

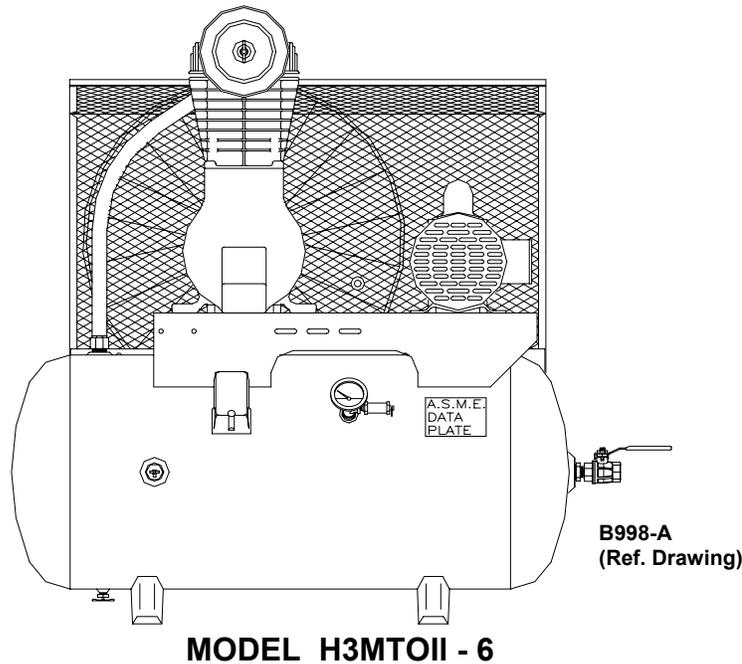


**OPERATION MAINTENANCE
MANUAL & PARTS LIST**

**SINGLE STAGE ONE AND TWO CYLINDER OIL-LESS
AIR COMPRESSORS, 3/4 THROUGH 5 HP**

⚠ WARNING

THIS MANUAL CONTAINS IMPORTANT SAFETY INFORMATION AND SHOULD ALWAYS BE AVAILABLE TO THOSE PERSONNEL OPERATING THIS UNIT. READ, UNDERSTAND AND RETAIN ALL INSTRUCTIONS BEFORE OPERATING THIS EQUIPMENT TO PREVENT INJURY OR EQUIPMENT DAMAGE.



**MAINTAIN COMPRESSOR RELIABILITY AND PERFORMANCE WITH
GENUINE CHAMPION COMPRESSOR
PARTS AND SUPPORT SERVICES**

Champion Compressor genuine parts, manufactured to design tolerances, are developed for optimum dependability – specifically for Champion compressor systems. Design and material innovations are the result of years of experience with hundreds of different compressor applications. Reliability in materials and quality assurance are incorporated in our genuine replacement parts.

Your authorized Champion Compressor distributor offers all the backup you'll need. A worldwide network of authorized distributors provides the finest product support in the air compressor industry. Your authorized distributor can support your Champion air compressor with these services:

1. Trained parts specialists to assist you in selecting the correct replacement parts.
2. Repair and maintenance kits designed with the necessary parts to simplify servicing your compressor.

Authorized distributor service technicians are factory trained and skilled in compressor maintenance and repair. They are ready to respond and assist you by providing fast, expert maintenance and repair services.

For the location of your local authorized Champion Air Compressor distributor, refer to the yellow pages of your phone directory or contact:

Factory:

Champion
1301 North Euclid Avenue
Princeton, IL 61356

Phone: (815) 875-3321

Fax: (815) 872-0421

E-Mail: Champion@Champion_pneumatic.com

INSTRUCTIONS FOR ORDERING REPAIR PARTS

When ordering parts, specify Compressor MODEL, HORSEPOWER and SERIAL NUMBER (see nameplate on unit). All orders for Parts should be placed with the nearest authorized distributor.

Order by part number and description. Reference numbers are for your convenience only.

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EXPLANATION OF SAFETY INSTRUCTIONS SYMBOLS AND DECALS



DANGER

Indicates immediate hazards which will result in severe injury or death.



WARNING

Indicates hazards or unsafe practice which could result in severe injury or death.



CAUTION

Indicates hazards or unsafe practice which could result in damage to the Champion compressor or minor injury.

NOTICE

Notice is used to notify people of installation, operation or maintenance information which is important but not hazard related.

SAFETY AND OPERATION PRECAUTIONS

OBSERVE, UNDERSTAND AND RETAIN THE INFORMATION GIVEN IN THE SAFETY PRECAUTION DECALS AS SHOWN IN THE PARTS LIST SECTION.



DANGER

This Oil-Less Compressor must not be used for breathing air without adequate downstream filters, purifiers and controls. To do so will cause serious injury whether air is supplied direct from the compressor source or to breathing tanks for later use. Any and all liabilities for damage or loss due to injuries, death and/or property damage including consequential damages stemming from the use of this compressor to supply breathing air will be disclaimed by the manufacturer.



WARNING

The use of this compressor as a booster pump and/or to compress a medium other than atmospheric air is strictly non-approved and can result in equipment damage and/or injury. Nonapproved uses will also void warranty.



CAUTION

This unit may be equipped with special options which may not be included in this manual. User must read, understand and retain all information sent with special options.

SAFETY AND OPERATION PRECAUTIONS

Because an air compressor is a piece of machinery with moving and rotating parts, the same precautions should be observed as with any piece of machinery of this type where carelessness in operation or maintenance is hazardous to personnel. In addition to the many obvious safety rules that should be followed with this type of machinery, the additional safety precautions as listed below must be observed:

1. Read all instructions completely before operating air compressor or unit.
2. For installation, follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
3. Electric motors must be securely and adequately grounded. This can be accomplished by wiring with a grounded, metal-clad raceway system to the starter; by using a separate ground wire connected to the bare metal of the motor frame; or other suitable means.
4. Protect the power cable from coming in contact with sharp objects. Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.
5. Make certain that the power source conforms to the requirements of your equipment.
6. Pull main electrical disconnect switch and disconnect any separate control lines, if used, before attempting to work or perform maintenance on the air compressor or unit. "Tag Out" or "Lock Out" all power sources.
7. Do not attempt to remove any compressor parts without first relieving the entire system of pressure.
8. Do not attempt to service any part while machine is in an operational mode.
9. Do not operate the compressor at pressures in excess of its rating.
10. Do not operate compressor at speeds in excess of its rating.
11. Periodically check all safety devices for proper operation. Do not change pressure setting or restrict operation in any way.
12. Be sure no tools or rags or loose parts are left on the compressor or drive parts.
13. Do not use flammable solvents for cleaning the air inlet filter or element and other parts.
14. Exercise cleanliness during maintenance and when making repairs. Keep dirt away from parts by covering parts and exposed openings with clean cloth or Kraft paper.
15. Do not operate the compressor without guards, shields and screens in place.
16. Do not install a shut-off valve in the discharge line, unless a pressure relief valve, of proper design and size, is installed in the line between the compressor unit and shut-off valve.
17. Do not operate compressor in areas where there is a possibility of ingesting flammable or toxic fumes.
18. Be careful when touching the exterior of a recently run motor - it may be hot enough to be painful or cause injury. With modern motors this condition is normal if operated at rated load - modern motors are built to operate at higher temperatures.
19. Inspect unit daily to observe and correct any unsafe operating conditions found.
20. Do not "play around" with compressed air, nor direct air stream at body, because this can cause injuries.
21. Compressed air from this machine absolutely must not be used for food processing or breathing air without adequate downstream filters, purifiers and controls.
22. Always use an air pressure regulating device at the point of use, and do not use air pressure greater than marked maximum pressure of attachment.
23. Check hoses for weak or worn condition before each use and make certain that all connections are secure.
24. Always wear safety glasses when using a compressed air blowgun.

The user of any air compressor package manufactured by Champion is hereby warned that failure to follow the preceding Safety and Operation Precautions can result in injuries or equipment damage. However, Champion does not state as fact or does not mean to imply that the preceding list of Safety and Operating Precautions is all inclusive, and further that the observance of this list will prevent all injuries or equipment damage.

INTRODUCTION

Champion Oil-Less compressors are the result of advanced engineering and skilled manufacturing. To be assured of receiving maximum service from this machine the owner must exercise care in its operation and maintenance. This book is written to give the operator and maintenance department essential information for day-to-day operation, maintenance and adjustment. Careful adherence to these instructions will result in economical operation and minimum downtime.

Express Limited Warranty

CHAMPION warrants each new piece of equipment manufactured by **CHAMPION** to be free from defects in material and workmanship under normal use and service for a period of twelve (12) months from date of installation or eighteen (18) months from date of shipment by **CHAMPION** or **CHAMPION** authorized distributor, whichever may occur first.

CHAMPION makes no warranty in respect to components and accessories furnished to **CHAMPION** by third parties, such as ELECTRIC MOTORS, and CONTROLS, which are warranted only to the extent of the original manufacturer's warranty to **CHAMPION**. To have warranty consideration, electric motors must be equipped with thermal overload protection.

