

HONDA

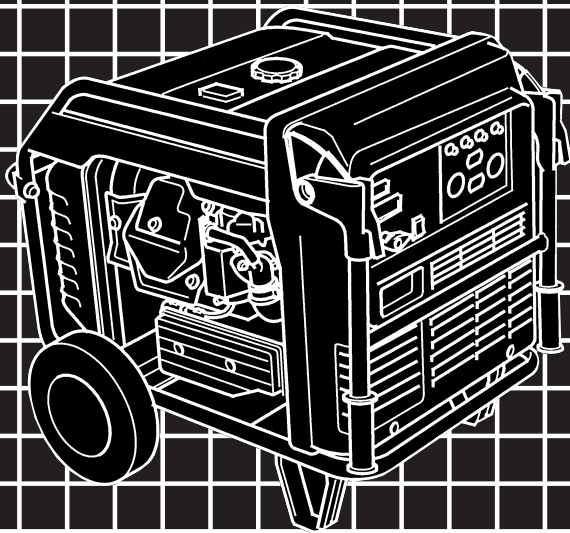
Power

Equipment

Owner's Manual

GENERATOR

EM5000is•EM6500is





WARNING:



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

WARNING

Exhaust contains poisonous carbon monoxide gas that can build up to dangerous levels in closed areas. Breathing carbon monoxide can cause unconsciousness or death.

Never run the generator in a closed, or even partly closed area where people may be present.

Keep this owner's manual handy, so you can refer to it at any time. This owner's manual is considered a permanent part of the generator and should remain with the generator if resold.

The information and specifications included in this publication were in effect at the time of approval for printing. Honda Motor Co., Ltd. reserves the right, however, to discontinue or change specifications or design at any time without notice and without incurring any obligation whatever.

INTRODUCTION

Congratulations on your selection of a Honda generator. We are certain you will be pleased with your purchase of one of the finest generators on the market.

We want to help you get the best results from your new generator and to operate it safely. This manual contains all the information on how to do that; please read it carefully.

As you read this manual, you will find information preceded by a **NOTICE** symbol. That information is intended to help you avoid damage to your generator, other property, or the environment.

We suggest you read the *Distributor's Limited Warranty* to fully understand its coverage and your responsibilities of ownership. The *Distributor's Limited Warranty* is a separate document that should have been given to you by your dealer.

When your generator needs scheduled maintenance, keep in mind that your Honda servicing dealer is specially trained in servicing Honda generators and is supported by the parts and service divisions of American Honda. Your Honda servicing dealer is dedicated to your satisfaction and will be pleased to answer your questions and concerns.

Best Wishes,
Honda Motor Co., Ltd.


A FEW WORDS ABOUT SAFETY

Your safety and the safety of others are very important. And using this generator safely is an important responsibility.

To help you make informed decisions about safety, we have provided operating procedures and other information on labels and in this manual. This information alerts you to potential hazards that could hurt you or others.

Of course, it is not practical or possible to warn you about all the hazards associated with operating or maintaining a generator. You must use your own good judgement.

You will find important safety information in a variety of forms, including:

- **Safety Labels** — on the generator.
- **Safety Messages** — preceded by a safety alert symbol  and one of three signal words, DANGER, WARNING, or CAUTION.

These signal words mean:

 **DANGER**

You **WILL** be KILLED or SERIOUSLY HURT if you don't follow instructions.

 **WARNING**

You **CAN** be KILLED or SERIOUSLY HURT if you don't follow instructions.

 **CAUTION**

You **CAN** be HURT if you don't follow instructions.

- **Safety Headings** — such as *IMPORTANT SAFETY INFORMATION*.
- **Safety Section** — such as *GENERATOR SAFETY*.
- **Instructions** — how to use this generator correctly and safely.

This entire book is filled with important safety information — please read it carefully.

CONTENTS

GENERATOR SAFETY	6
IMPORTANT SAFETY INFORMATION	6
Operator Responsibility.....	6
Carbon Monoxide Hazards.....	6
Electric Shock Hazards	7
Fire and Burn Hazards	7
Refuel With Care	8
SAFETY LABEL LOCATIONS	9
CONTROLS & FEATURES.....	10
COMPONENT & CONTROL LOCATIONS	10
CONTROLS.....	12
Fuel Valve Lever	12
Engine Switch.....	12
Starter Grip	13
Eco-Throttle™ Switch.....	13
Voltage Selector Switch	14
AC Circuit Protectors.....	14
Folding Handle	15
FEATURES.....	16
Ground Terminal.....	16
Output Indicator	17
Overload Indicator	17
Oil Alert® Indicator	18
i-Monitor™	19
Fuel Gauge.....	22
BEFORE OPERATION	23
ARE YOU READY TO GET STARTED?	23
Knowledge.....	23
IS YOUR GENERATOR READY TO GO?	23
Check the Engine.....	24
Maintenance cover	24

CONTENTS

OPERATION	25
SAFE OPERATING PRECAUTIONS	25
STARTING THE ENGINE	26
Starting the engine with remote control (optional part)	29
STOPPING THE ENGINE	30
Stopping the engine with remote control (optional part)	31
AC OPERATION.....	32
AC Applications.....	34
AC Receptacle Selection.....	35
ECO-THROTTLE SYSTEM	37
STANDBY POWER.....	38
Connections to a Building's Electrical System	38
System Ground	38
Special Requirements.....	39
 SERVICING YOUR GENERATOR.....	 40
THE IMPORTANCE OF MAINTENANCE	40
MAINTENANCE SAFETY.....	41
Safety Precautions	41
MAINTENANCE SCHEDULE	42
REFUELING	43
FUEL RECOMMENDATIONS	44
ENGINE OIL LEVEL CHECK	45
ENGINE OIL CHANGE.....	46
ENGINE OIL RECOMMENDATIONS.....	47
AIR CLEANER SERVICE	48
FOAM AIR FILTER CLEANING	49
SEDIMENT CUP CLEANING.....	50
SPARK PLUG SERVICE.....	51
SPARK ARRESTER SERVICE.....	53
BATTERY SERVICE	55
FUSE	58
 STORAGE.....	 59
STORAGE PREPARATION.....	59
Cleaning	59
Fuel.....	59
Engine Oil	62
STORAGE PRECAUTIONS	63
REMOVAL FROM STORAGE.....	63

TRANSPORTING	64
TAKING CARE OF UNEXPECTED PROBLEMS.....	65
ENGINE PROBLEMS	65
GENERATOR PROBLEMS	67
TECHNICAL & CONSUMER INFORMATION.....	68
TECHNICAL INFORMATION	68
Serial Number Location	68
Carburetor Modification for High Altitude Operation.....	69
Emission Control System Information.....	70
Air Index.....	73
Specifications	74
Wiring Diagram	76
CONSUMER INFORMATION	77
Honda Publications.....	77
Customer Service Information.....	78
ASSEMBLY	79
SAFETY	79
The Importance of Proper Assembly	79
Important Safety Precautions	80
ASSEMBLY.....	81
Unpacking.....	81
Loose Parts	81
Wheel Kit Installation.....	82
Handle Installation	83
Rear Bar Installation.....	84
Battery	85
Engine oil	87
Fuel.....	87
BEFORE OPERATION	88
OPTIONAL PARTS	89
Remote Control Kit.....	89
Hanger Kit	91
INDEX	92
QUICK REFERENCE INFORMATION	Inside back cover

GENERATOR SAFETY

IMPORTANT SAFETY INFORMATION

Honda generators are designed for use with electrical equipment that has suitable power requirements. Other uses can result in injury to the operator or damage to the generator and other property.

Most accidents can be prevented if you follow all instructions in this manual and on the generator. The most common hazards are discussed below, along with the best way to protect yourself and others.

Operator Responsibility

- Know how to stop the generator quickly in case of emergency.
- Understand the use of all generator controls, output receptacles, and connections.
- Be sure that anyone who operates the generator receives proper instruction. Do not let children operate the generator without parental supervision.

Carbon Monoxide Hazards

- Exhaust contains poisonous carbon monoxide, a colorless, odorless gas. Breathing carbon monoxide can cause loss of consciousness and may lead to death.
- If you run the generator in a confined or even partially enclosed area, the air you breathe could contain a dangerous amounts of exhaust gas.
- Never run your generator inside a garage, house or near open windows or doors.

Electric Shock Hazards

- The generator produces enough electric power to cause a serious shock or electrocution if misused.
- Using a generator or electrical appliance in wet conditions, such as rain or snow, or near a pool or sprinkler system, or when your hands are wet, could result in electrocution. Keep the generator dry.
- If the generator is stored outdoors, unprotected from the weather, check all of the electrical components on the control panel before each use. Moisture or ice can cause a malfunction or short circuit in electrical components which could result in electrocution.
- Do not connect to a building electrical system unless an isolation switch has been installed by a qualified electrician.

Fire and Burn Hazards

- The exhaust system gets hot enough to ignite some materials.
 - Keep the generator at least 3 feet (1 meter) away from buildings and other equipment during operation.
 - Do not enclose the generator in any structure.
 - Keep flammable materials away from the generator.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Let the engine cool before storing the generator indoors.

GENERATOR SAFETY

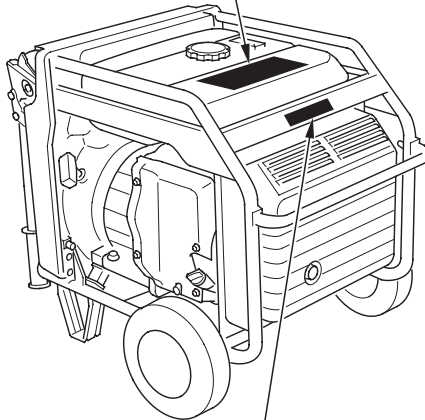
Refuel With Care

Gasoline is extremely flammable, and gasoline vapor can explode. Allow the engine to cool if the generator has been in operation. Refuel only outdoors in a well-ventilated area with the engine OFF. Do not overfill the fuel tank. Never smoke near gasoline, and keep other flames and sparks away. Always store gasoline in an approved container. Make sure that any spilled fuel has been wiped up before starting the engine.

SAFETY LABEL LOCATIONS

These labels warn you of potential hazards that can cause serious injury. Read them carefully. If a label comes off or becomes hard to read, contact your Honda servicing dealer for a replacement.

⚠ DANGER	⚠ WARNING	⚠ WARNING
<p>Using a generator indoors CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.</p> <div data-bbox="120 422 240 478"> </div> <p>NEVER use inside a home or garage, EVEN IF doors and windows are open.</p> <div data-bbox="246 422 352 478"> </div> <p>Only use OUTSIDE and far away from windows, doors, and vents.</p>	<p>Gasoline is highly flammable and explosive. You could be burned or seriously injured if the gasoline is ignited.</p> <ul style="list-style-type: none"> ■ Before refueling, stop the engine and keep heat, sparks, and flame away. ■ Handle fuel only outdoors. ■ Do not fill the fuel tank above the upper limit line. ■ Wipe up spills immediately. <div data-bbox="364 383 397 422"> </div> <p>Exhaust contains poisonous carbon monoxide gas that can build up to dangerous levels in closed areas. Breathing carbon monoxide can cause unconsciousness or death.</p> <ul style="list-style-type: none"> ■ Never run the generator in a closed, or even partly closed area where people may be present. <div data-bbox="364 454 397 494"> </div>	<div data-bbox="672 375 705 414"> </div> <p>Improper connections to a building can allow electrical current to backfeed into utility lines, creating an electrocution hazard.</p> <ul style="list-style-type: none"> ■ Connections to a building must isolate generator power from utility power and comply with all applicable laws and electrical codes. <div data-bbox="672 438 705 478"> </div> <p>The generator is a potential source of electrical shock if not kept dry.</p> <ul style="list-style-type: none"> ■ Do not expose the generator to moisture, rain or snow. ■ Do not operate the generator with wet hands. <div data-bbox="672 486 705 510"> </div> <p>Read owner's manual carefully before operation.</p>

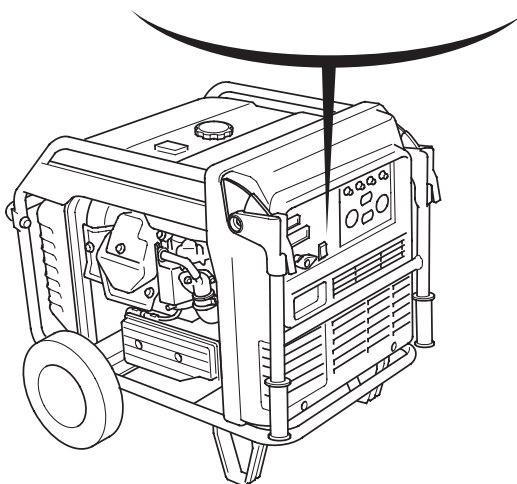
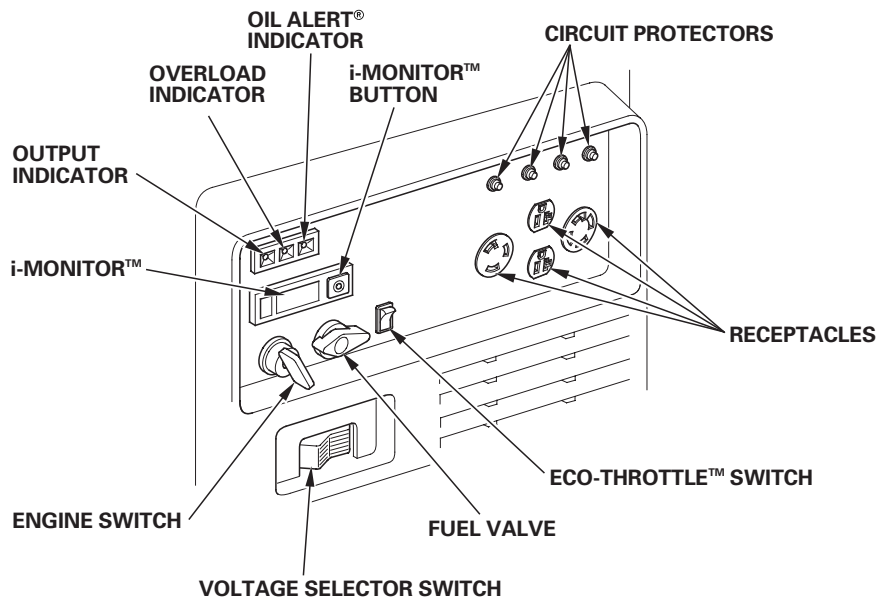


⚠ CAUTION	
	<p>A hot exhaust system can cause serious burns.</p> <ul style="list-style-type: none"> ■ Avoid contact if the engine has been running.

