grounding wire.

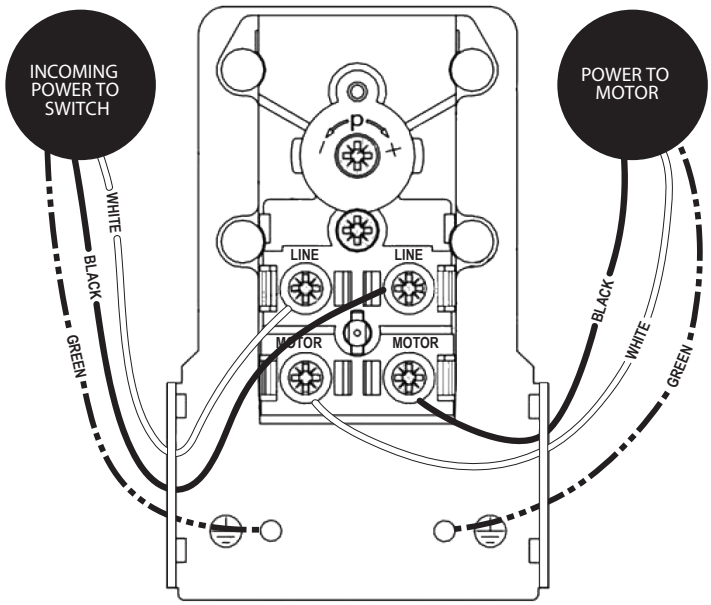
NOTE: The installation, electric motor, wiring, and all electrical controls must be in accordance with NFPA 70-1996 National Electric Code, National Electric Safety Code, and state and local codes. Failure to abide by the national, state, and local codes may result in physical harm and/or property damage.

⚠ **DANGER**: High voltage may cause personal injury or death. Disconnect and lockout/tagout, per OSHA regulation 1910.147, all electrical power supplies before opening the electrical enclosure or servicing.

⚠ **DANGER**: Never assume a compressor is safe to work on if it is not operating. It could restart at any time. Always disconnect/ lockout/tagout before servicing.

⚠ **CAUTION**: Dry pipe sprinkler compressor must be wired to a reliable power source to be compliant with AHJ.

WIRING DIAGRAM



CONDOR PRESSURE SWITCH

START UP

NOTE: There is no need to "break-in" your compressor. It has been tested and run at the factory by qualified personnel.