When a compressor pump, or component is changed or replaced during the warranty period, the newly replaced item is warranted for only the remainder of the original warranty period.

Repair, replacement or refund in the manner and within the time provided shall constitute **CHAMPION'S** sole liability and your exclusive remedy resulting from any nonconformity or defect. **CHAMPION SHALL NOT IN ANY EVENT BE LIABLE FOR ANY DAMAGES, WHETHER BASED ON CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES, ARISING WITH RESPECT TO THE EQUIPMENT OR ITS FAILURE TO OPERATE EVEN IF CHAMPION HAS BEEN ADVISED OF THE POSSIBILITY THEREOF.**

CHAMPION MAKES NO OTHER WARRANTY OR REPRESENTATION OF ANY KIND, EXCEPT THAT OF TITLE, AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY DISCLAIMED. NO SALESMAN OR OTHER REPRESENTATIVE OF CHAMPION HAS AUTHORITY TO MAKE ANY WARRANTIES.

COMPRESSOR UNIT SPECIFICATIONS

COMPRESSOR MODEL	MOTOR H.P.	PUMP RPM	DISPL (CFM)	MAXIMUM PRESSURE (PSIG)	COOLING AIR FLOW (CFM)	HEAT REJECTION (BTU/HR)
CCE10	3/4	430	3.7	100	450	2100
CCE10	1	575	4.9	100	600	2800
CCE20	1½	570	9.6	100	1315	3360
CCE20	2	680	11.5	100	1570	4480
CCE30	3	650	17.1	100	1500	6700
CVE50	5	650	27.4	100	1500	12,000

Minimum Ambient Temperature 32°F
Maximum Ambient Temperature 100°F

INSTALLATION



WARNING

Do not operate unit if damaged during shipping, handling or use. Operating unit if damaged may result in injury.

1. Permanently installed compressors must be located in a clean, well ventilated dry room so compressor receives adequate supply of fresh, clean, cool and dry air. It is recommended that a compressor, used for painting, be located in a separate room from that area wherein body sanding and painting is done. Abrasive particles or paint found to have clogged the air intake filters and intake valves shall automatically void warranty.
2. Compressors should never be located so close to a wall or other obstruction that flow of air through the cooling fan, which cools the compressor, is impeded. Permanently mounted units should have cooling fan at least 12" from wall.
3. Place stationary compressors on firm level ground or flooring. Permanent installations require bolting to floor. Bolt holes in tank or base feet are provided. Before bolting or lagging down, shim compressor level to avoid putting a stress on a tank foot. It is recommended that unit be set on optional vibro-isolator pads. Tanks bolted directly to a concrete floor without isolators will not be warranted against cracking.
4. If installing a base mounted unit, make certain pressure limiting controls are properly installed and operational. A pressure switch is required for start/stop control. Units furnished with dual control are supplied with a pilot valve. The pilot valve requires a control air pressure line from the air receiver to be connected to the pilot valve.



DANGER

Do not install isolating valves between compressor outlet and air receiver. This will cause excessive pressure if valve is closed and cause injury and equipment damage.



DANGER

Factory assembled medical units equipped with an isolation valve have a pressure relief valve installed in the discharge line between the compressor and isolation valve. Do not remove or adjust.



WARNING

Always use an air pressure regulating device at the point of use. Failure to do so can result in injury or equipment damage.



CAUTION

- Do not install an area where ambient temperature is below 32 degrees F. or above 100 degrees F.
- Do not install unit in an area where air is dirty and/or chemical laden.
- Unit is not to be installed outdoors.

INSTALLATION (CONT'D)

ELECTRICAL POWER SUPPLY

It is essential that the power supply and the supply wiring are adequately sized and that the voltage corresponds to the unit specifications. Branch circuit protection must be provided at installation as specified in the National Electrical Code.

All wiring should be performed by a licensed electrician or electrical contractor. Wiring must meet applicable codes for area of installation. The table gives recommended wire sizes based on the 1999 NEC.

**WIRE SIZE (AWG)
COPPER CONDUCTOR - 75°C TEMP. RATING - 30° AMBIENT**

MOTOR HP	3 PHASE				1 PHASE		
	200/208V	230V	460V	575V	115V	208V	230V
3/4 – 1-1/2	14 (14)	14 (14)	14 (14)	14 (14)	10 (8)	14 (10)	14 (12)
2	14 (12)	14 (12)	14 (14)	14 (14)	8 (6)	12 (8)	12 (10)
3	14 (10)	14 (12)	14 (14)	14 (14)	8 (4)	10 (8)	10 (8)
5	10 (8)	12 (8)	14 (12)	14 (12)	-----	8 (6)	8 (6)

Valves in () for duplex unit with one incoming power line to both motors.

All models require a properly sized magnetic starter as specified in the National Electric Code (NEC). See Figure 1-1 for simplex wiring diagram and Figure 1-2 for duplex wiring diagram.

If ordered with a factory mounted magnetic starter, compressor is wired at factory. It is necessary only to bring lines from a properly sized disconnect switch to the magnetic starter mounted on the unit.

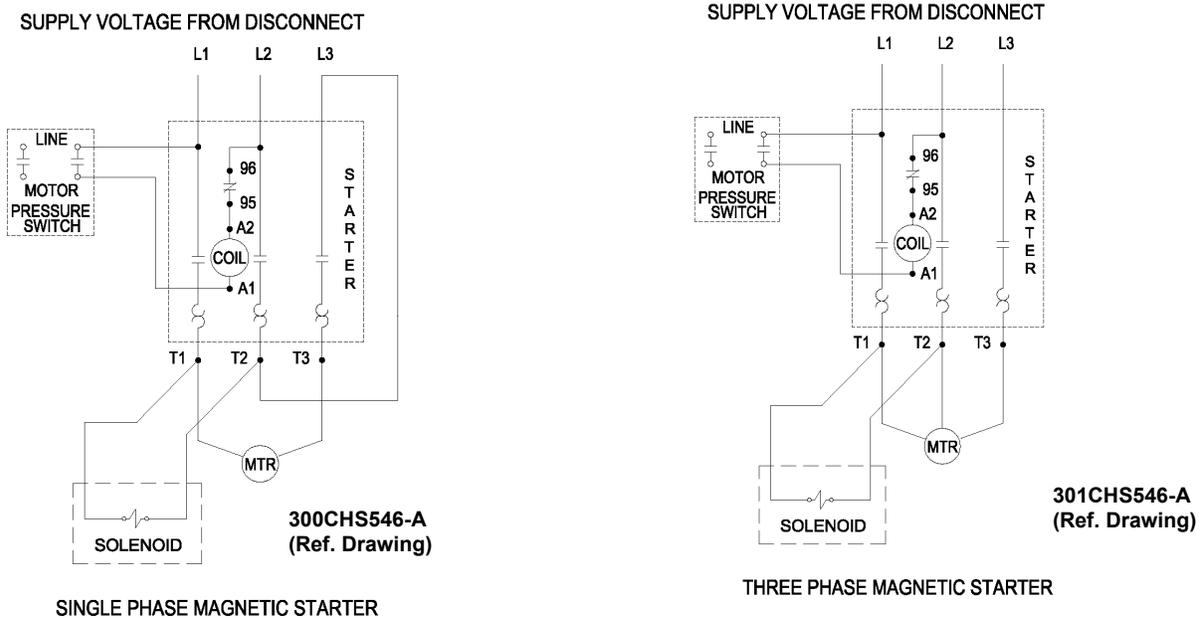
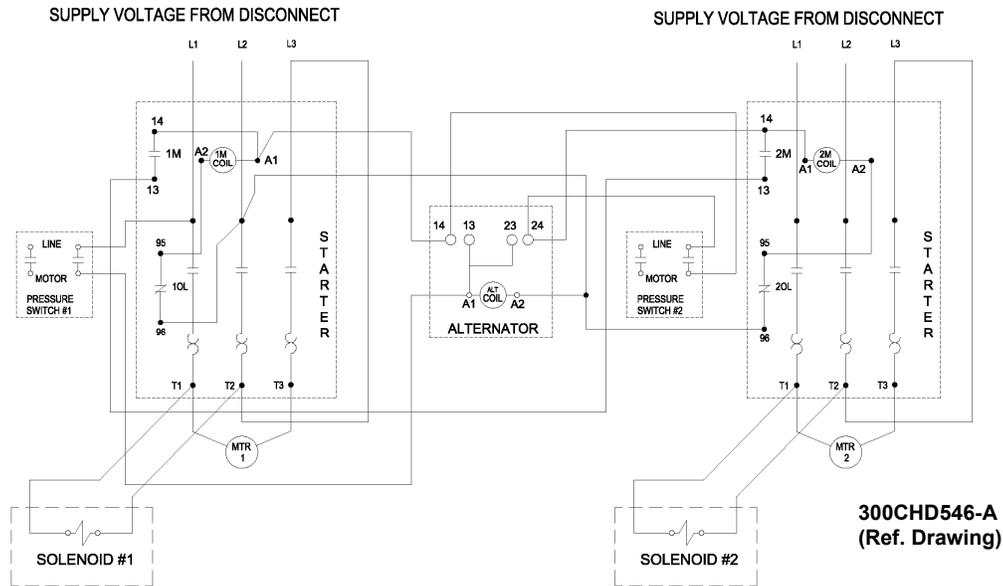
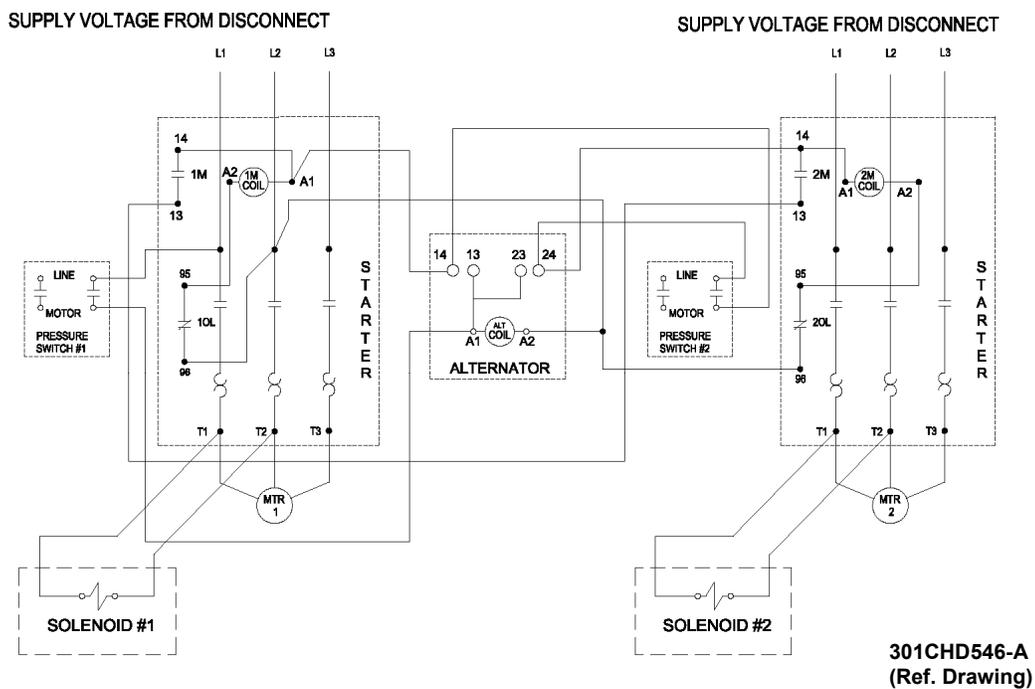