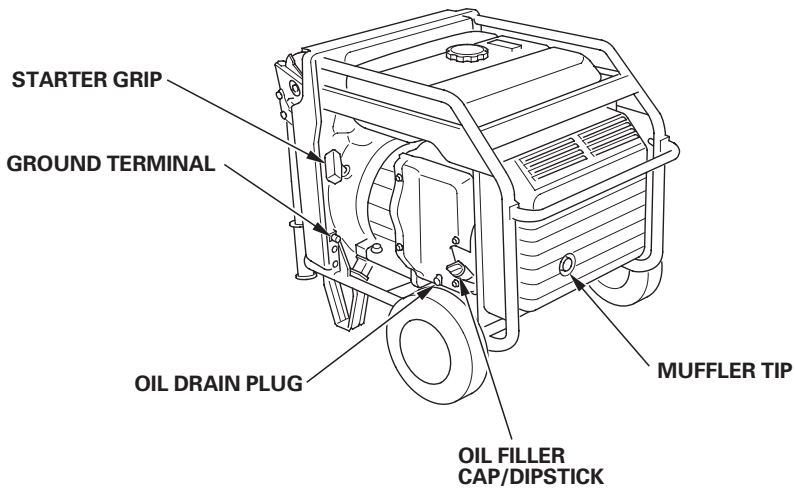
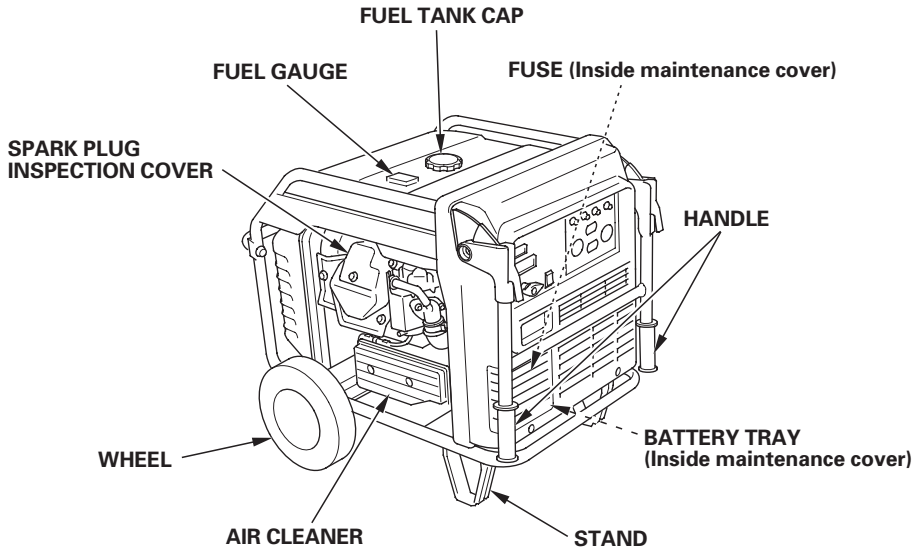
CONTROLS & FEATURES

COMPONENT & CONTROL LOCATIONS

Use the illustrations on these pages to locate and identify the most frequently used controls.



CONTROL & FEATURES



CONTROL & FEATURES

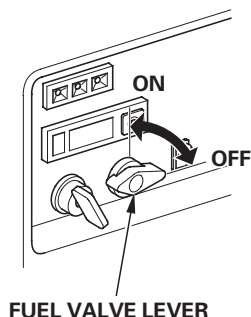
CONTROLS

Fuel Valve Lever

The fuel valve lever is located on the control panel.

The fuel valve must be in the ON position for the engine to run.

After stopping the engine, turn the fuel valve to the OFF position.



Engine Switch

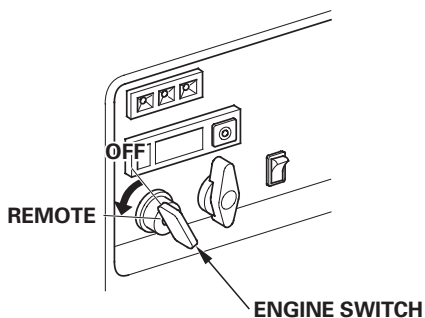
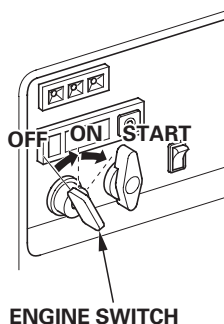
The engine switch controls the ignition system, and it operates the electric starter.

OFF — Stops the engine. The engine switch key can be removed/inserted.

ON — Running position, and for starting with the recoil starter.

START — Operates the electric starter.

REMOTE — For using the remote control kit (optional parts).

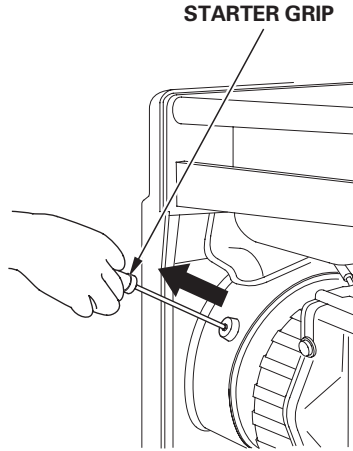


Starter Grip

Pulling the starter grip operates the recoil starter to crank the engine for starting.

NOTICE

- *Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.*
- *Do not let the starter rope rub against the generator body, or the rope will wear out prematurely.*



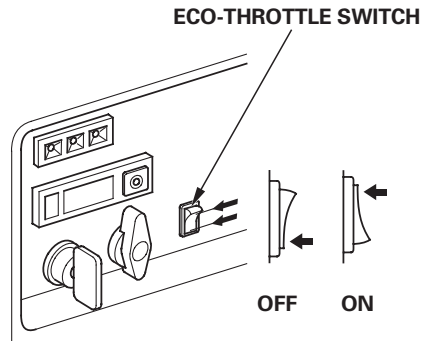
Eco-Throttle™ Switch

The Eco-Throttle™ system automatically reduces engine speed when all loads are turned off or disconnected. When appliances are turned on or reconnected, the engine returns to the proper speed to power the electrical load.

If high electrical loads are connected simultaneously, turn the Eco-Throttle switch to the OFF position to reduce voltage changes.

ON — Recommended to minimize fuel consumption and further reduce noise levels when a reduced load or no load is applied to the generator.

OFF — The Eco-Throttle system does not operate. Generator operates at full output.



CONTROL & FEATURES

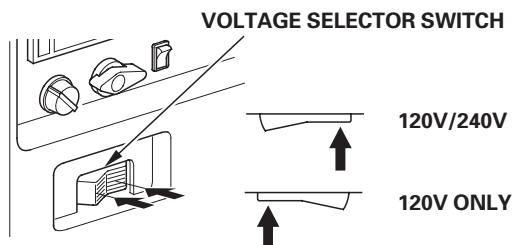
Voltage Selector Switch

The voltage selector switch switches generator output to produce "120V ONLY" or "120/240V." If a 240V appliance is connected to the 4-prong receptacle, the switch must be in the "120/240V" position. If only a 120V appliance is being connected to any of the 120V 3-prong receptacles, select the "120V ONLY" position. Select the voltage before starting the engine.

Switch Position

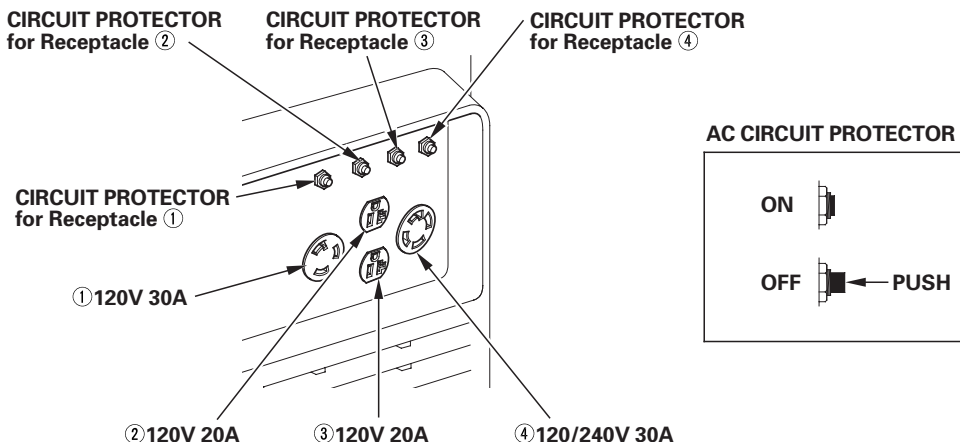
120/240V: The 120V and 120/240V receptacles can be used simultaneously.

120V ONLY: ONLY the 120V receptacles can be used. Do not use the 120/240V receptacle in this position. The most power will be available at the 30A 120V locking plug receptacle.



AC Circuit Protectors

The AC circuit protectors will automatically switch OFF if there is a short circuit or a significant overload of the generator at each receptacle. If an AC circuit protector switches OFF automatically, check that the appliance is working properly and does not exceed the rated load capacity of the circuit before resetting the AC circuit protector ON.



Folding Handle

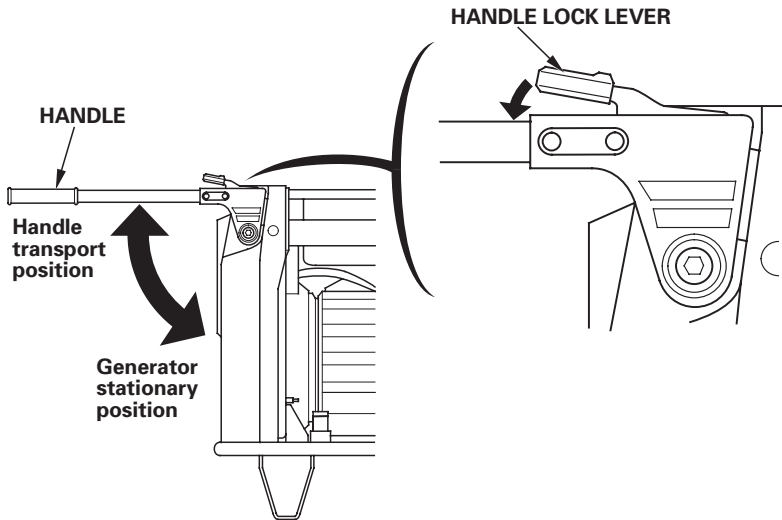
The foldable handle is intended for ease of transportation and should be folded when the generator is stationary. Do not rest objects on the extended handle.

To Extend The Handle

Lift handle upward. Lock levers will lock and secure the handle into place.

To Fold The Handle

1. Press both handle lock levers downward.
2. Lower the handle.



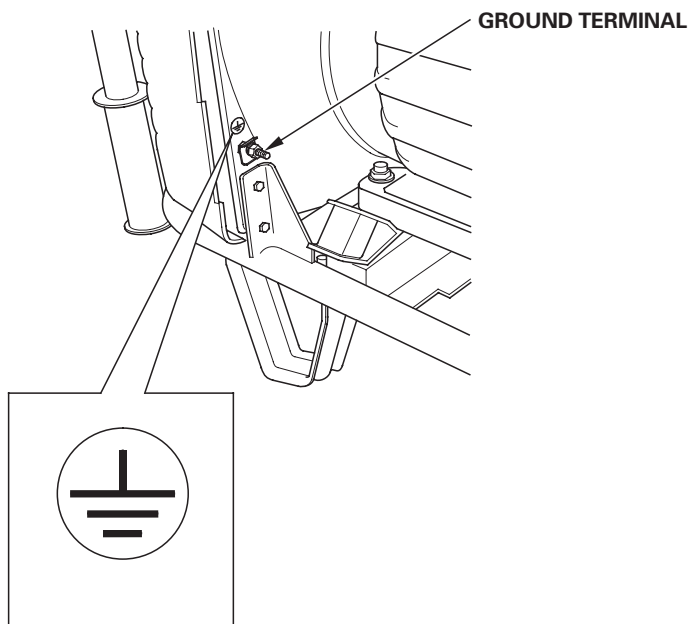
CONTROL & FEATURES

FEATURES

Ground Terminal

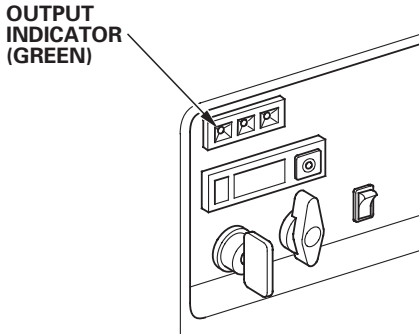
The ground terminal is connected to the frame of the generator, the metal non-current-carrying parts of the generator, and the ground terminals of each receptacle.

Before using the ground terminal, consult a qualified electrician, electrical inspector or local agency having jurisdiction for local codes or ordinances that apply to the intended use of the generator.



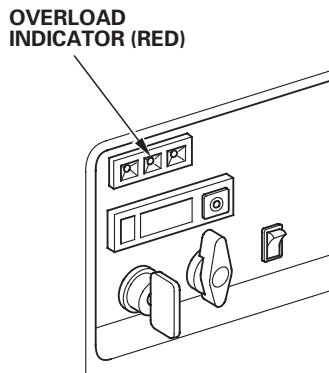
Output Indicator

The output indicator (green) is illuminated when the generator is operating normally. It indicates that the generator is producing electrical power at the receptacles.



Overload Indicator

If the generator is overloaded, or if there is a short circuit in a connected appliance, or if the inverter is overheated, the overload indicator (red) will go ON. When the generator is operating overloaded, the overload indicator (red) will stay ON, and after about five seconds, current to the connected appliance(s) will shut off, and the output indicator (green) will go OFF.



CONTROL & FEATURES

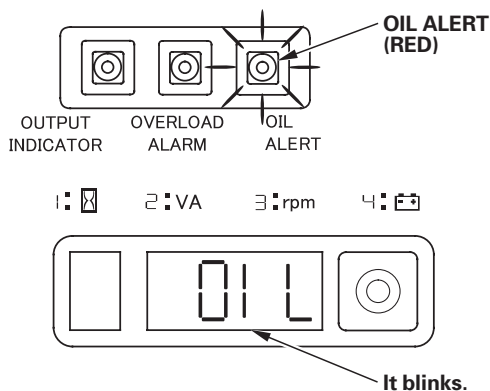
Oil Alert® Indicator

The Oil Alert® system is designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. Before the oil level in the crankcase can fall below a safe limit, the Oil Alert indicator comes on, and the Oil Alert system automatically will stop the engine (the engine switch will remain in the ON position).

The i-Monitor display will show “OIL” on the screen and the Oil Alert indicator illuminates.

If the engine stops or the Oil Alert indicator comes on when you turn the engine switch to START or pull the starter grip, check the engine oil level (see page 45) before troubleshooting in other areas.

Even when oil is added to the engine, the generator will not restart until the Oil Alert indicator is reset. To reset the Oil Alert indicator, turn the engine switch OFF, add the proper amount of oil (see page 46), and then turn the engine switch back ON.



i-Monitor™

The i-Monitor™ is a user interface that allows the operator to view (when the generator is running) total operating time in hours, generator output, engine RPM, battery voltage and error messages. The different display modes are selected by pressing the i-Monitor button.

i-Monitor at Startup

During start up, the i-Monitor display and all three indicators will simultaneously blink once. The condition of the i-Monitor display and all three indicators can be checked with the aid of an observer. Once the generator is running, the Output indicator (green) and the i-Monitor display will remain lit.

Display Backlight Flashes

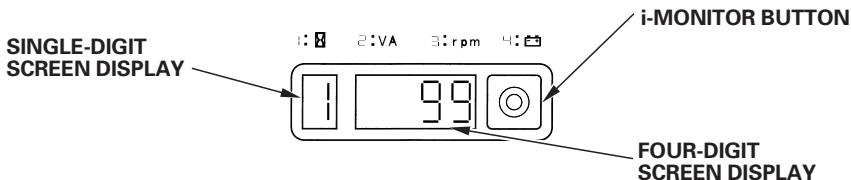
If the key is left in the ON position for over 30 seconds without starting the engine, the display will start to flash.

i-Monitor Display

The i-Monitor display is divided into two screens. The single-digit screen displays the i-Monitor mode which is represented by a number 1 through 4. The four-digit screen displays the four mode values or any activated error messages.

i-Monitor Display Mode 1 — Total Operating Hours

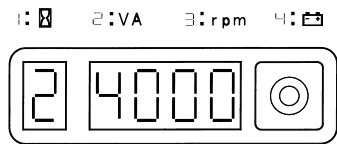
This mode displays the total operating hours of the generator. When the generator is running, the total operating time accumulates. If the total operating time is less than one hour, the numeric display will be "0." When the operating time is one hour or greater, the display will be "1" or "2" and so on. Base the generator's maintenance schedule on the accumulated time displayed.



CONTROL & FEATURES

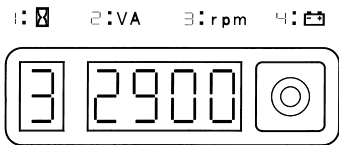
i-Monitor Display Mode 2 — Power Output

This mode displays an approximate generator output on the display screen. The output is expressed in VA (volt-amperes). The output value is not an exact measurement and should be regarded as a reference only. Power output will not display until a load is connected to the generator.



