

***PC32Ri and PC43Ri***  
***Portable Generator***

**Installation & Operating Manual**

**WARNING:  
CALIFORNIA PROPOSITION 65 WARNING:**

**Engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects and other reproductive harm.**

**WARNING:  
CALIFORNIA PROPOSITION 65 WARNING:**

**Battery posts, terminals and related accessories are known to the state of California to cause cancer, birth defects and other reproductive harm.**

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# Section 1

## Product Safety Information

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### Safety Notice

**Be sure that you are completely familiar with the safe operation of this equipment. This equipment may be connected to other machines that have rotating parts or parts that are controlled by this equipment. Improper use can cause serious or fatal injury. Always disconnect all electrical loads before starting the generator.**

Installation and repair procedures require specialized skills with electrical generating equipment. Any person that installs or repairs this generator must have these specialized skills to ensure that this generating unit is safe to operate. Contact Baldor for repairs or any questions you may have about the safe installation and operation of this system.

The precaution statements are general guidelines for the safe use and operation of this generator. It is not practical to list all unsafe conditions. Therefore, if you use a procedure that is not recommended in this manual you must determine if it is safe for the operator and all personnel in the proximity to the generator and connected loads. If there is any question of the safety of a procedure please contact Baldor before starting or stopping the generator.

This equipment contains high voltages. Electrical shock can cause serious or fatal injury. Only qualified personnel should attempt the start-up procedure or troubleshoot this equipment.

This equipment may be connected to other machines that have rotating parts or parts that are driven by this equipment. Improper use can cause serious or fatal injury. Only qualified personnel should attempt the start-up procedure or troubleshoot this equipment.

- System documentation must be available to anyone that operates this equipment at all times.
- Keep non-qualified personnel at a safe distance from this equipment.
- Only qualified personnel familiar with the safe installation, operation and maintenance of this device should attempt start-up or operating procedures.
- Always stop engine before making or removing any connections.
- Always stop engine and allow it to cool before refueling.

### Responsibility

When your generator is delivered, it becomes the responsibility of the owner/operator of the generator set to prevent unsafe conditions and operation of the equipment. Some responsibilities include (but are not limited to) the following:

1. It is the responsibility of the owner/operator of this generator to ensure that this equipment is correctly and safely installed.
2. It is the responsibility of the owner/operator of this generator to ensure that this equipment, when installed fully complies with all federal, state and local codes.
3. It is the responsibility of the owner/operator of this generator to ensure that any person operating this equipment has been properly trained.
4. It is the responsibility of the owner/operator of this generator to ensure that any person operating this equipment has access to all manuals and information required for the safe use and operation of this equipment.
5. It is the responsibility of the owner/operator of this generator to ensure that it is properly maintained and safety inspected at regular scheduled intervals.
6. It is the responsibility of the owner/operator of this generator to ensure that any person who has not been trained on the safe use of this equipment does not have access to this equipment.

### Read This Manual Thoroughly

If you do not understand any concept, any procedure, any safety warning statement, any safety caution statement or any portion of this manual, contact Baldor or your nearest authorized Baldor representative. We are happy to make sure you understand the information in this manual so that you can safely enjoy the full use of this generator.

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## Symbols



This symbol is shown throughout the manual to indicate a connection to ground reference point.



Indicates a potentially hazardous situation which, if not avoided, could result in injury or death.



Indicates a potentially hazardous situation which, if not avoided, could result in injury or death.

## Precaution Statements Used In This Manual

There are three classifications of precautionary statements used in this manual. The most critical is a **WARNING** statement, then the **Caution** statement and the least critical is the Note statement. The usage of each statement is as follows:

**WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in injury or death.

**Caution:** Indicates a potentially hazardous situation which, if not avoided, could result in damage to property.

**Note:** Additional information that is not critical to the installation or operation.

## IMPORTANT SAFETY INSTRUCTIONS

**SAVE THESE INSTRUCTIONS** – This manual contains important instructions for the generator that should be followed during installation, operation and maintenance of the generator.

For ease of reading, the Warning statements are divided into four categories: Operation, Burn, Installation, and Maintenance.

### Operation

**WARNING:** Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death. For storage or refueling handle fuel with care and only in clean, approved, properly marked safety fuel containers.

**WARNING:** Do not overfill the fuel tank. Only fill the tank to within  $\frac{1}{2}$ " of the top of the tank to allow space for fuel expansion. Overfilling of tank may cause fuel to spill out onto engine and cause fire or explosion.

**WARNING:** Clean up fuel spills by wiping completely dry before starting engine. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death.

**WARNING:** Make sure the fuel cap is completely and securely closed after refueling to prevent spillage. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death.

**WARNING:** Never operate this generator in a manner other than as described in this manual. Operation in any manner not described in this manual should be considered unsafe and should not be attempted. Never start the engine unless you have first verified that the installation and operation of the generator are as described in this manual.

**WARNING:** Be sure that you are completely familiar with the safe operation of this equipment. This equipment may be connected to other machines that have rotating parts or parts that are controlled by this equipment. Improper use can cause serious or fatal injury.

**WARNING:** Exhaust fumes/gases are extremely dangerous and can cause severe illness or death. Never breath exhaust fumes produced by a running engine. Only run the engine outdoors where ventilation is plentiful. Exhaust gases contain carbon monoxide, a colorless, odorless and extremely dangerous gas that can cause unconsciousness or death. Symptoms of carbon monoxide poisoning include: dizziness, nausea, headaches, sleepiness, vomiting or incoherence. If you or anyone else experiences these symptoms, get out into fresh air immediately. Stop the engine and do not restart the engine until it has been inspected and if necessary repaired or reinstalled in a well ventilated area.

**WARNING:** Hot exhaust gasses must never be directed toward anything that may catch fire or explode.

**WARNING:** This generator must not be used on or near any forest covered, brush covered, or grass covered land unless the engine's exhaust system is equipped with a spark arrestor. The spark arrestor must be maintained in effective working order by the operator.

**WARNING:** Never move a generator set that is running. Hazards are caused by moving a generator set that is running.

**WARNING:** Always wear safety glasses with side shields and hearing protection when working near the generator.

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**Operation Warning Statements** Continued

- WARNING:** Some parts of this generator rotate during operation. Rotating parts can present extreme danger if clothing or body extremities are caught by the rotating part and can cause serious or fatal injury. Never touch a part of the generator until the engine has been stopped and all rotating parts are completely stopped. Also, disconnect the spark plug wires and battery connection to prevent accidental engine rotation during servicing.
- WARNING:** Be sure that you understand how to stop the engine quickly in case of an emergency situation. Become familiar with the controls and safety systems provided with this generator set.
- WARNING:** Improper operation may cause violent motion of connected equipment. Be certain that unexpected movement will not cause injury to personnel or damage to equipment.
- WARNING:** Never operate the generator set indoors or in a poorly ventilated area such as a tunnel or cave. Exhaust fumes are extremely dangerous to all personnel that are in or in contact with that area.
- WARNING:** Never permit anyone to operate the generator without proper instructions. Be sure to keep a copy of this manual with the generator so that all users can be properly informed of its safe operation.
- WARNING:** Never allow children or pets to be in the area where the generator is running. The generator and the equipment being powered by the generator may cause injury or death.
- WARNING:** Never operate the generator unless all guards, covers, shields and other safety items are properly installed.
- WARNING:** Do not put hands, feet, tools clothing or other objects near rotating parts such as drive shaft, pulley, belt etc. Rotating parts cause extremely dangerous situations because they can catch loose clothing or extremities and cause serious or fatal injury.
- WARNING:** When operating this generator remain alert at all times. Never operate machinery when physically or mentally fatigued, or while under the influence of alcohol, drugs or medication.
- WARNING:** Never operate the engine when the air cleaner is removed. An engine backfire can cause serious burns.
- WARNING:** Never “jump start” a generator to start the engine. If the battery charge is insufficient to start the engine, charge or replace the battery and try to restart. Jump starting a battery can cause the battery to explode and cause severe injury or death to anyone in the area.
- WARNING:** High voltage is present whenever engine is running. Electrical shock can cause serious or fatal injury. Never operate electrical equipment while standing in water, on wet ground or with wet hands, feet or shoes or while barefoot.
- WARNING:** High voltage is present whenever the engine is running. Electrical shock can cause serious or fatal injury.
- WARNING:** Do not smoke near generator during operation or while refueling. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death.
- WARNING:** Stop engine and allow engine to cool before refueling. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death.
- WARNING:** Never store an engine with fuel in its tank indoors or in an enclosed, poorly ventilated area where gasoline fumes could reach an ignition source and cause an explosion. Fumes may reach an open flame, electrical spark or pilot light as on a furnace, water heater, clothes dryer, etc. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death.
- WARNING:** Allow generator to cool before transporting it or storing it. Always drain fuel from tank after generator has cooled.
- WARNING:** When transporting the generator (especially over rough roads) always drain the fuel tank to prevent leakage or spillage of fuel. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death.
- WARNING:** Operate the generator only on a level surface. If the generator is tilted during operation, fuel spillage may result. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death.
- WARNING:** Keep generator at least three feet away from buildings and other structures.
- WARNING:** Keep generator away from flammable or hazardous materials (trash, rags, lubricants, explosives, paints etc.) and grass or leaf build up.
- WARNING:** Keep a fire extinguisher near the generator while generator is in use. An extinguisher rated “ABC” by the National Fire Protection Association is appropriate.