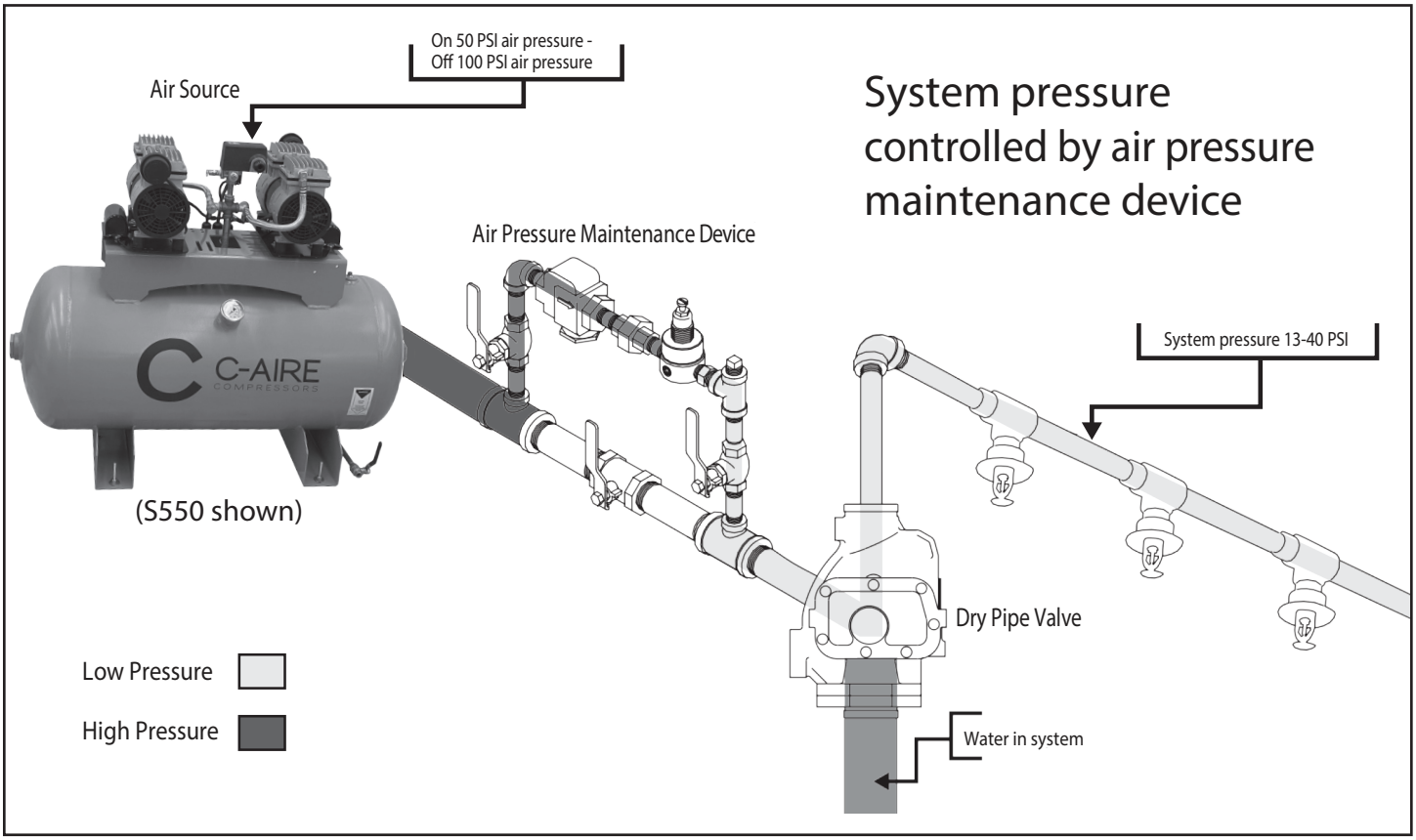
When operating the compressor for the first time, do the following:

1. Perform an inspection of the compressor to ensure there are no obstructions that might interfere with moving parts.
2. Release any remaining tank pressure by slowly opening the manual drain valve on the bottom of the tank (see parts identification 8).
3. Connect the compressor to the power source (the compressor will start).

SYSTEM INSTALLATION DIAGRAMS

NOTE: Factory set at 50-100 PSI.

To be used in conjunction with an air maintenance device (not included).



MAINTENANCE

⚠ **WARNING**: Before performing maintenance, release air pressure from the compressor using the manual drain valve (see parts identification 6) and disconnect/lockout/tagout the main power supply.

WEEKLY MAINTENANCE

- Drain moisture from your air compressor's tank WEEKLY!

⚠ **CAUTION**: Open the drain valve slowly to release the moisture, as pressure in the tank can cause the moisture to expel at very high velocity.

- Check for any unusual noises, vibrations, or permanent leaks from the unloader valve.

BIANNUAL MAINTENANCE

- TURN OFF POWER and check and tighten all electrical connections.
- Change air-intake filter(s). The filter is located on the top of the compressor (see parts identification, item 1). Twist the top cap off of the filter housing to access the filter.
- Check to make sure all bolts are tight.

VALVES AND SWITCHES

PRESSURE RELIEF VALVE (safety valve - see parts identification, item 2)

Pressure-relief valves are standard on all units. Pressure-relief valves aid in preventing system failures by relieving system pressure when compressed air reaches a determined level. Pressure-relief valves are PRESET by the manufacturer: *under no circumstances should the setting be changed by anyone other than the manufacturer.*

⚠ **DANGER**: Pressure-relief valves are designed to protect compressed-air systems in accordance with ASME B19 safety standards.

