



Operator Manual

Cummins **Onan**

Performance you rely on.™



60 Hz Commercial Portable Generator Set

EGMBM / PX6100
EGMBM / PX6100e

P6100 Commercial Portable Generator Set

P6100e Commercial Portable Generator Set

FEDERAL EMISSIONS COMPONENT DEFECT WARRANTY

EMISSIONS COMPONENT DEFECT WARRANTY COVERAGE – This emission warranty is applicable in all States, except the state of California.

Cummins Power Generation and Cummins Onan, Minneapolis, MN, (herein "CUMMINS ONAN") warrant(s) to the initial retail purchaser and each subsequent owner, that this Nonroad engine (herein "engine") has been designed, built, and equipped to conform at the time of initial sale to all applicable regulations of the U.S. Environmental Protection Agency (EPA), and that the engine is free of defects in materials and workmanship which would cause this engine to fail to conform with EPA regulations during its warranty period.

For the components listed under PARTS COVERED, the service dealer authorized by CUMMINS ONAN will, at no cost to you, make the necessary diagnosis, repair, or replacement necessary to ensure that the engine complies with applicable U.S. EPA regulations.

EMISSION COMPONENT DEFECT WARRANTY PERIOD

The warranty period for this engine begins on the date of sale to the initial purchaser and continues for a period of two years.

PARTS COVERED

Listed below are the parts covered by the Emission Components Defect Warranty. Some of the parts listed below may require scheduled maintenance and are warranted up to the first scheduled replacement point for that part.

- | | |
|--|--|
| <p>(1) Fuel Metering System</p> <ul style="list-style-type: none"> (i) Carburetor and internal parts (and/or pressure regulator or fuel injection system). (ii) Air/fuel ratio feedback and control system, if applicable. (iii) Cold start enrichment system, if applicable. (iv) Regulator assy (gaseous fuel, if applicable) <p>(2) Air Induction System</p> <ul style="list-style-type: none"> (i) Intake manifold, if applicable (ii) Air filter. | <p>(3) Ignition System</p> <ul style="list-style-type: none"> (i) Spark plugs. (ii) Magneto or electronic ignition system. (iii) Spark advance/retard system, if applicable. <p>(4) Exhaust manifold, if applicable</p> <p>(5) Miscellaneous Items Used in Above Systems</p> <ul style="list-style-type: none"> (i) Electronic controls, if applicable (ii) Hoses, belts, connectors, and assemblies. (iii) Filter lock assy (gaseous fuel, if applicable) |
|--|--|

OBTAINING WARRANTY SERVICE

To obtain warranty service, take your engine to the nearest authorized CUMMINS ONAN service dealer. Bring your sales receipts indicating date of purchase for this engine. The service dealer authorized by CUMMINS ONAN will perform the necessary repairs or adjustments within a reasonable amount of time and furnish you with a copy of the repair order. All parts and accessories replaced under this warranty become the property of CUMMINS ONAN.

WHAT IS NOT COVERED

*Conditions resulting from tampering, misuse, improper adjustment (unless they were made by the service dealer authorized by CUMMINS ONAN during a warranty repair), alteration, accident, failure to use the recommended fuel and oil, or not performing required maintenance services.

- *The replacement parts used for required maintenance services.
- *Consequential damages such as loss of time, inconvenience, loss of use of the engine or equipment, etc.
- *Diagnosis and inspection charges that do not result in warranty-eligible service being performed.
- *Any non-authorized replacement part, or malfunction of authorized parts due to use of non-authorized parts.

OWNER'S WARRANTY RESPONSIBILITIES

As the engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. CUMMINS ONAN recommends that you retain all receipts covering maintenance on your engine, but CUMMINS ONAN cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the engine owner, you should however be aware that CUMMINS ONAN may deny warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your engine to the nearest service dealer authorized by CUMMINS ONAN when a problem exists.

If you have any questions regarding your warranty rights and responsibilities, you should contact the CUMMINS ONAN customer service department at 1-800-344-0039 for the information.

THINGS YOU SHOULD KNOW ABOUT THE EMISSION CONTROL SYSTEM WARRANTY MAINTENANCE AND REPAIRS

You are responsible for the proper maintenance of the engine. You should keep all receipts and maintenance records covering the performance of regular maintenance in the event questions arise. These receipts and maintenance records should be transferred to each subsequent owner of the engine. CUMMINS ONAN reserves the right to deny warranty coverage if the engine has not been properly maintained. Warranty claims will not be denied, however, solely because of the lack of required maintenance or failure to keep maintenance records.

MAINTENANCE, REPLACEMENT OR REPAIR OF EMISSION CONTROL DEVICES AND SYSTEMS MAY BE PERFORMED BY ANY REPAIR ESTABLISHMENT OR INDIVIDUAL; HOWEVER, WARRANTY REPAIRS MUST BE PERFORMED BY A SERVICE DEALER AUTHORIZED BY CUMMINS ONAN. THE USE OF PARTS THAT ARE NOT EQUIVALENT IN PERFORMANCE AND DURABILITY TO AUTHORIZED PARTS MAY IMPAIR THE EFFECTIVENESS OF THE EMISSION CONTROL SYSTEM AND MAY HAVE A BEARING ON THE OUTCOME OF A WARRANTY CLAIM.

If other than the parts authorized by CUMMINS ONAN are used for maintenance replacements or for the repair of components affecting emission control, you should assure yourself that such parts are warranted by their manufacturer to be equivalent to the parts authorized by CUMMINS ONAN in their performance and durability.

HOW TO MAKE A CLAIM

All repair qualifying under this limited warranty must be performed by a service dealer authorized by CUMMINS ONAN. In the event that any emission-related part is found to be defective during the warranty period, you shall notify CUMMINS ONAN customer service department at 1-800-344-0039 and you will be advised of the appropriate warranty service dealer or service providers where the warranty repair can be performed.

FOREWORD

Thank you for purchasing a Cummins Onan generator.

This manual covers operation and maintenance of the Cummins Onan generators. All information in this publication is based on the latest production information available at the time of approval for printing.

Pay special attention to statements preceded by the following words:

WARNING

Indicates a strong possibility of severe personal injury, loss of life and equipment damage if instructions are not followed.

[CAUTION]

Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTE :

Gives helpful information.

If a problem should arise, or if you have any questions about the generator, consult an authorized dealer or service shop






WARNING


- **The generator is designed to give safe and dependable service if operated according to instructions.**
- **Do not operate the generator before you have read and understood the instructions. Failure to do so could result in death, personal injury or equipment damage.**


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1. SAFETY PRECAUTIONS


-  Do not operate the generator near gasoline or gaseous fuel because of the potential danger of explosion or fire.
Do not fill the fuel tank with fuel while the engine is running. Do not smoke or use open flame near the fuel tank. Be careful not to spill fuel during refueling. If fuel is spilt, wipe it off and let dry before starting the engine.
-  Do not place inflammables near the generator.
Be careful not to place fuel, matches, gunpowder, oily cloths, straw, trash, or any other inflammables near the generator.
-  Do not operate the generator inside a room, cave, tunnel, or other insufficiently ventilated area. Always operate it in a well-ventilated area, otherwise the engine may become overheated, and the poisonous carbon monoxide gas contained in the exhaust gases will endanger human lives. Keep the generator at least 1 meter (3 feet) away from any structure or building during use.
If the generator must be used indoors, the area must be well-ventilated and extreme caution must be taken regarding the discharge of exhaust gases.
-  Do not enclose the generator nor cover it with a box.
The generator has a built-in forced air cooling system, and may become overheated if it is enclosed. If generator has been covered to protect it from the weather during nonuse, be sure to remove it and keep it well away from the area during generator use.
-  Operate the generator on a level surface.
It is not necessary to prepare a special foundation for the generator. However, the generator will vibrate on an irregular surface, so choose a level place without surface irregularities.
If the generator is tilted or moved during operation, fuel may spill and / or the generator may tip over, causing a hazardous situation.
Proper lubrication cannot be expected if the generator is operated on a steep incline or slope. In such a case, piston seizure may occur even if the oil is above the upper level.


 Pay attention to the wiring or extension cords from the generator to the connected device.
If the wire is under the generator or in contact with a vibrating part, it may break and possibly cause a fire, generator burnout, or electric shock hazard. Replace damaged or worn cords immediately.


 Do not operate in rain, in wet or damp conditions, or with wet hands.
The operator may suffer severe electric shock if the generator is wet due to rain or snow.


 If wet, wipe and dry it well before starting. Do not pour water directly over the generator, nor wash it with water.




 Be extremely careful that all necessary electrical grounding procedures are followed during each and every use. Failure to do so can be fatal.

 Do not connect the generator to a commercial power line. Connection to a commercial power line may short circuit the generator and ruin it or cause electric shock hazard. Use the transfer switch for connecting to domestic circuit.

 No smoking while handling the battery. The battery emits flammable hydrogen gas, which can explode if exposed to electric arcing or open flame.
Keep the area well-ventilated and keep open flames/sparks away when handling the battery.

 Engine becomes extremely hot during and for some time after operation.
Keep combustible materials well away from generator area.
Be very careful not to touch any part of the hot engine especially the muffler area or serious burns may result.

 Keep children and all bystanders at a safe distance from work areas.

-  It is absolutely essential that you know the safe and proper use of the power tool or appliance that you intend to use. All operators must read, understand and follow the tool/appliance owners manual. Tool and appliance applications and limitations must be understood. Follow all directions given on labels and warnings. Keep all instruction manuals and literature in a safe place for future reference.
-  Use only "LISTED" extension cords.
When a tool or appliance is used outdoors, use only extension cords marked "For Outdoor Use." Extension cords, when not in use should be stored in a dry and well ventilated area.
-  Always switch off generator's no-fuse breaker and disconnect tools or appliances when not in use, before servicing, adjusting, or installing accessories and attachments.

