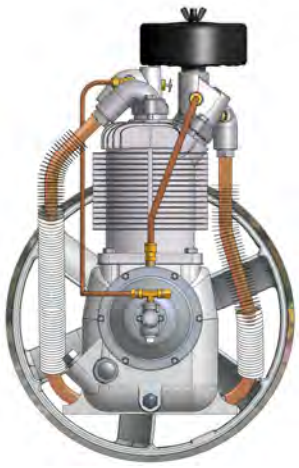
CHAMPION

OPERATION/MAINTENANCE MANUAL & PARTS LIST

TWO STAGE/TWO CYLINDER AIR COMPRESSORS & UNITS FEATURING THE R10 & R15 PUMPS

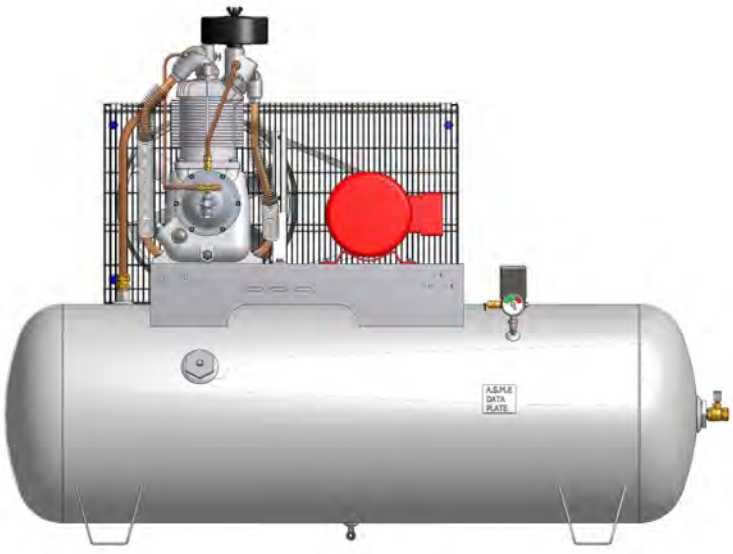
⚠ WARNING

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.



C453-B
(Ref. Drawing)

MODEL R15B COMPRESSOR



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MODEL HR2-6 UNIT

Form No. F3231 VER: 20 11/25/2015

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 ï 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 youÕll 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. A full line of factory tested CHAMPLUBÊ compressor lubricants specifically formulated for use in Champion compressors.
3. 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.

To Contact Champion or locate your local distributor:

Visit: www.championpneumatic.com/contactus.aspx

Or

Call: (217)222-5400

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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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. "Lock out" or "Tag 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 compressed air gun.

The user of any air compressor package manufactured by **Champion** ï A Gardner Denver Co., is hereby warned that failure to follow the preceding Safety and Operation Precautions can result in injuries or equipment damage. However, **Champion** ï A Gardner Denver Co., 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.

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. Non-approved 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.

INTRODUCTION

Champion R Series 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.

Champion Five Year Warranty
"R" Series Compressors

CHAMPION warrants each new compressor pump manufactured by **CHAMPION**, mounted on a factory assembled unit, to be free from defects in material and workmanship under normal use and service for a period of sixty (60) months from date of installation or sixty-six (66) months from date of shipment by **CHAMPION** or **CHAMPION** distributor, whichever may occur first. **Applies to the compressor pump only, excluding head valves. Valves, controls and accessories are warranted for the first year only.** Compressor pumps purchased separately would carry a one year warranty.

This five year extended warranty will be prorated over the 5 years as follows:

First Year	-	100% Allowance, Parts and Labor
Second Year	-	90% Allowance, Parts and Labor
Third Year	-	80% Allowance, Parts and Labor
Fourth Year	-	70% Allowance, Parts and Labor
Fifth Year	-	60% Allowance, Parts and Labor

Applies to CHAMPION logo, tank or base mounted complete compressors only.

Express Limited Warranty

CHAMPION warrants each new air compressor unit 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** 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, GASOLINE ENGINES** 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.

The extended five year warranty will apply to ASME air receivers provided they are installed on rubber vibro isolator pads.

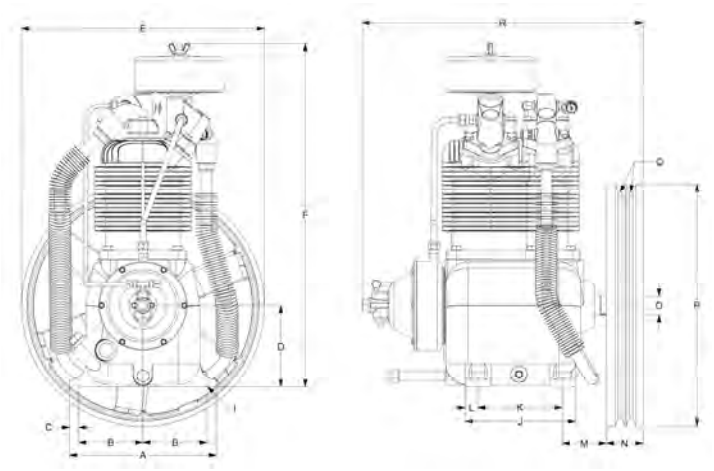
When a compressor pump, or component is changed or replaced during the warranty period, the new/replaced item is warranted for only the remainder of the original warranty period.

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 OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY DISCLAIMED. NO SALESMAN OR OTHER REPRESENTATIVE OF **CHAMPION** HAS AUTHORITY TO MAKE ANY WARRANTIES.

TWO STAGE AIR COMPRESSORS - MODELS R10D & R15B

DIMENSIONS



C416-B
(Ref. Drawing)

	ITEM	R10D & R15B
A	Base-Width	10ò
B	Bolt Down-Width	4-3/8ò
C	Bolt Down to Edge	5/8ò
D	Base to Crank Ctr	5-1/2ò
E	Overall Width	18
F	Overall Height	23-1/4ò
I	Bolt Down Hole Dia.	15/32ò
J	Base-Depth	7-1/2ò
K	Bolt Down Depth	5-3/4ò
L	Bolt Down to Edge	7/8ò
M	Bolt Hole to Wheel (Max.)	3-5/8ò
N	Flywheel Width	2-*1/2ò
O	Crank Diameter	1-5/16ò
P	Flywheel Diameter	16-1/2ò
Q	Flywheel Grooves	2VB
R	Overall Depth	20ò

NOTE: H.P. Exhaust Opening 3/4" Tubing.

Flywheel Rotation ï Clockwise when viewed from front, flywheel to rear.

SPECIFICATIONS

MODEL	BORE & STROKE (INCHES)	NO. OF CYLINDERS	OIL CAPACITY (QTS.)	WEIGHT (LBS)	PRESSURE (PSIG)	CU FT./REV.	MIN./MAX. RPM
R10D	4-5/8 & 2-1/2 x 2	2	2	107	175	.01942*	400/1050
R15B	4-5/8 & 2-1/2 x 3	2	2	109	175	.02914	400/1050

* Clearance Volume Modified to Effective .014 Cu. Ft./Rev.

PERFORMANCE

PUMP	OUTPUT PRESS. PSIG	MOTOR H.P.	PUMP RPM	DISPL. CFM	COOLING AIR FLOW CFM	HEAT REJECTION BTU/HR	APPROX. PULLEY O.D. INCHES
R10D	125	2	562	10.9	647	4480	5.15
R10D	175	2	475	9.2	547	4480	4.35
R10D	125	3	845	16.4	973	6700	7.75
R10D	175	3	802	15.6	923	6700	7.35
R15B	125	5	750	21.9	868	12,000	7.35
R15B	175	5	710	20.7	820	12,000	7.00
R15B	175	7-1/2	990	28.7	1195	16,800	9.75

All data is based on 1725 RPM electric motors as a power source.

Pulley Dia. (approx.) = $\frac{\text{Compressor RPM x Flywheel Dia.}}{\text{Motor or Engine RPM}}$

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 fan bladed flywheel, which cools the compressor, is impeded. Permanently mounted units should have flywheel 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. Avoid putting a stress on a tank foot by pulling it down to floor. This will only result in abnormal vibration, and possible cracking of Air Receiver. It is recommended that optional vibro-isolator pads be installed on unit. Tanks bolted directly to a concrete floor without padding will not be warranted against cracking. Champion vibro-isolators must be used for extended warranty to apply to ASME air receivers.
4. If installing a bare pump or a base mounted unit, make certain the system has adequate pressure limiting controls. Controls could be a pressure switch for start/stop operation or a pilot valve for continuous operation. If a pilot valve is used, the compressor must be equipped with head unloaders. Control air must be piped from the air receiver to the pilot valve.
5. A properly sized air check valve must be installed in the discharge piping, between the compressor outlet and the inlet of any receiver tank(s) in the system.

⚠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.

⚠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 in 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.**
- ǒ **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 correspond to the unit specifications. Branch circuit protection must be provided at installation a specified in the National Electrical Code.

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

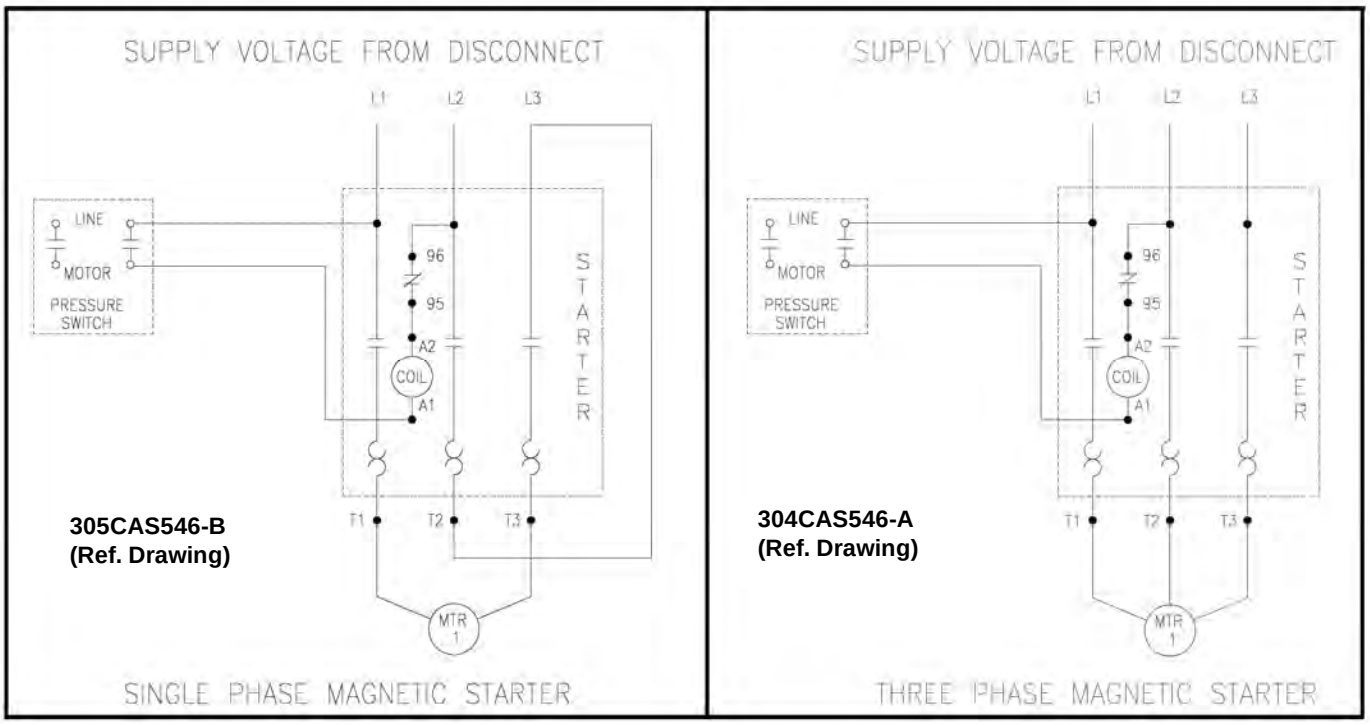
WIRE SIZE (AWG) - 75°C COPPER - 30°C AMBIENT

MOTOR	3 PHASE				1 PHASE		
HP	200/208V	230V	460V	575V	115V	208V	230V
1-1/2	14	14	14	14	10	14	14
2	14 (14)	14 (14)	14 (14)	14 (14)	8 (6)	12 (10)	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)
7-1/2	8 (6)	10 (6)	14 (10)	14 (10)	--	6 (3)	6 (4)

Values in ( ) for Duplex Unit w/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.

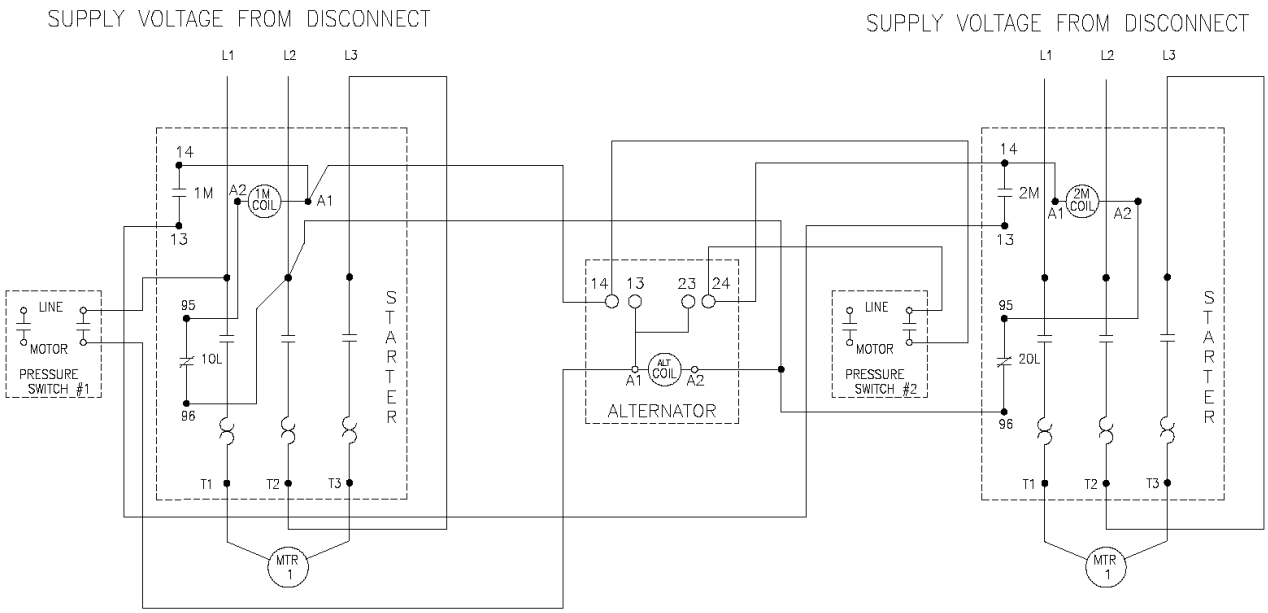


305CAS546-B (Ref. Drawing)

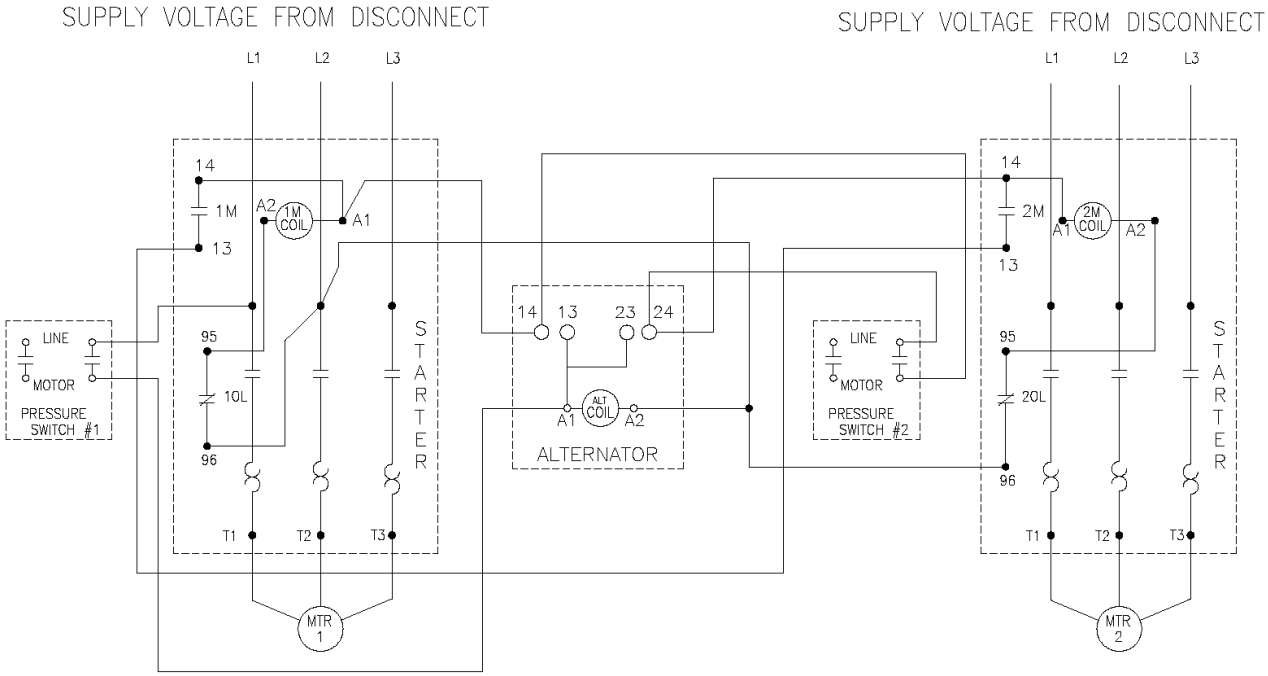
304CAS546-A (Ref. Drawing)

Figure 1 - Simplex Wiring Diagram

INSTALLATION (CONT'D)



SINGLE PHASE – DUPLEX MAGNETIC STARTERS W/ ALTERNATOR **311CAD546-B (Ref. Drawing)**



THREE PHASE – DUPLEX MAGNETIC STARTERS W/ ALTERNATOR **312CAD546-B (Ref. Drawing)**

INSTALLATION (CONT'D)

⚠ 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.

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)

MODEL	25'	50'	100'	200'	300'
R10D	3/4ò	3/4ò	3/4ò	3/4ò	3/4ò
R15B	3/4ò (1ò)	3/4ò (1ò)	3/4ò (1ò)	1ò (1-1/4ò)	1ò (1-1/4ò)

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 for a 80%/ON ï 20%/OFF 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.

OPERATION (CONT'D)

Units furnished with head unloaders 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.

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. ñLock Outò or ñTag Outò switch. Connect power leads to start.

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

3. Check compressor oil level. Add oil as required. See ñCompressor Oil Specificationsò Section. **NOTE**: Do not mix oil type, weights or brands.
4. Activate main disconnect switch.
5. ñJogò motor and check for proper rotation by direction arrow. If rotation is wrong, reverse input connections on the magnetic starter.
6. Close receiver outlet hand valve and start.
7. 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.
8. Check for proper operation of any options. Refer to individual option instruction sheet.
9. When the initial run period has shown no operating problems, shut unit down and recheck oil level.
10. Open receiver hand valve. The air compressor unit is now ready for use.

⚠WARNING
This unit can start automatically without warning.

GUIDE TO MAINTENANCE

To obtain reliable and satisfactory service, this unit requires a consistent preventive maintenance schedule. Maintenance schedule pages are included in the back of this manual 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. Check oil level of both compressor and engine if so equipped. Add quality lubricating oil as required. See Section on "Oil Specifications".
2. Drain moisture from tank by opening tank drain valve located in bottom of tank. Do not open drain valve if tank pressure exceeds 25 PSIG.
3. 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 head, motor, fan blade, air lines, intercooler 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:
   a. Remove bolts and guard to access compressor drive.
   b. Loosen mounting hardware which secures motor to base. Slide motor within slots of baseplate to desired position.
   c. 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.
   d. Check the alignment of pulleys. Adjust if necessary.
   e. Tighten mounting hardware to secure motor on base.
   f. Re-install guard and secure with 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. Change crankcase oil. Use type and grade oil as specified in the section on "Compressor Oil Specifications".

2. Check entire system for air leakage around fittings, connections, and gaskets, using soap solution and brush.

3. Tighten nuts and capscrews as required.

4. Check and clean compressor valves, replace springs, discs and seats when worn or damaged.

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

5. Pull ring on all pressure relief valves to assure proper operation.

GENERAL MAINTENANCE NOTES

PRESSURE RELIEF VALVE: The pressure relief valve is an automatic pop valve. Each valve is properly adjusted for the maximum pressure permitted by tank specifications and working 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. 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 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.

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

⚠ CAUTION
If belts are too tight, overload will be put on motor and motor bearings.

COMPRESSOR VALVES: 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. 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. Valve gaskets should be replaced each time valves are removed from pump.

GENERAL MAINTENANCE (Cont'd.)

CENTRIFUGAL UNLOADER AND UNLOADER PRESSURE RELEASE VALVE:

The centrifugal unloader is operated by two governor weights. It is totally enclosed and lubricated from the crankcase of the compressor. When compressor starts, the governor weights automatically open compressing the main spring, allowing the unloader pressure release valve to close. When the compressor stops, the main spring returns the governor weights to normal position opening the unloader pressure release valve and unloading the compressor. This prevents overloading the motor when starting. If air continues to escape through the governor or unloader pressure release valve while operating, this is an indication that the unloader pressure release valve is not closing tightly and may be held open by foreign substance which has lodged on the seat. In order to correct this, remove the governor release valve cap, giving access to unloader pressure release valve spring and ball. Clean thoroughly and return parts in the same order in which they were removed. Loose drive belts can also cause unloader to leak by preventing the compressor from reaching proper speed. (See ñBELTSò above).

CHECK VALVE: The check valve closes when the compressor stops operating, preventing air from flowing out of the tank through the pressure release valve. After the compressor stops operating, if air continues to escape through the release 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 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.

THE INTERSTAGE PRESSURE RELIEF VALVE is provided to protect against interstage over pressure and is factory set for maximum pressure of 75 PSIG. **DO NOT RESET**
If the pressure relief valve pops, it indicates trouble. Shut down the unit immediately and determine and correct the malfunction. Inspect the head valves. Serious damage can result if not corrected and can lead to complete destruction of the unit. Tampering with the interstage pressure relief valve, or plugging the opening destroys the protection provided and voids all warranty.

