

CASE

CONSTRUCTION

COMPRESSOR

BCCAC1330HEB2

BCCAC1330HGW

BCCAC1030KGW

BCCAC1330HEBG2S

BCCAC1330HB3000W

OPERATION MANUAL

Introduction

- 4 Using the Operator's Manual

Product Identification

- 5 Record Identification Numbers

Generator Safety

- 6 Generator Safety & Grounding

Safety

- 8 Safety Precautions and Warnings

Troubleshooting

- 9 Troubleshooting Chart

Compressor Maintenance

- 11 Maintenance

- 12 Storage

Adjustments & Alignment

- 13 Adjusting Belt Tension

- 13 Pulley Alignment

Unit Description

- 14 What is a reciprocating compressor?

- 14 Description of Cooling

- 14 Description of Controls

Pre-Operation

- 15** Receiving and uncrating of your compressor
- 15** Compressor Installation
- 15** Location
- 15** Mounting
- 16** Induction System
- 16** Noise
- 16** Piping Fitup
- 16** Safety Valves
- 17** Pressure Vessels
- 17** Manual Relief and Shutoff Valves
- 18** Guards
- 18** Drives

Start Up Preparation

- 19** Start Up Preparation

Stopping for Maintenance

- 20** Stopping for Maintenance or Service

Maintenance

- 21** Safety Procedures
- 21** Daily
- 21** Weekly
- 21** Every 3 Months

Parts Breakdown

- 22** Parts Breakdown
- 23** Parts Breakdown Description
- 24** CA1 and CA1U
- 25** CA1 and CA1U Parts Breakdown

Warranty

- 26** Warranty Statement



Attention: Read through the complete manual prior to the initial use of your Compressor

Using the Operator's manual

The operating manual is an important part of your Compressor. It should be read thoroughly before initial use, and referred to often to make sure adequate safety and service concerns are being addressed.

Reading the owner's manual thoroughly will help avoid any personal injury or damage to your pump. By knowing how best to operate this machine you will be better positioned to show others who may also operate the unit.

You can refer back to the manual at any time to help troubleshoot any specific operating functions, so store it with the machine at all times.



WARNING
ADVERTENCIA • AVERTISSEMENT

Cancer and Reproductive Harm
Cáncer y Daño Reproductivo
Cancer et dommages à la reproduction

www.P65Warnings.ca.gov

Record Identification Numbers

Compressor

If you need to contact an Authorized Dealer or Customer Service line (1-855-850-6668) for information on servicing, always provide the product model and identification numbers.

You will need to locate the model and serial number for the pump and record the information in the places provided below.

Date of Purchase:

Dealer Name:

Dealer Phone:

Product Identification Numbers

Model Number:

Serial Number:

This unit is equipped with a grounding terminal for your protection. Always complete the ground path from the unit to an external ground source as instructed in the following page.

The unit is a potential source of electrical shock if not kept dry. Keep the unit dry and do not use in rain or wet conditions. To protect from moisture, operate it on a dry surface under an open, canopy-like structure. Dry your hands if wet before touching the unit.

Plug appliances directly into the unit. Or, use a heavy duty, outdoor-rated extension cord that is rated (in watts or amps) at least equal to the sum of the connected appliance loads. Check that the entire cord is free of cuts or tears and that the plug has all three prongs, especially a grounding pin.

NEVER try to power house wiring by plugging the unit into a wall outlet, a practice known as “back feeding”. This is an extremely dangerous practice that presents an electrocution risk to utility workers and neighbors served by the same utility transformer. It also bypasses some of the built-in household circuit protection devices.

If you must connect the unit to the house wiring to power appliances, have a qualified electrician install the appropriate equipment in accordance with local electrical codes. Or, check with your utility company to see if it can install an appropriate power transfer switch.

For power outages, permanently installed stationary units are better suited for providing backup power to the home. Even a properly connected portable unit can become overloaded. This may result in overheating or stressing the unit components, possibly leading to a unit failure.

This product must be grounded. Should a malfunction occur, grounding provides the path of least resistance for the electric current, reducing the risk of electrocution.

The screw and ground terminal on the frame must always be used to connect the unit to a suitable ground source. The ground path should be made with #8 size wire. Connect the terminal of the ground wire between the star washers and screw then tighten the screw fully. Connect the other end of the wire securely to a suitable ground source.

The National Electric Code contains several practical ways in which to establish a good ground source. Examples given below illustrate a few of the ways in which a good ground source may be established.

A metal underground water pipe in direct contact with the earth for at least 10 feet can be used as a grounding source. If a pipe is unavailable, an 8 foot length of pipe or rod may be used as the ground source. The pipe should be 3/4 inch trade size or larger and the outer surface must be noncorrosive. If a steel or iron rod is used it should be at least 5/8 inch diameter and if a nonferrous rod is used it should be at least 1/2 inch diameter and be listed as material for grounding.

Drive the rod or pipe to a depth of 8 feet. If a rock bottom is encountered less than 4 feet down, bury the rod or pipe in a trench. All electrical tools and appliances operated from this unit, must be properly grounded by use of a third wire or be "Double Insulated".

It is recommended to:

1. Use electrical devices with 3 prong power cords.
2. Use an extension cord with a 3 hole receptacle and a 3 prong plug at the opposite ends to ensure continuity of the ground protection from the unit to appliance.

We strongly recommend that all applicable federal, state and local regulations relating to grounding specifications be checked and adhered to.

Safety Precautions and Warnings

Listed are some, but not all safety precautions that must be observed with compressors. Failure to follow any of these warnings may result in severe personal injury, death, property damage and/or compressor damage.

