

HONDA

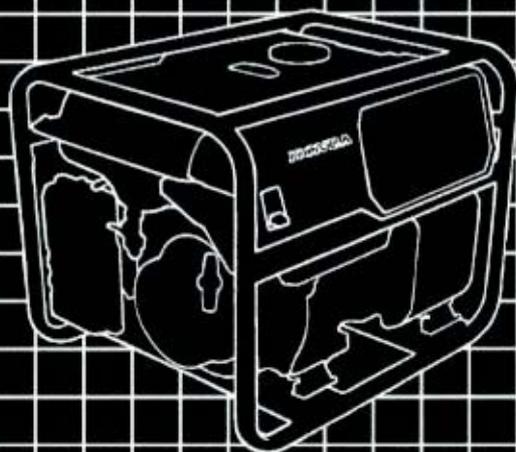
Power

Equipment

Owner's Manual

GENERATOR

EM1800X/EM2500X





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.

SAFETY	5
Safety Label Locations	5
Safety Information	7
COMPONENT IDENTIFICATION	9
CONTROLS	11
Engine Switch	11
Recoil Starter	11
Fuel Valve Lever	12
Choke Lever	12
AC Circuit Breaker	13
Oil Alert® System	14
Ground Terminal	14
Volt Meter	15
Voltage Adjustment Knob	15
DC Terminals	16
DC Circuit Protector	16
GENERATOR USE	17
Connections to a Building Electrical System	17
Ground System	17
Special Requirements	17
AC Applications	18
AC Operation	19
DC Operation	20
High Altitude Operation	22
PRE-OPERATION CHECK	23
Engine Oil	23
Refueling	24
Fuel Recommendations	25
STARTING THE ENGINE	27
STOPPING THE ENGINE	28

MAINTENANCE	29
The Importance of Maintenance	29
Maintenance Safety	30
Emission Control System Information	31
Air Index	33
Maintenance Schedule	34
Engine Oil Change	35
Air Cleaner Service	36
Fuel Sediment Cup Cleaning	37
Spark Plug Service	38
Spark Arrester Maintenance	40
TRANSPORTING/STORAGE	42
Transporting	42
Storage	43
TROUBLESHOOTING	45
WIRING DIAGRAM	47
SPECIFICATIONS	48
WARRANTY SERVICE INFORMATION	49
INDEX	50

SAFETY LABEL LOCATIONS

These labels warn you of potential hazards that can cause serious injury. Read them carefully.

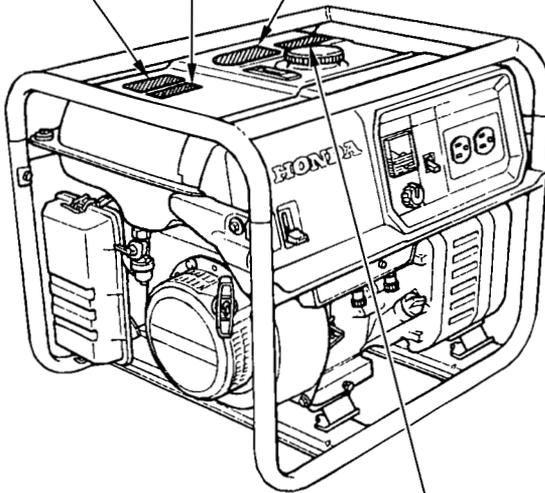
If a label comes off or becomes hard to read, contact your Honda generator dealer for a replacement.

WARNING
USING THE GENERATOR IN RAIN, SNOW OR NEAR WATER CAN LEAD TO DEATH FROM ELECTRIC SHOCK. KEEP GENERATOR DRY.

WARNING
ELECTROCUTION OR PROPERTY DAMAGE CAN OCCUR. DO NOT CONNECT THIS GENERATOR TO ANY BUILDING'S ELECTRICAL SYSTEM UNLESS AN ISOLATION SWITCH HAS BEEN INSTALLED BY A LICENSED ELECTRICIAN. READ OWNER'S MANUAL CAREFULLY.



■ CHECK FOR SPILLED FUEL OR FUEL LEAKS. STOP ENGINE BEFORE REFUELING.
■ CONTRÔLER QU'IL N'Y A NI FUITE NI ESSENCE RÉPANDUE SUR L'APPAREIL. ARRÊTER LE MOTEUR AVANT DE REFAIRE LE PLEIN.
■ INSPECCIONAR PARA COMBUSTIBLE DERRAMADO O ESCAPE. PARAR MOTOR ANTES DE ECHAR.



WARNING DO NOT USE INDOORS. EXHAUST GAS CONTAINS POISONOUS CARBON MONOXIDE.

ATTENTION NE PAS UTILISER DANS UN ENDROIT FERMÉ A CAUSE DU RISQUE D'EMPOISONNEMENT DU GAZ.

ATENCIÓN NO LO USE EN LUGARES CERRADOS PORQUE EL MONOXIDO DE CARBONO ES VENENOSO.

EM2500X HONDA MOTOR CO., LTD.

MADE IN JAPAN (A)

CAUTION

■ BE SURE TO FILL CRANKCASE WITH RECOMMENDED OIL BEFORE USING. FOR DETAILED EXPLANATION, SEE THE OWNER'S MANUAL.

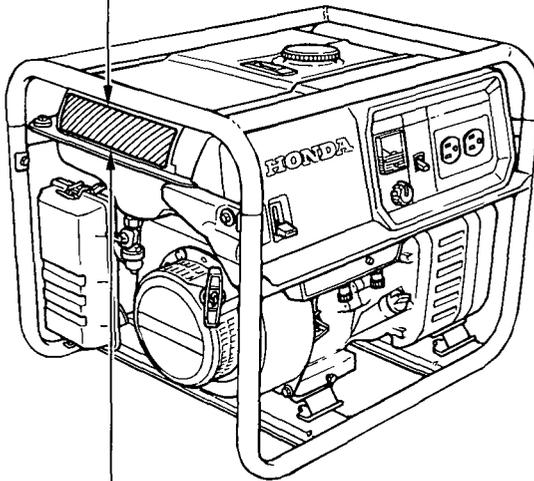
AC

VOLTAGE 120V
 FREQUENCY 60Hz
 RATED OUTPUT 2.3kVA
 MAX. OUTPUT 2.5kVA
 PHASE 1∅

DC

VOLTAGE 12V
 CURRENT 8.3A

FUEL GASOLINE (PETROL)

**EM1800X HONDA MOTOR CO., LTD.**

MADE IN JAPAN (A)

CAUTION

■ BE SURE TO FILL CRANKCASE WITH RECOMMENDED OIL BEFORE USING. FOR DETAILED EXPLANATION, SEE THE OWNER'S MANUAL.

AC

VOLTAGE 120V
 FREQUENCY 60Hz
 RATED OUTPUT 1.5kVA
 MAX. OUTPUT 1.8kVA
 PHASE 1∅

DC

VOLTAGE 12V
 CURRENT 8.3A

FUEL GASOLINE (PETROL)

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.

