

HONDA

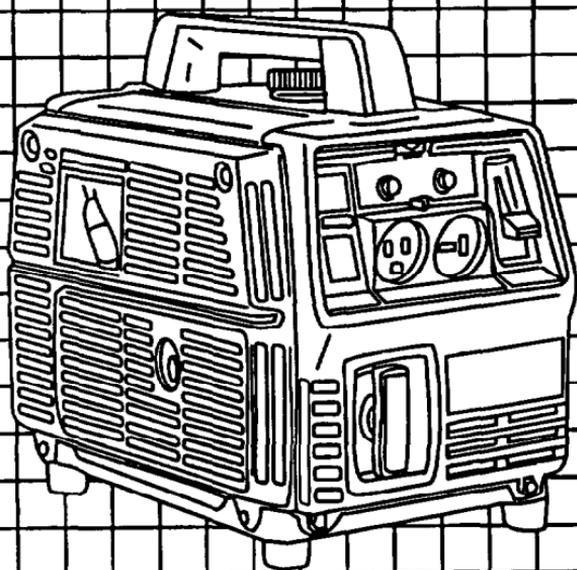
Power

Equipment

Owner's Manual

Generator

EM500 • EM600



Thank you for purchasing a Honda generator.

This manual covers operation and maintenance of the EM500 and EM600 generators. All information in this publication is based on the latest product information available at the time of approval for printing.

Honda Motor Co., Ltd. reserves the right to make changes at any time without notice and without incurring any obligation.

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This manual should be considered a permanent part of the generator and remain with the generator when sold.

Pay special attention to statements preceded by the following words:

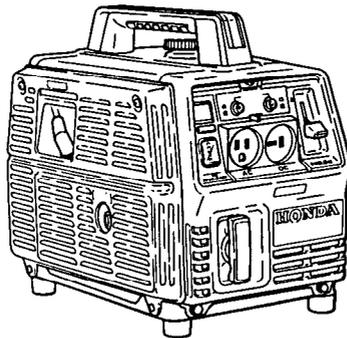
WARNING Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.

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

NOTE: Gives helpful information.

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

WARNING The Honda generator is designed to give safe and dependable service if operated according to instructions. Read and understand the Owner's Manual before operating the generator. Failure to do so could result in personal injury or equipment damage.