COMPRESSOR LUBRICATION: Fill crankcase to proper level as indicated by oil sight gauge. Keep crankcase filled as required by usage. It is recommended that only Champlub recip lubricant be used. This is a 30-weight, non-detergent industrial oil with rust and oxidation inhibitors specially formulated for reciprocating compressors. Do not mix oil types, weights or brands.

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 manufacturerôs instructions for the type of grease and lubrication intervals.

PILOT VALVE: 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

Proceed with the following instructions while compressor is running:

1. Loosen locknut (4) and back off several turns. Do not turn differential pressure adjustment nut (3).

2. Check reading on the tank pressure gauge. Set the compressor maximum pressure by turning threaded cap (1) clockwise to increase pressure or counter clockwise to decrease pressure. Pressure setting must be 5 psig less than setting of pressure switch.

3. After pressure is set, tighten locknut (4). Be careful not to move threaded cap (1).

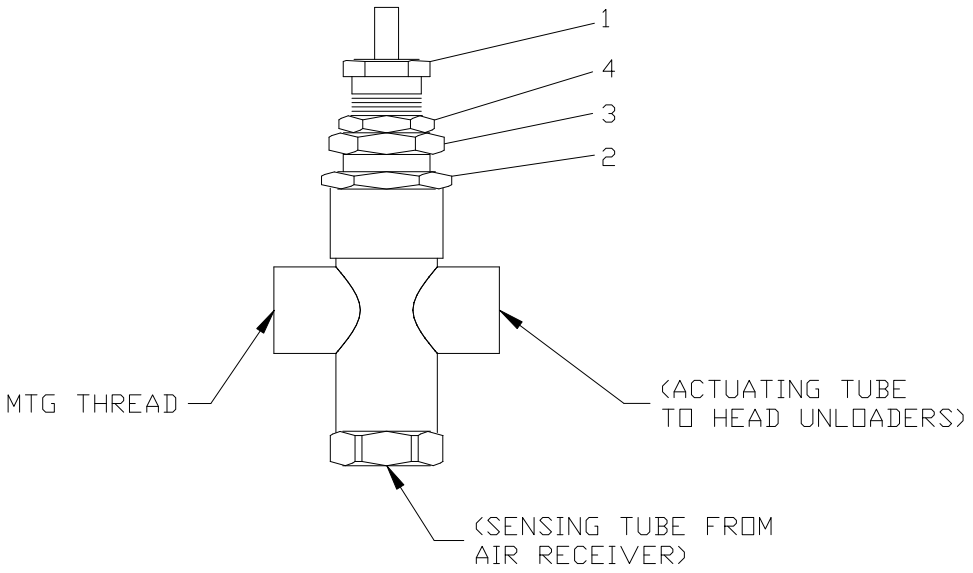
COMPRESSOR PILOT VALVE DIFFERENTIAL PRESSURE ADJUSTMENT

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 170 psig, reload at 140 psig). Turn nut (3) clockwise to increase differential pressure or counterclockwise to de differential pressure.

3. After pressure is set, tighten locknut (2). Be careful not to move nut (3).



B890-B
(Ref. Drawing)

COMPRESSOR OIL SPECIFICATIONS

Compressors are factory filled with CHAMPLUB hydrocarbon based recip lubricant. This is an ISO 100 non-detergent industrial lubricant with rust and oxidation inhibitors specially formulated for reciprocating compressors. It is recommended this compressor be maintained using this oil for ambient temperatures above 32°F.

CHAMPLUB synthetic is a premium grade diester based synthetic lubricant providing excellent performance in high temperature applications.

⚠ CAUTION
Do not mix oil types, weights or brands.

⚠ CAUTION
"Emulsification of oil (white milky substance) indicates unsafe accumulation of moisture and may be evidence compressor is oversized for application. Failure to promptly consult your local distributor, or Champion Customer Service, can be grounds to deny warranty."

NOTES:

1. Normal break-in period of Champion air compressors is 25 hours.
2. For the first 100 hours of compressor operation, a careful and regular check of the oil level should be made. Maintain oil level at the full line.

CHANGING TO SYNTHETIC LUBRICANT

(Applies to diester based synthetic lubricant only)

If changing to synthetic lubricant, the following steps must be completed.

1. Compressor must run for a 25 hour break-in period using ChampLub ISO 100 oil.
2. Thoroughly drain existing oil from crankcase.
3. Fill crankcase with a full charge of synthetic lubricant.
4. Run compressor for 200 hours.
5. Stop compressor and thoroughly drain the synthetic lubricant.
6. Add a full charge of synthetic lubricant.
7. Compressor now ready to run for extended period before next lubricant change. made. Maintain oil level at the full line.

LUBRICANT

CHAMPLUB

DESCRIPTION	PART NUMBER
1 ï Quart Case (12/case)	P09479A
1 ï Gallon Case (4/case)	P08909A
5 ï Gallon Pail	P08908A
55 ï Gallon Drum	P08907A

CHAMPLUB SYNTHETIC

DESCRIPTION	PART NUMBER
1 ï Quart Case (12/case)	P13179A
1 ï Gallon Case (4/case)	P13180A
5 ï Gallon Pail	P11506A
55 ï Gallon Drum	P13181A

TORQUE VALVES

SPECIFIC APPLICATION	FASTENER SIZE & THREAD	TORQUE INCH-POUNDS
BEARING HOUSING BOLT	3/8 ï 16	400
CYLINDER FLANGE BOLT	7/16 ï 20	400
CONNECTING ROD BOLT	5-16 ï 18	230
MANIFOLD BOLT	3/8 ï 16	200
FLYWHEEL BOLT	1/2 ï 13	600

TROUBLE SHOOTING CHART FOR COMPRESSOR

WARNING

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

Never operate unit without belt guard in place.

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

Troubleshooting Chart

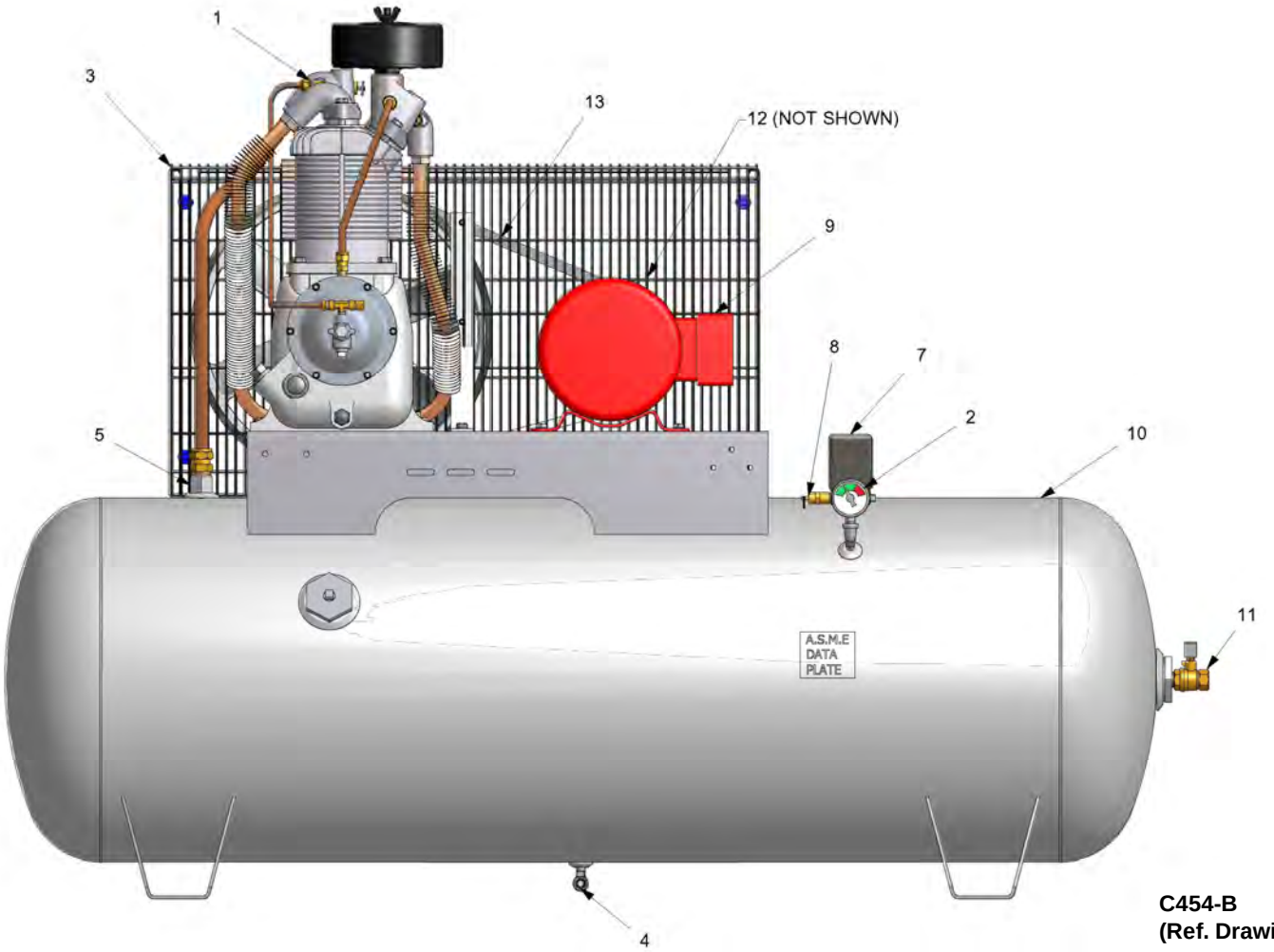
Symptom	Possible Cause(s)	Corrective Action
Motor will not start.	1. Main switch and fuses open. 2. Starter heater coils open. 3. Starter tripped 4. Defective pressure switch-contacts will not close 5. Low voltage.	1. Check all fuses and switches. Check for loose or faulty wires. 2. Check overload relay in starter. Reset starter. 3. Reset starter. If starter trips repeatedly, have electrical system inspected by an electrician. 4. Repair or replace pressure switch. **Warning –** Relieve tank pressure before servicing. 5. Check with voltmeter. Be sure voltage corresponds to unit specifications.
Starter trips repeatedly.	1. Improperly adjusted pressure switch. 2. Faulty check valve. 3. Incorrect fuse size or magnetic starter heaters. 4. Low voltage. 5. Defective motor.	1. Adjust or replace. **Warning –** Relieve tank pressure before servicing. 2. Clean or replace **Warning –** Relieve tank pressure before servicing. 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.	1. Air leaks. 2. Dirty air filter. 3. Defective compressor valves	1. Tighten fittings. 2. Clean or replace. 3. Install new valve plate assembly.
Tank pressure builds up quickly.	1. Excessive water in tank.	1. Drain tank.
Discharge pressure relief valve pops off while compressor is running.	1. Wrong pressure switch setting. 2. Defective ASME relief valve.	1. Adjust to correct setting. 2. Replace valve. **Warning** ï Relieve tank pressure before servicing.
Compressor will not unload (Units with head unloaders)	1. Wrong pilot valve setting. 2. Defective pilot valve. 3. Lack of air to pilot valve..	1. Adjust to correct setting 2. Replace pilot valve. 3. Open needle valve to pilot valve.
Excessive belt wear.	1. Pulley out of alignment. 2. Belts too tight or too loose.	1. Realign motor pulley. 2. Adjust belt tension.
Compressor runs hot.	1. Improper flywheel rotation 2. Defective compressor valves. 3. Dirty air filter. 4. Dirty cylinder and/or intercooler.	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.
Interstage pressure relief valve pops off.	1. Defective compressor valves.	1. Install new valves.
Excessive oil consumption.	1. Dirty air filter. 2. Wrong oil viscosity. 3. Oil leaks. 4. Worn piston rings. 5. Scored cylinder	1. Clean or replace. 2. Refill with proper viscosity oil. 3. Tighten bolts. Replace gaskets. 4. Replace rings. 5. Replace cylinder.

Troubleshooting Chart (Cont'd)

Symptom	Possible Cause(s)	Corrective Action
Air escapes from centrifugal unloader when unit is running	1. Centrifugal unloader release valve dirty or detective.	1. Clean or replace valve
Air escapes from centrifugal unloader when unit is stopped.	1. Check valve stuck in open position.	1. Replace check valve. ⚠ **Warning –** Relieve tank pressure before servicing.
System does not alternate (Duplex units only)	1. Starter tripped. 2. Loose wiring in alternator. 3. Defective alternator. 4. Defective motor.	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.

PARTS ILLUSTRATION

MODELS: HR2-3, HR2-6, HR2-8, HR3F-3, HR3F-6, HR3F-8, HR3F-12, HR5-3, HR5-6, HR5-8, HR5-12, HR7F-6, HR7F-8 & HR7F-12



C454-B
(Ref. Drawing)

REPAIR PARTS LIST

MODELS

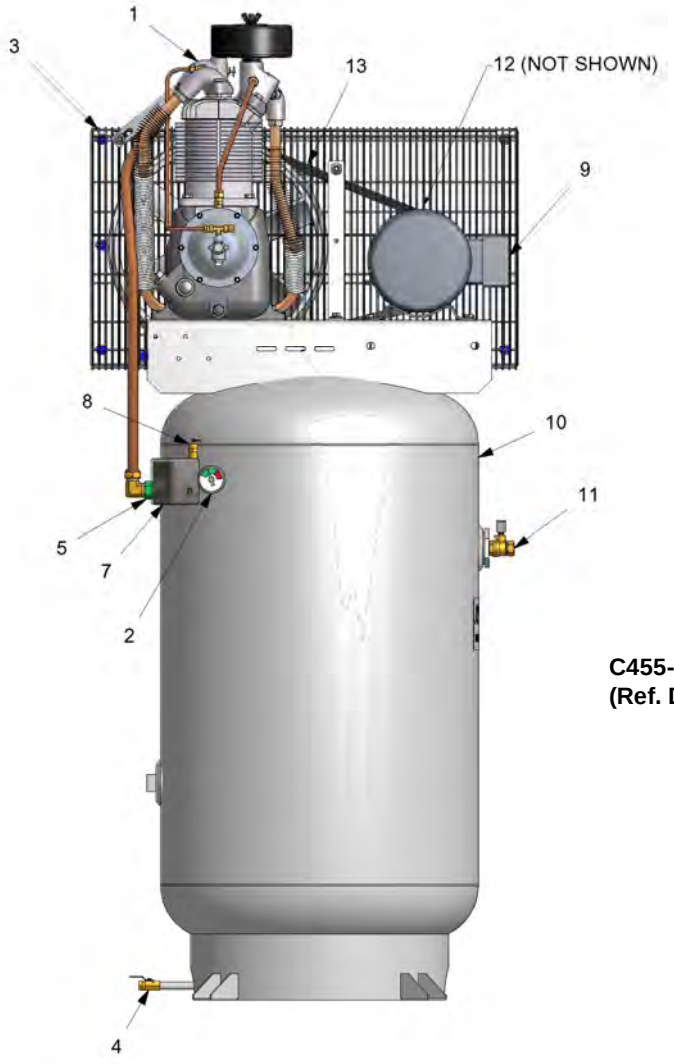
		HR2-3	HR2-6	HR2-8	HR3F-3	HR3F-6	HR3F-8
1. Pump		R10D	R10D	R10D	R10D	R10D	R10D
2. Pressure Gauge		M519C	M519C	M519C	M519C	M519C	M519C
3. Belt Guard (Standard)		CC1066253	CC1060936	CC1060936	CC1066253	CC1060936	CC1060936
3. Belt Guard (With ACAC)		CC1066254	CC1060937	CC1060937	CC1066254	CC1060937	CC1060937
4. Drain Valve		VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988
5. Check Valve		P05822A	P05822A	P05822A	P05822A	P05822A	P05822A
7. Pressure	125 PSIG	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A
Switch	175 PSIG	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A
8. Pressure Relief Valve		M2843	M2843	M2843	M2843	M2843	M2843
9. Motor		2 HP	2 HP	2-HP	3 HP	3HP	3HP
10. Tank		P04390D	P01136D	P01164D	P04390D	P01136D	P01164D
11. Isolation Valve		M3590	M3590	M3590	M3590	M3590	M3590
*12. Pulley	125 PSIG	P12213A PULLEY P09423A BUSHING	P12213A PULLEY P09423A BUSHING	P12213A PULLEY P09423A BUSHING	CC1005999 PULLEY P08136A BUSHING	CC1005999 PULLEY P08136A BUSHING	CC1005999 PULLEY P08136A BUSHING
*12. Pulley	175 PSIG	P13197A PULLEY P11520A BUSHING	P13197A PULLEY P11520A BUSHING	P13197A PULLEY P11520A BUSHING	P07986A PULLEY P08136A BUSHING	P07986A PULLEY P08136A BUSHING	P07986A PULLEY P08136A BUSHING
13. Belts		5L680 (2)	5L680 (2)	5L680 (2)	5L650 (2)	5L650 (2)	5L650 (2)

		HR3F-12	HR5-3	HR5-6	HR5-8	HR5-12	HR5-25	HR7F-6	HR7F-8	HR7F-12
1. Pump		R10D	R15B	R15B	R15B	R15B	R15B	R15B	R15B	R15B
2. Pressure Gauge		M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C
3. Belt Guard (Standard)		CC1060936	CC1066253	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936
3. Belt Guard (With ACAC)		CC1060937	CC1066254	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937
4. Drain Valve		VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988
5. Check Valve		P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A
7. Pressure	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A
Switch	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A
8. Pressure Relief Valve		M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843
9. Motor		3 HP	5 HP	5 HP	5 HP	5 HP	5 HP	7.5 HP	7.5 HP	7.5 HP
10. Tank		P01596D	P04390D	P01136D	P01164D	P01596D	P05763D	P01136D	P01164D	P01596D
11. Isolation Valve		CQM3756	M3590	M3590	M3590	CQM3756	CQM3756	M3590	M3590	CQM3756
*12.Pulley	125PSIG	CC1005979 PULLEY P08136A BUSHING	P11870C	P11870C	P11870C	P11870C	P11870C	P13912A PULLEY P05607A BUSHING	P13912A PULLEY P05607A BUSHING	P13912A PULLEY P05607A BUSHING
*12.Pulley	175 PSIG	P07986A PULLEY P08136A BUSHING	M4309D	M7009D	M7009D	M7009D	M7009D	P13912A PULLEY P05607A BUSHING	P13912A PULLEY P05607A BUSHING	P13912A PULLEY P05607A BUSHING
13. Belts		5L650 (2)	5L650 (2)	5L680 (2)	5L680 (2)	5L680 (2)	5L680 (2)	B68 (2)	B68 (2)	B68 (2)

*** NOTE:** 2 HP UNITS WITH SINGLE PHASE MOTOR USE:
PULLEY: P12213A (125 PSIG); P13197A (175PSIG)
BUSHING: P09358A (125PSIG); P09855A (175PSIG)
BELTS: 5L680 (2)

UNIT REPAIR PARTS ILLUSTRATION

MODELS: VR2-6, VR2-8, VR3F-6, VR3F-8, VR3F-12, VR5-6, VR5-8, VR5-12, VR7F-6, VR7F-8, & VR7F-12



C455-B
(Ref. Drawing)

REPAIR PARTS LIST

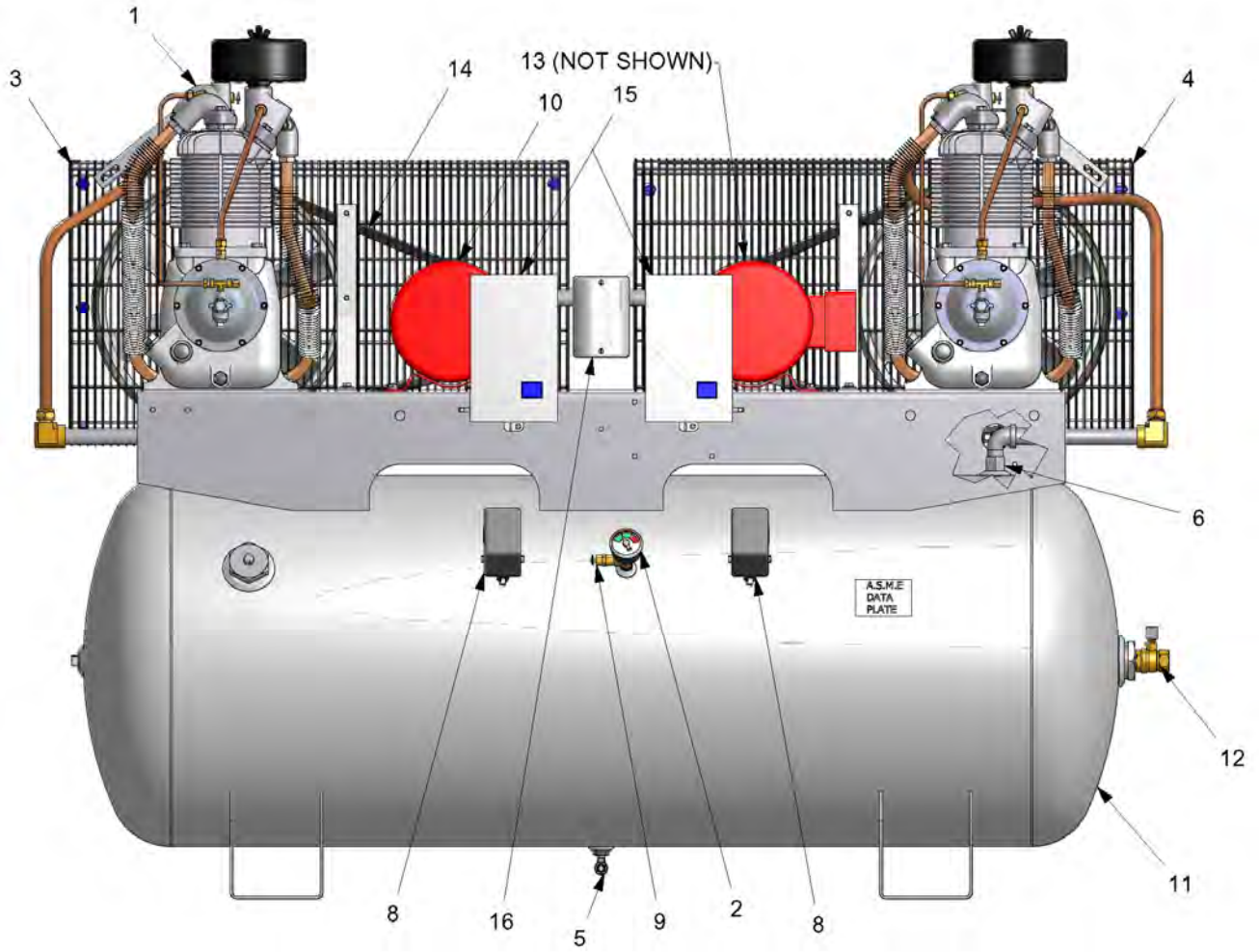
MODELS

	VR2-6	VR2-8	VR3F-6	VR3F-8	VR3F-12	VR5-6	VR5-8	VR5-12	VR7F-6	VR7F-8	VR7F-12
1. Pump	R10D	R10D	R10D	R10D	R10D	R15B	R15B	R15B	R15B	R15B	R15B
2. Pressure Gauge	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C
3. Belt Guard (Standard)	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936	CC1060936
3. Belt Guard (With ACAC)	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937	CC1060937
4. Drain Valve	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988
5. Check Valve	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A
7. Pressure Switch 125 PSIG	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A
7. Pressure Switch 175 PSIG	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A
8. Pressure Relief Valve	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843
9. Motor	2 HP	2 HP	3 HP	3 HP	3 HP	5 HP	5 HP	5 HP	7.5 HP	7.5 HP	7.5 HP
10. Tank	P01161D	CC1048923	P01161D	CC1048923	P02212D	P01161D	CC1048923	P02212D	P01161D	CC1048923	P02212D
11. Isolation Valve	M3590	M3590	M3590	M3590	CQM3756	M3590	M3590	CQM3756	M3590	M3590	CQM3756
*12. Pulley 125PSIG	P12213A PULLEY P09423A BUSHING	P12213A PULLEY P09423A BUSHING	CC1005979 PULLEY P08136A BUSHING	CC1005979 PULLEY P08136A BUSHING	CC1005979 PULLEY P08136A BUSHING	P11870C	P11870C	P11870C	P13912A PULLEY P05607A BUSHING	P13912A PULLEY P05607A BUSHING	P13912A PULLEY P05607A BUSHING
*12. Pulley 175 PSIG	P13197A PULLEY P11520A BUSHING	P13197A PULLEY P11520A BUSHING	P07986A PULLEY P08136A BUSHING	P07986A PULLEY P08136A BUSHING	P07986A PULLEY P08136A BUSHING	M7009D	M7009D	M7009D	P13912A PULLEY P05607A BUSHING	P13912A PULLEY P05607A BUSHING	P13912A PULLEY P05607A BUSHING
13. Belts	5L680 (2)	5L680 (2)	5L650 (2)	5L650 (2)	5L650 (2)	5L680 (2)	5L680 (2)	5L680 (2)	B68 (2)	B68 (2)	B68 (2)