- Air from this compressor will cause severe injury or death if used for breathing or food processing.
- Air used for these processes must meet OSHA 29 CFR 1910 or FDA 21 178.3570 regulations.
- This compressor is designed for use in the compression of normal atmospheric air only. No other gases, vapors or fumes should be exposed to the compressor intake, nor processed through the compressor.
- Disconnect all power supplies to the compressor plus any remote controllers prior to servicing the unit.
- Relieve all pressure internal to the compressor prior to servicing.
- Do not depend on check valves to hold system pressure.
- A properly sized safety valve must be installed in the discharge piping ahead (upstream) of any shutoff valve (block valve), heat exchanger, orifice or any potential blockage point. Failure to install a safety relief valve could result in rupturing or explosion of some compressor or safety component.
- Do not change the pressure setting of the safety relief valve, restrict the function of the safety relief valve, or replace the safety valve with a plug.
- Over pressurization of some system or compressor component can occur, resulting in severe personal injury, death and property damage.
- Never use plastic pipe, rubber hose, or soldered joints in any part of the compressors. Failure to ensure system compatibility with compressor piping is dangerously unsound.
- Never use a flammable or toxic solvent for cleaning the air filter or any parts.
- Do not attempt to service any part while the compressor is operating.
- Do not operate the compressor at pressures in excess of its rating.
- Do not remove any guards while the compressor is operating.
- Observe gauges daily to ensure compressor is operating properly.
- Follow all maintenance procedures and check all safety devices on schedule.
- Compressed air is dangerous, do not play with it.
- Use the correct lubricant at all times.

Troubleshooting Chart

NOTE: Troubleshooting problems may have similar causes and solutions.

Make sure drive engine battery is disconnected before any maintenance or repair.

ALWAYS MAKE SURE COMPRESSOR DRIVE ENGINE KEY SWITCH IS OFF AND REMOVED FROM THE COMPRESSOR

You should always contact an authorized service center before attempting to fix or repair your air compressor.

| Problem | Possible Cause | Solutions |
|--|--|---|
| Compressor stalls and dies | <ol style="list-style-type: none"> 1. Drive engine low on fuel. 2. Compressor check valve not functioning. 3. Compressor Pilot valve not functioning. 4. Spark Plug in engine is bad. 5. Drive engine low on oil. | <ol style="list-style-type: none"> 1. Check fuel level in drive engine. 2. Inspect compressor check valve. 3. Check drive engine spark plug. 4. Check oil level on compressor drive engine. 5. Check oil on compressor pump. |
| Compressor is running but is not compressing air | <ol style="list-style-type: none"> 1. Compressor pilot valve is actuated. 2. Compressor pilot valve is malfunctioning. 3. Compressors pump head unloaders stuck engaged. | <ol style="list-style-type: none"> 1. Check pilot valve to make sure it is in the proper position. 2. Replace compressor pilot valve. 3. Check and clean compressor pump head unloaders. |
| Compressor does not idle up for compression | <ol style="list-style-type: none"> 1. Throttle control valve (bullwhip) not engaging. 2. Throttle control valve cable broken. 3. Drive engine throttle linkage damaged. | <ol style="list-style-type: none"> 1. Check throttle control valve (bullwhip) for proper function. 2. Replace throttle control valve. 3. Check drive engine throttle linkage. |
| Compressor pump knocking | <ol style="list-style-type: none"> 1. Loose motor pulley or compressor flywheel. 2. Low oil level in compressor pump. 3. Carbon build up on valve and piston. | <ol style="list-style-type: none"> 1. Tighten pulley or flywheel. 2. Keep oil level at recommended level for proper operation. 3. Only use factory recommended oil. |

| Problem | Possible Cause | Solutions |
|---|---|---|
| Excessive oil discharge in air (All Compressors have a small amount of oil carry over in compression) | <ol style="list-style-type: none"> 1. Worn piston rings or cylinder. 2. Restricted air intake. 3. Oil level too high. 4. Compressor has exceeded its duty cycle. | <ol style="list-style-type: none"> 1. Clean or replace air filters. 2. Reduce oil level to recommended amount. 3. Reduce compressor duty cycle (repair leaks or add another unit to handle the excess demand). |
| Compressor Overheating | <ol style="list-style-type: none"> 1. Poor ventilation. 2. Dirty cooling surfaces. 3. Compressor is out of its operating duty cycle. | <ol style="list-style-type: none"> 1. Relocate compressor to any area with better ventilation (at least 18 inches from the nearest wall). 2. Clean all cooling surfaces. 3. Reduce compressor duty cycle (repair leaks or add another unit to handle the excess demand). |
| Excessive belt wear | <ol style="list-style-type: none"> 1. Pulley out of alignment. 2. Improper belt tension. 3. Pulley damaged or loose. | <ol style="list-style-type: none"> 1. Realign pulley with flywheel. 2. Readjust belt tension. |
| Compressor won't start in cold weather | <ol style="list-style-type: none"> 1. Bad check valve. 2. Compressor has wrong grade oil. 3. Control lines frozen. | <ol style="list-style-type: none"> 1. Use IS 100 (30W) compressor oil for cold weather conditions. 2. Move compressor to a warmer location. 3. Put a heat lamp on compressor to maintain above freezing temperatures. |
| Compressor has excessive vibration | <ol style="list-style-type: none"> 1. Compressor is not properly mounted on vibration isolation pads. 2. Compressor pulley is out of alignment. 3. Engine is low on fuel or throttle is out of adjustment. | <ol style="list-style-type: none"> 1. Properly mount compressor on vibration isolation pads. 2. Re-align pulleys. 3. Check drive engine oil and fuel level. 4. Re-adjust engine throttle control (bull whip). |

Compressor Maintenance

WARNING

To avoid personal injury, always turn drive engine key off and remove from compressor, relieve all air pressure from the system, also disconnect the battery power connections before starting any service or maintenance on the compressor.

Daily:

Drain the receiver. Condensation will accumulate in the tank daily, and should be drained at least once a day. This is done to reduce corrossions of the tank from the inside. Always wear protective eye wear when draining the tank.

Check pump oil level. All units have a sight glass the oil level non running units should be no lower than 1/2 way on the sight glass if it is lower then you need to add oil until it is at least 1/2 way up the sight glass.

Check unit for any unusual noise or vibrations.

Weekly:

Clean air filter to ensure that no dirt or heavy particulate makes its way into the compressors valve assemblies.

Clean external parts of compressor and electric motor, this helps to ensure proper cooling and prevents rust and corrosion on critical parts.

Check safety valves to ensure they are not stuck in place and are operating properly.

Elite units check auto tank drain for proper function.

Monthly:

Inspect complete air system for leaks to make sure the compressor does not get out of its duty cycle due to air leak in the system.

Inspect oil for contamination to ensure that harmful deposits do not build up in the oil.

Check belt tension, to ensure the belts do not fail pre-maturely. Tighten them as needed to ensure they do not slip. If belts are loose, tighten per instructions on next page. Failure to tighten can cause pre-mature belt failure.