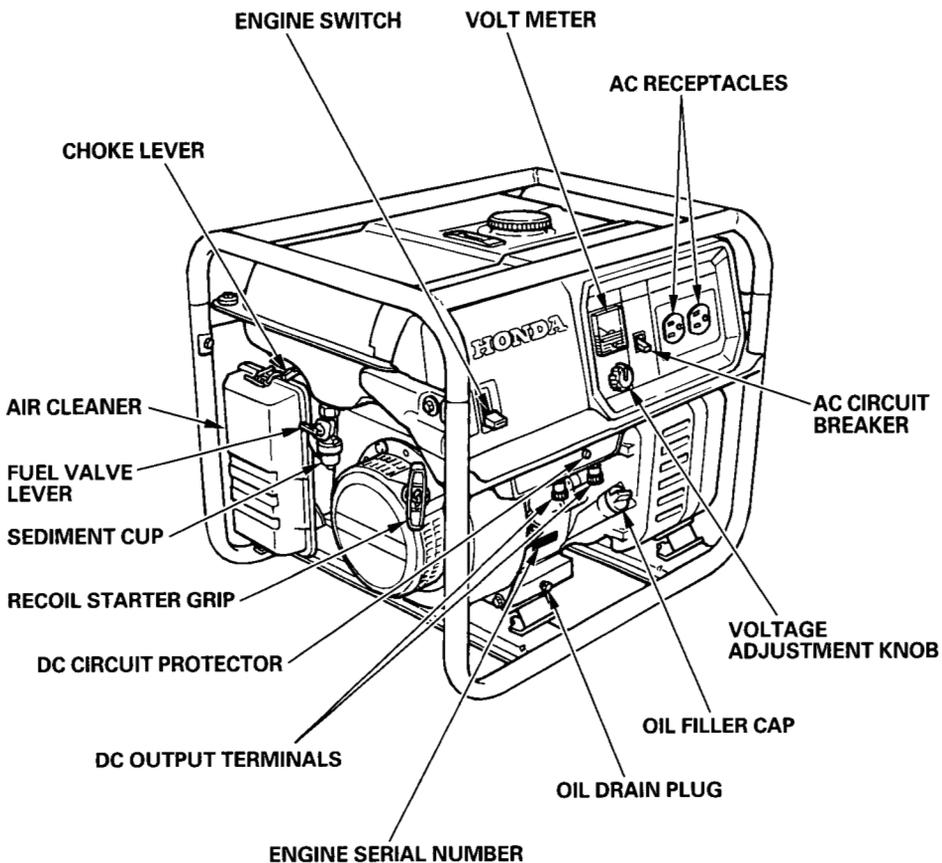
Electric Shock Hazards

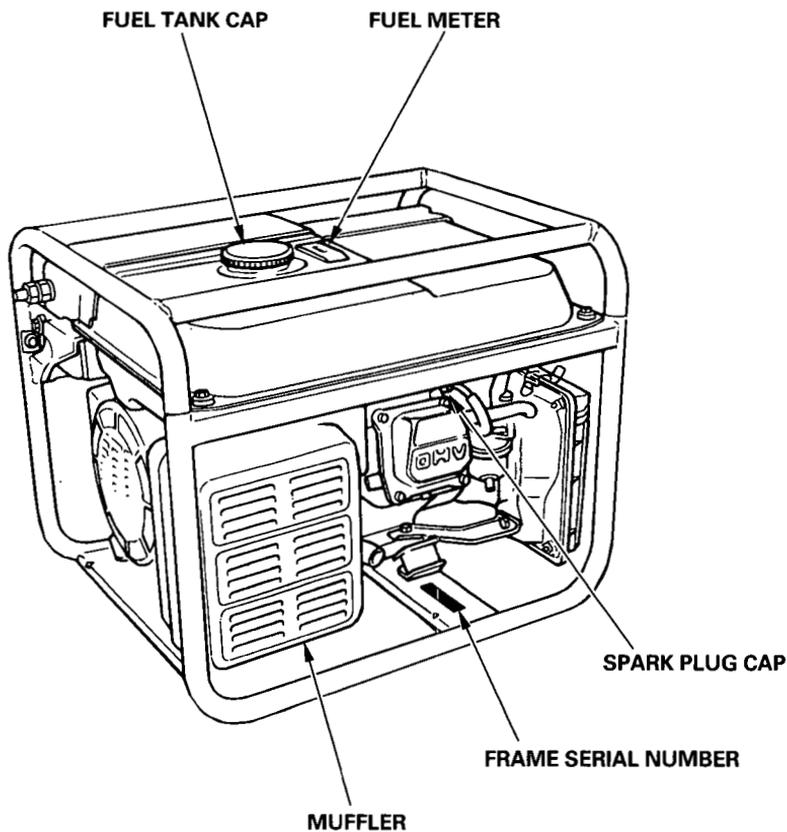
- The generator produces enough electric power to cause a serious shock or electrocution if misused.
- Using a generator or electrical appliance in wet conditions, such as rain or snow, or near a pool or sprinkler system, or when your hands are wet, could result in electrocution. Keep the generator dry.
- 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





*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 49).

Frame serial number: _____

Engine serial number: _____

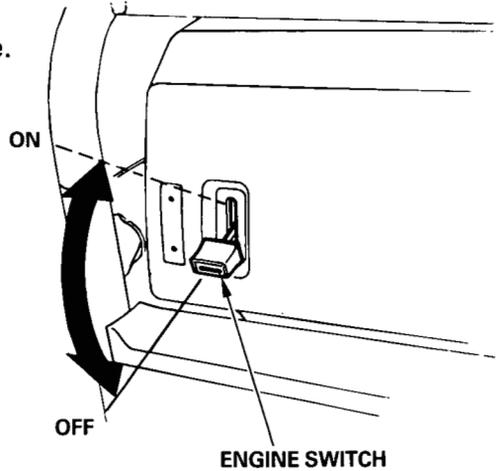
ENGINE SWITCH

To start and stop the engine.

Switch position:

OFF: To stop the engine.

ON: To start and run the engine.

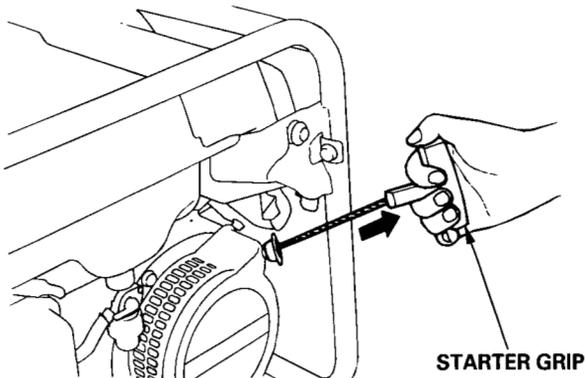


RECOIL STARTER

To start the engine, pull the starter grip lightly until resistance is felt, then pull briskly.

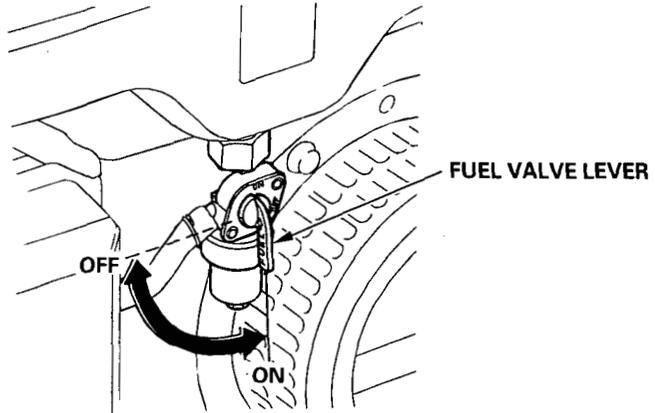
NOTICE

Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.



