



KING CANADA

POWERFORCE

15,000W V-TWIN GASOLINE GENERATOR WITH ELECTRIC START



Read this manual. Do not attempt to operate this generator until you have read and understood the safety, operation, and maintenance instructions

MODEL: KCG-15000GE

INSTRUCTION MANUAL

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WARRANTY & SERVICE INFORMATION



**1-YEAR
LIMITED WARRANTY
FOR THIS 15,000W GASOLINE GENERATOR**

**KING CANADA TOOLS
OFFERS A 1-YEAR LIMITED WARRANTY
FOR NON-COMMERCIAL USE.**



**IF YOU ARE EXPERIENCING
PROBLEMS, DO NOT RETURN
TO THE RETAILER,
CALL THIS TOLL-FREE NUMBER
FOR SERVICE INFORMATION**

1-877-636-4214

BEFORE CALLING THE ABOVE TOLL-FREE NUMBER, PLEASE READ THIS MANUAL, SPECIFICALLY THE SAFETY PRECAUTIONS, THE INSPECTION BEFORE OPERATION AND THE TROUBLESHOOTING GUIDE.

- **DO NOT RETURN THE DEFECTIVE PRODUCT TO THE RETAILER.**

WARRANTY INFORMATION

PROOF OF PURCHASE

Please keep your dated proof of purchase for warranty and servicing purposes.

PARTS DIAGRAM & PARTS LISTS

Refer to the Parts section of the King Canada web site for the most updated parts diagram and parts list.

LIMITED TOOL WARRANTY

KING CANADA makes every effort to ensure that this product meets high quality and durability standards. KING CANADA warrants to the original retail consumer a 1-year limited warranty as of the date the product was purchased at retail and that each product is free from defects in materials.

THIS WARRANTY IS NOT TRANSFERABLE AND DOES NOT COVER

- Damage or liability caused by shipping, improper handling, improper installation, improper maintenance, improper modification, or the use of accessories and/or attachments not specifically recommended.
- Repairs necessary because of operator abuse or negligence, or the failure to install, operate, maintain, and store the product according to the instructions in the owner's manual.
- Damage caused by cold, heat, rain, excessive humidity, corrosive environments and materials, or other contaminants.
- Expendable items that become worn during normal use such as fuel filters, air cleaners, spark plugs, and engine oil.
- Cosmetic defects that do not interfere with product functionality.
- Freight costs from customer to an authorized warranty service location.
- Repair and transportation costs of products or parts determined not to be defective.
- ANY INCIDENTAL, INDIRECT OR CONSEQUENTIAL LOSS, DAMAGE, OR EXPENSE THAT MAY RESULT FROM ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCT.

- **RETAIN THE ORIGINAL CASH REGISTER SALES RECEIPT AS PROOF OF PURCHASE FOR WARRANTY WORK.**

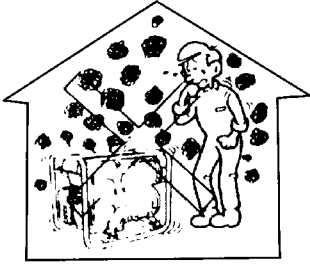
KING CANADA shall in no event be liable for death, injuries to persons or property or for incidental, special or consequential damages arising from the use of our products. Shipping and handling charges may apply. If a defect is found, KING CANADA will either repair or replace the product.

KING CANADA TOOLS INC. MONTREAL, QUEBEC, CANADA H9P 2Y4

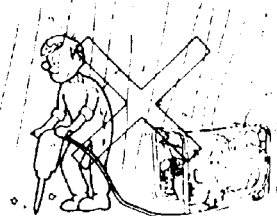


BASIC & SPECIFIC SAFETY PRECAUTIONS

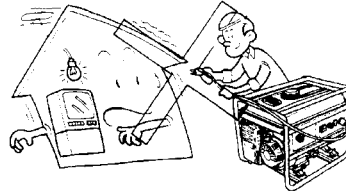
BE CAREFUL!



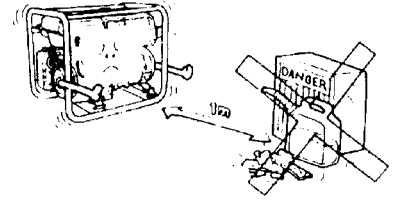
**DO NOT USE
IN YOUR HOUSE**



**DO NOT USE IN
WET CONDITIONS**

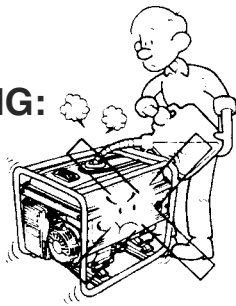


**DO NOT CONNECT TO
HOUSEHOLD CIRCUIT**

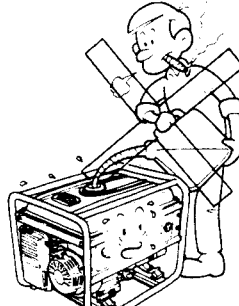


**KEEP FLAMMABLE
MATERIALS AWAY**

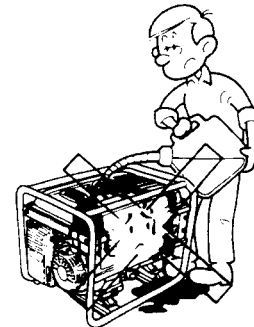
WHEN REFUELING:



STOP ENGINE!



NO SMOKING!



DO NOT SPILL GASOLINE!

BASIC SAFETY INFORMATION

EXHAUST FUMES ARE DANGEROUS

•Never operate the engine in a closed area or it may cause unconsciousness and death within a short time. Operate in a well ventilated area.

FUEL IS HIGHLY FLAMMABLE AND POISONOUS

- Always turn off the engine when refueling.
- Never refuel while smoking or in the vicinity of an open flame.
- When operating or transporting this generator, be sure to keep it upright. If it tilts, fuel may leak from the carburetor or fuel tank.

ENGINE AND MUFFLER MAY BE HOT

- Place the generator in an appropriate location, away from children and pedestrians.
- Avoid placing any flammable materials near the exhaust outlet during operation.
- Keep a 4ft. clearance from buildings or other equipment around the generator to prevent overheating.

ELECTRIC SHOCK PREVENTION

- Never operate in rain or snow.
- Never touch the generator with wet hands or electric shock will occur.
- Be sure to ground (earth) the generator.

ELECTRICAL CONNECTION NOTES

- Avoid connecting the generator to commercial power outlet.
- Avoid connecting the generator in parallel with any other generator.

WARNING! The engine muffler will be very hot after use, avoid

touching the engine or muffler while they are still hot.

FUEL

Make sure there is sufficient fuel in the tank.

GROUNDING

Make sure to ground the generator.