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**Warning Statements** Continued

**Burn**

**WARNING:** Parts of this generator are extremely hot during and after operation. To prevent severe burns, do not touch any part of the generator until you have first determined if the part is hot. Wear protective clothing and after use allow sufficient time for parts to cool before touching any part of the generator.

**WARNING:** Do not touch the hot exhaust parts or the high voltage spark plug or coil terminals of the engine. Although spark plug voltages are not normally lethal, a sudden involuntary jerk of the hand or body part caused by contact with high voltage or a hot surface can result in injury to yourself or others.

**Installation**

**WARNING:** Installation and servicing of batteries is to be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

**WARNING:** Installation and repair procedures requires specialized skills with electrical generating equipment and small engine systems. Any person that installs or performs repairs must have these specialized skills to ensure that the generator set is safe to operate. Contact Baldor for installation or repairs.

**WARNING:** Be sure all wiring complies with the National Electrical Code (NEC) and all regional and local codes or CE Compliance. Improper wiring may cause a hazardous condition and exposure to electrical hazards can cause serious injury or death.

**WARNING:** Be sure the system is properly grounded before applying power. Do not apply AC power before you ensure that grounds are connected. Electrical shock can cause serious or fatal injury. NEC requires that the frame and exposed conductive surfaces (metal parts) be connected to an approved earth ground. Local codes may also require proper grounding of generator systems.

**WARNING:** Place protective covers over all rotating parts such as drive shaft, pulley, belt etc. Rotating parts cause extremely dangerous situations because they can catch loose clothing or extremities and cause serious or fatal injury.

**WARNING:** Unauthorized modification of a generator set may make the unit unsafe for operation or may impair the operation of the unit. Never start a generator set that has been modified or tampered with. Be sure that all covers and guards are properly installed and that the unit is safe before starting the engine. If you are unsure, contact Baldor before starting the engine.

**WARNING:** When moving the generator, use reasonable caution. Be careful where you place fingers and toes to prevent injury "Pinch Points". Never try to lift a generator without a hoist or lift means because they are heavy and bodily injury may result.

**WARNING:** When transporting a generator secure the unit to prevent movement during transport.

**WARNING:** Never connect this generator to any buildings electrical system unless a licensed electrician has installed an approved transfer switch. The National Electrical Code (NEC) requires that connection of a generator to any electrical circuit normally powered by means of an electric utility must be connected by means of approved transfer switch equipment so as to isolate the electrical circuit from the utility distribution system when the generator is operating. Failure to isolate the electrical circuits by such means may result in injury or death to utility power workers due to backfeed of electrical energy onto the utility lines.

**WARNING:** Circuit overload protection must be provided in accordance with the National Electrical Code and local regulations.

**WARNING:** Check Ground Fault Circuit Interrupt (GFCI) receptacles monthly by using the "Test" and "Reset" buttons.

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**Warning Statements** Continued

**Maintenance**

- WARNING:** Installation and servicing of batteries is to be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.
- WARNING:** Disconnect the battery's ground terminal before working in the vicinity of the battery or battery wires. Contact with the battery can result in electrical shock when a tool accidentally touches the positive battery terminal or wire. The risk of such shock is reduced when the ground lead is removed during installation and maintenance.
- WARNING:** A battery presents a risk of fire and explosion because they generate hydrogen gas. Hydrogen gas is extremely explosive. Never jump start a battery, smoke in the area around the battery or cause any spark to occur in the area around the battery.
- WARNING:** Do not mutilate the battery or dispose of a battery in a fire. The battery is capable of exploding. If the battery explodes, electrolyte solution will be released in all directions. Battery electrolyte solution is caustic and can cause severe burns and blindness. If electrolyte contacts skin or eyes, immediately flush the area with water and seek medical attention quickly.
- WARNING:** A battery presents a risk of electrical shock hazard and high short circuit current. Electrical shock can cause serious or fatal injury. Never wear jewelry, watch or any metal objects when in the area around the battery.
- WARNING:** The battery electrolyte is a dilute sulfuric acid that is harmful to the skin and eyes. It is electrically conductive and corrosive. If electrolyte contacts the skin, flush the area immediately with water and wash it off using soap and water. If electrolyte contacts the eyes, immediately flush the eye thoroughly with water and seek medical attention quickly.
- WARNING:** Before cleaning, inspecting, repairing, refueling or performing any maintenance to the generator set, always be sure the engine has stopped and that all rotating parts have also stopped. After stopping, certain components are still extremely hot so be careful not to get burned.
- WARNING:** Before servicing the generator set, be sure to disconnect the spark plug wires to prevent accidental engine rotation or starting.
- WARNING:** Inspect all wiring frequently and replace any damaged, broken or frayed wiring or wires with damaged insulation immediately. Electrical shock can cause serious or fatal injury.
- WARNING:** Disconnect all electrical wires and load devices from generator power outlets before servicing the generator. Electrical shock can cause serious or fatal injury. Always treat electrical circuits as if they are energized.
- WARNING:** Check fuel tank, fuel line, and connections monthly for fuel leaks. Gasoline is flammable and can cause fire, explosions, injury or death. If a leak is found, replace only with approved pipe or components.
- WARNING:** Never store an engine with fuel in its tank indoors or in an enclosed, poorly ventilated area where gasoline fumes could reach an ignition source and cause an explosion.

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### **Caution Statements**

- Caution:** The brass connecting tab on some 120VAC duplex receptacles have been removed. Each receptacle is powered by a separate generator winding. When replacing a receptacle, inspect the brass tab that normally links both receptacles. If it is removed, be sure to remove the brass tab from the replacement receptacle before it is installed. Failure to remove the tab will cause a direct short to the generator windings and cause possible generator damage.
- Caution:** Avoid installing the generator set beside heat generating equipment, or directly below water or steam pipes or in the vicinity of corrosive substances or vapors, metal particles and dust. Heat can cause engine problems to develop and unwanted substances can cause rust or generator failure over time.
- Caution:** Do not apply high voltage to windings (start the generator) in a moisture-saturated condition. Moisture can cause insulation breakdown, making it necessary to return the generator to the factory for repair, and consequent expense and loss of time.
- Caution:** Use only original equipment or authorized replacement parts. Using the correct parts will assure continued safe operation as designed.
- Caution:** Do not suspend the generator from the top handle during operation.
- Caution:** Do not tamper with or change the engine speed. Engine speed is factory set to produce the correct voltage and output frequency.
- Caution:** Never operate the engine without a muffler and spark arrestor. The engine is designed to have the correct exhaust components installed. Operating without these components can present a fire hazard, cause excessive exhaust gases and cause damage to engine.
- Caution:** Operate the generator only on a level surface. Operation of the generator on an incline or slope may degrade engine lubrication and result in engine failure.
- Caution:** Always fill fuel tank with clean fresh fuel before use. Never leave fuel in tank for long storage periods. Old fuel becomes stale and can damage the fuel system causing the engine not to start. Always drain the fuel tank after use before storage.
- Caution:** For electric start models, do not place the key switch in the start position when engine is running. This causes the starting motor to engage and may damage the starter and engine.

## Section 2 General Information

Thank you for purchasing your Baldor Generator Set. This manual contains information you need to safely and efficiently install and operate your generator set. During the preparation of this manual every effort was made to ensure the accuracy of its contents. This manual describes only very basic engine information. A separate owner's manual for the engine is supplied with this unit for your use. Please refer to the engine manual for information relative to engine operation, maintenance, recommendations and additional safety warnings.

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Baldor Generators have earned the reputation of being high quality and dependable. We take pride in this fact and continue to keep our quality standards high on our list of priorities. We are also constantly researching new technological ideas to determine if they could be used to make our generator sets even better.

