

HONDA

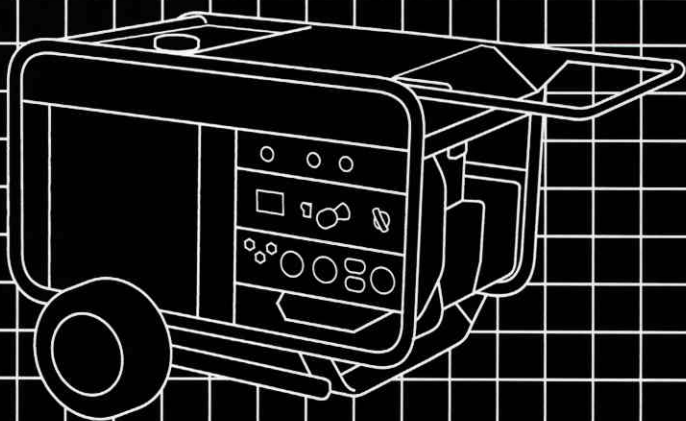
Power

Equipment

Owner's Manual

GENERATOR

ES6500





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

The generator is a potential source of electrical shock if misused. Do not expose the generator to moisture, rain or snow. Do not let the generator get wet, and do not operate it with wet hands.

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. No part of this publication may be reproduced without written permission.

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 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 warranty policy to fully understand its coverage and your responsibilities of ownership. The warranty policy 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. Your authorized 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.

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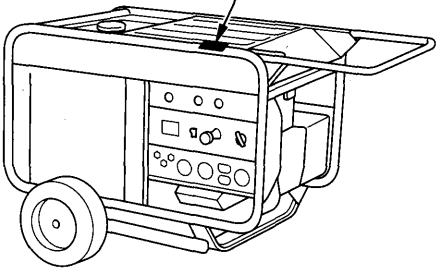
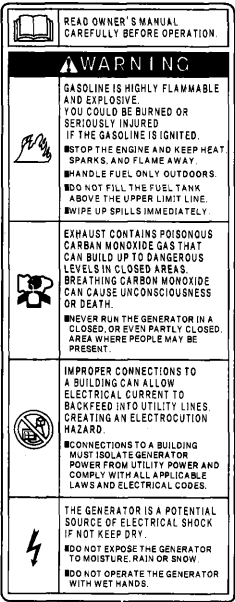
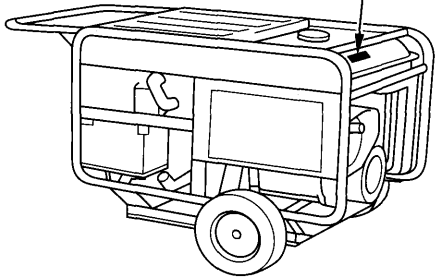
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SAFETY

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 generator dealer for a replacement.



SAFETY INFORMATION

Honda generators are designed to give safe and dependable service if operated according to instructions. Read and understand this owner's manual before operating your generator. You can help prevent accidents by being familiar with your generator's controls, and by observing safe operating procedures.

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 and odorless gas. Breathing exhaust can cause loss of consciousness and may lead to death.
- If you run the generator in an area that is confined, or even partially enclosed, the air you breathe could contain a dangerous amount of exhaust gas. To keep exhaust gas from accumulating, provide adequate ventilation.

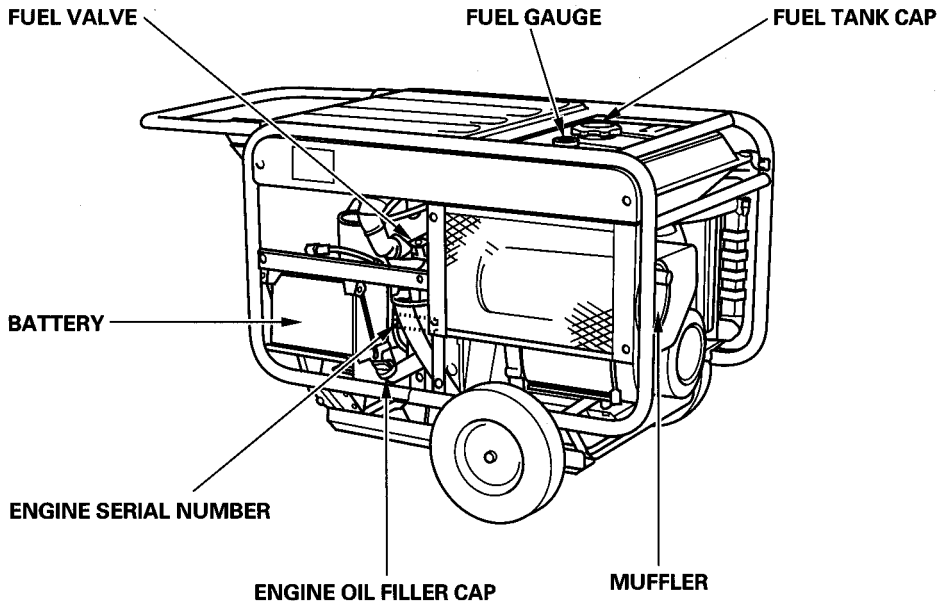
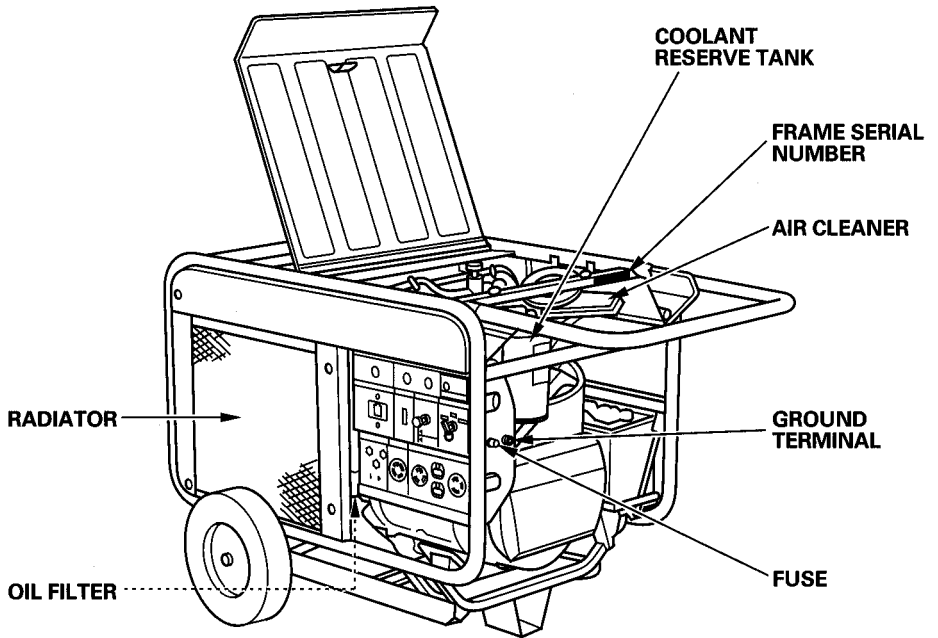
Electric Shock Hazards

- 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 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.

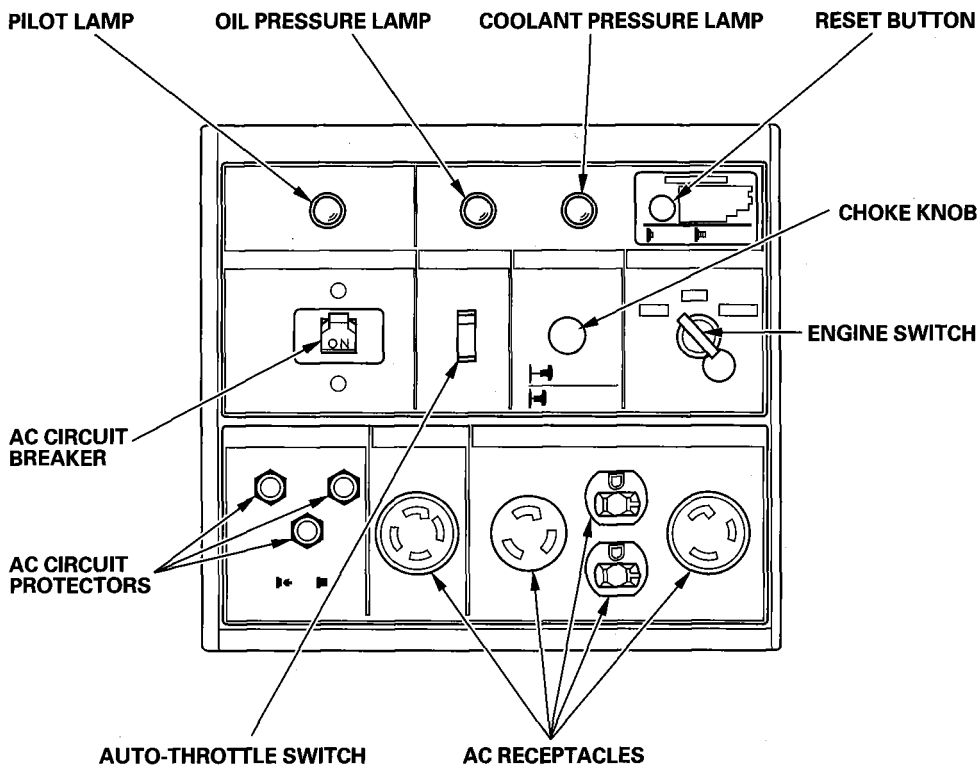
Fire and Burn Hazards

- 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.
- Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks where the generator is refueled or where gasoline is stored. Refuel in a well-ventilated area with the engine stopped.
- Fuel vapors are extremely flammable and may ignite after the engine has started. Make sure that any spilled fuel has been wiped up before starting the generator.