*** NOTE:** 2 HP UNITS WITH SINGLE PHASE MOTOR USE:
PULLEY: P12213A(125 PSIG); P13197A (175 PSIG)
BUSHING P09358A (125 PSIG), P09855A (175 PSIG
BELTS: 5L680 (2)

UNIT REPAIR PARTS ILLUSTRATION

MODELS: HR2D-8, HR2D-12, HR3DF-8, HR3DF-12
HR5D-8, HR5D-12, HR7DF-12 & HR7DF-25



C457-B
(Ref. Drawing)

REPAIR PARTS LIST

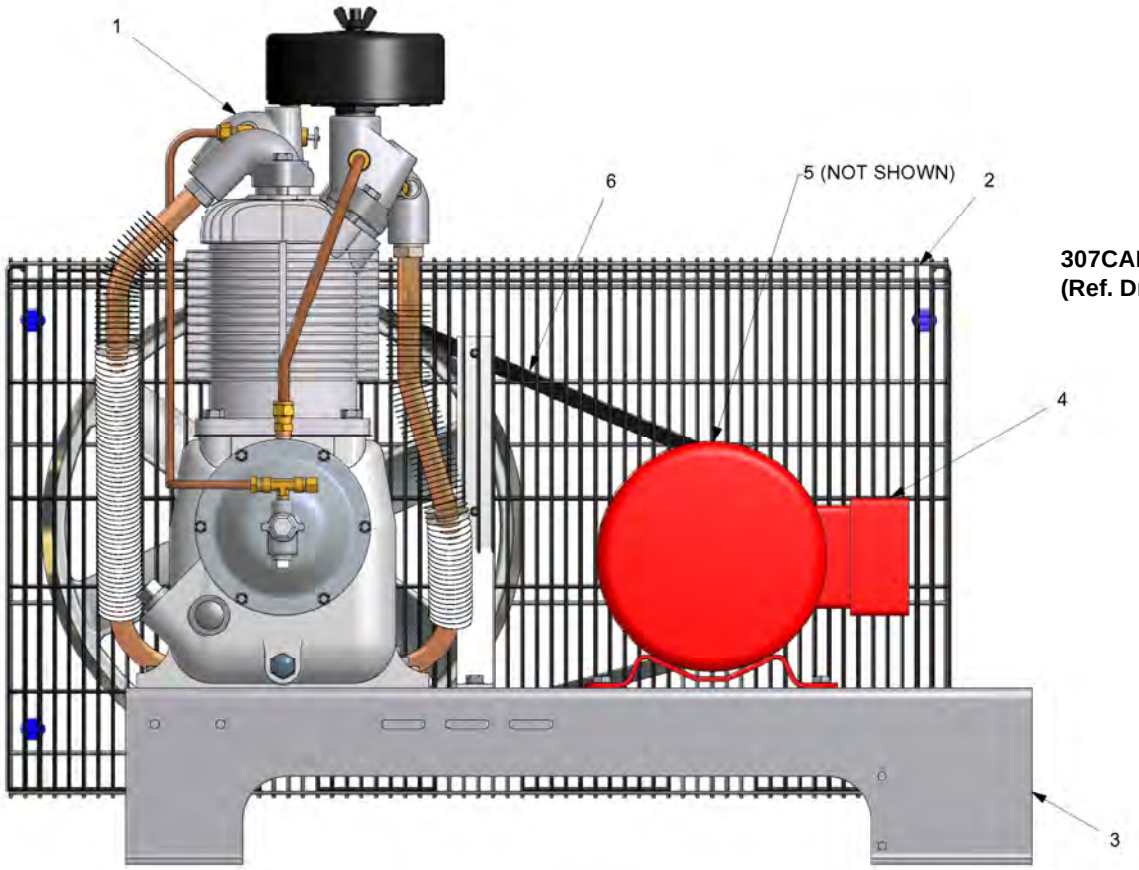
MODELS

		HR2D-8	HR2D-12	HR3DF-8	HR3DF-12	HR5D-8	HR5D-12	HR5D-25	HR7DF-12	HR7DF-25
1. Pump		R10D	R10D	R10D	R10D	R15B	R15B	R15B	R15B	R15B
2. Pressure Gauge		M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C	M519C
3. Belt Guard (Standard)		CC1060945	CC1060936	CC1060945	CC1060936	CC1060945	CC1060936	CC1060936	CC1060936	CC1060936
3. Belt Guard (With ACAC)		CC1060947	CC1060937	CC1060947	CC1060937	CC1060947	CC1060937	CC1060937	CC1060937	CC1060937
4. Belt Guard (Standard)		CC1060946	CC1060954	CC1060946	CC1060954	CC1060946	CC1060954	CC1060954	CC1060954	CC1060954
4. Belt Guard (With ACAC)		CC1060948	CC1060955	CC1060948	CC1060955	CC1060948	CC1060955	CC1060955	CC1060955	CC1060955
5. Drain Valve		VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988	VP1022988
6. Check Valve		P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A	P05822A
8.Pressure Switch	125 PSIG	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A	P14205A
	175 PSIG	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A	P14202A
9. Pressure Relief Valve		M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843	M2843
10. Motor		2 HP	2 HP	3 HP	3HP	5HP	5HP	5HP	7.5 HP	7.5HP
11. Tank		P05767D	P14130D	P05767D	P14130D	P05767D	P14130D	P05763D	P14130D	P05763D
12. Isolation Valve		CQM3756	CQM3756	CQM3756	CQM3756	CQM3756	CQM3756	CQM3756	CQM3756	CQM3756
*13. Pulley	125PSIG	P11213A (2) PULLEY P09423A (2) BUSHING	P11213A (2) PULLEY P09423A (2) BUSHING	CC1005979 (2) PULLEY P08136A BUSHING	CC1005979 (2) PULLEY P08136A BUSHING	P11870C (2)	P11870C (2)	P11870C (2)	P13912A (2) PULLEY P05607A (2) BUSHING	P13912A (2) PULLEY P05607A (2) BUSHING
*13. Pulley	175 PSIG	P13197A (2) PULLEY P11520A (2) BUSHING	P13197A (2) PULLEY P11520A (2) BUSHING	P07986A (2) PULLEY P08136A (2) BUSHING	P07986A (2) PULLEY P08136A (2) BUSHING	M7009D (2)	M7009D (2)	M7009D (2)	P13912A (2) PULLEY P05607A (2) BUSHING	P13912A (2) PULLEY P05607A (2) BUSHING
14. Belts		5L680 (4)	5L680 (4)	5L650 (4)	5L650 (4)	5L680 (4)	5L680 (4)	5L680 (4)	B68 (4)	B68 (4)
15. Starter		CONSULT FACTORY								
16. Alternator		CONSULT FACTORY								

*** NOTE:** 2 HP UNITS WITH SINGLE PHASE MOTOR USE:
PULLEY: P12213A (125 PSIG); P13197A (175PSIG)
BUSHING: P09358A (125 PSIG); P09855A (175PSIG)
BELTS: 5L680 (4)

UNIT REPAIR PARTS ILLUSTRATION

MODELS: BR-2, BR-3F, BR-5 & BR-7F



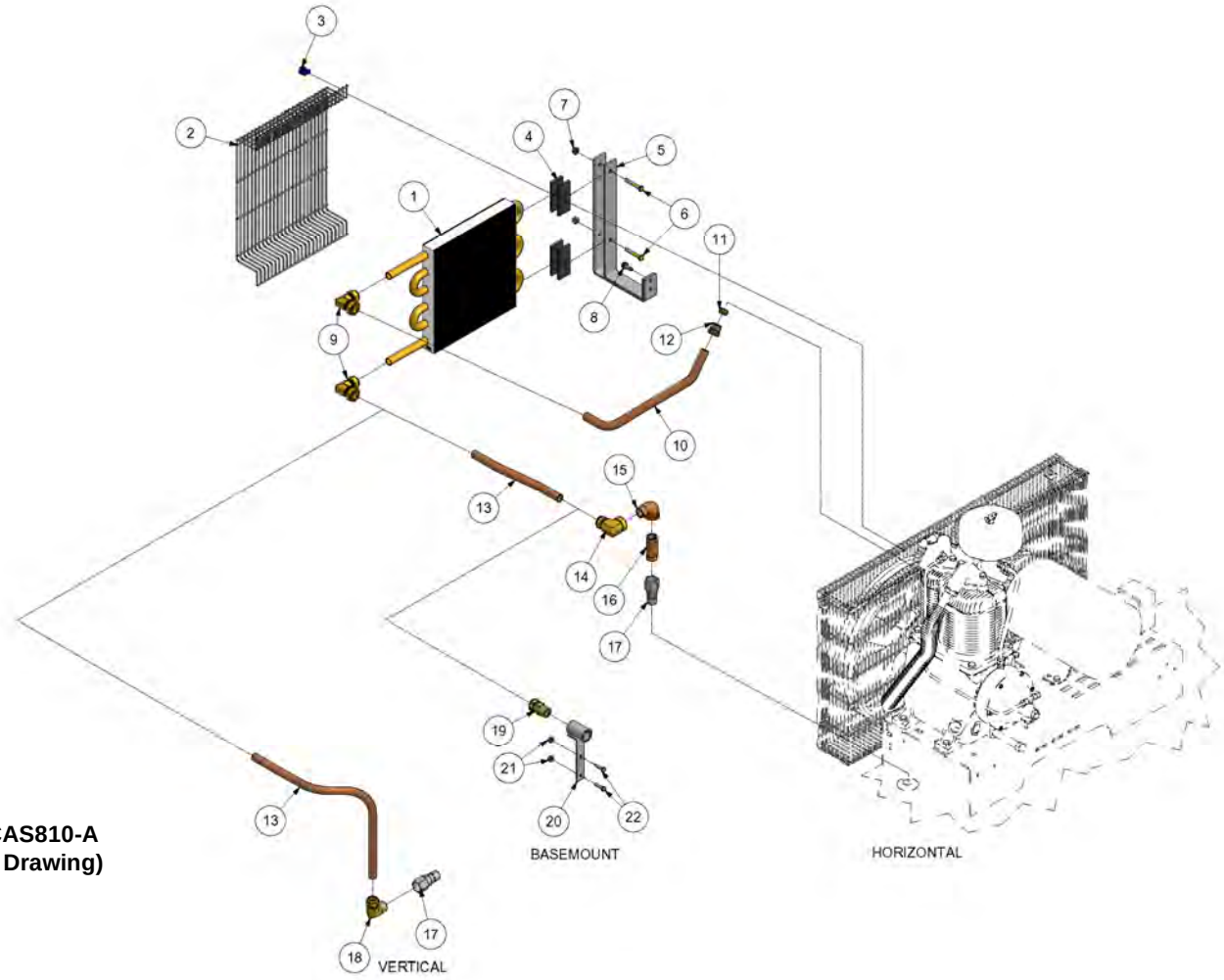
307CAB797-A
(Ref. Drawing)

REPAIR PARTS LIST

	MODELS			
	BR-2	BR-3F	BR-5	BR-7F
1. Pump	R10D	R10D	R15B	R15B
2. Belt Guard (Standard)	CC1060936	CC1060936	CC1060936	CC1060936
2. Belt Guard (With ACAC)	CC1060937	CC1060937	CC1060937	CC1060937
3. Base Plate	P09195C	P09195C	P09195C	P09195C
4. Motor	2 HP	3 HP	5 HP	7.5 HP
*5. Pulley 125 PSIG	P12213A PULLEY P09423A BUSHING	CC1005979 PULLEY P08136A BUSHING	P11870C	P13912A PULLEY P05607A BUSHING
*5. Pulley 175 PSIG	P13197A PULLEY P11520A BUSHING	P07986A PULLEY P08136A BUSHING	M7009D	P13912A PULLEY P05607A BUSHING
6. Belts	5L680 (2)	5L650 (2)	5L680 (2)	B68 (2)

*** NOTE:** 2 HP UNITS WITH SINGLE PHASE MOTOR USE:
PULLEY: P12213A (125 PSIG); P13197A (175PSIG)
BUSHING: P09358A(125 PSIG); P09855A (175PSIG)
BELTS: 5L680 (4)

REPAIR PARTS ILLUSTRATION
AIR COOLED AFTERCOOLER



336CAS810-A
(Ref. Drawing)

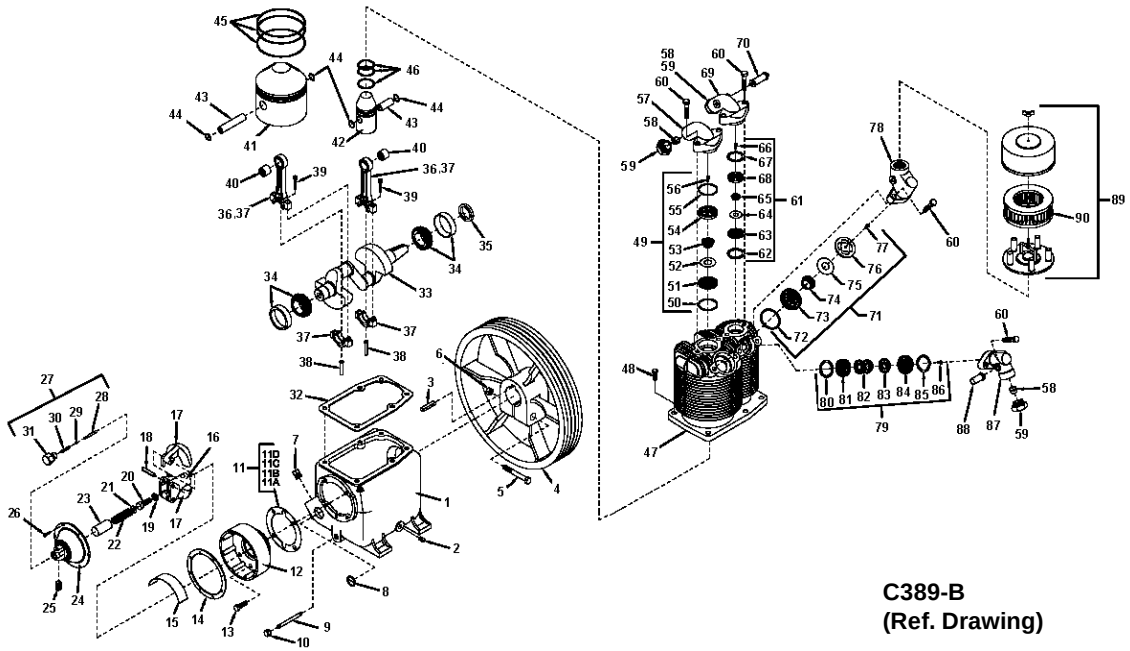
Repair Parts List
Air Cooled Aftercooler

Ref. No.	Description	Part Number	Qty.
1	Aftercooler	P14477B	1
2	Belt Guard, Aftercooler	P14072C	1
3	Clip	P10005A	4
4	Isolators	M1367	4
5	Bracket, ACAC	CC1055729	1
5	Bracket, ACAC,30GH	CC1066174	1
6	Screw	M2627	2
7	Nut	M3485	2
8	Screw	M1454	4
9	Compression Elbow	M2288	2
10	Discharge Tube, Upper	P10143B	1
11	Compression Ferrule	SE542	1
12	Compression Nut	SE541	1

Repair Parts List
Air Cooled Aftercooler

Ref. No.	Description	Part Number	Qty.
13	Discharge Tube, Lower 30GH	P10705B	1
	Discharge Tube, Lower 60-80-120GH	P10144B	1
	Discharge Tube, Lower 250GH	M2474	1.5 FT.
	Discharge Tube, Lower 60-120GV	P10422B	1
	Discharge Tube, Basemount	P10143B	1
	Discharge Tube, Lower 80 GV	CC1055732	1
14	Elbow, Tube	M2398	1
15	Street Elbow, Horizontal Units Only	M1296	1
16	Nipple, Horizontal Units Only	M1035B	1
17	Check Valve	P05822A	1
18	Compression Fitting	M2350	1
19	Compression Fitting	M2867	1
20	Bracket, Coupling	CC1032600	1
21	Nut	M3424	2
22	Screw	M3471	2

Compressor Repair Parts Illustration
Models: R10D & R15B



C389-B
(Ref. Drawing)

Repair Parts List
Compressor Models R10D & R15B

Ref. No.	Description	Part No.	Qty.
1	Crankcase	M1820	1
2	Pipe plug	64AA5	1
3	Key	U8	1
4	Flywheel	NR7A	1
5	Hex head cap screw	M738	1
6	Hex nut	M2955	1
7	Pipe plug	64A5	1
8	Oil level gauge	RE714	1
9	Pipe nipple	M492	1
10	Pipe cap	M461	1
11	Governor housing gasket set (includes, 11A, 11B,11C & 11D)	Z130	1
11A	Governor housing gasket (.032òThick)	SE1430	1
11B	Governor housing gasket (.005/.007òThick)	SE1430A	1
11C	Governor housing gasket (.010òThick)	SE1430B	1
11D	Governor housing gasket (.015òThick)	SE1430C	1
12	Governor housing	NR80A	1
13	Hex head cap screw	M2343	4
14	Governor housing cover gasket	SE1489	1
15	Baffle plate	NR104	1
16	Governor weight spindle	SE583B	1
17	Governor weight	SE582B	2
18	Governor weight pin	SE592A	1

Repair Parts List
Compressor Models R10D & R15B

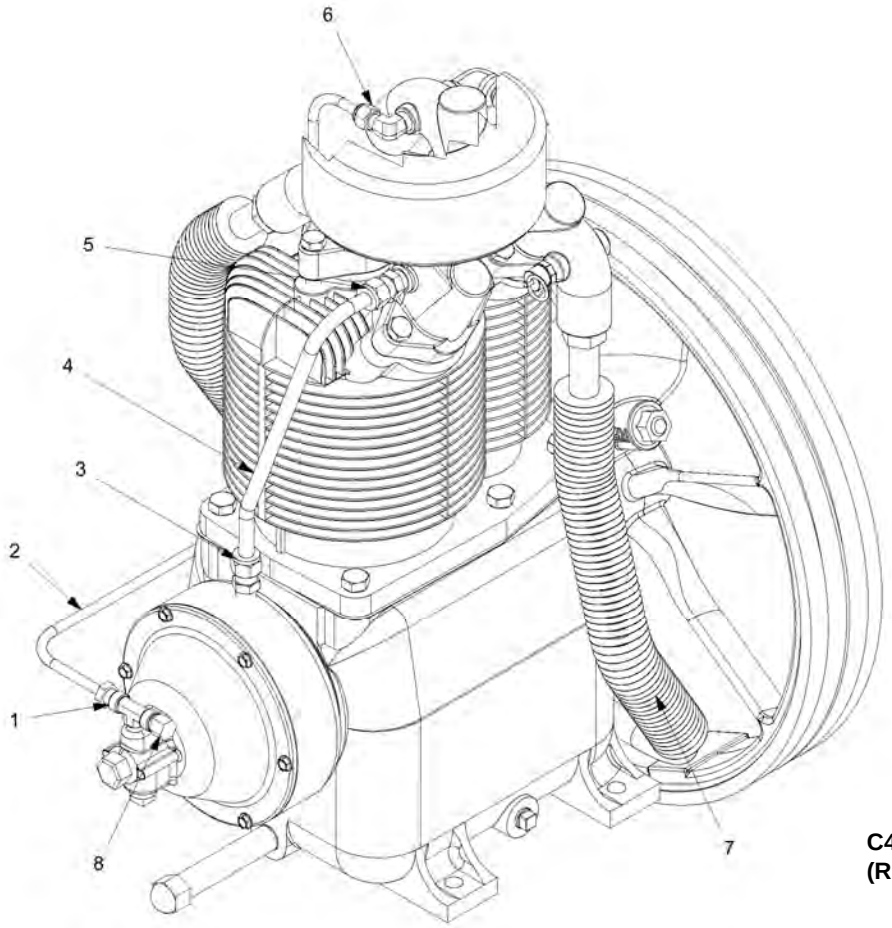
Ref. No.	Description	Part No.	Qty.
19	Lock washer	M3468	1
20	Hex head cap screw	M2345	1
21	Flat washer	M912A	1
22	Governor spring	SE590	1
23	Spring sleeve	SE587	1
24	Governor housing cover	RE10100A	1
25	Unloader muffler assembly	Z4593	1
26	Hex head machine screw	M3473	6
27	Release valve assembly	Z12414A	1
28	Release valve plunger	SE586B	1
29	Release valve ball	P07841A	1
30	Release valve spring	SE591	1
31	Release valve body	NR101	1
32	Cylinder flange gasket	NR29A	1
33	Crankshaft (Model R10D)	R105	1
33	Crankshaft (Model R15B)	R155	1
34	Main Bearing	ZNR16	2
35	Oil seal	OSN4	1
36	Connecting rod assembly model R10D low pressure (includes items 37 thru 40)	Z750	1
36	Connecting rod assembly model R10D high pressure (includes items 37 thru 40)	Z752	1
36	Connecting rod assembly model R15B (includes items 37 thru 40)	Z750	2
37	Connecting rod (not sold separately)	---	--
38	Oil dipper (Model R10D)	R1024	2
38	Oil dipper (Model R15B)	R1524	2
39	Connecting rod bolt	M1583	4
40	Piston pin bearing	R1037	2
41	Low pressure piston with pin (includes items 43 & 44)	ZR154	1
42	High pressure piston with pin (includes items 43 & 44)	ZP02709C	1
43	Piston pin	R1021	2
44	Piston pin retaining ring	R10102	4
45	Low pressure piston ring set	Z798	1
46	High pressure piston ring set	Z797	1
47	Cylinder	P12237D	1
48	Hex head cap screw	M2345	6
49	Low pressure discharge valve assembly	Z813	1
50	Valve gasket	P04135A	1
51	Discharge valve seat	M2097	1
52	Valve disc	RE1061	1
53	Valve spring	RE1059	1
54	Discharge valve cage	M2099	1
55	Valve gasket	P04135A	1
56	Hex head machine screw	M3220	1
57	Low pressure discharge manifold	RE102E	1
58	Ferrule	SE542	3
59	Compression nut	SE541	3
60	Hex head cap screw	P05005A	8
61	High pressure discharge valve assembly	Z115	1
62	Valve gasket	P04137A	1
63	Discharge valve seat	RE757A	1
64	Valve disc	RE1062	1
65	Valve spring	RE760	1
66	Hex head machine screw	M3220	1
67	Gasket, Valve, HPEX, R10-30	CQP14869A	1
68	Discharge valve cage	M2100	1
69	High pressure discharge manifold (Non-Base Mount Units)	P12303B	1
69	High pressure discharge manifold (Base Mount Units)	M1717	1
70	Pressure relief valve	P09704A	1
*71	Low pressure intake valve assembly	Z812	1