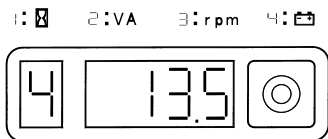
i-Monitor Display Mode 3 — Engine RPM

When the i-Monitor is in this mode, the engine's speed, expressed in revolutions-per-minute (RPM) is displayed.



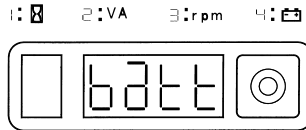
i-Monitor Display Mode 4 — Battery Voltage

This mode displays the battery condition, expressed in Volts DC.



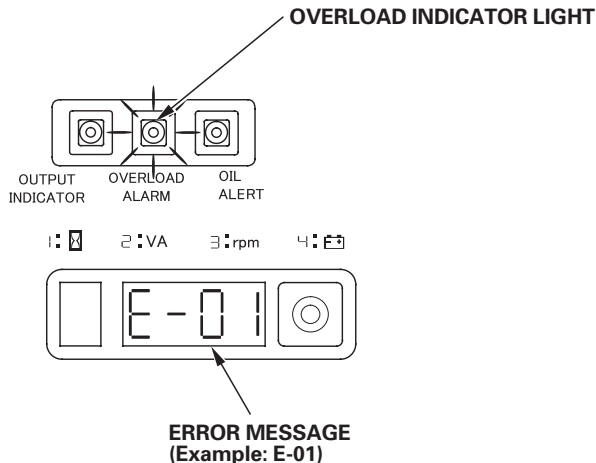
i-Monitor Low Battery Message

If the engine switch is turned to the START position and “batt” is shown on the i-Monitor display, the battery voltage is too low to operate the engine’s electric starter. Use the recoil starter to start the generator. Have the battery recharged and checked (see page 57).



i-Monitor System Error Messages

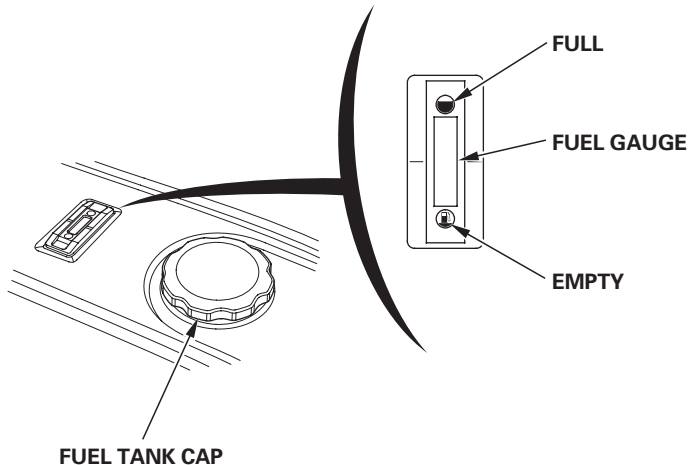
If the generator has a system malfunction, it will show an error message on the i-Monitor display. During remote control operation, an E-01 error message may display if the starter button is pressed for more than 10 seconds. With an E-01 error message, the engine will stay running and the electrical output may stay constant. Normal remote control operation will be restored after the E-01 error message clears. If the E-01 error message will not clear or if any other error message displays, contact an authorized Honda generator dealer.



CONTROL & FEATURES

Fuel Gauge

The fuel gauge is a mechanical device that measures the fuel level in the tank. The red indicator in the window will reference the level in relation to full or empty. To provide increased operating time, start with a full tank before beginning operation. Check the fuel level with the generator on a level surface. Always refuel with the engine OFF and cool.



BEFORE OPERATION

ARE YOU READY TO GET STARTED?

Your safety is your responsibility. A little time spent in preparation will significantly reduce your risk of injury.

Knowledge

Read and understand this manual. Know what the controls do and how to operate them.

Familiarize yourself with the generator and its operation before you begin using it. Know how to quickly shut off the generator in case of an emergency.

If the generator is being used to power appliances, be sure that they do not exceed the generator's load rating (see page 34).

IS YOUR GENERATOR READY TO GO?

For your safety, and to maximize the service life of your equipment, it is very important to take a few moments before you operate the generator to check its condition. Be sure to take care of any problem you find, or have your servicing dealer correct it, before you operate the generator.

⚠ WARNING

Improperly maintaining this generator, or failing to correct a problem before operation, could cause a malfunction in which you could be seriously injured.

Always perform a preoperation inspection before each operation, and correct any problem.

To prevent a possible fire, keep the generator at least 3 feet (1 meter) away from building walls and other equipment during operation. Do not place flammable objects close to the engine.

Before beginning your preoperation checks, be sure the generator is on a level surface and the engine switch is in the OFF position.

BEFORE OPERATION

Check the Engine

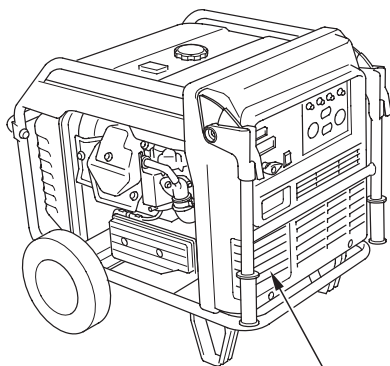
Check the oil level (see page 45). A low oil level will cause the Oil Alert system to shut down the engine.

Check the air filter (see page 48). A dirty air filter will restrict air flow to the carburetor, reducing engine and generator performance.

Check the fuel level (see page 43). Starting with a full tank will help to eliminate or reduce operating interruptions for refueling.

Maintenance Cover

Never operate the generator without the maintenance cover in place, as poor engine and generator performance will result.



MAINTENANCE COVER

OPERATION

SAFE OPERATING PRECAUTIONS

Before operating the generator for the first time, please review the *GENERATOR SAFETY* section and the chapter titled *BEFORE OPERATION*.

For your safety, do not operate the generator in an enclosed area such as a garage. Your generator's exhaust contains poisonous carbon monoxide gas that can collect rapidly in an enclosed area and cause illness or death.

WARNING

Exhaust contains poisonous carbon monoxide gas that can build up to dangerous levels in closed areas. Breathing carbon monoxide can cause unconsciousness or death.

Never run the generator in a closed, or even partly closed area where people may be present.

Before connecting an AC appliance or power cord to the generator:

- Use grounded 3-prong extension cords, tools, and appliances, or double-insulated tools and appliances.
- Inspect cords and plugs, and replace if damaged.
- Make sure that the appliance is in good working order. Faulty appliances or power cords can create a potential for electric shock.
- Make sure the electrical rating of the tool or appliance does not exceed that of the generator. Never exceed the maximum power rating of the generator. Power levels between rated and maximum may be used for no more than 30 minutes.
- Operate the generator at least 3 feet (1 meter) away from buildings and other equipment.
- Do not operate the generator in an enclosed structure.

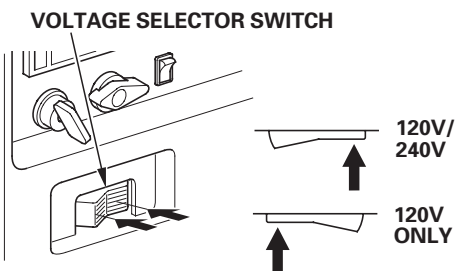
OPERATION

STARTING THE ENGINE

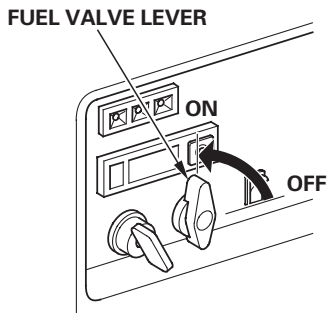
Refer to Safe Operating Precautions on page 25 .

1. Make sure that all appliances are disconnected from the AC receptacles. The generator may be hard to start if a load is connected.

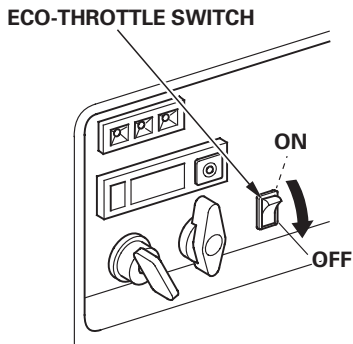
2. Set the Voltage Selector Switch to match the voltage requirements for the application.



3. Turn the fuel valve lever to the ON position.



4. Make sure the Eco-Throttle switch is in the OFF position, or more time will be required for warm up.



5. Start the engine.

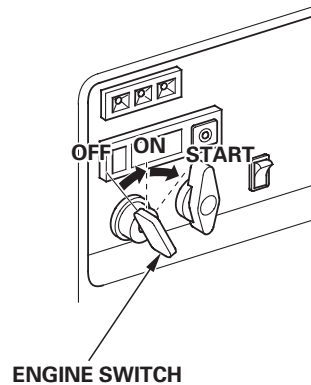
- Using the electric starter:

Turn the engine switch to the START position, and hold it there until the engine starts. When the engine starts, release the key, allowing the switch to return to the ON position.

If the engine fails to start within 5 seconds, release the key, and wait at least 10 seconds before operating the starter again.

NOTICE

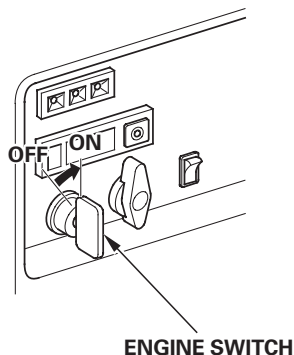
Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.



OPERATION

- Using the recoil starter:

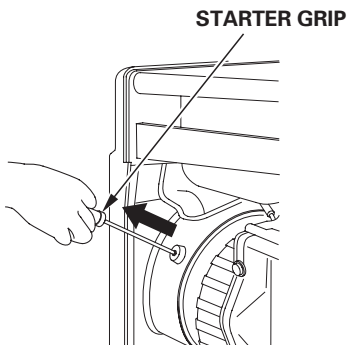
- a. Turn the engine switch to the ON position.



- b. Pull the starter grip lightly until you feel resistance, then pull briskly in the direction of the arrow as shown.

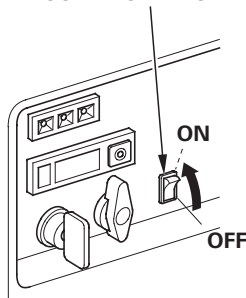
NOTICE

- *Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.*
- *Do not let the starter rope rub against the generator body, or the rope will wear out prematurely.*



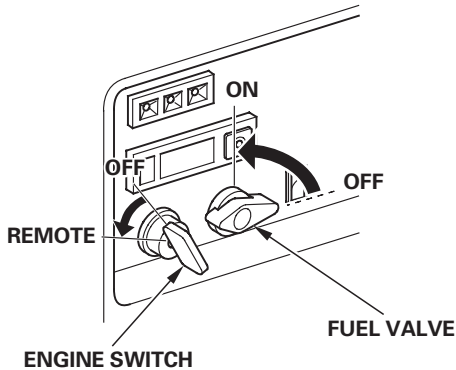
6. If you wish to use the Eco-Throttle system, turn the Eco-Throttle switch to the ON position after the engine has warmed up for 2 or 3 minutes.

ECO-THROTTLE SWITCH



Starting the engine with remote control (optional part)

1. Determine the voltage requirements and adjust the voltage selector switch, as needed.
2. Turn the fuel valve to the ON position.
3. Turn the engine switch to the REMOTE (far left) position.

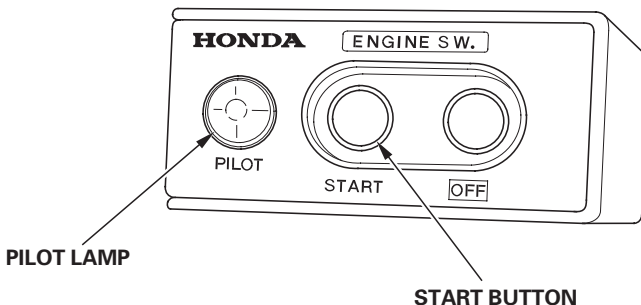


4. Press and hold the start button until the engine pilot lamp illuminates. The start button will automatically be disabled after the engine starts.

If the engine fails to start within 5 seconds, release the button, and wait at least 10 seconds before operating the starter again.

NOTICE

Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.

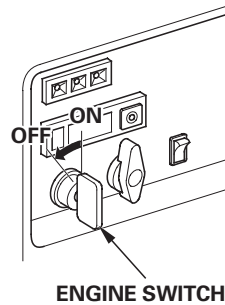


OPERATION

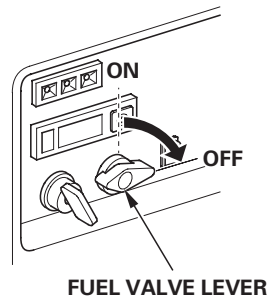
STOPPING THE ENGINE

To stop the engine in an emergency, simply turn the engine switch to the OFF position. Under normal conditions, use the following procedure.

1. Unplug all appliances from all generator AC receptacles.
2. Turn the engine switch to the OFF position.

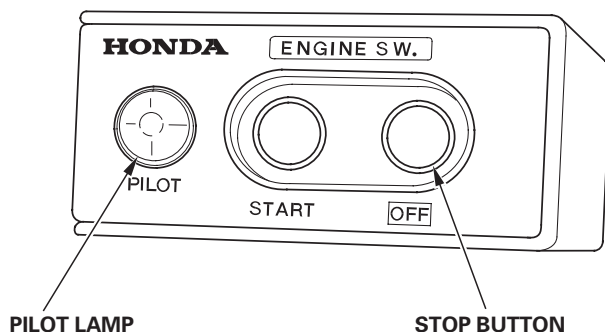


3. Turn the fuel valve lever to the OFF position.

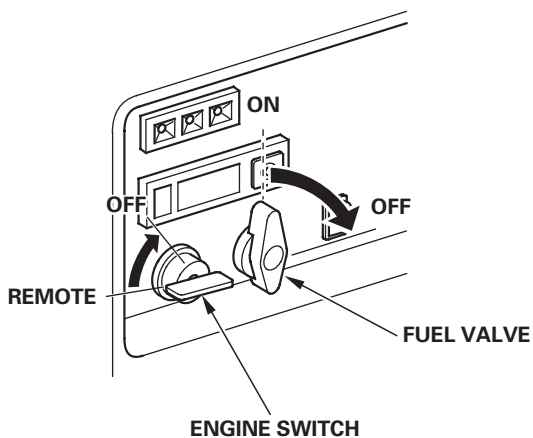


Stopping the engine with remote control (optional part)

1. Press the stop button.



2. Turn the engine switch to the OFF position.
3. Turn the fuel valve lever to the OFF position.



OPERATION

AC OPERATION

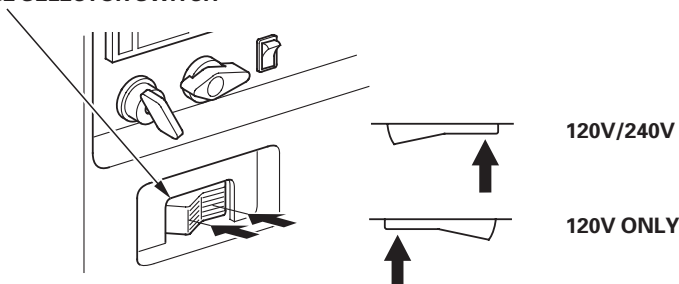
If an appliance begins to operate abnormally, becomes sluggish or stops suddenly, turn it off immediately. Disconnect the appliance, and determine whether the problem is in the appliance, or if the rated load capacity of the generator has been exceeded.

NOTICE

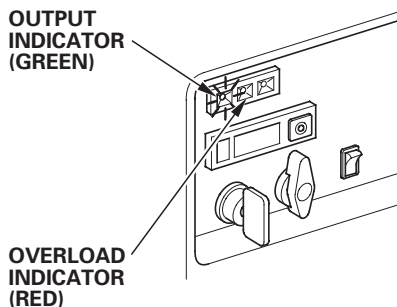
Substantial overloading that continuously lights the overload indicator (red) may damage the generator. Marginal overloading that temporarily lights the overload indicator (red) may shorten the service life of the generator.