Baldor makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of fitness for any particular purpose. The information in this document is subject to change without notice. Baldor assumes no responsibility for any errors that may appear in this document.

### Limited Warranty

Baldor Generators will replace or repair free of charge any part or parts of the generator of their manufacture that are defective in workmanship and materials for a period of time as set forth in the Warranty Period chart below. All Baldor products requiring warranty service shall be transported or shipped freight pre-paid, at the risk of the party requiring warranty service, to a Baldor Generator repair facility, or to Baldor Generators – Customer Service Department in Oshkosh, Wisconsin. Written notification of the alleged defect in addition to a description of the manner in which the Baldor generator is used, and the name, address and telephone number of the party requiring warranty service must be included. Baldor is not responsible for removal and shipment of the Baldor product to the service center or for the reinstallation of the Baldor product upon its return to the party requiring warranty service. Problems with Baldor products can be due to improper maintenance, faulty installation, non-Baldor additions or modifications, or other problems not due to defects in Baldor workmanship or materials. If a Baldor Generator repair facility determines that the problem with a Baldor product is not due to defects in Baldor workmanship or materials, then the party requesting warranty service will be responsible for the cost of any necessary repairs. EXCEPT FOR THE EXPRESSED WARRANTY SET FORTH ABOVE, BALDOR GENERATORS DISCLAIMS ALL OTHER EXPRESSED AND IMPLIED WARRANTIES INCLUDING THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. NO OTHER WARRANTY, EXPRESSED OR IMPLIED, WHETHER OR NOT SIMILAR IN NATURE TO ANY OTHER WARRANTY PROVIDED HEREIN, SHALL EXIST WITH RESPECT TO THE GOODS SOLD UNDER THE PROVISIONS OF THESE TERMS AND CONDITIONS. ALL OTHER SUCH WARRANTIES ARE HEREBY EXPRESSLY WAIVED BY THE BUYER. UNDER NO CIRCUMSTANCES SHALL BALDOR GENERATORS BE LIABLE OR RESPONSIBLE IN ANY MANNER WHATSOEVER FOR ANY INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, OR ANTICIPATED PROFITS RESULTING FROM THE DEFECT, REMOVAL, REINSTALLATION, SHIPMENT OR OTHERWISE. This is the sole warranty of Baldor Generators and no other affirmations or promises made by Baldor Generators shall be deemed to create an expressed or implied warranty. Baldor Generators has not authorized anyone to make any representations or warranties other than the warranty contained herein.

### Warranty Period

Generator Series	Labor*	Parts
Portable Products (Premier, Powerchief, DG Series, K Series)	1 Year	3 Years
Towable Products (TS)	1 Year or 3,000 Hours Whichever comes first	3 Years or 3,000 Hours Whichever comes first
3600 RPM Standby Systems (Some AE Models)	1 Year or 1,000 Hours Whichever comes first	3 Years or 1,000 Hours Whichever comes first
1800 RPM Standby Systems (Some AE Models, DLC, GLC)	1 Year or 3,000 Hours Whichever comes first	3 Years or 3,000 Hours Whichever comes first
Industrial Standby Systems	1 Year or 1,000 Hours Whichever comes first	2 Years or 1,000 Hours Whichever comes first
Industrial Prime Power Systems	1 Year or 1,000 Hours Whichever comes first	1 Year or 1,000 Hours Whichever comes first
International	1 Year or 1,000 Hours Whichever comes first	1 Year or 1,000 Hours Whichever comes first

\*For products covered under labor coverage, travel expenses will be allowed up to 7 hours straight labor or 300 miles, whichever occurs first and only applies to permanently wired and mounted products (AE, DLC, GLC, IDLC). No warranty registration card is necessary to obtain warranty on Baldor Generators.

You must save the purchase receipt. Proof of purchase, date, serial number and model number will be required for all portable and Towable products to qualify for any warranty consideration.

For all other products, a start-up inspection form/warranty registration must be completed in its entirety and submitted to Baldor Generators within 30 days of start-up to qualify for any warranty consideration.



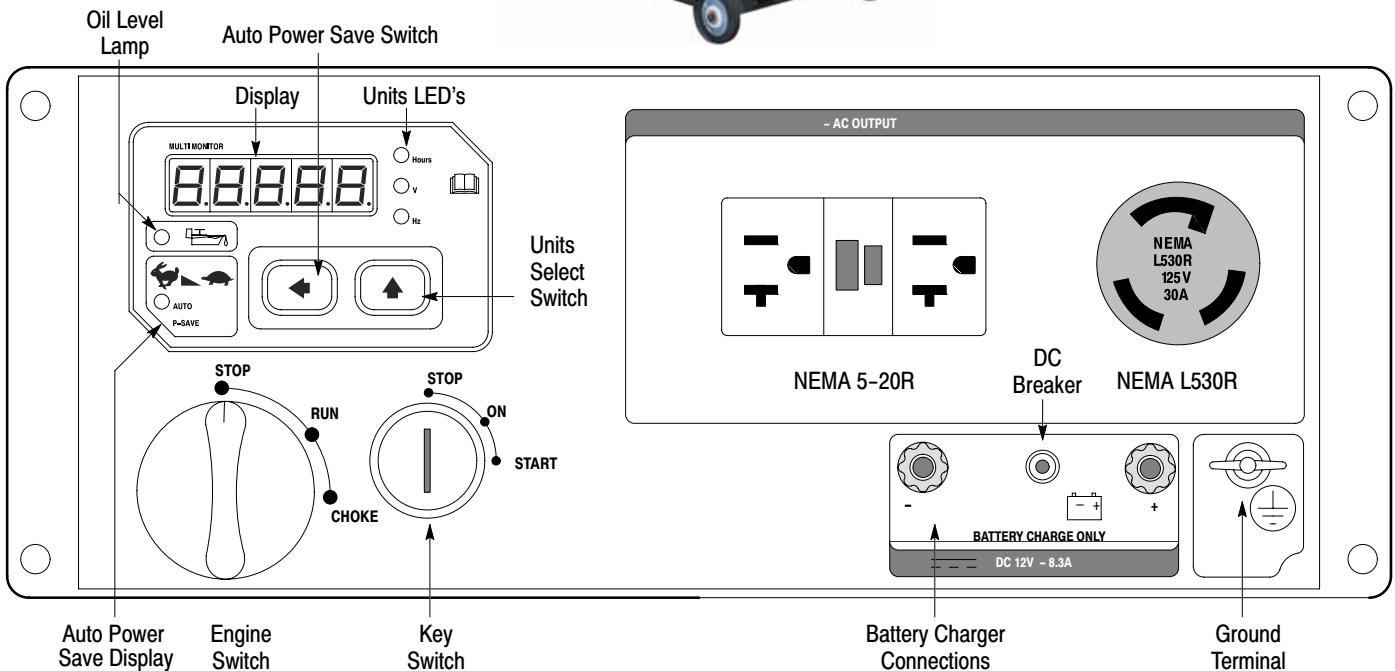
## Section 3 Receiving & Installation

- Receiving & Inspection** When you receive your generator, there are several things you should do immediately.
1. Observe the condition of the shipping container and report any damage immediately to the commercial carrier that delivered your system.
  2. Verify that the part number of the system you received is the same as the part number listed on your purchase order.
  3. If the system is to be stored for several weeks before use, be sure that it is stored in a location that conforms to published storage temperature and humidity specifications.

### Lifting the Generator

The generator weighs about 75 lbs dry. Use proper lift equipment and methods to avoid injury.

**Figure 3-1 PC32Ri/43Ri Portable Generator Control Panel**



### Storage

If you will not be using the generator set for a significant amount of time (3 months or longer) you should store the generator to prevent any problems that could arise from sitting idle. Please fully read the storage guidelines in Section 5 of this manual.

**WARNING: Never store an engine with fuel in its tank indoors or in an enclosed, poorly ventilated area where gasoline fumes could reach an ignition source and cause an explosion.**

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## **Physical Location**

Your generator is portable to go where the work is. To be safe, several factors must be considered:

1. Keep extension cords as short as possible.
2. For effective cooling and maintenance, the generator should be mounted on a flat, smooth, non-flammable level surface. A concrete pad is ideal and provides a secure installation.
3. The location for the generator must be dry. Never operate a generator in an area that has standing water or puddles.
4. Prevent obstructions (buildup of leaves, grass, sand, snow, etc.). It is important that the unit be operated in a reasonably clean environment.
5. All engines give off considerable heat when running. The engine in your generator set uses air to keep it cool so it is important that the ambient temperature is cool. Where natural ventilation is inadequate a fan to boost circulation should be used.