Repair Parts List
Compressor Models R10D & R15B

Ref. No.	Description	Part No.	Qty.
72	Gasket, Valve, LPIN, R10-30	CQP14832A	1
73	Intake valve cage	M2098	1
74	Valve spring	RE1458	1
75	Valve disc	RE1470	1
76	Intake valve seat	RE1471	1
77	Hex head machine screw	P04544A	1
78	Low pressure intake manifold	P09669C	1
*79	High pressure intake valve assembly	Z11937	1
80	Valve gasket	P09171A	1
81	Intake valve cage	P14224B	1
82	Valve spring	P13866A	2
83	Valve disc	P13865A	1
84	Intake valve seat	P14118B	1
85	Gasket, Valve, HPIN, R10-30	CQP14870A	1
86	Hex head machine screw	M3220	1
87	High pressure intake manifold	P12302B	1
88	Interstage pressure relief valve	M3685	1
89	Intake filter	P04999A	1
90	Intake filter element	P05050A	1
	Complete compressor pump gasket set (items 11,14 & 32)	Z764	
	Low pressure piston kit (items 41 & 45)	Z9101	1
	High pressure piston kit (items 42 & 46)	Z9100	
	Complete compressor pump ring set (items 45 & 46)	Z799	1
	Complete valve set w/gaskets	Z5155	1
	Complete valve set gaskets	Z5156	1

* See page 31 for intake valves for head unloader pumps.
Use Z6795 ï Complete Valve Set for head unloader pumps.

Compressor Repair Parts Illustration
Models: R10D & R15B



C420-B
(Ref. Drawing)

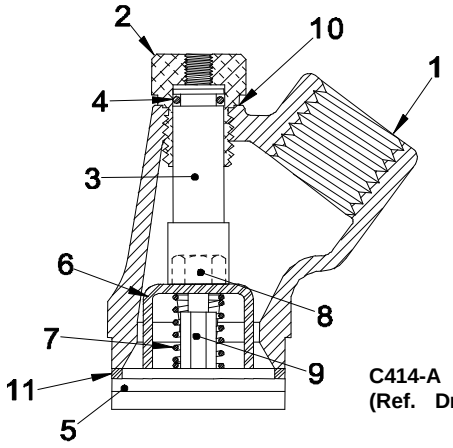
Ref. No.	Description	Part No.	Qty.
1	Compression Fitting	M2879	1
2	Tube, Unloading w/Fittings	ZSB250A	1
3	Compression Fitting	M2864	1
4	Breather Tube w/Fitting	ZUB375	1
5	Compression Fitting	M2864	1
6	Compression Fitting	86A40	1
7	Intercooler w/Fittings	Z9140	1
8	Compression Nut	VP1061773	1

CONSTANT SPEED HEAD UNLOADER
For Air Compressor Models R10D and R15B

NOTE: This is optional equipment and may not be included on your unit.

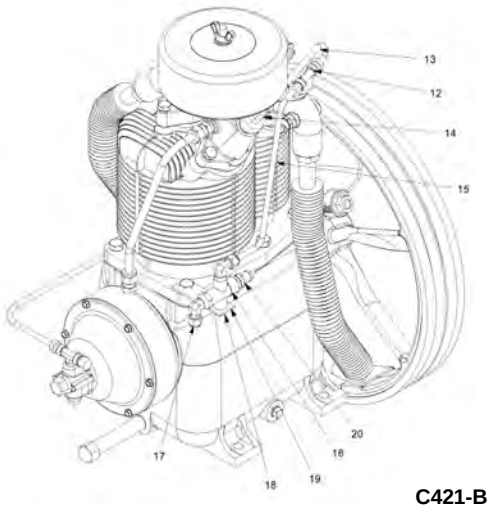
The purpose of constant speed unloading is to provide a means of stopping or starting the compression of air by the compressor without stopping or starting the electric motor or gasoline engine after each cycle.

The parts called out below replace or are substituted for those found in the regular parts list.



C414-A
(Ref. Drawing)

TYPICAL MANIFOLD ASSEMBLY



C421-B
(Ref. Drawing)

Repair Parts List for Constant Speed Head Unloader

Low Pressure

REF. NO.	DESCRIPTION	PART NO.	QTY.
-	LP Intake Manifold Group (includes 1,2,3,4)	Z6312	1
1	LP Intake Manifold	P09670C	1
2	Cylinder	P02306B	1
3	Unloader Piston	P09923A	1
4	O-Ring	P02547A	1
5	LP Valve Assembly (includes 6,7,8,9)	Z4877	1
6	Unloader Finger	P09085A	1
7	Unloader Spring	P09084A	1
8	Locknut	P09086A	1
9	Guide Stem	P09083A	1

High Pressure

REF. NO.	DESCRIPTION	PART NO.	QTY.
-	HP Intake Manifold Goup (Includes items 1,2,3,4,10)	Z9143	1
1	HP Intake Manifold	P12304B	1
2	Cylinder	P02306B	1
3	Unloader Piston	P09923A	1
4	O-Ring	P02547A	1
5	HP Valve Assembly (includes 6,7,8,9 & 11)	Z11938	1
6	Unloader Finger	P14119A	1
7	Unloader Spring	P01882A	1
8	Locknut	P09086A	1
9	Guide System	P09296A	1
10	Cylinder Gasket	P00746A	1
11	Valve Gasket (not included)	P09171A	1

Low & High Pressure

REF.NO.	DESCRIPTION	PART NO.	QTY.
12	Compression Fitting	M2879	1
13	Manifold Tube	Z9172	1
14	Compression Fitting	M2868	1
15	Actuating Tube	P12323A	1
16	Pilot Valve	M2853	1
17	Compression Fitting	86A40	1
18	Screw, Hex Head Cap	M3465	1
19	Mounting bracket	M807	1
20	Compression Fitting	M2868	1
--	Needle Valve (Dual Control) Not Shown	M547	1
--	Constant Speed Head Unloader Kit (Includes all of the above)	Z9144	1

UNIT HAZARD DECAL LISTING

PAGE	DESCRIPTION	PART NO.
34	PRODUCT LIABILITY DECAL SHEET - MASTER	P10157A
	Unit Pressure Setting	1
	NOT USED	2
	DANGER ï Breathing Air	3
	DANGER ï Drain Tank Daily	4
	WARNING ï Pressure/Safety Valve	5
	NOT USED	6
	DANGER ï Valve Maintenance	7
	DANGER ï High Voltage	8
	WARNING ï Hot Surfaces	9
	WARNING ï Do Not Remove Fan Guard	10
	NOTICE - Lubricant	11a
	NOT USED	11b
	DECAL ï Synthetic or Food Grade Inserts	12
	NOT USED	13
	DECAL ï Pressure Setting: 95-125 PSIG	14
	DECAL ï Pressure Setting: 140-175 PSIG	14
	NOTICE ï Read and Retain Manuals	15
	NOT USED	16
	DECAL ï Rotation Direction	17
	NOT USED	18
	DECAL ï Pressure Switch	P14677A

PUMP HAZARD DECAL LISTING

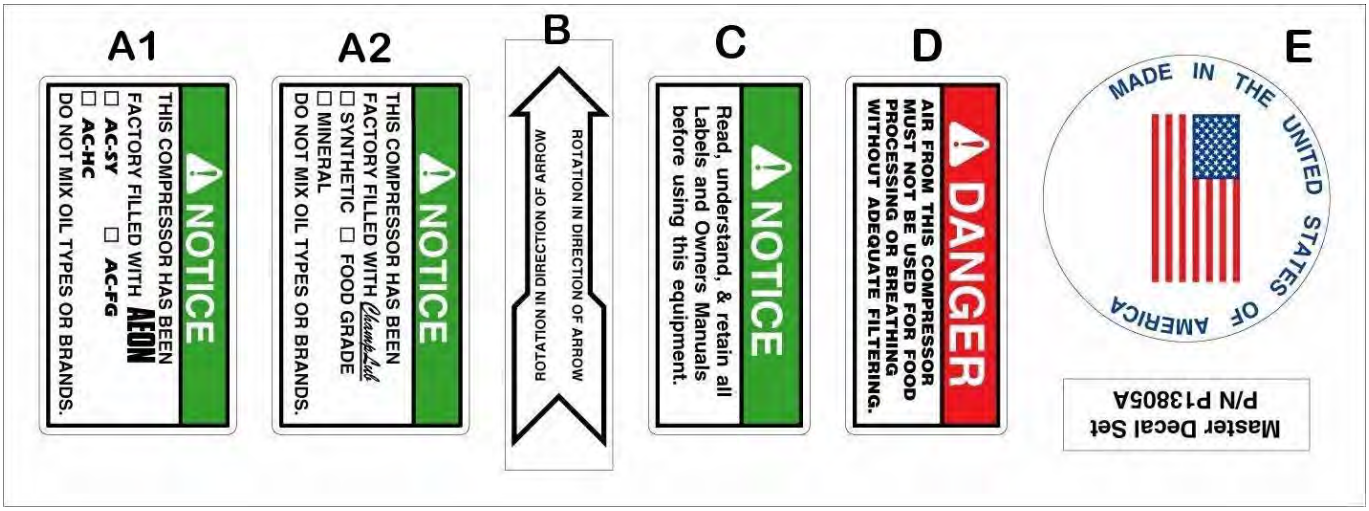
PAGE	DESCRIPTION	PART NO.
35	PUMP DECAL SHEET ï MASTER	P13805A
	NOT USED	A1
	NOTICE - Lubricants	A2
	DECAL ï Rotation Direction	B
	NOTICE ï Read and Retain Manuals	C
	DANGER ï Breathing Air	D
	DECAL ï Made in the United States of America	E
	IMPORTANT NOTICE ï Motor Burn-Outs	F

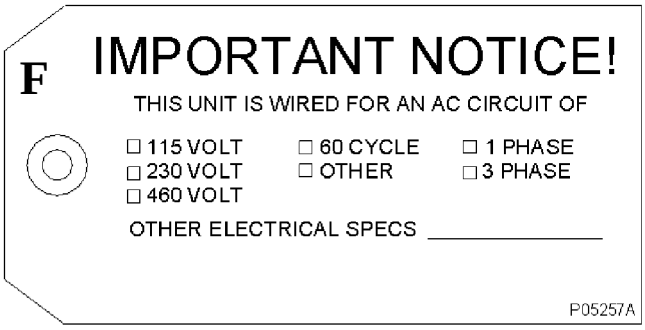
DO NOT CONNECT
INCOMING POWER
SUPPLY TO PRESSURE
SWITCH.

P14677A

UNIT HAZARD DECALS

PUMP HAZARD DECALS





F3231VER20
F3231VER20

CHAMPION

For additional information, contact your local representative or visit:
www.championpneumatic.com/contactus.aspx

 Printed in U.S.A.

ENERGY STAR PARTNER

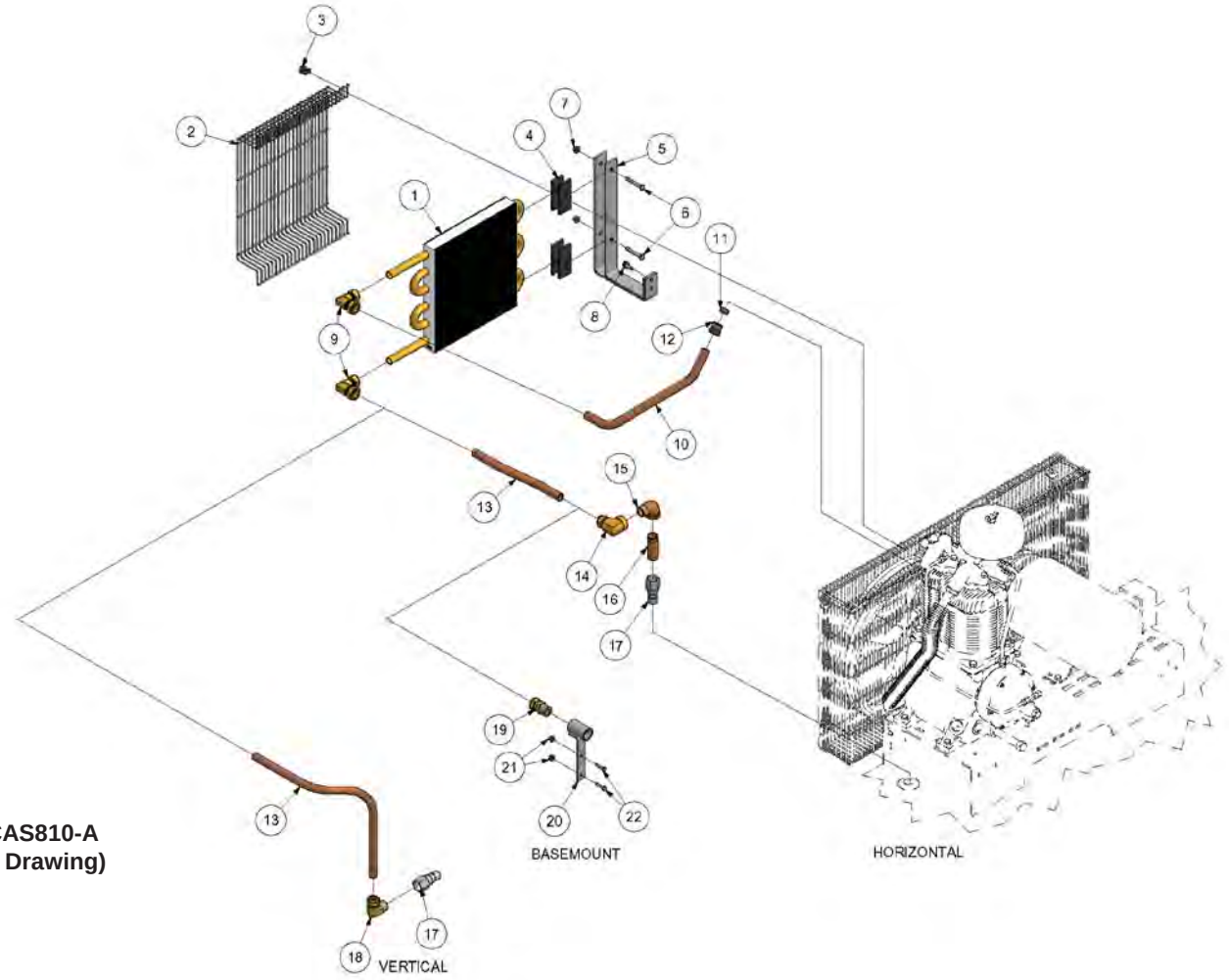
CERTIFIED QUALITY MANAGEMENT SYSTEM ISO 9001:2008 ANAB DNV

MEMBER OF CAGI Compressed Air & Gas Institute

COMPRESSED AIR CHALLENGE

Please recycle after use.

REPAIR PARTS ILLUSTRATION
AIR COOLED AFTERCOOLER



336CAS810-A
(Ref. Drawing)

Repair Parts List
Air Cooled Aftercooler

Ref. No.	Description	Part	Qty.
1	Aftercooler	P14477B	1
2	Belt Guard, Aftercooler	P14072C	1
3	Clip	P10005A	4
4	Isolators	M1367	4
5	Bracket, ACAC	CC1055729	1
5	Bracket, ACAC,30GH	CC1066174	1
6	Screw	M2627	2
7	Nut	M3485	2
8	Screw	M1454	4
9	Compression Elbow	M2288	2
10	Discharge Tube, Upper	P10143B	1
11	Compression Ferrule	SE542	1
12	Compression Nut	SE541	1

Repair Parts List
Air Cooled Aftercooler

Ref. No.	Description	Part	Qty.
13	Discharge Tube, Lower 30GH	P10705B	1
	Discharge Tube, Lower 60-80-120GH	P10144B	1
	Discharge Tube, Lower 250GH	M2474	1.5 FT.
	Discharge Tube, Lower 60-120GV	P10422B	1
	Discharge Tube, Basemount	P10143B	1
	Discharge Tube, Lower 80 GV	CC1055732	1
14	Elbow, Tube	M2398	1
15	Street Elbow, Horizontal Units Only	M1296	1
16	Nipple, Horizontal Units Only	M1035B	1
17	Check Valve	P05822A	1
18	Compression Fitting	M2350	1
19	Compression Fitting	M2867	1
20	Bracket, Coupling	CC1032600	1
21	Nut	M3424	2
22	Screw	M3471	2

CHAMPION®
A Gardner Denver Product

ENGINEERING DATA SHEET C1-2-2-345
DATE June 6, 2007
SUPERSEDES January 2000

MOTOR HP & AMPS
ELECTRICAL WIRE, FUSE & BREAKER SIZES

The following table gives wire, breaker and fuse sizes based on horsepower, voltage and phase. Motor full load amps are taken from motors currently used by Champion. The wire, breaker and fuse sizes are provided as a reference for the installer and are based on the 1996 National Electrical Code. All wiring should be performed by a licensed electrician or electrical contractor and must meet all applicable codes for the area where installed.

Motor HP	**Voltage**	**Typical Motor F.L.A.**	**Copper Conductor 75° C Rating – 30° C Ambient Wire Size Awg No.**	**Dual Element, Time Delay UL Class RK5 Fuse** (Used with Properly Sized O/L Relay)	**Circuit Breaker** (Instantaneous Trip Circuit Breaker) Continuous Amp Rating
			SINGLE PHASE UNITS		
½	115V	8.4	14	15A	15A
½	208V / 230V	4.4 / 4.2	14	8A / 7A	7A
¾	115V	11	12	15A	15A
¾	208V/ 230V	5.5 / 5.4	14	12A / 10A	15A
1	115V	12.4	12	20A	15A
1	208V / 230V	6.5 / 6.2	14	12A / 10A	15A
1½	115V	18	10	20A	30A
1½	208V / 230V	9.5 / 9	14	15A / 10A	15A
2	115V	24	10	35A	30A
2	208V / 230V	12.6 / 12	14	20A	15A
3	115V	32	8	50A	50A
3	208V / 230V	16.8 / 16	10	30A / 25A	30A
5	208V / 230V	25.5 / 24	8	40A	50A / 30A
7½	208V / 230V	33 / 31	6	50A	50A
			THREE PHASE UNITS		
1½	200V / 230V	5 / 4.8	14	8A	7A
1½	460V	2.4	14	4A	3A
2	200V / 230V	6.8 / 6.4	14	12A / 10A	15A
2	460V	3.2	14	5A	7A
3	200V / 230V	8.5 / 8	14	12A	15A
3	460V	4	14	7A	7A
5	200V / 230V	14.8 / 14	10 / 12	25A	30A
5	460V	7	14	12A	15A
7½	200V / 230V	23 / 22	8 / 10	40A / 35A	30A
7½	460V	11	14	15A	15A
10	200V / 230V	30 / 28	8	50A / 45A	50A
10	460V	14	12	20A	30A
15	200V / 230V	44.8 / 39	6	75A / 60A	100A / 50A
15	460V	19.5	10	30A	30A
20	200V / 230V	61 / 53	4	100A / 90A	100A
20	460V	26.5	8	45A	50A
25	200V / 230V	74 / 65	3 / 4	125A / 110A	100A
25	460V	32.5	8	50A	50A
30	200V / 230V	87 / 76	2 / 3	150A / 125A	150A / 100A
30	460V	38	6	60A	50A

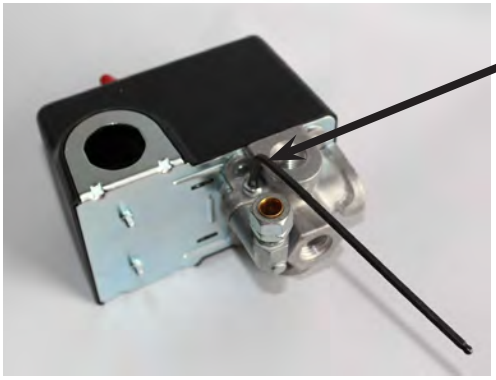
1. To ensure proper coordination between the heater element and short circuit protective device, consult the heater table packaged with the motor controller.
2. Maximum branch-circuit, short-circuit protective device ratings shown in the manufacturer's overload relay table for use with a motor controller, or otherwise marked on the equipment, shall not be exceeded.