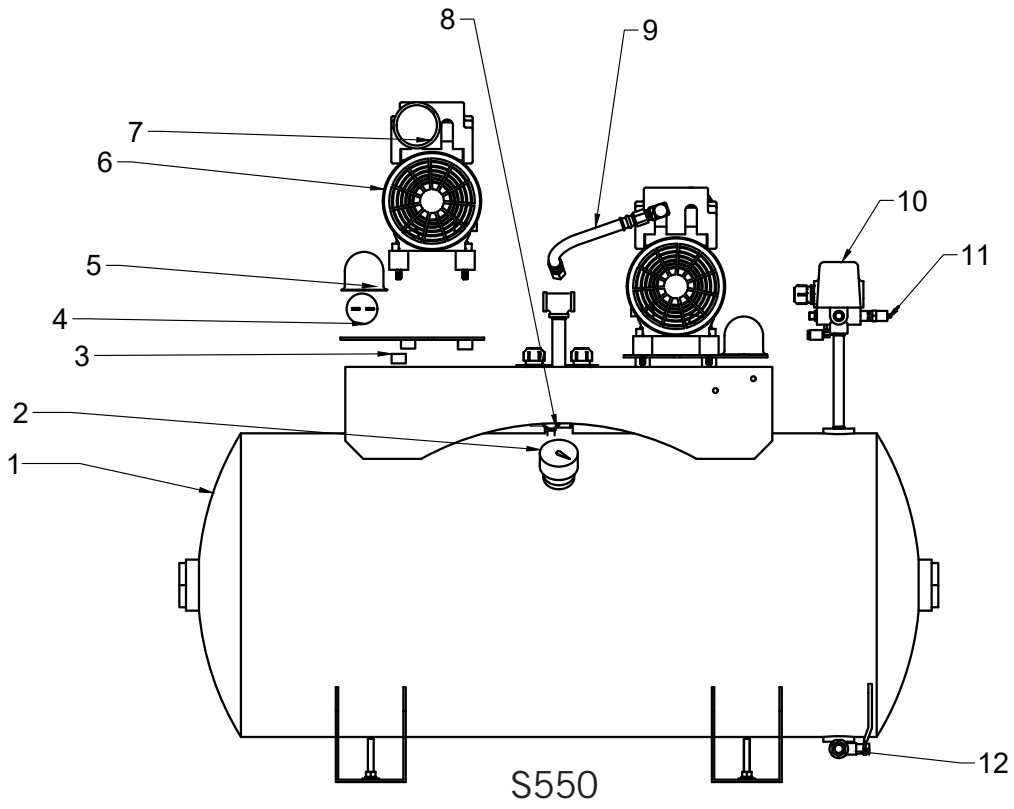
PRESSURE SWITCH (see parts identification, item 3)

A pressure switch is used to detect the demand for compressed air and allow the motor to start. When the demand is satisfied, the motor stops. They are preset at the factory by C-Aire and do not require adjustment.

⚠ **DANGER**: Electric power always exists inside the pressure switch whenever the compressor is connected to a power supply. Do not touch any electrical leads or electric components without locking out the power supply first.

PARTS DIAGRAM

1	TANK	H3 30-175	
2	GAUGE	GA 200 BACKLF	
3	SPACER	WH SPACER 2	
4	CAPACITOR	EL CBB60	EL CBB60-450
5	CAPACITOR COVER	EL CBB60-C	
6	PUMP	PM DD1100	PM DD2200
7	AIR FILTER	FA S28	
8	CHECK VALVE	BR P-7575-ST	
9	FLEX HOSE	DT 0604	
10	PRESSURE SWITCH	EL S280	
11	SAFETY RELIEF VALVE	BR SV-25-125	
12	DRAIN KIT	140-1025	