**WARNING: Exhaust fumes/gases are extremely dangerous and can cause severe illness or death. Never breath exhaust fumes produced by a running engine. Only run the engine outdoors where ventilation is plentiful. Exhaust gases contain carbon monoxide, a colorless, odorless and extremely dangerous gas that can cause unconsciousness or death. Symptoms of carbon monoxide poisoning include: dizziness, nausea, headaches, sleepiness, vomiting or incoherence. If you or anyone else experiences these symptoms, get out into fresh air immediately. Stop the engine and do not restart the engine until it has been inspected and if necessary repaired or reinstalled in a well ventilated area.**

6. Exhaust gases from internal combustion engines are extremely poisonous. Never operate an engine indoors.
7. All electrical equipment should be protected from excessive moisture. Failure to do so will result in deterioration of the insulation and may result in short circuits and a possible electrocution hazard.

## **Installation**

The generator is completely assembled, tested and adjusted at the factory before it is shipped to you. External connections required at the time of installation are:

1. Electrical Connections.
2. Frame Ground Connection.

**Electrical Connections** All load connections are made at the front panel using electrical cords with the proper mating plug for the receptacle being used. More than one receptacle can be used as long as the total load does not exceed the continuous rating of the generator.

**WARNING: Never connect this generator to any buildings electrical system unless a licensed electrician has installed an approved transfer switch. The National Electrical Code (NEC) requires that connection of a generator to any electrical circuit normally powered by means of an electric utility must be connected by means of approved transfer switch equipment so as to isolate the electrical circuit from the utility distribution system when the generator is operating. Failure to isolate the electrical circuits by such means may result in injury or death to utility power workers due to backfeed of electrical energy onto the utility lines.**

Use correct size insulated wire to connect the generator to the load. The gauge of the wire will depend on the distance to the load, the permissible voltage drop at the load, and the current required by the load. If you are not sure of the gauge wire needed for your application, consult a competent electrician. Using wire that is too small can result in fire hazard. Also, be sure the wire has the appropriate ratings for insulation and environment conditions. Use only U.L. approved extension cords rated for outdoor use.

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### Frame Ground Connection

**WARNING:** Be sure the system is properly grounded before applying power. Do not apply AC power before you ensure that grounds are connected. Electrical shock can cause serious or fatal injury. NEC requires that the frame and exposed conductive surfaces (metal parts) be connected to an approved earth ground. Local codes may also require proper grounding of generator systems.

The NEC requires that the frame and exposed metal surfaces be at local ground reference potential to avoid electrical shock hazard. A local ground reference may require a driven earth ground conductor at the generator installation site. Make the ground connection as shown in Figure 3-2. Use the appropriate size wire (normally 6 AWG) as required by NEC and local codes. The local reference ground is normally a copper clad earth ground rod driven into the earth at least 8 feet.

**Figure 3-2 Frame Ground Connection**



### **Engine Oil**

The generator is shipped dry. This means no oil is in the engine crankcase and no fuel is in the fuel tank. Refer to section 5 of this manual for lubricant and fuel requirements and obtain the correct type and quantity of engine motor oil and fuel.

1. Refer to section 5 of this manual and add the required amount of engine oil.
2. Refer to section 5 of this manual and add the appropriate amount of fuel.

After installation, the post installation checks must be performed prior to starting the engine. After these checks have been performed and the system operation is verified to be good, refer to Section 5 Maintenance for periodic checks that must be performed at scheduled intervals to ensure continued operation with minimal problems.

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**Battery Connections** The generator is shipped with no battery installed.

**WARNING: Installation and servicing of batteries is to be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.**

**WARNING: Disconnect the battery's ground terminal before working in the vicinity of the battery or battery wires. Contact with the battery can result in electrical shock when a tool accidentally touches the positive battery terminal or wire. The risk of such shock is reduced when the ground lead is removed during installation and maintenance.**

**WARNING: Do not mutilate the battery or dispose of a battery in a fire. The battery is capable of exploding. If the battery explodes, electrolyte solution will be released in all directions. Battery electrolyte solution is caustic and can cause severe burns and blindness. If electrolyte contacts skin or eyes, immediately flush the area with water and seek medical attention quickly.**

**WARNING: A battery presents a risk of electrical shock hazard and high short circuit current. Electrical shock can cause serious or fatal injury. Never wear jewelry, watch or any metal objects when in the area around the battery.**

The following precautions are to be followed when working on batteries:

1. Remove watches, rings, necklaces and all other metal objects.
2. Use tools with insulated handles.
3. Wear rubber gloves and boots.

**WARNING: The battery electrolyte is a dilute sulfuric acid that is harmful to the skin and eyes. It is electrically conductive and corrosive. If electrolyte contacts the skin, flush the area immediately with water and wash it off using soap and water. If electrolyte contacts the eyes, immediately flush the eye thoroughly with water and seek medical attention quickly.**

The following precautions are to be followed when working on batteries:

1. Wear full eye protection (safety glasses or goggles) and protective clothing.
2. Where electrolyte contacts the skin, flush the area immediately with water and wash it off using soap and water.
3. Where electrolyte contacts the eyes, immediately flush the eye thoroughly with water and seek medical attention quickly.
4. Spilled electrolyte is to be washed down with an acid neutralizing agent. A common practice is to use a solution of one pound (500 grams) bicarbonate of soda to one gallon (four liters) of water. The bicarbonate solution is to be added until evidence of reaction (foaming) has ceased. The resulting liquid is to be flushed with water and the area dried.

**WARNING: A battery presents a risk of fire and explosion because they generate hydrogen gas. Hydrogen gas is extremely explosive. Never jump start a battery, smoke in the area around the battery or cause any spark to occur in the area around the battery.**

The following precautions are to be followed when working on batteries:

1. Do not smoke when near batteries.
2. Do not cause flame or spark in battery area.
3. Discharge static electricity from body before touching batteries by first touching a grounded metal surface.

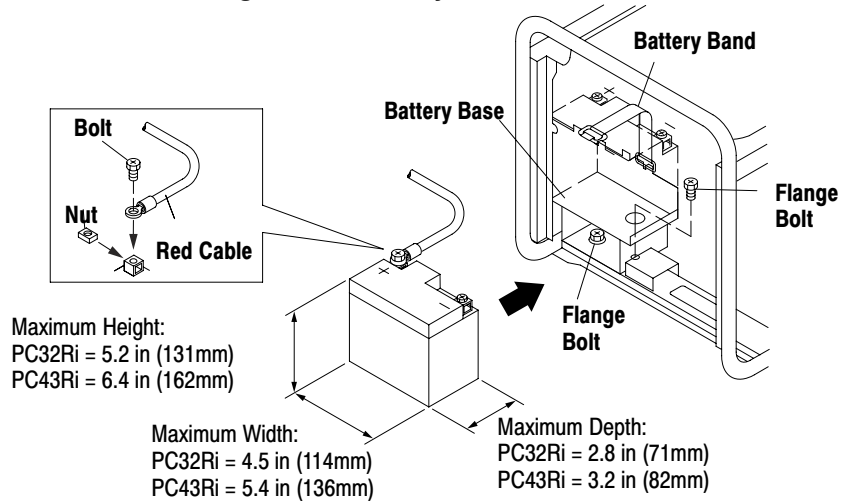
**WARNING: Disconnect the battery's ground terminal before working in the vicinity of the battery or battery wires. Contact with the battery can result in electrical shock when a tool accidentally touches the positive battery terminal or wire. The risk of such shock is reduced when the ground lead is removed during installation and maintenance.**

**Procedure:** The correct type battery must be installed in the battery compartment provided, see Table 3-1. Installation and servicing of batteries is to be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

1. Verify that the engine's starter key is in the "STOP" position.
2. Connect the positive lead to the positive (+) battery terminal as shown in Figure 3-3.
3. Connect the negative lead to the negative (-) battery terminal as shown in Figure 3-3.
4. Place the battery (see Table 3-1) on the Battery Base as shown in Figure 3-3 (with terminals facing inwards) and push the battery all the way inward.



**Figure 3-3 Battery Installation**



5. Secure the battery in position using the Battery Band shown in Figure 3-3.
6. Do not lay tools or metal parts on top of batteries.
7. Disconnect the battery's ground terminal before working in the vicinity of the battery or battery wires. Contact with the battery can result in electrical shock when a tool accidentally touches the positive battery terminal or wire. The risk of such shock is reduced when the ground lead is removed during installation and maintenance.

**Recommended Engine Oil and Battery Type**

When replacing batteries, use only the recommended battery for your generator, see Table 3-1.