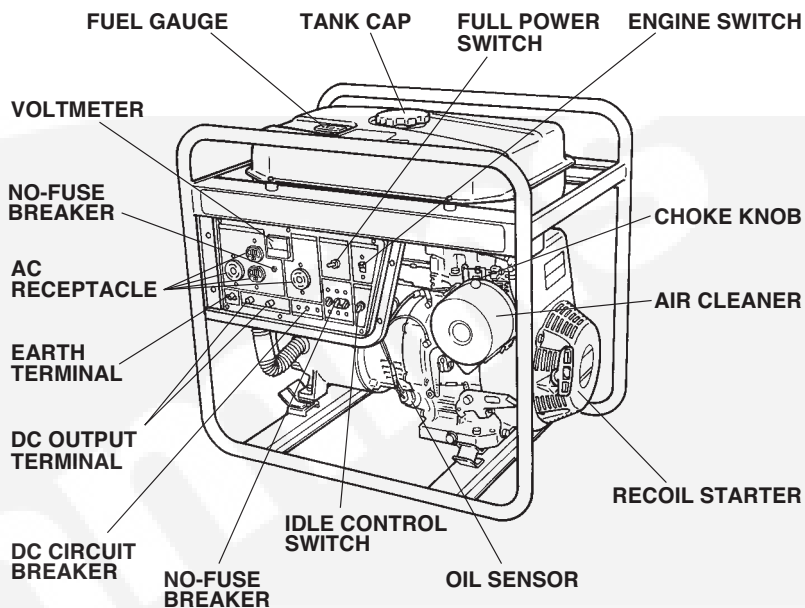
2. SPECIFICATIONS

MODEL		RGV2800	RGV4100	PX6100/e	
Alternator	Type	Brushless, Self-Exciting, 2-Poles, Single Phase			
	Voltage regulator	Condenser type			
	Rated voltage	60 Hz	120 V	120 V/ 240 V	
	Maximum output	60 Hz	2.8 kVA	4.1 kVA	5.8 kVA
	Rated output	60 Hz	2.3 kVA	3.6 kVA	4.8 kVA
	Rated power factor	1.0			
	DC output	12V-8.3A			
	Over current protector	No-fuse Breaker			
Engine	Model	EH17-2D	EH25-2D	EH34D	
	Type	Forced air-cooled, 4-cycle, Gasoline Engine			
	Displacement	172 mL	251 mL	338 mL	
	Fuel	Automotive unleaded gasoline			
	Fuel tank capacity	3.17 US-gal (12.0 liter)	4.38 US-gal (16.6 liter)	5.67 US-gal (21.5 liter)	
	Rated continuous operation (Approx.)	60 Hz	9.0 hours	7.0 hours	7.0 hours
	Starting system	Recoil	Recoil (Electric starter)*		
Dimension	Length	22.0 in (560 mm)	24.4 in (620 mm)	26.8 in (680 mm)	
	Width	16.3 in (415 mm)	16.9 in (430 mm)	18.5 in (470 mm)	
	High	19.4 in (493 mm)	21.7 in (552 mm)	24.8 in (630 mm)	
Dry weight (Electric start type)		105.8 lb (48 kg)	132.3 lb (60 kg) 140.0 lb (63.5 kg)*	172.0 lb (78 kg) 179.7 lb (81.5 kg)*	
Battery		12V 24 amp (See battey installation for details)			
Valve clearance (Intake and Exhaust)		0.0039±0.0012 in (0.1±0.03 mm)		0.0039±0.0006 in (0.1±0.015 mm)	
Note : Adjust the valve clearance while the engine is cold.					

Specifications are subject to change without notice.

* : Electric starter is available as option

3. COMPONENTS



WARNING LABELS

CAUTION

- DO NOT OPERATE THE GENERATOR IN A ROOM, CAVE, OR TUNNEL. ALWAYS OPERATE IN A WELL VENTILATED AREA.
- NEVER OPERATE IN WET GRASS OR DAMP AREAS. ● NEVER REFUEL THE GENERATOR WHILE THE ENGINE IS RUNNING OR HOT.
- CLOSE THE FUEL PET COCK BEFORE REFUELING. ● NEVER OPERATE WITH WET HANDS OR DAMP SHOES.
- DO NOT TOUCH THE EXHAUST MUFFLER WHILE THE ENGINE IS RUNNING OR HOT. ● CHECK OIL LEVEL BEFORE USING.

OPERATION

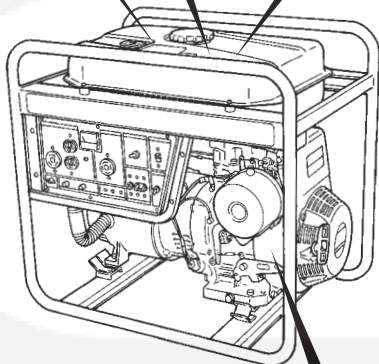
- **STARTING**
 1. OPEN THE FUEL COCK.
 2. ● PULL THE STARTER HANDLE -(RECOIL START TYPE)
 - TURN THE KEY SWITCH TO THE START POSITION. -(ELECTRIC START TYPE)
 3. ALLOW THE ENGINE 1 TO 3 MINUTES TO WARM UP AT NO-LOAD.
- **STOPPING**
 1. ALLOW THE ENGINE ABOUT 3 MINUTES TO COOL DOWN AT NO-LOAD BEFORE STOPPING.
 2. ● PUSH THE STOP BUTTON -(RECOIL START TYPE)
 - TURN THE KEY SWITCH TO THE STOP POSITION. -(ELECTRIC START TYPE)
 3. CLOSE THE FUEL COCK.

⚠ WARNING

Open main switch to electrical service before connecting generator to house circuit. Disconnect generator before reconnecting electrical service. Failure to do so could endanger life and property.

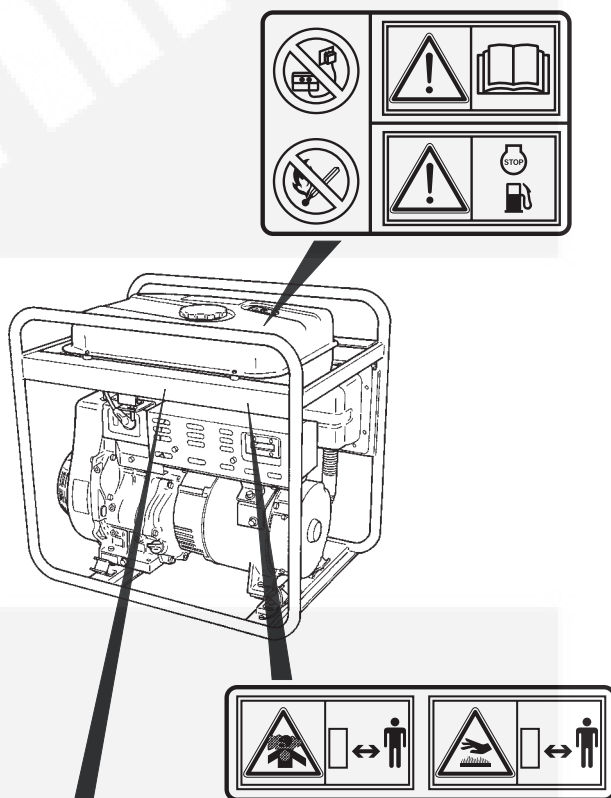
This spark ignition system meets all requirements of the Canadian Interference Causing Equipment Regulations.

Ce système d'allumage respecte toutes les exigences sur le matériel brouilleur du Canada.



⚠ WARNING

- ★ READ ENGINE STARTING AND OPERATING GUIDE CAREFULLY BEFORE STARTING ENGINE.
- ❑ SHUT OFF ENGINE BEFORE REFUELING. THOROUGHLY WIPE UP ANY SPILLED FUEL BEFORE STARTING.
- ❑ CHECK FOR LEAKAGE FROM HOSES AND FITTINGS
- ❑ KEEP FLAMMABLES AWAY FROM ENGINE.
- ❑ SHUT OFF FUEL VALVE WHEN ENGINE IS NOT IN USE.
- ❑ OPERATE ENGINE IN A WELL VENTILATED AREA. DO NOT OPERATE IN A CLOSED ROOM.
- ❑ DO NOT TOUCH MUFFLER OR ANY AREA NEAR EXHAUST DURING OPERATION.



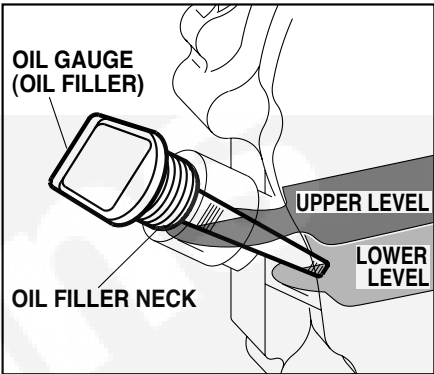
<p>FOR ELECTRICAL EQUIPMENT ONLY CAUTION: DO NOT USE IN RAIN OR SNOW DO NOT USE INSIDE DUE TO DANGER OF ELECTRICAL SHOCK DO NOT USE AT THE SAME TIME</p>	<p>POUR ÉQUIPEMENT ÉLECTRIQUE PRÉCAUTION ATTENTION: NE PAS UTILISER EN PLUIE NI NEIGE NE PAS UTILISER À L'INTÉRIEUR PAR RISQUE DE DANGER ÉLECTRIQUE NE PAS UTILISER À LA MÊME ÉPOQUE QUE L'ÉQUIPEMENT ÉLECTRIQUE</p>	<p>• Insulation system: B • Insulation class: B • Maximum ambient temperature: 40°C (104°F) • Maximum ambient humidity: 95% RH (95%) • Maximum altitude: 2000m (6561ft)</p>	<p>• AC: 100V/240V • WYE: 1.6 • RATED • 400V/3 • 50/60Hz</p>	<p>RGV 永 久 電 機 FUJI HEAVY INDUSTRIES LTD. MADE IN JAPAN</p>
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4. PRE-OPERATION CHECKS

CHECK ENGINE OIL.

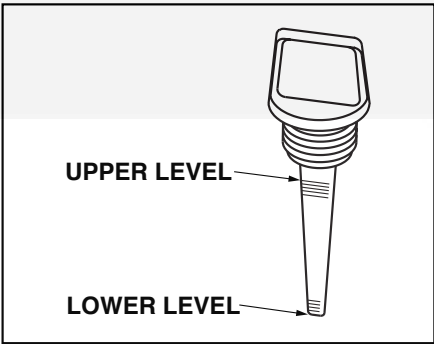
Before checking or refilling oil, be sure generator is located on stable and level surface with engine stopped.

- Remove oil filler cap and check the engine oil level.
- If oil level is below the lower level line, refill with suitable oil (see table) to upper level line. Do not screw in the oil filler cap when checking oil level.
- Change oil if contaminated.
(See "How-To" Maintenance.)



Oil capacity

Model	Upper level
RGV2800	22 oz (0.65 liter)
RGV4100	34 oz (1.0 liter)
PX6100/e	41 oz (1.2 liter)



Recommended engine oil :

Use 4-stroke automotive detergent oil of API service class SE or highergrade (SG, SH or SJ is recommended). SAE 10W-30 or 10W-40 is recommended for general, all-temperature use. If single viscosity oil is used, select the appropriate viscosity for the average temperature in your area.