SPECIFIC SAFETY INFORMATION

Attempting to connect generator directly to the electrical system of any building structure.

Back feeding electricity through a building's electrical system to the outside utility feed lines could endanger repair technician attempting to restore service.

Failure to use a double throw transfer switch when connecting to a structure's electrical system can damage appliances and **WILL VOID** the manufacturer's warranty.

Never backfeed electricity through a structure's electrical system. To connect to a structure's electrical system in a safe manner, always have a Double-Throw Transfer Switch installed by a qualified electrician and in compliance with local ordinances. (When installing a Double-Throw Transfer Switch, a minimum of 10 gauge wiring must be used).

SPECIFIC SAFETY PRECAUTIONS



OPERATION OF GENERATOR IN RAIN, WET, ICY, OR FLOODED CONDITIONS.

Water is an excellent conductor of electricity! Water which comes in contact with electrically charged components can transmit electricity to the frame and other surfaces, resulting in electrical shock to anyone contacting them.

Operate generator in a clean, dry, well ventilated area. Make sure hands are dry before touching unit.

TAMPERING WITH FACTORY SET ENGINE SPEED SETTINGS.

Engine speed has been factory set to provide safe operation. Tampering with the engine speed adjustment could result in overheating of attachments and could cause a fire.

Never attempt to “speed-up” the engine to obtain more performance. Both the output voltage and frequency will be thrown out of standard by this practice, endangering attachments and the user.

IMPROPER CONNECTION OF ITEMS TO GENERATOR.

Exceeding the load capacity of the generator by attaching too many items, or items with very high load ratings to it could result in overheating of some items or their attachment wiring resulting in fire or electrical shock. Make sure that the sum total of electrical loads for all attachments does not exceed the load rating of the generator.

ATTEMPTING TO FILL THE FUEL TANK WHILE THE ENGINE IS RUNNING.

Gasoline and gasoline vapors can become ignited by coming in contact with hot components such as the muffler, engine exhaust gases, or from an electrical spark.

Turn engine off and allow it to cool before adding fuel to the tank. Equip area of operation with a fire extinguisher certified to handle gasoline or fuel fires.

SPARKS, FIRE, HOT OBJECTS

Cigarettes, sparks, fires, or other hot objects can cause gasoline or gasoline vapors to ignite.

Add fuel to tank in well ventilated area. Make sure there are no sources of ignition near the generator.

INADEQUATE VENTILATION FOR GENERATOR

Materials placed against or near the generator or operating the generator in areas where the temperature exceeds 40° C ambient (such as storage rooms or garages) can interfere with its proper ventilation features causing overheating and possible ignition of the materials or buildings.

Operate generator in a clean, dry, well ventilated area a minimum of four feet from any building, object or wall. **DO NOT OPERATE UNIT INDOORS OR IN ANY CONFINED AREA.**

RISK OF BREATHING - INHALATION HAZARD

Operate generator in clean, dry, well ventilated area. Never operate unit in enclosed areas such as garages, basements, storage, sheds, or in any location occupied by humans or animals.

Keep children, pets and others away from area of operating unit. Breathing exhaust fumes will cause serious injury or death. **Gasoline engines produce toxic carbon monoxide exhaust fumes.**

OPERATION OF VOLTAGE SENSITIVE APPLIANCES WITHOUT A VOLTAGE SURGE PROTECTOR.

Any gasoline operated household generator will incur voltage variations causing damage to voltage sensitive appliances or could result in fire.

Always use a U.L./CSA listed voltage sensitive surge protector to connect voltage sensitive appliances (TV, computer, stereo, etc.). Failure to use a U.L./CSA listed voltage surge protector will void the warranty on your generator.

Notice: A multiple outlet strip is not a surge protector. Make sure you use a U.L./CSA listed voltage surge protector.

USE OF WORN, DAMAGED, UNDERSIZED OR UNGROUNDED EXTENSION CORDS.

Contact with worn or damaged extension cords could result in electrocution. Use of undersize extension cords could result in overheating of the wires or attached items, resulting in fire.

Use of ungrounded extension cords could prevent operation of circuit breakers and result in electrical shock.

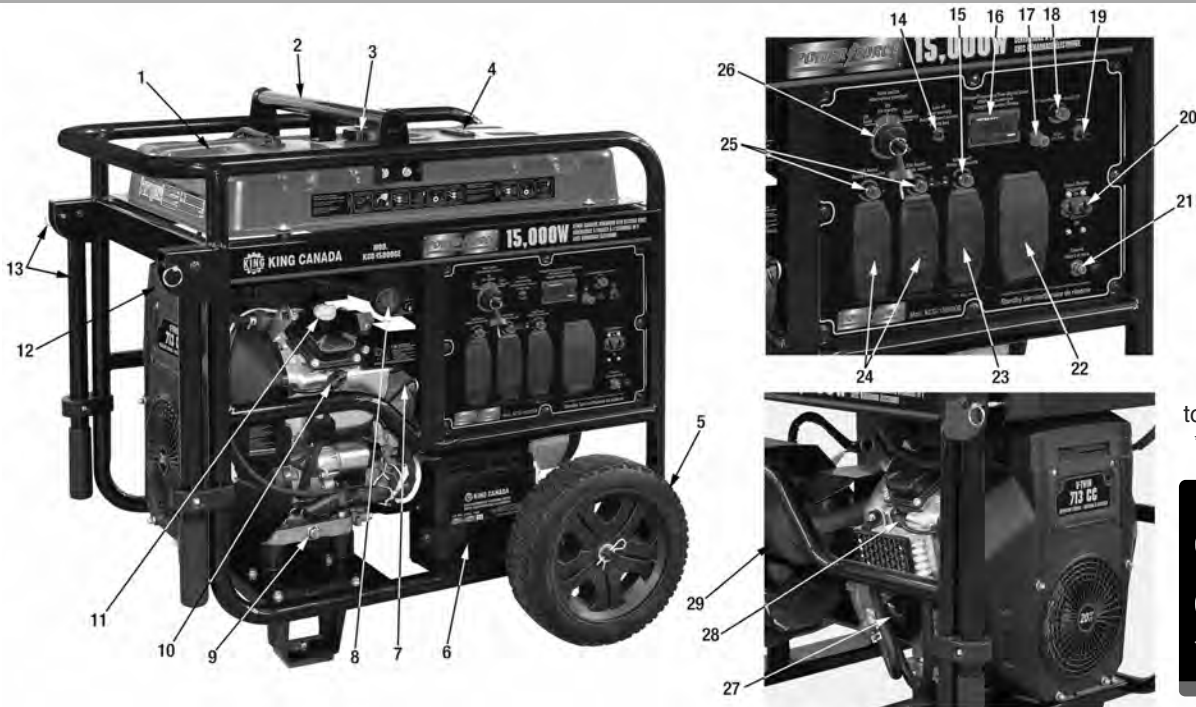
Inspect extension cords before use and replace with new cord if required. Use proper size (wire gauge) extension cords for application as shown below. Always use an extension cords having a grounding wire with an appropriate grounding plug. **DO NOT** use an ungrounded plug.