1. Turn the voltage selector switch to either position.
With the voltage selector switch in the “120/240V” position, you can use the 120V and 120/240V receptacles simultaneously. If you are NOT using the 120/240V receptacle, but require more power from the 120V locking plug receptacle, then select the “120V ONLY” position.

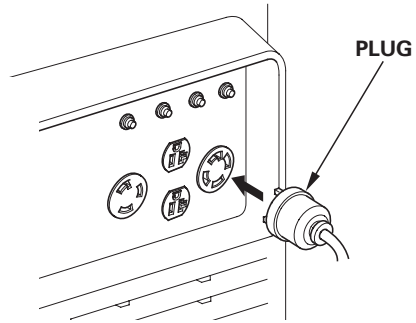
VOLTAGE SELECTOR SWITCH



2. Start the engine and make sure the output indicator (green) comes on (see pages 26 – 28).



3. Plug in the appliance.
Most motorized appliances require more than their rated wattage for startup.



If the generator is overloaded, or if there is a short circuit in a connected appliance, or if the inverter is overheated, the overload indicator (red) will come ON. The overload indicator (red) will stay ON, and after about five seconds, current to the connected appliance(s) will shut off, and the output indicator (green) will go OFF. Stop the engine and investigate the problem.

Determine if the cause is a short circuit in a connected appliance, an overload, or an overheated inverter. Correct the problem and restart the generator.

Before connecting an appliance to the generator, make sure that it is in good order and that its electrical rating does not exceed that of the generator. Then start the generator and connect the appliance power cord.

When an electric motor is started, the overload indicator (red) may come on. This is normal if the overload indicator (red) goes off after about five seconds. If the overload indicator (red) stays on, consult an authorized Honda generator dealer.

OPERATION

AC Applications

Before connecting an appliance or power cord to the generator:

- Make sure that it is in good working order. Faulty appliances or power cords can create a potential for electrical shock.
- If an appliance begins to operate abnormally, becomes sluggish or stops suddenly, turn it off immediately. Disconnect the appliance, and determine whether the problem is the appliance, or if the rated load capacity of the generator has been exceeded.
- Make sure that the electrical rating of the tool or appliance does not exceed that of the generator. Never exceed the maximum power rating of the generator. Power levels between rated and maximum may be used for no more than 30 minutes.

NOTICE

Substantial overloading will open the circuit breaker. Exceeding the time limit for maximum power operation or slightly overloading the generator may not switch the circuit breaker or circuit protector OFF, but will shorten the service life of the generator.

Limit operation requiring maximum power to 30 minutes.

Maximum power is:

EM5000is: 5,000 VA

EM6500is: 6,500 VA

For continuous operation (longer than 30 minutes), do not exceed the rated power.

Rated power is:

EM5000is: 4,500 VA

EM6500is: 5,500 VA

The total power requirements (VA) of all appliances connected must be considered. Appliance and power tool manufacturers usually list rating information near the model number or serial number.

AC Receptacle Selection

The generator has separate main power producing circuits. These two circuits supply power to different receptacles shown when the voltage selector switch is in the 120/240 V position.

When two or more receptacles are used, prevent overloading by dividing the load between the two power circuits.

The chart below shows the rated load in amperes that can be connected to each receptacle to balance the generator when the 120/240 V locking plug receptacle is used for 120 V.

The total rated ampere draw is:

EM5000is: 37.5 A

EM6500is: 45.8 A

EM5000is

Main power circuit	Receptacles powered by each main circuit	Power distribution
Main Circuit I	1, 3 and 4	$1 + 3 + 4 = 18.8\text{A}$ rated.
Main Circuit II	2 and 5	$2 + 5 = 18.8\text{A}$ rated.

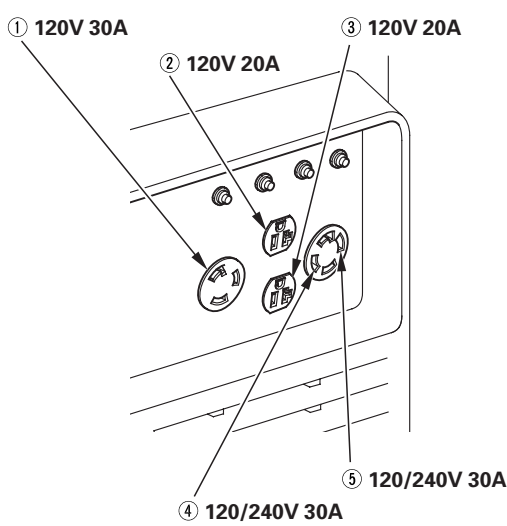
EM6500is

Main power circuit	Receptacles powered by each main circuit	Power distribution
Main Circuit I	1, 3 and 4	$1 + 3 + 4 = 22.9\text{A}$ rated.
Main Circuit II	2 and 5	$2 + 5 = 22.9\text{A}$ rated.

OPERATION

Example: EM5000is

Receptacle 1 has a 15A load connected to it. Receptacle 3 has a 10A load connected to it. Both receptacles are powered by main power circuit I. The equation tells us that the total power draw on circuit I is 25A. This is a substantial overload of this circuit. To eliminate the excess power draw on circuit I, the load from receptacle 3 should be switched to receptacle 2. Now circuit I is powering the 15A load (less than 18.8A) and circuit II is powering the 10A load (less than 18.8A).



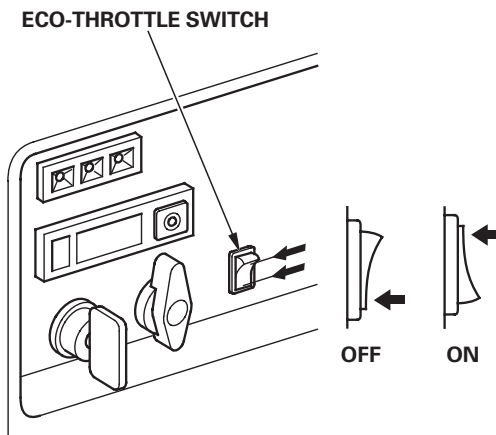
ECO-THROTTLE SYSTEM

With the switch in the ON position, engine speed is automatically lowered when loads are reduced, turned OFF or disconnected. When appliances are turned ON or reconnected, the engine returns to the proper speed to power the electrical load. In the OFF position, the Eco-Throttle system does not operate.

Appliances with large start-up power demands may not allow the engine to reach normal operating rpm when they are connected to the generator. Turn the Eco-Throttle to the OFF position and connect the appliance to the generator. If the engine still will not reach normal operating speed, check that the appliance does not exceed the rated load capacity of the generator.

If high electrical loads are connected simultaneously, turn the Eco-Throttle switch to the OFF position to reduce voltage changes.

The Eco-Throttle system is not effective for use with appliances that require only momentary power. If the tool or appliance will be turned ON and OFF quickly, the Eco-Throttle switch should be in the OFF position.



OPERATION

STANDBY POWER

Connections to a Building's Electrical System

Your generator can supply power to a building's electrical system. If the generator will be used as an alternative to utility company power, an isolation switch must be installed to disconnect the utility lines from the building when the generator is connected. Installation must be performed by a qualified electrician and must comply with all applicable laws and electrical codes.

WARNING

Improper connections to a building's electrical system can allow current from the generator to backfeed into the utility lines.

Such backfeed may electrocute utility company workers or others who contact the lines during a power outage, and the generator may explode, burn, or cause fires when utility power is restored.

Consult the utility company or a qualified electrician prior to making any power connections.

In some areas, generators are required by law to be registered with local utility companies. Check local regulations for proper registration and use procedures.

System Ground

Honda portable generators have a system ground that connects the generator frame components to the ground terminals in the AC output receptacles. The system ground is not connected to the AC neutral wire. If the generator is tested with a receptacle tester, it will not show the same ground circuit condition as for a home receptacle.

Special Requirements

There may be Federal or State Occupational Safety and Health Administration (OSHA) regulations, local codes, or ordinances that apply to the intended use of the generator. Please consult a qualified electrician, electrical inspector, or the local agency having jurisdiction.

- In some areas, generators are required to be registered with local utility companies.
- If the generator is used at a construction site, there may be additional regulations that must be observed.

SERVICING YOUR GENERATOR

THE IMPORTANCE OF MAINTENANCE

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 professionals and are normally performed by a Honda technician or other 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 your servicing dealer for recommendations applicable to your individual needs and use.

WARNING

Improper maintenance, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed.

Always follow the inspection and maintenance recommendations and schedules in this owner's manual.

Remember that your servicing dealer knows your generator best and is fully equipped to maintain and repair it.

To ensure the best quality and reliability, use only new, genuine Honda parts or their equivalents for repair and replacement.

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any engine repair establishment or individual, using parts that are "certified" to EPA standards.

MAINTENANCE SAFETY

Some of the most important safety precautions follow. However, we cannot warn you of every conceivable hazard that can arise in performing maintenance. Only you can decide whether or not you should perform a given task.

WARNING

Failure to properly follow maintenance instructions and precautions can cause you to be seriously hurt or killed.

Always follow the procedures and precautions in the owner's manual.

Safety Precautions

Make sure the engine is off before you begin any maintenance or repairs. This will eliminate several potential hazards:

- **Carbon monoxide poisoning from engine exhaust.**
Operate outside away from open windows or doors.
- **Burns from hot parts.**
Let the engine and exhaust system cool before touching.
- **Injury from moving parts.**
Do not run the engine unless instructed to do so.
- Read the instructions before you begin, and make sure you have the tools and skills required.
- To reduce the possibility of fire or explosion, be careful when working around gasoline. Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks, and flames away from all fuel-related parts.

SERVICING YOUR GENERATOR

MAINTENANCE SCHEDULE

REGULAR SERVICE PERIOD (3)		Each use	First month or 20 Hrs.	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs.	Page
ITEM	Perform at every indicated month or operating hour interval, whichever comes first.						
Engine oil	Check level	○					45
	Change		○		○		46
Air filter	Check	○					48
	Clean			○ (1)			49
Sediment cup	Clean				○		50
Spark plug	Check-adjust				○		51
	Replace					○	51
Spark arrester	Clean				○		53
Valve clearance	Check-adjust					○ (2)	—
Combustion chamber	Clean	After every 500 Hrs. (2)					—
Fuel tank and filter	Clean				○ (2)		—
Fuel tube	Check	Every 2 years (Replace if necessary) (2)					—

- (1)Service more frequently when used in dusty areas.
- (2)These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to Honda shop manual for service procedures.
- (3)For commercial use, log hours of operation to determine proper maintenance intervals.

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

REFUELING

With the engine stopped, check the fuel level gauge. Refill the fuel tank if the fuel level is low.

WARNING

Gasoline is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

NOTICE

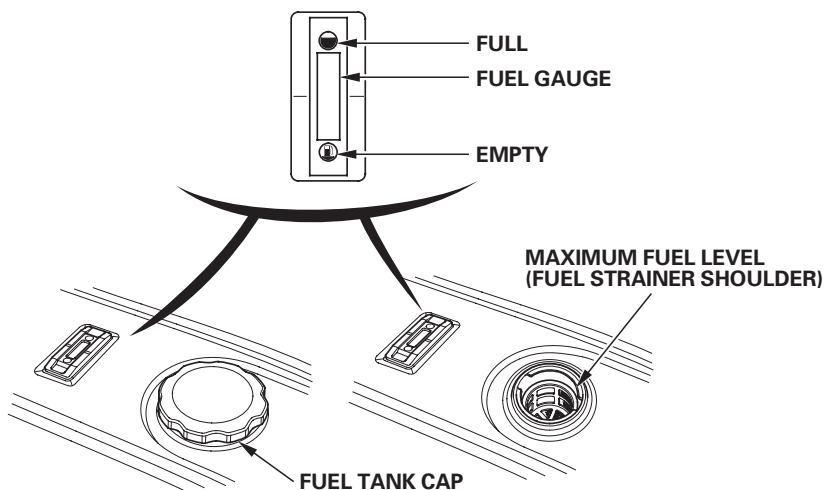
Fuel can damage paint and plastic. Be careful not to spill fuel when filling your fuel tank. Damage caused by spilled fuel is not covered under warranty.

Refuel in a well-ventilated area before starting the engine. If the engine has been running, allow it to cool. Refuel carefully to avoid spilling fuel. Do not fill the fuel tank above the fuel strainer shoulder.

Never refuel the engine inside a building where gasoline fumes may reach flames or sparks. Keep gasoline away from appliance pilot lights, barbecues, electric appliances, power tools, etc.

Spilled fuel is not only a fire hazard, it causes environmental damage. Wipe up spills immediately.

SERVICING YOUR GENERATOR



After refueling, reinstall the fuel tank cap securely.

FUEL RECOMMENDATIONS

This engine is certified to operate on regular unleaded gasoline with a pump octane rating of 86 or higher.

Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

You may use regular unleaded gasoline containing no more than 10% Ethanol (E10) or 5% Methanol by volume. In addition, Methanol must contain cosolvents and corrosion inhibitors.

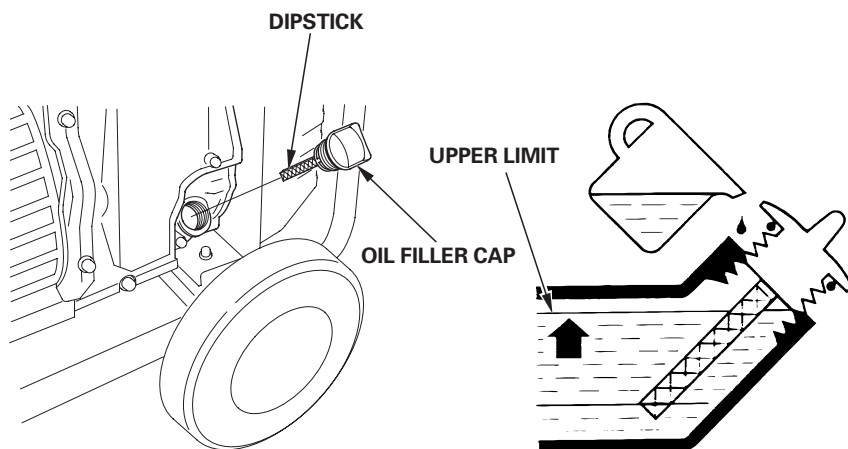
Use of fuels with content of Ethanol or Methanol greater than shown above may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of the fuel system.

Engine damage or performance problems that result from using a fuel with percentages of Ethanol or Methanol greater than shown above are not covered under warranty.

ENGINE OIL LEVEL CHECK

Check the engine oil level with the generator on a level surface and the engine stopped.

1. Remove the oil filler cap/dipstick and wipe it clean.
2. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
3. If the oil level is low, fill to the top of the oil filler neck with the recommended oil (see page 47).
4. Screw in the oil filler cap/dipstick securely.



The Oil Alert system will automatically stop the engine before the oil level falls below safe limits. However, to avoid the inconvenience of an unexpected shutdown, check the oil level regularly.

SERVICING YOUR GENERATOR

ENGINE OIL CHANGE

Drain the oil while the engine is warm to assure rapid and complete draining.