COMPONENT IDENTIFICATION



CONTROL BOX



*Record the engine and frame serial numbers for your future reference. Refer to these serial numbers when ordering parts, and when making technical or warranty inquiries (see page 51).

Frame serial number: _____

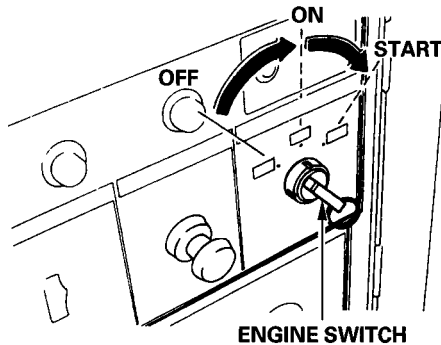
Engine serial number: _____

ENGINE SWITCH

To start and stop the engine.

Key position:

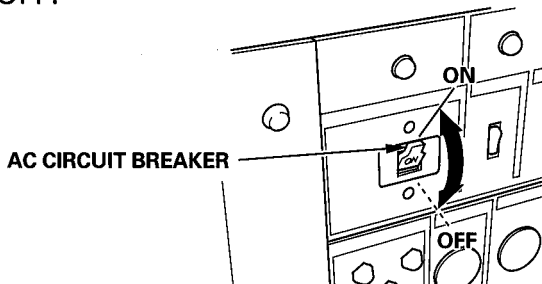
- OFF:** To stop the engine. Key can be removed/inserted.
ON: To run the engine after starting.
START: To start the engine by operating the starter motor.



Return the key to the ON position once the engine has started. Do not use the starter for more than 5 seconds at a time. If the engine fails to start, release the switch and wait 10 seconds before operating the starter again.

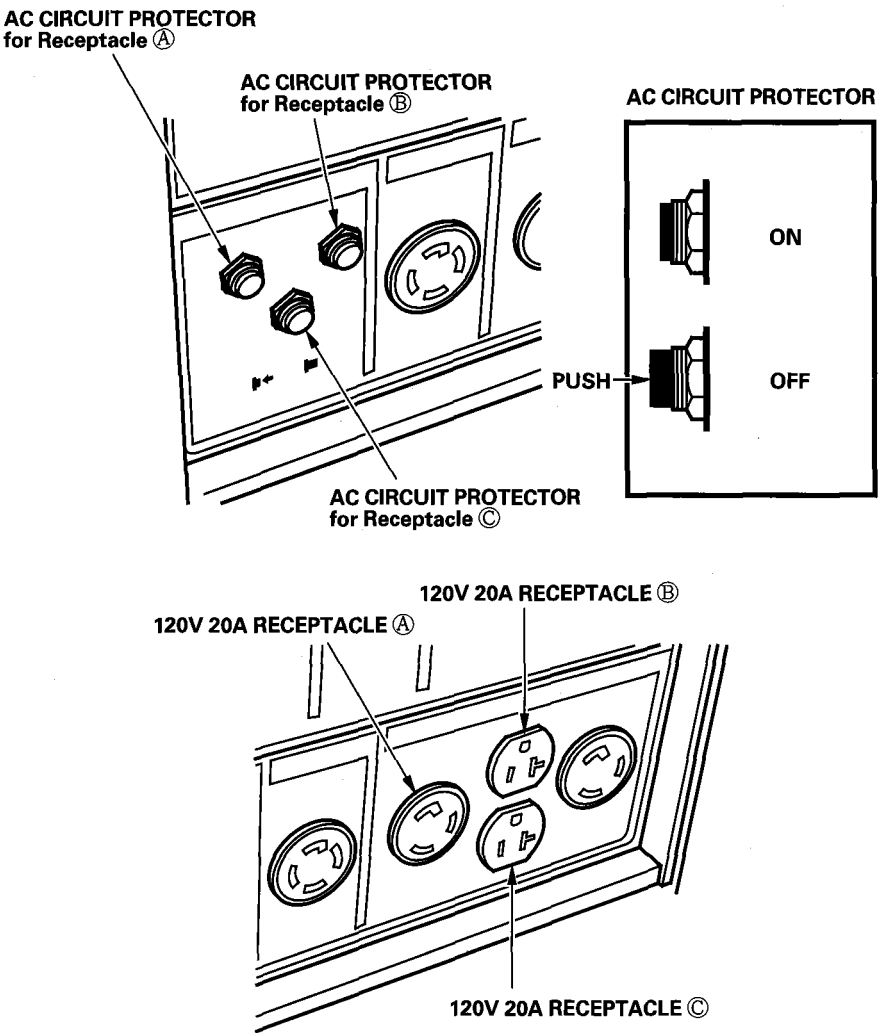
AC CIRCUIT BREAKER

The AC circuit breaker will automatically switch OFF if there is a short circuit or an overload of the generator at the AC receptacle. If the AC circuit breaker is switched OFF automatically, check that the appliance is working properly and does not exceed the rated load capacity of the AC circuit before switching the AC circuit breaker ON again. The AC circuit breaker may be used to switch the generator AC power ON or OFF.



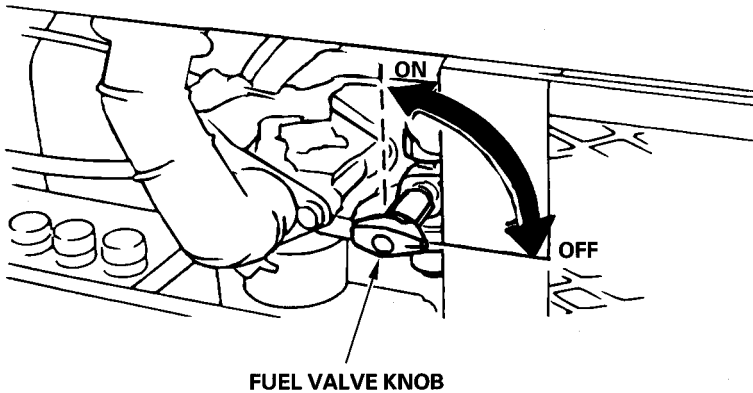
AC CIRCUIT PROTECTOR

The AC circuit protectors will automatically switch OFF if there is a short circuit or a significant overload of the generator at the 120V 20A receptacle. If a 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.



FUEL VALVE

The fuel valve is located between the fuel tank and carburetor. When the knob is in the ON position, fuel is allowed to flow from the fuel tank to the carburetor. Be sure to return the knob to the OFF position after stopping the engine.

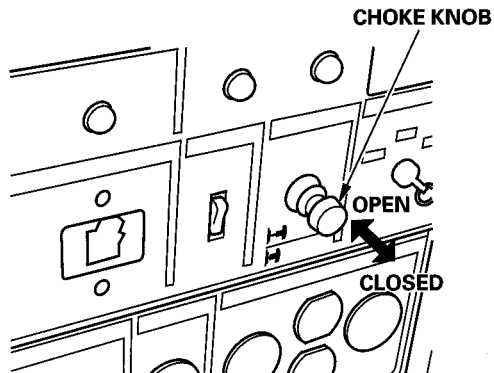


CHOKE KNOB

The choke knob opens and closes the choke valve in the carburetor.

Pulling the choke knob to the CLOSED position enriches the fuel mixture for starting a cold engine.

Pushing the choke knob to the OPEN position provides the correct fuel mixture for operation after starting, and for restarting a warm engine.

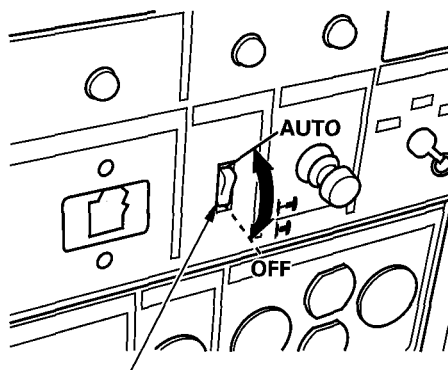


AUTO-THROTTLE SYSTEM

The auto-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 rated speed.