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WARNING

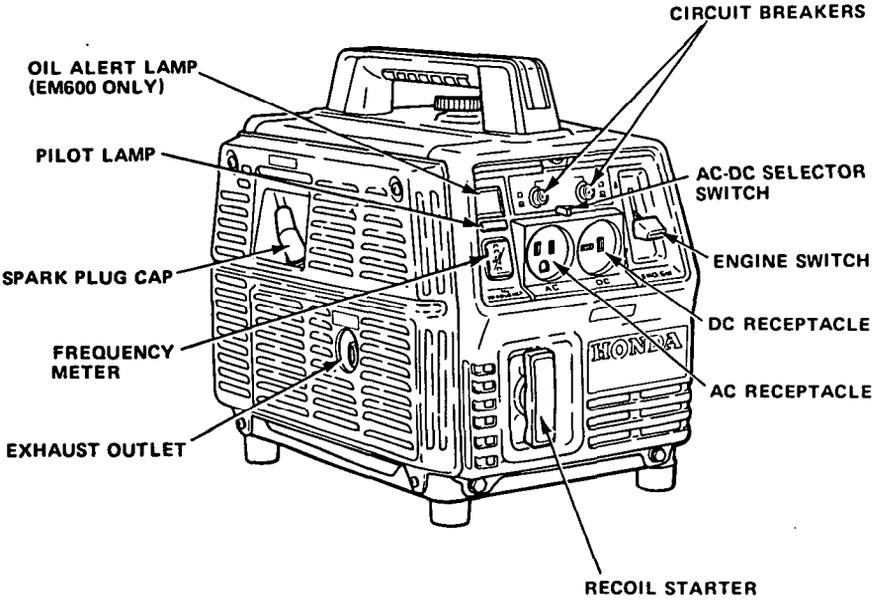
To ensure safe operation –

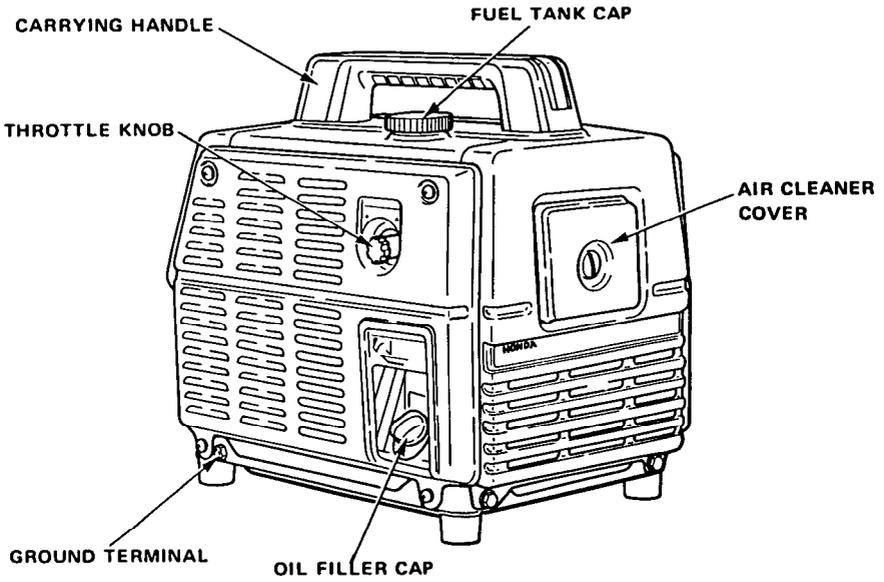
- Place the generator at least 1 m (3 ft) away from buildings or other equipment when operating the generator.
- Operate the generator on a level surface.
If the generator is tilted, fuel spillage may result.
- Exhaust gas contains poisonous carbon monoxide.
Never run the generator in an enclosed area.
Be sure to provide adequate ventilation.
- Know how to stop the generator quickly and understand operation of all the controls. Never permit anyone to operate the generator without proper instructions.
- Keep children and pets away from the generator when it is in operation.
- Keep away from rotating parts while the generator is running.
- The generator is a potential source of electrical shocks when misused; do not operate with wet hands.
- Do not operate the generator in rain or snow and do not let it get wet.

When charging a battery –

- Battery electrolyte contains sulphuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and call a doctor if your eyes were exposed.
- Batteries generate hydrogen gas which can be highly explosive. Do not smoke or allow flames or sparks near a battery, especially while charging it.

2. COMPONENT IDENTIFICATION





3. PRE-OPERATION CHECK

CAUTION: Be sure to check the generator on a level surface with the engine stopped.

1. Check the engine oil level.

CAUTION: Engine oil is a major factor affecting engine performance and service life. Non-detergent or vegetable oils are not recommended.

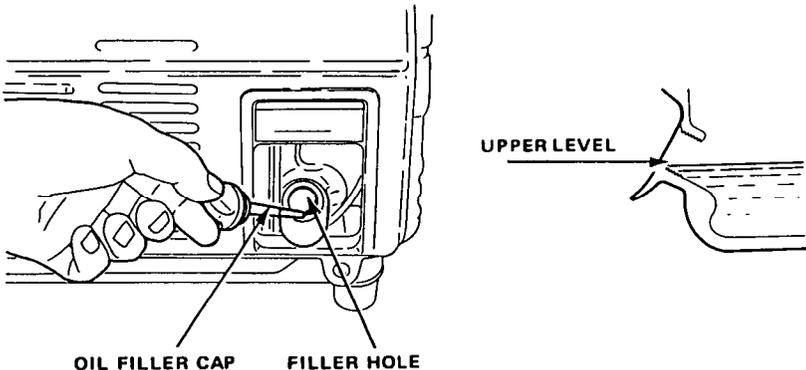
Use Honda 4-stroke oil, or an equivalent high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirements for Service Classification SE or SF. (Motor oils classified SE or SF will show this designation on the container.)

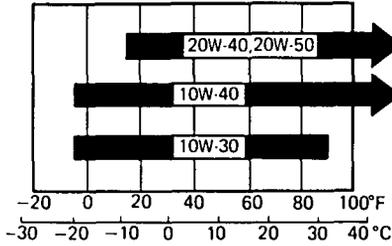
SAE 10W-40 is recommended for general, all-temperature use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

Remove the oil filler cap and check the oil level.

If the level is low, fill to the top of the oil filler neck with the recommended oil.

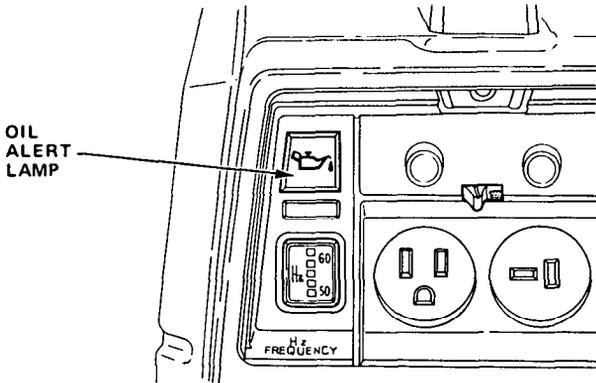
CAUTION: Running the engine with insufficient oil can cause serious engine damage.





NOTE:

- The oil alert lamp (EM600 only) will light during operation before the engine oil level becomes too low. If this occurs, stop the engine and fill to the top of the filler neck with the recommended oil (page 4).
- The oil alert lamp should always light when starting, but should go out after the engine is running if there is sufficient oil. If the lamp does not light at all, replace the bulb.