Every 3 months:

Change oil to ensure that the compressor has proper oil level and that the oil in the machine does not deteriorate past factory specifications.

Inspect valve assemblies to prevent premature failure and clean out and carbon that can form in older valves.

*Elite units clean auto tank drain strainer and check for proper function.

Inspect pressure switch for proper function.

Inspect check valve for proper function and remove any carbon accumulation to prevent premature failure.

*Clean belt guard coolers (if equipped).

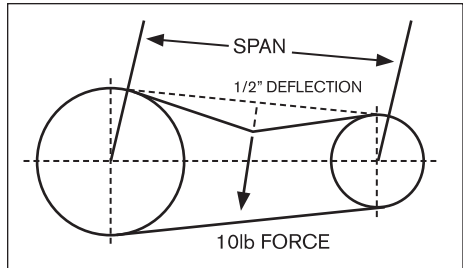
Storage of Compressor:

Before storing the compressor for a prolonged period of time, use a blow gun to clean all debris from compressor. Shut OFF main power and turn OFF disconnect. Drain tank pressure, clean air filter, drain old oil and replace with new oil. Cover the unit to prevent dust and moisture from collecting on the unit.

Adjusting Belt Tension

Proper belt tension and pulley alignment must be maintained for maximum drive efficiency and for maximum belt life. The correct tensions exists if a deflection of 1/2 inch occurs by placing 10lbs of force midway between the motor pulley and the compressor flywheel. This deflection can be adjusted by the following procedure. The pulley should be carefully aligned with the flywheel and set screws should be kept tight.

1. Remove the belt guard.
2. Loosen the motor mounting bolts.
3. Shift the motor to the point where the correct deflection exists.
4. Retighten the motor mounting belts.
5. Check to ensure that the tension remain correct after tightening.



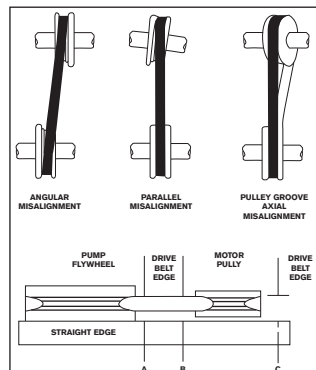
6. Re-install the belt guard. All moving parts must be guarded.

NOTE: Drive belt tension and pulley alignment are done at the same time. They are discussed separately for clarity.

Pulley Alignment

The figure to the side shows 3 examples of misaligned pulleys. To check pulley alignment, remove the belt guard and place a straightedge against the compressor flywheel, measure and record the distance from the straightedge to the edge of the drive belt. Then measure the distance to the edge of the drive belt on the motor pulley at the same edge. As long as both points measure the same distance the pulleys will be aligned if not you will need to move the pulley until its in alignment this may take a few tries. To re-align the pulley follow the steps below.

1. Loosen the motor mounting bolts.
2. Remove the belt guard.
3. Loosen the set screw on the motor pulley.
4. Align the motor pulley with the compressor flywheel.
5. Re-tighten the motor pulley set screws.
6. Adjust the proper belt tension.
7. Re-tighten the motor mounting bolts.
8. Re-install the belt guard.



What is a reciprocating compressor?

A reciprocating compressor is a piston type pump which develops pressure from the action of a piston moving through a cylinder. The cylinder, or cylinders, may be vertical, horizontal or angular.

When air is drawn in from the atmosphere and compressed to its final pressure in a single stroke, the compressor is referred to as a "single stage" pump. Single stage units normally are used in the 90 to 125 PSI range and are available as single or multi-cylinder (twin cylinder) compressors.

When the air drawn from the atmosphere is compressed first to an intermediate pressure, and then further compressed to a higher pressure, it is done in a "two stage" pump. These cylinders are unequal in size and the first stage always takes place in the larger, low pressure cylinder. From there it passes through the inner cooler to the smaller, high pressure cylinder. The cycle is completed as the air then moves through the after cooler and discharge line into the tank. Two stage compressors are generally used for pressure ranges from 100 to 175 PSI and deliver more air per horsepower at these pressures. This increase in efficiency is partially due to the heat dissipated as the air passes through the inner cooler.

Description Of Cooling

Our compressors are cooled by fan blades, incorporated into the driven sheave (pulley), blowing air across the intercooler, after cooler, and cylinder head.

Description Of Controls

Stop/Start Receiver or plant air system pressure is controlled within limits by a pressure switch automatically stopping and starting the compressor as the air pressure reaches a maximum preset pressure (cut out) and then drops to a minimum pressure (cut in).

Receiving and Uncrating of your Compressor

Before uncrating the compressor the following steps should be taken.

1. Immediately upon receipt of the equipment, it should be inspected for damage that may have occurred during shipment. If any damage is found, demand an inspection immediately by an inspector from the carrier. Ask him how to file a claim for damages. (See Appendix "A" for Details).
2. Insure that adequate lifting equipment is available for moving the machinery.
3. Read the compressor nameplate to be sure the compressor is the model and size ordered.
4. Read the motor nameplate to be sure the motor is compatible with your electrical conditions. (Volts-Phase-Hertz).

IMPORTANT: Compressor drive engine comes with its own manual refer to drive engine manual for any specifications or troubleshooting issues with the drive engine of the air compressor.

WARNING

Improper lifting can result in component or system damage or personal injury. Follow good shop practices and safety procedures.

Compressor Installation

LOCATION

Locate the compressor in an area that is clean, dry, well lighted, and well ventilated, with sufficient space for safe and proper inspection and maintenance. Ambient temperatures should not exceed 110 degrees F or fall below 30 degrees unless. Inspection and maintenance checks are required daily, therefore, ample space is required around the compressor.

The compressor must not be installed closer than fifteen inches from a wall or other solid structure to allow ample circulation of air across the compressor cylinders and head, and through the coolers if they are part of the system. Additional safety can be achieved by locating the pulley guard next to the wall or solid structure.

MOUNTING

We recommend the use of rubber pads or isolators between the tank legs and the floor. If a shim is required to level the unit, place it between the pad and floor. If you bolt the unit to the floor, use the bolts as guide pins and do not tighten the bolts. The rubber pads are used to absorb machine vibration and cannot work effectively if bolted tightly.