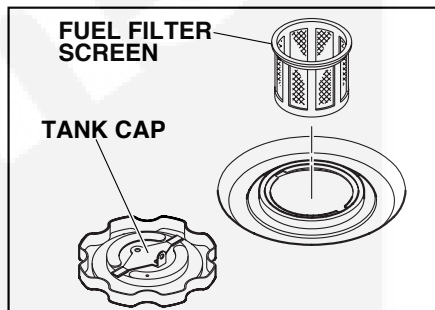
Single grade	5W							
	10W							
	20W							
	#20							
	#30							
Multigrade	#40							
	10W-30							
Ambient temperature	10W-40							
	-20 -10 0 10 20 30 40°C	-4 14 32 50 68 86 104°F						

CHECK ENGINE FUEL.

⚠ WARNING

Do not refuel while smoking or near open flame or other such potential fire hazards. Otherwise fire accident may occur.

- Check fuel level at fuel level gauge.
- If fuel level is low, refill with automotive unleaded gasoline only.
This engine is certified to operate on automotive unleaded gasoline.
- Be sure to use the fuel filter screen on the fuel filter neck.

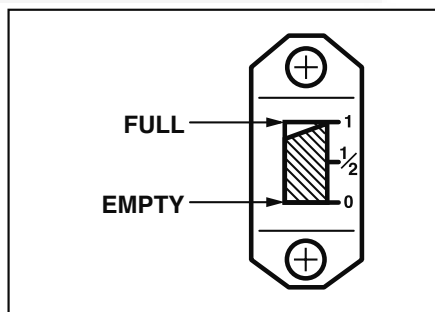


Fuel tank capacity :

RGV28003.17 US-gal (12.0 liter)

RGV41004.38 US-gal (16.6 liter)

PX6100/e5.67 US-gal (21.5 liter)



⚠ WARNING

Make sure you review each warning in order to prevent fire hazard.

- Do not refill tank while engine is running or hot.
- Close fuel cock before refueling with fuel.
- Be careful not to admit dust, dirt, water or other foreign objects into fuel.
- Wipe off spilt fuel thoroughly before starting engine.
- Keep open flames away.

CHECKING COMPONENT PARTS

Check following items before starting engine:

- Fuel leakage from fuel hose, etc.
- Bolts and nuts for looseness.
- Components for damage or breakage.
- Generator not resting on or against any adjacent wiring.

CHECK GENERATOR SURROUNDINGS.

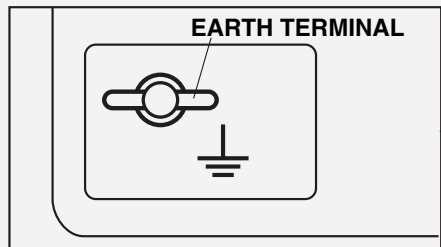
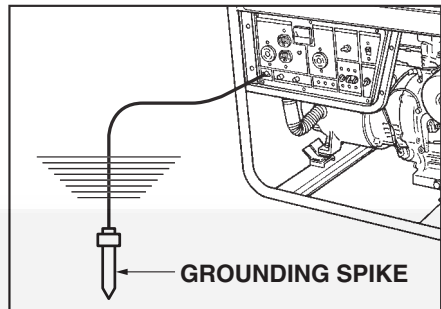
⚠ WARNING

Make sure you review each warning in order to prevent fire hazard.

- **Keep area clear of inflammables or other hazardous materials.**
- **Keep generator at least 3 feet (1 meter) away from buildings or other structures.**
- **Only operate generator in a dry, well ventilated area.**
- **Keep exhaust pipe clear of foreign objects.**
- **Keep generator away from open flame. No smoking!**
- **Keep generator on a stable and level surface.**
- **Do not block generator air vents with paper or other material.**

GROUNDING THE GENERATOR

- To ground the generator to the earth, connect the grounding lug of the generator to the grounding spike driven into the earth or to the conductor which has been already grounded to the earth.
- If such grounding conductor or grounding electrode is unavailable, connect the grounding lug of the generator to the grounding terminal of the electric tool or appliance you are using.



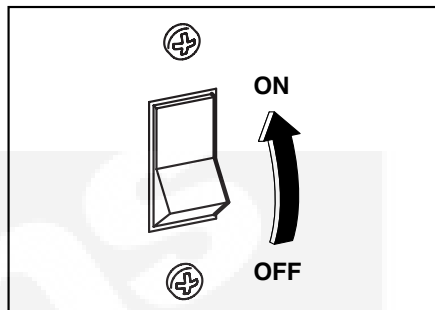
5. OPERATING PROCEDURES

STARTING THE ENGINE

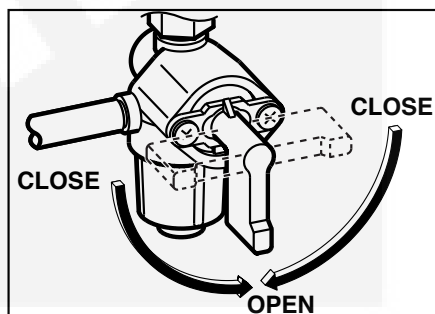
[CAUTION]

Check the oil level before each operations as outlined on page 8.

(a) Turn the engine switch to the ON position
(Recoil starter model only)

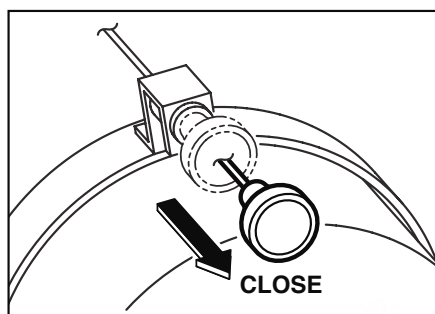


(b) Turn the no-fuse breaker to the OFF position.



(c) Open the fuel cock.

(d) Pull the choke knob to close if the engine is cold.



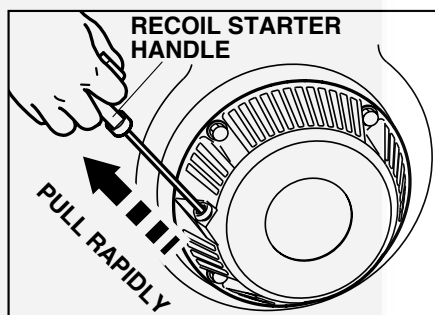
(e) [Recoil starter model]

Pull the starter handle slowly until resistance is felt.

This is the "compression" point.

Return the handle to its original position and then pull swiftly.

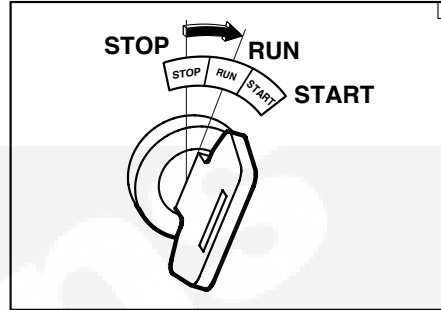
- If the engine fails to start after several attempts, repeat above procedures with choke knob returned to open.
- Do not fully pull out the rope.
- After starting, allow the starter handle to return to its original position while still holding the handle.



(f) **[Electric starter model]**

Insert the key into the key switch and turn it clockwise to the "RUN" position to start the engine.

Then turn the key further to the "START" position. The engine will be started by starting motor.

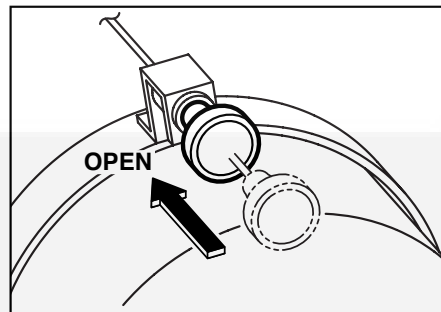


[CAUTION]

- Do not run the starting motor over 5 seconds continuously. If the engine fails to start, return the key to the "RUN" position and wait about 10 seconds then start again.
- Do not turn the key switch to "START" position when the engine is running to prevent damage to the starting motor.
- When starting the engine by recoil starter, set the key switch at the "ON" position and pull the starter handle.

(g) After the engine starts, return the choke knob gradually to OPEN position.

(h) Warm up the engine without a load for a few minutes.

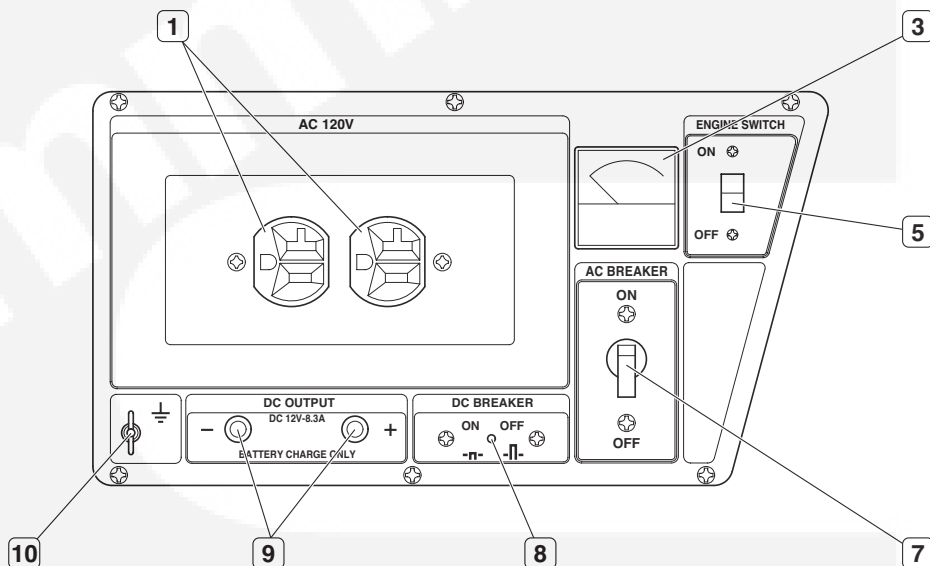


USING ELECTRIC POWER

⚠ WARNING

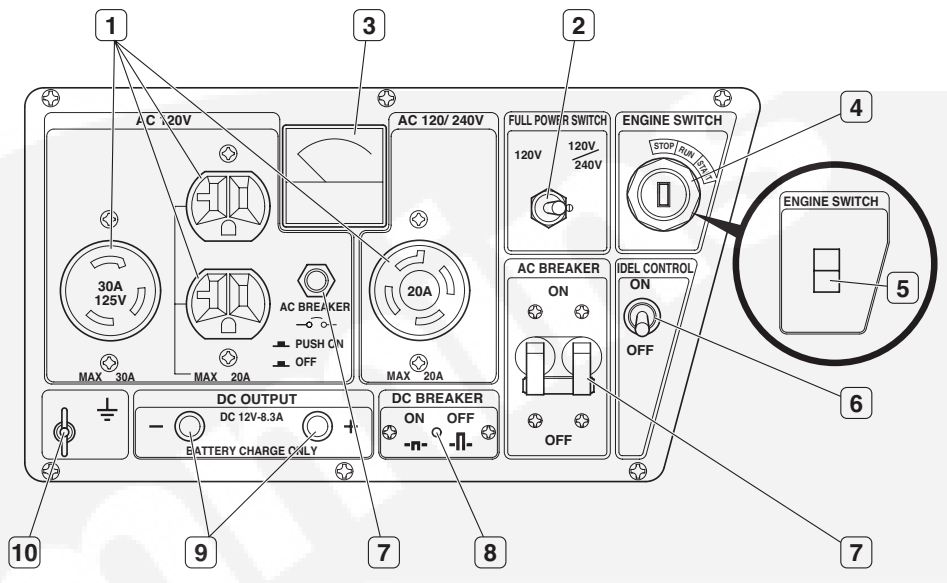
- Make sure that the appliance is switched OFF before connecting it to the generator.
- Do not move the generator while it is running.
- Be sure to ground the generator if the connected appliance is grounded. Failure to ground unit may lead to electrical shock.