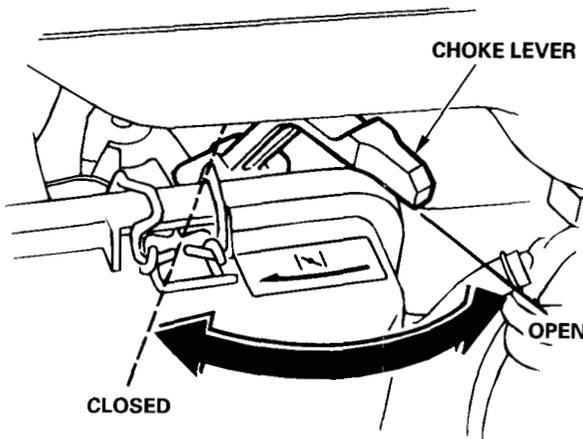
FUEL VALVE LEVER

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



CHOKE LEVER

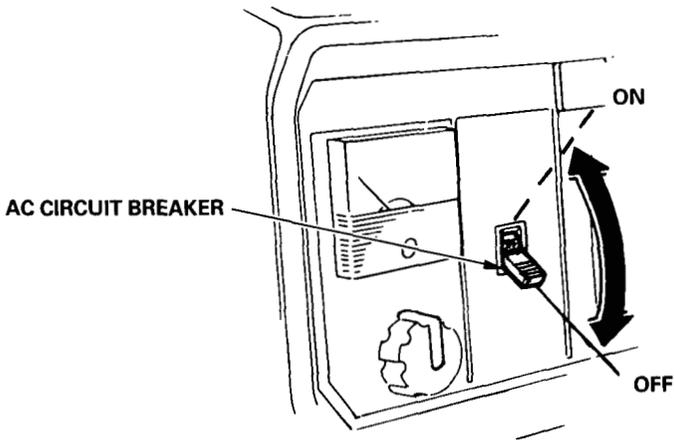
The choke is used to provide proper starting mixture when the engine is cold. It can be opened and closed by operating the choke lever manually. Move the choke lever to the CLOSED position to enrich the mixture for cold starting.



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.

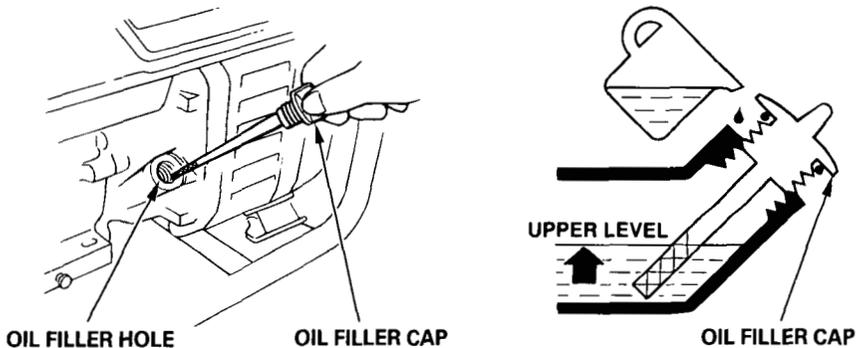
The AC circuit breaker may be used to switch the generator AC power ON or OFF.



OIL ALERT® SYSTEM

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® system will automatically stop the engine (the engine switch will remain in the ON position).

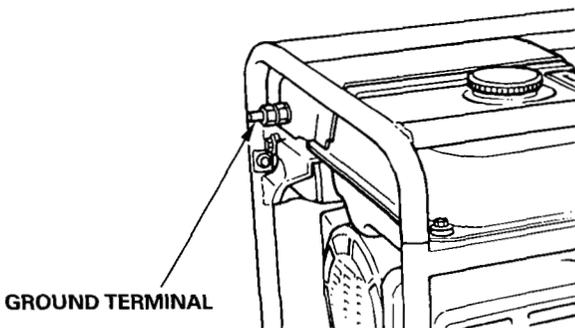
If the engine stops and will not restart, check the engine oil level (see page 23) before troubleshooting in other areas.



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.

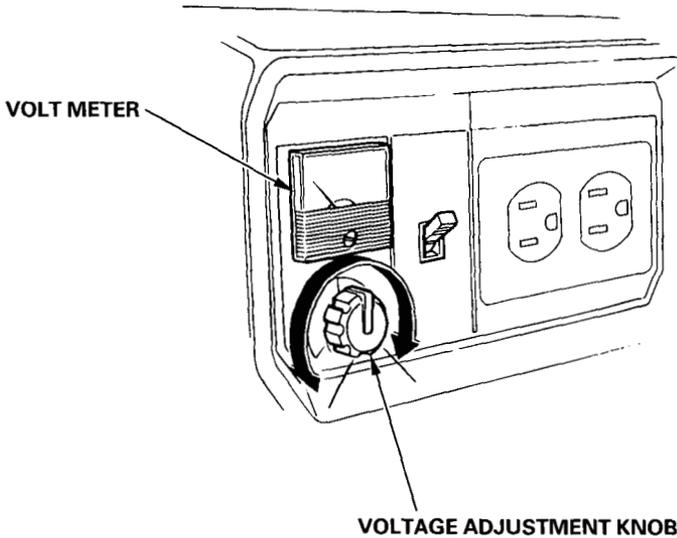


VOLT METER

The volt meter displays the voltage the generator is producing.

VOLTAGE ADJUSTMENT KNOB

Although voltage adjustment is usually not required, fine adjustments may be made by turning the voltage adjustment knob. Use the generator at the specified voltage (120 V).



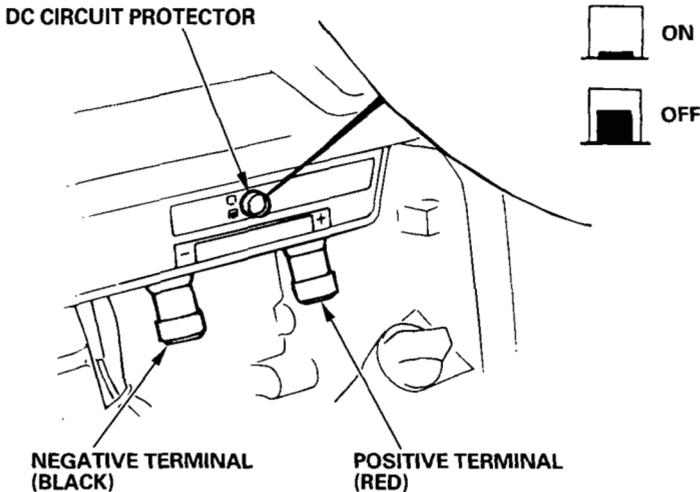
DC TERMINALS

The DC terminals may ONLY be used for charging 12 volt automotive type batteries.

The terminals are colored red to identify the positive (+) terminal and black to identify the negative (-) terminal. The battery must be connected to the generator DC terminals with the proper polarity (battery positive to generator red terminal and battery negative to the generator black terminal).

DC CIRCUIT PROTECTOR

The DC circuit protector automatically shuts off the DC battery charging circuit when the DC charging circuit is overloaded, when there is a problem with the battery, or when the connections between the battery and the generator are improper.



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.