2. Check the fuel level.

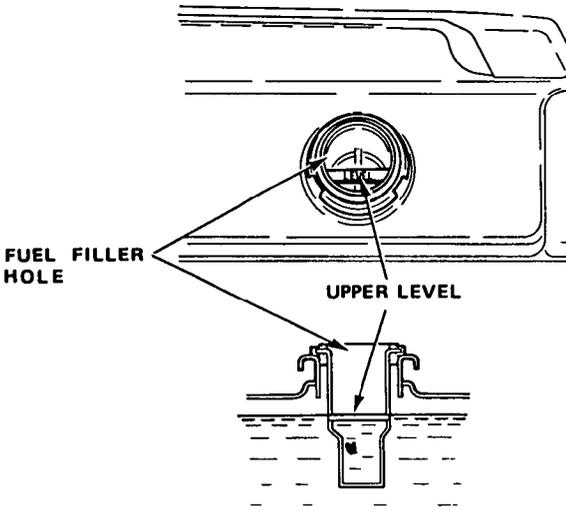
Use low lead or unleaded automotive gasoline with a pump octane rating of 86 or higher.

Never use an oil/gasoline mixture or dirty gasoline. Avoid getting dirt, dust or water in the fuel tank.

CAUTION: Gasoline substitutes are not recommended; they may be harmful to the fuel system components.

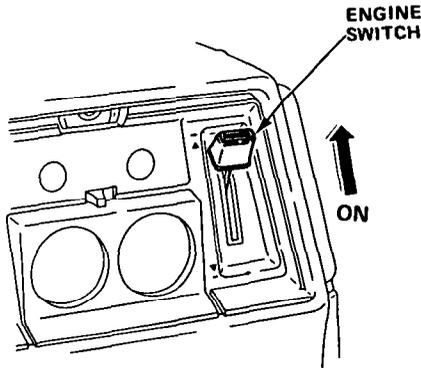
⚠ WARNING

- Gasoline is extremely flammable and explosive under certain conditions. Refuel in a well ventilated area with the engine stopped.
- Do not smoke or allow flames or sparks in the area where the generator is refueled or where gasoline is stored.
- Do not overfill the tank and make sure the filler cap is securely closed after refueling.
- Be careful not to spill fuel when refueling. Fuel vapor or spilled fuel may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

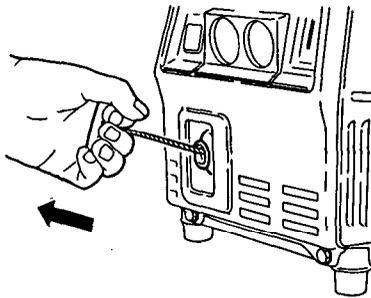


4. STARTING THE ENGINE

1. Disconnect the load from the AC or DC receptacle.
2. Move the engine switch to "ON".



3. Pull the starter rope lightly until resistance is felt, then pull briskly.

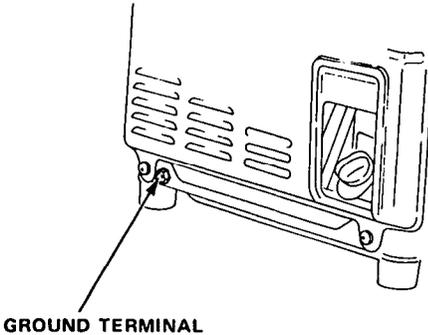


CAUTION: Do not allow the starter grip to snap back against the generator. Return it gently to prevent damage to the housing.

NOTE: Make sure the pilot lamp comes on. If not, the filament may be burnt out.

5. GENERATOR USE

⚠ WARNING To prevent electrical shock from faulty appliances, the generator should be grounded. Connect a length of heavy wire between the ground terminal and the ground source.



CAUTION:

- Limit operation requiring maximum power (EM500: 500VA, EM600: 600VA) to 30 minutes.
For continuous operation, do not exceed the rated power of 400VA (EM500) and 450VA (EM600).
- Do not exceed the current limit specified for any one receptacle.
- Do not connect the generator to a household circuit. This could cause damage to the generator or to electrical appliances in the house.

NOTE:

- The EM500/EM600 generate both AC and DC power, but they cannot be used at the same time. The interlock selector switch prevents simultaneous use.
- Most appliance motors require more than their rated wattage for start-up. If the required starting wattage exceeds 100W, the AC circuit will be overloaded.

AC operation

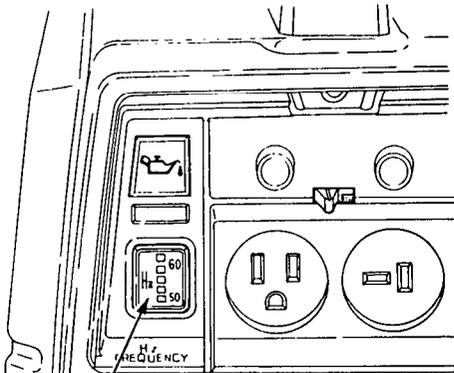
1. Start the engine and make sure the pilot lamp comes on. If not, the filament may be burnt out.
2. Move the selector switch to the AC position.
3. Plug in the appliance.

CAUTION: Be sure that appliances do not exceed the rated load for more than 30 minutes, and never exceed the maximum load. Substantial overloading will switch off the circuit breaker. Lesser overloading will not switch off the circuit breaker and will shorten the service life of the generator.