CONTROL PANEL (RGV2800)

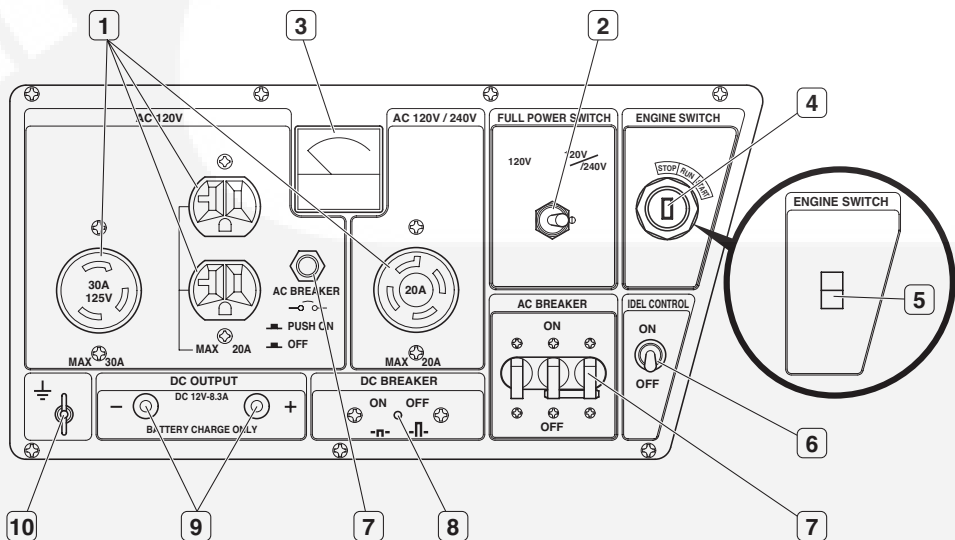


- | | |
|--|----------------------------|
| 1 AC receptacle | 6 Idle control switch |
| 2 Full power switch | 7 No-fuse breaker |
| 3 Voltmeter | 8 DC circuit breaker |
| 4 Key switch
(Electric starter type) | 9 DC output terminal |
| 5 Engine switch
(Recoil starter type) | 10 Earth (Ground) terminal |

(RGV4100)

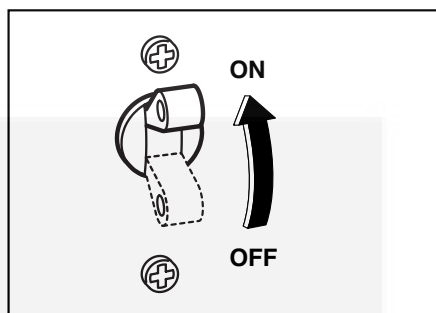
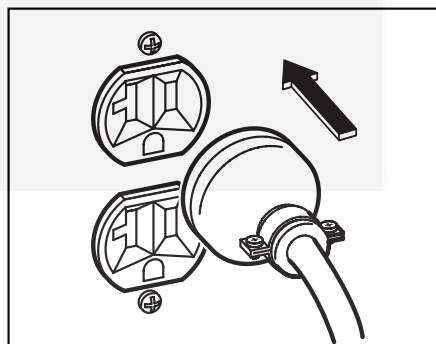
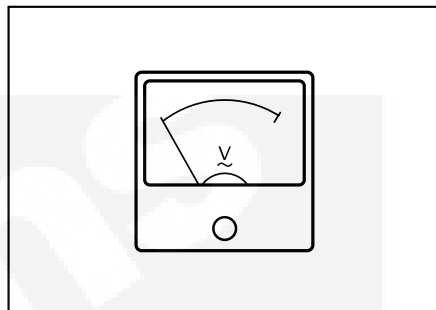


(PX6100/e)



(1) AC APPLICATION

- (a) Check the voltmeter for proper voltage.
- This generator is thoroughly tested and adjusted in the factory. If the generator does not produce the specified voltage, consult your nearest dealer or service shop.
- (b) Turn off the switch/switches of the electrical appliance before connecting to the generator.
- (c) Insert the plug/plugs of the electrical appliance into the receptacle.
- Check the amperage of the receptacles used referring to **TABLE 1**, and be sure not to take a current exceeding the specified amperage.
 - Be sure that the total wattage of all appliances does not exceed the rated output of the generator.
- (d) Turn the no-fuse breaker to the ON position.






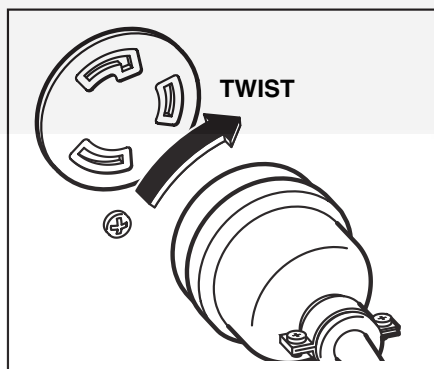
Style	Ampere	Receptacle	AC plug	Description
	Up to 20A	NEMA L5-20R	NEMA L5-20P	Duplex Receptacle (REC1)
	Up to 30A	NEMA L5-30R	NEMA L5-30P	Locking Receptacle (REC2)
	Up to 20A	NEMA L14-20R	NEMA L14-20P	Locking Receptacle (REC3)

TABLE 1

⚠ WARNING

- To draw power from the **TWIST LOCK RECEPTACLE**, insert the plug into the receptacle, and turn it clockwise to the lock position.
- Be sure to ground the generator if the connected electrical device is grounded.



NOTE :

When the no-fuse breaker turns off during operation, the generator is overloaded or the appliance is defective. Stop the generator immediately, check the appliance and / or generator for overloading or defect and have repaired as necessary by dealer or service shop.

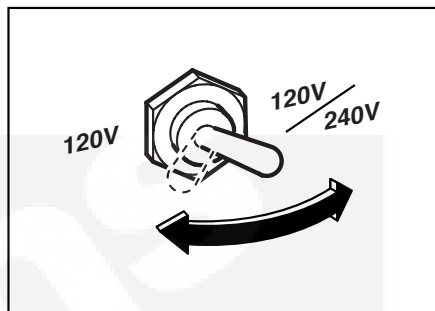
FULL POWER SWITCH (Except RGV2800)

Select the voltage using the FULL POWER SWITCH in accordance with the electrical appliance.

Refer to **TABLE 2**.

[CAUTION]

Change the FULL POWER SWITCH after turning the no-fuse breaker to OFF.

**NOTE :**

Voltmeter always indicates the lower voltage when ever the FULL POWER SWITCH is set.

Switch position	Lower Voltage Receptacle	Higher Voltage Receptacle
120V	Activated full rated output	N.A
120/240V	Activated half of rated output	Activated full rated output

TABLE 2

(2) CONNECTING TO DOMESTIC CIRCUITS (HOUSE WIRING)

⚠ WARNING

The generators are a neutral grounded type.

If a generator is to be connected to residential such as a standby power source during power outage, all connections must be made by a licensed electrician.

Failure in connection may result in death, personal injury, damage to generator, damage to appliances, damage to the building's wiring or fire.

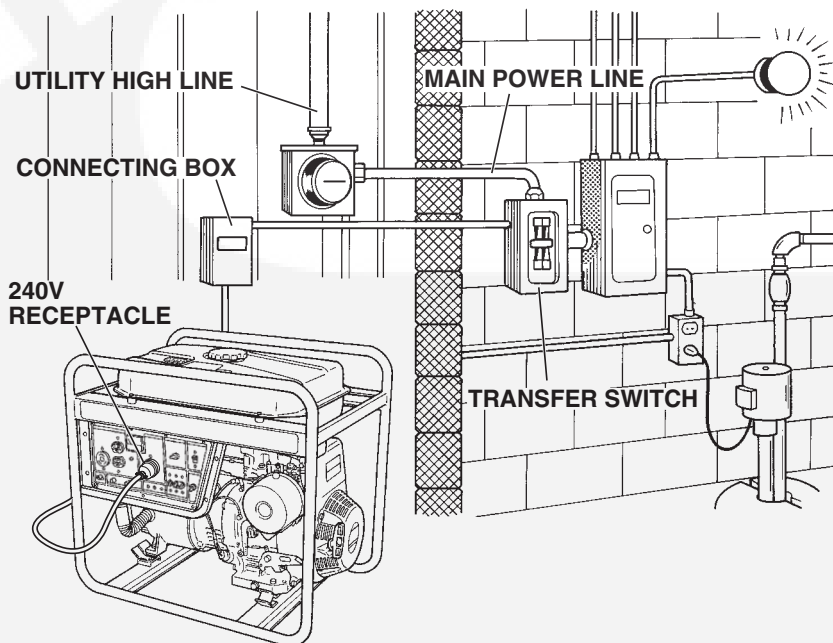
(a) When connecting a generator to a house wiring, generator output power must be taken from the 240V-4P receptacle.