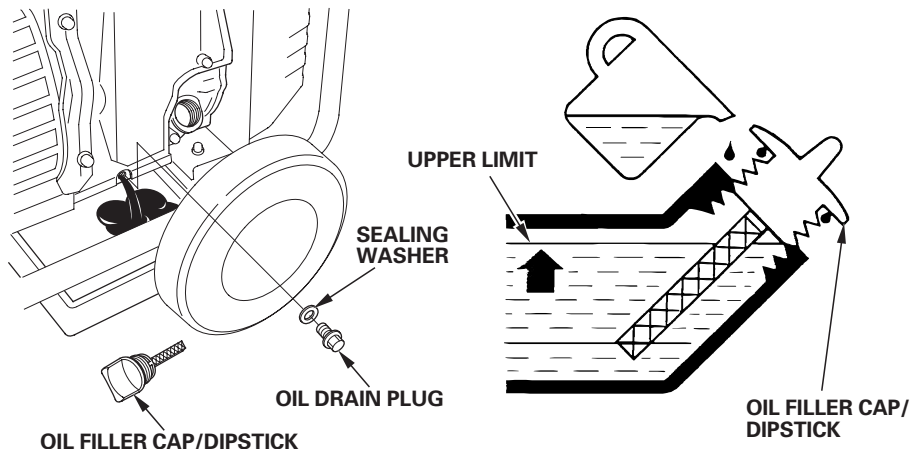
1. Place a suitable container below the engine to catch the used oil, then remove the oil filler cap/dipstick, drain plug and sealing washer.
2. Allow the used oil to drain completely, then reinstall the drain plug and sealing washer. Tighten the plug securely.

NOTICE

Improper disposal of engine oil can be harmful to the environment. If you change your own oil, please dispose of the used oil properly. Put it in a sealed container and take it to a recycling center. Do not discard it in a trash bin, dump it on the ground or pour it down the drain.

3. With the generator in a level position, fill to the outer edge of the oil filler hole with the recommended oil (see page 47).
4. Screw in the oil filler cap/dipstick securely.

Wash your hands with soap and water after handling used oil.

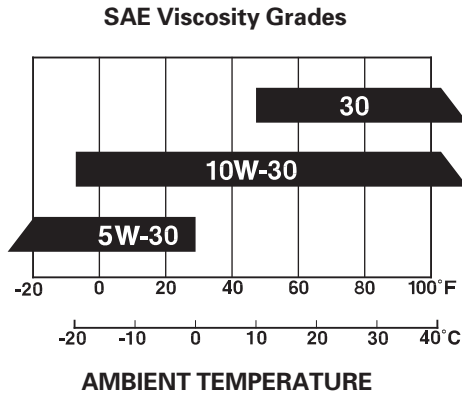


SERVICING YOUR GENERATOR

ENGINE OIL RECOMMENDATIONS

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil.

SAE 10W—30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the recommended range.

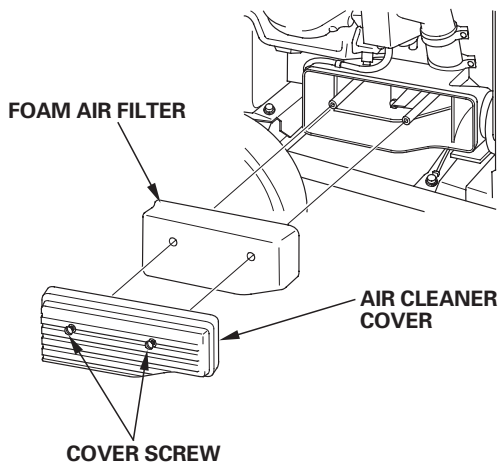


The SAE oil viscosity and service category are in the API label on the oil container. Honda recommends that you use API SERVICE category SJ or later (or equivalent) oil.

SERVICING YOUR GENERATOR

AIR CLEANER SERVICE

1. Loosen the cover screws and remove the air cleaner cover.



2. Remove the foam air filter from the air cleaner cover.
3. Check the foam air filter to be sure it is clean and in good condition.

If the foam air filter is dirty, clean it as described on page 49.
Replace the foam air filter if it is damaged.

4. Reinstall the foam air filter in the air cleaner cover.
5. Reinstall the air cleaner cover.

NOTICE

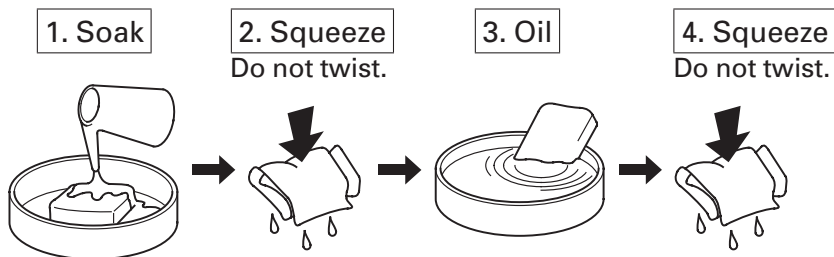
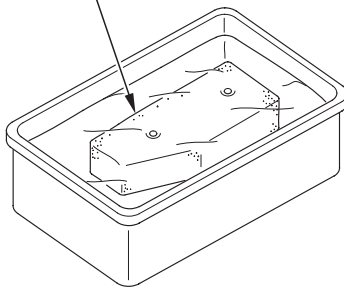
Operating the engine without an air filter or with a damaged air filter will allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by the Distributor's Limited Warranty.

FOAM AIR FILTER CLEANING

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

1. Clean the foam air filter in warm soapy water, rinse, and allow to dry thoroughly, or clean in nonflammable solvent and allow to dry.
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 filter.

FOAM AIR FILTER

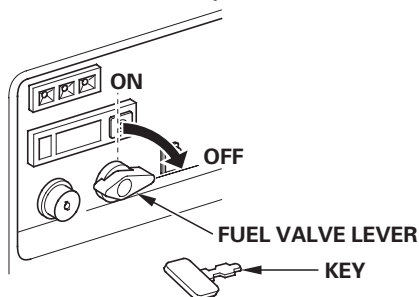


3. Wipe dirt from the air cleaner housing and cover using a moist rag. Be careful to prevent dirt from entering the air duct that leads to the carburetor.

SERVICING YOUR GENERATOR

SEDIMENT CUP CLEANING

1. Turn the fuel valve lever to the OFF position and remove the key.



2. Remove the sediment cup by turning it counterclockwise.

⚠ WARNING

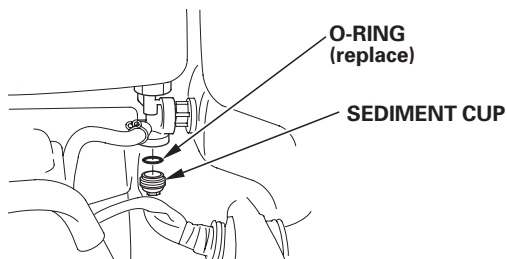
Gasoline is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

3. Wash the sediment cup in nonflammable solvent, and dry it thoroughly.

4. Reinstall the new O-ring and sediment cup.



5. Turn the fuel valve ON and check for leaks.

SPARK PLUG SERVICE

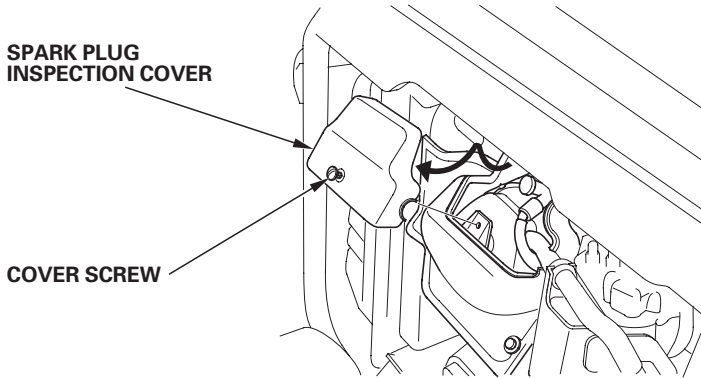
Recommended spark plugs: BPR5ES (NGK)
W16EPR-U (DENSO)

NOTICE

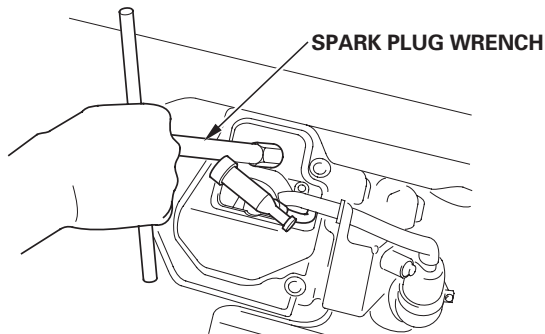
Incorrect spark plugs can cause engine damage.

If the engine is hot, allow it to cool before servicing the spark plug.

1. Loosen the cover screw and remove the spark plug inspection cover.



2. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.
3. Remove the spark plug with a 13/16-inch spark plug wrench (commercially available).

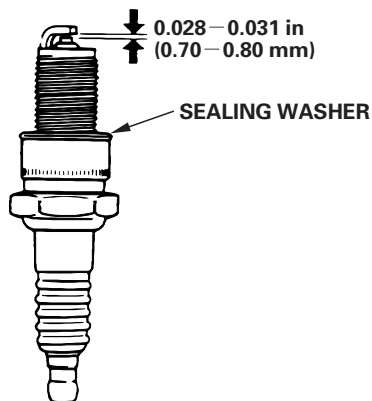


SERVICING YOUR GENERATOR

4. Inspect the spark plug. Replace it if the electrodes are worn or if the insulator is cracked, chipped or fouled.

5. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode.

The gap should be:
0.028–0.031 in (0.70–0.80 mm)



6. Make sure that the spark plug sealing washer is in good condition, and thread the spark plug in by hand to prevent cross-threading.
7. After the spark plug seats, tighten with a 13/16-inch spark plug wrench to compress the washer.

If reinstalling a used spark plug, tighten 1/8 – 1/4 turn after the spark plug seats.

If installing a new spark plug, tighten 1/2 turn after the spark plug seats.

NOTICE

A loose spark plug can overheat and damage the engine. Overtightening the spark plug can damage the threads in the cylinder head.

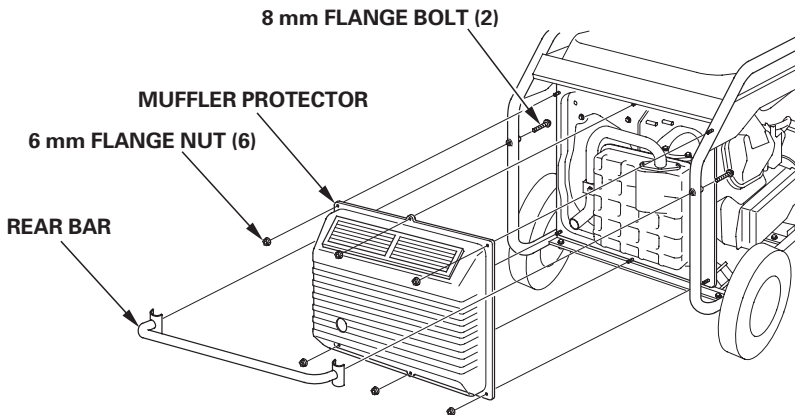
8. Attach the spark plug cap.
9. Reinstall the spark plug inspection cover and tighten the cover screw.

SPARK ARRESTER SERVICE

The spark arrester must be serviced every 100 hours to keep it functioning as designed.

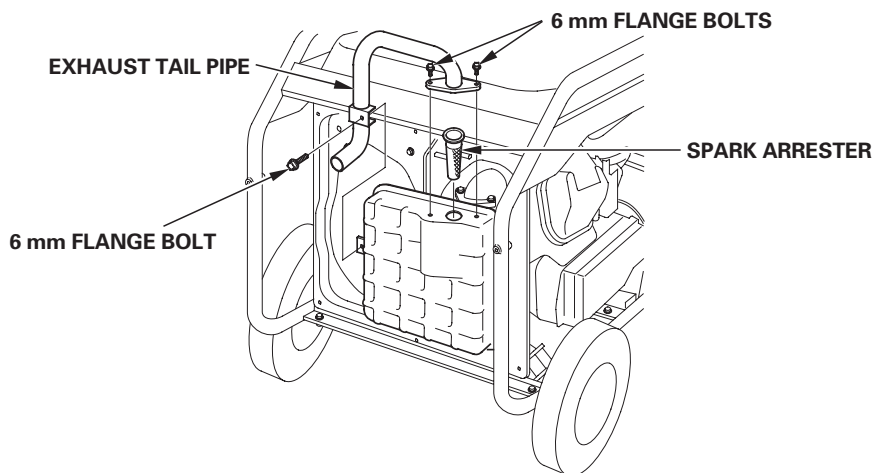
If the engine has been running, the muffler will be very hot. Allow the muffler to cool before servicing the spark arrester.

1. Remove the two 8 mm flange bolts, and remove the rear bar.
2. Remove the six 6 mm flange nuts, and remove the muffler protector.

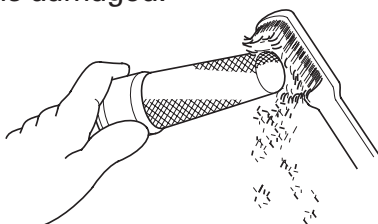


SERVICING YOUR GENERATOR

3. Remove the three 6 mm flange bolts, and remove the exhaust tail pipe and the spark arrester.



4. 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.



5. Inspect the screen for breaks or tears and replace it if necessary.
6. Install the spark arrester and the exhaust tail pipe in the reverse order of removal.
TORQUE: 8 lbf·ft (11 N·m , 1.1 kgf·m)
7. Install the muffler protector and the rear pipe in the reverse order of removal.
TORQUE: 6.3 lbf·ft (8.5 N·m , 0.87 kgf·m)

BATTERY SERVICE

Your generator's engine charging system charges the battery while the engine is running. However, if the generator is only used periodically, the battery must be charged monthly to maintain the battery service life.

WARNING

The battery contains sulfuric acid (electrolyte) which is highly corrosive and poisonous. Getting electrolyte in your eyes or on your skin can cause serious burns.

Wear protective clothing and eye protection when working near the battery.

KEEP CHILDREN AWAY FROM THE BATTERY.

Emergency Procedures

Eyes — Flush with water from a cup or other container for at least fifteen minutes. (Water under pressure can damage the eye.) Immediately call 911 (USA only) or a physician.

Skin — Remove contaminated clothing. Flush the skin with large quantities of water. Call a physician immediately.

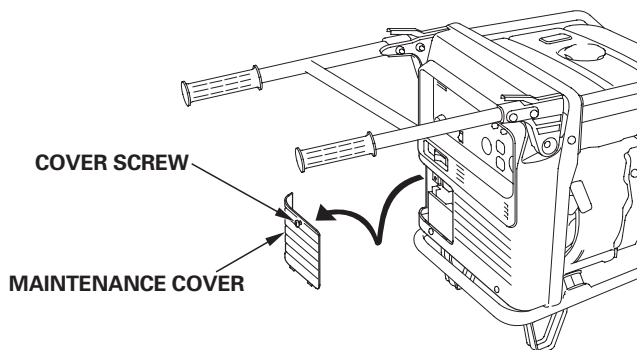
Swallowing — Drink water or milk. Call your local Poison Control Center (USA only) or a physician immediately.

SERVICING YOUR GENERATOR

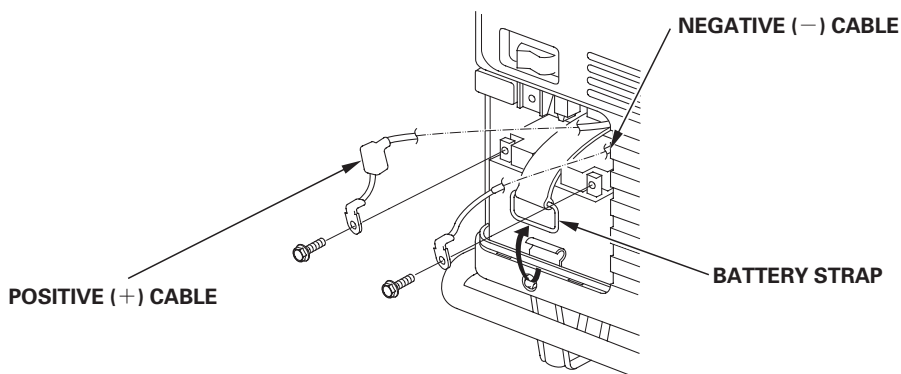
Battery Removal

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds. **Wash hands after handling.**

1. Lift handle upward. Lock levers will lock and secure handle into place.
2. Loosen the cover screw and remove the battery maintenance cover.