An extension cord that is hot to the touch is overloaded. Repair or replace damaged extension cords immediately.

<u>Cord Length</u>	<u>Wire Gauge Size</u>	<u>Amps</u>
0-100 FEET	NO.12	Up to 20 Amps.
0-100 FEET	NO.10	Up to 30 Amps.

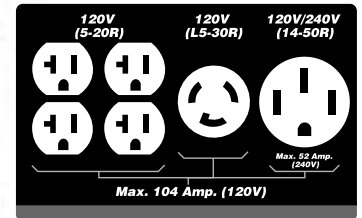


GETTING TO KNOW YOUR GENERATOR



IMPORTANT

To obtain max amperes, use the 120V receptacles together as shown. (Max 104A).
*No Nema cables or plugs are included.



1. **Fuel tank.** Unleaded gasoline only! 40 Liter capacity.
2. **Removable lifting brace.**
3. **Fuel cap.** Make sure the fuel cap is always screwed on tightly.
4. **Fuel level indicator window with float gauge.**
5. **12" Wheels.**
6. **12V Battery.** Powers the electric start.
7. **Oil gauge dipstick.** Check the oil level using this oil gauge dipstick.
8. **Fuel Shut-off Valve.** Opens or closes the flow of fuel to the engine.
The fuel shut-off valve must be fully opened before starting.
9. **Engine oil drain bolt.**
10. **Spark plug cover (1 of 2).**
11. **Engine oil fill cap.**
12. **Air filters.** Periodically the air cleaner filters must be checked and maintained, see maintenance section.
13. **Transport Pivot Handles & locking pins.**
14. **Low oil warning indicator light.** Low oil warning system shuts off generator when oil level is too low.
15. **30 Amp Reset.** Resets the corresponding 120V AC NEMA L5-30 twist lock outlet.
16. **Digital Meter.** Indicates voltage, frequency (Hz) and running time.
17. **12V DC Terminal (positive).** Operate 12V DC appliances or tools.
18. **Reset button for 12V DC.** Resets the 12V DC output.

19. **12V DC Terminal (negative).** Operate 12V DC appliances or tools.
20. **AC Breaker.** The AC breaker turns off automatically when the load exceeds the generator rated output. Reduce the load.
21. **Grounding terminal.** This generator must be grounded, see grounding instructions.
22. **AC 120V/240V 50A outlet.** This NEMA 14-50 outlet allows 120V or 240V operation, see instructions further in this manual.
23. **AC 120V 30A Twist lock outlet.** This NEMA L5-30 twist lock outlet allows 120V operation only, see instructions further in this manual.
24. **2 Duplex AC 120V outlets.** Plug up to 4-120V appliances or a power bar, make sure the Amp. requirement does not exceed max amperage or else the AC breaker will automatically shut-off the power output.
25. **20 Amp Resets.** Resets the corresponding dual 120V AC outlet.
26. **Electric Start Power ON Key Switch.** To turn engine on, first turn key to ON, turn key further and hold until engine starts and release. Move switch to Off position to stop generator.
27. **Engine oil filter.** The oil filter must be changed when changing engine oil, see maintenance section.
28. **Spark plug cover (2 of 2).**
29. **Muffler.** Muffler gets hot during operation, do not touch muffler.

MODEL	KCG-15000GE
Peak Wattage (starting)	15,000W
Running Wattage	12,500W
AC current (120V/240V)	104 Amp./52 Amp.
Engine (OHV)	20 HP
No load speed	3,600 RPM
Displacement (cc)	713
Fuel	Unleaded Gasoline
Fuel tank (L)	40
Oil capacity (L)	1.6
Run time	8-9 hrs
Noise level	77 dB(A)
Assembled dimensions (LxWxH)/weight	34" x 32" x 34-3/4" / 338 lbs
Package dimensions (LxWxH)/weight	35-3/8" x 24-3/8" x 38-3/8" / 389 lbs

ASSEMBLY



WARNING! To prevent permanent damage to the generator or any appliances, you **MUST** check oil level, fuel level, air cleaner filter and unplug any load from the generator before starting.

ASSEMBLY

Remove all the contents from the carton and proceed to the following assembly steps:

Installing Wheels

To install the wheels to the right end of the frame, first install the wheel shaft (A) Fig.1 into the wheel bracket (B). Secure wheel shaft to the wheel support using a retaining pin (C).

Slide a washer onto the wheel shaft, then slide the wheel (A) Fig.2 onto the wheel shaft (B), slide another washer (C) onto the wheel shaft and secure wheel by inserting a retaining pin (D) into the hole at the end of the wheel shaft. Repeat steps for second wheel.

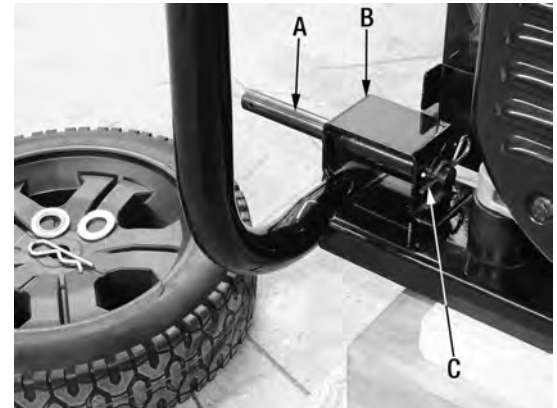


Figure 1



Figure 2

Connecting Battery

The battery comes installed and is secured in place with a hex. bolt (A) Fig.3 and a horizontal fixing plate (B). Remove hex. bolt (A) and horizontal fixing plate and position the battery as shown in Fig.4.

The battery cables must now be connected to the battery. Connect the red positive (+) battery cable (A) Fig.4 to the positive post. Then connect the black negative (-) battery cable (B) to the negative post of the battery.

Note: Actual battery may appear different than the one shown in Fig.4, but the installation instructions remain the same, always connect the red positive (+) battery cable to the positive post of the battery, connect the black negative (-) battery cable to the negative post of the battery.

Reinstall the battery in the battery tray and secure it in place with the hex. bolt (A) Fig.3 and a horizontal fixing plate (B).



Figure 3



Figure 4



PRE-START CHECK

PRE-START CHECK

WARNING! To prevent permanent damage to generator or any appliances, you **MUST** check oil level, fuel level, air cleaner filter and unplug any load from the generator before starting.