Air Pressure Switch
How to Install & Adjust Air Pressure Switch

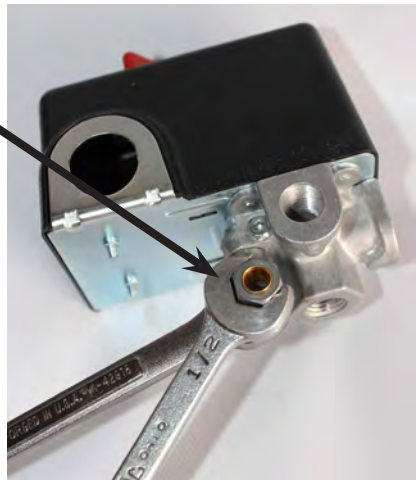
1. BEFORE you remove cover – make sure switch is in the OFF position.

2. Install ¼" x 2" nipple and ¼" pipe plugs as needed.

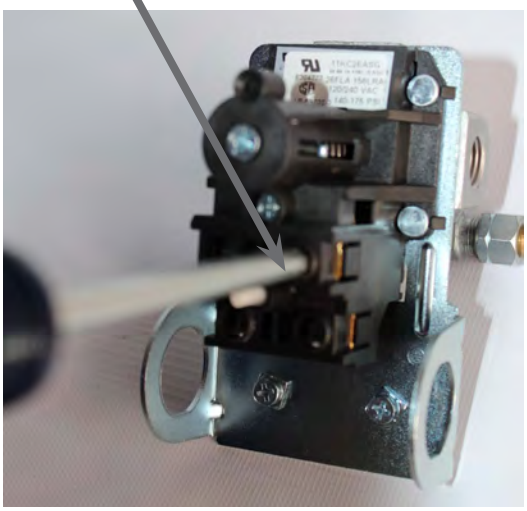
3. Unloader valve position can be rotated by loosening the 3 mm Allen head screw. Reposition then tighten. (if used)



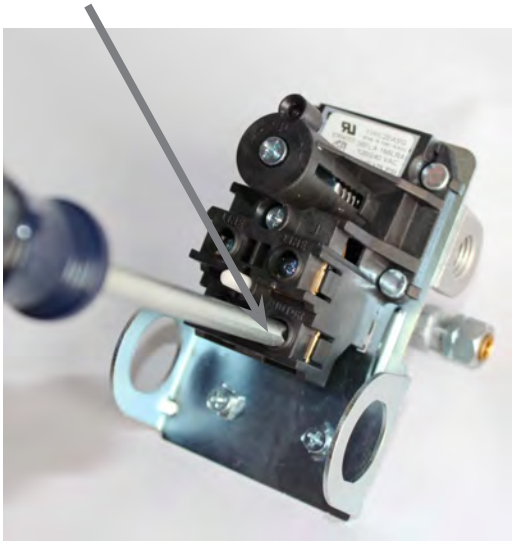
4. Using two (2) wrenches – tighten the unloader compression fitting. (if used)



5. Wire INCOMING POWER to LINE TERMINALS.



6. Wire MOTOR LEADS to MOTOR TERMINALS

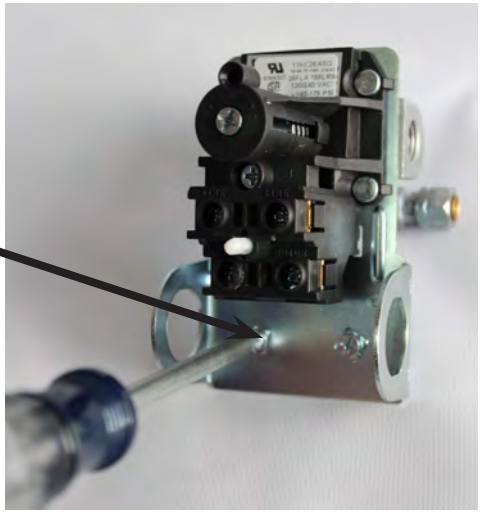


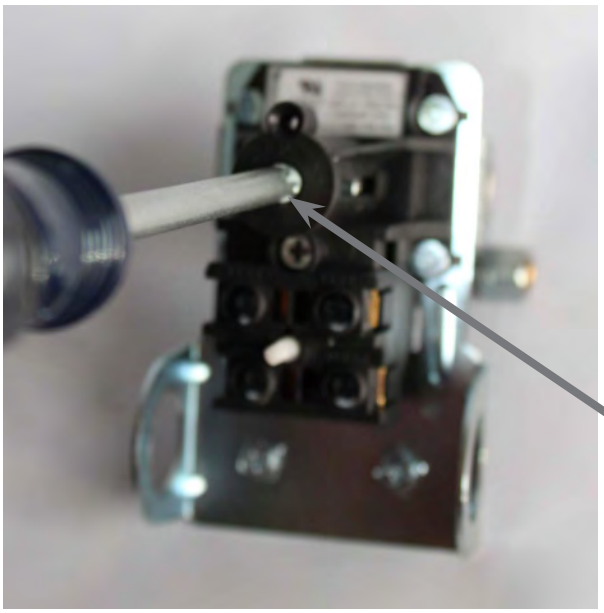
NOTE: ***WHEN USED WITH A MAGNETIC MOTOR STARTER- LINE TO MOTOR TERMINALS ARE COMMON NC CONTACTS***

Air Pressure Switch

How to Install & Adjust Air Pressure Switch

7. Be sure to use GROUND SCREWS for safety





8. To INCREASE PRESSURE:
Turn pressure adjustment (P) screw CLOCKWISE.

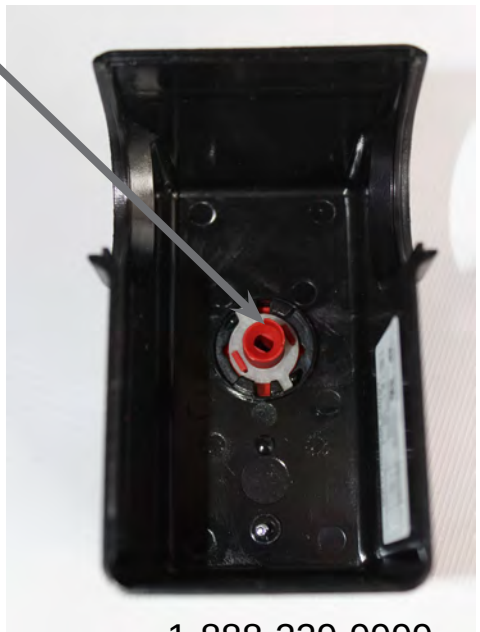
To DECREASE PRESSURE:
Turn pressure adjustment (P) screw COUNTER CLOCKWISE

9. To INCREASE DIFFERENTIAL:
Turn differential adjustment (J) screw CLOCKWISE.

To DECREASE DIFFERENTIAL:
Turn differential adjustment (J) screw COUNTER CLOCKWISE

10. BEFORE replacing cover – be sure to turn SWITCH to the OFF POSITION.

This will properly align the slot in the switch with the white transfer pin.



Do not over-tighten cover screw

Champion Compressor Service Check List

Customer: _____ **Date:** _____

NACT or SAT# _____

Model # _____ **Unit Serial #** _____

Pump Serial # _____ **Pump Type:** _____
(R15, R30, R70, etc)

Voltage : Please take all readings leg to leg.

		UNIT OFF		UNIT RUNNING	
		Volts		Volts	Amps
Single & 3-Phase	L1-L2		L1-L2		
Three Phase	L1-L3		L1-L3		
Three Phase	L2-L3		L2-L3		

Circuit Breaker Size
(Amps / i.e. 30 amp)

Wire Size
(i.e. 8 gage)

Motor Starter

Yes	No

Heaters
(i.e. "E60" / "E74")

Disconnect: Yes or No

Disconnect Fuse Size:

Is the Unit Wired Correctly?

Yes	No	Corrected

Is Motor Rotation Correct?

Yes	No	Corrected

Overload Compensator Position

(located on the side of the overload block / allows for plus or minus 15% adjustement / it should be set in the center or "normal position" / confirm position and check one)

Minus15%	Normal	Plus 15%

Cycle Time & Pressures

Pressures	Cut In	Cut Out	Cycle Time	Minutes	Seconds
	psi	psi			

("time from cut in to cut out")

Motor Info: **MFR:** _____ **Cat #** _____ **S/N** _____

Volts & Phase (208 / 230 / 460) _____ **Amps** (FLA) _____ **S.F.** _____

Frame Size _____ **RPM** _____ **Horse Power** _____

Drive Belts **Part #** _____ **Qty** _____

TECH: _____

ENGINEERING DATA SHEET C1-2-2-340
DATE January 2001
SUPERSEDES New

TOLERANCE CHART
R-LINE COMPRESSORS

Model	Motor HP	Compr. RPM	Pressure Setting	Tank Size In Inches	Tank Capacity Gallons	Minutes from 0 Pressure to Cut-Out Pressure	Minutes from Cut-In Pressure to Cut-Out Pressure
HR1-3	1½	542	140-175	38 x 16	30	9.01 minutes	1.80 minutes
HR1-6	1½	542	140-175	48 x 20	60	18.02 minutes	3.60 minutes
HR1-8	1½	542	140-175	63 x 20	80	24.02 minutes	4.80 minutes
HR2-3	2	725	140-175	38 x 16	30	6.37 minutes	1.27 minutes
HR2-6	2	725	140-175	48 x 20	60	12.74 minutes	2.54 minutes
HR2-8	2	725	140-175	63 x 20	80	16.99 minutes	3.39 minutes
HR3-6	3	440	140-175	48 x 20	60	9.01 minutes	1.80 minutes
HR3-8	3	440	140-175	63 x 20	80	12.01 minutes	2.40 minutes
HR3-12	3	440	140-175	69 x 24	120	18.02 minutes	3.60 minutes
HR5-6	5	710	140-175	48 x 20	60	5.40 minutes	1.08 minutes
HR5-8	5	710	140-175	63 x 20	80	7.20 minutes	1.44 minutes
HR5-12	5	710	140-175	69 x 24	120	10.80 minutes	2.16 minutes
HR7-8	7½	575	140-175	63 x 20	80	4.84 minutes	.97 minutes
HR7-12	7½	575	140-175	69 x 24	120	7.26 minutes	1.46 minutes
HR7F-8	7½	1035	140-175	63 x 20	80	5.42 minutes	1.08 minutes
HR7F-12	7½	1035	140-175	69 x 24	120	8.13 minutes	1.63 minutes
HR10-8	10	740	140-175	63 x 20	80	3.63 minutes	.73 minutes
HR10-12	10	740	140-175	69 x 24	120	5.45 minutes	1.10 minutes
HRA15-12	15	770	140-175	69 x 24	120	3.56 minutes	.71 minutes
HRA15-25	15	770	140-175	92 x 30	250	7.42 minutes	1.48 minutes
HR15F-8	15	1045	140-175	63 x 20	80	2.60 minutes	.52 minutes
HR15F-12	15	1045	140-175	69 x 24	120	3.90 minutes	.78 minutes
HR15F-25	15	1045	140-175	92 x 30	250	8.12 minutes	1.62 minutes
HRA20-12	20	655	140-175	69 x 24	120	2.46 minutes	.49 minutes
HRA20-25	20	655	140-175	92 x 30	250	5.13 minutes	1.02 minutes
HRA25-12	25	770	140-175	69 x 24	120	2.10 minutes	.42 minutes
HRA25-25	25	770	140-175	92 x 30	250	4.38 minutes	.88 minutes
HRA30-12	30	890	140-175	69 x 24	120	1.89 minutes	.38 minutes
HRA30-25	30	890	140-175	92 x 30	250	3.94 minutes	.79 minutes

Note: Not all currently available models are listed.

IMPORTANT

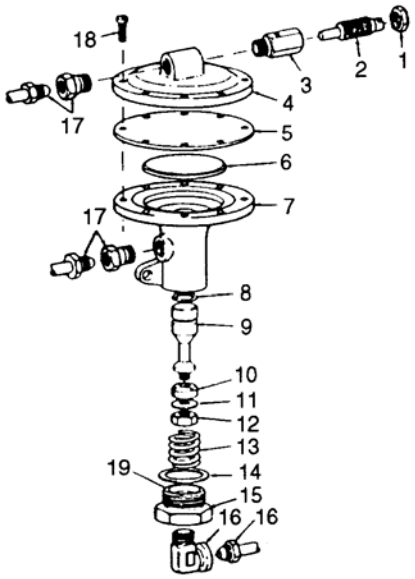
Always be certain that air tank is completely drained of water before making test.
The master line must be shut off, at the air tank outlet.

CHAMPION®

A Gardner Denver Product

AUTOMATIC TANK DRAIN VALVE

REPLACEMENT PARTS LIST			
ITEM	**PART NO.**	**REQ'D**	**DESCRIPTION**
1	M2399	1	Nut, Timer Lock
2	TD6	1	Screw, Timer
3	TD5	1	Body, Timer
4	TD2	1	Cover, Diaphragm
5	TD9	1	Diaphragm
6	TD4	1	Plate, Diaphragm
7	TD1	1	Body, Valve
8	TD16	1	Ring, O
9	TD7	1	Stem, Valve
10	TD3	1	Disc, Valve
11	TD18	1	Washer, Disc Backup
12	M745	1	Nut, Hex Brass
13	P01882A	1	Spring, Valve
14	CQP14868A	1	Gasket, Intake, Plug, Atd
15	TD10	1	Plug, Intake
16	M2881	1	Fitting, Compression
17	M2863	2	Fitting, Compression
18	M3473	8	Screw, Fillister Heat Machine
19	M1651	1	Screen
	ZTD1	1	Tank Drain Assembly, Complete
	ZTD1A		Tank Drain W/Installation Kit (Champion Units)
	ZTD1C		Drain W/Kit (Commandair Units)
	Z5941	1	Repair Kit Includes Items 5 & 8 Thru 14



⚠WARNING

Drain tank completely of air and water before installing or servicing valve. Failure to relieve pressure may cause injury or equipment damage

INSTALLATION

The Champion valve must be mounted horizontally. It must be mounted rigidly to compressor or tank using mounting flange. The flange has been drilled to accommodate 1/4" bolts. A new tank drain fitting with flexible tube attached may be ordered or existing manual drain fitting and tube may be retained and used. Make sure flexible tube reaches bottom of tank. Connect as shown using 1/8" or 1/4" compression fittings. Where necessary to run connection into diaphragm cover on timer side, timer may be unscrewed and placed on the opposite side. When adjusting timer, timer screw should be turned to give draining time just long enough to exhaust all trace of moisture. Turning timer screw (2) clockwise lengthens discharge time counter-clockwise shortens discharge time. Tighten lock nut (1) when timer screw is set.

OPERATION

At the end of each pumping cycle, any compressor equipped with a centrifugal unloader* or pressure switch with a pressure release valve, exhausts air from the lines between compressor and tank. This exhausted air is used to actuate the Champion Automatic Tank Drain Valve. The exhausted air is delivered into the diaphragm cover, (4) depressing the diaphragm (5). This forces the diaphragm plate (6) and valve stem (9) down, unseating valve disc (10). Storage tank pressure then forces moisture accumulation at the bottom of tank through flexible tube and tank drain valve (see diagram reverse side).

Timer (1, 2 & 3) allows the exhaust air depressing the diaphragm to bleed off. The length of time required to bleed off air determines draining time of valve. The timer screw (2) opens or closes air bleed holes providing the operating range necessary to assure complete drainage.

*Only compressors equipped with centrifugal unloaders or unloader-type pressure switches can use this valve. The auto tank drain will not work with gasoline driven or continuous run units using head unloader.

Form No: F3043 VER: 02 05/11/2007

F3043VER02

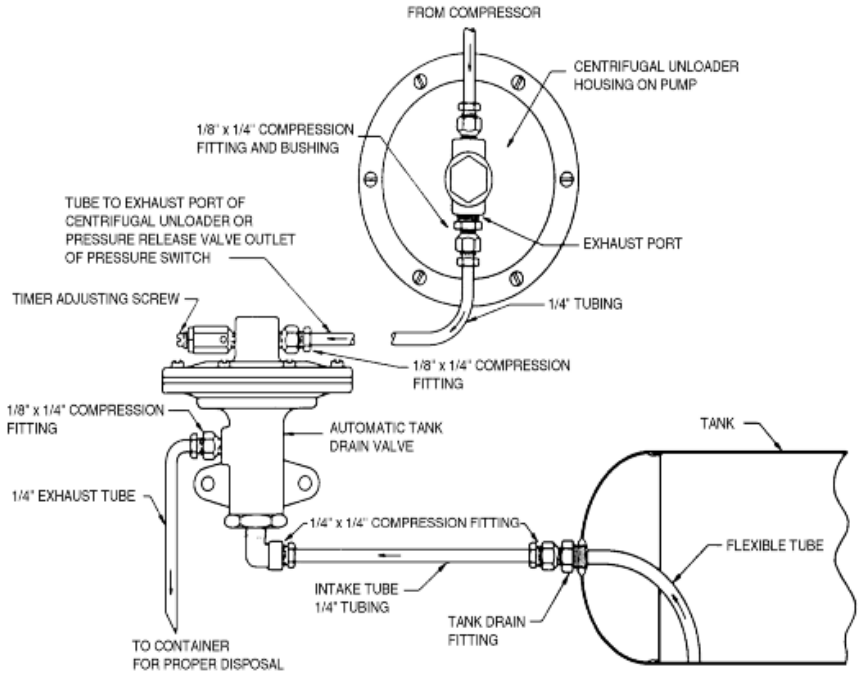
MONTHLY MAINTENANCE

Shut off & lock out / tag out compressor. Relieve all pressure from air receiver. Disconnect auto drain from receiver at bottom (M2881) fitting. Remove TD10 intake plug and clean M1651 screen which may become fouled with scale or debris from air tank. Unless this fitting and screen are kept clean, debris may work into the drain valve seat, causing the valve to stick or fail to close.

SERVICING

If valve fails to open. Check for leaks in line from unloader or pressure release valve to automatic drain valve. Check to see that timer has not been unscrewed too far. If trouble persists, remove intake plug (15) and clean chamber. If this fails, remove diaphragm cover (4) and check diaphragm and diaphragm plate for cause of non-operation. if valve fails to close. Check timer adjustment to see that air is bleeding out. If air continuously bleeds from timer while compressor is running, centrifugal unloader or pressure switch release valve is leaking. Check compressor or pressure switch instructions for remedy.

If air continuously bleeds from timer when compressor is not running, inspect compressor check valve. Replace check valve if air is leaking back from tank. If timer works correctly and valve fails to close, remove intake plug (15), spring (13) and valve stem assembly. This assembly includes valve stem (9), "O" ring (8), disc (10) and nut (12). They are not attached to diaphragm plate (6) and will drop out through bottom of valve chamber opening. Clean intake chamber and disc (10). Replace disc if scored. If valve opens and only air is exhausted. Check flexible tube in tank. It must reach to the bottom of the tank and be free of leaks. Timer may be adjusted under operating conditions.



INSTALLATION OF CHAMPION AUTOMATIC TANK DRAIN FOR COMPRESSORS EQUIPPED WITH CENTRIFUGAL UNLOADER

CHAMPION®
A Gardner Denver Product

1301 N. Euclid Ave., Princeton, Illinois 61356-9990
Phone (815) 875-3321, FAX (815) 872-0421
Manufacturing Plants in Princeton, Illinois Manteca, California

INSTALLATION INSTRUCTIONS FOR NEW ATD (VP1048249)
SIMPLEX UNITS

⚠WARNING

Switch main disconnect switch to "off" position to assure no power is entering unit. "Lock Out" or "Tag Out" all sources of power. Relieve all air pressure in unit. Failure to do this may result in injury or equipment damage.

R10/R15 COMPRESSORS (Ref. drawing 328CAS810) (See Page 2)
R30/R40/R70 COMPRESSORS (Ref. drawing 329CAS810) (See Page 3)

(A) Refer to owner's manual (Compressor assembly - governor housing).

(B) Disconnect the unloader tube at the 90 degree compression fitting located at the top of the governor housing cover.

(C) Replace the 90 deg compression fitting on top of governor housing cover with compression tee (ITEM 9).

(D) Connect existing unloader tube to compression fitting (ITEM 9).

(E) Replace the 90 degree compression fitting and reducing bushing on bottom of governor housing cover with muffler assembly (plug with vent hole and felt), part number Z4593. (Not shown on drawing).

(F) Using the two mounting holes for securing the ATD, install bracket (ITEM 6) using two screws (ITEM 7).

(G) Remove nut and washer from new ATD (ITEM 3). Slide male NPT end through hole in bracket (ITEM 6) keeping bowl in vertical position. Re-install nut and washer and tighten.

(H) Install straight compression fitting (ITEM 8).

(I) Connect straight compression fitting (Item 8) and compression tee (ITEM 9) with copper tubing (ITEM 5). Cut and form.

(J) Install straight compression fitting (ITEM 4) and 1 foot of copper tubing (ITEM 5) in bottom of drain. Straighten copper tubing and point downward.

(K) Install 90 degree compression fitting (ITEM 1) to new ATD (ITEM 3).