Figure 1-1 Simplex Wiring Diagram

INSTALLATION (CONT'D)



SINGLE PHASE - DUPLEX MAGNETIC STARTERS W/ ALTERNATOR



THREE PHASE - DUPLEX MAGNETIC STARTERS W/ ALTERNATOR

Figure 1-2 Duplex Wiring Diagram



CAUTION

Wiring must be such that when viewing compressor from opposite shaft end, rotation of shaft is clockwise as shown by arrow on guard. Wrong direction rotation for any length of time will result in damage to compressor

INSTALLATION (CONT'D)

GROUNDING INSTRUCTIONS

This product should be connected to a grounded, metallic, permanent wiring system, or an equipment-grounding terminal or lead on the product.

AIR LINE PIPING

Connection to air system should be of the same size, or larger, than discharge pipe out of unit. The table gives recommended minimum pipe sizes. A union connection to the unit and water drop leg is recommended. Install a flexible connector between the discharge of the unit and the plant air piping. Plant air piping should be periodically inspected for leaks using a soap and water solution for detection on all pipe joints. Air leaks waste energy and are expensive.

**Minimum Pipe Sizes For Compressor Air Lines
(Based on clean Smooth Schedule 40 Pipe)**

COMPRESSOR MODEL	25'	50'	100'	200'	300'
CCE10	3/4" (1")	3/4" (1")	3/4" (1")	3/4" (1")	3/4" (1")
CCE20	3/4" (1")	3/4" (1")	3/4" (1")	3/4" (1")	3/4" (1")
CCE30	3/4" (1")	3/4" (1")	3/4" (1")	3/4" (1")	3/4" (1")
CVE50	3/4" (1")	3/4" (1")	3/4" (1")	1" (1-1/4")	1" (1-1/4")

Values in () are for duplex unit.



WARNING

Never use plastic pipe or improperly rated metal pipe. Improper piping material can burst and cause injury or property damage.

OPERATION

This compressor has been inspected, thoroughly tested and approved at the factory. For this unit to give long satisfactory service it must be installed and operated properly.

This compressor has been designed to run at a 100% duty cycle.

Simplex units have a pressure switch that senses changes in receiver pressure and automatically starts and stops the compressor at preset pressure limits. If the receiver pressure falls below the cut-in pressure setting of the pressure switch the compressor will run until the cut-out pressure setting of the pressure switch has been reached.

Duplex units have lead and lag pressure switches and an automatic alternating system to evenly distribute the load between the two compressors. The pressure switches sense changes in receiver pressure and automatically start and stop the compressor at preset pressure levels. If the receiver pressure falls below the cut-in pressure setting of the lead pressure switch but remains above the cut-in pressure setting of the lag pressure switch, only one compressor will run until receiver pressure reaches the cut-out pressure of the lead pressure switch. The next time the pressure in the receiver drops, the system automatically starts the compressor that was idle. If the receiver pressure falls below the cut-in pressure setting of the lag pressure switch, both compressors run until receiver pressure reaches the cut-out pressure setting of the lead pressure switch.

Units furnished with optional dual control are equipped with a needle valve, pilot valve and head unloaders to provide continuous run capabilities. The pilot valve acts as an automatic air switch allowing air to flow from the receiver to the head unloader mechanism, thus actuating it. To operate unit in continuous run, open needle valve located next to pilot valve. The pilot valve is now able to sense receiver pressure. When the receiver pressure reaches the cut-out pressure setting of the pilot valve, the pilot valve opens and air is released to the unloader mechanism. The compressor stops compressing air and runs unloaded until the cut-in pressure setting of the pilot valve has been reached. At this time air released from the unloader mechanism and the compressor starts compressing again. Continuous run is recommended if motor starts exceed 8 starts/hour.

OPERATION (CONT'D)

Initial Start Up

1. Inspect unit for any visible signs of damage that would have occurred in shipment or during installation.
2. Pull main disconnect switch to unit to assure that no power is coming into the unit. "Lock Out" or "Tag Out" switch. Connect power leads to starter.



WARNING

Do not attempt to operate compressor on voltage other than that specified on order or on compressor motor.

3. Activate main disconnect switch.
4. "Jog" motor and check for proper rotation by direction arrow. If rotation is wrong, reverse input connections on the magnetic starter.
5. Close receiver outlet hand valve and start.
6. With receiver hand valve closed, let machine pump up to operating pressure. At this stage the automatic controls will take over. Check for proper cycling operation.
7. Check for proper operation of any options. Refer to individual option instruction sheet.
8. Open receiver hand valve. The air compressor unit is now ready for use.



WARNING

This unit can start automatically without warning.

GUIDE TO MAINTENANCE

For Service contact an authorized Champion distributor. All requests should include model number and serial number. To obtain reliable and satisfactory service, this unit requires a consistent preventive maintenance schedule. Maintenance schedule form is included to aid in keeping the proper records.



WARNING

Before performing any maintenance function, switch main disconnect switch to "off" position to assure no power is entering unit. "Lock Out" or "Tag Out" all sources of power. Be sure all air pressure in unit is relieved. Failure to do this may result in injury or equipment damage.

DAILY MAINTENANCE

1. Drain moisture from tank by opening tank drain cock located in bottom of tank. Do not open drain valve if tank pressure exceeds 25 PSIG.
2. Turn off compressor at the end of each day's operation. Turn off power supply at wall switch.

WEEKLY MAINTENANCE

1. Clean dust and foreign matter from cylinder, cylinder head, motor, fan blade, air lines, and tank.
2. Remove and clean intake air filters.



WARNING

Do not exceed 15 PSIG nozzle pressure when cleaning element parts with compressed air. Do not direct compressed air against human skin. Serious injury could result. Never wash elements in fuel oil, gasoline or flammable solvent.

3. Check V-belts for tightness. The V-belts must be tight enough to transmit the necessary power to the compressor. Adjust the V-belts as follows:

Remove bolts and guard to access compressor drive.

Loosen mounting hardware, which secures motor to base. Slide motor within slots of baseplate to desired position.

Apply pressure with finger to one belt at midpoint span. Tension is correct if top of belt aligns with bottom of adjacent belt. Make further adjustments if necessary.

Check the alignment of pulleys. Adjust if necessary.

Tighten mounting hardware to secure motor on base.