AUTO: Recommended to minimize fuel consumption and further reduce noise levels when no load is applied to the generator.

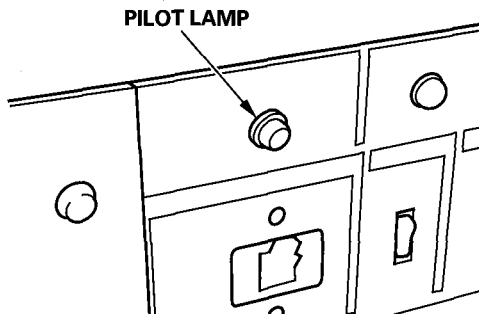
OFF: The auto-throttle system does not operate. Recommended to minimize warm-up time when the generator is started.



AUTO-THROTTLE SWITCH

PILOT LAMP

The pilot lamp is illuminated when the generator is operating normally. It indicates that the generator is providing electrical power at the receptacles.



OIL PRESSURE LAMP

Lights when the engine oil pressure is low or the engine lubrication system is not working properly. The engine will stop automatically when the light comes on.

If this occurs:

- Check the engine oil level, and add the correct engine oil if necessary (see page 22).
- To restart the engine, turn the engine switch to the OFF position. Next, push the reset button and start according to the starting procedure (see page 28).
- If the oil pressure indicator light continues to light even though the engine oil level is correct, stop operating the generator and see an authorized Honda generator dealer.

COOLANT TEMPERATURE LAMP

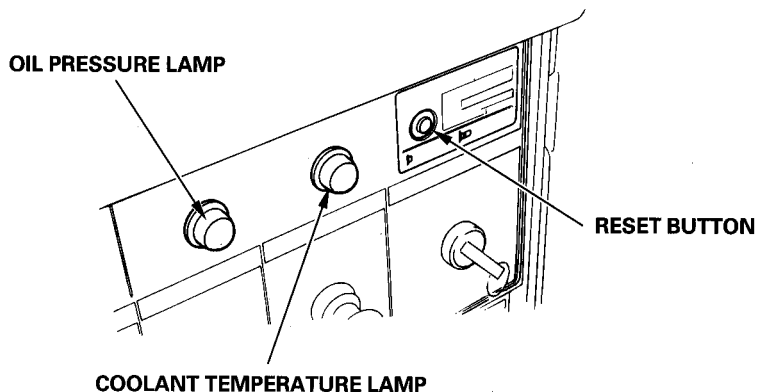
Lights when the coolant temperature becomes higher than normal. The engine will stop automatically when the light comes on.

If this occurs:

- Check the coolant level, and add coolant if the level is low (see page 26).
- Check the cooling air openings and the radiator for obstructions that would restrict air flow.
- To restart the engine, first turn the engine switch to the OFF position. Next, push the reset button, turn the engine switch to the ON position, and observe the coolant temperature indicator light. If the light remains on, allow the engine to cool before attempting to start the engine.
- If the coolant temperature indicator light continues to come on even though the coolant level is correct, discontinue operation and see an authorized Honda generator dealer.

NOTICE

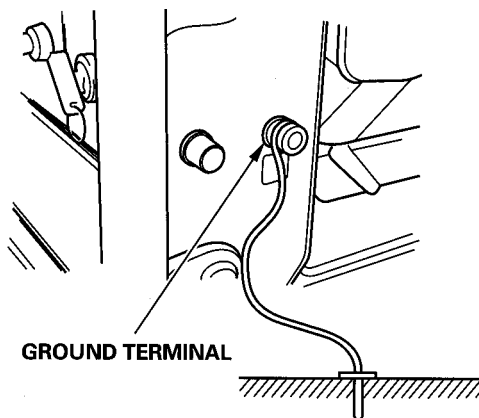
Check the coolant level before each use. The coolant temperature indicator light may not function if there is insufficient coolant in the radiator.



GROUND TERMINAL

The generator 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.



GENERATOR USE

CONNECTIONS TO A BUILDING ELECTRICAL SYSTEM

Connections for standby power to a building electrical system must be made by a qualified electrician. The connection must isolate the generator power from utility power, and must comply with all applicable laws and electrical codes. A transfer switch, which isolates generator power from utility power, is available through authorized Honda generator dealers.

▲WARNING

Improper connections to a building electrical system can allow electrical 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.

GROUND SYSTEM

Honda portable generators have a system ground that connects 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 by 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 which must be observed.

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 OFF, but will shorten the service life of the generator.

Limit operation requiring maximum power to 30 minutes.
Maximum power is:

6.5 kVA

For continuous operation, do not exceed the rated power.
Rated power is:

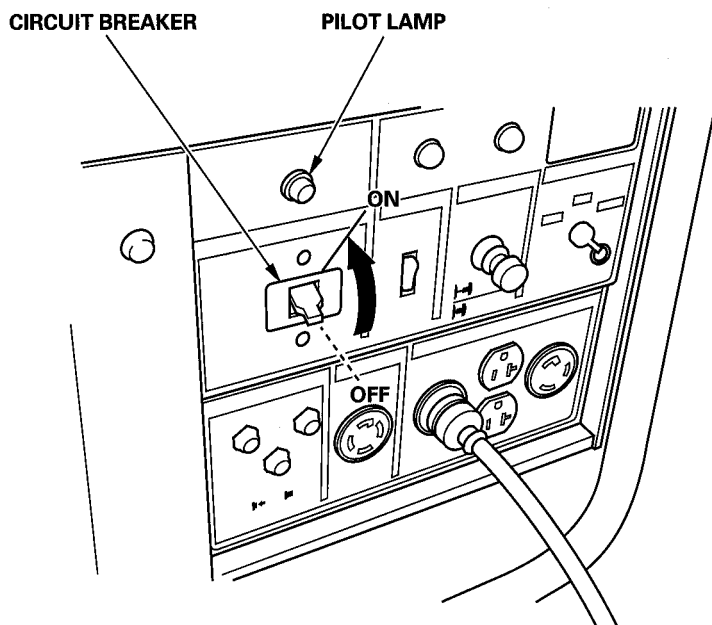
6.0 kVA

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 OPERATION

1. Start the engine (see page 28).
2. Switch the AC circuit breaker ON.
3. Plug the appliance into the appropriate AC receptacle.

Do not exceed the current limit specified for any one receptacle. If an overloaded circuit causes the AC circuit breaker or circuit protector to switch OFF, reduce the electrical load on the circuit, wait a few minutes and then reset the circuit breaker.



AC RECEPTACLE SELECTION

The generator has two separate main power producing circuits. These two circuits supply equal power to different receptacles shown.

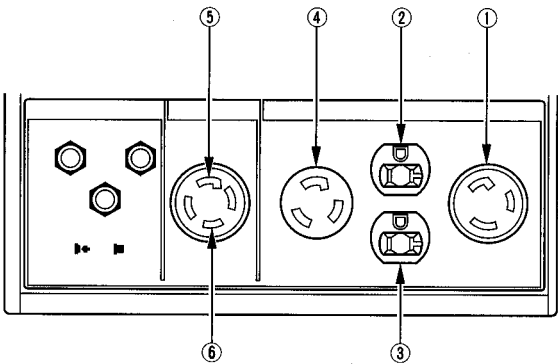
When two or more receptacles are used; prevent overloading by dividing the load between the two power circuits.
The chart below shows the rated load in amperes that can be connected to each receptacle to balance the generator load.
The total rated ampere draw is 50.0A.

Main power circuit	Receptacles powered by each main circuit	Power distribution
Main Circuit I	1, 3 and 5	$1+3+5=25.0A$ max.
Main Circuit II	2, 4 and 6	$2+4+6=25.0A$ max.

*The table shows the specifications when the 120/240V locking plug receptacle is used for 120V.

Example:

Receptacle 2 has a 10A load connected to it. Receptacle 4 has a 15A load connected to it. Both receptacles are powered by main power circuit II. The equation tells us that the total power draw on circuit II is 25A. This is a substantial overload of this circuit. To eliminate the excess power draw on circuit II, the load from receptacle 2 should be switched to receptacle 3. Now circuit I is powering the 10A load (less than 25.0A) and circuit II is powering a 15A load (less than 25.0A).