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

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

EM1800X: 1.8 kVA
EM2500X: 2.5 kVA

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

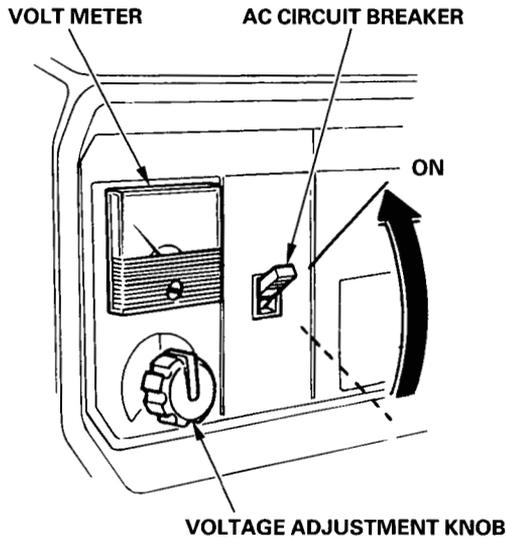
EM1800X: 1.5 kVA
EM2500X: 2.3 kVA

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 27) and switch ON the AC circuit breaker.
2. Plug in the appliance.
3. Make sure that the voltmeter indicates the specified voltage.
If not, adjust with the voltage adjustment knob.

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, the AC circuit breaker will automatically switch OFF. If the AC circuit breaker is switched OFF automatically, current to the connected appliance(s) will shut off. Stop the engine and investigate the problem.

Determine if the cause is a short circuit in a connected appliance or an overload. 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 power cord of the appliance.

DC OPERATION

The DC terminals may ONLY be used for charging 12 volt automotive type batteries.

Connecting the battery charging cables:

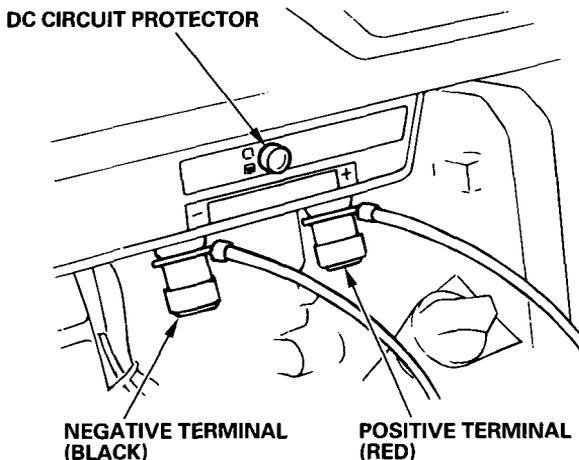
1. Before connecting the battery charging cable to a battery that is installed in a vehicle, disconnect the vehicle ground battery cable from the battery negative (-) terminal.

⚠ WARNING

A battery can explode if you do not follow the correct procedure, seriously injuring anyone nearby.

Keep all sparks, open flames, and smoking materials away from the battery.

2. Connect the positive (+) battery charging cable to the battery positive (+) terminal and the other end to the generator positive (+) terminal.
3. Connect the negative (-) battery charging cable to the generator negative (-) terminal and the other end to the battery negative (-) terminal.



4. Start the generator.

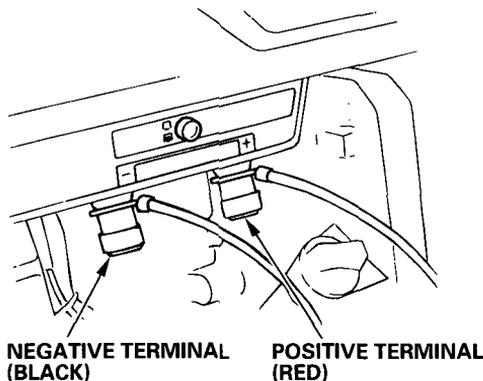
NOTICE

Do not start the vehicle while the battery charging cables are connected and the generator is running. The vehicle or the generator may be damaged.

An overloaded DC circuit, excessive current draw by the battery, or a wiring problem will trip the DC circuit protector (PUSH button extends out). If this happens, wait a few minutes before pushing in the circuit protector to resume operation. If the circuit protector continues to go OFF, discontinue charging and see your authorized Honda generator dealer.

Disconnecting the battery charging cables:

1. Stop the engine.
2. Disconnect the negative (–) battery charging cable from the battery negative (–) terminal.
3. Disconnect the other end of the negative (–) battery charging cable from the generator negative (–) terminal.
4. Disconnect the positive (+) battery charging cable from the battery positive (+) terminal.
5. Disconnect the other end of the positive (+) battery charging cable from the generator positive (+) terminal.
6. Connect the vehicle ground battery cable to the battery negative (–) terminal.



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

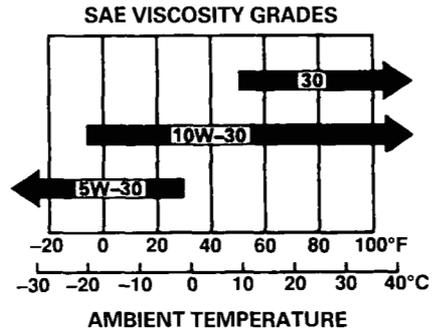
ENGINE OIL

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.

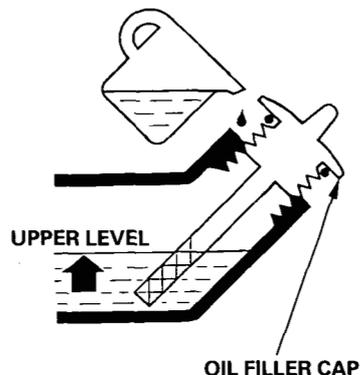
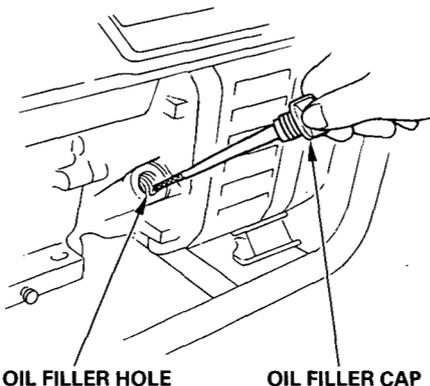
Check the oil level **BEFORE EACH USE** with the generator on a level surface and the engine stopped.

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 letters 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 wipe the dipstick clean.
2. Check the oil level by inserting the dipstick into the filler neck without screwing it in.
3. If the level is low, add the recommended oil to the upper mark on the dipstick.



REFUELING

Fuel tank capacity:

2.91 US gal (11.0 ℓ , 2.42 Imp gal)

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

▲WARNING

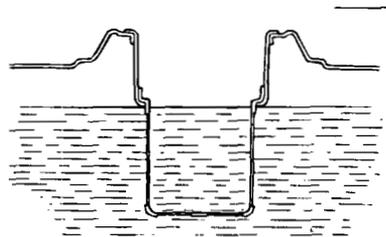
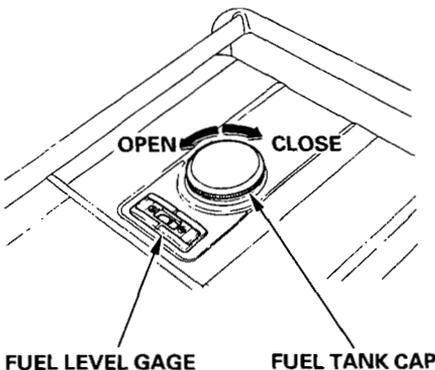
Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

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

Refuel in a well-ventilated area with the engine stopped. If the engine has been running, allow it to cool first. Refuel carefully to avoid spilling fuel. Do not fill above the fuel strainer shoulder. After refueling, tighten the fuel tank cap securely.

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.



FUEL RECOMMENDATIONS

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.

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.