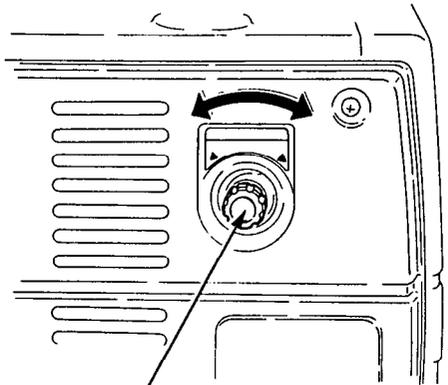
4. Check the frequency meter to verify that the generator is operating at 60Hz. If it is not, turn the throttle knob to increase or decrease engine speed until the correct frequency is obtained (meter bar next to 60 will vibrate).

NOTE:

- An overloaded AC circuit will trip the AC circuit breaker. If this occurs, wait a few minutes before pushing the circuit breaker to resume operation.



FREQUENCY METER



THROTTLE KNOB

DC operation

Start the engine and move the selector switch to the DC position. The DC receptacle may be used for charging 12 volt automotive-type batteries only.

WARNING Batteries produce explosive gases. Keep sparks, flames, and cigarettes away. To prevent the possibility of creating a spark near the battery, connect the charging cord first to the battery, then to the generator, and disconnect the cord first at the generator.

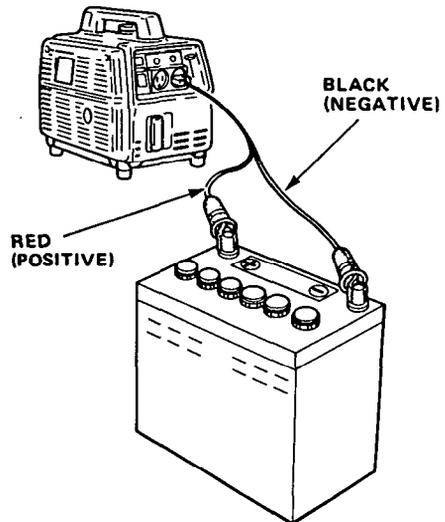
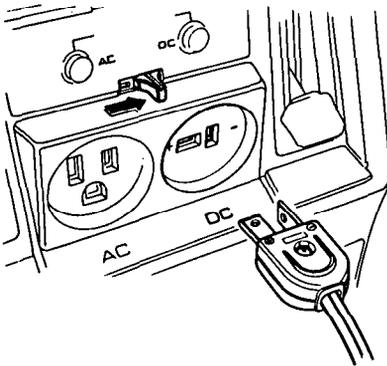
WARNING Disconnect the vehicle's grounded battery cable first, and after charging, reconnect the grounded cable last. This procedure will prevent the possibility of a short circuit and sparks if your tools accidentally make contact between a battery terminal and the vehicle's frame or body.

CAUTION:

- Do not attempt to start an automobile engine with the generator still connected to the battery. The generator may be damaged.
- Connect the positive battery terminal to the positive charging cord. Do not reverse the charging cables, or serious damage to the generator and/or battery may occur.

NOTE:

- An overloaded DC circuit will trip the DC circuit breaker (push button comes out). If this happens, wait a few minutes before pushing the circuit breaker to resume operation.

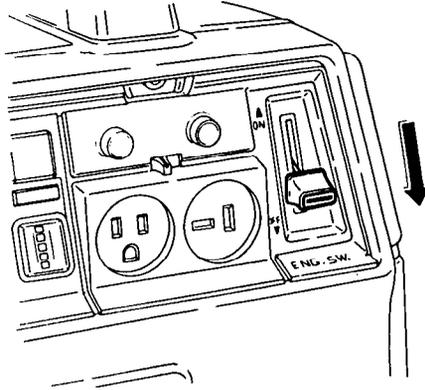


6. STOPPING THE ENGINE

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

In normal use:

1. Turn off the electrical appliance or disconnect the charging cord from the generator.
2. Move the engine switch to OFF.



● High altitude operation

At high altitude, the standard carburetor air-fuel mixture will be excessively rich. Performance will decrease, and fuel consumption will increase.

High altitude performance can be improved by installing a smaller diameter main fuel jet in the carburetor and readjusting the pilot screw. If you always operate the generator at altitudes higher than 6,000 feet above sea level, have your authorized Honda Generator dealer perform these carburetor modifications.

Even with suitable carburetor jetting, engine horsepower will decrease approximately 3.5 % for each 1,000 foot increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

CAUTION: Operation of the generator at an altitude lower than the carburetor is jetted for may result in reduced performance, overheating, and serious engine damage caused by an excessively lean air/fuel mixture.

7. MAINTENANCE

The purpose of the maintenance schedule and adjustment is to keep the generator in the best operating condition.

Inspect or service as scheduled in the table on the next page.