INDUCTION SYSTEM

Do not locate the compressor where it could ingest or ignite toxic, explosive or corrosive vapors, ambient air temperatures exceeding 110 degrees F, water or extremely dirty air. Ingestion of any of the above noted atmospheres by the compressor could jeopardize the performance of the equipment and all personnel exposed to the total compressor.

Destructive pulsations can be induced by reciprocating compressors that will damage walls and break windows. Pulsation can be minimized by adding a pulsation dampener on the inlet side of the compressor.

WARNING

Under no circumstances should a compressor be placed in an area that may be exposed to a toxic, volatile or corrosive atmosphere nor should toxic, volatile or corrosive agents be stored near the compressor.

NOISE

Noise is a potential health hazard that must be considered. There are local and federal laws specifying maximum acceptable noise levels that must not be exceeded. Most of the noise from a reciprocating compressor originates from the air inlet point. Excessive noise can be greatly reduced by installing an intake noise silencer.

PIPING FITUP

Care must be taken to avoid assembling the piping in a strain with the compressor. It should line up without having to spring or twist into position. Adequate expansion loops or bends should be installed to prevent undue stresses at the compressor resulting from the changes between hot and cold conditions. Pipe support should be mounted independently of the compressor and anchored as necessary to limit vibration and prevent expansion strains.

SAFETY VALVES

Safety valves are pressure relief valves and should be sized and purchased with a pressure setting to protect the weakest link in the system. Never change the pressure setting, only the safety valve manufacturer is qualified to make a change.

Safety valves are to be placed ahead of any potential blockage point which included but is not limited to, shutoff valves, heat exchangers, pulsation dampeners, and discharge silencers.

⚠ DANGER

Safety valves are to protect system integrity in accordance with ASME Codes & ANSI B19.3 safety standards. Failure to use safety valves of the proper capacity and pressure will cause severe personal injury or death.

PRESSURE VESSELS

Air receiver tanks and other pressure containing vessels such as, but not limited to, pulsation bottles, heat exchangers, moisture separators and traps, shall be in accordance with ASME Boiler and Pressure Vessel Code Section VIII and ANSI B19.3 Safety Standards.

⚠ DANGER

Failure to properly size, set & install pressure relief valves can be fatal.

⚠ CAUTION

ASME coded pressure vessels must not be modified, welded, repaired, reworked or subjected to operation conditions outside the nameplate ratings. Such actions will negate code status, affect insurance status and may cause severe personal injury, death, and property damage.

MANUAL RELIEF AND SHUTOFF VALVES

Install a manual relief valve to vent the compressor to atmosphere. In those instances where the air receiver tank services a single compressor, the manual relief valve can be installed on the receiver. When a manual shut-off valve, and a safety relief valve installed upstream from the manual relief valve. These valves are to be designed and installed as to permit maintenance to be performed in a safe manner. Never substitute a check valve for a manual shut-off valve (block valve) if the purpose is to isolate the compressor from a system for servicing.

⚠ CAUTION

Relieve compressor and system air pressure by opening the appropriate manual relief valve prior to servicing. Failure to relieve all system pressure may result in severe personal injury, death & property damage.

GUARDS

All mechanical action or motion is hazardous in varying degrees and needs to be guarded. Guarding shall be in compliance with OSHA Safety and Health Standards 29 CFR 1910.219 in OSHA manual 2206 and any state or local code.

⚠ CAUTION

Guards must be fastened in place before starting the compressor and never removed before cutting off & locking out the main power supply.

DRIVES

It is important that the compressor and motor pulleys are aligned properly and the V belt is correctly tensioned. Improper pulley alignment and belt tension are causes for motor overloading, excessive vibration, and premature belt and/or bearing failure.

⚠ CAUTION

Excessive speed of the compressor or driver can be lethal. Never operate the compressor beyond the manufacturer's recommendation. Bursting of the flywheel may be the greatest threat because the normal guard may not contain all the pieces. Crankshaft and connecting rod breakage is a possibility and compressor efficiency, valve life and bearing life will be abnormally reduced.

⚠ CAUTION

Removal or painting over safety labels will result in uninformed conditions. This may result in personal injury or property damage. Warnings signs and labels shall be provided with enough light to read, conspicuously located and maintained for legibility. Do not remove any warning, caution, or instructional material attached!

Provisions should be made to have the instruction manual readily available to the operator and maintenance personnel. If for any reason any part of the manual becomes illegible or if the manual is lost, have it replaced immediately. The instruction manual should be periodically read to refresh one's memory, it may prevent a serious or fatal accident.

Start Up Preparation & Procedures

The following check list shall be adhered to before putting the compressor into operation.

| |
|--|
|  CAUTION |
|--|

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|---|
| Failure to perform the checks may result in serious injury or death, property damage and/or mechanical failure. Disconnect and lock out power supply. |
|---|

1. Remove all loose pieces and tools around the compressor installation.
2. Check oil level in crankcase, add as necessary.
3. Check all pressure connections for tightness and leaks.
4. Check to make sure all safety relief valves are in place and operational.
5. Check to be sure all guards are in place and securely mounted.
6. Check fuses, circuit breakers and thermal overloads for proper size.
7. Open all manual shut-off valves (block valves) at and beyond the compressor discharge.

The following procedures should be followed for start-up of a new installation, or after changes have been made to an existing installation, and/or after service repair work has been performed.

1. Instructions in addition to those contained within this manual, supplied by manufacturers of supporting equipment, must also be read and understood before start-up.
2. Check oil level in crankcase.
3. Drain moisture from air receiver and traps.
4. Start compressor and watch for excessive vibration or strange noises. If either is observed, stop the compressor immediately and correct.
5. Check air receiver or system pressure.
6. Manually activated safety relief valves by pulling ring or lever.
7. Check operation of controls.
8. After two days of operation check belt tension, air piping for leaks, and crankcase oil level.

Stopping for Maintenance or Service

| |
|--|
|  CAUTION |
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|---|
| Never assume the compressor is ready for maintenance or service because it is stopped. The automatic stop/start control may start the compressor at any time! |
|---|

The following procedure should be followed to maximize safety when preparing for maintenance or service.