Re-install guard and secure bolts.



WARNING

Never operate unit without belt guard in place. Removal will expose rotating parts which can cause injury or equipment damage.

EVERY 90 DAYS OR 500 HOURS MAINTENANCE

1. Check entire system for air leakage around fittings, connections, and gaskets, using soap solution and brush.
2. Tighten nuts and cap screws as required.
3. Check and clean compressor valves as required. Replace when worn or damaged parts.

GENERAL MAINTENANCE NOTES

PRESSURE RELIEF VALVE: The pressure relief valve is an automatic pop valve. Each valve is properly adjusted for the maximum pressure of the unit on which it is installed. If it should pop, it will be necessary to drain all the air out of the tank in order to reseat properly, or drop pressure in line. Do not readjust.

TANK DRAIN VALVE: Drain valve is located at bottom of tank. Open drain valve daily to drain condensation. Do not open drain valve if tank pressure exceeds 25 psig. The automatic tank drain equipped compressor requires draining manually once a week.

PRESSURE SWITCH: The pressure switch is automatic and will start compressor at the low pressure and stop when the maximum pressure is reached. It is adjusted to start and stop compressor at the proper pressure for the unit on which it is installed. Do not readjust.

COMPRESSOR VALVES (CCE10): Once per year or if compressor fails to pump air or seems slow in filling up tank, disconnect unit from power source remove valve plate and clean thoroughly, using compressed air. The valve plates can be reached by removing the cylinder head. The cylinder head is held by four capscrews. After cleaning exceptional care must be taken that all parts are replaced in exactly the same position and all joints must be tight or the compressor will not function properly. When all valves are replaced and connections tight, close hand valve at tank outlet for final test.

COMPRESSOR VALVES (CCE20, CCE30, CVE50): Once per year or if compressor fails to pump air or seems slow in filling up tank, disconnect unit from power source and remove valves and clean thoroughly, using compressed air and a soft wire brush. The valve plates can be reached by removing the cylinder head. Each cover is held by four capscrews. Take care not to damage the "O"-Ring seal under the top of the cover. After cleaning exceptional care must be taken that all parts are replaced in exactly the same position and all joints must be tight or the compressor will not function properly. When all valves are replaced and connections tight, close hand valve at tank outlet for final test.



CAUTION

Valves must be replaced in original position. Valve gaskets should be replaced each time valves are serviced.

CHECK VALVE: The check valve closes when the compressor stops operating, preventing air from flowing out of the tank through the unloader solenoid valve. After the compressor stops operating, if air continues to escape through the unloader solenoid valve, it is an indication that the check valve is leaking. This can be corrected by removing check valve and cleaning disc and seat. If check valve disc is worn badly, replace same.



WARNING

Before removing check valve be sure all air is drained out of tank and power is disconnected. Failure to do so may result in injury or equipment damage.

GENERAL MAINTENANCE (Cont'd.)

BELTS: Drive belts must be kept tight enough to prevent slipping. If belts slip or squeak, see V-belt maintenance in preceding section.

MOTOR LUBRICATION: Long time satisfactory operation of an electric motor depends in large measure on proper lubrication of the bearings. Bearing grease will lose its lubricating ability overtime, not suddenly. Refer to the motor manufacturer's instructions for the type of grease and lubrication intervals.

PILOT VALVE: (Optional - Dual Control Units Only) The pilot valve actuates the head unloader mechanism to provide a means of stopping or starting the compression of air by the compressor without stopping or starting the electric motor.

COMPRESSOR PILOT VALVE PRESSURE ADJUSTMENT (DUAL CONTROL UNITS ONLY)

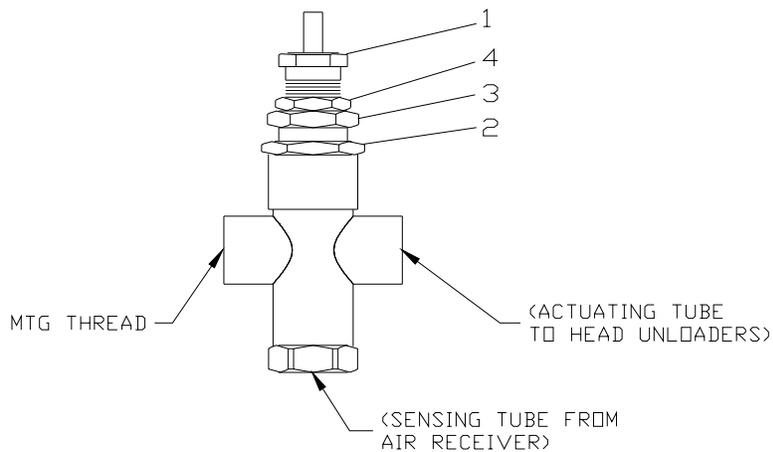
Proceed with the following instructions while compressor is running:

1. Loosen locknut (2) and back off several turns.
2. Check reading on the tank pressure gauge. Set the pressure to 30 psig differential (unload at 95 psig, reload at 65 psig). Turn nut (3) clockwise to increase differential pressure or counterclockwise to decrease differential pressure.
3. After pressure is set, tighten locknut (2). Be careful not to move nut (3).

COMPRESSOR PILOT VALVE DIFFERENTIAL PRESSURE ADJUSTMENT

Proceed with the following instructions while compressor is running.:

1. Loosen locknut (2) and back off several turns.
2. Check reading on the tank pressure gauge. Set the pressure to 30 psig differential (unload at 95 psig, reload at 65 psig). Turn nut (3) clockwise to increase differential pressure or counterclockwise to decrease differential pressure.
3. After pressure is set, tighten locknut (2). Be careful not to move nut (3).



B980-B
(Ref. Drawing)

PARTS REPLACEMENT SCHEDULE

1. Replace compression rings every 3 years (2 years if 60 or more hours/week run time).
2. Replace control rings every 3 years (2 years if 60 or more hours/week run time).
3. Change both main shaft and con rod bearings every 4 years (3 years if 60 or more hours/week run time).
4. Replace head valves or valve plates every 2 years (1 year if 60 or more hours/week run time).

PISTON RING REPLACEMENT

Piston rings can be inspected or replaced by doing the following:

1. Make sure all power is off to the unit and the air receiver is at 0 PSIG.
2. Loosen and remove the discharge line or manifold.
3. Loosen and remove the four capscrews holding the cylinder to the crankcase.
4. Pull the cylinder/head assembly straight off of the crankcase (Take care not to damage the piston/con rod during this removal).
5. The piston and rings will then be exposed.
6. Inspect and replace the rings as required (Note that the CCE20, CCE30 and CVE50 compression rings are of the two separate piece design and take care not to drop or break the overlap ends of the ring).
7. Replace rings on piston and carefully slide cylinder over the piston until it sets on the crankcase.
8. Tighten four capscrews that hold the cylinder to the crankcase.
9. Reinstall the discharge line or manifold.

CCE10 CRANKSHAFT BEARING AND CON ROD REPLACEMENT

Crankshaft bearings can be replaced as follows:

1. Disconnect all power to the unit and bleed down the air receiver pressure to 0 PSIG.
2. Remove the belt guard and the V-belt.
3. Remove the flywheel.
4. Remove the cylinder from the crankcase.
5. Loosen the two setscrews in the pin boss area tightened against the pin on the inside area of the piston.
6. Push the piston pin out to remove the piston from the top of the con rod.
7. Remove crankcase breather cover and foam material on the front end of the crankcase. This will expose a round opening in the crankcase in line with the crankshaft end.
8. Remove snap ring on the rod of the crankshaft using snap ring pliers.
9. Remove the con rod assembly using a gear puller.
10. If only installing con rod assembly, heat the lower end bearing on a hot plate to 190°F. Using heat resistant gloves, quickly slide bearing on the rod of the crankshaft to proper location and reinstall the snap ring.
11. Remove the 2 capscrews located inside the crankcase on the flywheel end.
12. Remove the flywheel key located on the crankshaft outside the crankcase.
13. Carefully remove the crankshaft from the crankcase using a press.
14. Remove the first bearing (smaller) from the crankshaft using gear puller.
15. Remove snap ring on the crankshaft using snap ring pliers.
16. Remove the second bearing (larger) from the crankshaft using gear puller.
17. To install new crankshaft bearings on the shaft, heat bearings to 190°F. Using heat resistant gloves quickly slide larger bearing to proper location on the crankshaft, reinstall snap ring, then slide smaller bearing to proper location on the crankshaft.
18. Reassemble compressor by reversing procedures stated 1 through 13.