**Table 3-1**

MODEL	SUMMER OIL	WINTER OIL	OIL CAPACITY qt (liter)	RECOMMENDED BATTERY
PC32Ri	SAE. 30	5W/30	0.63 (0.6)	Interstate YTZ7S - 12Volt - 6 AmpHour
PC43RI	SAE. 30	5W/30	1.0 (1.0)	Interstate YTX14AHL-BS - 12Volt - 12 AmpHour

**Use of Electric Motor Loads**

Electric motors require much more current (amperes) to start them than to keep them running. Some motors, particularly split-phase motors are very difficult to start and require 5 to 7 times more current to start them. Repulsion-induction type motors are the easiest to start and normally only require 2 to 3 times as much current to start them.

Most fractional horsepower motors take about the same amount of current to start them and keep them running. This is true whether they are the repulsion-induction type motor, capacitor type motor, or the split-phase type motor.

Other factors that influence the amount of current needed to start a motor are:

1. **The type of load connected to the motor.** If the electric motor is connected to a hard starting load such as an air compressor it will require more starting current. If the same electric motor is connected to a light load such as a heater or power saw it will require less starting current.
2. **The brand or design of the electric motor.** The expected starting current for a particular size motor will vary depending on the brand of the electric motor as well as the type of electric motor (Split Phase, capacitor, Repulsion-induction type, etc.)
3. **The condition of the electric motor.** A clean motor with free turning bearings will require less starting currents than a similar type motor that is dirty and the bearings are not as free turning as they used to be.

### Voltage Drop in Extension Cords

When a long electric extension cord is used to connect an appliance or tool to the generator, a certain amount of voltage drop or loss occurs in the extension cord which reduces the effective voltage available for the appliance or tool. Table 3-2 illustrates the approximate voltage loss when an extension cord of 300 feet (approx. 100 meters) is used to connect an appliance or tool to the generator.

**Table 3-2 Voltage Drop in Electrical Extension Cords**

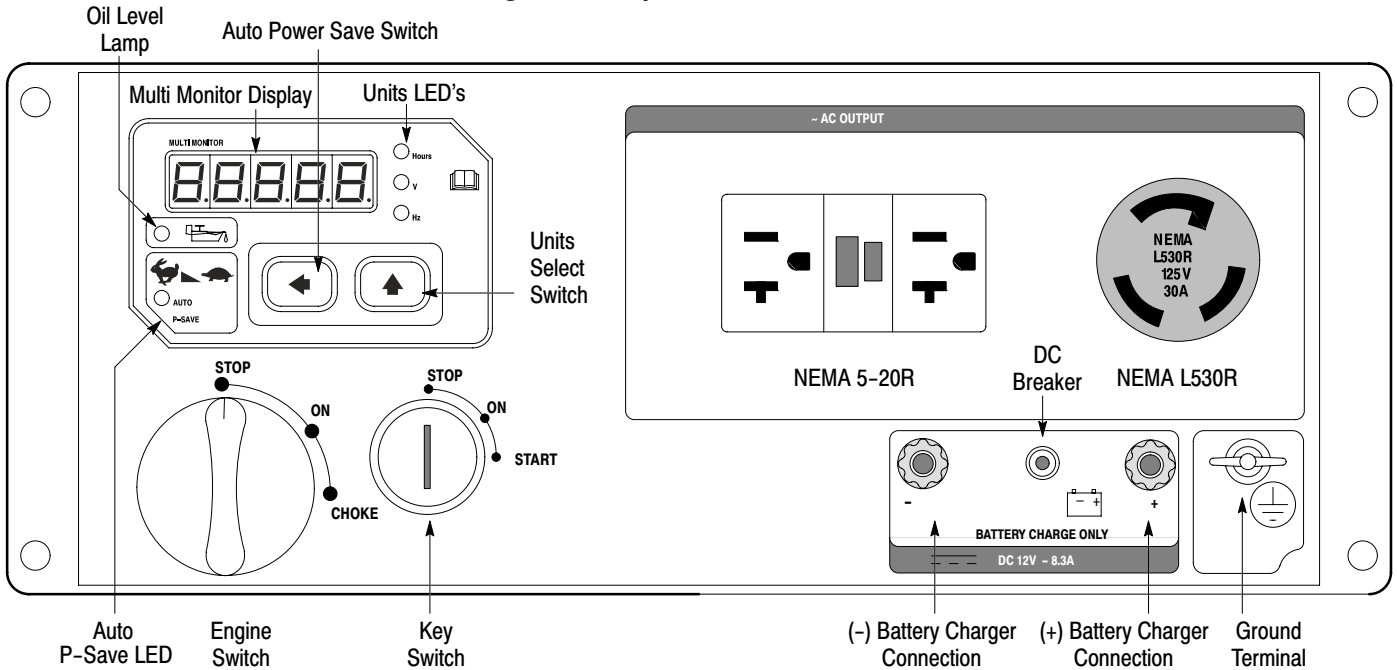
Nominal cross section	A.W.G. Gauge No.	Allowable current	No. of strands / strands dia.	Resistance	Current Amp.							Voltage drop
					1A	3A	5A	8A	10A	12A	15A	
mm <sup>2</sup>	No.	A	No./mm	Ω/100m	1A	3A	5A	8A	10A	12A	15A	
0.75	18	7	30/0.18	2.477	2.5V	8V	12.5V					
1.27	16	12	50/0.16	1.486	1.5V	5V	7.5V	12V	15V	18V		
2.0	14	17	37/0.26	0.952	1V	3V	5V	8V	10V	12V	15V	
3.5	12 to 10	23	45/0.32	0.517		1.5V	2.5V	4V	5V	6.5V	7.5V	
5.5	10 to 8	35	70/0.32	0.332		1V	2V	2.5V	3.5V	4V	5V	

# Section 4 Operation

## Operator Control Panel

The Operator Control Panel is shown in Figure 4-1.

**Figure 4-1 Operator Control Panel**



### Multi Monitor Display Overload Display

A five digit display for messages or display of Hours, Volts or Hertz.

“O\_LOD” is displayed on the Multi Monitor display when generator is running and an overload condition exists. To reset, Stop the generator and Start the generator again to resume operation.

### Units LED's

When Units Select Switch is set to Hours, Units Hours LED is ON and operating hours is displayed on Multi Monitor Display.

When Units Select Switch is set to V, Units V LED is ON and Generator Output Volts is displayed on Multi Monitor Display.

When Units Select Switch is set to Hz, Units Hz LED is ON and Generator Output Frequency is displayed on Multi Monitor Display.

### Units Select Switch Oil Level Lamp

Pressing Switch changes display modes from Hours, Volts and Hz.

Lamp is on when engine oil level is less than a predetermined level. When the lamp turns ON, the engine will stop automatically. If Oil Lamp is ON, replenish the engine oil level and restart the engine.

**Auto Power Save Switch** Press to select Power Save Mode, (Auto P-Save LED is ON) and generator speed changes for the applied load. Output voltage and frequency remain constant even at engine idle speed.

Press again to deselect Power Save mode and generator runs at full speed and produces full power. Use this mode (Auto P-Save LED is OFF) for DC power.

### Auto P-Save LED

OFF when generator runs at full speed and produces full power.

ON when generator is in Power Save Mode (Adjustable Speed).

### Engine Switch

**Stop** In this position, the engine is stopped and fuel supply line is closed.

**Run** Allows the engine to start and run during normal operation.

**Choke** Allows cold weather starting, place the Engine Switch in the Run position after engine is started.

### Key Switch

**Stop** In this position, the engine is stopped.

**ON** Engine run position after starting.

**Start** Engine start position, engages engine starter to crank the engine.

---

## **Operator Control Panel** Continued

**~ AC Output** Two AC receptacles are provided to allow easy connection of electrical loads. Both receptacles may be used at the same time provided the total electrical load does not exceed the generators rated output. GFCI (Ground Fault Circuit Interrupter) provides ground fault protection for NEMA 5–20R only.

Note: The nominal voltage produced by the generator at each receptacle is 120VAC.

**DC Circuit Breaker** Provide overcurrent protection for the DC Output terminals. When tripped, the plunger will extend from the body of the breaker. Simply push the plunger in to reset the breaker.

Note: If the breaker continues to trip, disconnect all loads and reset the breaker. If the breaker trips with all loads disconnected, turn off the generator and discontinue use until the generator is repaired.

**DC Output** Two screw type terminals provide DC output used to charge automotive type batteries. Red terminal post is positive (+). Black terminal post is negative (-).