1. Turn compressor drive engine key switch off and remove key from compressor.
2. Close shut-off valve (block valve) between receiver and compressor, or receiver and air system, to prevent any back-up of air flow into the area to be serviced.
3. Disconnect battery connection to compressor drive engine
4. Lock open manual vent valve and wait for the pressure in the area to be serviced (compressor, receiver, etc.) to be completely relieved before starting service. The Manual vent valve may be the drain valve in the receiver. **NEVER** remove a plug to relieve the pressure.
5. Open all manual drain valves within the area to be serviced.
6. Wait for the unit to cool before starting service, (temperatures at 125 degrees F can burn the skin), some surface temperatures exceed 400 degrees F when the compressor is working).
7. Clean up all oils spills immediately to prevent slipping.

Maintenance

SAFETY PROCEDURES

Adherence to safe working procedures are important to Service personnel at the time of servicing and to those who may, at a later date be around the compressor and the system it serves. Routine maintenance insures trouble free operation and protects your investment. All warranties are void if maintenance is neglected.

DAILY

Check the oil level. Maintain the level at the center of the sight glass with 30w non-detergent.

Drain the tank. Turn off the power to the compressor and drain all the moisture from the bottom of the tank.

WEEKLY

Clean the oil. If the oil appears contaminated by moisture or dirt, change immediately.

Check the V belts. Turn off the compressor and inspect the belts for damage, excessive wear, and correct tension. Replace if necessary.

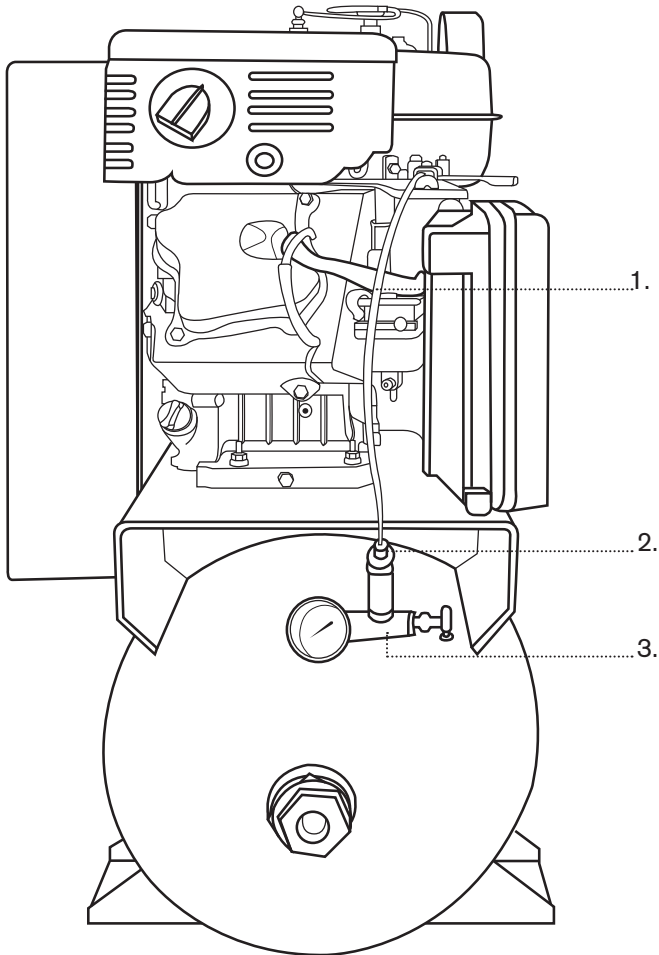
Test the safety valve. Pull the ring on the safety valve. Air should escape and then reset. In the event the compressor ran over pressure, the safety valve would reduce the tank pressure to a safe level. Never run the unit without this safety valve or attempt to adjust it.

General inspection. Check the overall operation of the unit. Tighten any loosen bolts, inspect for air leaks and inspect for any unusual noises or vibrations.

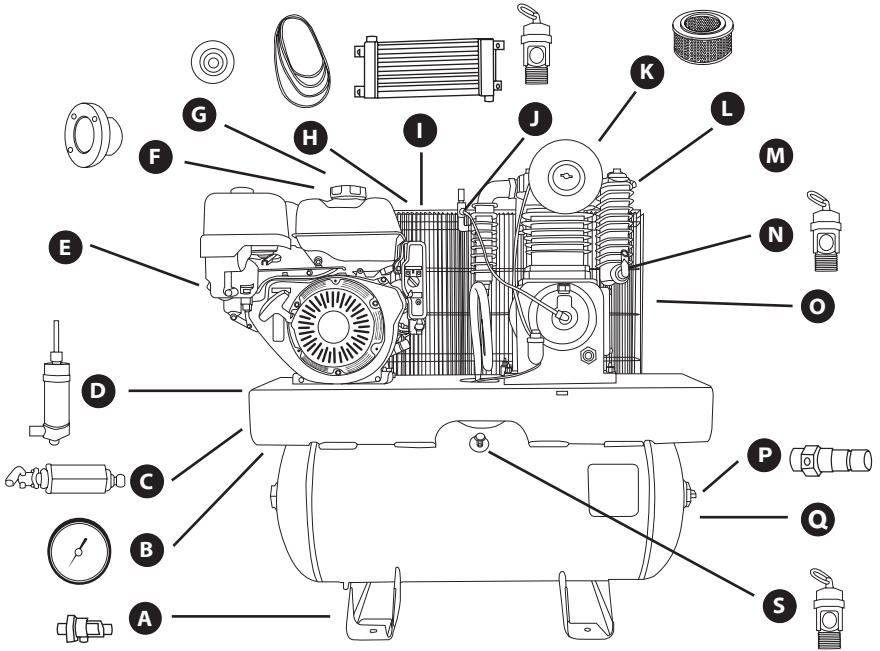
EVERY 3 MONTHS OR 500 HOURS OF OPERATION

Change the oil. Refill with 30w non-detergent oil.

Inspect compressor valves and plates. The compressor valves are manufactured from high quality stainless steel for long life. Inspect and clean the valves and valve plates by brushing with a stiff bristle brush. Do not use a steel or wire brush as severe damage to the sealing surfaces may result. Clean safety solvent may also be used to loosen carbon deposits. NEVER use gasoline, thinners or other flammable solutions to clean valves or related parts. Check to be sure the valves are seated against the sealing surface around each port. If the valves are not sealing, compressor capacity will be severely reduced and excessive heat will be generated, resulting in carbon build-up.