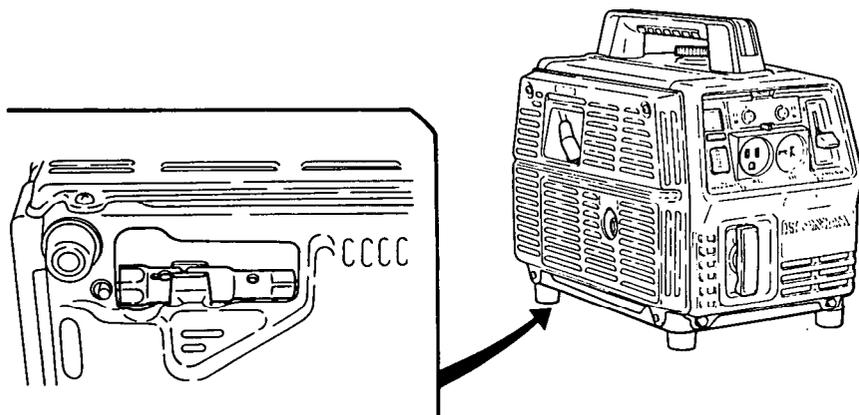
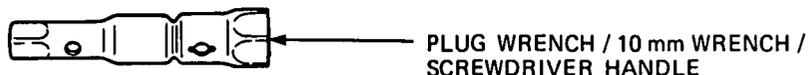
WARNING Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas.

CAUTION: Use only genuine HONDA parts or their equivalent. The use of replacement parts which are not of equivalent quality may damage the generator,

Tool kit

The screwdriver and spark plug wrench stored under the generator will enable you to perform the owner-maintenance procedures listed on page 13. The 10 mm socket end of the spark plug wrench can also be used to turn the ground terminal nut.

Always keep the tool kit with the generator.



Maintenance Schedule

REGULAR SERVICE PERIOD Perform at every indicated month or operating hour interval, whichever occurs first.		Daily	First month or 20 Hrs.	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs.
ITEM						
Engine oil	Inspection	•				
	Change		•		•	
Air cleaner element	Inspection	•				
	Cleaning			• (1)		
Fuel filter cleaning					•	
Spark plug maintenance					•	
Valve clearance adjustment						• (2)
Combustion chamber and valve cleaning						• (2)
Fuel line inspection (Replace if necessary)						•
Spark arrester		Clean every 100 operating hours.				

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

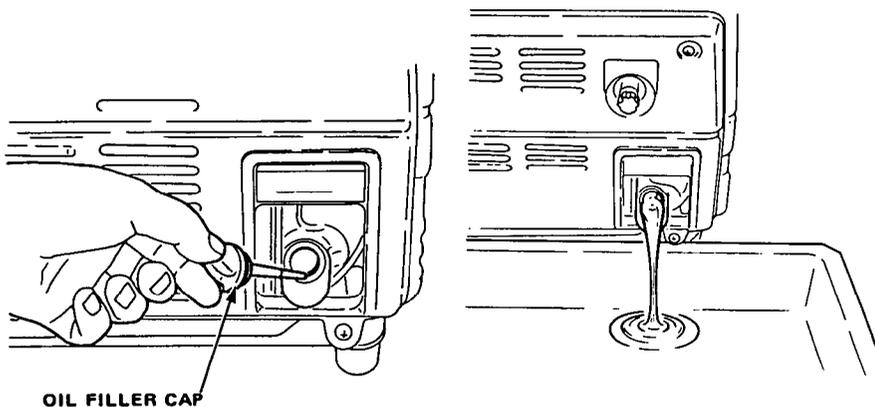
(2) : These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.

Changing oil

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

1. Remove the oil filler cap, and drain the oil.
2. Refill with the recommended oil (see page 4) and check the level.

OIL CAPACITY: 0.35ℓ (0.37 US qt)



CAUTION: Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

NOTE: 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 for reclamation. Do not throw it in the trash or pour it on the ground.

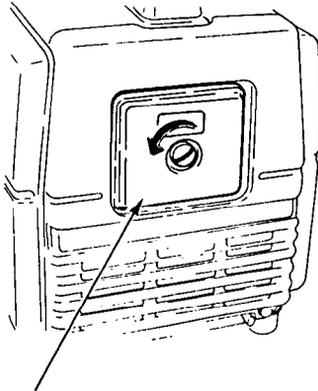
Air cleaner service

A dirty air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly (page 13). Service more frequently when operating the generator in extremely dusty areas.

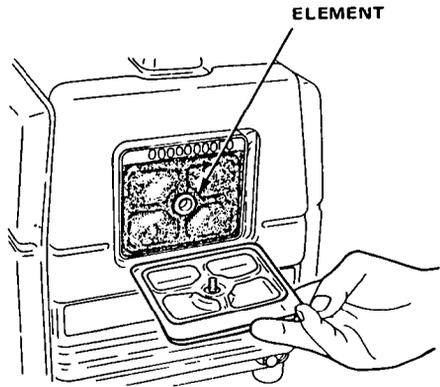
WARNING Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

CAUTION: Never run the generator without the air cleaner. Rapid engine wear may result.

1. Loosen the cover bolt, remove the air cleaner cover and remove the element.
2. Wash the element in a non-flammable or high flash point solvent and dry it thoroughly.
3. Soak the element in clean engine oil and squeeze out the excess oil.
4. Reinstall the air cleaner element and the cover.