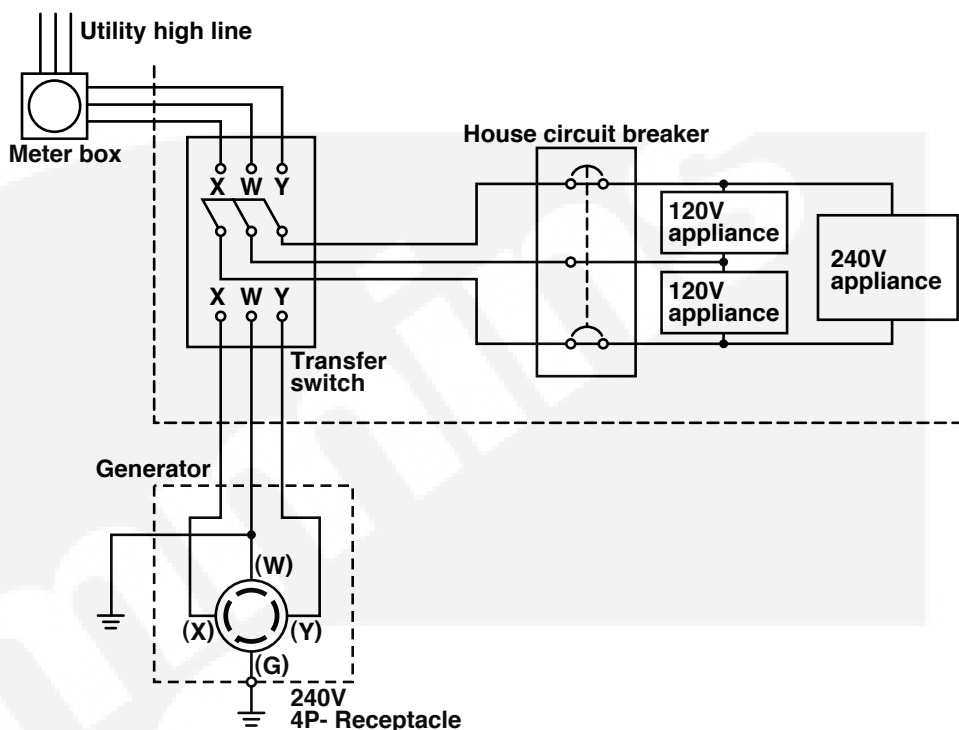
(b) Install a transfer switch.

A transfer switch must be installed by a certified/licensed electrician to transfer the load from the commercial power source to the generator. This switch is necessary to prevent accidents caused by the recovery from power outage. Use a transfer switch of the correct capacity. Install transfer switch between the meter and the fuse or AC breaker box.

[CAUTION]

If the neutral wire of house wiring is grounded, be sure to ground the ground terminal of the generator. Otherwise an electric shock may occur to the operator.





(c) Operating the generator.

- Set the full power switch to 120V/ 240V side.
- Turn the house AC breaker off before starting the generator.
- Start the generator and warm it up.
- Turn the house AC breaker on.

[CAUTION]

Do not start the generator with electrical appliance (s) connected and with their switches on.

Otherwise the appliance (s) may be damaged by the surge voltage at starting.

IDLE CONTROL SWITCH (Except RGV2800)

IDLE CONTROL SWITCH automatically reduces engine speed when load is OFF, and automatically increases engine speed to rated r.p.m. when load is ON.

IDLE CONTROL SWITCH provides fuel economy and low noise operation at no-load running.

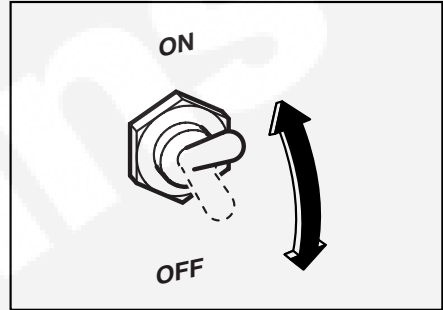
(1) HOW TO USE IDLE CONTROL SWITCH

- Start the engine with IDLE CONTROL SWITCH off.

NOTE :

Warm up the engine without a load for a few minutes.

- Turn IDLE CONTROL SWITCH on.



(2) CHECKING THE OPERATION

When IDLE CONTROL SWITCH does not operate normally, please check following :

- Overloaded ?
Please make it sure that the generator is not overload.

NOTE :

Most induction loads such as electric motors require three to five times more wattage than their ratings during starting.

This starting wattage should not exceed the rated output of the generator for proper operation of IDLE CONTROL SWITCH.

- Turn IDLE CONTROL SWITCH off when the IDLE CONTROL SWITCH does not work normally under the rated output.

NOTE :

The IDLE CONTROL SWITCH may not operate when the applied load is under 40W. In such cases turn the IDLE CONTROL SWITCH off.

(3) STOPPING THE ENGINE

- Turn the load switches to OFF.
- Switch off generator's AC breaker.
- Disconnect tool or appliance.
- Turn the IDLE CONTROL SWITCH off.
- Turn the STOP SWITCH to the OFF position.

NOTE :

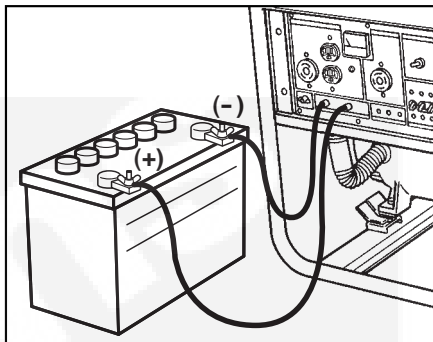
Allow the engine about 3 minutes to cool down at no-load before stopping.

(3) DC APPLICATION

The DC terminal is used only for charging 12 volt batteries. It provides up to 12V-8.3A (100W) of maximum power.

CONNECTION OF CABLE :

- Connect positive (red) terminal on generator to positive (+) terminal on battery.
- Connect negative (black) terminal on generator to negative (-) terminal on battery.
- Both AC and DC output can be used at the same time if the total output is within rated output of the generator.



SAFETY PRECAUTIONS WHILE CHARGING

- An explosive hydrogen gas is discharged through vent holes in the battery during the charging process. Do not allow spark or open flame around the generator or battery during the charging process.
- Electrolyte fluid can burn eyes and clothing. Be extremely careful to avoid contact. If injured, wash the affected area immediately with large quantities of water and consult a doctor for treatment.
- When charging a large capacity battery or totally discharged battery, excessive current may force the DC breaker to turn off.
In such cases, use a battery charger to charge a large battery with AC output.
- Battery defects may cause the DC breaker to turn off.
Check the battery before replacing the DC breaker.

STOPPING THE GENERATOR

- (a) Turn off the power switch of the electric equipment and unplug the cord from receptacle of the generator.
- (b) Turn the no-fuse breaker to the OFF position.
- (c) Allow the engine about 3 minutes to cool down at no-load before stopping.

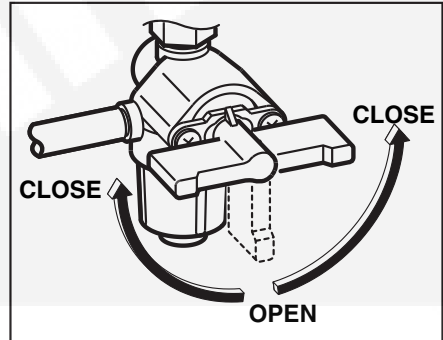
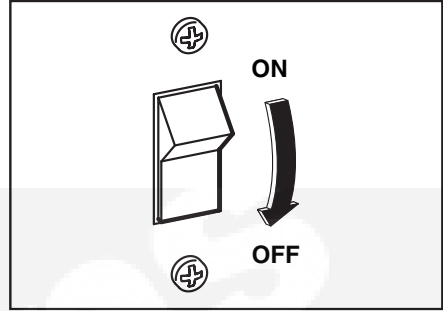
(d) [**Recoil starter model**]

Turn the engine switch to the OFF position.

[**Electric starter model**]

Turn the key switch to the STOP position.

- (e) Close the fuel cock.



OIL SENSOR

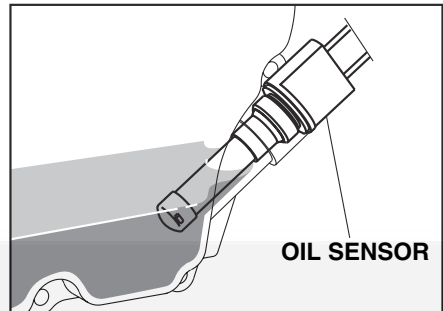
- (a) The oil sensor detects the fall in oil level in the crankcase and automatically stops the engine when the oil level falls below a predetermined level.

- (b) When engine has stopped automatically, switch off generator's no-fuse breaker, and check the oil level.

Refill engine oil to the upper level as instructed on page 8 and restart the engine.

- (c) If the engine does not start by usual starting procedures, check the oil level.

- (d) If oil level is ok, please have unit serviced by a Cummins Onan dealer or distributor.



[CAUTION]

**Do not remove OIL SENSOR PROBE when refilling with oil.
Remove oil filler cap on the opposite side of carburetor.**

6. WATTAGE INFORMATION

Some appliances need a "surge" of energy when starting.

This means that the amount of electrical power needed to start the appliance may exceed the amount needed to maintain its use.

Electrical appliances and tools normally come with a label indicating voltage, cycles / Hz, amperage (amps) and electrical power needed to run the appliance or tool.

Check with your nearest dealer or service center with questions regarding power surge of certain appliances or power tools.

- Electrical loads such as incandescent lamps and hot plates require the same wattage to start as is needed to maintain use.
- Loads such as fluorescent lamps require 1.2 to 2 times the indicated wattage during start-up.
- Loads for mercury lamps require 2 to 3 times the indicated wattage during start-up.
- Electrical motors require a large starting current. Power requirements depend on the type of motor and its use. Once enough "surge" is attained to start the motor, the appliance will require only 50% to 30% of the wattage to continue running.
- Most electrical tools require 1.2 to 3 times their wattage for running under load during use. For example, a 5,000 watt generator can power a 1800 to 4000 watt electrical tool.
- Loads such as submersible pumps and air compressors require a very large force to start. They need 3 to 5 times the normal running wattage in order to start.
For example, a 5,000 watt generator would only be able to drive a 1,000 to 1,700 watt pump.

NOTE :

The following wattage chart is general guide only. Refer to your specific appliance for correct wattage.

To determine the total wattage required to run a particular electrical appliance or tool, multiply the voltage figure of the appliance/tool by the amperage (amps) figure of same. The voltage and amperage (amps) information can be found on a name plate which is normally attached to electrical appliances and tools.

Applications	Applicable Wattage (W)		
	RGV2800	RGV4100	PX6100/e
	60Hz	60Hz	60Hz
Incandescent lamp, Heater	2300	3600	4800
Fluorescent lamp, Electric tool	1200	1800	2400
Mercury lamp	800	1400	1600
Pump, Compressor	550	850	1100

VOLTAGE DROP IN ELECTRIC 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.

The chart below has been prepared to illustrate 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.