- 1. Bull Whip Throttle Cable
- 2. Bull Whip (Throttle Control)
- 3. Pilot Valve (Air Pressure Control Device)

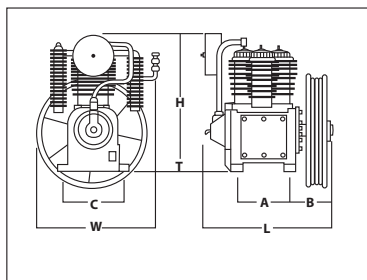
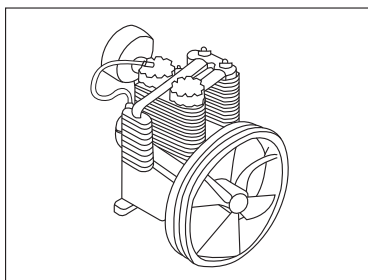


Description

Part Number

| | |
|--------------------------------------|---|
| A Auto Tank Drain | A IAT-WV1 |
| B Check Valve | B IAT-CTB34X34 |
| C Pilot/Pressure Control Valve | C IAT-RCB-MHU160/175 |
| D Throttle Control Valve | D IAT-TCLI-36 |
| E Pressure Gauge | E IAT-PSB20 |
| F Gas Engine | F 8HP KOHLER(IAT-PS95108) 8HP HONDA (GX270) 13HP HONDA (IAT-GX390KIQ) 15HP KOHLER (IAT-44502) 10HP DIESEL (IAT-15LD400) 14HP KOHLER (CH-440) |
| G Motor Pulley | G IAT-LP2B495H |
| H Belts | H IAT-B72 |
| I Belt guard cooler | I IAT-M15-AL |
| J Discharge safety valve 250 PSI | J IAT-ST25-250 |
| K 10-15hp Gas/Diesel Pump | K IAT-CA1-U |
| L Air cleaner Housing L1. Air Filter | L IAT-019-0023, L1. IAT-14 |
| M Belt Guard | M IAT-BG5X18X32X110G |
| N Intercooler Safety Valve 70 PSI | N IAT-ST25-70 |
| O Battery Box | O IAT-BATTERYBX |
| P Tank safety valve 200 PSI | P IAT-ST25-200 |
| Q Tank 30 Gallon | Q IAT-300562 |

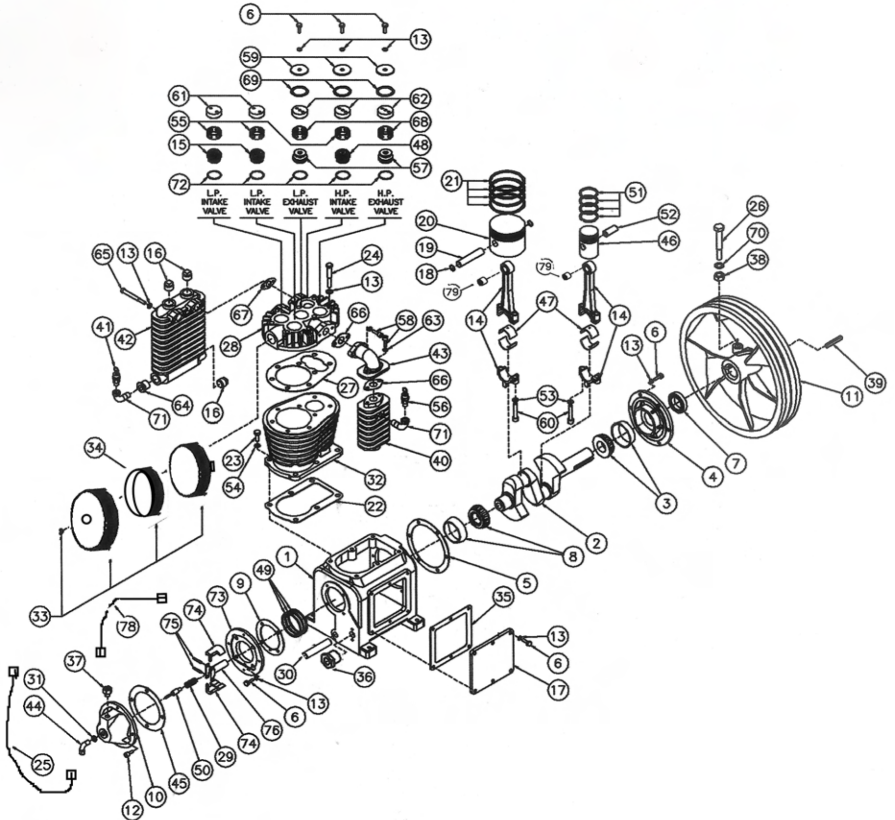
CA1 and CA1U



| Performance | | | |
|---------------|---------------------------|-------------|-------------|
| Motor | HP KW | 7.5 5.48 | 8.5 6.10 |
| Pressure | PSI Bar | 145 1.0 | 175 1.21 |
| Cylinders | | 2 | 2 |
| Piston LP | inch mm | 4.13 105 | 4.13 105 |
| Piston HP | inch mm | 2.16 55 | 2.16 55 |
| Stroke | inch mm | 3.5 89 | 3.5 89 |
| RPM | | 1100 | 1400 |
| Displacement | DCFM m ³ /m | 29.9 .85 | 31 .88 |
| Air Delivered | ACFM m ³ /m | 21.7 .62 | 21.7 .62 |
| Efficiency % | | 72.5 | 70 |
| Flywheel Dia. | inch mm | 17 430 | 17 430 |
| Groove Type | | 1/B | 1/B |

| Dimensions | | |
|-------------------|------------|-------------|
| A | inch mm | 7.75 197 |
| B | inch mm | 5.63 144 |
| C | inch mm | 9.0 229 |
| L | inch mm | 18 457 |
| W | inch mm | 17 432 |
| H | inch mm | 20 508 |
| Weight | kg | 102 |
| | lb | 225 |
| QTY 20' container | | 144 |
| QTY 40' container | | 216 |