3. Remove the negative (–) cable from the battery first, then remove the positive (+) cable from the battery.
4. Unhook the battery strap from the bottom hook of the generator.



5. Remove the battery from the battery tray.

Battery Charging

WARNING

The battery gives off explosive hydrogen gas during normal operation.

A spark or flame can cause the battery to explode with enough force to kill or seriously hurt you.

Wear protective clothing and a face shield, or have a skilled mechanic do the battery maintenance.

The battery is rated at 11.2 Ah (ampere-hours). Charging current should equal 10% of the battery's ampere-hour rating. A battery charger should be used that can be adjusted to deliver 1.1 amps.

1. Connect the battery charger following the manufacturer's instructions.
2. Charge the battery 5–10 hours.
3. Clean the outside of the battery and the battery compartment with a solution of baking soda and water.

Battery Installation

1. Install the battery into the generator.
2. Connect the battery positive (+) cable to the battery positive (+) terminal first and tighten the bolt securely.
3. Slide the battery boot over the positive (+) cable and terminal.
4. Connect the battery negative (–) cable to the battery negative (–) terminal and tighten the bolt securely.
5. Install the battery strap.
6. Install the maintenance cover in the reverse order of removal (see page 56).
Never operate the generator without the maintenance cover in place, as poor engine and generator performance will result.

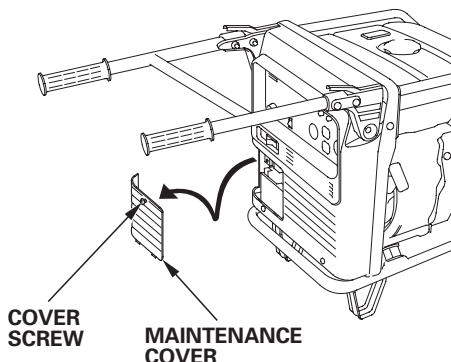
SERVICING YOUR GENERATOR

FUSE

If the fuse is blown, the starter motor won't operate.

In the event of fuse failure, locate the cause of failure and repair before you continue operation. If the fuse continues to fail, discontinue generator use and consult an authorized Honda generator dealer.

1. Turn the engine switch OFF and remove the key before checking or replacing the fuse.
2. Loosen the cover screw and remove the battery maintenance cover.



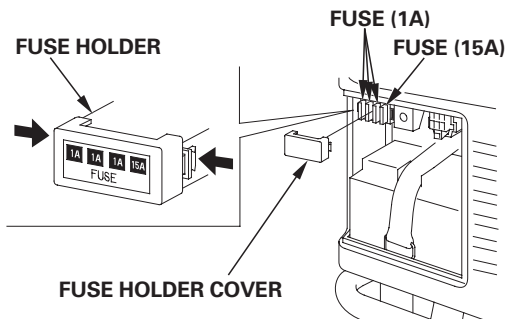
3. Remove the fuse holder cover and pull the fuse out.

4. Replace the fuse with a fuse of the same type and rating.

Specified fuse: 1 A, 15 A

NOTICE

Never use a fuse with different rating from that specified. Serious damage to the electrical system or fire may result.



5. Install the fuse holder cover and the maintenance cover in the reverse order of removal (see page 56).
Never operate the generator without the maintenance cover in place, as poor engine and generator performance will result.

STORAGE

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.

The length of time that gasoline can be left in your fuel tank and carburetor without causing functional problems will vary with such factors as gasoline blend, your storage temperatures, and whether the fuel tank is partially or completely filled. The air in a partially filled fuel tank promotes fuel deterioration. Very warm storage temperatures accelerate fuel deterioration. Fuel deterioration problems may occur within a few months, or even less depending on the gasoline formulation in your area.

The *Distributor's Limited Warranty* does not cover fuel system damage or engine performance problems resulting from neglected storage preparation.

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.

STORAGE

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 fuel stabilizer following the manufacturer's instructions.
2. After adding a fuel 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 lever to the OFF position.

Draining the Fuel Tank and Carburetor

⚠ WARNING

Gasoline is highly flammable and explosive.

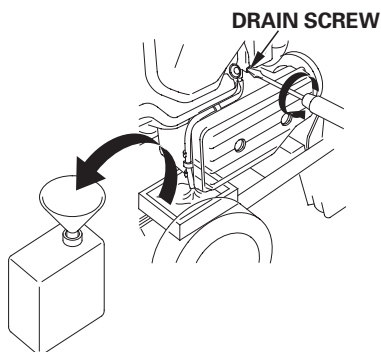
You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

1. Place a suitable gasoline container below the carburetor drain hose.

2. Loosen the carburetor drain screw and drain the gasoline from the carburetor.

3. After all the fuel has drained into the container, tighten the drain screw securely.



4. Place an approved gasoline container below the sediment cup, and use a funnel to avoid spilling fuel. Remove the sediment cup, then move the fuel valve lever to the ON position (see page 50).

5. Allow the fuel to drain completely, then reinstall the sediment cup (see page 50).

STORAGE

Engine Oil

1. Change the engine oil (see page 46).
2. Remove the spark plug (see page 51).
3. Pour a tablespoon (5 — 10 cc) of clean engine oil into the cylinder.
4. Pull the starter grip several times to distribute the oil in the cylinder.
5. Reinstall the spark plug.
6. Slowly pull the starter grip until resistance is felt. At this point, the piston is coming up on its compression stroke and both the intake and exhaust valves are closed. Storing the engine in this position will help to protect it from internal corrosion. Return the starter grip gently.

STORAGE PRECAUTIONS

If your generator will be stored with gasoline in the fuel tank and carburetor, it is important to reduce the hazard of gasoline vapor ignition.

Select a well ventilated storage area away from any appliance that operates with a flame, such as a furnace, water heater, or clothes dryer. Also avoid any area with a spark-producing electric motor, or where power tools are operated.

If possible, avoid storage areas with high humidity, because that promotes rust and corrosion.

Unless all fuel has been drained from the fuel tank, leave the fuel valve in the OFF position to reduce the possibility of leakage.

Place the generator on a level surface. Tilting can cause fuel or oil leakage.

With the engine and exhaust system cool, cover the generator to keep out dust. A hot engine and exhaust system can ignite or melt some materials.

Do not use sheet plastic as a dust cover. A nonporous cover will trap moisture around the generator, promoting rust and corrosion.

Fully charge the battery. Recharge the battery once a month (see page 57).

REMOVAL FROM STORAGE

Check your generator as described in the *BEFORE OPERATION* chapter of this manual.

If the fuel was drained during storage preparation, fill the tank with fresh gasoline. If you keep a container of gasoline for refueling, be sure that it contains only fresh gasoline. Gasoline oxidizes and deteriorates over time, causing hard starting.

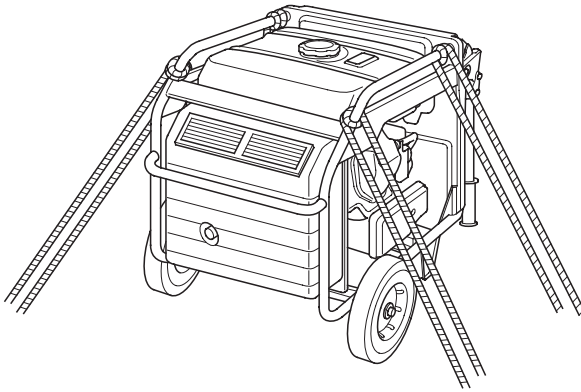
If the cylinder was coated with oil during storage preparation, the engine may smoke briefly at startup. This is normal.

TRANSPORTING

If the generator has been running, allow the engine to cool for at least 15 minutes before loading the generator on the transport vehicle. A hot engine and exhaust system can burn you and can ignite some materials.

Keep the generator level when transporting to reduce the possibility of fuel leakage. Move the fuel valve to the OFF position.

When using ropes or tie-down straps to secure the generator for transportation, be sure to only use the frame bars as attachment points. Do not fasten ropes or straps to any portions of the generator body or the folding transport handle.



TAKING CARE OF UNEXPECTED PROBLEMS

ENGINE PROBLEMS

Engine Will Not Start	Possible Cause	Correction
1. Check control positions.	Fuel valve lever OFF.	Turn lever ON.
	Engine switch OFF.	Turn engine switch to ON.
2. Check fuel.	Out of fuel.	Refuel (p. 43).
	Bad fuel; generator stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p. 61). Refuel with fresh gasoline (p. 43).
3. Check engine oil level.	Low oil level caused Oil Alert to stop engine.	Add oil (p. 45). Turn engine switch to OFF and restart the engine.
4. Remove and inspect spark plug.	Spark plug faulty, fouled, or improperly gapped.	Gap or replace spark plug (p. 51).
	Spark plug wet with fuel (flooded engine).	Dry and reinstall spark plug.
5. Take generator to an authorized Honda servicing dealer, or refer to shop manual.	Fuel filter restricted, carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

TAKING CARE OF UNEXPECTED PROBLEMS

Engine Lacks Power	Possible cause	Correction
1. Check air filter.	Air filter restricted.	Clean or replace air filter (p. 48).
2. Check fuel.	Bad fuel; generator stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p. 61). Refuel with fresh gasoline (p. 43).
3. Take generator to an authorized Honda servicing dealer, or refer to shop manual.	Fuel filter restricted, carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

TAKING CARE OF UNEXPECTED PROBLEMS

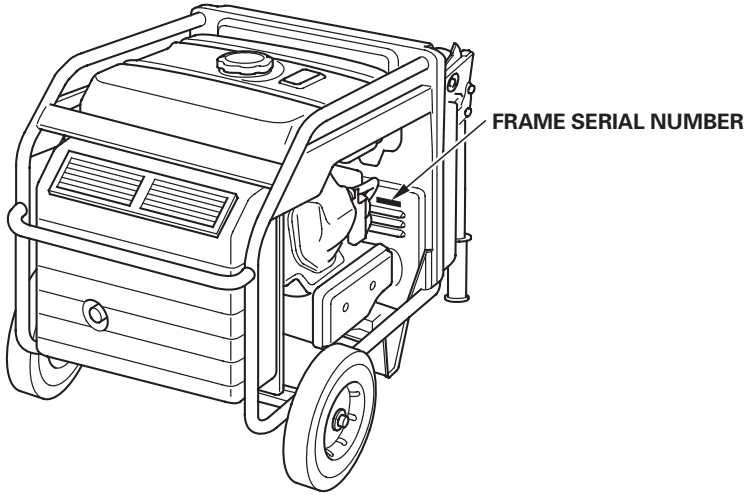
GENERATOR PROBLEMS

No Power at the AC Receptacles	Possible Cause	Correction
1. Check output and overload indicator.	Output indicator is OFF, and overload indicator is ON.	Check AC load. Stop and restart the engine.
		Check the cooling air inlet. Stop and restart the engine.
2. Check circuit protectors.	Circuit protector(s) tripped.	Check AC load and reset circuit protector(s) (p. 14).
3. Check the power tool or appliance at a known, good AC power source.	Faulty power tool or appliance.	Replace or repair power tool or appliance. Stop and restart the engine.
4. Take generator to an authorized Honda servicing dealer, or refer to shop manual.	Faulty generator.	Replace or repair faulty components as necessary.

TECHNICAL & CONSUMER INFORMATION

TECHNICAL INFORMATION

Serial Number Location



Record the frame serial number and date purchased in the spaces below. You will need this information when ordering parts, and when making technical or warranty inquiries.

Frame serial number: _____

Date purchased: _____

Carburetor Modification for 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 authorized Honda servicing dealer 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.

NOTICE

When the carburetor has been modified for high altitude operation, the air/fuel mixture will be too lean for low altitude use. Operation at altitudes below 5,000 feet (1,500 meters) with a modified carburetor may cause the engine to overheat and result in serious engine damage. For use at low altitudes, have your servicing dealer return the carburetor to original factory specifications.

TECHNICAL & CONSUMER INFORMATION

Emission Control System Information

Source of Emissions

The combustion process produces carbon monoxide, oxides of nitrogen, and hydrocarbons. Control of hydrocarbons and oxides of nitrogen is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Honda utilizes appropriate air/fuel ratios and other emissions control systems to reduce the emissions of carbon monoxide, oxides of nitrogen, and hydrocarbons.

Additionally, Honda fuel systems utilize components and control technologies to reduce evaporative emissions.

The U.S. and California Clean Air Acts

EPA and California regulations require all manufacturers to furnish written instructions describing the operation and maintenance of emission control systems.

The following instructions and procedures must be followed in order to keep the Honda engine emissions within the emission standards.

Tampering and Altering

Tampering with or altering the emission control system may increase emissions beyond the legal limit. Among those acts that constitute tampering are:

- Removal or alteration of any part of intake, fuel, or exhaust systems.
- Altering or defeating the governor linkage or speed-adjusting mechanism to cause the engine to operate outside its design parameters.

TECHNICAL & CONSUMER INFORMATION

Problems That May Affect Emissions

If you are aware of any of the following symptoms, have your engine inspected and repaired by your authorized Honda servicing dealer.

- Hard starting or stalling after starting.
- Rough idle.
- Misfiring or backfiring under load.
- Afterburning (backfiring).
- Black exhaust smoke or high fuel consumption.

Replacement Parts

The emission control systems on your Honda engine were designed, built, and certified to conform with appropriate emission regulations. We recommend the use of genuine Honda parts whenever you have maintenance done. These original-design replacement parts are manufactured to the same standards as the original parts, so you can be confident of their performance. The use of replacement parts that are not of the original design and quality may impair the effectiveness of your emission control system.

A manufacturer of an aftermarket part assumes the responsibility that the part will not adversely affect emission performance. The manufacturer or rebuilder of the part must certify that use of the part will not result in a failure of the engine to comply with emission regulations.

Maintenance

Follow the *MAINTENANCE SCHEDULE* on page 42 . Remember that this schedule is based on the assumption that your machine will be used for its designed purpose. Sustained high-load or high-temperature operation, or use in dusty conditions, will require more frequent service.

Air Index (Models certified for sale in California)

An Air Index Information hang tag/label is applied to engines certified to an emission durability time period in accordance with the requirements of the California Air Resources Board.

The bar graph is intended to provide you, our customer, the ability to compare the emissions performance of available engines. The lower the Air Index, the less pollution.

The durability description is intended to provide you with information relating to the engine's emission durability period. The descriptive term indicates the useful life period for the engine's emission control system. See your *Emission Control System Warranty* for additional information.

Descriptive Term	Applicable to Emission Durability Period
Moderate	50 hours (0—80 cc, inclusive) 125 hours (greater than 80 cc)
Intermediate	125 hours (0—80 cc, inclusive) 250 hours (greater than 80 cc)
Extended	300 hours (0—80 cc, inclusive) 500 hours (greater than 80 cc) 1,000 hours (225 cc and greater)

The Air Index Information hang tag must remain on the generator until it is sold. Remove the hang tag before operating the generator.

TECHNICAL & CONSUMER INFORMATION

Specifications

EM5000is

Dimensions

Model	EM5000is
Description code	EAJJ
Length [Handle in up position]	31.9 in (810 mm) [45.5 in (1,155 mm)]
Width	26.4 in (670 mm)
Height [Handle in up position]	27.2 in (690 mm) [28.0 in (710 mm)]
Dry weight*	209 lbs (95 kg)

* Without battery

Engine

Model	GX340K1
Engine type	4-stroke, overhead valve, single cylinder
Displacement [Bore × Stroke]	20.6 cu-in (337 cm ³) [3.2 × 2.5 in (82 × 64 mm)]
Compression ratio	8.0:1
Engine speed	2,400—3,600 rpm<Eco-Throttle ON>
Cooling system	Forced air
Ignition system	Full transistor
Oil capacity	1.2 US qt (1.1 ℓ)
Fuel tank capacity	4.49 US gal (17.0 ℓ)
Spark plug	BPR5ES (NGK) W16EPR-U (DENSO)

Generator

Type		A
AC output	Rated voltage	120/240 V
	Rated frequency	60 Hz
	Rated current	37.5/18.8 A
	Rated output	4.5 kVA
	Maximum output	5.0 kVA

Tuneup Specifications

ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.028—0.031 in (0.70—0.80 mm)	Refer to page: 51
Valve clearance(cold)	IN: 0.15±0.02 mm EX: 0.20±0.02 mm	See your authorized Honda dealer
Other specifications	No other adjustments needed.	