CCE20, CCE30, & CVE50 CRANKSHAFT BEARING AND CON ROD REPLACEMENT

Crankshaft bearings can be replaced as follows:

1. Disconnect all power to the unit and bleed down the air receiver pressure to 0 PSIG.
2. Remove the belt guard and the V-belts.
3. Remove the flywheel.
4. Remove the cylinder(s) from the crankcase.
5. Loosen the two setscrews in the pin boss area tightened against the pin on the inside area of the piston(s).
6. Push the piston pin out to remove the piston from the top of the con rod.
7. Loosen and remove the bearing cover on the flywheel end. Jackscrews are provided to remove this cover.
8. Remove the crankcase breather cover and foam material on the front end of the crankcase. This will expose a slotted opening in the crankcase casting in line with the crankshaft end.
9. Using a drift and hammer, push the end of the crankshaft bearing toward the pulley end until the front side crankshaft bearing is free from the crankcase.
10. Carefully remove the crankshaft/con rod assembly from the crankcase through the opening in the flywheel end.
11. The crankshaft bearings can be removed from the crankcase with bearing puller.
12. If the connecting rods need to be removed from the crankshaft, jackscrews are provided in the crankcase adjacent to the con rod bearing for this purpose (remove the snap ring before using the jackscrews). To install a new con rod assembly, heat the lower end bearing on a hot plate to 190°F. Using heat resistant gloves, quickly slide con rod on shaft, starting at flywheel end to its proper place on the shaft throw.
13. To install a new con rod assembly, heat the lower end bearing on a hot plate to 190° F. Using heat resistant gloves, quickly slide bearings on each end of shaft, starting at flywheel end to its proper place on the shaft throw.
14. Reinstall snap ring.
15. To install new crankshaft bearings on shaft, heat bearings to 190°F. Using heat resistant gloves, quickly slide bearings on each end of shaft, making sure the smaller bearing is installed on the front end of the crankshaft.
16. Reassemble compressor by reversing procedures stated in 1 through 10.

TROUBLE SHOOTING GUIDE FOR COMPRESSOR



WARNING

Always disconnect unit from power supply and relieve all pressure from air tank before performing any maintenance. “Tag Out” or “Lock Out” disconnect switch. Failure to do so may result in equipment damage or injury.

Never use gasoline or flammable solvent on or around compressor unit. Explosion may result.

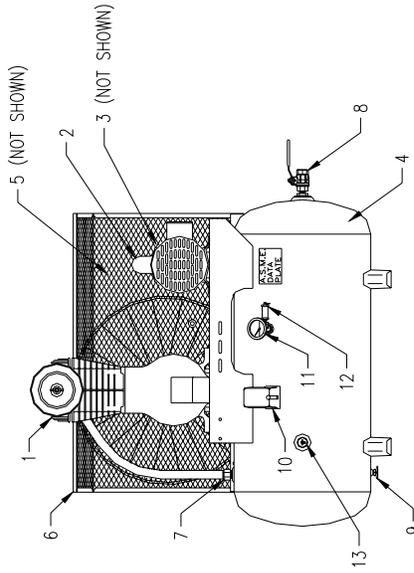
Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Motor will not start.	<ol style="list-style-type: none"> 1. Main switch and fuses open. 2. Starter heater coils open. 3. Starter tripped 4. Defective pressure switch-contacts will not close 5. Low voltage. 	<ol style="list-style-type: none"> 1. Check all fuses and switches. Check for loose or faulty wires. 2. Check overload relay in starter. Reset starter. 3. Reset starter. If starter trips repeatedly, have electrical system inspected by an electrician. 4. Repair or replace pressure switch. <p> Warning – Relieve tank pressure before servicing.</p> <ol style="list-style-type: none"> 5. Check with voltmeter. Be sure voltage corresponds to unit specifications.
Starter trips repeatedly.	<ol style="list-style-type: none"> 1. Improperly adjusted pressure switch. 2. Faulty check valve. 3. Incorrect fuse size or magnetic starter heaters. 4. Low voltage. 5. Defective motor. 	<ol style="list-style-type: none"> 1. Adjust or replace. <p> Warning – Relieve tank pressure before servicing.</p> <ol style="list-style-type: none"> 2. Clean or replace <p> Warning – Relieve tank pressure before servicing.</p> <ol style="list-style-type: none"> 3. Be sure that fuses and heaters are properly rated. 4. Check with voltmeter. Be sure voltage corresponds to unit specifications. 5. Replace motor.
Tank pressure builds up slowly.	<ol style="list-style-type: none"> 1. Air leaks. 2. Dirty air filter. 3. Defective compressor valves 	<ol style="list-style-type: none"> 1. Tighten fittings. 2. Clean or replace. 3. Install new valves.
Tank pressure builds up quickly.	<ol style="list-style-type: none"> 1. Excessive water in tank. 	<ol style="list-style-type: none"> 1. Drain tank.
Discharge pressure relief valve pops off while compressor is running.	<ol style="list-style-type: none"> 1. Wrong pressure switch setting. 2. Defective ASME relief valve. 	<ol style="list-style-type: none"> 1. Adjust to correct setting. 2. Replace valve. <p> Warning – Relieve tank pressure before servicing.</p>
Compressor will not unload (Dual control units only)	<ol style="list-style-type: none"> 1. Wrong pilot valve setting. 2. Defective pilot valve. 3. Lack of air to pilot valve.. 	<ol style="list-style-type: none"> 1. Adjust to correct setting 2. Replace pilot valve. 3. Open needle valve to pilot valve.
Excessive belt wear.	<ol style="list-style-type: none"> 1. Pulley out of alignment. 2. Belts too tight or too loose. 	<ol style="list-style-type: none"> 1. Realign motor pulley. 2. Adjust belt tension.
Compressor runs hot.	<ol style="list-style-type: none"> 1. Improper flywheel rotation 2. Defective compressor valves. 3. Dirty air filter. 4. Dirty cylinder and/or intercooler. 	<ol style="list-style-type: none"> 1. Check for correct rotation. (Counter clockwise when viewed from drive side. 2. Install new valve plate assembly. 3. Clean or replace. 4. Clean cylinder fins and/or intercooler.

Troubleshooting Chart (cont'd)

Symptom	Possible Cause(s)	Corrective Action
Air leaking from unloading solenoid valve when unit is running.	<ol style="list-style-type: none"> 1. Check valve stuck in open position. 2. Incorrect wiring of solenoid valve. 3. Defective solenoid valve. 	<ol style="list-style-type: none"> 1. Replace check valve.  Warning – Relieve tank pressure before servicing. 2. Check all wiring. Check for loose or faulty wires. Check for correct voltage. 3. Replace solenoid valve.
System does not alternate (Duplex units only)	<ol style="list-style-type: none"> 1. Starter tripped. 2. Loose wiring in alternator. 3. Defective alternator. 4. Defective motor. 	<ol style="list-style-type: none"> 1. Reset starter. If starter trips repeatedly, have electrical system inspected by an electrician. 2. Check and tighten all wiring connections. 3. Replace alternator. 4. Replace motor.

UNIT REPAIR PARTS ILLUSTRATION
MODELS: H.7MTOII-3, H.1MTOII-6, H.1MTOII-3, H.1MTOII-6, H1.5MOTII-6, H2MTOII-3, H2MTOII-6, H3MTOII-6, H5MTOII-6



B999-B
(Ref. Drawing)