STARTING THE ENGINE

STARTING THE ENGINE

1. Make sure that the AC circuit breaker is in the OFF position. The generator may be hard to start if a load is connected.
2. Turn the fuel valve lever to the ON position.
3. To start a cold engine, move the choke lever to the CLOSED position. To restart a warm engine, leave the choke lever in the OPEN position.
4. Turn the engine switch to the ON position.
5. Pull the starter grip lightly until resistance is felt, then pull briskly.

NOTICE

Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter or housing.

6. If the choke lever was moved to the CLOSED position to start the engine, gradually move it to the OPEN position as the engine warms up.

STOPPING THE ENGINE

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. Turn the AC circuit breaker to the OFF position.
Unplug appliances from the generator AC receptacles.
2. Turn the engine switch to the OFF position.
Disconnect DC battery charging cables (see page 21).
3. Turn the fuel valve lever to the OFF position.

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.

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.

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.

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 34 . 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 Emissions 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.
●	Engine oil	Check level Change	○	○	○	
●	Air filter	Check Clean Replace	○	○(1)		○(*)
●	Sediment cup	Clean			○	
●	Spark plug	Check-adjust Replace			○	○
	Spark arrester	Clean			○	
●	Idle speed	Check-adjust				○(2)
●	Valve clearance	Check-adjust				○(2)
●	Combustion chamber	Clean	Every 500 Hrs (2)			
●	Fuel tank and filter	Clean			○(2)	
●	Fuel line	Check	Every 2 years (Replace if necessary) (2)			

NOTE: ● Emission related items.

(*) Replace paper element type only.

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

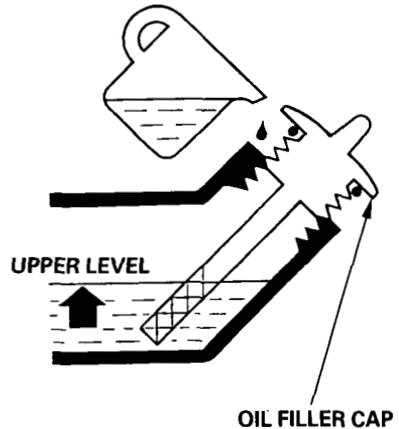
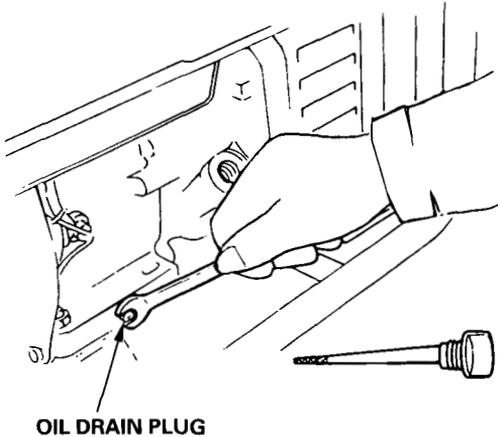
(2) These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient.

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

ENGINE OIL CHANGE

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

1. Remove the oil drain plug and sealing washer, remove the oil filler cap, and drain the oil.



2. Reinstall the oil drain plug and sealing washer. Tighten the plug securely.
3. Refill with the recommended oil (see page 23) and check the oil level.

Oil capacity: 0.63 US qt (0.60 ℓ , 0.53 Imp qt)

4. Reinstall the oil filler cap and tighten it securely.

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

NOTICE

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

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.

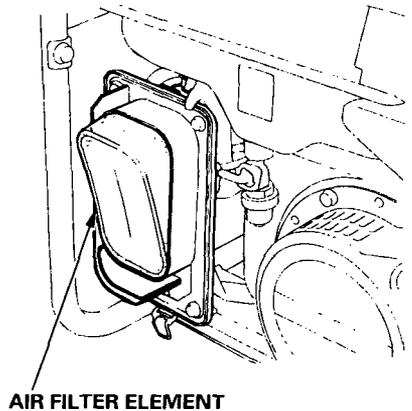
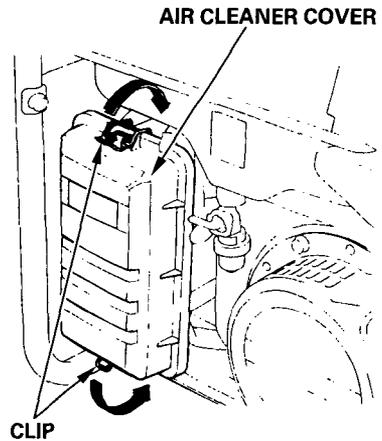
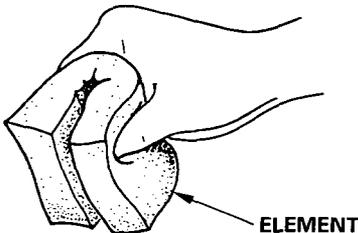
▲WARNING

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.

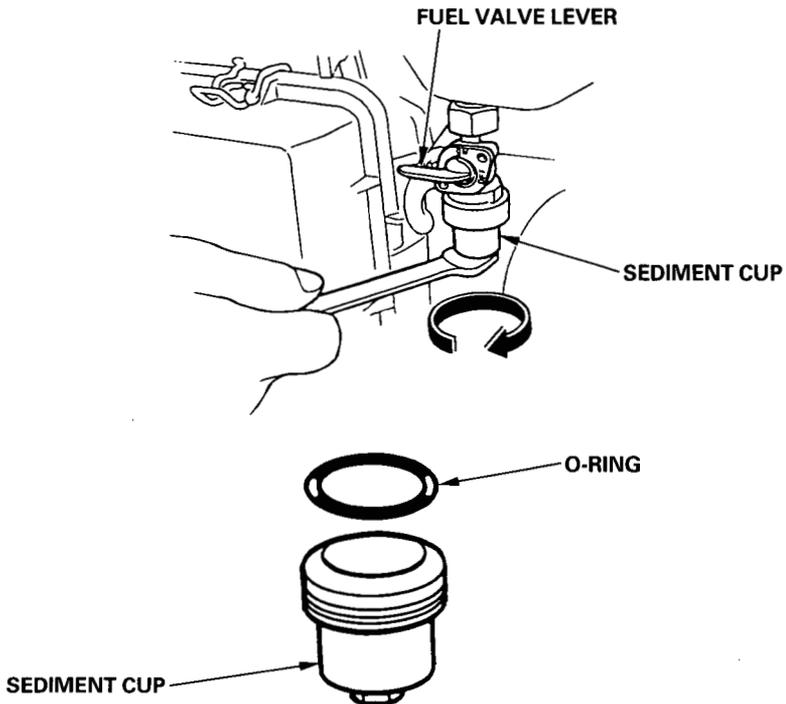
1. Unsnap the air cleaner cover clips and remove the air cleaner cover, and remove the element.
2. Wash the air filter in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flashpoint solvent. Allow the air filter to dry thoroughly.
3. Soak the air filter in clean engine oil and squeeze out the excess oil. The engine will smoke during initial startup if too much oil is left in the air filter.
4. Reinstall the air filter element and the cover.



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 engine switch to the OFF position.
2. Turn the fuel valve lever to the OFF position.
3. Remove the sediment cup by turning it counterclockwise.
4. Clean the sediment cup and O-ring in nonflammable or high flash point solvent.
5. Reinstall the O-ring and sediment cup.
6. Turn the fuel valve lever ON and check for leaks.