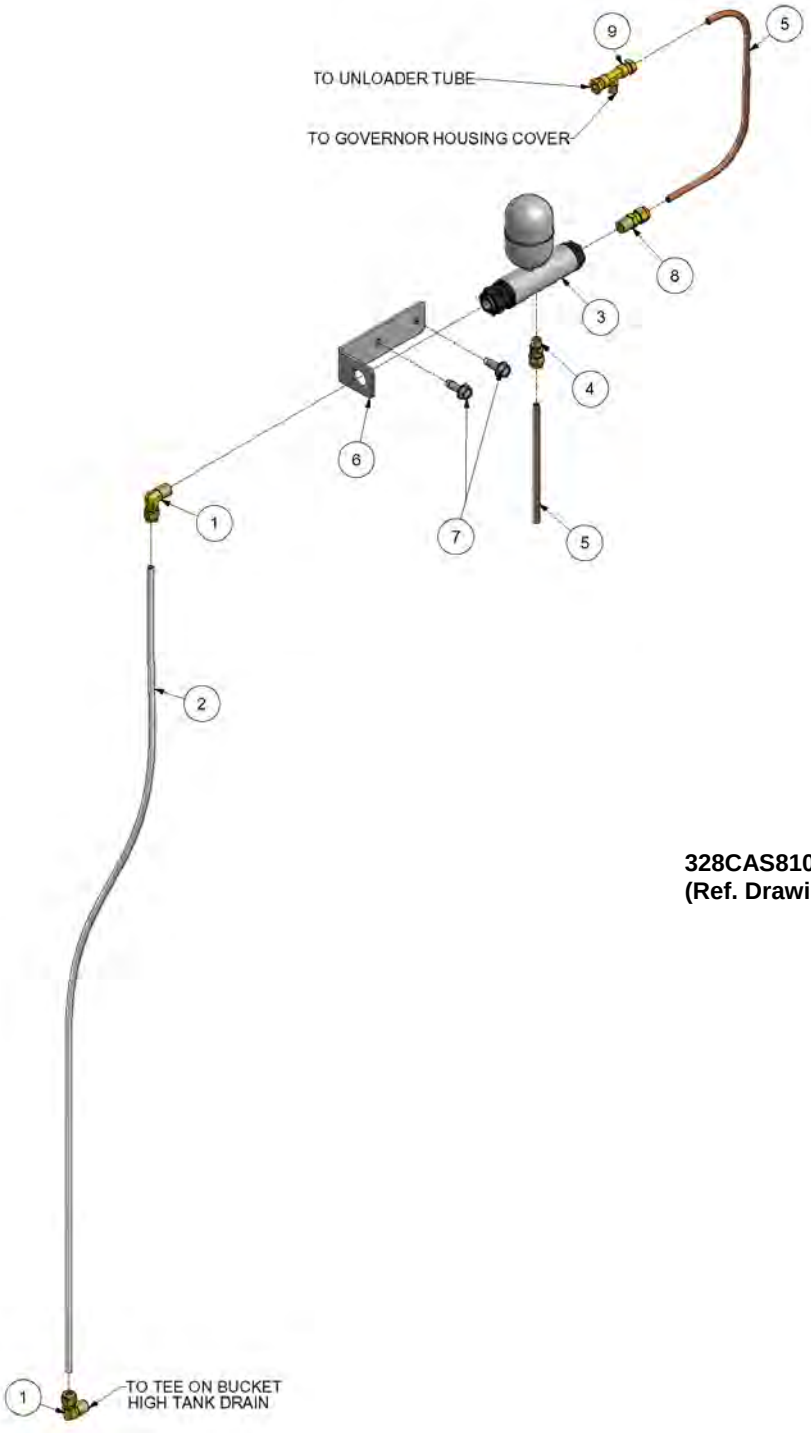
(L) Replace compression fitting from tee at the bucket high tank drain (not shown on drawing) with new 90 degree compression fitting (ITEM 1).

(M) Connect both 90 degree compression fittings (ITEM 1) with plastic tubing (ITEM 2). Cut to fit.

MCGUIRE AIR COMPRESSORS INC 1-888-229-9999

SIMPLEX UNITS

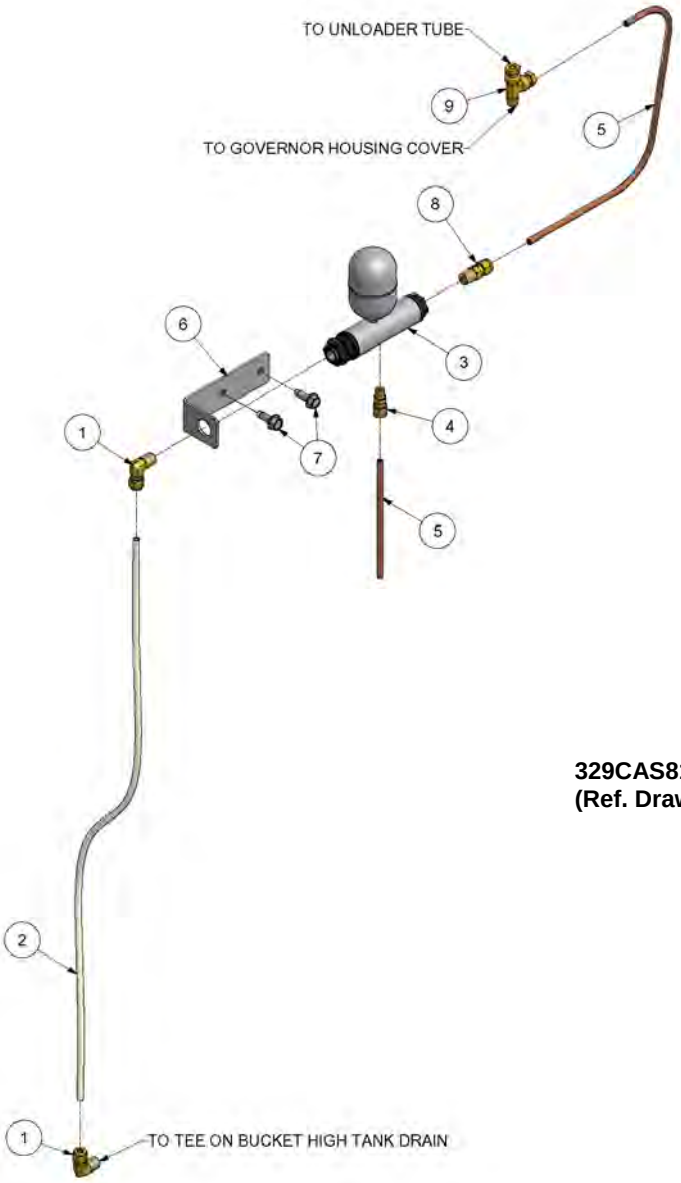
R10/R15 COMPRESSORS (Ref. drawing 328CAS810)



328CAS810-A
(Ref. Drawing)

SIMPLEX UNITS

R30/R40/R70 COMPRESSORS (Ref. drawing 329CAS810)



329CAS810-A
(Ref. Drawing)

DUPLEX UNITS

⚠WARNING

Switch main disconnect switch to "off" position to assure no power is entering unit. "Lock Out" or "Tag Out" all sources of power. Relieve all air pressure in unit. Failure to do this may result in injury or equipment damage.

R10/R15 COMPRESSORS (Ref. drawing 302CAD810) (See Page 5)
R30/R40/R70 COMPRESSORS (Ref. drawing 301CAD810) (See Page 6)

A) Refer to owner's manual (Compressor assembly – governor housing).

B) Remove old ATD and tubing.

C) Disconnect the unloader tube at the 90 degree compression fitting located at the top of the governor housing cover on both compressors.

D) For compressor closest to ATD, replace the 90 deg compression fitting on top of governor housing cover with one nipple (ITEM 10), tee (ITEM 11) and straight compression fitting (ITEM 4).

E) Connect existing unloader tube to straight compression fitting (ITEM 4).

F) Install nipple (ITEM 10), shuttle valve (ITEM 9) and two straight compression fittings (ITEM 4).

G) For the other compressor, replace the 90 deg compression fitting located on top of governor housing cover with compression tee (ITEM 12).

H) Connect existing unloader tube to compression tee (ITEM 12).

I) Connect straight compression fitting (ITEM 4) and compression tee (ITEM 12) with copper tubing (ITEM 5). Cut and form.

J) For compressor closest to ATD, replace 90 degree compression fitting and reducing bushing on bottom of governor housing cover with muffler assembly (plug with vent hole and felt), part number Z4593. (Not shown on drawing).

K) For climate control units only, replace 90 degree compression fitting and bushing on bottom of governor housing cover on both compressors with muffler assembly (plug with vent hole and felt), part number Z4593. (Not shown on drawing).

L) Using the two mounting holes that were used for securing the old ATD, install bracket (ITEM 6) using two screws (ITEM 7).

M) Remove nut and washer from new ATD (ITEM 3). Slide male NPT end through hole in bracket (ITEM 6) keeping bowl in vertical position. Re-install nut and washer and tighten.

N) Install straight compression fitting (ITEM 8).

O) Connect straight compression fitting (ITEM 8) and straight compression fitting (ITEM 4) with copper tubing (ITEM 5). Cut and form.

P) Install straight compression fitting (ITEM 4) and 1 foot of copper tubing (ITEM 5) in bottom of drain. Straighten copper tubing and point downward.

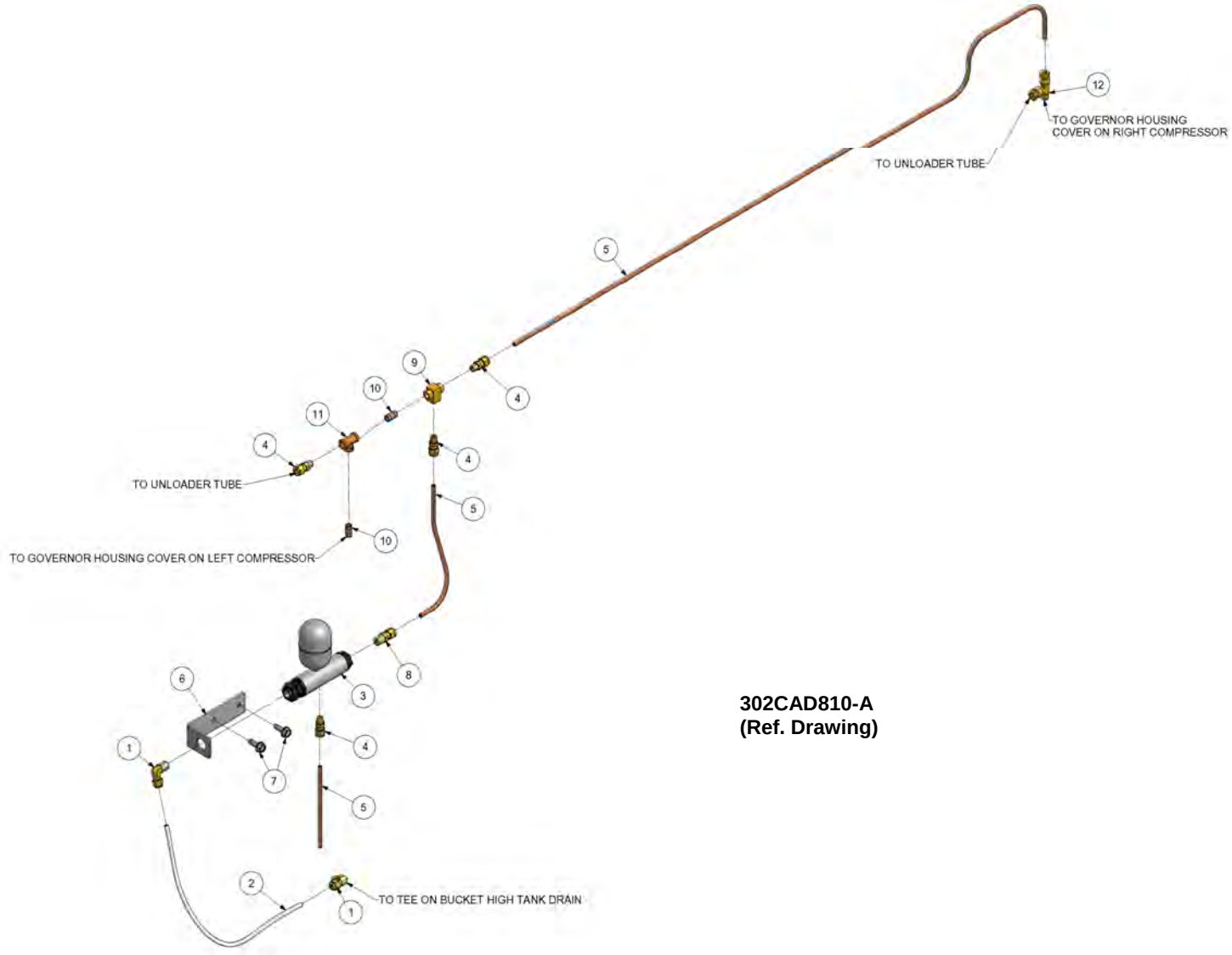
Q) Install 90 degree compression fitting (ITEM 1) to new ATD (ITEM 3).

R) Replace the 90 degree compression fitting from tee at bucket high tank drain (not shown on drawing) with new 90 degree compression fitting (ITEM 1).

S) Connect both 90 degree compression fitting (ITEM 1) with plastic tubing (ITEM 2). Cut to fit.

DUPLEX UNITS

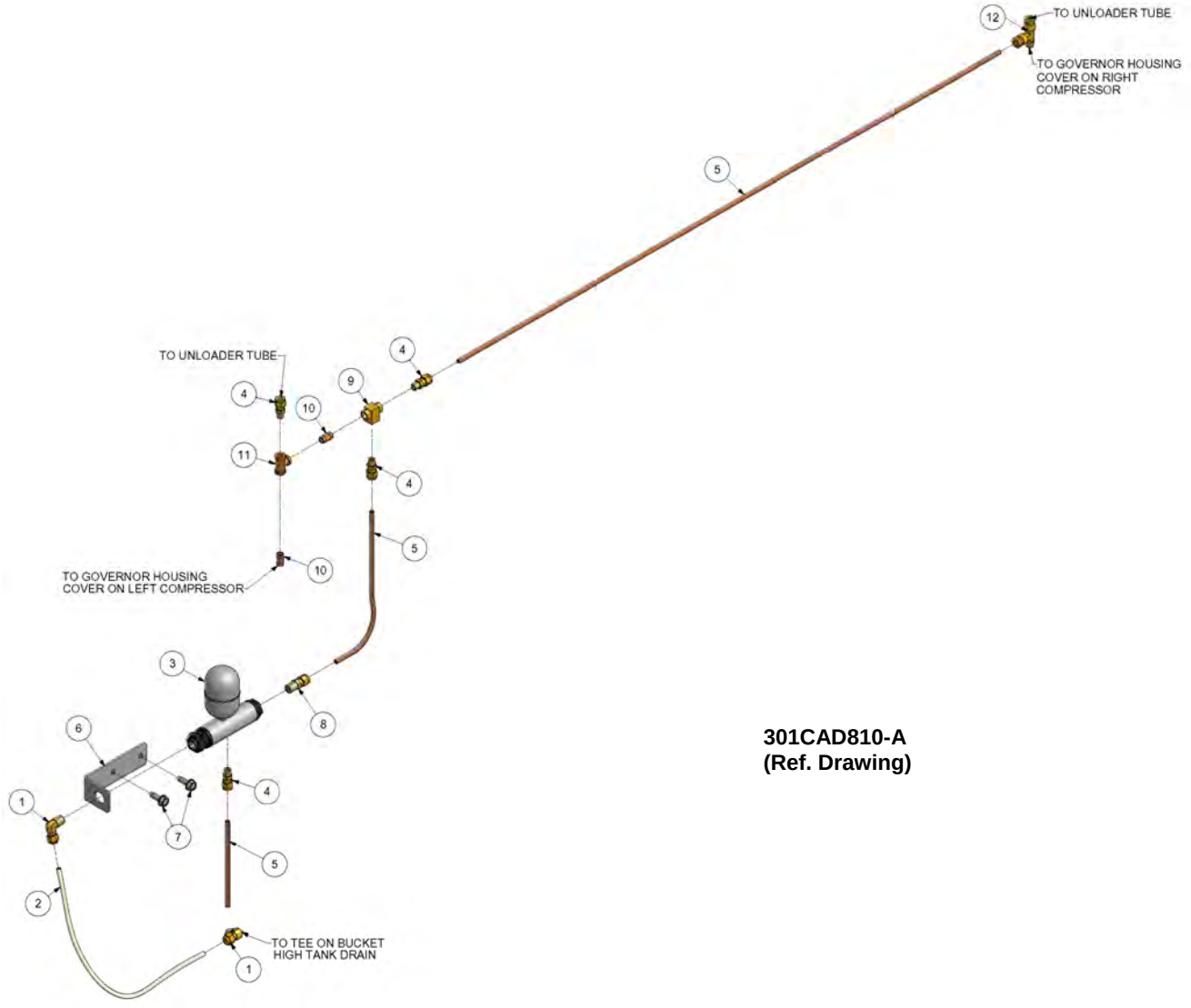
R10/R15 COMPRESSORS (Ref. drawing 302CAD810)



302CAD810-A
(Ref. Drawing)

DUPLEX UNITS

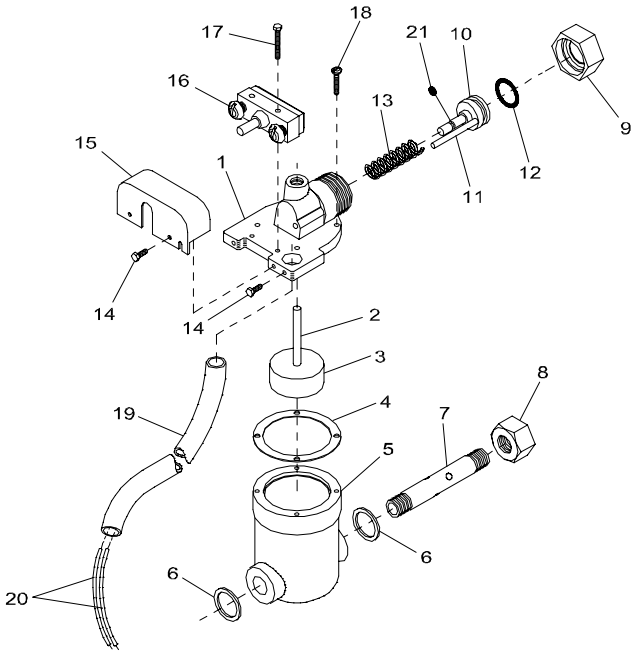
R30/R40/R70 COMPRESSORS (Ref. drawing 301CAD810)



301CAD810-A
(Ref. Drawing)

OIL MONITOR NEMA 1 & 4

AIR COMPRESSORS SERVICE DATA



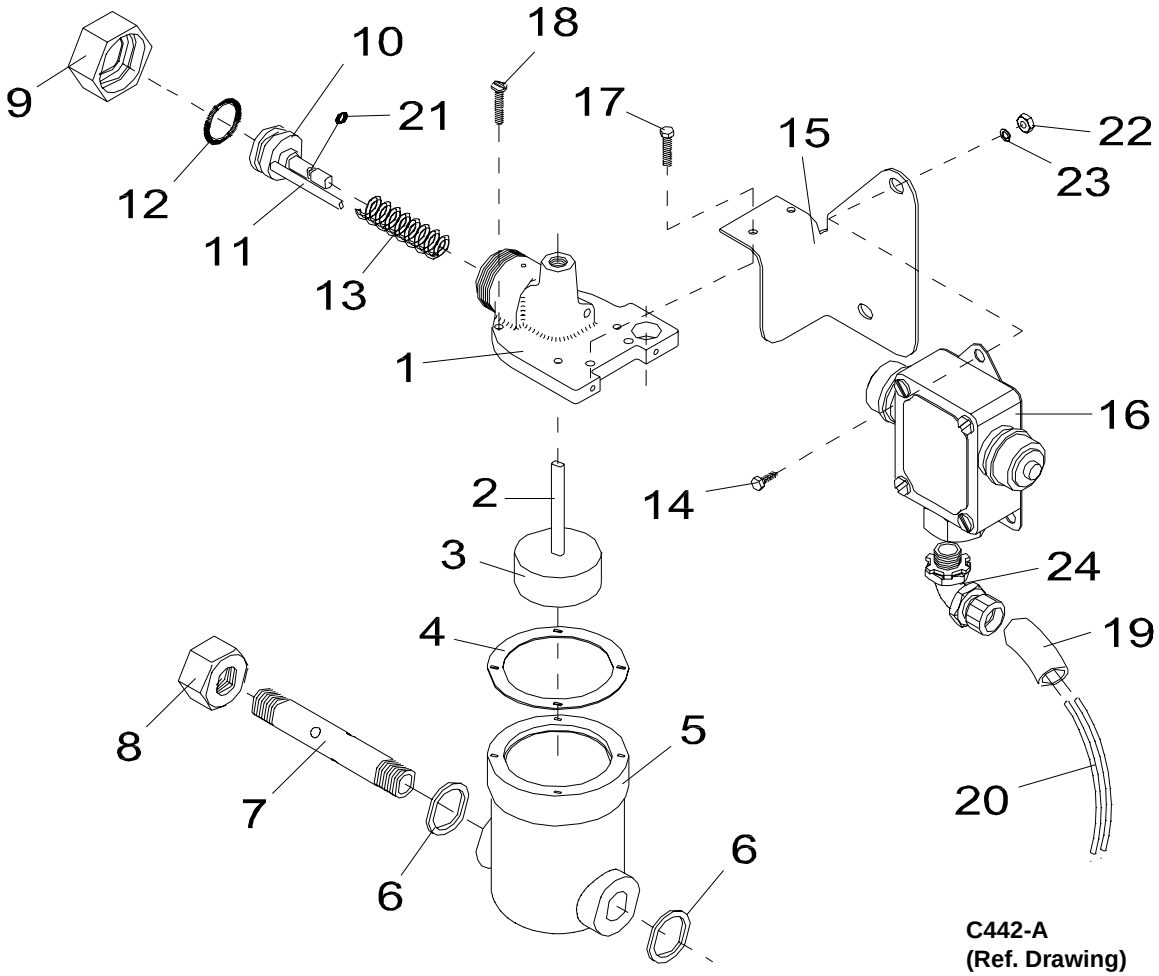
C441-A
(Ref. Drawing)

Z-685 LOSC BASIC CONTROL NEMA 1
REPLACEMENT PARTS LIST

ITEM	PART NO.	QUAN.	DESCRIPTION
1.	LO-1B	1	BODY, VALVE
2 & 3.	LO-4-5	1	FLOAT WITH STEM
4.	LO-9A	1	GASKET, BOWL
5.	LO-2A	1	BOWL, FLOAT
6.	P02843A	2	GASKET, BOWL (OIL
7.	M-813	1	TUBE)
8.	LO-30	1	TUBE, OIL
9.	LO-3A	1	CAP, RETAINER
10.	P10097A	1	PLUG, INTAKE
11.	P10098A	1	PISTON AND ROD
12.	M-1598	1	ROD, SWITCH
			O-RING

ITEM	PART NO.	QUAN.	DESCRIPTION
13.	P05227A	1	SPRING
14.	M2949	3	SCREW, SELF TAPPING #6X3/8"
15.	LO-16B	1	COVER, SWITCH
16.	LO-15A	1	SWITCH, MICRO
17.	M2950	2	SCREW, SELF TAPPING #6X1"
18.	M2951	4	SCREW, SELF TAPPING, PAN HD, #6 X 3/4"
19.		1	FLEXIBLE CONDUIT 3/8"X24" (NOT SUPPLIED)
20.	M2438	2	WIRE #18TFNX48"
21.	LO-12	1	O-RING