Nominal cross section	A.W.G.	Allowable current	No.of strands / strands dia.	Resistance	Current Amp.							
mm²	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	—	—	—	Voltage drop	
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

7. SPARK ARRESTER

SPARK ARRESTER

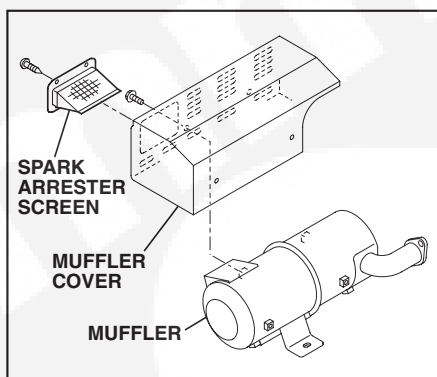
Always use with a spark arrester.

Some areas require the use of a spark arrester. Please check your local laws and regulations before operating your product.

The spark arrester must be cleaned regularly to keep it functioning as designed.
A clogged spark arrester :

- Prevents the flow of exhaust gas
- Reduces engine output
- Increases fuel consumption
- Makes starting difficult

If the engine has been running, the muffler and the spark arrester will be very hot.
Allow the muffler to cool before cleaning the spark arrester.



Maintenance interval

Clean spark arrester every hundred(100) hours.

How to remove the spark arrester

1. Remove the flange bolts from the muffler cover and remove the muffler cover.
2. Remove the special screw from the spark arrester and remove the spark arrester from the muffler.

Clean the spark arrester screen

Use a brush to remove carbon deposits from the spark arrester screen.
Be careful to avoid damaging the screen.

The spark arrester must be free of breaks and holes. Replace the spark arrester if it is damaged.

Install the spark arrester, and muffler protector in the reverse order of disassembly.

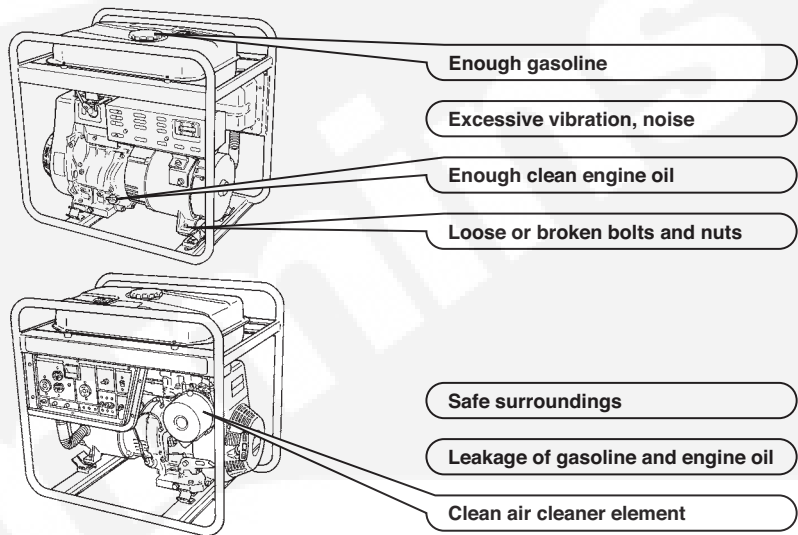


8. MAINTENANCE SCHEDULE

MAINTENANCE, REPLACEMENT OR REPAIR OF THE EMISSION CONTROL DEVICES AND SYSTEMS MAY BE PERFORMED BY ANY NONROAD ENGINE REPAIR ESTABLISHMENT OR INDIVIDUAL.

DAILY INSPECTION

Before running the generator, check the following service items:



PERIODIC MAINTENANCE

Periodic maintenance is vital to safe and efficient operation of your generator. Check the table below for periodic maintenance intervals.

IT IS ALSO NECESSARY FOR THE USER OF THIS GENERATOR TO CONDUCT THE MAINTENANCE AND ADJUSTMENTS ON THE EMISSION-RELATED PARTS LISTED BELOW TO KEEP THE EMISSION CONTROL SYSTEM EFFECTIVE.

The emission control system consists of the following parts :

- | | | |
|---|--|--|
| (1) Carburetor and internal parts | (4) Air cleaner elements | (8) Exhaust manifold, if applicable |
| (2) Cold start enrichment system, if applicable | (5) Spark plug | (9) Hoses, belts, connectors, and assemblies |
| (3) Intake manifold, if applicable | (6) Magneto or electronic ignition system | |
| | (7) Spark advance/retard system, if applicable | |

The maintenance schedule indicated in the table is based on the normal generator operation. Should the generator be operated in an extremely dusty condition or in a heavier load condition, the maintenance intervals must be shortened depending on the contamination of oil, clogging of filter elements, wear of parts, and so on.

Periodic Maintenance Schedule table

Maintenance Items	Every 8 hours (Daily)	Every 20 hours	Every 50 hours (Weekly)	Every 200 hours (Monthly)	Every 500 hours	Every 1000 hours
CLEAN GENERATOR AND CHECK BOLT AND NUTS	● (Daily)					
CHECK AND REFILL ENGINE OIL	● (Refill daily up to upper level)					
CHANGE ENGINE OIL (*Note1)		● (Initial)	● (Every 100 hours)			
CLEAN SPARK PLUG			●			
CLEAN AIR CLEANER			●			
REPLACE AIR CLEANER ELEMENT				●		
CLEAN FUEL STRAINER				●		
CLEAN AND ADJUST SPARK PLUG AND ELECTRODES				●		
REPLACE SPARK PLUG					●	
SPARK ARRESTER			● (Every 100 hours)			
REMOVE CARBON FROM CYLINDER HEAD (*Note 2)					●	
CHECK AND ADJUST VALVE CLEARANCE, (*Note 2)					●	
CLEAN AND ADJUST CARBURETOR (*Note 2)					●	
REPLACE FUEL LINES						● (Yearly)
OVERHAUL ENGINE (*Note 2)						●

*NOTE: 1. Initial oil change should be performed after first twenty (20) hours of operation. Thereafter change oil every hundred (100) hours.
Before changing oil, check for a suitable way to dispose of old oil.
Do not pour it down into sewage drains, onto garden soil or into open streams. Your local zoning or environmental regulations will give you more detailed instructions on proper disposal.

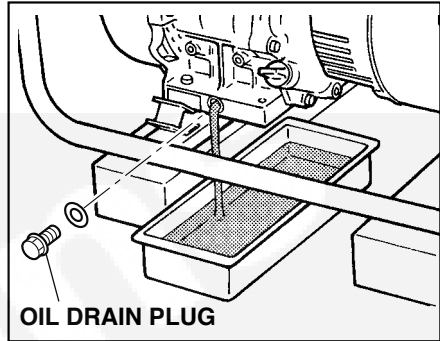
*NOTE: 2. As to the procedures for these items, please refer to the SERVICE MANUAL or consult your nearest service dealer.

9. "HOW-TO" MAINTENANCE

ENGINE OIL CHANGE

- Change engine oil every 100 hours.
(For new engine, change oil after 20 hours.)

- (a) Drain oil by removing the drain plug and the oil filler cap while the engine is warm.
- (b) Reinstall the drain plug and fill the engine with oil until it reaches the upper level on the oil filler cap.



- Use fresh and high quality lubricating oil to the specified level as directed on page 8. If contaminated or deteriorated oil is used or the quantity of the engine oil is not sufficient, the engine damage will result and its life will be greatly shortened.

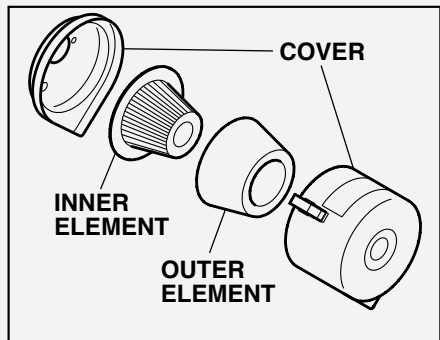
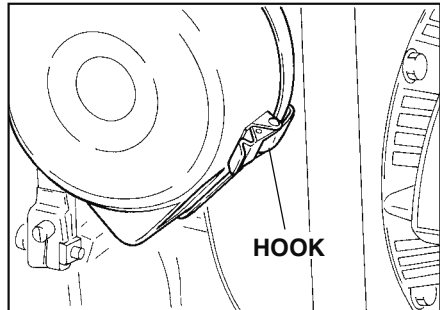
CLEANING AIR CLEANER

(Model RGV2800)

Maintaining an air cleaner in proper condition is very important.

Dirt induced through improperly installed, improperly serviced or inadequate elements damages and wears out engines. Always keep the air cleaner element clean.

- (a) Unhook the cover and remove the cleaner element.
- (b) Inner element : Wash the element with kerosene, then soak it in mixed oil (Kerosene (3 parts) : Engine oil (1 part)). Drain the mixed oil.
- (c) Outer element : Wash the element with kerosene, then dip it into the mixed oil (Kerosene (3 parts) : Engine oil (1 part)). Squeeze out the mixed oil. (Do not twist.)

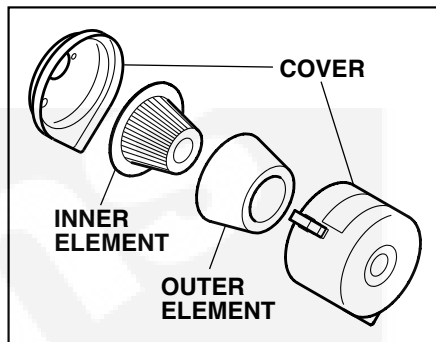


(Model RGV4100, 6100)

[CAUTION]

Do not wash elements with kerosene, gasoline or oil.

A dirty air cleaner element will cause starting difficulty, power loss, engine malfunctions, and shorten engine life extremely. Always keep the air cleaner element clean.



1. Urethane Foam Element

Wash and clean the urethane foam with detergent. After cleaning, dry it. Clean the urethane foam element every 50 hours.

2. Paper element

Clean by tapping gently to remove dirt and blow off dust.

Never use oil. Clean the paper element every 50 hours of operation, and replace element set every 200 hours.

Clean and replace air cleaner elements more often when operating in dusty environments.

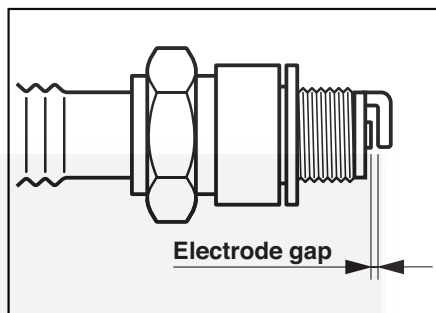
CLEANING AND ADJUSTING SPARK PLUG

(a) If the plug is contaminated with carbon, remove it using a plug cleaner or wire brush.

(b) Adjust the electrode gap.