SPARK PLUG SERVICE

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

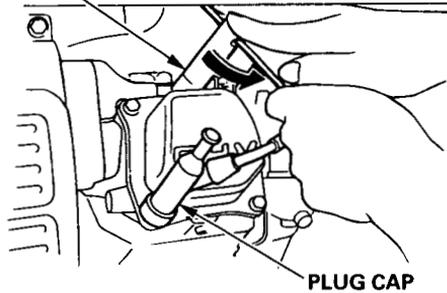
Recommended spark plugs: BPR6ES (NGK)
W20EPR-U (DENSO)

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

If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

1. Remove the spark plug cap.
2. Clean any dirt from around the spark plug base.
3. Use a spark plug wrench to remove the spark plug.

SPARK PLUG WRENCH

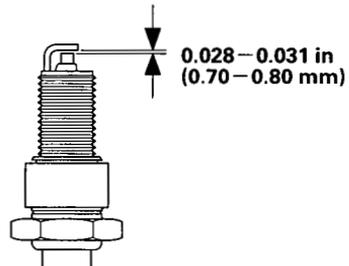


4. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.

5. Measure the plug gap with a feeler gauge.
Correct as necessary by carefully bending the side electrode.

The gap should be:

0.028–0.031 in (0.70–0.80 mm)



-
6. Check that the spark plug washer is in good condition, and thread the spark plug in by hand to prevent cross-threading.
 7. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.

If installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer. If reinstalling a used spark plug, tighten 1/8–1/4 turn after the spark plug seats to compress the washer.

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.

8. Reinstall the spark plug cap on the spark plug securely.

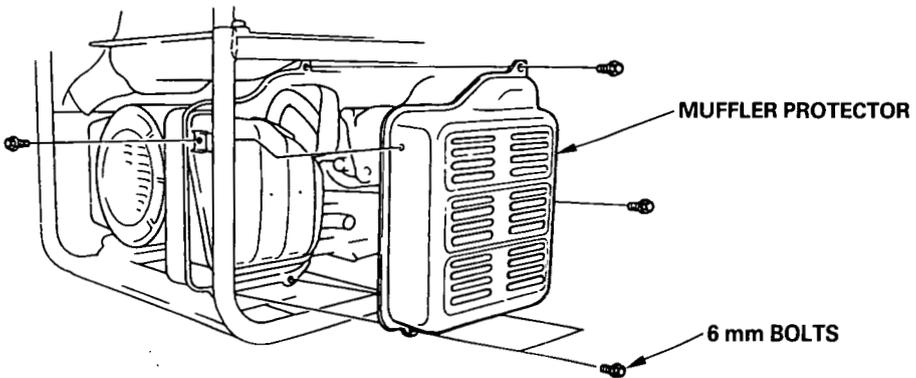
SPARK ARRESTER MAINTENANCE

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

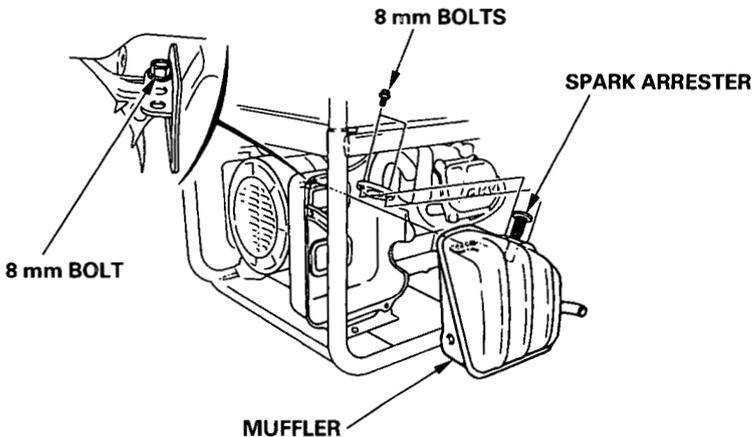
The spark arrester must be serviced every 100 hours to maintain its efficiency.

Clean the spark arrester as follows:

1. Remove the five 6 mm bolts, and remove the muffler protector.



2. Remove the two 8 mm bolts at the exhaust pipe and 8 mm bolt at the muffler stay.
Remove the muffler and spark arrester.



-
3. Use a brush to remove carbon deposits from the spark arrester screen.



4. Inspect the screen for breaks or tears and replace it if necessary.
5. Check the muffler gasket; replace if damaged. Reinstall the muffler gasket, the spark arrester, the muffler and the muffler protector in the reverse order of removal.

TRANSPORTING/STORAGE

TRANSPORTING

If the generator has been used, allow it 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 material.

When transporting the generator, turn the engine switch and the fuel valve lever OFF, and keep the generator level to reduce the possibility of fuel leakage.

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

STORAGE

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 44). Drain the fuel sediment cup. (page 37).
1 year or more	Fill with fresh gasoline and add gasoline conditioner *. Drain the carburetor float bowl. (page 44). Drain the fuel sediment cup. (page 37). Remove the spark plug. Put a tablespoon of engine oil into the cylinder. Turn the engine slowly with the starter grip to distribute the oil. Reinstall the spark plug. Change the engine oil. (page 35). 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

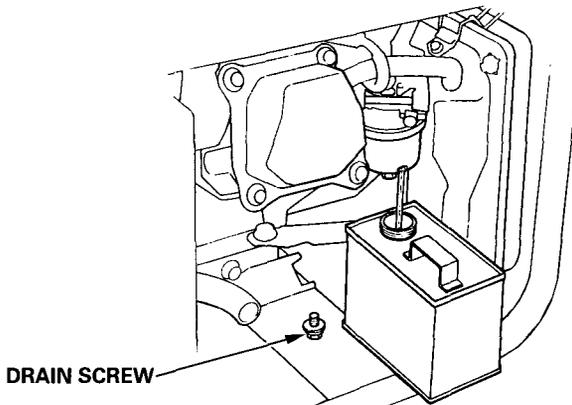
1. Drain the fuel tank, the carburetor and the fuel sediment cup.

- a. Remove the carburetor drain screw.
- b. Drain the gasoline from the carburetor into a suitable container.
- c. Install and tighten the carburetor drain screw.
- d. Turn the fuel valve lever off and drain the fuel sediment cup.
- e. Turn the fuel valve lever on and drain the gasoline from the fuel tank into a suitable container.
- f. Install and tighten the fuel sediment cup securely.
- g. Turn the fuel valve lever off.

▲WARNING

Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- **Keep heat, sparks, and flame away.**
- **Handle fuel only outdoors.**
- **Wipe up spills immediately.**

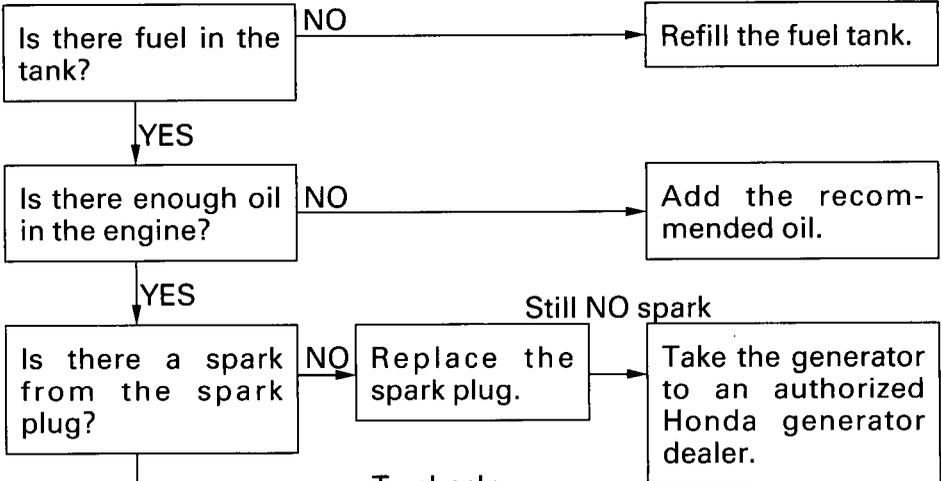


2. Change the engine oil (page 35).

3. Remove the spark plug, and pour about a tablespoon of clean engine oil into the cylinder. Crank the engine several revolutions to distribute the oil, then reinstall the spark plug.