Note: The DC and AC outlets of the generator can be used at the same time as long as the total power consumed does not exceed the output rating.

**WARNING: A battery presents a risk of electrical shock hazard and high short circuit current. The following precautions are to be followed when working on batteries:**

**WARNING: The battery electrolyte is a dilute sulfuric acid that is harmful to the skin and eyes. It is electrically conductive and corrosive. The following precautions are to be followed when working on batteries:**

**WARNING: A battery presents a risk of fire because they generate hydrogen gas. Hydrogen gas is extremely explosive. Never jump start a battery, smoke in the area around the battery or cause any spark to occur in the area around the battery.**

However several safety precautions must be followed:

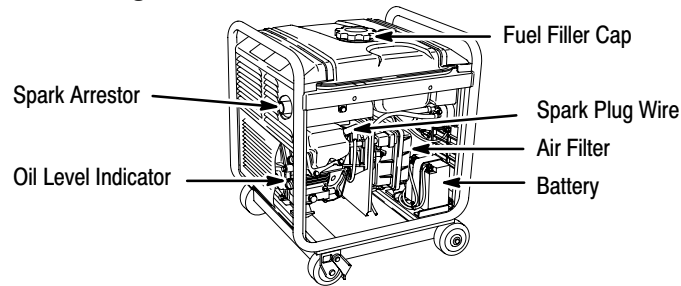
- When charging a large capacity battery or a totally discharged battery, excessive current may trip the DC breaker. If this happens, use a battery charger to charge the battery. The battery charger can be plugged into the generators AC output.
- An explosive hydrogen gas is given off by the battery (through the batteries vent holes) when it is charged. Do not allow a spark or open flame to be present during battery charging. Always turn off the generator before disconnecting the battery leads from the DC Output terminals to avoid a spark.
- The battery contains electrolyte solution which is caustic and can cause severe burns and blindness. If electrolyte contacts skin or eyes, immediately flush the area with water and seek medical attention quickly. Never charge a battery that is low on water.

**The following precautions are to be followed when working on batteries:**

1. Wear full eye protection (safety glasses or goggles) and protective clothing.
2. Where electrolyte contacts the skin, flush the area immediately with water and wash it off using soap and water.
3. Where electrolyte contacts the eyes, immediately flush the eye thoroughly with water and seek medical attention quickly.
4. Spilled electrolyte is to be washed down with an acid neutralizing agent. A common practice is to use a solution of one pound (500 grams) bicarbonate of soda to one gallon (four liters) of water. the bicarbonate solution is to be added until evidence of reaction (foaming) has ceased. The resulting liquid is to be flushed with water and the area dried.

**WARNING: Never connect this generator to any buildings electrical system unless a licensed electrician has installed an approved transfer switch. The National Electrical Code (NEC) requires that connection of a generator to any electrical circuit normally powered by means of an electric utility must be connected by means of approved transfer switch equipment so as to isolate the electrical circuit from the utility distribution system when the generator is operating. Failure to isolate the electrical circuits by such means may result in injury or death to utility power workers due to backfeed of electrical energy onto the utility lines.**

**Figure 4-2 Shown With Left Cover Removed**



**Pre-Start Checks** Before the engine is started, several things must first be checked.

1. Place the generator set in an open, dry, well ventilated and reasonably level location.
2. If grounding is required for your application, check to make sure your unit is grounded properly (see Section 3).
3. Check the engine's oil level, see Section 5.
4. Check the fuel level, see Section 5.
5. Disconnect or "turn off" all external loads.
6. Make sure DC circuit breaker is set (pushed in).
7. Tighten any bolts or nuts that may have loosened due to vibration.
8. Be sure all extension cords are in good condition before starting the generator. Use only U.L. listed extension cords.

**Start-Up Procedure**

1. Rotate the Engine Switch to the "Choke" position. If the engine is warm or if the ambient air temperature is high; try starting the engine switch in the Run position.
2. Check the fuel system for fuel leaks and repair them prior to starting the engine.
3. Rotate the "Key Switch" to the Start position and hold it there until the engine starts.
4. When engine starts, release the key and leave it in the On position to run the engine. Rotate the Engine Switch from Choke to the "On" position.

Note: Rotate the key switch to the Stop position to stop the engine.

Note: If the engine does not start after turning the engine over a few times, smell for fuel near the air cleaner. If there is a significant gasoline smell coming from the air cleaner, turn the engine switch to the Run position and attempt to start the engine.

Note: If engine does not start using normal starting methods, check the oil level. The oil level sensor will prevent engine operation if oil level is low.

5. When the engine starts, turn the engine switch to the Run position.
6. Turn the Auto Power Save switch to On so engine can idle (if equipped).
7. Ensure that the Pilot Lamp is on and the Overload Lamp is off. Otherwise stop engine immediately and correct the problem.
8. Allow engine to run for 20 or 30 seconds with no load. (Warm up).
9. Power is now present at the receptacles. Connect or "Turn On" the loads you wish to operate.
10. Turn the Auto Power Save switch to Off or On as desired.

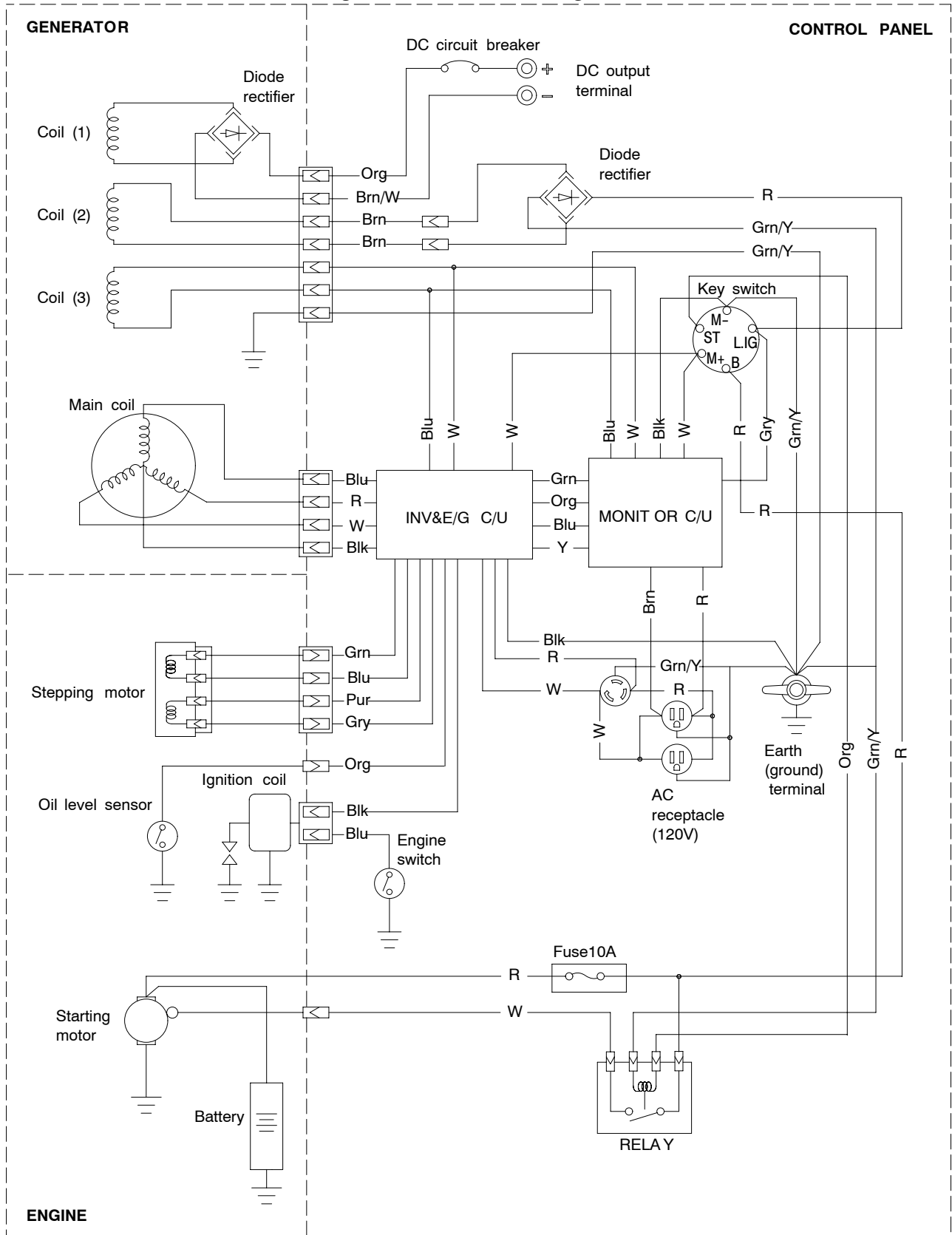
**WARNING: Never move a generator set that is running. Hazards are caused by moving a generator set that is running.**

**Stopping Procedure**

1. Disconnect or "Turn Off" all loads connected to the generator set.
2. Turn the Auto Power Save switch to On so engine can idle (if equipped).
3. Allow the generator to run at idle for 3 minutes with no load. (Cool down).
4. Rotate the Key Switch to the Stop position to stop the engine.
5. Rotate the Engine Switch to the Stop position to close the fuel line.