OIL LEVEL

WARNING! This generator has been shipped from the factory without oil or very little oil in the crankcase. Operating the unit without the correct amount of oil can damage the engine. Oil crankcase capacity: 1.6 litres.

Always check the oil level before starting the generator, make sure the generator is on a level surface. To check oil level:

- 1) Pull and remove the oil gauge dipstick (A) Fig.5 and clean it with a clean cloth.
- 2) Fully reinsert the oil gauge dipstick and pull it out to check the oil level.
- 3) If the oil level is at the halfway mark on the dipstick or below, refill with SAE 10W-30. Undo oil fill cap (B). Using the supplied oil funnel, add oil through the oil fill hole until the oil level reaches the maximum mark on the dipstick as shown in the illustration below.
- 4) Reinstall the oil gauge dipstick.

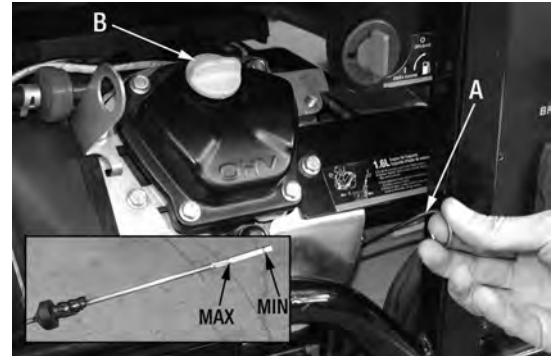
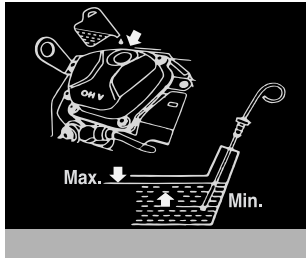


Figure 5

FUEL LEVEL

WARNING! Make sure there is enough fuel in the fuel tank before operating.

- 1) Check the fuel level indicator window (A) Fig.6, if the orange float gauge is all the way up, it is not necessary to add fuel. If you do not see or hardly see the orange float gauge, it is necessary to add fuel.
- 2) If it is necessary to add fuel, first make sure the engine is OFF, then open the fuel cap (B) Fig.6 by turning it counterclockwise.
- 3) Make sure the fuel filter cup (C) is positioned inside the tank opening before refueling.
- 4) When refueling, keep in mind all safety precautions and make sure to add enough fuel based on usage. A full tank will give you 8-9 hours of operation at 50% load. Use clean unleaded gasoline with a minimum of 87 octane. Do not mix oil with gasoline. Fuel tank capacity: 40 Litres.



Figure 6

AIR CLEANER FILTERS

The combined air cleaner filter (foam & paper) should be checked before every start-up and after prolonged storage, the following steps should be done when checking:

- 1) Release four latch tabs (A) Fig.7 on both sides of the air cleaner cover (B), and remove the air cleaner cover.
- 2) Foam filter:
 - a) The foam filter (A) Fig.8 is attached to the paper filter (B). If the foam filter is very dirty, detach it from the paper filter. Make sure it is still in good condition, if damaged replace the foam filter.
 - b) Clean the foam filter in warm soapy water, rinse, and allow to dry thoroughly, or clean in non-flammable solvent and allow to dry. Dip the foam air filter in clean engine oil, then squeeze out all excess oil. The engine will smoke when started if too much oil is left in the foam air filter. Refer to Fig.17.
 - c) Reinstall the foam up against the paper filter.
- 3) Paper air filter:
 - a) If the paper air filter (B) is dirty, replace it with a new one. Do not clean the paper air filter.
- 4) Reinstall the combined air cleaner filter with foam filter facing up, and the air cleaner cover.

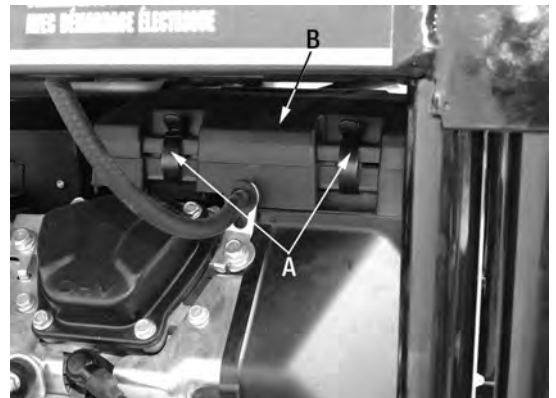


Figure 7



Figure 8

STARTING & STOPPING PROCEDURES



STARTING PROCEDURES

GROUNDING

WARNING! BEFORE STARTING, YOUR GENERATOR MUST BE GROUNDED!

Before operating make sure to ground the generator. A ground terminal (A) Fig.9 identified by the ground symbol can be found on the front control panel of the generator. Attach a metal spike to a wire, attach the wire to the ground terminal as shown and ground the metal spike into the earth. Your local electrical company or certified electrician should be able to help you with this information. See Fig.9.

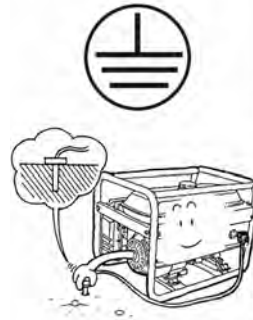


Figure 9

STARTING YOUR GENERATOR

WARNING! Do not adjust or attempt maintenance of engine without consulting an authorized service center. Never run engine indoors or in enclosed, poor ventilated areas, engine exhaust contains carbon monoxide, an odorless and deadly gas! Make sure all electrical appliances are unplugged before attempting to start generator!

To safely start your generator, follow the steps 1 through 6 in Fig.10.

Note: Allow generator to run at no load for 5 minutes upon each initial start-up to allow engine and generator to stabilize.

IF ENGINE OIL LEVEL IS TOO LOW, ENGINE WILL NOT START. CHECK OIL LEVEL AND ADD IF NECESSARY.