4. 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.

When the engine will not start:



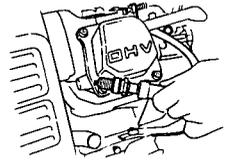
⚠WARNING

Be sure there is no spilled fuel around the spark plug. Spilled fuel may ignite.

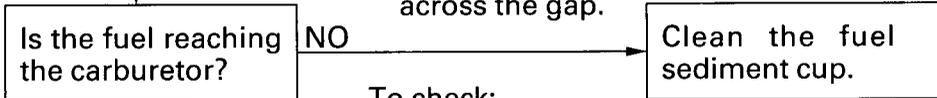
Still NO spark

To check:

- 1) Remove the spark plug cap and clean any dirt from around the spark plug.
- 2) Remove the spark plug and install the spark plug in the plug cap.
- 3) Set the plug side electrode on the cylinder head.
- 4) Crank the engine, sparks should jump across the gap.

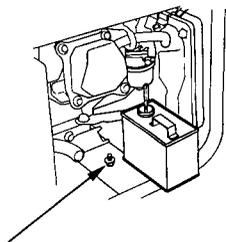


YES



To check:

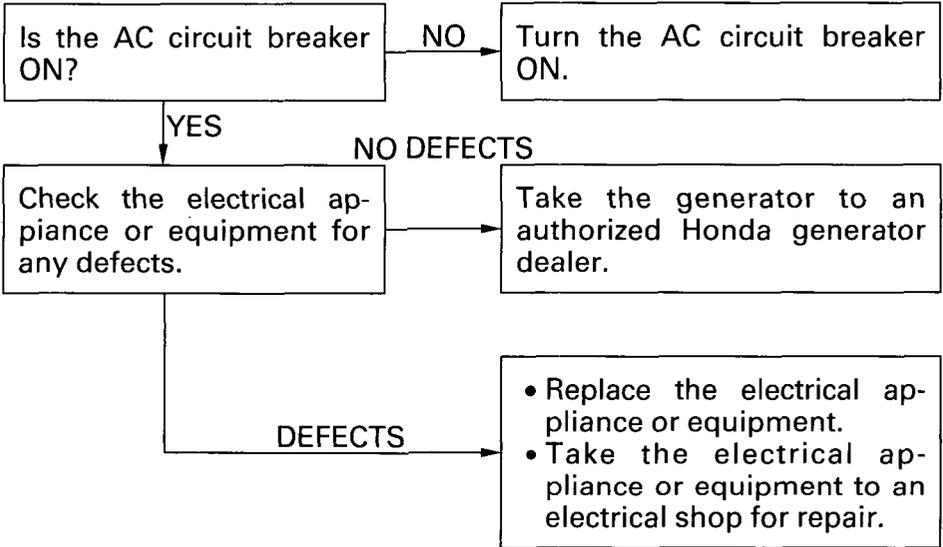
- 1) Turn off the fuel valve lever and remove the drain screw.
- 2) Turn on the fuel valve lever. Fuel should flow from the drain.



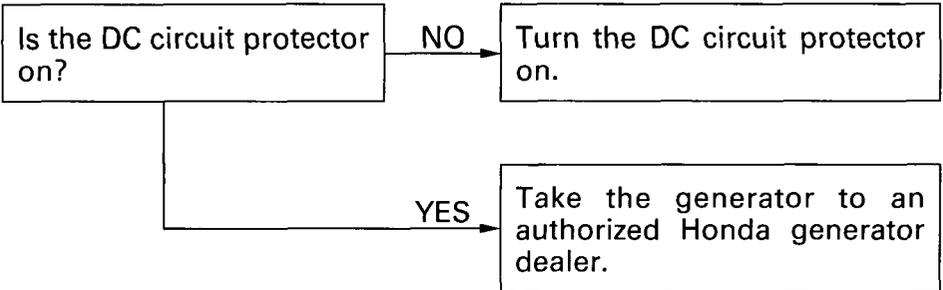
DRAIN SCREW

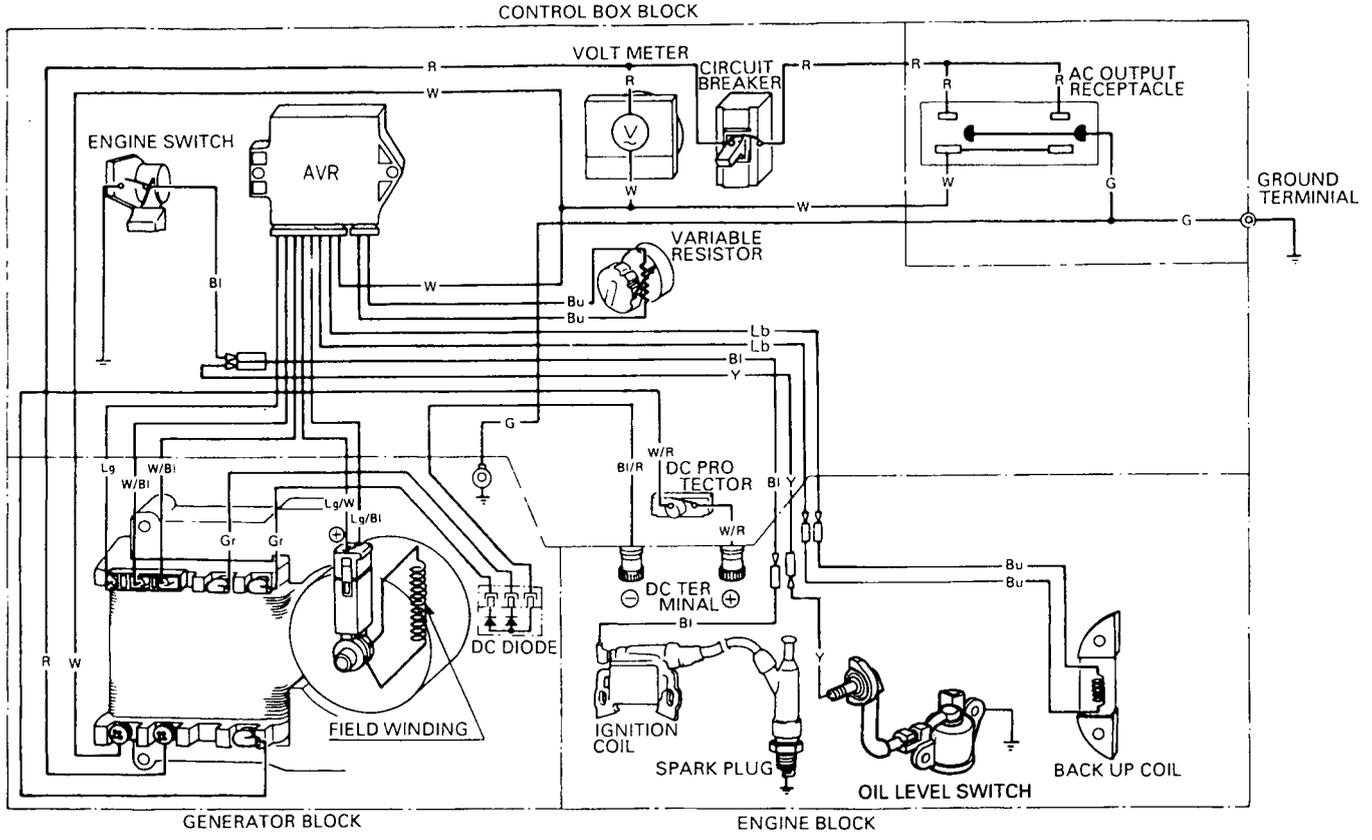
If the engine still does not start, take the generator to an authorized Honda generator dealer.