- ① 120V 30A
- ② 120V 20A
- ③ 120V 20A
- ④ 120V 20A
- ⑤ & ⑥ 120/240V 30A

AUTO-THROTTLE SYSTEM

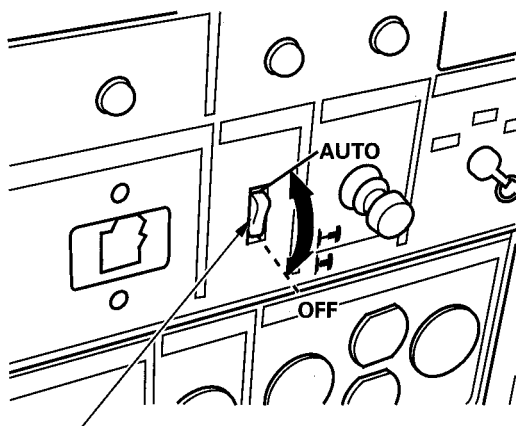
With the switch in the AUTO position, engine speed is automatically reduced when ALL loads are turned OFF or disconnected. When appliances are turned ON or reconnected, the engine returns to rated speed. In the OFF position, the auto-throttle system does not operate.

The auto-throttle system will not respond to electrical loads of less than 1 ampere. Turn the auto-throttle to the OFF position to operate loads of less than 1.

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 auto-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.

To avoid extended warm-up periods, keep the switch OFF until the engine reaches operating temperature.

The auto-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 auto-throttle switch should be in the OFF position.



AUTO-THROTTLE SWITCH

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 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.

PRE-OPERATION CHECK

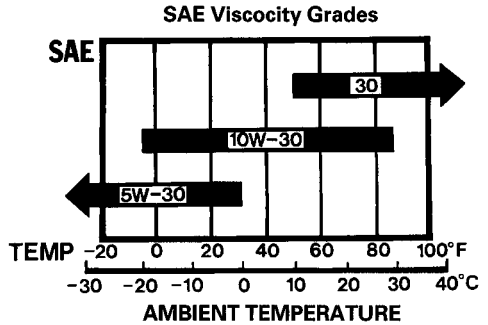
ENGINE OIL

NOTICE

Engine oil is a major factor affecting engine performance and service life. Non detergent and 2-stroke engine oils will damage the engine and are not recommended.

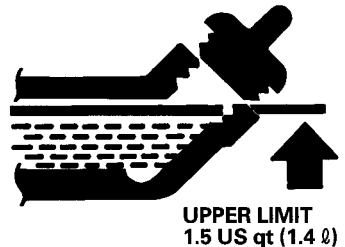
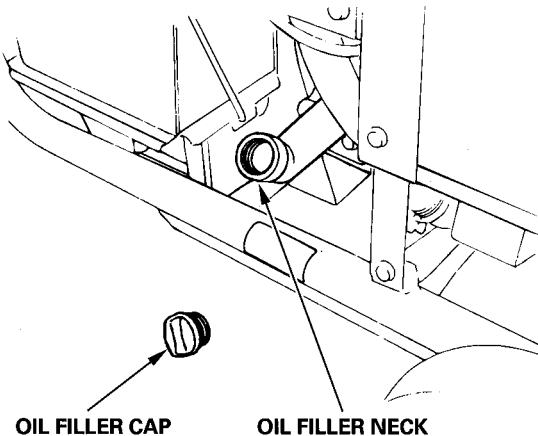
Check the oil level **BEFORE EACH USE** with the generator on a level surface and the engine stopped.

Use 4-stroke motor oil that meets or exceeds the requirements for API service classification SJ. Always check the API SERVICE label on the oil container to be sure it includes the letter SJ.



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

1. Remove the oil filler cap, and check the oil level.
2. If the level is low, fill to the top of the oil filler neck with the recommended oil.



FUEL RECOMMENDATIONS

Check the fuel gauge, and refill the tank if the fuel level is low.

Use unleaded gasoline with a pump octane rating of 86 or higher.

This engine is certified to operate on unleaded gasoline.

Unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust system life.

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

Refuel carefully to avoid spilling fuel. Do not fill above the fuel strainer shoulder.

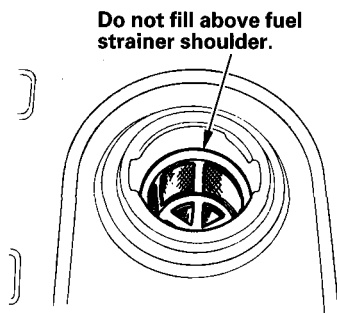
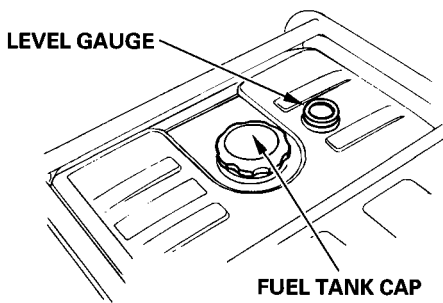
▲WARNING

Gasoline is highly flammable and explosive, and you can be burned or seriously injured when refueling.

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

Fuel tank capacity:

4.36 US gal (16.5 l , 3.63 Imp gal)



NOTICE

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

Occasionally you may hear a light “spark knock” or “pinging” (metallic rapping noise) while operating under heavy loads. This is no cause for concern.

If spark knock or pinging occurs at a steady engine speed, under normal load, change brands of gasoline. If spark knock or pinging persists, see an authorized Honda generator dealer.

NOTICE

Running the engine with persistent spark knock or pinging can cause engine damage.

Running the engine with persistent spark knock or pinging is misuse, and the *Distributor's Limited Warranty* does not cover parts damaged by misuse.

Oxygenated Fuels

Some conventional gasolines are being blended with alcohol or an ether compound. These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If you use an oxygenated fuel, be sure it is unleaded and meets the minimum octane rating requirement.

Before using an oxygenated fuel, try to confirm the fuel's contents. Some states/provinces require this information to be posted on the pump.

The following are the EPA approved percentages of oxygenates:

ETHANOL — (ethyl or grain alcohol) 10% by volume
You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name "Gasohol".

MTBE — (methyl tertiary butyl ether) 15% by volume
You may use gasoline containing up to 15% MTBE by volume.

METHANOL — (methyl or wood alcohol) 5% by volume
You may use gasoline containing up to 5% methanol by volume as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

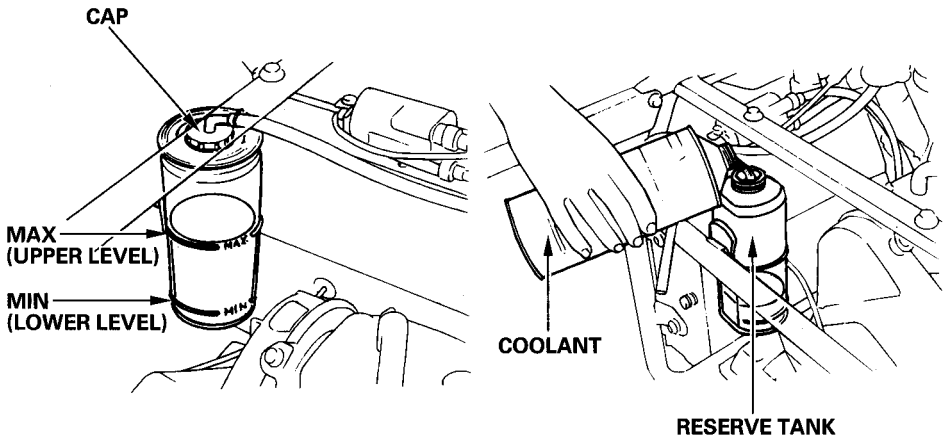
If you notice any undesirable operating symptoms, try another service station or switch to another brand of gasoline.

Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under warranty.

COOLANT

Check the coolant level in the reserve tank while on a level surface.

When the engine is at operating temperature, the coolant level should be between the MIN and MAX marks on the reserve tank. If the level is near the MIN mark, add coolant to bring the level up to the MAX mark.



The engine protection system will automatically stop the engine if the coolant gets too hot, which may occur if the coolant level is too low. To avoid the inconvenience of an unexpected shutdown, inspect the coolant level in the reserve tank regularly.

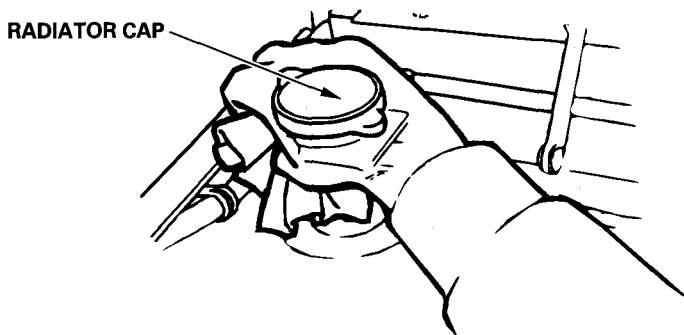
If there is no coolant in the reserve tank:

Make sure the engine is cool, then check the coolant system for leaks and have repairs made if needed. Add coolant to the reserve tank before starting the engine.

▲ WARNING

Hot coolant is under pressure. If you remove the radiator cap when the engine is hot, you may be scalded. Wait for the engine to cool.