Form No. F3110 Ver: 02 10/06/2003



C442-A
(Ref. Drawing)

Z2351 LOSC BASIC CONTROL NEMA 4
REPLACEMENT PARTS LIST

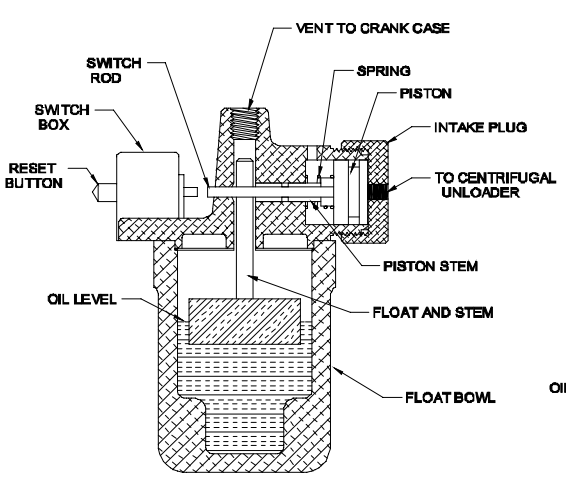
ITEM	PART NO.	QUAN.	DESCRIPTION
1.	LO-1B	1	BODY, VALVE
2 & 3.	LO-4-5	1	FLOAT WITH STEM
4.	LO-9A	1	GASKET, BOWL
5.	LO-2A	1	BOWL, FLOAT
6.	P02843A	2	GASKET, BOWL (OIL
7.	M-813	1	TUBE)
8.	LO-30	1	TUBE, OIL
9.	LO-3A	1	CAP, RETAINER
10.	P10097A	1	PLUG, INTAKE
11.	P10096A	1	PISTON AND ROD
12.	M-1598	1	ROD, SWITCH
13.	P05227A	1	O-RING
			SPRING

ITEM	PART NO.	QUAN.	DESCRIPTION
14.	M3471	2	SCREW, HEX HEAD 1/4-20X1"
15.	P07719B	1	BRKT, LOSC NEMA 4
16.	P07720A	1	SWITCH, MICRO
17.	M2621	2	SCREW, SELF TAPPING #6-32X3/8"
18.	M2951	4	SCREW, SELF TAPPING, PAN HD, #6 X 3/4"
19.	M2606	1	FLEXIBLE CONDUIT 3/8"X24"
20.	M2438	2	WIRE #18TFNX48"
21.	LO-12	1	O-RING
22.	M939A	2	NUT, 1/4-20
23.	M919A	2	LOCKWASHER, 1/4"
24.	M2607	1	3/8" CONDUIT ELBOW

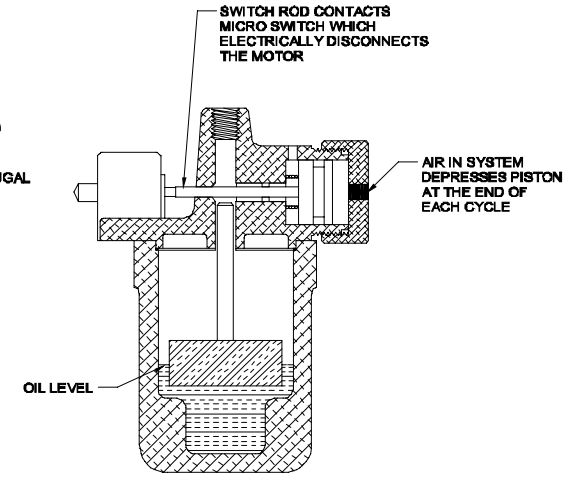
OIL MONITOR APPLICATION

PUMP MODEL	NEMA 1 KIT	DIAGRAM	NEMA 4 KIT
R10D, R15B, S12, S20	Z687	A	Z-2355
R10DHU, R15BHU, S12HU, S20HU	Z690	B	Z-2354
S40A, R30D*	Z762	C	Z-2353
S40AHU, R30DHU*	Z763	D	Z-2352
R40A	Z689	E	Z-2357
R40AHU	Z833	F	Z-2356
R70A	Z688	E	Z-2359
R70AHU	Z832	F	Z-2358
PL15A	Z6527	G	
PL30A	Z6532	G	
PL40A	Z6539	G	
PL70A	Z6544	G	
RV10A, RV15A	Z7277	H	
RV30A	Z7279	H	

NOTE: *Subsequent to serial #248485 of 11-4-74
IMPORTANT NOTE: The Oil Monitor does not eliminate the compressor owner's responsibility for periodically checking oil level, nor does it guarantee that the unit cannot be run low on oil under continuous duty operation. Refer to compressor Owner's Manual for maintenance instructions.



SAFE OPERATING OIL LEVEL

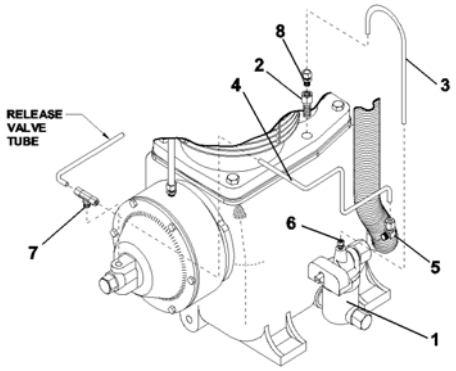


UNSAFE OPERATING OIL LEVEL

Key to Oil Monitor's reliability is its simplified operating principle and relatively few moving parts. In operation, it is installed on the outside of the air compressor crankcase with a "flow-through" port that allows oil to gravity feed into its float bowl chamber and seek the same level as in the crankcase. The float and its stem move vertically up or down with the surface level of the oil. An air operated piston with a stem is positioned so that the end of the stem can pass horizontally into the same guide hole in which the float stem travels up or down.
Each time the compressor cycles, a centrifugal unloader valve supplies air to the Oil Monitor which moves the air operated piston and stem assembly horizontally toward the float stem guide hole. If the oil is at a low unsafe level, the float stem will be sufficiently low to expose the guide hole, allowing the air piston stem to enter and apply pressure on a rod that actuates a microswitch, thus interrupting the electrical circuit to the motor and preventing the compressor from starting. The unit will not restart until the reset button has been pushed, and unless oil has been added to the crankcase. As air bleeds from the air operated piston assembly, a spring returns it to normal position.
On constant run head unloader units, the oil monitor receives its "signal" from the pilot valve rather than the centrifugal unloader (See Diagram B). Oil level is "checked" each time the compressor goes into an unload cycle. When the crankcase oil is at a safe operating level, the float stem is sufficiently high in the guide hole to stop the air piston travel and prevent the micro switch from being actuated.
Oil Monitor operates automatically and normally does not require field adjustment. Due to the limited capacity of the microswitch, the oil monitor must be used in conjunction with a magnetic starter (see wiring diagrams on page 7).

DIAGRAM A — LOSC NON-RECYCLE

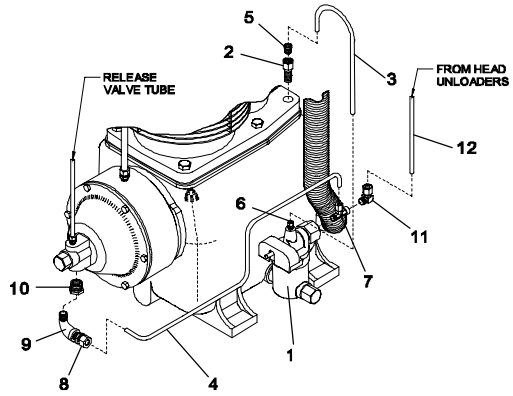
R10D, R15B, S12, AND S20



ITEM	PART NO.	DESCRIPTION
1	Z685	LOSC
2	P13757A	FITTING, VENT
3	LO24A	TUBE, VENT, 3"
4	LO25	TUBE, ACTUATING, 3"
5	M2868	COMPRESSION FITTING, 90°
6	M2863	COMPRESSION FITTING, STRAIGHT
7	M2879	COMPRESSION TEE
8	M2863	COMPRESSION FITTING, STRAIGHT

DIAGRAM B — LOSC-HU

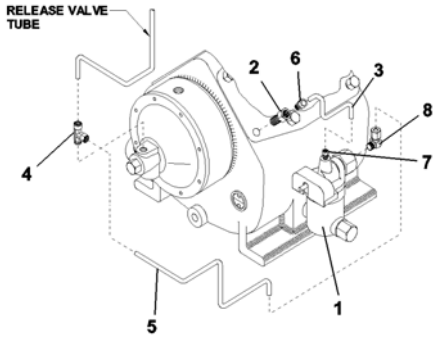
R10D-HU, R15B-HU, S12-HU, AND S20-HU



ITEM	PART NO.	DESCRIPTION
1	Z685	LOSC
2	P13757A	FITTING, VENT
3	LO24A	TUBE, VENT 3"
4	M2471	TUBE, ACTUATING 3" (16" LONG)
5	M2863	COMPRESSION FITTING STRAIGHT
6	M2863	COMPRESSION FITTING, STRAIGHT
7	P04802A	TEE ADAPTER
8	M1601	BALL CHECK CONNECTOR
9	M1597	BLEEDER, AIR, 1/8 ST. ELL
10	M9488	REDUCING BUSHING, 3/8 X 1/8
11	M2868	COMPRESSION FITTING, 90°
12	M2471	TUBING, ACTUATING, 3 (20" LONG)

DIAGRAM C — LOSC NON-RECYCLE

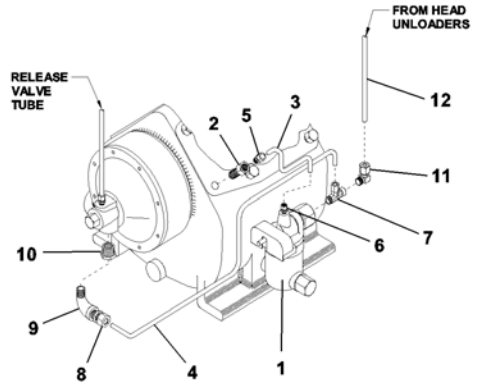
R30D AND S40A



ITEM	PART NO.	DESCRIPTION
1	Z685	LOSC
2	P13757A	FITTING, VENT
3	LO3624	TUBE, VENT, 3"
4	M2362	COMPRESSION FITTING, TEE
5	LO25	TUBING, ACTUATING, 3" (36" LG)
6	M2863	COMPRESSION FITTING STRAIGHT
7	M2863	COMPRESSION FITTING, STRAIGHT
8	M2868	COMPRESSION FITTING, 90°

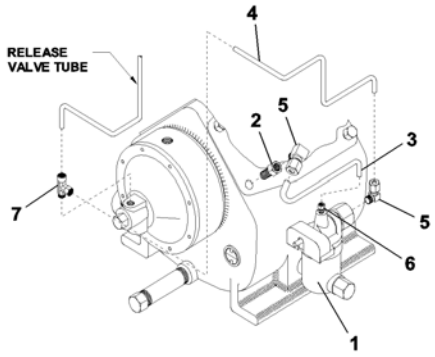
DIAGRAM D LOSC-HU

R30D-HU AND S40A-HU



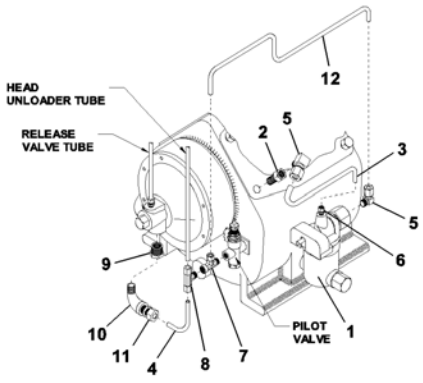
ITEM	PART NO.	DESCRIPTION
1	Z685	LOSC
2	P13757A	FITTING, VENT
3	LO3624	TUBE, VENT, 3"
4	M2471	TUBE, ACTUATING, 3" COPPER (17" LG.)
5	M2863	COMPRESSION NUT FITTING STRAIGHT
6	M2863	COMPRESSION FITTING, STRAIGHT
7	P04802A	TEE ADAPTER
8	M1601	BALL CHECK CONNECTOR
9	M1597	BLEEDER, AIR, 1/8" ST. ELL
10	M948B	REDUCING BUSHING, 3/8 X 1/8
11	M2868	COMPRESSION FITTING, 90°
12	P11018B	TUBING, ACTUATING, 3"

DIAGRAM E R40A & R70A LOSC NON-RECYCLE



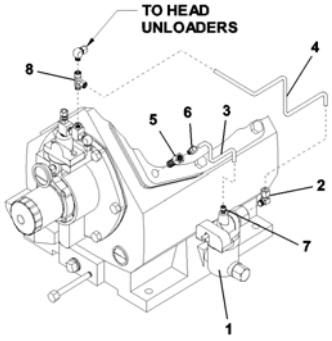
ITEM	PART NO.	DESCRIPTION
1	Z685	LOSC
2	M1500	FITTING, VENT
3	M1621	TUBE, VENT (R40A)
3	M1501	TUBE, VENT (R70A)
4	M1502	TUBING, ACTUATING
5	M2868	COMPRESSION FITTING, 90°
6	M2863	COMPRESSION FITTING, STRAIGHT
7	M2362	COMPRESSION FITTING, TEE

DIAGRAM F R40A & R70A LOSC-HU & DUAL CONTROLS



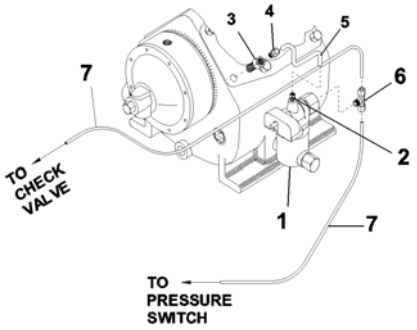
ITEM	PART NO.	DESCRIPTION
1	Z685	LOSC
2	M1500	FITTING, VENT
3	M1621	TUBE, VENT (R40A-HU)
3	M1501	TUBE, VENT (R70A-HU)
4	M1602	TUBING, VENT
5	M2868	COMPRESSION FITTING, 90°
6	M2863	COMPRESSION FITTING, STRAIGHT
7	P04802A	TEE ADAPTER
8	M2879	COMPRESSION TEE
9	M948B	REDUCING BUSHING, 3/8 x 1/8
10	M1597	BLEEDER, AIR, 1/8 ST. ELL
11	M1601	BALL CHECK CONNECTOR
12	M1603	ACTUATING TUBE

DIAGRAM G PL15A; PL30A; PL40A & PL70A LOSC



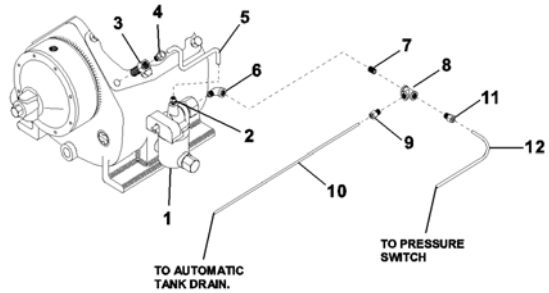
ITEM	DESCRIPTION	PL-15 (Z6527)	PL-30 (Z6532)	PL-40 (Z6539)	PL-70 (Z6544)
1	LOSC BASIC CONTROL	Z685	Z685	Z685	Z685
2	COMPRESSION FITTING	M2868	M2868	M2868	M2868
3	VENT, TUBE	LO24A	LO3624	M1621	M1501
4	ACTUATING TUBE	P10833A	P10834A	P10846A	P10846A
5	VENT, FITTING	P13757A	P13757A	M1500	M1500
6	COMPRESSION FITTING	M2863	M2863	M2868	M2868
7	COMPRESSION FITTING	M2863	M2863	M2863	M2863
8	ADAPTER TEE	P04802A	P04802A	P04802A	P04802A

DIAGRAM H RV10A; RV15A & RV30A LOSC NON-RECYCLE



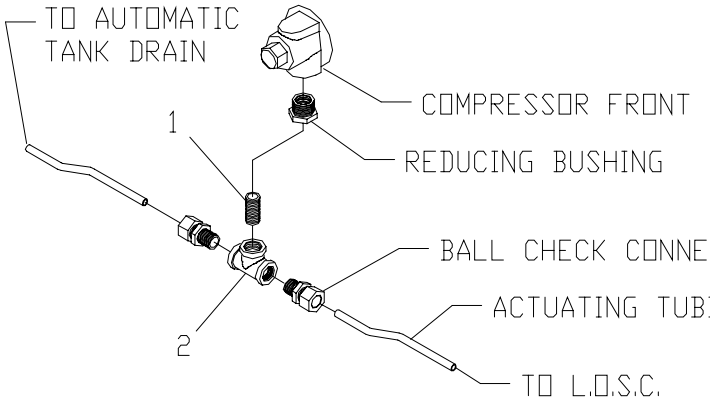
ITEM	PART NO.	DESCRIPTION
1	Z7297	LOSC BASIC CONTROL
2	M2863	COMPRESSION FITTING
3	LO10A	VENT FITTING
4	M27	COMPRESSION NUT
5	LO24A	VENT TUBE (RV10, RV15)
	LO3624	VENT TUBE (RV 30)
6	M2879	COMPRESSION FITTING
7	M2471	TUBE, 1/4"

RV10A; RV15A & RV30A LOSC & AUTOMATIC TANK DRAIN



ITEM	PART NO.	DESCRIPTION
1	Z7297	LOSC BASIC CONTROL
2	M2863	COMPRESSION FITTING
3	LO10A	VENT FITTING
4	M27	COMPRESSION NUT
5	LO24A	VENT TUBE, (RV10, RV15)
	LO3624	VENT TUBE, (RV30)
6	M3251	STREET ELBOW, 1/8"
7	M3174	CLOSE NIPPLE, 1/8"
8	M3474	PIPE TEE, 1/8"
9	P08730A	COMPRESSION FITTING
10	P08727A	TUBING, NYLON 5/32"
11	P08730A	COMPRESSION FITTING
12	P08727A	TUBING, NYLON 5/32"

LOSC AND ATD CONNECTION



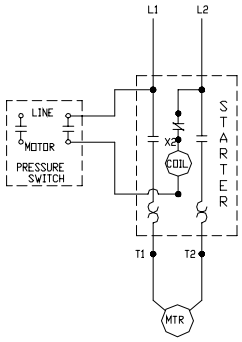
R10, R15, R30, R40, R70 W/HU OR DUAL CONTROL AND AUTOMATIC TANK DRAIN (ATD)

DELETE AIR BLEEDER M1597 AND ADD:

1..M3174.....CLOSE NIPPLE, 1/8"
2..M3474.....PIPE TEE, 1/8"

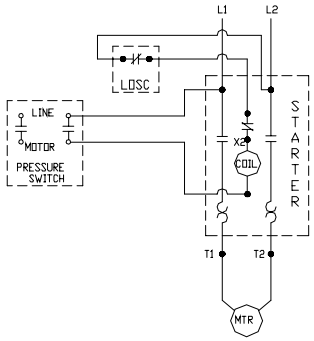
LOSC WIRING DIAGRAMS

SUPPLY VOLTAGE FROM DISCONNECT



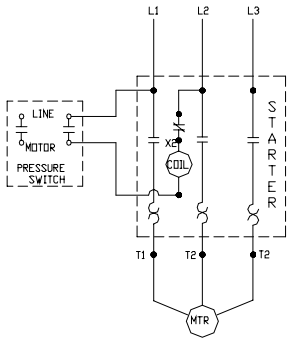
SINGLE PHASE MAGNETIC STARTER

SUPPLY VOLTAGE FROM DISCONNECT



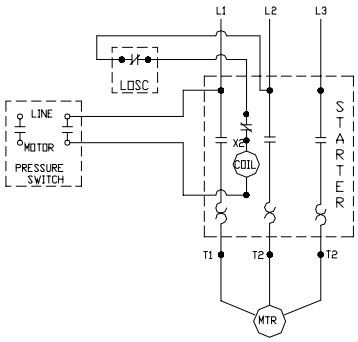
SINGLE PHASE MAGNETIC STARTER WITH LOSC

SUPPLY VOLTAGE FROM DISCONNECT



THREE PHASE MAGNETIC STARTER

SUPPLY VOLTAGE FROM DISCONNECT



THREE PHASE MAGNETIC STARTER WITH LOSC

TO HAVE WARRANTY CONSIDERATION, ELECTRIC MOTORS MUST BE EQUIPPED WITH FACTORY INSTALLED THERMAL OVERLOAD

3110-07

OPERATION

IMPORTANT: The oil monitor is not "fail-safe" in that it cannot shut compressor off unless the unit cycles off and back on by operation of pressure switch or pilot valve. The user must still periodically check oil level and add oil if needed.

The oil monitor controls compressor operation when oil in crankcase falls to a level where compressor will not lubricate properly.

When mounted, control is placed on right side of compressor with reset button facing front. Operation of control as follows:

Oil level in crankcase is measured at the beginning of each pumping cycle with non recycling oil monitor. Level in bowl is same as that in the crankcase. Float (3) and stem (2) move up and down as level changes.
When the compressor stops centrifugal unloader valve releases air in system up to check valve, or when compressor unloads pilot valve pressurizes tubing. This air is piped to control and pushes piston (10) on control to left. If oil level is sufficiently high, float and stem are up. Piston rod cannot advance to left. Spring (13) then returns it to original position as air bleeds from vent. If oil level drops, float stem (2) will move down and out of path of piston rod (10). Piston rod will then travel to left until switch rod (11) is contacted. This breaks motor circuit as shown in wiring diagram. Now compressor will not run until switch (16) is reset by depressing reset button and oil is added. Compressor will not recycle unless oil level is corrected.

Item numbers ( ) refer to illustration on front cover.

SERVICING

WARNING

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

The oil monitor is pre-set at the factory and no adjustments should be necessary once in service.

TO CHECK OIL MONITOR FOR PROPER OPERATION.

Drain oil to a level slightly below crankcase sight gauge. Start compressor by bleeding air from tank or system. Shut off compressor manual start switch while running. After compressor stops, re-start with manual switch. If control is operating properly, compressor will fail to run. Be sure to refill crankcase to proper level before depressing reset button**.**

If the Oil Monitor does not operate properly, check the following points for malfunction:

1) AIR LEAKS IN SYSTEM

Check the fittings at ends of tube (4) leading from centrifugal unloader to oil monitor for tightness and leaks. (Diagram A & B)

Check the fittings at ends of vent tube (3) for tightness and leaks. (Diagram A & B)

Check the gasket (4) between valve body (1) and bowl (5) for leaks. This is particularly important if, as compressor becomes older, rings become worn allowing blow by. This will cause a pressure rise in the crankcase which will give a false safe oil level indication.