Specifications may vary according to the types, and are subject to change without notice.

TECHNICAL & CONSUMER INFORMATION

EM6500is

Dimensions

Model	EM6500is
Description code	EAHJ
Length [Handle in up position]	31.9 in (810 mm) [45.5 in (1,155 mm)]
Width	26.5 in (672 mm)
Height [Handle in up position]	27.2 in (692 mm) [27.9 in (709 mm)]
Dry weight*	209 lbs (95 kg)

* Without battery

Engine

Model	GX390K1
Engine type	4-stroke, overhead valve, single cylinder
Displacement [Bore × Stroke]	23.74 cu-in (389.2 cm ³) [3.5 × 2.5 in (88 × 64 mm)]
Compression ratio	8.0:1
Engine speed	2,400—3,600 rpm<Eco-Throttle ON>
Cooling system	Forced air
Ignition system	Full transistor
Oil capacity	1.2 US qt (1.1 ℓ)
Fuel tank capacity	4.36 US gal (16.5 ℓ)
Spark plug	BPR5ES (NGK) W16EPR-U (DENSO)

Generator

Generator		
Type		A
AC output	Rated voltage	120/240 V
	Rated frequency	60 Hz
	Rated current	45.8/22.9 A
	Rated output	5.5 kVA
	Maximum output	6.5 kVA

Tuneup Specifications

ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.028—0.031 in (0.70—0.80 mm)	Refer to page: 51
Valve clearance(cold)	IN: 0.15±0.02 mm EX: 0.20±0.02 mm	See your authorized Honda dealer
Other specifications	No other adjustments needed.	

Specifications may vary according to the types, and are subject to change without notice.

Wiring Diagram



CONSUMER INFORMATION

Honda Publications

Shop Manual

This manual covers complete maintenance and overhaul procedures. It is intended to be used by a skilled technician.

Available through your Honda dealer or through Helm Inc. at (888) 292-5395 or visit www.hondapowerequipment.com/own.htm.

Parts Catalog

This manual provides complete, illustrated parts lists. Available through your Honda dealer.

Accessories Catalog

Your authorized Honda power equipment dealer offers a wide selection of accessories (optional equipment) to make your generator even more useful.

Visit www.hondapowerequipment.com/acc.htm and click on Generators and Welders to see the entire catalog of accessories. Especially popular accessories include:

- Remote start kit
- Transfer switch
- Cover

TECHNICAL & CONSUMER INFORMATION

Customer Service Information

Honda Power Equipment dealership personnel are trained professionals. They should be able to answer any question you may have. If you encounter a problem that your dealer does not solve to your satisfaction, please discuss it with the dealership's management. The Service Manager or General Manager can help. Almost all problems are solved in this way.

If you are dissatisfied with the decision made by the dealership's management, contact the Honda Power Equipment Customer Relations Office. You can write:

American Honda Motor Co., Inc.
Power Equipment Division
Customer Relations Office
4900 Marconi Drive
Alpharetta, Georgia 30005-8847

Or telephone: (770) 497-6400 8:30 am to 8:00 pm ET

When you write or call, please give us this information:

- Model and serial numbers (see page 68)
- Name of the dealer who sold the generator to you
- Name and address of the dealer who services your generator
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem

ASSEMBLY

SAFETY

The Importance of Proper Assembly

Proper assembly is essential to operator safety and the reliability of the machine. Any error or oversight made by the person assembling and servicing a unit can easily result in faulty operation, damage to the machine, or injury to the operator.

WARNING

Improper assembly can cause an unsafe condition that can lead to serious injury or death.

Follow the procedures and precautions in the assembly instructions carefully.

Some of the most important safety precautions are given below. However, we cannot warn you of every conceivable hazard that can arise in performing this assembly. Only you can decide whether or not you should perform a given task.

WARNING

Failure to properly follow instructions and precautions can cause you to be seriously hurt or killed.

Follow the procedures and precautions in this manual carefully.

ASSEMBLY

Important Safety Precautions

- Make sure you have a clear understanding of all basic shop safety practices and that you are wearing appropriate clothing and safety equipment. When performing this assembly, be especially careful of the following:
 - ☐ Read the instructions before you begin and be sure you have the tools and skills required to perform the tasks safely.
- Make sure the engine is off before you begin any maintenance or repairs. This will help eliminate several potential hazards:
 - ☐ **Carbon monoxide poisoning from engine exhaust.**
Operate outside away from open windows or doors.
 - ☐ **Burns from hot parts.**
Let the engine and exhaust system cool before touching.
 - ☐ **Injury from moving parts.**
Do not run the engine unless the instruction tells you to do so. Even then, keep your hands, fingers, and clothing away. Do not run the engine when any protective guard or shield is removed.
- To reduce the possibility of a fire or explosion, be careful when working around gasoline or batteries. Use only a nonflammable solvent, not gasoline, to clean parts. Keep all cigarettes, sparks, and flames away from all fuel-related parts.

ASSEMBLY

Unpacking

- 1. Remove the generator and loose parts box from the carton.
- 2. Compare the loose parts with the inventory list below.

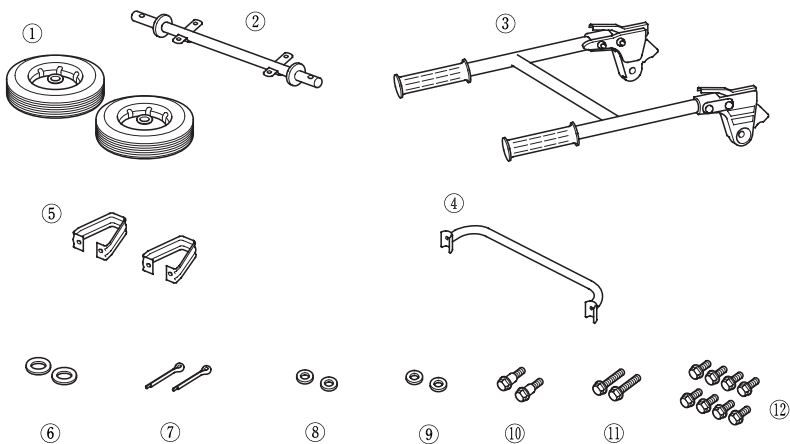
Tools Required: 14 mm wrench (2), 10 mm wrench or Phillips head screwdriver for battery connections, pliers (not included)

Loose Parts

Check all loose parts against the following list. Contact your dealer if any of the loose parts shown below are not included with your generator.

Ref. No.	Description	Qty.
1	Wheel	2
2	Axle	1
3	Handle assembly	1
4	Rear pipe	1
5	Stand	2
6	20 mm Washer	2
7	4.0×28 mm Cotter pin	2

Ref. No.	Description	Qty.
8	12 mm Washer	2
9	Spring Washer	2
10	Handle holder bolt	2
11	8×45 mm Flange bolt	2
12	8×16 mm Flange bolt	8



ASSEMBLY

Wheel Kit Installation

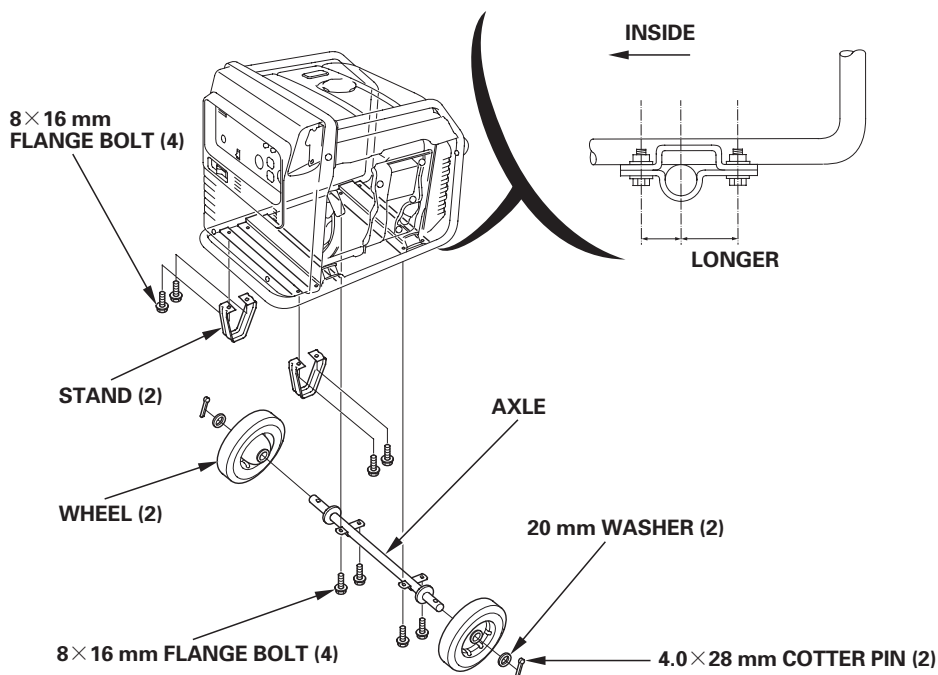
Do not operate the generator without the wheel kit installed. The wheel kit provides an air space between the ground and the generator air intake.

NOTICE

If the wheel kit is not installed, it may be possible for dirt and debris to be drawn into the generator air intake causing possible generator damage. Always operate the generator with the wheel kit installed.

1. Install the two wheels on the axle shaft using the washers and cotter pins.
2. Install the axle assembly on the generator using four 8×16 mm flange bolts.
3. Install the two stands on the under frame using four 8×16 mm flange bolts.

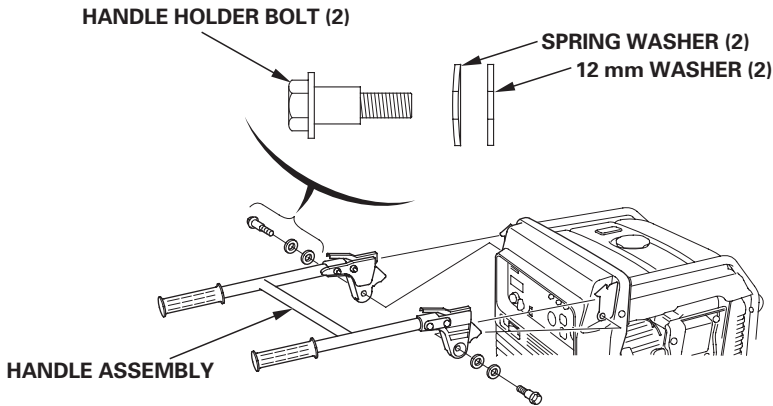
TORQUE: 17 – 22 lbf·ft (24 – 29 N·m , 2.4 – 3.0 kgf·m)



Handle Installation

Install the handle assembly on the generator upper frame using the 12 mm washers, spring washers and handle holder bolts.

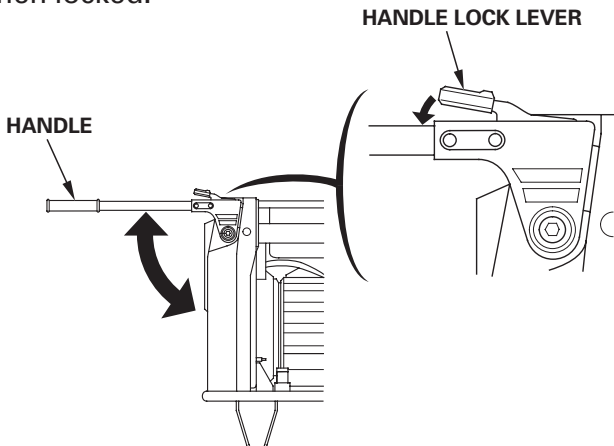
TORQUE: 17 – 22 lbf·ft (24 – 29 N·m , 2.4 – 3.0 kgf·m)



Operation must be checked after attaching a handle.

To extend handle:

Raise the handle to the horizontal position. The handle will click into place when locked.

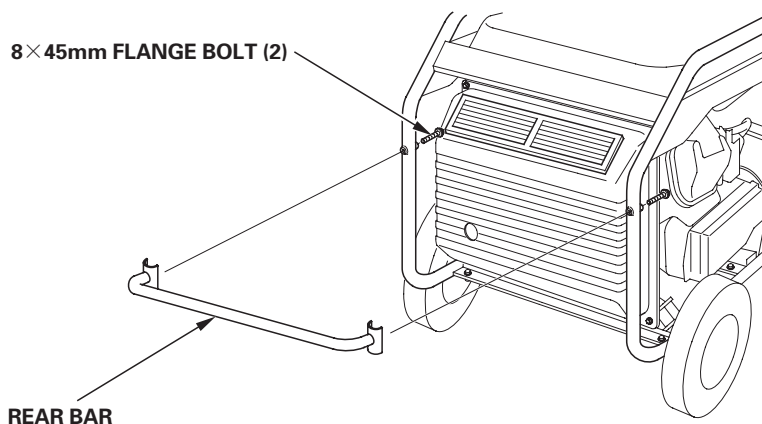


ASSEMBLY

Rear Bar Installation

Install the rear bar on the generator frame using the two 8×45 mm flange bolts.

TORQUE: 17 – 22 lbf·ft (24 – 29 N·m , 2.4 – 3.0 kgf·m)



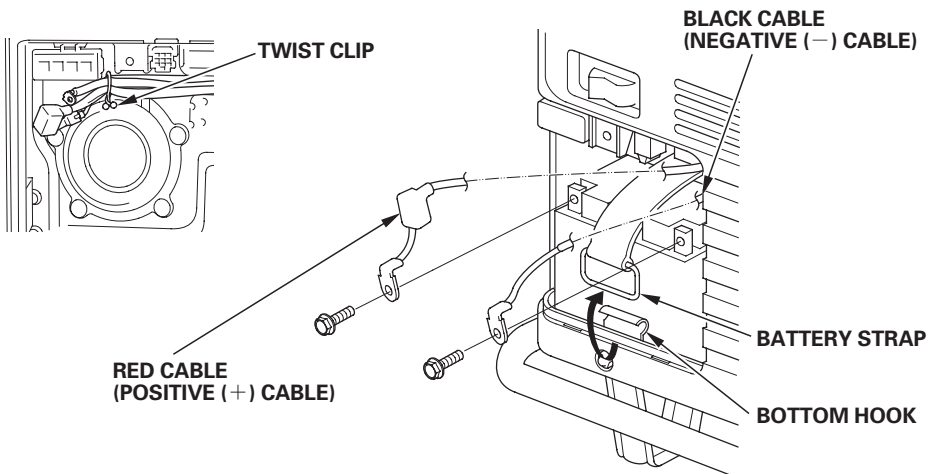
Battery

The battery is a standard part for this generator.

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds. **Wash hands after handling.**

The battery is disconnected and strapped into the battery tray for shipment.

1. Remove the maintenance cover (see page 56).
2. Remove the battery strap from the bottom hook, and then remove the battery.
3. Remove the red cable and the black cable from the twist clip, and return the battery to its tray.
4. Remove the protective cover from the battery positive (+) terminal, connect the red cable to the battery positive (+) terminal.
5. Connect the black cable to the battery negative (–) terminal.
6. To secure the battery, hook the battery strap onto the bottom hook of the generator.



ASSEMBLY

7. Install the maintenance cover in the reverse order of removal (see page 56).
Never operate the generator without the maintenance cover in place, as poor engine and generator performance will result.