1. When the engine is cool, relieve any remaining coolant pressure by turning the radiator cap counterclockwise until it reaches its stop; **DO NOT PRESS DOWN WHILE TURNING THE CAP.** After all pressure has been relieved, press the cap down, and continue turning the cap to remove it.



2. Fill the radiator with coolant, and reinstall the radiator cap. Tighten the cap securely.
3. Fill the reserve tank to the MAX mark with coolant.

Antifreeze/Coolant Recommendation

Use high quality ethylene glycol coolant that is specifically formulated for aluminum engines. Mix the coolant with low-mineral drinking water or distilled water.

A 50/50 mixture of ethylene glycol coolant and water is recommended for most temperatures, and it provides good corrosion protection. A higher concentration of coolant decreases cooling efficiency and is recommended if additional protection against freezing is needed. A concentration of less than 40% antifreeze will not provide enough corrosion protection.

NOTICE

The wrong type of coolant, hard water, or salt water can cause corrosion damage in the engine.

STARTING THE ENGINE

STARTING THE ENGINE

1. Turn the fuel valve ON.
2. Make sure that the circuit breaker is OFF.
The generator may be hard to start if a load is connected.
3. Make sure the auto-throttle switch is off, or more time will be required for warm up.
4. To start a cold engine, pull the choke knob to the CLOSED position.
To restart a warm engine, push the choke knob to the OPEN position.
5. Turn the engine switch to START and hold it there until the engine starts.
Do not use the electric starter for more than 5 seconds at a time. If the engine fails to start, release the switch and wait 10 seconds before operating the starter again.

NOTICE

When the speed of the starter motor drops after a period of time, it is an indication that the battery should be recharged.

6. After the engine starts, let the engine switch return to ON.
7. Warm up the engine for 2-3 minutes. Turn the auto-throttle switch to AUTO after the engine has warmed up.

STOPPING THE ENGINE

In an emergency:

1. To stop the engine in an emergency, move the engine switch to the OFF position.

In normal use:

1. Turn the AC circuit breaker to the OFF position.
2. Move the engine switch to the OFF position.
3. Turn the fuel valve to the OFF position.

MAINTENANCE

THE IMPORTANCE OF MAINTENANCE

Good maintenance is essential for safe, economical, and trouble-free operation. It will also help reduce air pollution.

▲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.

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 severe conditions, such as sustained high-load or high-temperature operation, or use it in unusually wet or dusty conditions, consult your servicing dealer for recommendations applicable to your individual needs and use.

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.**
Be sure there is adequate ventilation whenever you operate the engine.
 - **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.

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 or replacement.

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 lean carburetor settings and other systems to reduce the emissions of carbon monoxide, oxides of nitrogen, and hydrocarbons.

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 emissions from your Honda engine 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 the 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.

Problems That May Affect Emissions

If you are aware of any of the following symptoms, have your engine inspected and repaired by your 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 EPA and California 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 35 . 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 unusually wet or dusty conditions, will require more frequent service.

AIR INDEX

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 Warranty* for additional information.

Descriptive Term	Applicable to Emission Durability Period
Moderate	50 hours (0-65 cc)
	125 hours (greater than 65 cc)
Intermediate	125 hours (0-65 cc)
	250 hours (greater than 65 cc)
Extended	300 hours (0-65 cc)
	500 hours (greater than 65 cc)

The Air Index Information hang tag must remain on the generator until it is sold. Remove the hang tag before operating the 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.
ITEM Performed at every indicated month or operating hour interval, whichever comes first.						
•	Engine oil	Check level	○			
		Change	○		○	
•	Air cleaner	Check	○			
		Clean		○ (1)		
		Replace				○ (*)
	Radiator screen	Clean	○			○
	Radiator coolant	Check	○			
		Change	Every 2 years (2)			
	Battery fluid	Check level	○			
•	Sediment cup	Clean			○	
•	Spark plug	Check-adjust			○	
		Replace				○
	Spark arrester (option)	Clean			○	
•	Idle speed	Check-adjust				○ (2)
•	Engine oil filter	Replace	Every 200 Hrs (2)			
•	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)			

NOTE: • Emission related items.

(*) Replace the paper air filter element only.

(1) Service more frequently when used in dusty areas.

(2) These items should be serviced by an authorized Honda generator dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.

(3) For commercial use, log hours of operation to determine proper maintenance intervals.

ENGINE OIL AND OIL FILTER CHANGE

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

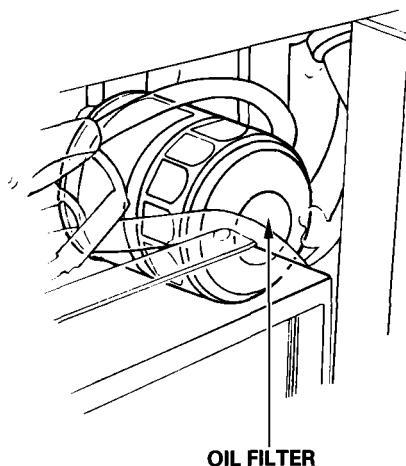
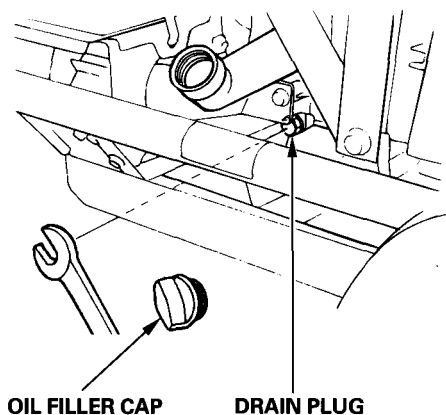
1. Remove the drain plug and filler cap, and drain the oil. Retighten the plug securely, and reinstall the filler cap.
2. Remove the oil filter with a filter wrench and let the remaining oil drain out.
3. Apply a thin coat of engine oil to the filter rubber seal and screw it in by hand until you feel it seat against the engine, then turn it $\frac{3}{4}$ of a turn more.
4. Fill the crankcase with the recommended oil (see page 22) and check the level. Recheck the level after running the engine for a few minutes.

Oil refill capacity without filter change:

1.2 US qt (1.1 ℓ , 1.0 Imp qt)

Oil refill capacity with filter change:

1.5 US qt (1.4 ℓ , 1.2 Imp qt)



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

Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station or recycling center for reclamation. Do not throw it in the trash, pour it on the ground, or down a drain.

AIR CLEANER SERVICE

A dirty air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the generator in extremely dusty areas.

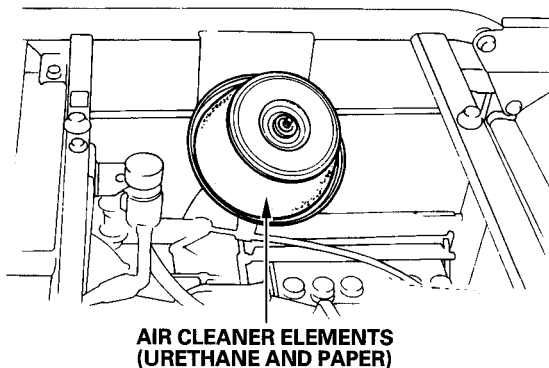
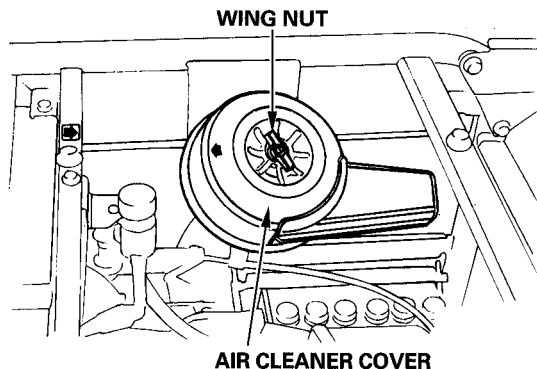
⚠ WARNING

Using gasoline or flammable solvent to clean the air filter can cause a fire or explosion. Use only soapy water or nonflammable solvent.

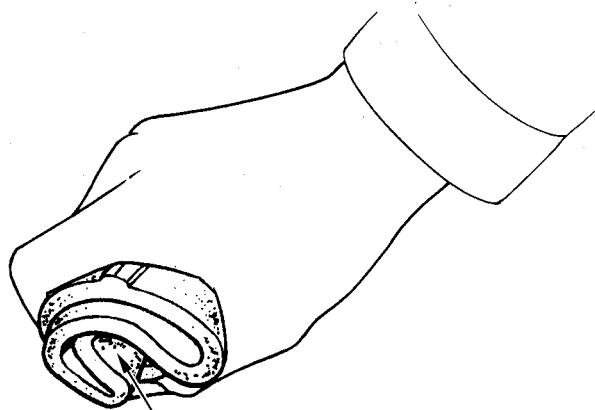
NOTICE

Never run the generator without the air filter. Rapid engine wear will result.