2) WORN OR FAULTY INTAKE VALVES

Check the valves for wear or malfunction. Faulty valves can cause a pressure drop in the crankcase which can give a false low oil level indication.

3) PLUGGED OR DIRTY INTAKE AIR FILTER

Replace or clean as prescribed on maintenance chart. Improper breathing can also cause a false low oil indication.

4) CRANKCASE OIL

Check crankcase oil for proper level. Check when compressor is shut off.

Check crankcase oil for proper viscosity. This is particularly important under low temperature conditions (Below 32˚F.) Oil which is too thick can slow the response of the mechanism, causing float to register a low level.

Change oil regularly-clean oil insures proper operation of the Oil Monitor, as well as compressor. When draining old oil, check operation of oil monitor as prescribed above.

5) MICRO SWITCH ADJUSTMENT

If "nuisance-tripping occurs and all other causes have been eliminated, switch rod o micro switch clearance may be increased by filing 1/32" off the end of the switch rod (Item 11, front cover).

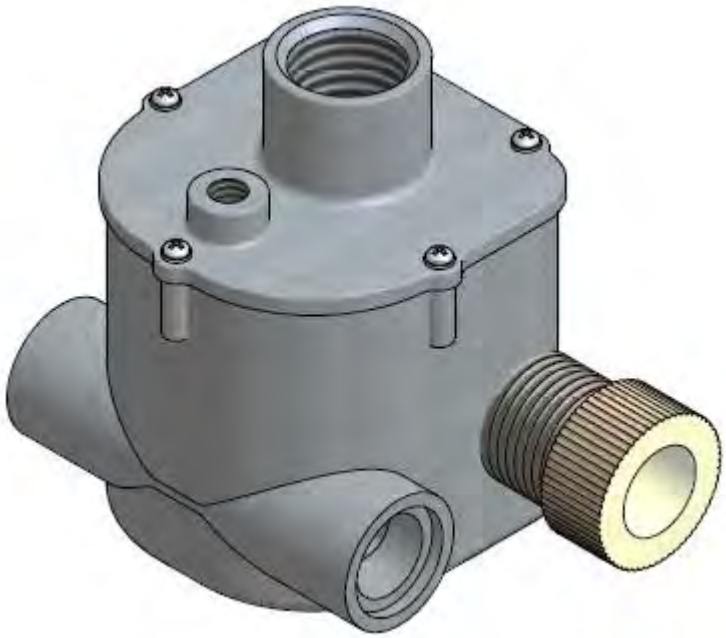
CHAMPION

OPERATION/MAINTENANCE MANUAL & PARTS LIST

LOW OIL SHUT DOWN CONTROL (LOSC)

⚠ WARNING

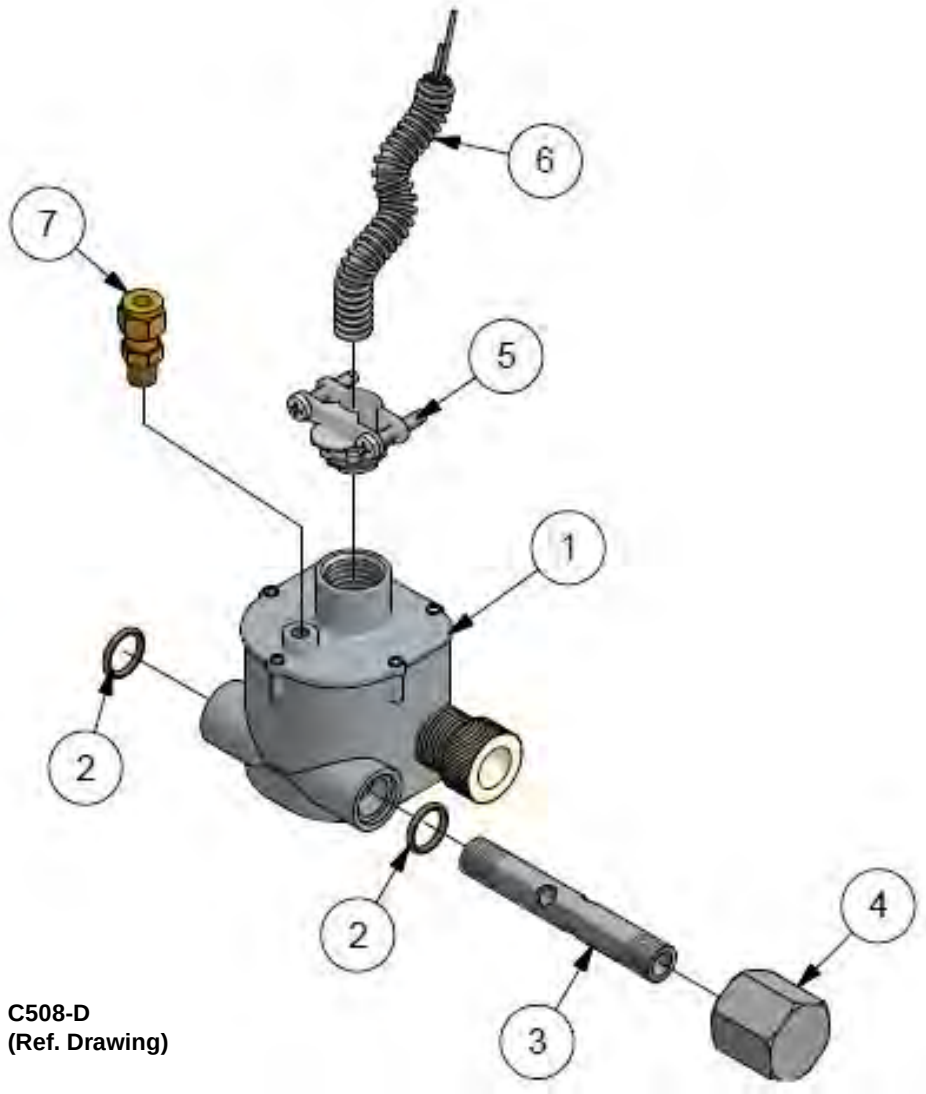
THIS MANUAL CONTAINS IMPORTANT SAFETY INFORMATION AND SHOULD ALWAYS BE AVAILABLE TO THOSE PERSONNEL OPERATING THIS UNIT.
READ, UNDERSTAND AND RETAIN ALL INSTRUCTIONS BEFORE OPERATING THIS EQUIPMENT TO PREVENT INJURY OR EQUIPMENT DAMAGE.



C520-B
(Ref. Drawing)

Form No. CQF3275 Ver: 06 02/16/2016

LOSC BASIC CONTROL NEMA 1 & 4
(NEMA 1 CONDUIT AND CONNECTOR SHOWN)

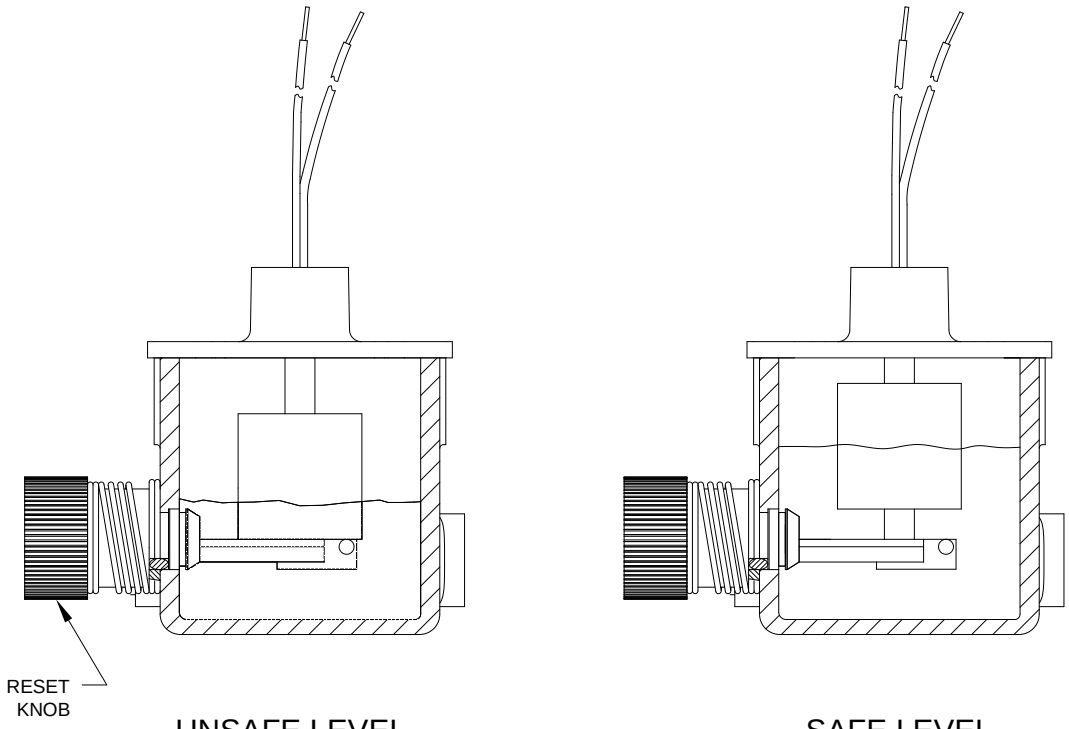


C508-D
(Ref. Drawing)

ITEM	PART NO.	QTY.	DESCRIPTION
1	VP1153306	1	LOSC SWITCH
2	2009222	2	O-RING
3	CC11553304	1	TUBE, OIL
4	L030	1	CAP
5	M1757	1	CONDUIT CONNECTOR N1 (NOT INCLUDED)
	M2761	1	CONDUIT CONNECTOR N4 (NOT INCLUDED)
6	CC1019312	1 ft.	CONDUIT N1 (NOT INCLUDED)
	M2606	1 ft.	CONDUIT N4 (NOT INCLUDED)
7	M2863	1	FITTING, COMPRESSION
	CC1153308	1	REPLACEMENT KIT (CONTAINS ITEMS 1,2 & 8)

OIL MONITOR KITS
(For installation on Pumps without Oil Monitor)

PUMP MODEL	KIT #	DIAGRAM
R10, R15, PL15, S12, S20	CC1007124	A
R30, PL30, S40	CC1007125	B
R40, PL40	CC1007127	C
R70, PL70	CC1007128	D
RV15	CC1007129	E
RV30	CC1007166	F



C509-A
(Ref. Drawing)

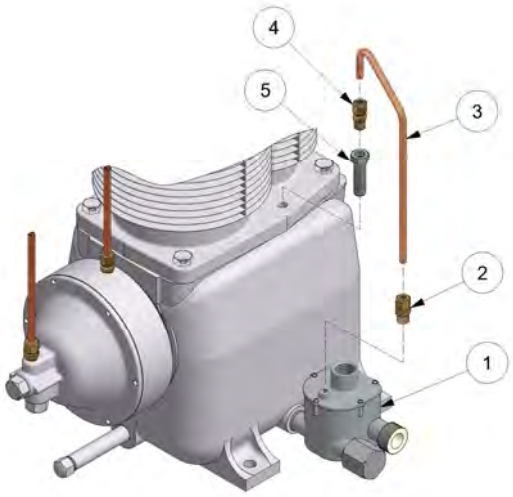
OPERATION:

The oil monitor must be used in conjunction with a magnetic starter (see wiring diagram for details). The oil monitor is installed on the outside of the air compressor crankcase with a port that allows oil to feed into its float bowl chamber and maintain the same level as in the crankcase. The float moves vertically up or down as the oil level changes. If the oil level is below minimum allowable operating level, the reed switch will open, thus stopping the motor. A magnet holds the float and prevents the compressor from starting. In order to start the compressor the following steps must be taken:

1. Fill crankcase to recommended capacity as indicated when level reaches the middle of the oil sight glass.
2. Turn cam reset knob 90° clockwise.

IMPORTANT NOTE: The Oil Monitor does not eliminate the compressor owner's responsibility for periodically checking oil level. Refer to compressor Owner's Manual for maintenance instructions.

DIAGRAM A — R10, R15, PL15, S12, AND S20

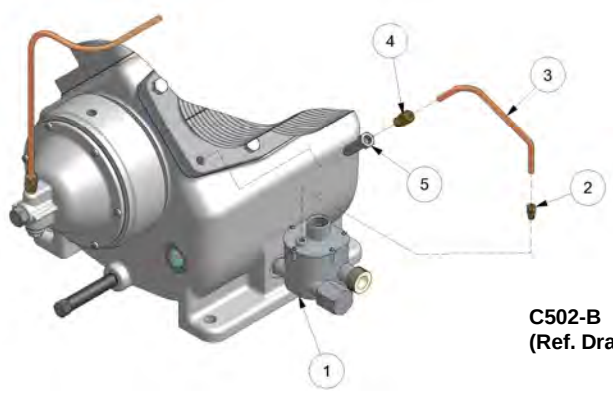


C506-B
(Ref. Drawing)

ITEM	PART NO.	QTY.	DESCRIPTION
1	CC1007376	1	LOSC ASSY
2	M2863	1	COMPRESSION FITTING, STRAIGHT
3	CC1007635	1	TUBE, VENT
4	M2863	1	COMPRESSION FITTING, STRAIGHT
5	P13757A	1	FITTING, VENT

Note: R15 Shown

DIAGRAM B — R30, PL30 AND S40

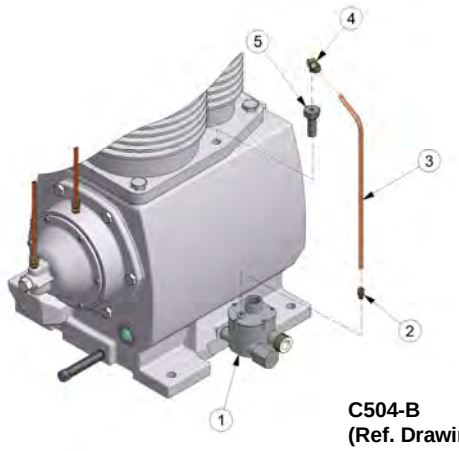


C502-B
(Ref. Drawing)

ITEM	PART NO.	QTY.	DESCRIPTION
1	CC1007376	1	LOSC ASSY
2	M2863	1	COMPRESSION FITTING, STRAIGHT
3	CC1007636	1	TUBE, VENT
4	M2863	1	COMPRESSION FITTING, STRAIGHT
5	P13757A	1	FITTING, VENT

Note: R30 Shown

DIAGRAM C — R40 AND PL40

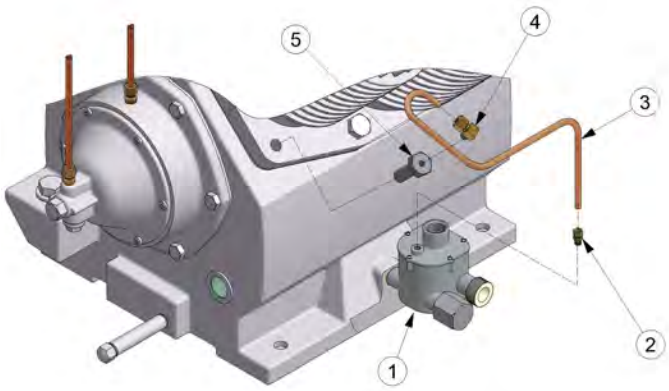


C504-B
(Ref. Drawing)

ITEM	PART NO.	QTY.	DESCRIPTION
1	CC1007376	1	LOSC ASSY
2	M2863	1	COMPRESSION FITTING, STRAIGHT
3	CC1007631	1	TUBE, VENT
4	M2868	1	COMPRESSION FITTING, 90 DEG
5	M1500	1	FITTING, VENT

Note: R40 Shown

DIAGRAM D — R70 and PL70

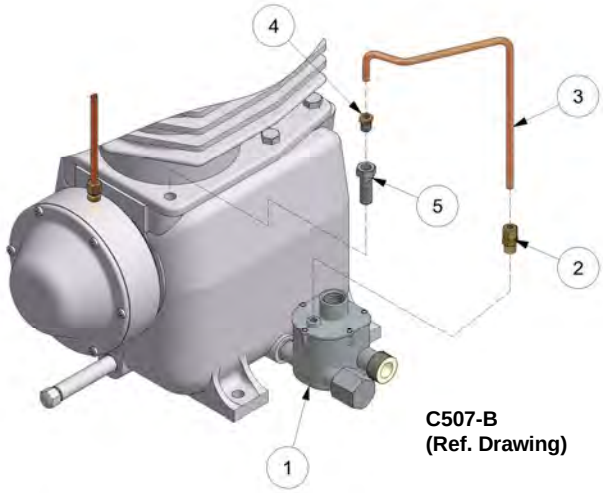


C505-B
(Ref. Drawing)

ITEM	PART NO.	QTY.	DESCRIPTION
1	CC1007376	1	LOSC ASSEMBLY
2	M2863	1	COMPRESSION FITTING, STRAIGHT
3	CC1007632	1	TUBE, VENT
4	M2868	1	COMPRESSION FITTING 90 DEG.
5	M1500	1	FITTING, VENT

Note: R70 Shown

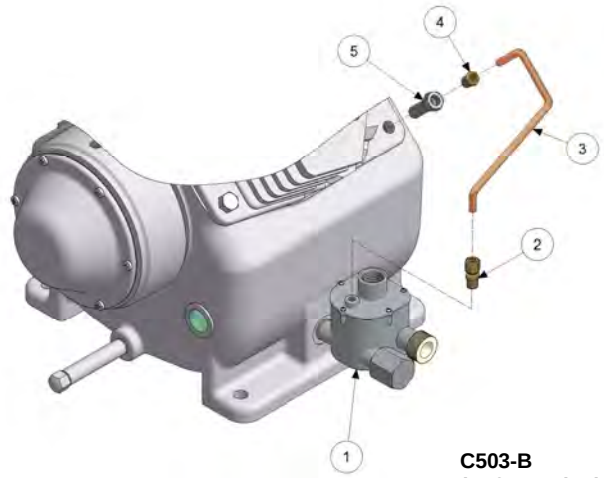
DIAGRAM E — RV15A



C507-B
(Ref. Drawing)

ITEM	PART NO.	QTY.	DESCRIPTION
1	CC1007376	1	LOSC ASSEMBLY
2	M2863	1	COMPRESSION FITTING, STRAIGHT
3	CC1007634	1	TUBE, VENT
4	M27	1	COMPRESSION NUT
5	LO10A	1	FITTING, VENT

DIAGRAM F — RV30A

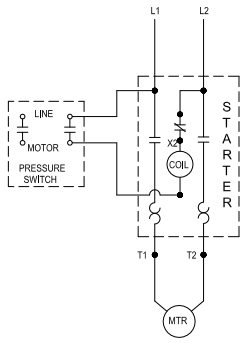


C503-B
(Ref. Drawing)

ITEM	PART NO.	QTY.	DESCRIPTION
1	CC1007376	1	LOSC ASSEMBLY
2	M2863	1	COMPRESSION FITTING, STRAIGHT
3	CC1007630	1	TUBE, VENT
4	M27	1	COMPRESSION NUT
5	LO10A	1	FITTING, VENT

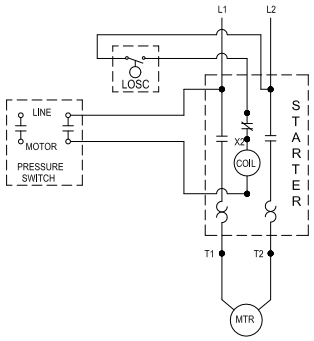
LOSC WIRING DIAGRAMS

SUPPLY VOLTAGE FROM DISCONNECT



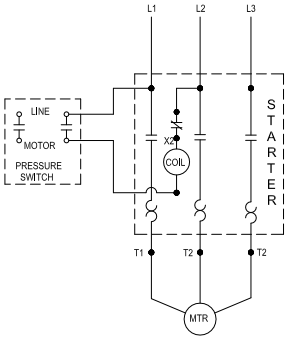
SINGLE PHASE MAGNETIC STARTER

SUPPLY VOLTAGE FROM DISCONNECT



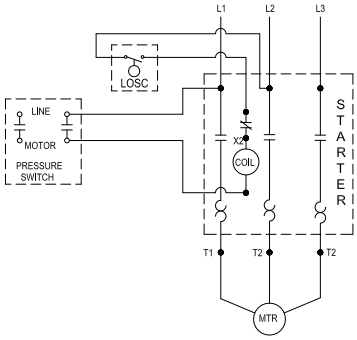
SINGLE PHASE MAGNETIC STARTER WITH LOSC
(LOSC SHOWN NORMALLY OPEN WHEN THERE IS NO OIL IN THE CRANKCASE)

SUPPLY VOLTAGE FROM DISCONNECT



THREE PHASE MAGNETIC STARTER

SUPPLY VOLTAGE FROM DISCONNECT



THREE PHASE MAGNETIC STARTER WITH LOSC
(LOSC SHOWN NORMALLY OPEN WHEN THERE IS NO OIL IN THE CRANKCASE)

TO HAVE WARRANTY CONSIDERATION, ELECTRIC MOTORS MUST BE EQUIPPED WITH FACTORY INSTALLED THERMAL OVERLOAD

C519-A
(Ref. Drawing)

TROUBLESHOOTING & SERVICING

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

NOTICE
Do not disassemble LOSC switch. Disassembly will void warranty.

No adjustments are required for oil monitor.

If the Oil Monitor does not operate properly, check the items listed below to determine the cause.

1) CRANKCASE OIL

Check sight glass to insure proper oil level in crankcase, when compressor is shut off.

Check crankcase oil for proper viscosity. This is particularly important for temperature conditions below 32¢F. Oil which is too thick can slow the response of the mechanism, causing float to register a low level.

Change oil regularly. Clean oil insures proper operation of the Oil Monitor, as well as compressor.

2) VENT TUBE

Check vent tube to insure it is not clogged.

Check the gasket between valve body and bowl for leaks. This will cause a pressure rise in the crankcase which will give a false safe oil level indication.

Check the fittings at ends of vent tube (3) for tightness and leaks.

3) RESET

Check that reset return spring is in proper working order.

Verify that reset knob is in fully counterclockwise position.

CHAMPION

For additional information, contact your local representative or visit:
www.championpneumatic.com/contactus.aspx

ENERGY STAR PARTNER

CERTIFIED QUALITY MANAGEMENT SYSTEM ISO 9001:2008 ANAB DNV

MEMBER OF CAGI Compressed Air & Gas Institute

KNOW PRESSURE COMPRESSED AIR CHALLENGE

Please recycle after use.