ELECTRODE GAP

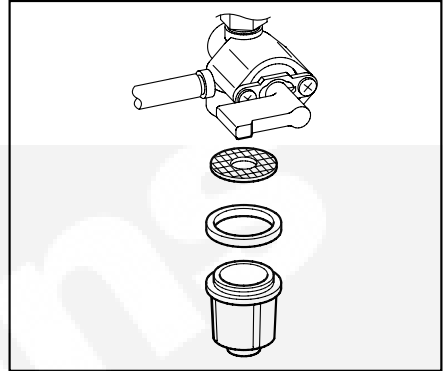
Model	Spark plug	Electrode gap
RGV2800 RGV4100	NGK BR6HS	0.02 to 0.03 in. (0.6 to 0.7 mm)
PX6100/e	NGK BR6ES	0.03 in. (0.7 to 0.8 mm)



CLEANING FUEL STRAINER

Dirt and water in the fuel are removed by the fuel strainer.

- (a) Remove the strainer cup and throw away water and dirt.
- (b) Clean the screen and strainer cup with gasoline.
- (c) Tightly fasten the cup to main body, making sure to avoid fuel leak.



FUEL HOSE REPLACEMENT

WARNING

Take extreme caution when replacing fuel hose ; gasoline is flammable.

Replace the fuel hose every 1,000 hours or every year.

If fuel hose leak is found, replace the fuel hose immediately.

10. PREPARATION FOR STORAGE

The following procedures should be followed prior to storage of your generator for periods of 6 months or longer.

- Drain fuel from fuel tank carefully by disconnecting the fuel line.
Gasoline left in the fuel tank will eventually deteriorate making engine-starting difficult.
- Remove the carburetor float chamber and also drain the carburetor.
- Change engine oil.
- Check for loose bolts and screws, tighten them if necessary.
- Clean generator thoroughly with oiled cloth. Spray with preservative if available. **NEVER USE WATER TO CLEAN GENERATOR !**
- Pull starter handle until resistance is felt, leaving handle in that position.
- Store generator in a well ventilated, low humidity area.

11. TROUBLESHOOTING

If the generator engine fails to start after several attempts, or if no electricity is available at the output socket, check the following chart. If your generator still fails to start or generate electricity, contact your nearest Cummins Onan dealer or service shop for further information or corrective procedures.

When Engine Fails to Start :

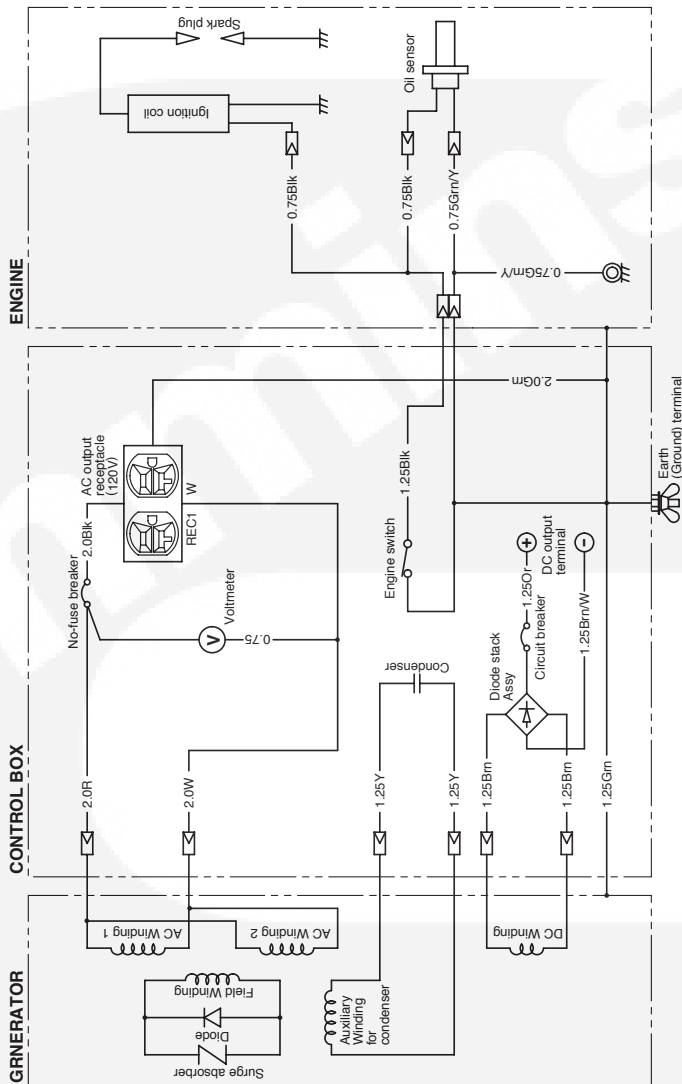
Check if choke lever is in its proper position.		Set the choke lever to "CLOSE" position.
Check if fuel cock is open.	↔	If closed, open fuel cock.
Check fuel level.		If empty, refill fuel tank making sure not to overfill.
Check if engine switch is in OFF.		Turn engine switch to ON.
Check to make sure generator is not connected to an appliance.		If connected, turn off the power switch on the connected appliance and unplug.
Check spark plug for loose spark plug cap.	↔	If loose, push spark plug cap back into place.
Check spark plug for contamination.		Remove spark plug and clean electrode.

When No Electricity Is Generated at Receptacle :

Check to make sure no-fuse breaker is in the "ON" position.	↔	After making sure that the total wattage of the electrical appliance is within permissible limits and there are no defects in the appliance, turn the no-fuse breaker to the "ON" position. If breakers continue to actuate, consult your nearest servicing dealer.
Check AC and DC terminals for loose connection.		Secure connection if necessary.
Check to see if engine starting was attempted with appliances already connected to generator.	↔	Turn off switch on the appliance, and disconnect cable from receptacle. Reconnect after generator has been started properly.