1. Pull the lock levers out and open the top cover.
2. Remove the wing nut and air cleaner cover. Remove the elements and separate them. Carefully check both elements for holes or tears, and replace if damaged.



-
3. Foam element: Clean in warm soapy water, rinse, and allow to dry thoroughly. Or clean in nonflammable solvent and allow to dry. Dip the element in clean engine oil and squeeze out all excess oil. The engine will smoke during initial running if too much oil is left in the foam.
 4. Paper element: Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air [not exceeding 30 psi (207 kPa, 2.1 kg/cm²)] through the filter from the inside out. Never try to brush the dirt off; brushing will force dirt into the fibers. Replace the paper element if it is excessively dirty.
 5. Reinstall the air cleaner elements and the cover.
 6. Reinstall the top cover.



URETHANE ELEMENT

SPARK PLUG SERVICE

In order to service the spark plug, you will need a spark plug wrench (commercially available).

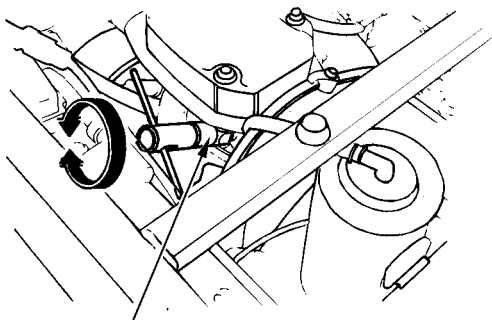
Recommended spark plug: BPR6HS (NGK)

To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

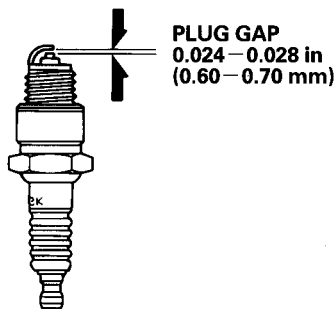
1. Pull the lock levers out and open the top cover.
2. Remove the spark plug cap.
3. Use a spark plug wrench to remove the spark plug.
4. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped.
5. Measure the plug gap with a feeler gauge.
Correct as necessary by carefully bending the side electrode.
The gap should be:
0.024–0.028 in (0.60–0.70 mm)
6. Attach the plug washer. Thread the plug in by hand to prevent cross-threading.
7. Tighten a new spark plug 1/2 turn with the wrench to compress the washer. If you are reusing a plug, it should only take 1/8–1/4 turn after the plug seats.
8. Reinstall the top cover.

NOTICE

The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and could damage the engine. Never use spark plugs which have an improper heat range. Use only the recommended spark plugs or equivalent.



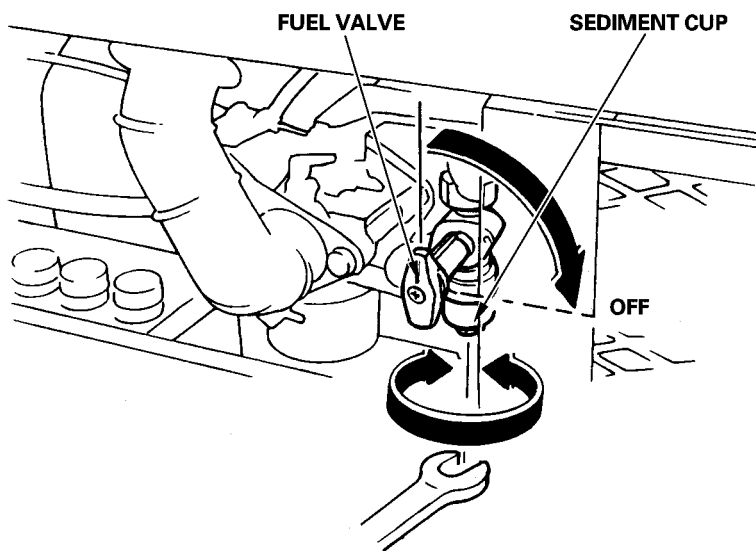
PLUG WRENCH



FUEL SEDIMENT CUP CLEANING

The sediment cup prevents dirt or water which may be in the fuel tank from entering the carburetor. If the engine has not been run for a long time, the sediment cup should be cleaned.

1. Turn the two lock pins and open the side cover.
2. Turn the fuel valve OFF. Remove the sediment cup.
3. Clean the cup thoroughly.
4. Reassemble. Do not damage the O-ring.
5. Close the side cover and lock with the lock pins.



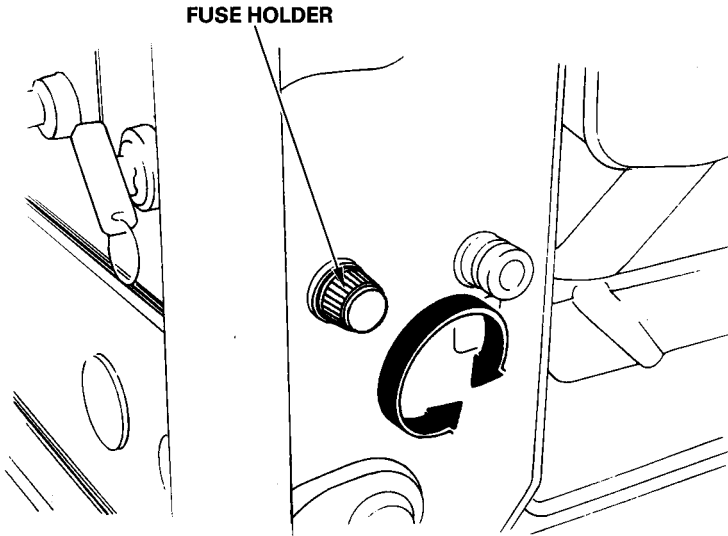
FUSE REPLACEMENT

If the fuse is blown, the engine will not start until it is replaced.

1. Turn the engine switch OFF.
2. Remove the fuse holder and replace the fuse. Use only a 15A fuse.

NOTICE

- *If frequent fuse failure occurs, determine the cause and correct the problem before attempting to operate the generator further.*
- *Never use a fuse with a different rating from that specified. Serious damage to the electrical system or fire may result.*



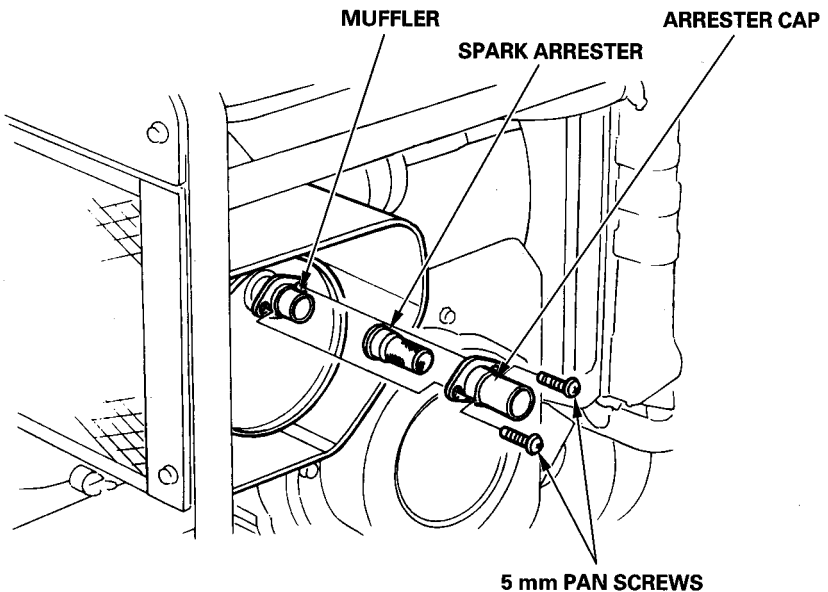
SPARK ARRESTER MAINTENANCE

If the generator has been running, the muffler will be very hot. Allow it to cool before proceeding.

NOTICE

The spark arrester must be serviced every 100 hours to maintain its efficiency.

1. Loosen the two 5 mm pan screws on the arrester cap.
2. Remove the arrester cap, then pull out spark arrester, taking care not to damage the wire mesh.
3. Inspect the spark arrester, and clean if necessary. Use a brush to remove deposits from the spark arrester screen. The spark arrester must be free of breaks and holes. Replace if necessary.
4. Check the muffler exhaust port for carbon deposits; clean if necessary.
5. Install the spark arrester and arrester cap on the muffler.
6. Tighten two 5 mm pan screws to the arrester cap.