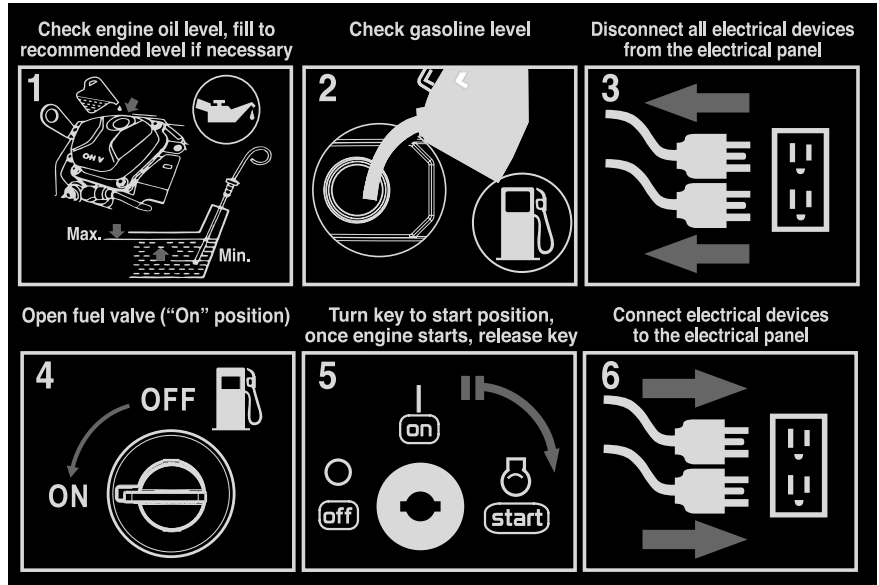


Figure 10

STOPPING PROCEDURES

STOPPING YOUR GENERATOR

Make sure all electrical appliances are unplugged before stopping the generator!

To safely stop your generator, follow the steps 1 through 3 in Fig.11.

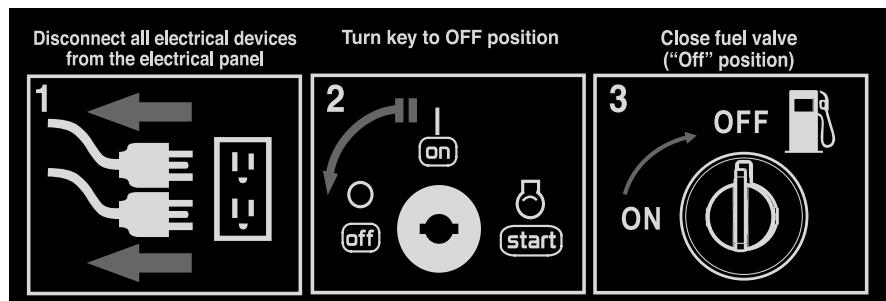


Figure 11



ELECTRICAL CONNECTIONS & CONTROL PANEL

ELECTRICAL CONNECTIONS

CONNECTING ELECTRICAL LOADS

Attempting to connect generator directly to the electrical system of any building structure.

Back feeding electricity through a building's electrical system to the outside utility feed lines could endanger repair persons attempting to restore service. Failure to use a double throw transfer switch when connecting to a structure's electrical system can damage appliances and WILL VOID the manufacturer's warranty. Never backfeed electricity through a structure's electrical system. To connect to a structure's electrical system in a safe manner, always have a Double-Throw Transfer Switch installed by a qualified electrician and in compliance with local ordinances. (When installing a Double-Throw Transfer Switch, a minimum of 10 gauge wiring must be used).

IMPROPER CONNECTION OF ITEMS TO GENERATOR

Exceeding the load capacity of the generator by attaching too many items, or items with very high load ratings to it could result in overheating of some items or their attachment wiring resulting in fire or electrical shock. Make sure that the sum total of electrical loads for all attachments does not exceed the load rating of the generator.

WARNING! Failure to connect and operate equipment in the sequence below can cause damage to equipment and will void the warranty.

- 1) Let engine run and warm up for five minutes after starting with no electrical load. Connect loads in the following manner:
- 2) Connect "inductive" load equipment first, inductive loads consist of refrigerators, freezers, water pumps, air conditioners, or small hand tools. Connect the items that require the most wattage first.
- 3) Connect the lights next.
- 4) Voltage sensitive equipment should be the last equipment connected to the generator. Plug voltage sensitive appliances such as TV's, VCR's, microwaves, ovens, computers, and cordless telephones into a UL/CSA listed voltage surge protector, then connect the UL/CSA listed voltage surge protector to the generator.

Overloading the generator will cause power fluctuations and can damage equipment and appliances. King Canada will not be responsible for equipment damaged as a result of voltage surges, improper operation or improper installation of the generator.

CONTROL PANEL

120V AC DUPLEX RECEPTACLES & RESETS (L5-20R)

For normal 120V operation, plug your appliance or power bar into one of the two duplex 120V receptacles (A & B) Fig.12. Each receptacle has its own reset button (C & D) placed directly above.

120V AC TWIST LOCK RECEPTACLE (NEMA L5-30R)

This 120V twist lock receptacle (E) Fig.12 is a NEMA L5-30R twist lock receptacle and requires a NEMA L5-30P (30A) plug to make the connection. If you are unsure about the use of this twist lock receptacle or how to wire the appropriate plug, contact a qualified electrician for more information. This receptacle has its own reset button (F) placed directly above.

120V/240V AC RECEPTACLE (NEMA 14-50R)

This 120/240V receptacle (G) Fig.12 is a NEMA 14-50R receptacle and requires a NEMA 14-50P (50A) plug to make the connection. May be used to supply electrical power for the operation of 120V and/or 240V AC, single phase 60 Hz electrical loads, such as welders and dryers. If you are unsure about the use of this receptacle or what can be connected, contact a qualified electrician for more information.

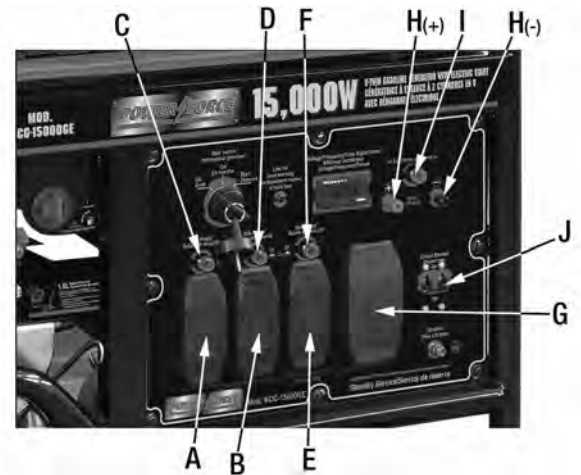


Figure 12

RESETS AND CIRCUIT BREAKER

The control panel contains 4 reset buttons (20 Amp. resets (C & D) for the duplex 120V receptacles, 30 Amp. reset (F) for the twist lock receptacle and a 8 amp reset (I) for the 12V DC terminals) and a main circuit breaker (J). If an overload occurs (reached maximum capacity), the corresponding reset button and the circuit breaker will "trip" to their "Off" position, causing the generator to automatically shut off. Disconnect all electrical items from the control panel. Press the tripped reset button, then position the circuit breaker to the On position and restart the generator. If the reset and circuit breaker continues to "trip", the electrical item or items are exceeding the amperage capacity of this generator, reduce electrical charge or use a more powerful generator.

12V DC TERMINALS (H) & DC RESET (I)- Main use, charging automotive batteries.