12. WIRING DIAGRAM

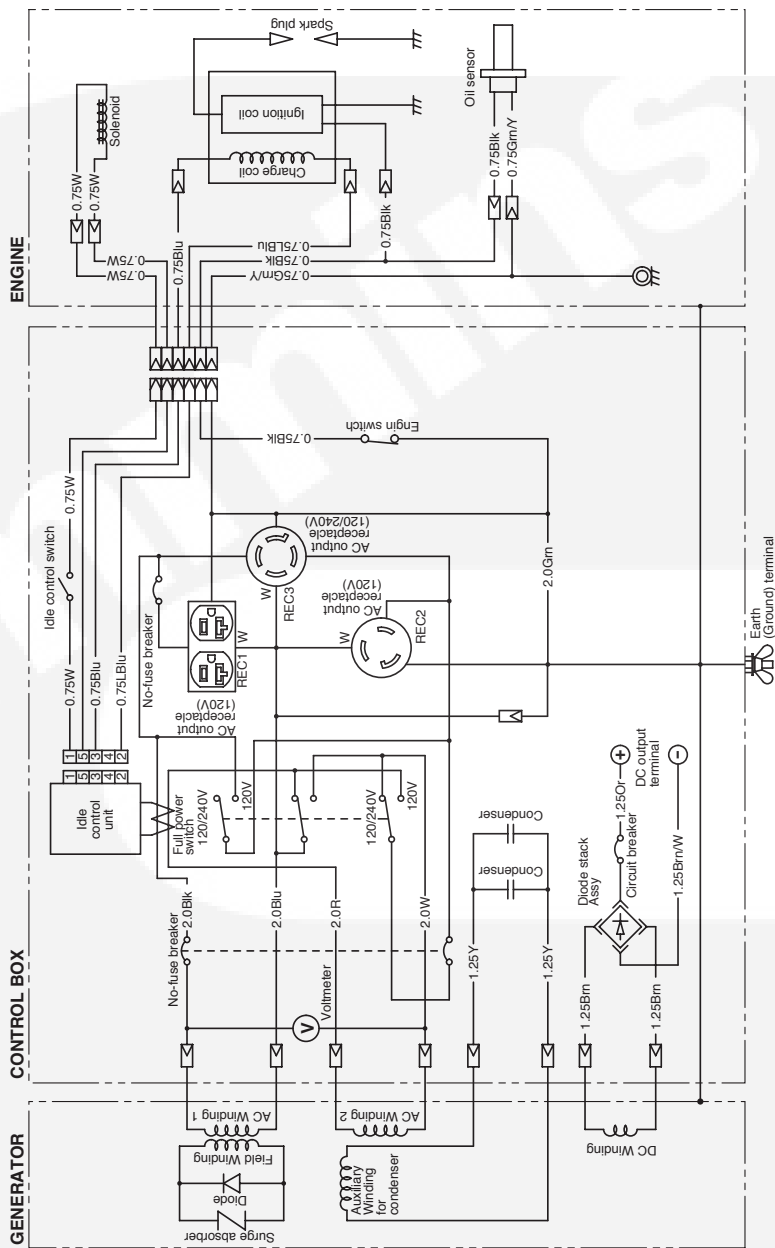
RGV2800



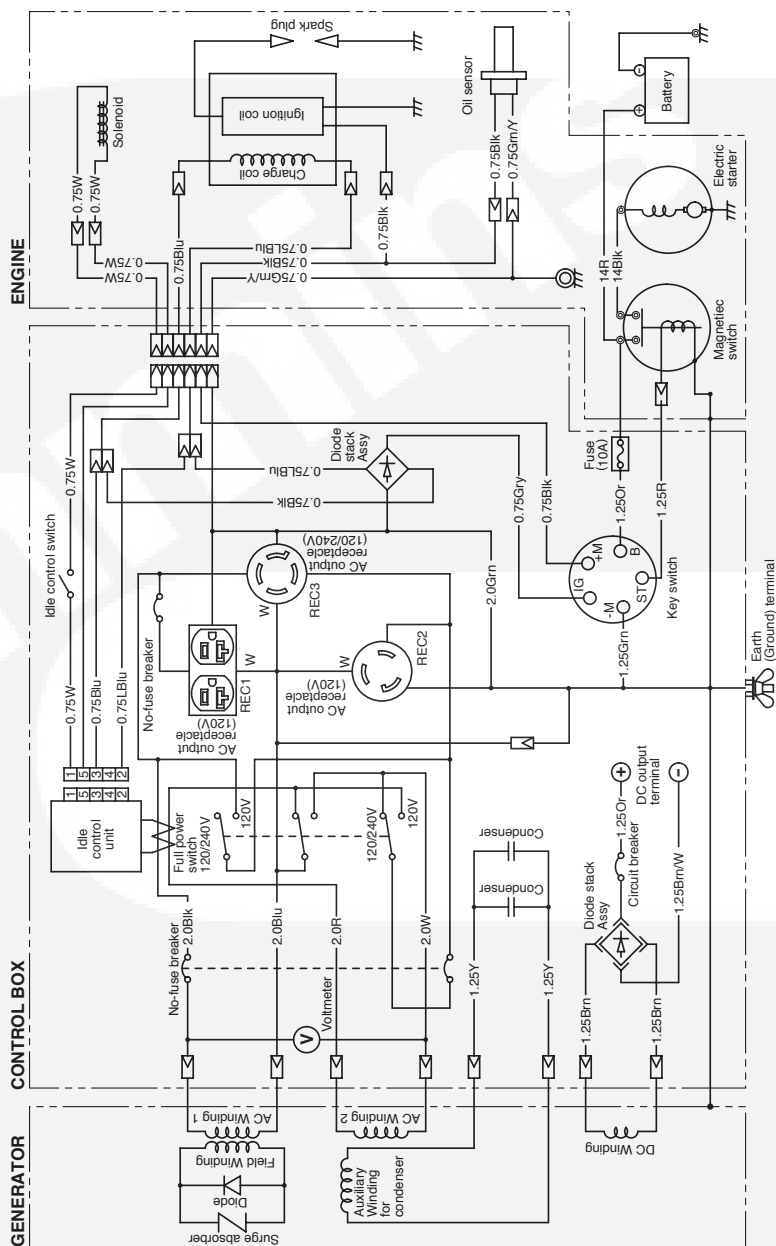
Wiring color cord

Blk	: Black	Bm/W	: Brown/White	R	: Red
BlkW	: Black/White	Grn	: Green	W	: White
Blu	: Blue	GrnW	: Green/White	Y	: Yellow
LBlu	: Light blue	Org	: Orange		
Bm	: Brown	Gry	: Gray		

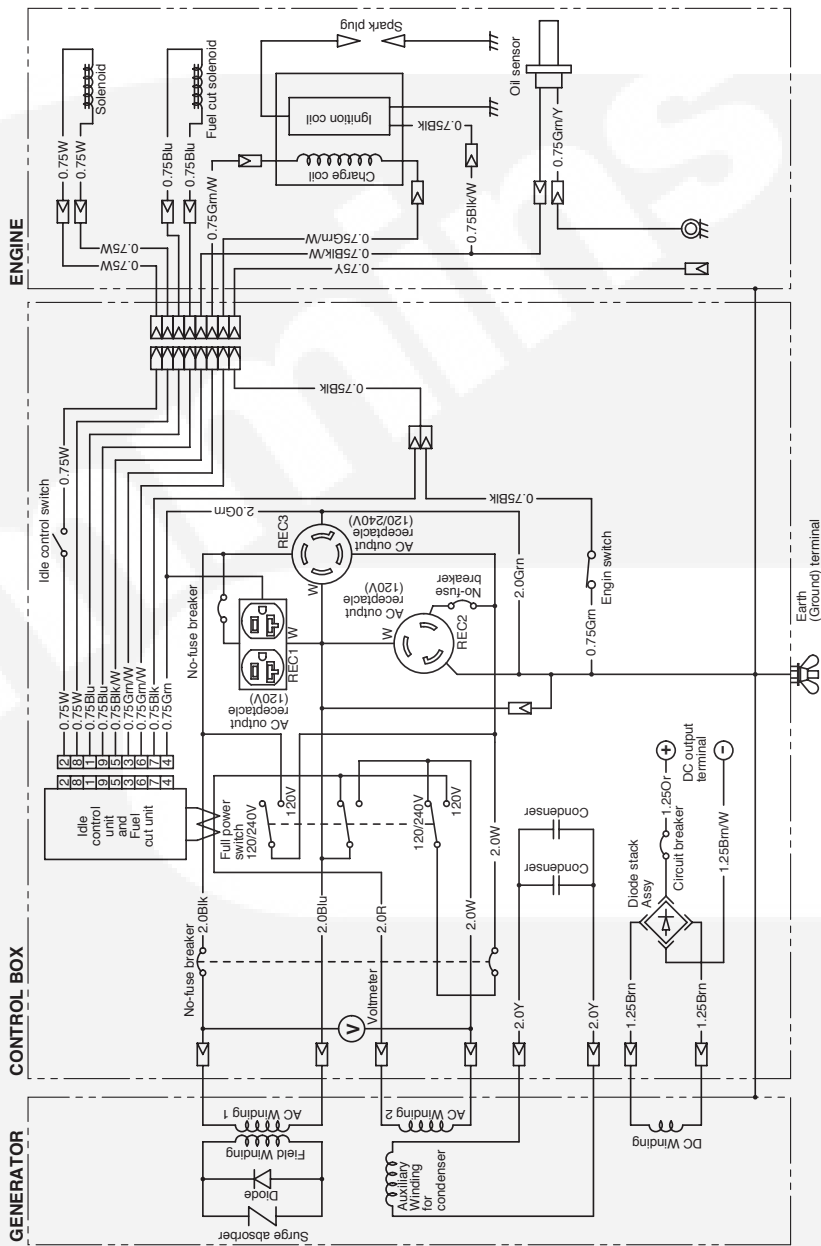
RGV4100

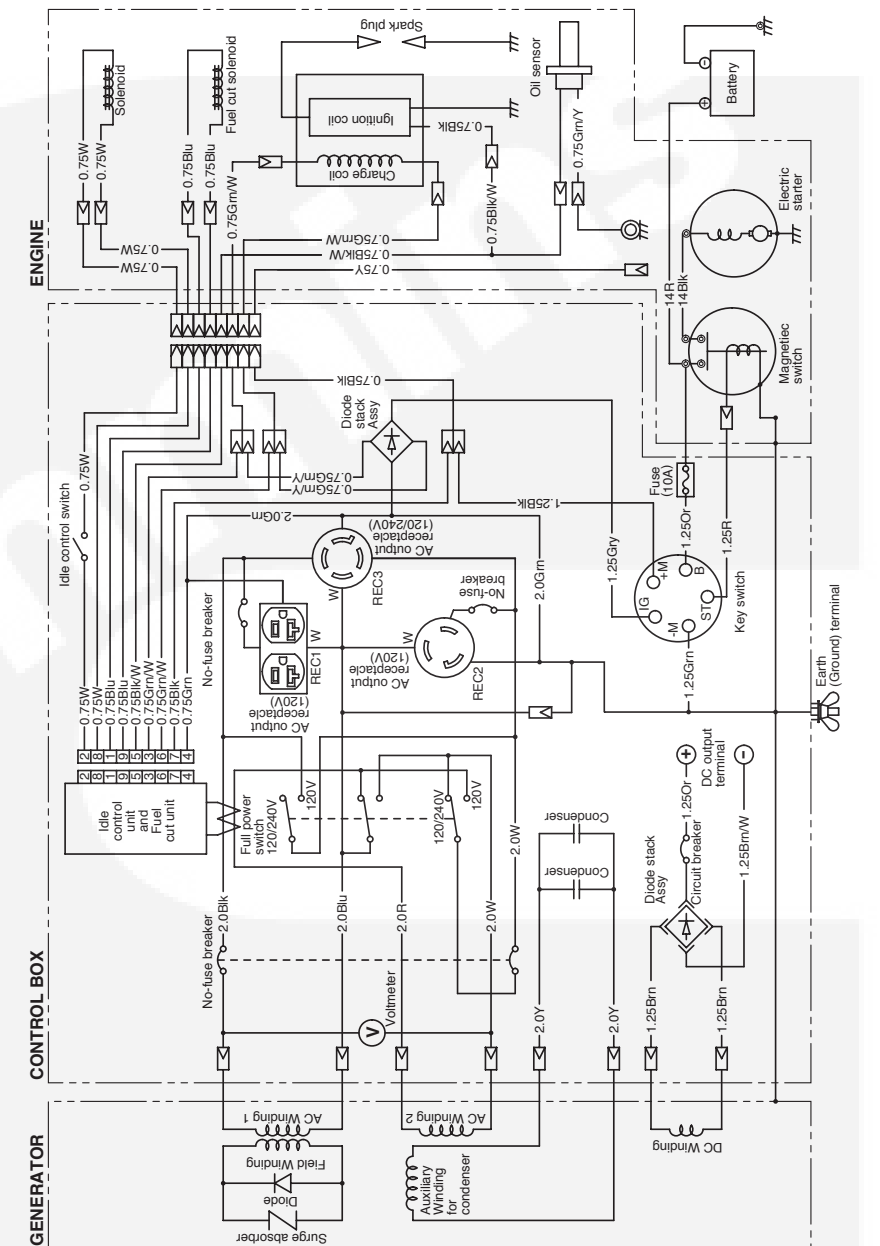


RGV4100 (Electric starter model)



PX6100





BATTERY INSTALLATION (Electric starter model)

Recommended Battery: A capacity of 12V-24AH or larger.

WARNING

Death, personal injury and/or property damage may occur unless instructions are followed carefully.

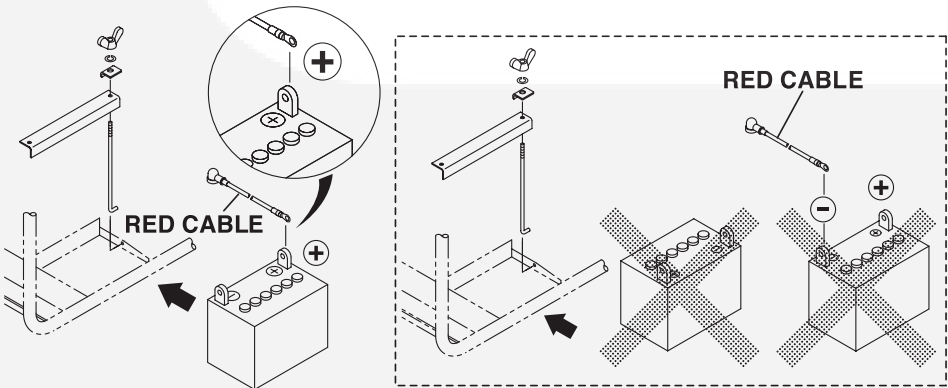
- Use battery of recommended capacity.
- Turn the starter switch to the "STOP" position when mounting or dismantling battery. When mounting battery, connect the positive (+) cable first and then the negative (-) cable to the battery. Be careful not to short battery cables. When dismantling battery, disconnect negative (-) cable first.

RED CABLE : To positive (+) terminal

BLACK CABLE : To negative (-) terminal

- Should an improper connection be made, the generator will be damaged.
- Tighten bolts and nuts on terminals securely so they will not be loosened by vibration.
- Disconnect battery cables when charging battery.

"HOW TO" INSTALL BATTERY (See "OPTIONAL PARTS")



ENGLISH

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