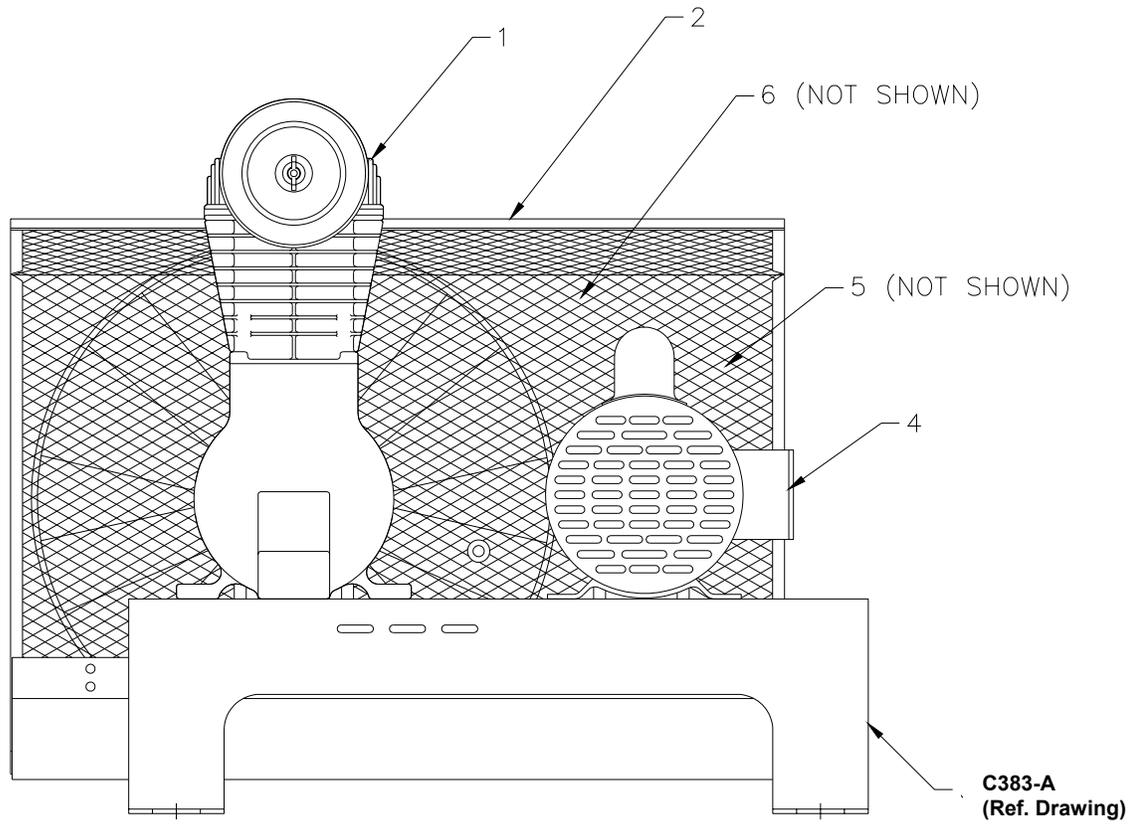
REPAIR PARTS LIST

		MODEL												
		H.7MTOII-3	H.1MTOII-6	H.1MTOII-3	H.1MTOII-6	H1.5MTOII-3	H1.5MTOII-6	H2MTOII-3	H2MTOII-6	H3MTOII-6	H5MTOII-6			
1	Pump	CCE10	CCE10	CCE10	CCE10	CCE20	CCE20	CCE20	CCE20	CCE30	CVE50			
2	Motor	3/4 HP	3/4 HP	1 HP	1 HP	1.5 HP	1.5 HP	2 HP	2 HP	3 HP	5 HP			
3	Pulley	P09947A	P09947A	P09965A	P09965A	P12026A	P12026A	P12027A	P12027A	P11992A	P11858C			
3	Pulley	P09947A	P09947A	P09949A	P09949A	P12026A	P12026A	P11999A	P11999A	P11992A	P11858C			
4	Tank	P11938D	P11937D	P11938D	P11937D	P11938D	P11937D	P11938D	P11937D	P11937D	P11937D			
5	Belts	A61 (1)	A61 (1)	A61 (1)	4L510 (2)	4L510 (2)	4L510 (2)	4L510 (2)	4L510 (2)	4L510 (2)	B48 (2)			
6	Belt Guard	Z12722	Z12722	Z12722	Z12722	Z9130	Z9130	Z9130	Z9130	Z9130	Z9132			
7	Check Valve	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A			
8	Isolation Valve	M3590	M3590	M3590	M3590	M3590	M3590	M3590	M3590	M3590	M3590			
9	Drain Valve	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988			
10	Pressure Switch	P05007A	P05007A	P05007A	P05007A	P05007A	P05007A	P05007A	P05007A	P05007A	P05007A			
11	Pressure Gauge	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C			
12	Pressure Relief Valve	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843			
13	Bucket High Drain	Z1541	Z1541	Z1541	Z1541	Z1541	Z1541	Z1541	Z1541	Z1541	Z1541			

Note: Common to all Units – Unloader Solenoid Valve

115V	200V	230V	460V
PART NO. CC1019457	PART NO. CC1019455	PART NO. CC1019459	PART NO. CC1019456

UNIT REPAIR PARTS ILLUSTRATION
MODELS: B.7MTOII B1MTOII, B1.5MTOII, B2MTOII, B3MTOII, & B5MTOII



REPAIR PARTS LIST

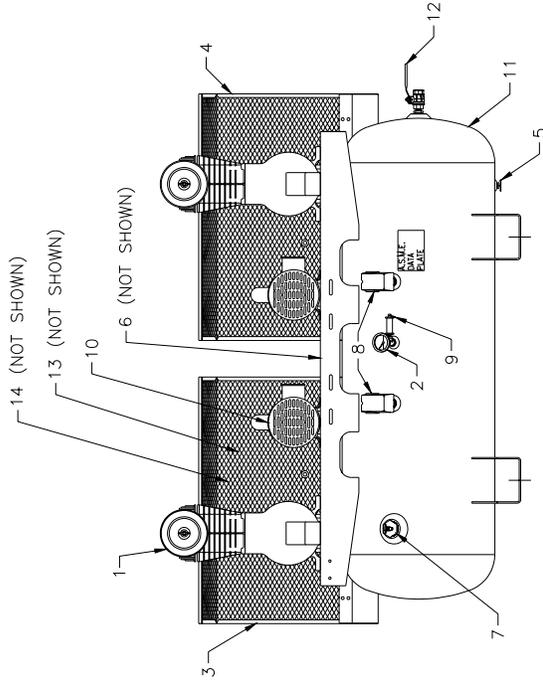
		MODEL						
		B.7MTOII	B1MTOII	B1.5MTOII	B2MTOII	B3MTOII	B5MTOII	
1	Pump	CCE10	CCE10	CCE20	CCE20	CCE30	CVE50	
2	Belt Guard	Z12722	Z12722	Z9130	Z9130	Z9130	Z9132	
3	Base Plate	P11933C	P11933C	P11933C	P11933C	P11933C	P11933C	
4	Motor	3/4 HP	1 HP	1.5 HP	2 HP	3 HP	5 HP	
5	Pulley	1 PHASE	P09947A	P09965A	P12026A	P12027A	P11992A	P11858C
5	Pulley	3 PHASE	P09947A	P09949A	P12026A	P11999A	P11992A	P11858C
6	Belts	A61 (1)	A61 (1)	A61 (1)	4L510 (2)	4L510 (2)	B48 (2)	

Note: Common to all Units – Unloader Solenoid Valve

115V	200V	230V	460V
PART NO.	PART NO.	PART NO.	PART NO.
CC1019457	CC1019455	CC1019459	CC1019456

UNIT REPAIR ILLUSTRATION

MODEL: H.7HTOIID-6, H.7MTOIID-8, H1MTOIID-6, H1.5MTOIID-8, H1.5MTOIID-6, H1.5MTOIID-6, H2MTOIID-6, H2MTOIID-8, H3MTOIID-8, H3MTOIID-12, H5MTOIID-8, & H5MTOIID-12



C384-A
(Ref. Drawing)

REPAIR PARTS LIST

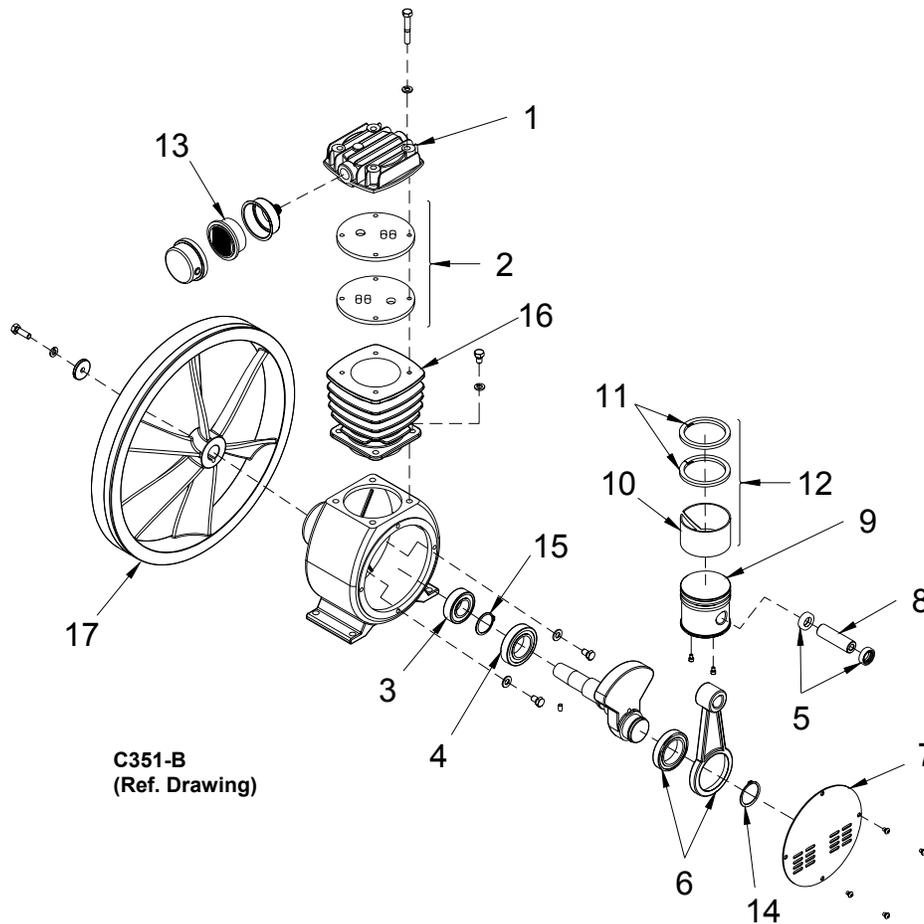
	MODEL							
1	H.7MTOIID-6 CCE10	H1MTOIID-8 CCE10	H1.5MTOIID-6 CCE20	H2MTOIID-6 CCE20	H3MTOIID-8 CCE30	H3MTOIID-12 CCE30	H5MTOIID-8 CCE50	H5MTOIID-12 CCE50
2	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C
3	Z12722	Z12722	Z12722	Z12722	Z9130	Z9130	Z9132	Z9132
4	Z12723	Z12723	Z12723	Z9131	Z9131	Z9131	Z9133	Z9133
5	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988
6	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A
7	Z1541	Z1541	Z1541	Z1541	Z1541	Z1541	Z1541	Z1541
8	P05007A	P05007A	P05007A	P05007A	P05007A	P05007A	P05007A	P05007A
9	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843
10	3/4 HP	1 HP	1.5 HP	2 HP	3 HP	3 HP	5 HP	5 HP
11	P11936D	P11934D	P11936D	P11936D	P11934D	P11935D	P11934D	P11935D
12	CQM3756	CQM3756	CQM3756	CQM3756	CQM3756	CQM3756	CQM3756	CQM3756
13	P09947A (2)	P09947A (2)	P12026A (2)	P12026A (2)	P12027A (2)	P11992A (2)	P11858C (2)	P11858C (2)
13	P09947A (2)	P09949A (2)	P12026A (2)	P12026A (2)	P11999A (2)	P11999A (2)	P11858C (2)	P11858C (2)
14	A61 (2)	A61 (2)	4L510 (4)	4L510 (4)	4L510 (4)	4L510 (4)	B48 (4)	B48 (4)