**WARNING: Parts of this generator are extremely hot during and after operation. To prevent severe burns, do not touch any part of the generator until you have first determined if the part is hot. Wear protective clothing and after use allow sufficient time for parts to cool before touching any part of the generator.**

**Figure 4-3 Connection Diagram**



## Section 5 Troubleshooting and Maintenance

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**WARNING:** Before cleaning, inspecting, repairing, refueling or performing any maintenance to the generator set, always be sure the engine has stopped and that all rotating parts have also stopped. After stopping, certain components are still extremely hot so be careful not to get burned.

**WARNING:** Before servicing the generator set, be sure to disconnect the spark plug wires to prevent accidental engine rotation or starting.

### Maintenance

The following are general maintenance recommendations. The engine must be stopped and all electrical load devices removed from the generator plugs or terminals before any maintenance is performed. The Maintenance Schedule is given in Table 5-1.

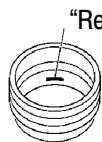
#### General Checks

1. Inspect the fuel system for leaks. Replace defective components immediately.
2. Inspect and replace any fuel line that shows signs of deterioration.
3. Inspect all fuel clamps to ensure they are tight and no leaks exist.
4. Make sure the fuel cap fits snugly on the fuel tank and that the fuel tank does not leak.
5. Inspect the condition of AC and DC terminals for damage and replace if damaged.
6. Test all GFCI (Ground Fault Circuit Interrupter) receptacles daily by pressing the test button on the receptacle during operation. Ensure that the GFCI trips and no voltage is present at the receptacle. Replace any GFCI receptacle that fails the test.
7. Inspect the external wire cables (extension cords) and connectors used with the generator set for cuts, frayed insulation, or loose connections. Repair or replace any problems prior to using the unit.
8. Inspect bolts and nuts for tightness. Vibration can cause nuts or bolts to loosen.
9. Inspect the recoil starting rope for any damage and replace it if necessary.

**WARNING:** Do not smoke near generator during operation or while refueling. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death. Keep open flames away from unit.

**WARNING:** Stop engine and allow engine to cool before refueling. Gasoline and diesel fuel are flammable and can cause fire, explosions, injury or death.

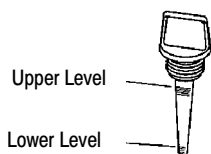
#### Check Fuel Level



"Red" marking

1. Remove fuel filler cap.
2. Fuel level should be at or below the "Red" marking at inlet portion of filler neck.
3. If fuel level is low, add unleaded automotive gasoline to just below the "Red" marking. Fuel tank capacity is: PC32Ri 2.8 gallons (10.8 liters); PC43Ri 3.3 gallons (12.8 liters).
4. Install the fuel filler cap. Wipe up any fuel spill.

#### Check Oil Level



Upper Level

Lower Level

**(SE or higher grade) SAE 10W-30 or SAE 10W-40** (Left side cover)

1. Remove oil filler cap and check the oil for contaminants (moisture or excessive dirt).
2. Change the oil if contaminated.
3. Clean the dip stick and fully insert it into oil and remove to check the oil level. Do not screw the filler cap in when checking the oil level.
4. If oil is below lower level on dip stick, add oil to bring oil to the upper level. Check for oil leaks.
5. Install and tighten the oil filler cap.

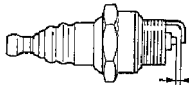
#### Change Engine Oil **(SE or higher grade) SAE 10W-30 or SAE 10W-40** (Left side cover)

1. If the engine is cold, start the engine and let it run for 1 minute. This will warm the oil to make it easier to drain. If engine is hot, allow it to cool. Hot engine oil can cause severe burns. Always wear protective clothing and eye protection when working on engine.
2. Drain oil by removing the drain plug and catch the used oil in a pan or tray. Remove the oil filler cap to let oil flow out quicker. The generator is shown raised using lumber so the pan can slide under.
3. When oil is drained, install and tighten the drain plug.
4. Fill the crankcase with clean oil until the oil level reaches the upper level on the filler cap. Oil capacity is: PC32Ri 0.63 quart (0.6 liters); PC43Ri 1.0 quart (1.0 liters).
5. Check for oil leaks.

#### Check Air Cleaner (Left side cover)

1. Unhook the air filter cover and remove the elements.
2. Clean the paper element by gently tapping the element to remove dirt and contaminants. Blow off dust and remaining dirt from the element. Replace the element if torn or extremely dirty. Replace every 200 hours or once each year.
3. Wash the urethane element with fresh water. Squeeze (do not twist) the water out and let air dry.
4. Install the elements and hook the cover.

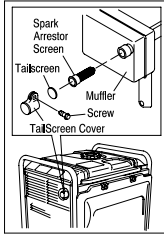
### Clean/Adjust Spark Plug (Left side cover)



NGKBR-6HS  
or RL86C  
0.024 - 0.028 in.  
(0.6 - 0.7 mm)

1. Remove the plug wire and spark plug.
2. If the spark plug is contaminated, remove the carbon buildup with a plug cleaner or wire brush.
3. Adjust the electrode gap to 0.025 in. (0.6mm).
4. Install the spark plug and plug wire.

### Clean Spark Arrester



1. Remove the flange bolts from the muffler cover and remove the muffler cover.
2. Remove the screw that secures the spark arrester and remove the spark arrester from the muffler.
3. Clean and remove carbon deposits from spark arrester with a wire brush. Be careful not to damage the fine mesh screen material. Replace spark arrester if damaged (breaks or holes).
4. Install spark arrester in muffler and secure with screw.
5. Install muffler cover and secure with flange bolts.

### Cleaning

Keeping the generator clean is an important part of good operation. If dirt buildup is not removed, the generator will run hotter than normal and its life is reduced. The following are general guidelines for cleaning.

1. Clean the generator set and remove any and all dust, dirt, or other foreign material.
2. Inspect and clean the cooling air intake and exhaust louvers of the generator end. Make sure they are clean. Remove dirt or any buildup that may restrict the cooling air flow.
3. Clean the generator set and its components with a damp cloth or sponge. Never use a water hose or pressure washer as this may damage electrical components.
4. Inspect and replace any control panel components that are broken or not working properly (receptacles, circuit breakers, switches, etc.)
5. Inspect and clean all governor and carburetor linkages so they operate properly.

**Table 5-1 Periodic Maintenance Schedule**

Maintenance Item	8 Hours or Daily	50 Hours or Weekly	100 Hours	200 Hours or Monthly	500 Hours	1000 Hours
Check condition of AC Receptacles and GFCI operation	•					
Check condition of Extension Cords	•					
Check condition of DC terminals	•					
Check condition of Engine Switch	•					
Clean generator and check tightness of bolts and nuts.	•					
Check engine oil level and replenish (to upper level) if necessary.	•					
Change engine oil (see Note 1)			•			
Clean Spark Plug and set plug air gap		•				
Replace Spark Plug					•	
Clean Air Filter element	•					
Replace Air Filter element		•				
Replace Fuel Filter				•		
Replace Spark Arrestor			•			
Remove carbon from Cylinder Head (see Note 2)					•	
Check and adjust Valve Clearance (see Note 2)					•	
Clean and adjust carburetor (see Note 2)					•	
Clean and replace Carbon Brushes					•	
Replace Fuel Lines (annually)						•
Check condition of Rotor						•
Check condition of Stator						•
Replace Engine Mounts						•

Note 1: Initial oil change should be performed after 20 hours of operation and every 100 hours thereafter. Dispose of used oil properly at recycling center.

Note 2: Please consult with Baldor Service for the correct procedures to follow for these items.



**Voltage Variations** This generator set must be run at its proper speed to obtain the correct electrical power at its output. All engines have a tendency to slow down when a load is applied to it. The engine governor is designed to hold the operating speed as nearly constant as possible. When the electrical load is increased, the engine is more heavily loaded and engine speed drops slightly. This slight decrease in engine speed results in a slight decrease in generator voltage and frequency output. This voltage and frequency variation has no appreciable effect in the operation of motors, lights, and most appliances and tools. However, timing devices and clocks will not keep perfect time when used on this generator.