CA1 and CA1U Parts Breakdown



5-7.5 hp Electric
8-15 hp Gas/Diesel
Two stage
Cast iron
Model CA1

| Item | CAS # | Part | Description | Qty |
|------|----------|--------|-----------------------------------|-----|
| 1 | 049-0027 | 708000 | Crankcase | 1 |
| 2 | 053-0051 | 709000 | Crankshaft | 1 |
| 3 | 051-0053 | 050170 | Bearing set front | 1 |
| 4 | 045-0044 | 701000 | Front bearing carrier | 1 |
| 5 | 046-0168 | 070163 | Gasket front cap | 1 |
| 6 | 059-0166 | 110117 | Capscrew hex M8x20 | 21 |
| 7 | 046-0179 | 060068 | Seal - shaft | 1 |
| 8 | 051-0054 | 050172 | Bearing set rear | 1 |
| 9 | 046-0227 | 070172 | Gasket rear cap | 1 |
| 10 | 077-0071 | 728004 | Centrifugal adapter plate | 1 |
| 11 | 044-0037 | 713002 | Flywheel 16 7/8" | 1 |
| 12 | 059-0156 | 110104 | Capscrew skt HD M6x20 | 4 |
| 13 | 060-0061 | 070201 | Gasket copper | 14 |
| 14 | 047-0054 | 705000 | Rod connecting aluminum w/bushing | 2 |
| 15 | 043-0098 | 727000 | Valve assembly - LP inlet | 2 |
| 16 | 062-0006 | 160004 | Plug oil fill 3/4" NPT | 4 |
| 17 | 077-0069 | 020146 | Cover crankcase side | 1 |
| 18 | 054-0119 | 200100 | Snapping internal | 2 |
| 19 | 052-0027 | 729000 | Wristpin - LP piston | 1 |
| 20 | 048-0054 | 720000 | Piston LP 105mm | 1 |
| 21 | 054-0179 | 719064 | Piston ring set LP | 1 |
| 22 | 046-0167 | 070162 | Gasket cylinder to crankcase | 1 |
| 23 | 059-0159 | 110107 | Capscrew hex 10 x 25 | 6 |
| 24 | 059-0167 | 110111 | Capscrew hex 12 x 70 | 8 |
| 25 | 046-0178 | 070171 | Gasket sight glass | 1 |
| 26 | 059-0163 | 110108 | Capscrew hex 16 x 80 | 1 |
| 27 | 046-0166 | 070161 | Gasket cylinder head | 1 |
| 28 | 042-0055 | 710000 | Head cylinder | 1 |
| 29 | 055-0051 | 723003 | Spring unloader | 1 |
| 30 | 062-0004 | 160005 | Plug oil drain 3/8" NPT | 1 |
| 31 | 058-0084 | 120058 | Nut adjustment lock | 1 |
| 32 | 050-0030 | 711000 | Cylinder | 1 |
| 33 | 019-0097 | 712000 | Filter inlet assembly | 1 |
| 34 | 019-0023 | 712114 | Filter element | 1 |
| 35 | 046-0169 | 070164 | Gasket side cover | 1 |
| 36 | 032-0031 | 731004 | Flanged sight glass | 1 |
| 37 | 056-0018 | 703007 | Breather | 1 |
| 38 | 058-0086 | 120060 | Nut hex - M16 | 1 |
| 39 | 146-0015 | 080029 | Key flywheel | 1 |
| 40 | 082-0014 | 706004 | Aftercooler | 1 |
| 41 | 136-0046 | 722005 | Valve safety 75 PSI | 1 |
| 42 | 082-0012 | 706000 | Intercooler | 1 |
| 43 | 083-0009 | 706002 | Elbow aftercooler | 1 |
| 44 | 031-0057 | 704000 | Elbow valve and unloader | 1 |

| | | | | |
|----|----------|--------|-----------------------------------|--------|
| 45 | 046-0171 | 070166 | Gasket unloader cover | 1 |
| 46 | 048-0081 | 720002 | Piston - HP | 1 |
| 47 | 051-0055 | 050122 | Insert rod - bearing half | 1 |
| 48 | 043-0100 | 727001 | Valve assembly - HP inlet | A/R |
| 49 | 046-0177 | 090095 | Shim .015 Brg Adjustment | and/or |
| 49 | 046-0176 | 090094 | Shim .010 Brg Adjustment | and/or |
| 49 | 046-0175 | 090093 | Shim .005 Brg Adjustment | and/or |
| 50 | 078-0011 | 728003 | Plunge unloader | 1 |
| 51 | 054-0178 | 719088 | Set HP piston rings | 1 |
| 52 | 052-0028 | 729006 | Wristpin HP piston | 1 |
| 53 | 060-0063 | 130060 | Lockwasher 10 | 4 |
| 54 | 060-0063 | 070203 | Gasket copper | 6 |
| 55 | 043-0094 | 727003 | Spacer inlet valve | 3 |
| 56 | 136-0007 | 722007 | Valve safety 200 PSI ASME | 1 |
| 57 | 043-0100 | 727002 | Valve assy HP/LP discharge | 2 |
| 58 | 059-0158 | 110106 | Capscrew SKT head 8 x 25 | 4 |
| 59 | 077-0073 | 727136 | Cover valve | 3 |
| 60 | 059-0154 | 110102 | Capscrew SKT head M10 x 45 | 4 |
| 61 | 058-0082 | 727134 | Retainer inlet valve | 2 |
| 62 | 058-0083 | 737135 | Retainer discharge valve | 3 |
| 63 | 060-0070 | 130058 | Lockwasher 8 | 4 |
| 64 | 063-0006 | 160002 | Bushing reducing 3/4" x 1/4" FNPT | 1 |
| 65 | 059-0157 | 110105 | Capscrew hex M8 x 85 | 4 |
| 66 | 046-0172 | 070167 | Gasket aftercooler | 2 |
| 67 | 046-0173 | 070169 | Gasket intercooler | 2 |
| 68 | 043-0095 | 727004 | Spacer discharge valve | 2 |
| 69 | 046-0174 | 070170 | Gasket valve cover | 3 |
| 70 | 060-0069 | 130057 | Lockwasher 16 | 1 |
| 71 | 064-0022 | 160003 | Elbow street 90 degrees 1/4" | 2 |
| 72 | 060-0062 | 070202 | Copper valve seat gasket | 5 |
| 73 | 077-0070 | 701029 | Cap rear | 1 |
| 74 | 096-0009 | 728000 | Weight unloader | 2 |
| 75 | 107-0015 | 100100 | Pin - hinge | 2 |
| 76 | 114-0012 | 728002 | Holder unloader | 1 |
| 77 | 046-0183 | 070245 | Gasket Set | 1 |

CALIFORNIA AND FEDERAL EXHAUST AND EVAPORATIVE EMISSIONS CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board, the United States Environmental Protection Agency and Chongqing Rato Technology Co., Ltd. (Rato), are pleased to explain the exhaust and evaporative emissions (“emissions”) control system warranty on your 2019/2020 small off-road engine/equipment.