Note: Common to all Units – Unloader Solenoid Valve

115V	200V	230V	460V
PART NO. CC1019457	PART NO. CC1019455	PART NO. CC1019459	PART NO. CC1019456

COMPRESSOR REPAIR PARTS ILLUSTRATION

MODEL: CCE10



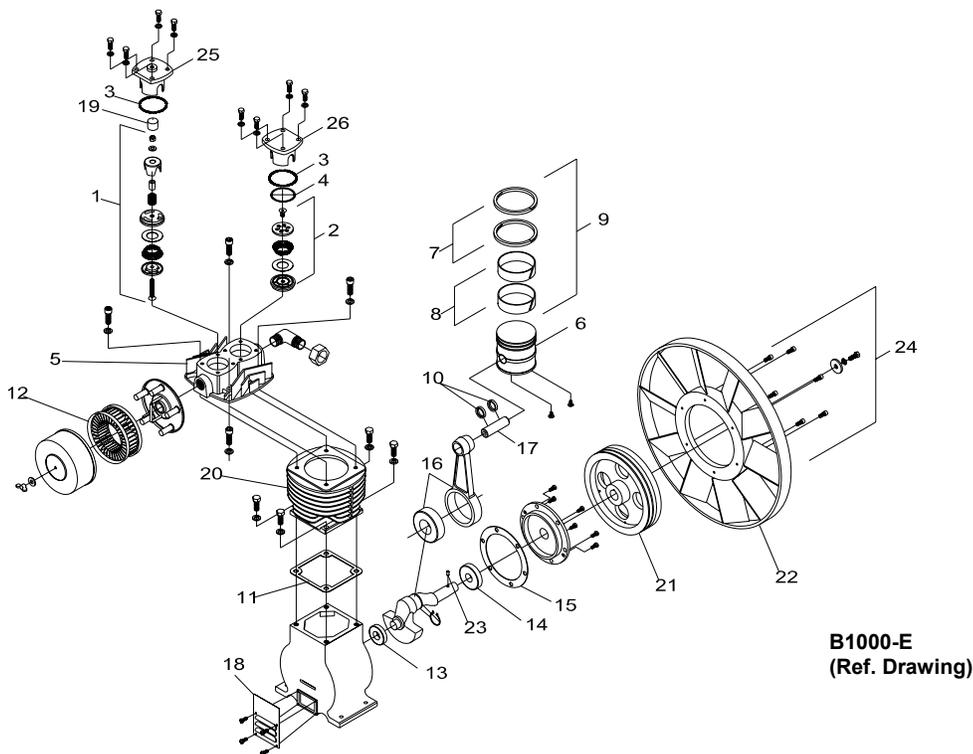
Repair Parts List Model CCE10

Ref. No.	Description	Part Number	Qty.
1	Cylinder Head	P14341A	1
2	Inlet/Outlet Valve Assembly	P14350A	2
3	Shaft Bearing-Front End	P14347A	1
4	Shaft Bearing-Flywheel End	P14346A	1
5	Seal, Piston Pin	P14345A	2
6	Connecting Rod and Bearing	P14351A	1
7	Crankcase Breather	P14349A	1
8	Piston Pin	P14348A	1
9	Piston	P14342A	1
10	Control Ring	P14344A	1
11	Compression Ring	P14343A	2
12	Piston Ring Set	Z12418	1
13	Intake Filter Element	P09974A	1
14	Snap Ring, 37MM	P14355A	1
15	Snap Ring, 32MM	P14356A	1
16	Cylinder	P14357A	1
17	Flywheel	P14358A	1

Note: For All Other Parts, Contact Factory Service Dept.

COMPRESSOR REPAIR PARTS ILLUSTRATION

MODELS: CCE20 & CCE30



Repair Parts List

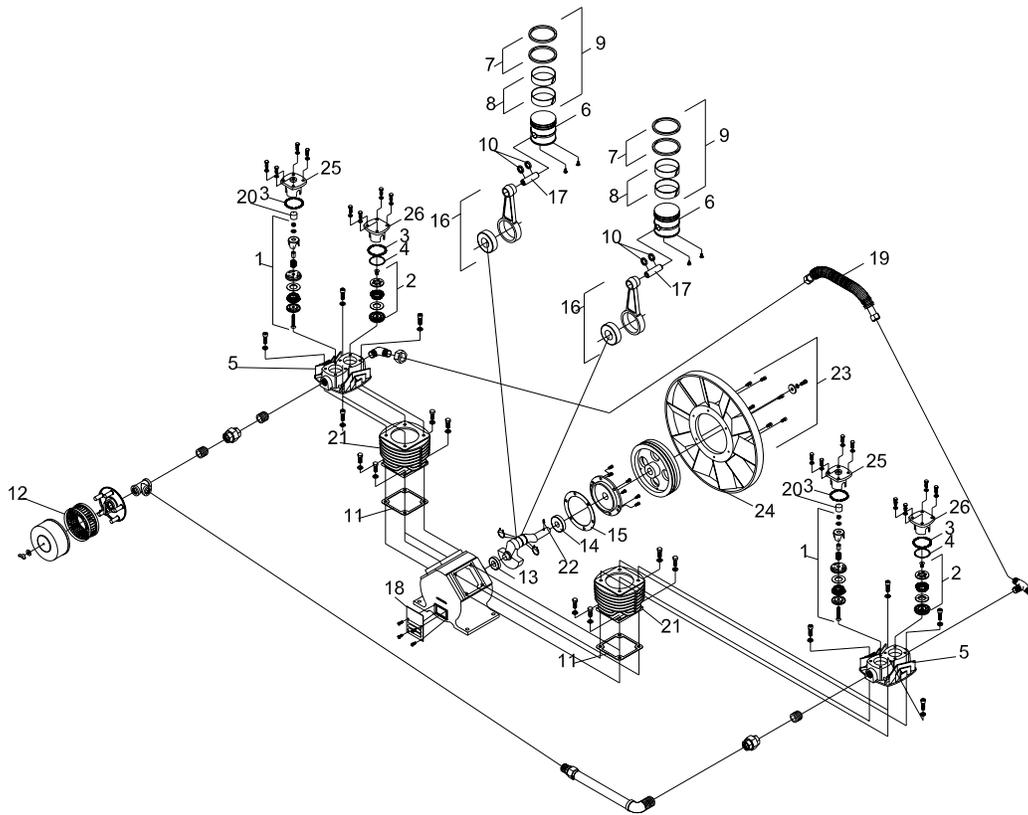
Models: CCE20, CCE30

Ref. No.	Description	CCE20		CCE30	
		Part No.	Qty.	Part No.	Qty.
1	Intake Valve	P11860A	1	P11867A	1
2	Exhaust Valve	P11861A	1	P11868A	1
3	"O"Ring Seal-Valve Cover	P11862A	2	P11869A	2
4	Exhaust Valve Gasket	P12770A	1	P12771A	1
5	Cylinder Head	P12768A	1	P12769A	1
6	Piston	P12772A	1	P12773A	1
7	Compression Ring	P11859A	2	P11866A	2
8	Control Ring	P12774A	2	P12775A	2
9	Piston Ring Set	Z9495	1	Z9496	1
10	Piston Pin Seal	P12778A	2	P12778A	2
11	Cylinder Gasket	P12776A	1	P12777A	1
12	Intake Filter Element	P05050A	1	P05050A	1
13	Shaft Bearing-Front End	P12829A	1	P12829A	1
14	Shaft Bearing-Flywheel End	P12827A	1	P12827A	1
15	Cover Gasket	P12825A	1	P12825A	1
16	Connecting Rod and Bearing	Z9503	1	Z9503	1
17	Piston Pin	P12824A	1	P12826A	1
18	Crankcase Breather	P13437A	1	P13437A	1
19	Piston, Unloader, MT0II, CE30 (Included on Head Unloader Pumps Only)	CQP14901A	1	CQP14862A	1
20	Cylinder	CC1009504	1	CC1009505	1
21	Pulley	CC1011356	1	CC1011356	1
22	Flywheel	CC1011357	1	CC1011357	1
23	Pin, Crankshaft	CC1011358	1	CC1011358	1
24	Fasteners, Flywheel	CC1011359	1	CC1011359	1
25	Valve Clamp, Inlet	CC1035092	1	CC1035093	1
26	Valve Clamp, Outlet	CC1035094	1	CC1035097	1

Note: For All Other Parts, Contact Factory Service Dept.