AIR CLEANER COVER



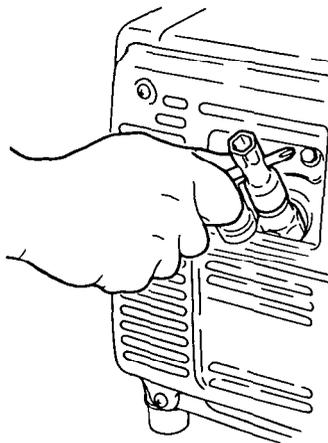
ELEMENT

Spark plug service

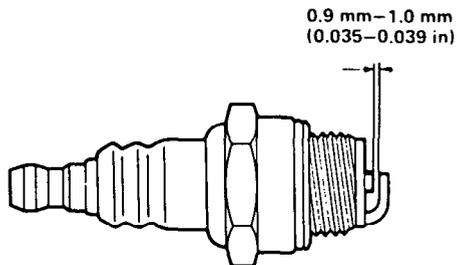
Recommended spark plug: BPMR4A-10 (NGK)
W14MPR-U10 (ND)

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

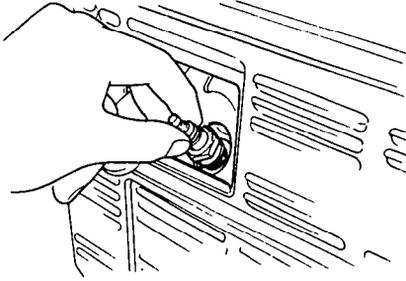
1. Remove the spark plug cap.
2. Use the wrench supplied in the tool kit to remove the spark plug.



3. 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.
4. Measure the plug gap with a feeler gauge. The gap should be 0.9–1.0 mm (0.035–0.039 in). Correct as necessary by bending the side electrode.



-
5. Attach the plug washer. Thread the plug in by hand to prevent cross-threading.



6. Tighten a new spark plug $\frac{1}{2}$ turn with the wrench to compress the washer. If you are reusing a plug, it should only take $\frac{1}{8}$ – $\frac{1}{4}$ turn after the plug seats.

CAUTION:

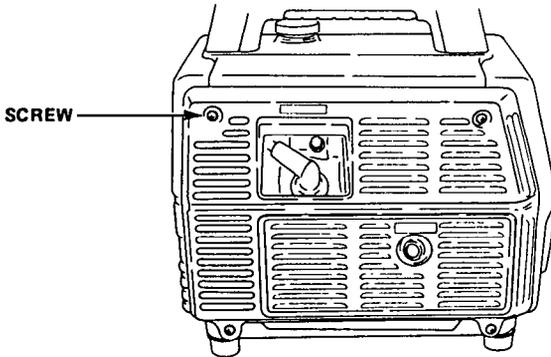
- The spark plug must be securely tightened. An improperly tightened plug can become very hot and possibly damage the generator.
- Never use a spark plug with an improper heat range.

Spark arrester maintenance

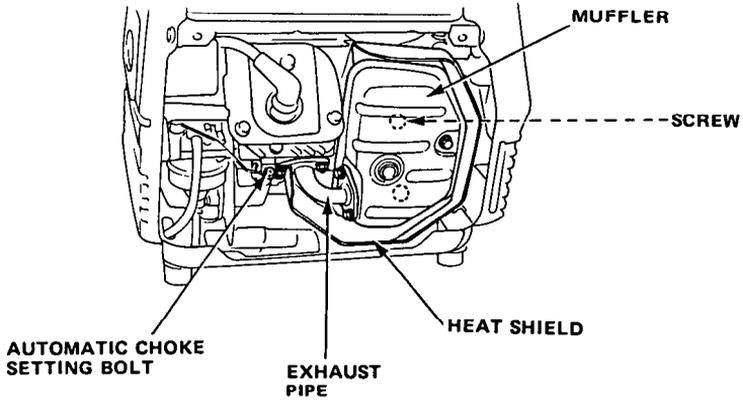
WARNING If the generator has been running, the muffler will be very hot. Allow it to cool before proceeding.

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

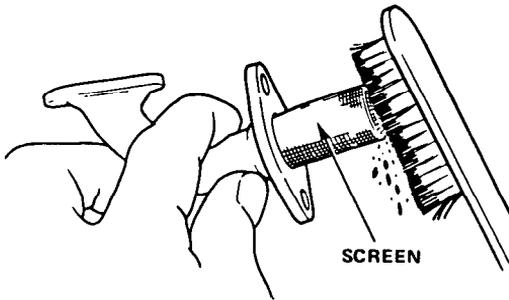
1. Remove the four left side cover screws, and remove the cover.



2. Remove the mounting bolt for the muffler, the mounting bolt for the choke bimetal strip, and the two nuts that attach the exhaust pipe to the engine. Remove the muffler and exhaust pipe.
3. Remove the two screws that attach the heat shield to the muffler. Remove the heat shield.
4. Remove the two bolts that attach the exhaust pipe to the muffler. Remove the exhaust pipe from the muffler carefully to avoid damaging the spark arrester screen.