To charge a battery:

- 1) Using battery cables, connect the red positive (+) battery cable to the battery's positive (+) terminal.
- 2) Attach the other end of the red positive (+) battery cable to the 12V DC red positive (+) terminal (H+).
- 3) Connect the black negative (-) battery cable to the battery's negative (-) terminal.
- 4) Attach the other end of the black negative (-) battery cable to the 12V DC black negative (-) terminal. (H-).
- 5) Charge the battery according to battery or equipment manufacturer recommendations.

To operate 12V DC equipment:

1. Refer to the 12V DC equipment owner's manual for operation of equipment and any special cable or adapter requirements.

CONTROL PANEL & WATTAGE CALCULATIONS



CONTROL PANEL

DIGITAL METER

The control panel contains a digital meter (A) Fig.13, this meter has 3 display modes. To toggle through the 3 modes, press the small mode button (B).

Mode 1 indicates the the voltage rating in volts.

Mode 2 indicates the frequency (Hz) rating of the generator.

Mode 3 indicates the total running time in hours (0000), will not reset if the generator is turned off, even if the battery is disconnected.

LOW OIL WARNING INDICATOR LIGHT

This generator comes with a low oil warning system which shuts off the generator when oil level is too low. If this situation happens, the low oil warning indicator light (C) Fig.13 will turn on.



Figure 13

WATTAGE CALCULATIONS

IMPORTANT! Never exceed the rated capacity of your generator. Serious damage to the generator or appliance could result from an overload.

- 1) "Starting" and "Running" wattage requirements should always be calculated when matching a generators wattage capacity to the appliance or tool.
- 2) There are two types of electrical appliances that can be powered by your generator:
 - a) Items such as radios, light bulbs, television sets, and microwaves have a "resistive load". Starting wattage and running wattage are the same.
 - b) Items such as refrigerators, air compressors, washer, dryer and hand tools that use an electrical motor have an "inductive load". **Inductive load appliances and tools require approx. 2 to 3 times the listed wattage for "starting" the equipment.** This initial load only lasts for a few seconds on start-up but is important when figuring your total wattage to be used.

Always start your largest electric motor first, and then plug in other items, one at a time. **NOTE:** On 120V loads the maximum starting wattage should NOT exceed one half of the rated generator wattage. Example: This 15,000 rated wattage generator = 12,500 maximum starting wattage.

Wattage Requirement Chart- This is only a guideline, each appliance or electrical device needs to be checked for its specific operating load.

DETERMINING WATTAGE REQUIREMENTS

Note: Volts X Amp. = Watts

Example: 120V X 10 Amp. = 1200 Watts

Before operating this generator, list all of the appliances and/or tools that are going to operate at the same time. (Then determine the starting wattage requirements and the running wattage requirements by following the example below:

- 1) Add the total amount of the running wattage of all appliances and/or tools that will be operated at the same time.

Example 1A:

Lights = 100 Watts (Running)
 Television = 300 Watts (Running)
 Electric blanket = 800 Watts (Running)
 Coffee maker = 1750 Watts (Running)
TOTAL = 2950 Watts (Running)

- 2) Next add the total amount of the starting wattage of any appliances and/or tools that will start and stop during operation.

Example 1B:

Small Refrigerator = 700 Watts (Running) 2200 Watts (Starting)
 Fan = 200 Watts (Running) 600 Watts (Starting)
 Water Pump = 500 Watts (Running) 1500 Watts (Starting)
TOTAL = 1400 Watts (Running) 4300 Watts (Starting)

- 3) The running wattage of examples 1A & 1B totals 4350 watts. The starting wattage totals 4300 watts which is 2900 watts more than the running watts. Take this difference of 2900 starting watts and add to the total running watts of 4350. Therefore:

2900 Starting Watts + 4350 Running Watts = 7250 Total Watts
The generator required to operate the items in example 1A & 1B must have a minimum capacity of at least 7250 starting watts.

Application	Wattage Required	
	Running	Peak Starting
Recreation/Camping		
Battery charging	120	120
Portable lighting	200	200
75W Light bulb	75	75
Fan	200	600
Coffee maker	1750	1750
Water pump	500	1500
Yard/Garden		
Hedge trimmer	450	900
Lawn edger	750	1500
Leaf blower	600	1200
Home		
Television	300	300
Radio	50-200	50-200
Computer	150	150
Printer	100	100
Electric range- 6" element	1500	1500
Microwave oven (625W)	625	800
Electric blanket	800	800
Freezer	700	2200
Refridgerator	700	2200
Garage door opener (1/4HP)	550	1100



MAINTENANCE

MAINTAINING YOUR GENERATOR

Good maintenance is essential for safe, economical, and trouble free operation. It will also help reduce air pollution. To help you properly care for your generator, the following pages include a maintenance schedule, routine inspection procedures, and simple maintenance procedures using basic hand tools. Other service tasks that are more difficult or require special tools are best handled by a qualified mechanic.

The maintenance schedule applies to normal operating conditions. If you operate your generator under unusual conditions, such as sustained high load or high temperature operation, or use it in dusty conditions, consult a qualified mechanic or your nearest King Canada service centre for recommendations applicable to your individual needs and use.

MAINTENANCE SCHEDULE

Failure to follow this maintenance schedule could result in non warrantable failures.

Perform maintenance at every indicated month or operating hour interval, whichever comes first.		Each use	First month or 20 HRS	Every 3 months or 50 HRS	Every 6 months or 100 HRS	Every year or 300 HRS
Engine oil	Check level	○				
	Change		○		○	
Engine oil filter	Replace					Every 200 HRS
Air cleaner	Check	○				
	Clean			○ (1)		
	Replace					○ (*)
Battery electrolyte	Check level	○				
Spark plug	Check-adjust				○	
	Replace					○
Sediment cup	Clean				○	
Valve clearance	Check-adjust					○ (2)
Combustion chamber	Clean					Every 500 HRS (2)
Fuel tank and filter	Clean	Every 2 years (2)				
Fuel tube	Check	Every 2 years, replace if necessary (2)				

NOTE:

(*) Replace the paper filter only.

(1) Service more frequently when used industry areas.

(2) These items should be serviced by qualified service technician, unless you have the proper tools and are mechanically proficient.

Engine Oil Replacement

Engine oil should be replaced after the first 20 hours of operation or after the first month of use, it should be replaced every 100 hours or 6 months after. It is recommended to drain the oil while the engine is warm to ensure rapid and complete draining. To replace engine oil:

- 1) Place the generator on wooden blocks to make space for placing a suitable container under the drain bolt (back side of generator).
- 2) Remove the oil fill cap (A) Fig.14 and oil drain bolt (B) on the back side of the generator, and drain the oil into the container.
- 3) Reinstall the oil drain bolt, and tighten the bolt securely.
- 4) Using the supplied oil funnel, add recommended oil (SAE 10W-30) through the oil fill hole until the oil level reaches the maximum mark on the dipstick. Reinstall the oil fill cap.