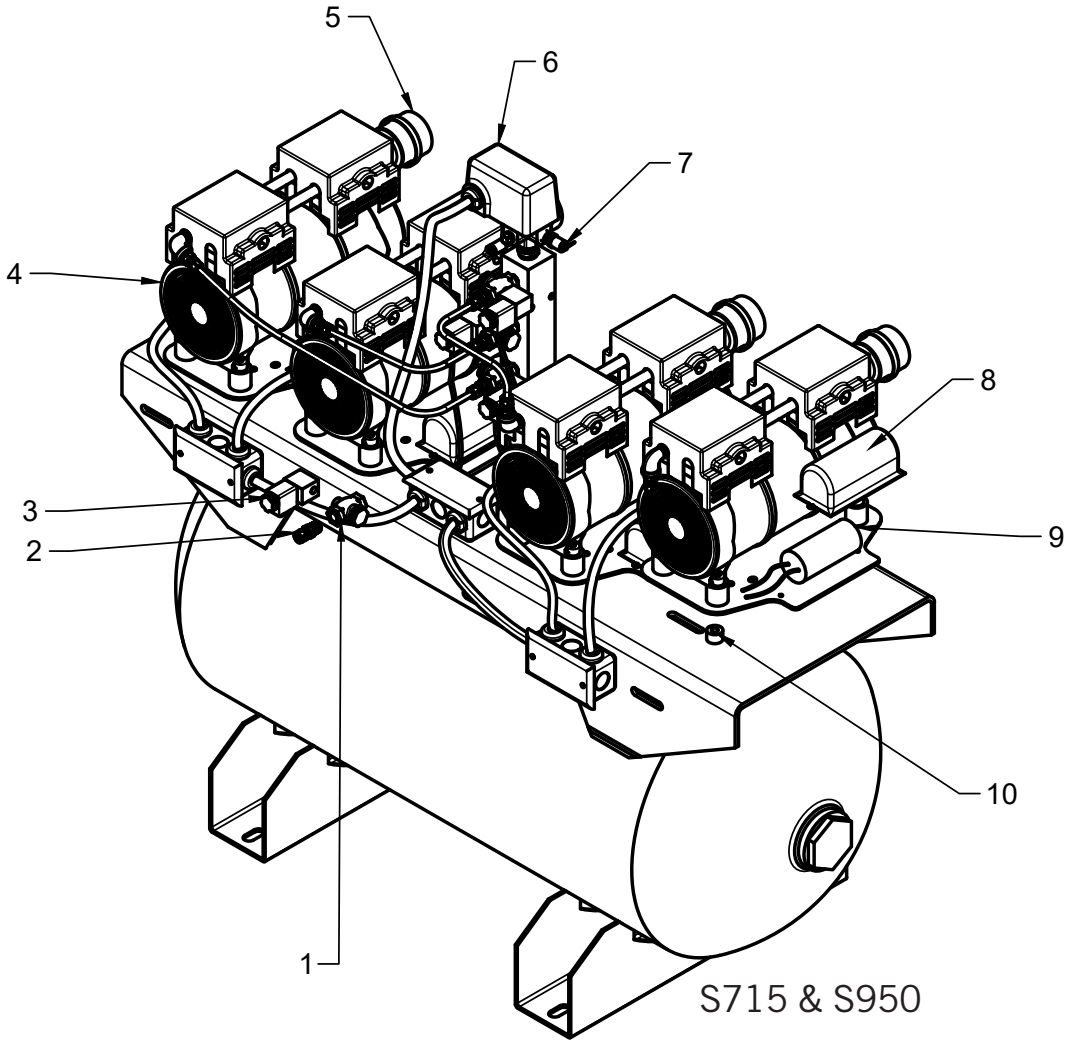


*1 S275 model units have a smaller tank, part number: H3 3NC

*2 For 220 volt units, pump/motor part number: PM DD2200

PARTS DIAGRAM

1	CHECK VALVE	BR HCV25U
2	FITTING	BR 68C 04X04
3	SOLENOID	EL SV3V1-06-220
4	PUMP	PM DD2200
5	FILTER ASSEMBLY	FA S28
6	PRESSURE SWITCH	EL S280
7	SAFETY RELIEF VALVE	BR SV-25-125
8	CAPACITOR COVER	EL CBB60-C
9	CAPACITOR	EL CBB60-450
10	SPACER	WH SPACER2
NOT SHOWN	GAUGE	GA 200BACKLF



TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTED CORRECTION
• Compressor will not operate	• No electrical power*1 • Loose wire connections • Pressure switch not making contact	• Turn on power • Tighten connection • See pressure switch adjustment
• Knocking noise or internal pump issue	• Internal pump problem	• Call C-Aire for assistance
• Tank does not hold pressure when compressor is turned off or unit continuously runs	• Check all fittings • Make sure drain valve is closed • Clogged Check Valve • Leaks on compressor fittings or down stream	• **WARNING**: Bleed tank. Disassemble Check Valve assembly, clean or replace faulty parts. • **DANGER**: Do not disassemble Check Valve with air in tank • Check fittings*2
• Tank pressure builds up slowly	• Clogged air filter • Air leaks	• Clean or replace filter element • Tighten joints
• Fuse or breaker trip • Pump/motor hums	• Wrong size fuse or breaker • Wrong size wire • Motor starting under load • Loose wires • Compressor is being overworked	• Check fuse/breaker size • Check volts/amps • Make sure pump is unloading when compressor shuts off • Check electrical connections
• Overheating compressor	• Poor ventilation • Internal pump problem	• Relocate compressor • Have unit serviced/call C-Aire
• Short cycling	• Condensation in the tank	• Drain weekly or install an Automatic Tank Drain

*1 Thermal overload tripped

*2 Or isolate compressor from system to determine leak location.

MODEL	
SERIAL #	
MFG #	

Make a permanent record of the Model and Serial Number of your compressor by filling in the fields above. You'll save time and expense by including this reference identification on replacement part orders.

380 West 1st Street, Dresser, WI 54009 // 800.762.2247//651.462.3440//www.cairecompressors.com

WARRANTY

OIL FREE COMPRESSOR

C-Aire Inc. warrants its compressors to be free from defects in material and workmanship subject to the following provisions:

STANDARD WARRANTY DURATION: 12 months from date of install.

WHAT THE WARRANTY COVERS DURING THE WARRANTY DURATION: All components on the compressor except for those items listed in the section titled "What is excluded from warranty coverage".

WHAT IS EXCLUDED FROM THE WARRANTY COVERAGE:

A) Air intake filters, which is a maintenance item.

B) Failure due to improper installation, insufficient power, or absence of mounting pads on floor mounted units.

C) Freight damaged items. (REJECT THE SHIPMENT or note damage on Bill of Lading)

D) Any labor, freight or transportation charges that are not pre-approved by C-Aire.

E) Labor charges incidental to the installation, electrical connections, repair, service, adjustment, removal, or replacement.

F) Misuse or abuse.

G) **C-AIRE HAS NO OBLIGATION UNDER THESE WARRANTIES OR OTHERWISE (REGARDLESS OF THE FORM OF ACTION) FOR SPECIAL, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOSS OF USE, LOST PROFITS, LOST INCOME, WHETHER SUFFERED BY THE BUYER OR A THIRD PARTY.**

C-AIRE'S OBLIGATIONS: C-Aire will repair or replace, at C-Aire's option, defective parts, pay reasonable labor costs of replacing or repairing the defective part, and pay ground freight for the return of defective parts and shipment of the replacement part(s). ALL LABOR AND FREIGHT MUST BE PRE-APPROVED AND ARRANGED BY C-AIRE.

PURCHASER'S OBLIGATION:

1) Properly install and start up the compressor.
2) Ensure the compressor is sized properly for the application. The compressor should run no more than 30 minutes/day on average after initial system fill.
3) Maintain proof of purchase.

WARRANTY CLAIMS: Please contact C-Aire at 1-800-762-2247 or 651-462-3440. Please have your Model and serial number available.

C-AIRE®

COMPRESSORS

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