COMPRESSOR REPAIR PARTS ILLUSTRATION

MODEL: CVE50



B1001-F
(Ref. Drawing)

Repair Parts List Model CVE50

Ref. No.	Description	Part Number	Qty.
1	Intake Valve	P11860A	2
2	Exhaust Valve	P11861A	2
3	"O"Ring Seal-Valve Cover	P11862A	4
4	Exhaust Valve Gasket	P12770A	2
5	Cylinder Head	P12768A	2
6	Piston	P12772A	2
7	Compression Ring	P11859A	4
8	Control Ring	P12774A	4
9	Piston Ring Set	Z9495	2
10	Piston Pin Seal	P12778A	4
11	Cylinder Gasket	P12776A	2
12	Intake Filter Element	P05050A	1
13	Shaft Bearing-Front End	P12830A	1
14	Shaft Bearing-Flywheel End	P12828A	1
15	Cover Gasket	P12825A	1
16	Connecting Rod and Bearing	Z9504	2
17	Piston Pin	P12824A	2
18	Crankcase Breather	P13437A	1
19	Intercooler Tube	P14366A	1
20	Piston, Unloader, MT0II, VE50 (Included on Head Unloader Pumps Only)	CQP14896A	2
21	Cylinder	CC1009506	2
22	Pin, Crankshaft	CC1011358	1
23	Fasteners, Flywheel	CC1011359	1
24	Flywheel	CC1011357	1
25	Valve Clamp, Inlet	CC1035096	2
26	Valve Clamp, Outlet	CC1035095	2

Note: For All Other Parts, Contact Factory Service Dept.

UNIT HAZARD DECAL LISTING

<u>PAGE</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
28	PRODUCT LIABILITY DECAL SHEET - MASTER	P10157A
	Unit Pressure Setting	1
	NOT USED	2
	DANGER – Breathing Air	3
	DANGER – Drain Tank Daily	4
	WARNING – Pressure/Safety Valve	5
	NOT USED	6
	DANGER – Valve Maintenance	7
	DANGER – High Voltage	8
	WARNING – Hot Surfaces	9
	WARNING – Do Not Remove Fan Guard	10
	NOT USED	11a
	NOT USED	11b
	NOT USED	12
	NOT USED	13
	DECAL – Pressure Setting: 70-100 PSIG	14
	NOTICE – Read and Retain Manuals	15
	INSTRUCTIONS – Dual Control (Optional)	16
	DECAL – Rotation Direction	17
	NOT USED	18
	DECAL – Pressure Switch	P14677A

PUMP HAZARD DECAL LISTING

<u>PAGE</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
29	PUMP DECAL SHEET – MASTER	P13805A
	NOT USED	A1
	NOT USED	A2
	DECAL – Rotation Direction	B
	NOTICE – Read and Retain Manuals	C
	DANGER – Breathing Air	D
	DECAL – Made in the United States of America	E
	IMPORTANT NOTICE – Motor Burn-outs	F

DO NOT CONNECT
INCOMING POWER
SUPPLY TO PRESSURE
SWITCH.

P14677A

UNIT HAZARD DECALS

5

⚠ WARNING

- RELIEVE TANK PRESSURE BEFORE SERVICING. Failure to do so can result in injury.
- DO NOT ADJUST PRESSURE SWITCH, PILOT VALVE, OR SAFETY VALVES. Exceeding factory settings can cause equipment damage and injury.

4

⚠ DANGER

DRAIN THIS TANK DAILY!

Failure to drain moisture will corrode tank material and lead to tank failure which will cause equipment damage, injury, or death.

3

⚠ DANGER

Air from this compressor must not be used for food processing or breathing without adequate filtering. Failure to comply will result in injury or death.

2

⚠ WARNING

DO NOT START ENGINE UNLESS TANK PRESSURE IS BELOW 130 PSIG. TO REDUCE TANK PRESSURE, OPEN VALVE ADJACENT TO THIS DECAL.

1

UNIT PRESSURE FACTORY SET AT

1

UNIT PRESSURE FACTORY SET AT

10

⚠ WARNING

DO NOT REMOVE BELT OR FAN GUARD

Removal will expose rotating parts which can cause severe injury and/or property damage.

9

⚠ WARNING

Do not touch hot surfaces! Contact with these surfaces can cause injury.

7

⚠ DANGER

Valves must be replaced in original position. Failure to do this will result in equipment damage, injury, or death. Do not disassemble valves.

10

⚠ WARNING

DO NOT REMOVE BELT OR FAN GUARD

Removal will expose rotating parts which can cause severe injury and/or property damage.

9

⚠ WARNING

Do not touch hot surfaces! Contact with these surfaces can cause injury.

8

⚠ DANGER

HIGH VOLTAGE

DISCONNECT POWER SOURCE BEFORE SERVICING.

11a

⚠ NOTICE

YOUR COMPRESSOR HAS BEEN TESTED AND SHIPPED WITH

Champ Plus

FOR OPTIMUM PERFORMANCE USE ONLY GENUINE CHAMPION PARTS AND LUBRICANTS. CHAMPION DISTRIBUTOR FOR ADDITIONAL LUBRICANT AND REPLACEMENT PARTS.

11b

⚠ NOTICE

YOUR COMPRESSOR HAS BEEN TESTED AND SHIPPED WITH

Aeon

FOR OPTIMUM PERFORMANCE USE ONLY GENUINE GARDNER DENVER PARTS AND LUBRICANTS. GARDNER DENVER DISTRIBUTOR FOR ADDITIONAL LUBRICANT AND REPLACEMENT PARTS.

MODEL: **6**

SERIAL NO:

FOOD GRADE

12

SYNTHETIC

AC-SY

13

AC-HC

85-115 PSIG
95-125 PSIG
130-165 PSIG
140-170 PSIG
140-175 PSIG
215-250 PSIG
20-40 PSIG
60-80 PSIG
60-90 PSIG
70-90 PSIG
70-100 PSIG
80-100 PSIG

RESET

18

RESET

⚠ NOTICE

Read, understand and retain all labels and Owners Manuals before using this equipment.

IMPORTANT: Please keep the operating Instructions with this compressor unit.

Master Decal Set
P/N P10157A

INSTRUCTIONS

DUAL CONTROL

This unit is equipped with a dual control valve. Open valve completely for continuous run operation. Close valve completely for start-stop operation.

PUMP HAZARD DECALS

A1

▲ NOTICE

THIS COMPRESSOR HAS BEEN
FACTORY FILLED WITH **AEON**
 AC-SY AC-FG
 AC-HC

DO NOT MIX OIL TYPES OR BRANDS.

A2

▲ NOTICE

THIS COMPRESSOR HAS BEEN
FACTORY FILLED WITH *PlenumLife*
 SYNTHETIC FOOD GRADE
 MINERAL

DO NOT MIX OIL TYPES OR BRANDS.

B

ROTATION IN DIRECTION OF ARROW

ROTATION IN DIRECTION OF ARROW

C

▲ NOTICE

Read, understand, & retain all
Labels and Owners Manuals
before using this equipment.

D

▲ DANGER

AIR FROM THIS COMPRESSOR
MUST NOT BE USED FOR FOOD
PROCESSING OR BREATHING
WITHOUT ADEQUATE FILTERING.

E

Master Decal Set
P/N P13805A

F **IMPORTANT NOTICE!**

THIS UNIT IS WIRED FOR AN AC CIRCUIT OF

<input type="checkbox"/> 115 VOLT	<input type="checkbox"/> 60 CYCLE	<input type="checkbox"/> 1 PHASE
<input type="checkbox"/> 230 VOLT	<input type="checkbox"/> OTHER	<input type="checkbox"/> 3 PHASE
<input type="checkbox"/> 460 VOLT		

OTHER ELECTRICAL SPECS _____

P05257A

IMPORTANT

MOTOR BURN-OUTS ARE NOT COVERED BY
WARRANTY - Unless Motor is Equipped with
Factory Installed thermal overload protection
(in either motor or starting device)

P05257A



F3266VER12

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