Figure 14

Warning! Wash your hands with soap and water after handling used oil. Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station or recycling centre for reclamation. Do not throw it in the trash, pour it on the ground, or pour it down a drain.

MAINTENANCE



MAINTAINING YOUR GENERATOR

Oil Filter Replacement

- 1) Drain the engine oil, and tighten the drain bolt securely.
- 2) Remove the oil filter (A) Fig.15, by turning it counterclockwise and drain the oil into a suitable container. Discard the used oil filter.
- 3) Clean the filter mounting base, and coat the O-ring of the new oil filter with clean engine oil.
- 4) Screw on the new oil filter by hand, until the O-ring contacts the filter mounting base, and then use an oil filter socket tool to tighten the filter an additional 7/8 turn.

OIL FILTER- TORQUE: 12N·m (1.2kgf·m)

- 5) Add specified amount of the recommended oil (SAE 10W-30). Reinstall the oil fill cap.
- 6) Start the engine and check for oil filter leaks.
- 7) Stop the engine, and check the oil level. If necessary, add oil to the maximum mark on the dipstick.

Engine Oil Recommendation

Oil is a major factor affecting engine performance and service life. Use 4-stroke automotive detergent oil that meets or exceeds the requirements for API service category SE or later (or equivalent).

SAE 10W-30 is recommended for general use. Other viscosities shown in the chart in Fig.16 may be used when the average temperature in your area is within the recommended range. The SAE oil viscosity and service category are on the API label on the oil container.

Air Cleaner Filters

Warning! Operating the engine without an air filters, or with damaged air filters, will allow dirt to enter the engine, causing rapid engine wear.

Cleaning Foam Filter- A dirty foam filter will restrict air flow to the carburetor, reducing engine performance. If you operate the generator in very dusty areas, clean the foam filter more frequently than specified in the Maintenance Schedule.

- 1) Clean the foam filter in warm soapy water, rinse, and allow to dry thoroughly, or clean in non-flammable solvent and allow to dry. See Fig.17.
- 2) Dip the foam air filter in clean engine oil, then squeeze out all excess oil. The engine will smoke when started if too much oil is left in the foam air filter. See Fig.17.

Paper filter- If the paper filter is dirty, replace it with a new one. Do not clean the paper air filter. Follow Maintenance Schedule.

Sediment Cup Cleaning

IMPORTANT: This sediment cup must be reinstalled in the exact same direction that it was removed. The sediment cup can only pass fuel one way. Take note of the orientation of the sediment cup before disassembly.

- 1) Turn the fuel valve (A) Fig.18 to the OFF position as shown.
- 2) Remove the two retaining clips (B), disconnect the fuel hoses (C) and then remove the sediment cup (D).
- 3) Clean the sediment cup in nonflammable solvent, and dry it thoroughly.
- 4) Reinstall the sediment cup in the proper orientation, reinstall fuel hoses and retaining clips.
- 5) Make sure there is no fuel leakage.



Figure 15

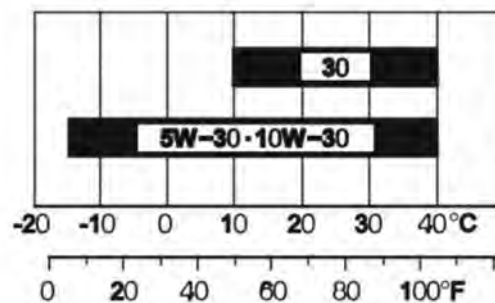


Figure 16

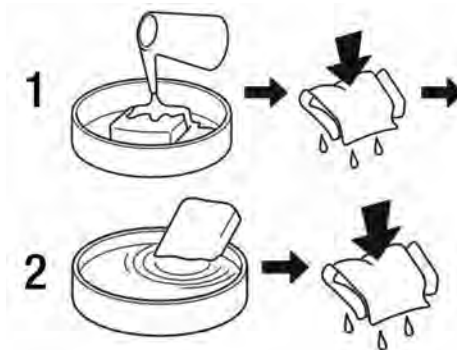


Figure 17

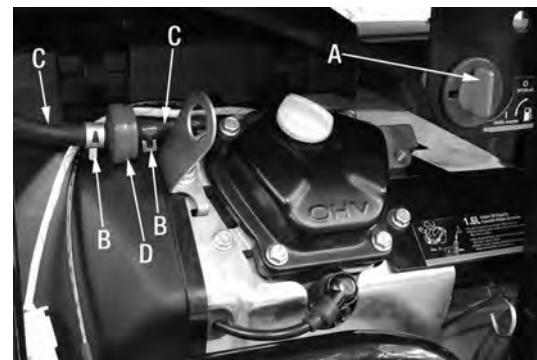


Figure 18



MAINTENANCE & STORAGE

MAINTAINING YOUR GENERATOR

Inspecting, Replacing or Cleaning Spark Plugs (F7TC or equivalent)

The spark plugs should be checked every 100 hours of operation or every 6 months. To replace or clean spark plugs:

- 1) Dismantle the spark plug cap (A) Fig.19 by pulling it off the spark plug (B). Using the supplied spark plug wrench, undo the spark plug by turning it counterclockwise.
- 2) Check to see if there is carbon sediment build-up, if so just remove it. If the carbon sediment is excessive, replace the spark plug.
- 3) Measure the electrodes clearance. See Fig.20. The spark plug electrode clearance should be between 0.7-0.8mm. If the clearance exceeds 0.8mm, replace the spark plug with an F7TC or equivalent (NGK BP6ES, Champion N9Y).
- 4) Reinstall spark plug in the reverse order.
- 5) Repeat above step for the second spark plug on the opposite side of the engine.

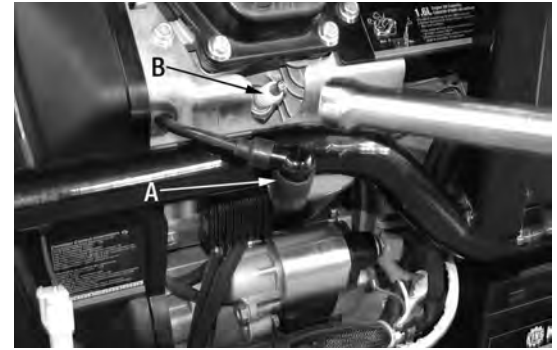


Figure 19



Figure 20

STORAGE

Proper storage preparation

Proper storage preparation is essential for keeping your generator trouble free and looking good. The following steps will help to keep rust and corrosion from impairing your generator's function and appearance, and will make the engine easier to start when you use the generator again.