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



6. Check the exhaust pipe gaskets; replace if damaged. Reassemble the exhaust system.

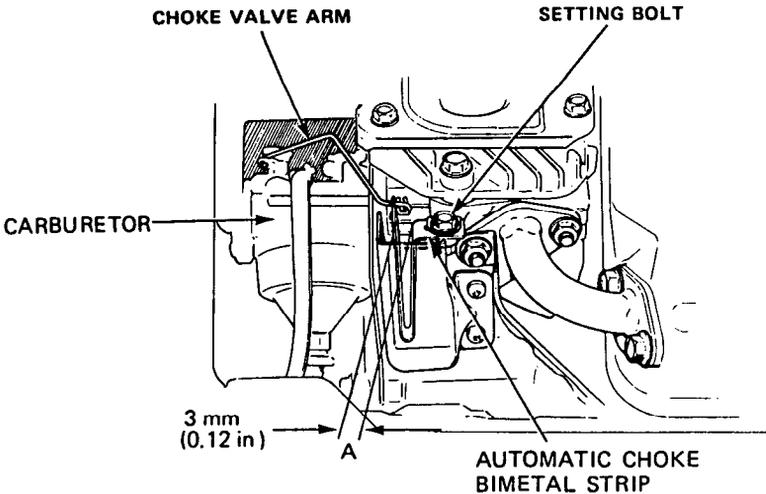
See next page. The automatic choke system needs adjustment, when reinstalling.

Automatic choke adjustment

1. Loosen the automatic choke setting bolt.
2. Push the choke valve arm at the carburetor so the choke valve is closed.
3. Adjust distance "A" to 3 mm (0.12 in) by relocating the bimetal strip. Retighten the bolt securely.

NOTE:

- Recheck distance A after tightening the bimetal strip.
- Hard starting or lack of power will result if not adjusted properly.

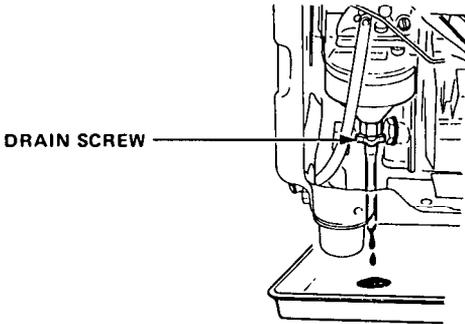


8. TRANSPORTING/STORAGE

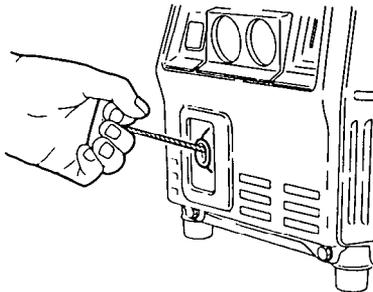
WARNING When transporting the generator, turn the engine switch OFF and keep the generator level to prevent fuel spillage. Fuel vapor or spilled fuel may ignite.

Before storing the unit for an extended period:

1. Be sure the storage area is free of excessive humidity and dust.
2. Drain the fuel –
 - a. With the engine switch ON, remove the fuel filler cap.
 - b. Loosen the drain screw and drain the fuel into a suitable container. Retighten the screw.
 - c. Move the engine switch to OFF.



3. Pull the starter grip until resistance is felt; the piston is coming up on its compression stroke. At this position, the exhaust and intake valves are closed, and this will help protect the engine from corrosion.



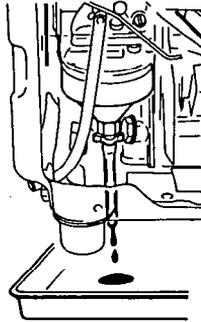
9. TROUBLESHOOTING

A. When the engine will not start:

1. Is the engine switch ON?
2. Is there enough fuel?
3. Is nothing connected at the AC and DC receptacles?
4. Is gasoline reaching the carburetor?

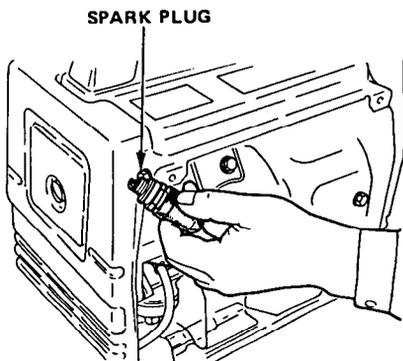
To check, remove the side cover and loosen the drain screw with the fuel valve ON.

WARNING If any fuel is spilled, make sure the area is dry before testing the spark plug or starting the engine. Fuel vapor or spilled fuel may ignite.



5. Is there a spark at the spark plug?
 - a. Remove the spark plug cap. Clean any dirt from around the spark plug base, then remove the spark plug.
 - b. Install the spark plug in the plug cap.
 - c. Turn the engine switch on.

-
- d. Grounding the side electrode to the cover, pull the recoil starter to see if sparks jump across the gap.



- e. If there are no sparks, replace the plug.

If OK, try to start the engine according to the instructions.