Reduced voltage to the load can also be caused by using the wrong extension cord. Small diameter wire will have a voltage drop across the cord when current flows through the wire. This voltage drop can be very significant over long cord lengths. Always use the proper wire size (gauge wire size) for the extension cord to minimize the voltage drop at rated current draw.

### Problems and Solutions

Some of the more common problems are listed in Table 5-2. This information is intended to be a check or verification that simple causes can be located and fixed. It is not an exhaustive “how to” for all types of problems.

**Table 5-2 Troubleshooting Guide**

Problem	Possible Cause	Remedy
Engine will not start	No fuel. Restricted air flow. No spark. Low oil level.	Check that fuel valves are ON. Check fuel level in fuel tank. Check/replace air filter. Check/replace spark plug(s). Verify engine switch is in “Run”. Oil sensor will prevent engine starting if oil level is low.
Engine will not crank (electric start)	Dead battery.	Remove battery and trickle charge or replace with new battery. Never Jump Start.
Engine starts but will not run smoothly	Fuel or ignition problem	Have engine serviced.
Engine overheats	Excessive load Debris or dirt buildup on engine	Remove one or more electrical loads. Remove debris. Clean engine surfaces to allow cooling.
No output voltage	Circuit Breaker tripped or defective. Loss of residual magnetism in exciter field poles. Open in stator windings Defective exciter circuit.	Reset circuit breaker or replace if required. Flash field.  Check for continuity in windings. Return to factory for repair if open. Check/replace diode and capacitor and flash the field.
Output voltage varies	Irregular speed (fixed speed mode) Fluctuating speed (fixed speed mode)  Loose terminal or load connections Defective bearing (uneven air gap)	Check engine for malfunction or load for fluctuation Stabilize load. The addition of a lamp load (resistance load) may compensate partially for load changes caused by intermittent motor operation. Do not overload. Verify all connections are proper and check tightness torque of terminals. Replace worn bearing
Low output voltage	Low engine speed Excessive load High resistance connections - connections will be warm or hot Shorted field  Low power factor	Check that the Auto Idle switch is in OFF position. Check engine for malfunction or system for overload. Reduce load. Verify all connections are proper and check tightness torque of terminals. Test field coils for possible short by checking resistance with an ohmmeter or resistance bridge. Return rotor assembly to factory for repair if alternator field coils are shorted. Reduce inductive (motor) load. Some AC motors use about the same current regardless of load. Do not use motors of greater horsepower rating than is necessary to move the mechanical load.
High output voltage	Excessive speed (fixed speed mode)	Check engine for malfunction
Electrical shock when frame is touched	Static charge. Grounded armature or field coil.	Ground generator frame at local reference ground (see Section 3). Return to factory for repair

## Service

Service for your generator can be obtained from Baldor Generators. Please have the following information available prior to contacting the factory:

The model number and serial number of the generator set.

A complete and accurate description of the problem.

## Parts

Parts for your generator can be obtained from Baldor Generators. Please have the following information available prior to contacting the factory:

The model number and serial number of the generator set.

A complete and accurate description of the part (part number if known).

## Engine Oil

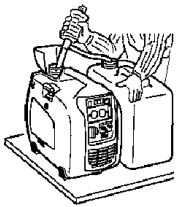
**(SE or higher grade) SAE 10W-30 or SAE 10W-40**

Use class SE (API classification) or better grade oil. SAE 10W-30 or SAE 10W-40 is recommended for general use. For single viscosity oil use at a specific temperature, refer to the following chart.

Single Grade	5W						
	10W						
		20W					
			30W				
				40W			
Multigrade	10W 30						
	10W 40						
Ambient Temperature	-20	-10	0	10	20	30	40 °C
	4	14	32	50	68	86	104 °F

## Storage

If you will not be using the generator set for a significant amount of time (3 months or longer) you should store the generator to prevent any problems that could arise from sitting idle. Please follow this procedure prior to storing the unit. This will help to ensure that the generator will start and provide good service when it is removed from storage.



1. Remove fuel filler cap.
2. Use a siphon pump to remove all fuel from fuel tank.
3. Install fuel filler cap.
4. Start the generator set and allow it to run out of fuel.
5. Place the Engine Switch in "Stop" position. This closes the fuel valve.
6. Drain the used oil from the engine's crankcase and refill it with clean oil.
7. Remove the spark plug and pour 1 oz. of clean engine oil into the cylinder. Put a rag over the spark plug port and turn the engine over approximately 5 times to distribute the oil in the cylinder.
8. Install the spark plug but do not connect the plug wire. This will help prevent accidental or unauthorized starting.
9. Provide maintenance to the engine and generator set as described in this section.
10. Inspect bolts and nuts for tightness. Vibration can cause nuts or bolts to loosen.
11. Inspect the recoil starting rope for any damage and replace it if necessary.
12. Cover any bare metal spots with paint or another type of rust preventative.

**WARNING: Never store an engine with fuel in its tank indoors or in an enclosed, poorly ventilated area where gasoline fumes could reach an ignition source and cause an explosion.**

## Baldor District Offices

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FAX: 630-848-5110

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INDIANAPOLIS, IN 46241  
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FAX: 317-246-5110  
800-428-4141

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1800 DIXON STREET, SUITE C  
DES MOINES, IA 50316  
PHONE: 515-263-6929  
FAX: 515-263-6515

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ELK RIDGE, MD 21075  
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FAX: 410-579-2677

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FAX: 508-854-0291

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FAX: 586-978-9969

#### MICHIGAN Continued

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GRAND RAPIDS, MI 49504  
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FAX: 616-785-1788

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ROGERS, MN 55374  
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FAX: 763-428-4551

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MARYLAND HEIGHTS, MO 63043  
PHONE: 314-298-1800  
FAX: 314-298-7660

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RIVERSIDE, MO 64150  
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AUBURN, NY 13021  
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GREENSBORO, NC 27406  
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GREENSBORO, NC 27416  
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FAX: 336-273-6628

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WEST CHESTER, OH 45069  
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FAX: 513-772-2219

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MACEDONIA, OH 44056  
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FAX: 918-366-9338

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HOUSTON, TX 77041  
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3040 QUEBEC  
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FAX: 214-634-8874

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SALT LAKE CITY, UT 84115  
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EDMONTON, ALBERTA T6E 6R8  
PHONE: 780-434-4900  
FAX: 780-438-2600

#### OAKVILLE, ONTARIO

2750 COVENTRY ROAD  
OAKVILLE, ONTARIO L6H 6R1  
PHONE: 905-829-3301  
FAX: 905-829-3302

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MONTREAL, QUEBEC H3J 1R5  
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FAX: 514-933-8639

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PORT COQUITLAM, BC V3C 5M5  
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FAX: 604-421-3113

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54 PRINCESS STREET  
WINNIPEG, MANITOBA R3B 1K2  
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FAX: 204-956-4251

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AUSTRALIA  
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FAX: (61) (2) 9674 2495

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AUSTRALIA  
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FAX: (61) (3) 9753 4366

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SHANGHAI JIAHUA BUSINESS CENTER  
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808 HONG QIAO ROAD  
SHANGHAI 200030  
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FAX: 86-21-64078620

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14, COMMERCE AVENUE  
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PAUD ROAD  
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MAHARASHTRA, INDIA  
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FAX: 91 20 24 55 95 30

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VIA BORROMINI, 20A  
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SWITZERLAND  
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KANAGAWA-KU  
YOKOHAMA, 221-0835, JAPAN  
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COMMERCIAL COOPERATIVE  
396-16 CHEONGCHEON 2-DONG,  
BUPYEONG-GU  
INCHEON, KOREA, 403-858  
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LEÓN 37545, GUANAJUATO, MÉXICO  
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FAX: 52 477 761 2010

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VSE INTERNATIONAL CORP.  
3233 NORTH ARLINGTON HEIGHTS  
SUITE 100W  
ARLINGTON HEIGHTS, IL 60004  
PHONE: 847 590 5547

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K B WAREHOUSE COMPLEX  
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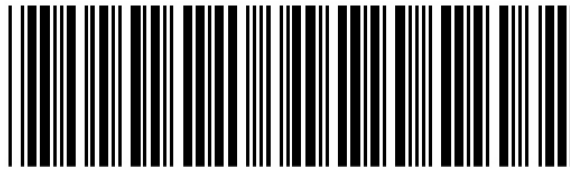
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