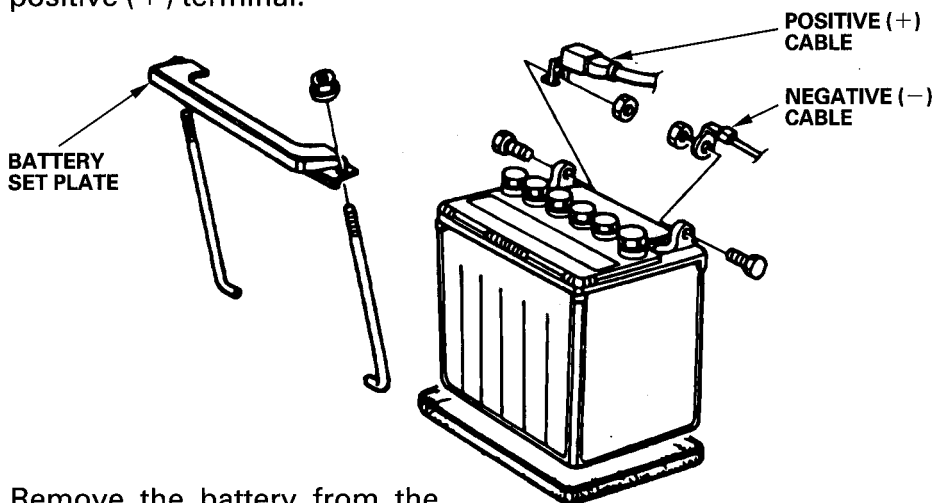
BATTERY

The generator's engine has a 3 amp charging system to charge the battery while the engine is running. If the generator is only used periodically, the battery must be charged monthly to maintain the battery service life.

A lead acid battery self discharges at a rate of 0.5—1.0% per day. This means that the battery, if the generator is not operated in a month, can discharge as much as 30% in the same period. This could cause the engine not to crank or shorten the service life of the battery. To charge the battery, follow the procedures below.

Removal:

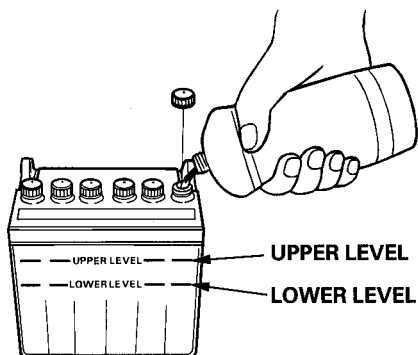
1. Remove the battery set plate.
2. Remove the negative (–) cable from the battery negative (–) terminal; then remove the positive (+) cable from the battery positive (+) terminal.



3. Remove the battery from the battery tray.

Inspection:

1. Remove the battery cell caps.
2. Inspect the electrolyte level of each cell. The electrolyte level must be maintained between the UPPER and LOWER level marks.
3. If the electrolyte level is near the LOWER mark, add distilled water as necessary.



Charging:

The battery is rated at 14AH (ampere-hour). 10% of the ampere-hour rating should be used as the charging current. A battery charger should be used that can be adjusted to deliver 1.4 amps.

⚠ WARNING

The battery gives off explosive gasses; keep sparks, flames and cigarettes away from the battery while charging. Provide adequate ventilation when charging.

- **The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.**
 - **If electrolyte gets on your skin, flush with water.**
 - **If electrolyte gets in your eyes, flush with water for at least 15 minutes and call a physician immediately.**
- **Electrolyte is poisonous.**
 - **If swallowed, drink large quantities of water or milk and follow with milk of magnesia or vegetable oil and call a physician.**
- **Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.**
- **KEEP OUT OF REACH OF CHILDREN.**

1. Remove the battery cell caps.
2. Connect the battery charger following the manufacturer's instructions.
3. Charge the battery 3–4 hours.
4. After the battery is charged, inspect the electrolyte level in each of the cells. Add distilled water as necessary.
5. Install the battery caps.
6. Clean the outside of the battery and the battery tray compartment with a solution of baking soda and water.

Installation:

1. Install the battery in the generator.
2. Install the positive (+) cable to the battery positive (+) terminal; then install the negative (–) cable to the battery negative (–) terminal.
3. Install the battery set plate.
4. Close and latch the battery cover.

TRANSPORTING/STORAGE

When transporting the generator, turn the engine switch and the fuel valve OFF. Keep the generator level to prevent fuel spillage. Fuel vapor or spilled fuel may ignite.

▲WARNING

Contact with a hot engine or exhaust system can cause serious burns or fires. Let the engine cool before transporting or storing the generator.

Take care not to drop or strike the generator when transporting. Do not place heavy objects on the generator.

Before storing the unit for an extended period:

1. Be sure the storage area is free of excessive humidity and dust.
2. Service according to the table below:

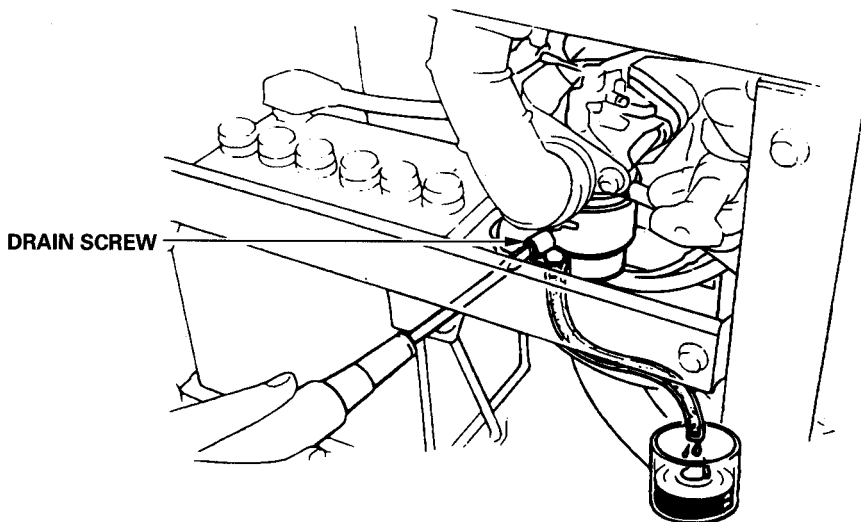
STORAGE TIME	RECOMMENDED SERVICE PROCEDURE TO PREVENT HARD STARTING
Less than 1 month	No preparation required
1 to 2 months	Fill with fresh gasoline and add gasoline conditioner *.
2 months to 1 year	Fill with fresh gasoline and add gasoline conditioner *. Drain the carburetor float bowl. (page 46). Drain the fuel sediment cup. (page 40).
1 year or more	Fill with fresh gasoline and add gasoline conditioner *. Drain the carburetor float bowl. (page 46). Drain the fuel sediment cup. (page 40). Remove the spark plugs. Pour a tablespoon (5–10 cc) of clean engine oil into each cylinder. Using the electric starter, crank the engine a few revolutions to distribute the oil in the cylinders. Reinstall the spark plugs. Change the engine oil. (page 36). After removal from storage, drain the stored gasoline into a suitable container, and fill with fresh gasoline before starting.
*Use gasoline conditioners that are formulated to extend storage life. Contact your authorized Honda generator dealer for conditioner recommendations.	

Storage Procedure

1. Drain the carburetor by loosening the drain screw. Drain the gasoline into a suitable container.

▲WARNING

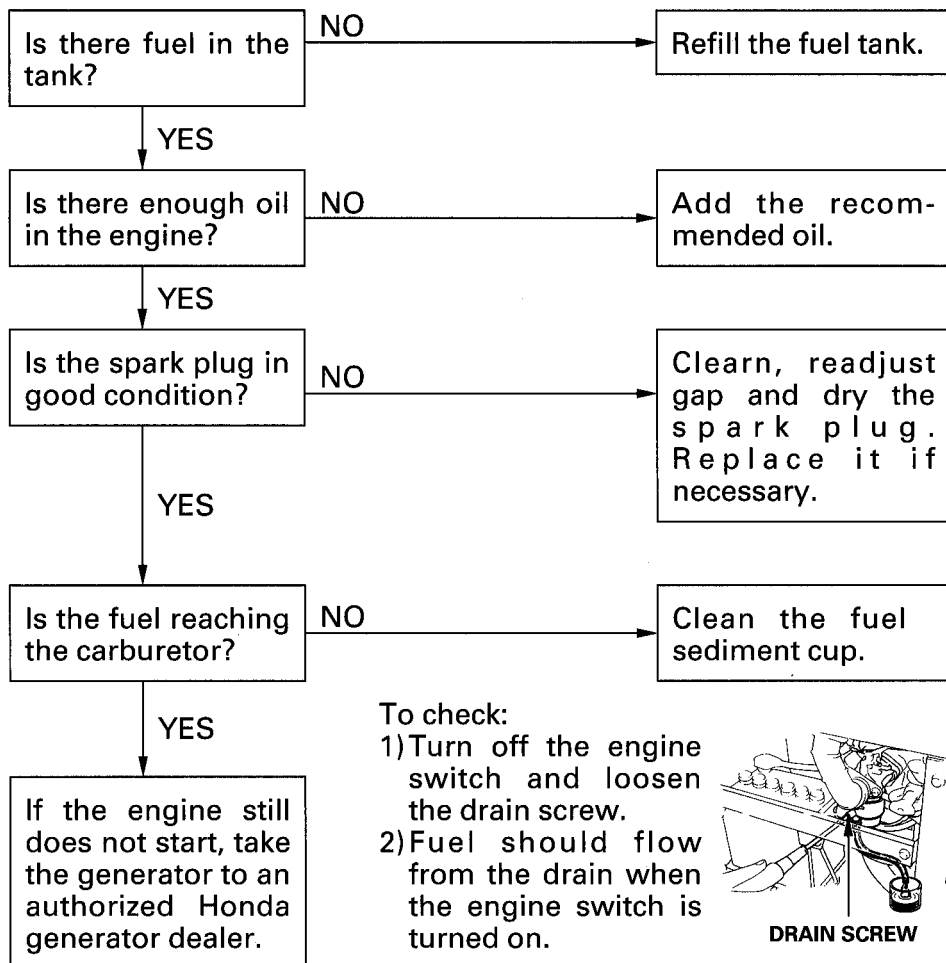
Gasoline is extremely flammable and is explosive under certain conditions. Perform this task in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area during this procedure.