Appliance does not operate:



No electricity at the DC terminals:





WIRING DIAGRAM

SPECIFICATIONS

Dimensions

Model	EM1800X	EM2500X
Power product description code	EZCK	EZCN
Length	19.9 in (505 mm)	
Width	16.5 in (420 mm)	
Height	16.5 in (420 mm)	
Dry weight	91.5 lbs (41.5 kg)	98.1 lbs (44.5 kg)

Engine

Model	GX160K1
Engine Type	4-stroke, overhead valve, single cylinder
Displacement [Bore x Stroke]	9.9 cu-in (163 cm ³) [2.7 × 1.8 in (68 × 45 mm)]
Compression Ratio	8.5 : 1
Engine Speed	3,600 rpm
Cooling System	Forced air
Ignition System	Transistorized magneto
Oil Capacity	0.63 US qt (0.60 ℓ , 0.53 Imp qt)
Fuel Tank Capacity	2.91 US gal (11.0 ℓ , 2.42 Imp gal)
Spark Plug	BPR6ES (NGK) W20EPR-U (DENSO)

Generator

Model	EM1800X	EM2500X	
Type	A		
AC output	Rated voltage	120 V	
	Rated frequency	60 Hz	
	Rated Ampere	12.5 A	19.2 A
	Rated Output	1.5 kVA	2.3 kVA
	Maximum Output	1.8 kVA	2.5 kVA

Tune-up Specifications

ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.028–0.031 in (0.70–0.80 mm)	Refer to page: 38
Valve clearance	IN: 0.15 ± 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.

WARRANTY SERVICE INFORMATION

Servicing 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 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 9 and 10)
- 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

INDEX

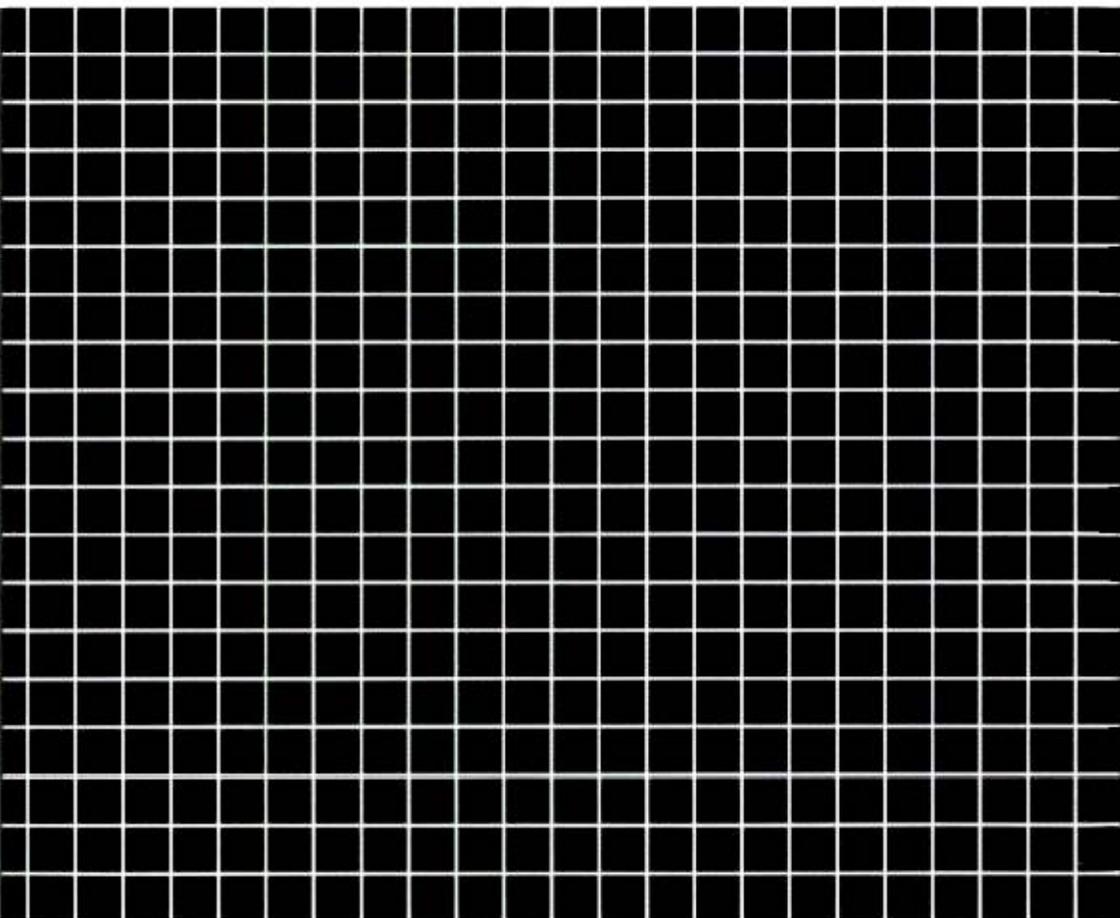
COMPONENT IDENTIFICATION	9
CONTENTS	3
CONTROLS	11
AC Circuit Breaker	13
Choke Lever	12
DC Circuit Protector	16
DC Terminals	16
Engine Switch	11
Fuel Valva Lever	12
Ground Terminal	14
Oil Alert® System	14
Recoil Starter	11
Voltage Adjustment Knob	15
Volt Meter	15
GENERATOR USE	17
AC Applications	18
AC Operation	19
Connections to a Building Electrical System	17
DC Operation	20
Ground System	17
High Altitude Operation	22
Special Requirement	17
MAINTENANCE	29
Air Cleaner Service	36
Air Index	33
Emission Control System Information	31
Engine Oil Change	35
Fuel Sediment Cup Cleaning	37
Importance of Maintenance	29
Maintenance Safety	30
Maintenance Schedule	34
Spark Arrester Maintenance	40
Spark Plug Service	38
PRE-OPERATION CHECK	23
Engine Oil	23
Fuel Recommendations	24
Refueling	23

SAFETY	5
Safety Information	7
Safety Label Locations	5
SPECIFICATIONS	48
STARTING THE ENGINE	27
STOPPING THE ENGINE	28
TRANSPORTING/STORAGE	42
Storage	43
Transporting	42
TROUBLESHOOTING	45
WARRANTY SERVICE INFORMATION	49
WIRING DIAGRAM	47

MEMO

HONDA

The Power of Dreams



31ZB1615
00X31-ZB1-6150

EM3 K1 (AH) (美) (Y) (HC) 1000.2001.07
Printed in Japan