Cleaning

Wipe the generator with a moist cloth. After the generator has dried, touch up any damaged paint, and coat other areas that may rust with a light film of oil.

Fuel

Gasoline will oxidize and deteriorate in storage. Old gasoline will cause hard starting, and it leaves gum deposits that clog the fuel system. If the gasoline in your generator deteriorates during storage, you may need to have the carburetor and other fuel system components serviced or replaced.

NOTE: Gasoline deteriorates very quickly depending on factors such as light exposure, temperature and time. In worst cases, gasoline can be contaminated within 30 days. Using contaminated gasoline can seriously damage the engine (carburetor clogged, valve stuck).

Such damage due to deteriorated fuel will void the warranty.

To avoid this please strictly follow these recommendations:

- Only use specified gasoline.
- Use fresh and clean gasoline.
- To slow deterioration, keep gasoline in a certified fuel container.
- If long storage (more than 30 days) is foreseen, drain fuel tank and carburetor as described in the next section.

You can extend fuel storage life by adding a gasoline stabilizer that is formulated for that purpose, or you can avoid fuel deterioration problems by draining the fuel tank and carburetor.

Adding a Gasoline Stabilizer to Extend Fuel Storage Life

When adding a gasoline stabilizer, fill the fuel tank with fresh gasoline. If only partially filled, air in the tank will promote fuel deterioration during storage. If you keep a container of gasoline for refueling, be sure that it contains only fresh gasoline.

- 1) Add gasoline stabilizer following the manufacturer's instructions.
- 2) After adding a gasoline stabilizer, run the engine outdoors for 10 minutes to be sure that treated gasoline has replaced the untreated gasoline in the carburetor.
- 3) Stop the engine, and turn the fuel valve to the OFF position.

MAINTENANCE & STORAGE



STORAGE continued...

NOTE: If a fuel stabilizer is not used, all gasoline must be drained from the tank and carburetor to prevent gum deposits from forming on these parts and causing possible malfunction of the engine. To drain gasoline:

- 1) Drain the fuel tank and carburetor.
- a) Unscrew the fuel tank cap, remove the retaining clip (A) Fig.21 behind the fuel valve, and disconnect fuel hose (B), empty the fuel tank into an approved gasoline container. Reinstall parts once tank is empty.



Figure 21

- b) To access the carburetor, the air cleaner cover (A) Fig.22 must be disassembled and removed. The engine side cover (B) Fig.22 must also be removed. Undo the 4 acorn nuts (C) and the 2 top hex. bolts (D) (under the air cleaner cover) and remove engine cover.



Figure 22

- c) Locate the carburetor drain tube (A) Fig.23, and place it in a suitable container.



Figure 23

- d) Loosen the carburetor drain screw (A) Fig.24 using a flat head screwdriver.
- e) Drain the gasoline from the carburetor into the container.
- f) Retighten the carburetor drain screw securely and reinstall the engine cover and air cleaner cover.

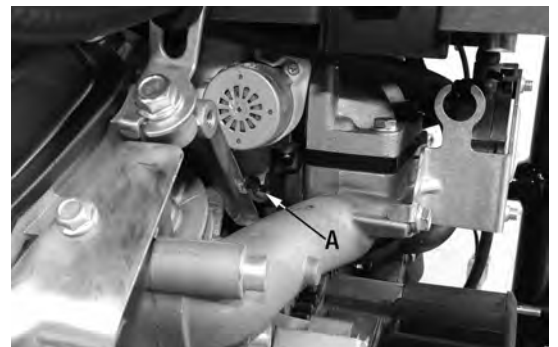


Figure 24

- 2) Change the engine oil.
- 3) Remove the spark plugs.
- 4) Pour a table spoon (5-10cc) of clean engine oil into each cylinder.
- 5) Turn the engine for a few seconds by turning the engine switch to the START position to distribute the oil in the cylinders.
- 6) Reinstall the spark plugs.
- 7) Remove the battery and store it in a cool, dry place. Recharge it once a month.
- 8) Cover the generator to keep out dust.

Your generator is now ready for prolonged storage.



TROUBLESHOOTING & HIGH ALTITUDE OPERATION

PROBLEM	CAUSE	CORRECTION
Engine will not start	<ol style="list-style-type: none"> 1. Low on fuel or oil. 2. Ignition switch in "Off" position. 3. Faulty spark plug. 4. Fuel shut-off valve is closed. 5. Unit loaded during start-up. 6. Spark plug wire loose. 	<ol style="list-style-type: none"> 1. Add fuel or oil. 2. Turn to "ON" position. 3. Replace spark plug. 4. Open fuel shut-off valve. 5. Remove load from unit. 6. Attach wire to spark plug.
Engine is running but no AC output	<ol style="list-style-type: none"> 1. Faulty receptacle. 2. Circuit breaker tripped. 3. Defective capacitor. 4. Faulty power cord. 	<ol style="list-style-type: none"> 1. Have Service Centre replace. 2. Reset breaker. 3. Have Service Centre replace capacitor. 4. Repair or replace cord.
Repeated circuit breaker tripping	<ol style="list-style-type: none"> 1. Overload. 2. Faulty cords or equipment. 	<ol style="list-style-type: none"> 1. Reduce load. 2. Check for damaged, bare, or frayed wires on equipment. Replace.
Generator overheating	<ol style="list-style-type: none"> 1. Generator overloaded. 2. Insufficient ventilation. 	<ol style="list-style-type: none"> 1. Reduce load. 2. Move to adequate supply of fresh air.
Engine runs well but gets bogged down when loads are connected	<ol style="list-style-type: none"> 1. Electrical short in connected item. 2. Overloaded. 	<ol style="list-style-type: none"> 1. Disconnect shorted load. 2. Reduce load.



IF YOU ARE EXPERIENCING PROBLEMS, DO NOT RETURN TO THE RETAILER, CALL THIS TOLL-FREE NUMBER FOR SERVICE INFORMATION

1-877-636-4214

High Altitude Operation

At high altitude, the standard carburetor air/fuel mixture will be too rich. Performance will decrease, and fuel consumption will increase. A very rich mixture will also foul the spark plug and cause hard starting. Operation at an altitude that differs from that at which this engine was certified, for extended periods of time, may increase emissions. High altitude performance can be improved by specific modifications to the carburetor. If you always operate your generator at altitudes above 5,000 feet (1,500 meters), have your dealer or nearest service centre perform this carburetor modification.

This engine, when operated at high altitude with the carburetor modifications for high altitude use, will meet each emission standard throughout its useful life. Even with carburetor modification, engine horsepower will decrease about 3.5% for each 1,000-foot (300-meter) increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.