6. If the engine still does not start, take the generator to the dealer.

B. No electricity at the AC receptacles:

1. Is the AC circuit breaker on?
2. Check the electrical appliance or equipment for any defects.

C. No electricity at the DC receptacles:

1. Is the DC circuit breaker on?
2. Check the electrical appliance or equipment for any defects.

10. SPECIFICATIONS

Dimensions

Length x Width x Height	EM500: 355 x 250 x 325 mm (14.0 x 9.84 x 12.8 in) EM600: 365 x 250 x 325 mm (14.4 x 9.84 x 12.8 in)
Dry Weight	EM500: 18.0 kg (39.7 lb) EM600: 19.0 kg (41.9 lb)

Engine

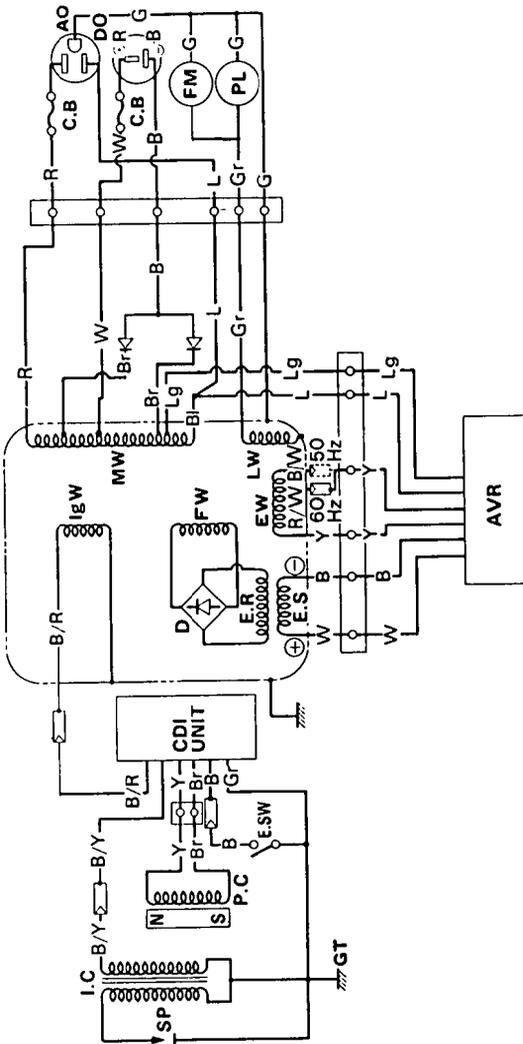
Engine Type	4-stroke, side valve, 1 cylinder
Displacement [Bore x Stroke]	59.8 cc (3.65 cu in) [46 x 36 mm (1.81 x 1.42 in)]
Compression Ratio	5.5 : 1
Engine Speed	3.600 r.p.m.
Cooling System	Forced air cooling
Ignition System	C.D.I.
Oil Capacity	0.35 l (0.37 US qt)
Fuel Tank Capacity	2.0 l (0.5 US gal)
Spark Plug	BPMR4A-10 (NGK), W14MPR-U10 (ND)

Generator

AC output	Rated Voltage	120 V
	Rated Frequency	60 Hz
	Rated Ampere	EM500: 3.3 A EM600: 3.8 A
	Rated Output	EM500: 400 VA (400 W) EM600: 450 VA (450 W)
DC output	Maximum Output	EM500: 500 VA (500 W) EM600: 600 VA (600 W)
	Only for charging 12 V automotive batteries. Maximum charging output = 8.3 A	

11. WIRING DIAGRAM

[EM500]



	Part Name
AVR	Automatic Voltage Regulator
D	DC Diode
E.R.	Rotor Exciter Winding
E.S.	Stator Exciter Winding
ESw	Engine Switch
EW	Exciter Winding
FM	Frequency Meter
C.B	Circuit Breaker
FW	Field Winding
GT	Ground Terminal
IC	Ignition Coil
IgW	Ignition Winding
LW	Lamp Winding
MW	Main Winding
AO	AC Output Receptacle
DO	DC Output Receptacle
PC	Pulser Coil
PL	Pilot Lamp
SP	Spark Plug

	Color
B	Black
L	Blue
Br	Brown
G	Green
Gr	Gray
Lg	Light green
R	Red
W	White
Y	Yellow

MEMO

Warranty Service

Owner Satisfaction

Your satisfaction and goodwill are important to your dealer and to us. All Honda warranty details are explained in the Distributor's Limited Warranty. Normally, any problems concerning the product will be handled by your dealer's service department. If you have a warranty problem that has not been handled to your satisfaction, we suggest you take the following action:

- Discuss your problem with a member of dealership management. Often complaints can be quickly resolved at that level. If the problem has already been reviewed with the Service Manager, contact the owner of the dealership or the General Manager.
- If your problem still has not been resolved to your satisfaction, contact the Power Equipment Customer Relations Department of American Honda Motor Co., Inc.

American Honda Motor Co., Inc.
Power Equipment Customer Relations Department
P.O. Box 50
Gardena, California 90247-0805
Telephone: (213) 604-2400

We will need the following information in order to assist you:

- Your name, address, and telephone number
- Product model and serial number
- Date of purchase
- Dealer name and address
- Nature of the problem

After reviewing all the facts involved, you will be advised of what action can be taken. Please bear in mind that your problem will likely be resolved at the dealership, using the dealer's facilities, equipment, and personnel, so it is very important that your initial contact be with the dealer.

Your purchase of a Honda product is greatly appreciated by both your dealer and American Honda Motor Co., Inc. We want to assist you in every way possible to assure your complete satisfaction with your purchase.

MEMO



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