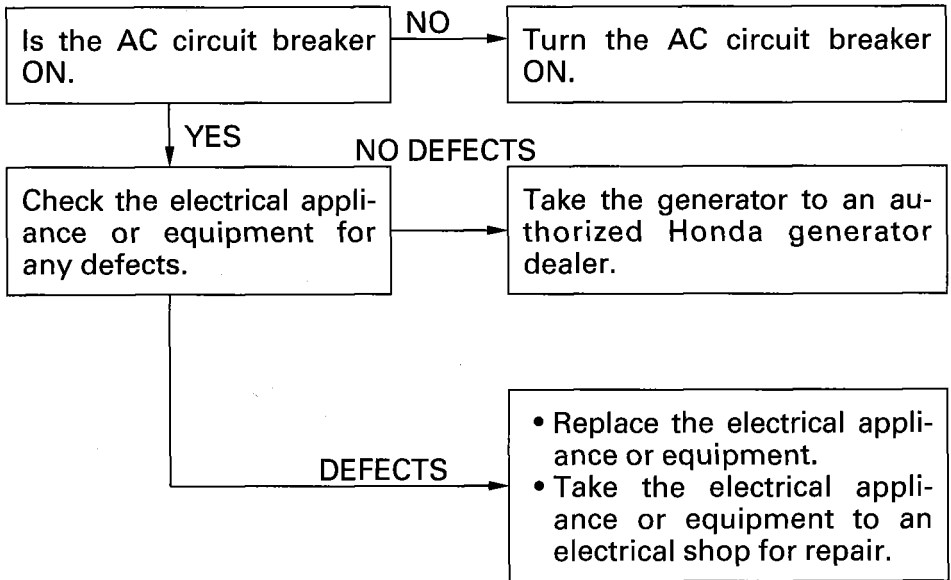
2. Change the engine oil.
3. Remove the spark plugs, and pour about a tablespoon of clean engine oil into each cylinder. Crank the engine several revolutions to distribute the oil, then reinstall the spark plugs.
4. Once a month, recharge the battery (see page 43).

TROUBLESHOOTING

When the engine will not start:



No electricity at the AC receptacles:



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	IG	E	BAT	ST	AS	S	G	FS
OFF								
ON								
START								

Bl	BLACK	Br	BROWN
Y	YELLOW	O	ORANGE
Bu	BLUE	Lb	LIGHT BLUE
G	GREEN	Lg	LIGHT GREEN
R	RED	P	PINK
W	WHITE	Gr	GRAY

COLOUR COMB - COLOUR MARKING

SPECIFICATIONS

Dimensions

Model	ES6500 K2
Length	45.3 in (1,150 mm)
Width	28.0 in (710 mm)
Height	26.8 in (680 mm)
Dry weight	273 lbs (124 kg)

Engine

Model	GX360 K1
Engine Type	4-Stroke, O. H. C. 2 cylinder
Displacement [Bore x Stroke]	21.9 cu-in (359 cm ³) [2.3 × 2.7 in (58 × 68 mm)]
Compression Ratio	8.5 : 1
Engine Speed	3,600 rpm
Cooling System	Liquid-cooling
Coolant Capacity	2.1 US qt (2.0 ℓ , 1.8 Imp qt)
Ignition System	Transistorized magneto
Oil Capacity	1.5 US qt (1.4 ℓ , 1.2 Imp qt)
Fuel Tank Capacity	4.36 US gal (16.5 ℓ , 3.63 Imp gal)
Spark Plug	BPR6HS (NGK)

Generator

Model		ES6500
Type		2-pole, revolving magnetic field type
AC output	Rated voltage	120/240 V
	Rated frequency	60 Hz
	Rated ampere	50.0/25.0 A
	Rated output	6.0 kVA
	Maximum output	6.5 kVA

Tune-up Specifications

ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.024 – 0.028 in (0.60 – 0.70 mm)	Refer to page: 39
Valve clearance	IN: 0.12 ± 0.02 mm (cold) EX: 0.20 ± 0.02 mm (cold)	See your authorized Honda dealer
Other specifications	No other adjustments needed.	

NOTE:

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

CUSTOMER SERVICE INFORMATION

Servicing dealership personnel are trained professionals. They should be able to answer any questions 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 to:

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

Or telephone: (770) 497-6400

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

- Model and serial number (see pages 8 and 9)
- Name of dealer who sold the generator to you
- Name and address of dealer who services your generator
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem

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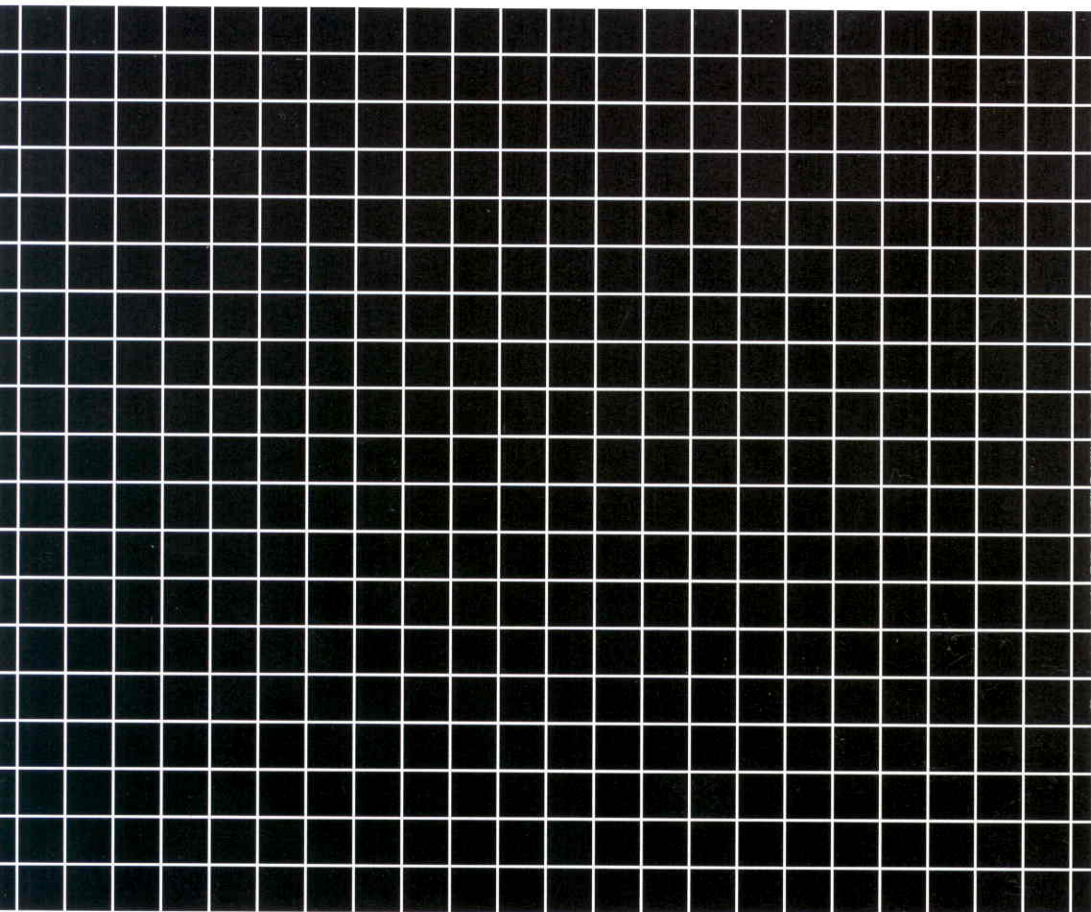
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The Power of Dreams



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