Engine Oil

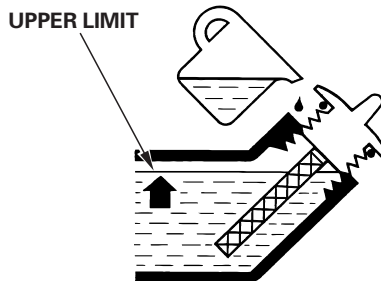
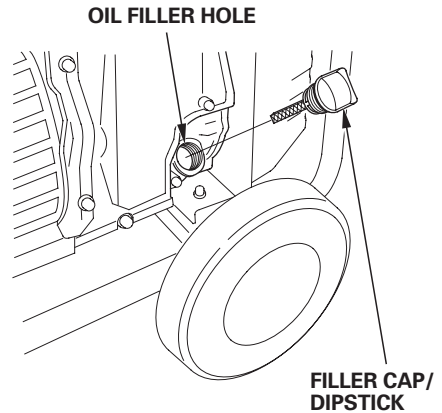
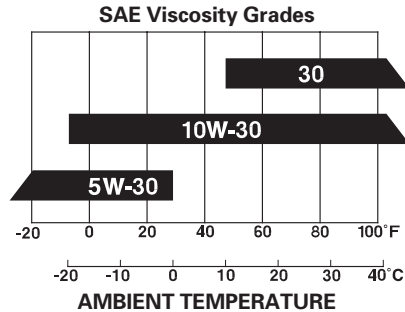
The generator is shipped **WITHOUT OIL** in the engine.

Place the generator on a level surface. Add enough of the recommended oil to bring the oil level to the top of the oil filler neck.

Use a 4-stroke motor oil that meets the requirements for API service category SJ or later (or equivalent).

SAE 10W-30 is recommended for general, all-temperature use. Other viscosities in the chart may be used when the temperature in your area is within the indicated range.

Do not overfill the engine with oil. If the engine is overfilled, the excess oil may get transferred to the air cleaner housing and air filter.



Fuel

Refer to page 59 .

ASSEMBLY

BEFORE OPERATION

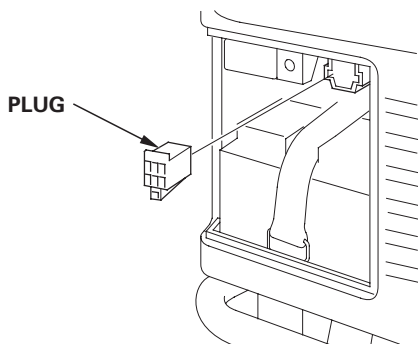
Before using your generator, you should become familiar with information contained in the following chapters and sections:

- **GENERATOR SAFETY** (page 6)
- **CONTROLS & FEATURES** (page 10)
- **OPERATION** (page 25)
- **STARTING THE ENGINE** (page 26)
- **STOPPING THE ENGINE** (page 30)

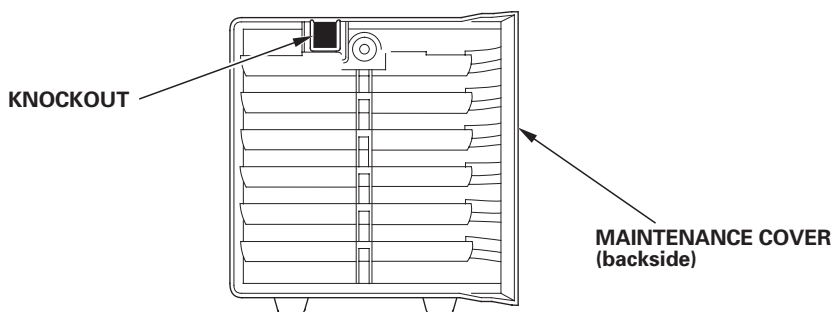
OPTIONAL PARTS

Remote Control Kit

1. Remove the maintenance cover (see page 56).
2. Remove the plug from the 6-pin connector.

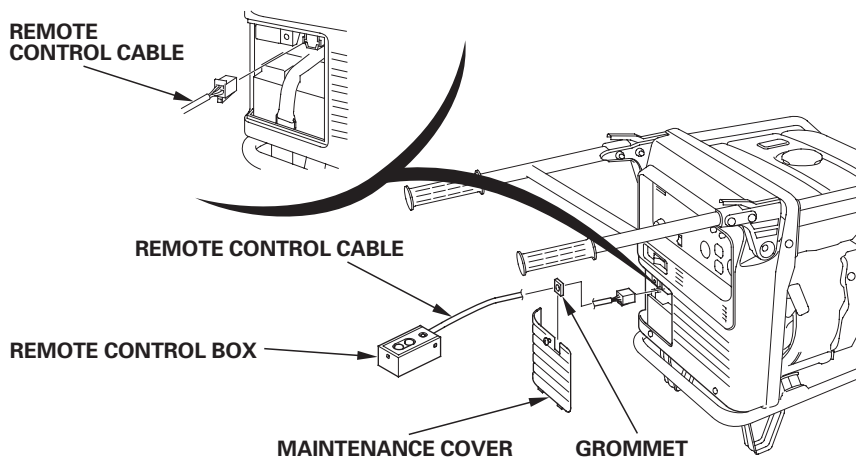


3. View the back of the maintenance cover and locate the knockout near the top center of the cover. Carefully remove the knockout.

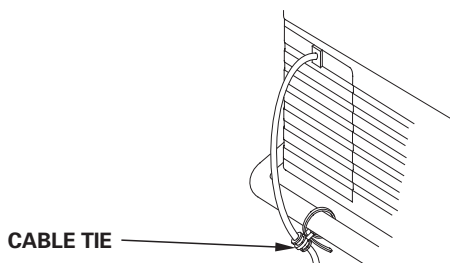


OPTIONAL PARTS

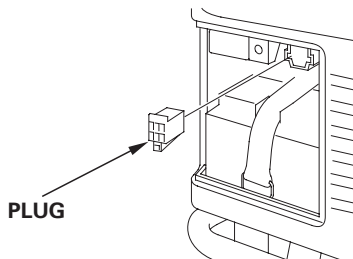
4. Pass the remote control cable through the supplied wire grommet and fit the grommet into the maintenance cover knockout.
5. Plug the remote control cable into the 6-pin connector.
6. Install the maintenance cover and tighten the cover screw.



7. To avoid accidentally unplugging the remote control cable, secure the cable to the generator frame with a cable tie as shown.



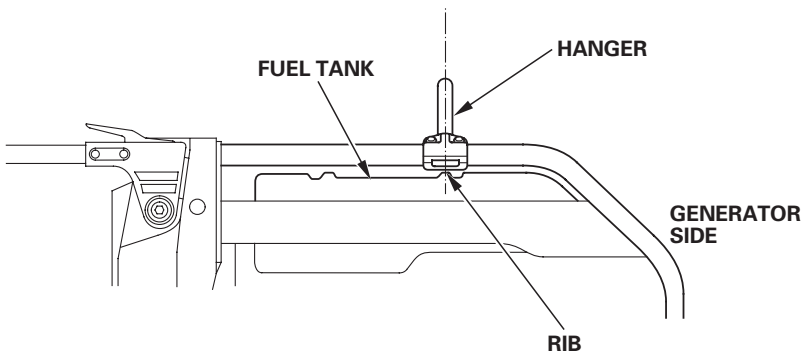
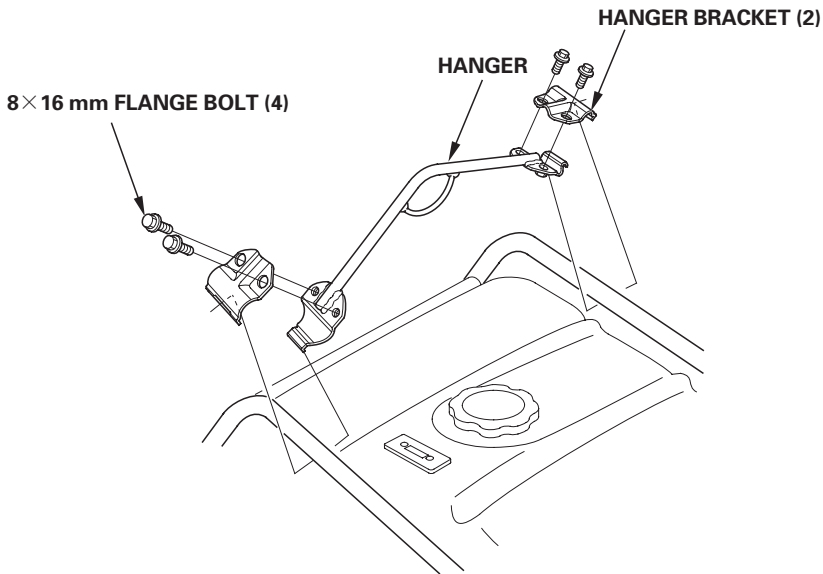
- Never operate the generator without the maintenance cover in place, as poor engine and generator performance will result.
- When the remote control is not being used, replace the plug on the connector.



Hanger Kit

1. Position the hanger at the generator's balance point as shown below.
2. Fit the end tabs of the hanger through the bracket slots, and bolt the brackets to the hanger and tighten securely.

TORQUE: 17 – 22 lbf·ft (24 – 29 N·m , 2.4 – 3.0 kgf·m)



INDEX

A

AC Applications	34
AC Circuit Protectors	14
AC OPERATION	32
AC Receptacle Selection	35
AIR CLEANER SERVICE	48
Air Index	73
ARE YOU READY TO GET STARTED?	23
ASSEMBLY	79, 81

B

Battery	85
BATTERY SERVICE	55
BEFORE OPERATION	23

C

Carbon Monoxide hazards	6
Carburetor Modification for High Altitude Operation	69
Check the Engine	24
Cleaning	59
COMPONENT & CONTROL LOCATIONS	10
Connections to a Building's Electrical System	38
CONSUMER INFORMATION	77
CONTROLS	12
CONTROLS & FEATURES	10
Customer Service Information	78

E

Eco-Throttle Switch	13
ECO-THROTTLE SYSTEM	37
Electric Shock Hazards	7
Emission Control System Information	70
Engine oil	62
ENGINE OIL CHANGE	46
ENGINE OIL LEVEL CHECK	45
ENGINE OIL RECOMMENDATIONS	47
ENGINE PROBLEMS	65
Engine Switch	12

F	
FEATURES	16
Fire and Burn Hazards	7
Folding Handle	15
FOAM AIR FILTER CLEANING	49
Fuel	59
Fuel Gauge	22
FUEL RECOMMENDATIONS	44
Fuel Valve Lever	12
FUSE	58
G	
GENERATOR PROBLEMS	67
GENERATOR SAFETY	6
Ground Terminal	16
H	
Handle Installation	83
Hanger Kit	91
Honda Publications	77
I	
i-Monitor	19
IMPORTANCE OF MAINTENANCE	40
IMPORTANT SAFETY INFORMATION	6
Important Safety Precautions	80
INDEX	92
IS YOUR GENERATOR READY TO GO	23
K	
Knowledge	23
L	
Loose Parts	81

INDEX

M

Maintenance Cover 24

MAINTENANCE SAFETY 41

MAINTENANCE SCHEDULE 42

O

Oil Alert Indicator 18

OPERATION 25

Operator Responsibility 6

OPTIONAL PARTS 89

Output Indicator 17

Overload Indicator 17

Q

QUICK REFERENCE INFORMATION Inside back cover

R

Rear Bar Installation 84

REFUELING 43

Refuel With Care 8

Remote Control Kit 89

REMOVAL FROM STORAGE 63

S

SAFE OPERATING PRECAUTIONS	25
SAFETY	79
SAFETY LABEL LOCATIONS	9
Safety Precautions	41
SEDIMENT CUP CLEANING	50
Serial Number Location	68
SERVICING YOUR GENERATOR	40
SPARK ARRESTER SERVICE	53
SPARK PLUG SERVICE	51
Special Requirements	39
Specifications	74
STANDBY POWER	38
Starter Grip	13
STARTING THE ENGINE	26
STOPPING THE ENGINE	30
STORAGE	59
STORAGE PRECAUTIONS	63
STORAGE PREPARATION	59
System Ground	38

T

TAKING CARE OF UNEXPECTED PROBLEMS	65
TECHNICAL & CONSUMER INFORMATION	68
TECHNICAL INFORMATION	68
The Importance of Proper Assembly	79
TRANSPORTING	64

U

Unpacking	81
-----------------	----

V

Voltage Selector Switch	14
-------------------------------	----

W

Wheel Kit Installation	82
Wiring Diagram	76

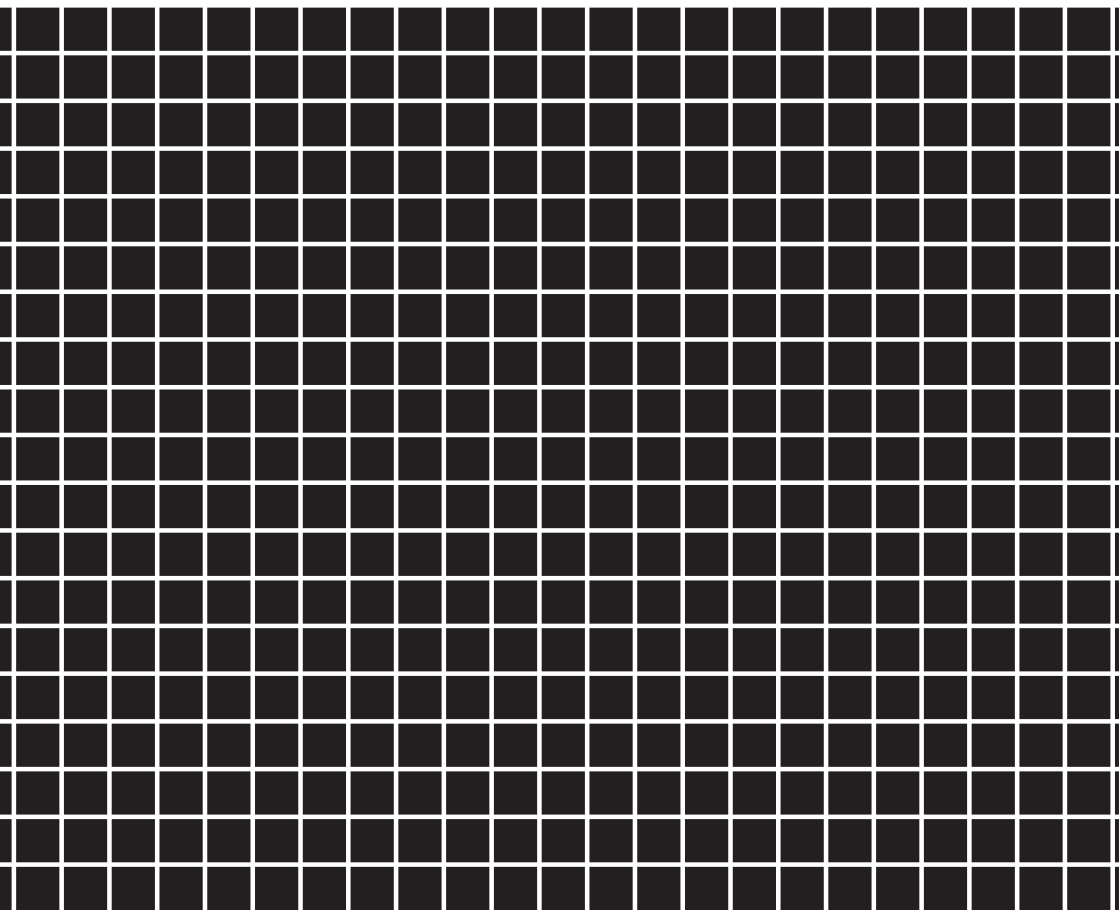
MEMO

QUICK REFERENCE INFORMATION

Fuel	Type	Unleaded gasoline with a pump octane rating of 86 or higher
Spark Plug	Type	NGK: BPR5ES DENSO: W16EPR-U
	Electrode Gap	0.028 — 0.031 in (0.70 — 0.80 mm)
Maintenance	Before each use	Check engine oil level. Check air filter.
	First 20 hours	Change engine oil.
	Subsequent	See Maintenance Schedule (page 42)

HONDA

The Power of Dreams



31Z11700
00X31-Z11-7000



700.2007.05

Printed in Japan