In California, new equipment that use small off-road engines must be designed, built, and equipped to meet the State’s stringent anti-smog standards. Rato must warrant the emissions control system on your small off-road engine/equipment for the period listed below provided there has been no abuse, neglect or improper maintenance of your small off-road engine/equipment leading to the failure of the emissions control system.

Your emissions control system may include parts such as the carburetor or fuel-injection system, the ignition system, catalytic converter, fuel tanks, fuel lines (for liquid fuel and fuel vapors), fuel caps, valves, canisters, filters, clamps and other associated components. Also included may be hoses, belts, connectors, and other emission-related assemblies.

Where a warrantable condition exists, Rato will repair your small off-road engine/equipment at no cost to you including diagnosis, parts and labor.

MANUFACTURER’S WARRANTY COVERAGE

The exhaust and evaporative emissions control system on your small off-road engine/equipment is warranted for two years. If any emissions-related part on your small off-road engine/equipment is defective, the part will be repaired or replaced by Rato.

OWNER’S WARRANTY RESPONSIBILITIES

As the small off-road engine/equipment owner, you are responsible for performance of the required maintenance listed in your owner’s manual. Rato recommends that you retain all receipts covering maintenance on your small off-road engine/equipment, but Rato cannot deny warranty coverage solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine/equipment owner, you should however be aware that Rato may deny your warranty coverage if your small off-road engine/equipment or a part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine/equipment to a Rato

distribution center or service center as soon as the problem exists. The warranty repairs shall be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact BE POWER EQUIPMENT at 1-800-663-8331 (free phone) or Email at info@bepressure.com

DEFECTS WARRANTY REQUIREMENTS

A - The warranty period begins on the date the small off-road engine/equipment is delivered to an ultimate purchaser.

B - General Emissions Warranty Coverage. Rato warrants to the ultimate purchaser and each subsequent owner that the engine or equipment is:

1. Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board; and
2. Free from defects in materials and workmanship that causes the failure of a warranted part for a period of two years.

C - The warranty on emission-related parts will be interpreted as follows:

1. Any warranted part that is not scheduled for replacement as required maintenance in the written instructions must be warranted for the warranty period defined in Subsection (b)(2). If any such part fails during the period of warranty coverage, it must be repaired or replaced by Rato according to Subsection (4) below. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.
2. Any warranted part that is scheduled only for regular inspection in the written instructions must be warranted for the warranty period defined in Subsection (b) (2). A statement in such written instructions to the effect of "repair or replace as necessary" shall advise owners of the warranty coverage for emissions related parts. Replacement within the warranty period is covered by the warranty and will not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.
3. Any warranted part that is scheduled for replacement as required maintenance in the written instructions must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by Rato according to Subsection (4) below. Any such part repaired or replaced under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
4. Repair or replacement of any warranted part under the warranty provisions must be performed at no charge to the owner at a warranty station.

1. Notwithstanding the provisions of Subsection (4) above, warranty services or repairs must be provided at distribution centers that are franchised to service the subject engine/equipment.
2. The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.
3. Rato is liable for damages to other engine/equipment components proximately caused by a failure under warranty of any warranted part.
4. Throughout the emissions control system's warranty period set out in subsection (b)(2), Rato must maintain a supply of warranted parts sufficient to meet the expected demand for such parts and must obtain additional parts if that supply is exhausted.
5. Manufacturer-approved replacement parts that do not increase the exhaust or evaporative emissions of the engine or emissions control system must be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of Rato.
6. Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts will be grounds for disallowing a warranty claim. Rato will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.
11. Rato issuing the warranty shall provide any documents that describe that warranty procedures or policies within five working days of request by the Executive Officer.

D - Emission Warranty Parts List for Exhaust

1. Fuel Metering System
 - Carburetor and internal parts (and/or pressure regulator or fuel injection system).
 - Air/fuel ratio feedback and control system.
 - Cold start enrichment system.
2. Air Induction System
 - Controlled hot air intake system.
 - Intake manifold.
 - Air filter.
3. Ignition System
 - Spark Plugs.
 - Magneto or electronic ignition system.
 - Spark advance/retard system.
4. Exhaust Gas Recirculation (EGR) System
 - EGR valve body, and carburetor spacer if applicable.
 - EGR rate feedback and control system.
5. Air Injection System
 - Air pump or pulse valve.

- Valves affecting distribution of flow.
- Distribution manifold.
- 6. Catalyst or Thermal Reactor System
 - Catalytic converter.
 - Thermal reactor.
 - Exhaust manifold.
- 7. Particulate Controls
 - Traps, filters, precipitators, and any other device used to capture particulate emissions.
- 8. Miscellaneous Items Used in Above Systems
 - Electronic controls.
 - Vacuum, temperature, and time sensitive valves and switches.
 - Hoses, belts, connectors, and assemblies.

E - Emission Warranty Parts List for Evap

1. Fuel Tank
2. Fuel Cap
3. Fuel Lines (for liquid fuel and fuel vapors)
4. Fuel Line Fittings
5. Clamps*
6. Pressure Relief Valves*
7. Control Valves*
8. Control Solenoids*
9. Electronic Controls*
10. Vacuum Control Diaphragms*
11. Control Cables*
12. Control Linkages*
13. Purge Valves*
14. Gaskets*
15. Liquid/Vapor Separator
16. Carbon Canister
17. Canister Mounting Brackets
18. Carburetor Purge Port Connector

*Note: As they relate to the evaporative emission control system.

Rato will furnish with each new small off-road engine/equipment written instructions for the maintenance and use of the engine/equipment by the owner.

**If you need assistance with the
assembly or operation of your
Compressor please call**

1-855-850-6668