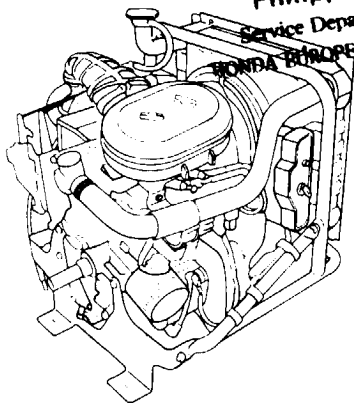


HONDA

GX360

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Service Department Manager
HONDA EUROPE POWER EQUIPMENT



OWNER'S MANUAL



32ZA0601
00X32-ZA0-6010

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1

EU K1 英 N HC 9601

Thank you for purchasing a Honda engine.

This manual covers the operation and maintenance of your engine:
GX360

All information in this publication is based on the latest product information available at the time of 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 engine and should remain with it if it is resold.

Pay special attention to statements preceded by the following words:

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

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

NOTICE Indicates that equipment or property damage can result if instructions are not followed.

NOTE: Gives helpful information.

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

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

1 SAFETY INSTRUCTIONS

▲ WARNING

To ensure safe operation —



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

- Always make a pre-operation inspection (page 7) before you start the engine. You may prevent an accident or equipment damage.
- To prevent fire hazards and to provide adequate ventilation, keep the engine at least 1 meter (3 feet) away from buildings and other equipment during operation. Do not place flammable objects close to the engine.
- Children and pets must be kept away from the area of operation due to a possibility of burns from hot engine components or injury from any equipment the engine may be used to operate.
- Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.
- Do not place flammable objects such as gasoline, matches, etc., close to the engine while it is running.
- Refuel in a well-ventilated area with the engine stopped. Gasoline is highly flammable and explosive under certain conditions.
- Do not overfill the fuel tank. There should be no fuel in the filler neck.
Make sure that the filler cap is closed securely.
- If any fuel is spilled, clean it up completely and allow petroleum vapours to dissipate before starting the engine.
- Do not smoke or allow flames or sparks where the engine is refueled or where gasoline is stored.
- Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust gases. Never run the engine in a closed garage or confined area.
- Place the engine on a stable surface. Do not tilt the engine more than 20° from horizontal. Operating at excessive angles may result in fuel spillage.

Safety Instruction

▲WARNING

To ensure safe operation –

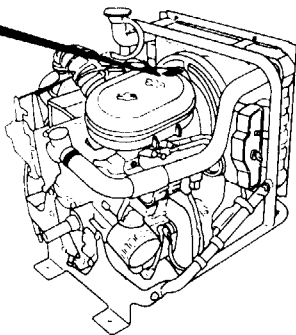
- Do not place anything on the engine, as it may create a fire hazard.
- A spark arrester is available as an optional part for this engine. It is illegal in some areas to operate an engine without a spark arrester. Check local laws and regulations before operating.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. To avoid severe burns or fire hazards, let the engine cool before transporting it or storing it indoors.

SAFETY LABEL LOCATION

This label warns you of potential hazards that can cause serious injury. Read it carefully.

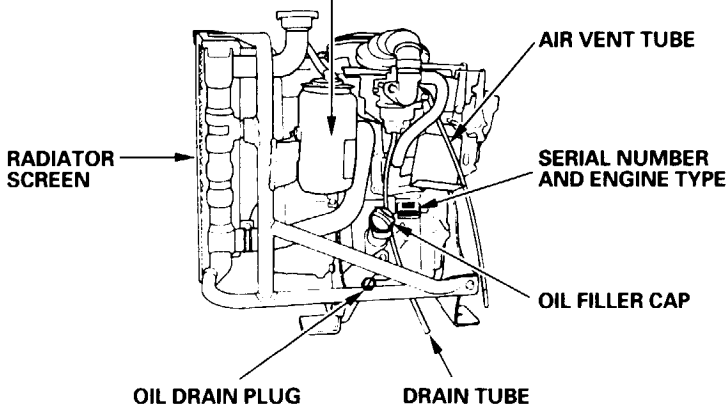
If the label comes off or becomes hard to read, contact your Honda dealer for replacement.

**READ OWNER'S
MANUAL**



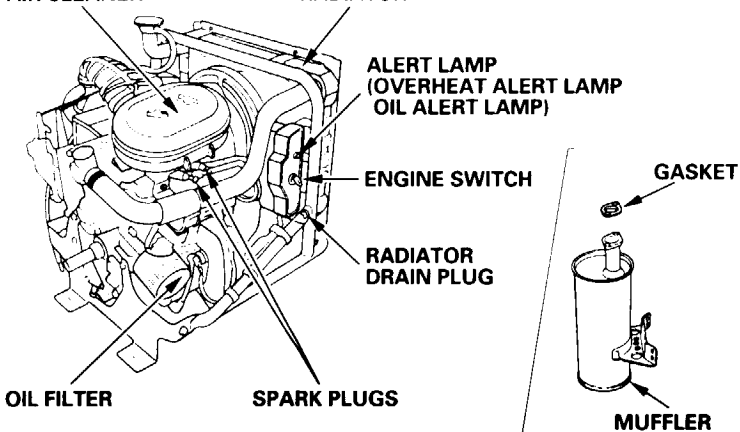
2 COMPONENT IDENTIFICATION

RADIATOR RESERVE TANK



AIR CLEANER

RADIATOR



3 BATTERY CONNECTIONS (for electric starter)

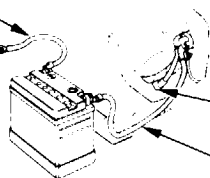
Use a 12 volt battery with an ampere-hour rating of at least 30AH. Connect the battery positive (+) cable to the starter solenoid terminal, as shown.

Connect the battery negative (-) cable to an engine mounting bolt, frame bolt, or other good engine ground connection.

Check the battery cable connections to be sure the cables are tightened and free of corrosion. Remove any corrosion, and coat the terminals and cable ends with grease.

**BATTERY NEGATIVE (-)
CABLE**

(to engine body)



STARTER SOLENOID

**BATTERY POSITIVE (+)
CABLE**

▲ WARNING

- The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging or using batteries in an enclosed space.
- 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 immediately.
- **KEEP OUT OF REACH OF CHILDREN.**

NOTICE

- Use only distilled water in the battery. Tap water will shorten the service life of the battery.
- Filling the battery above the UPPER LEVEL line may cause the electrolyte to overflow, resulting in corrosion to engine or nearby parts. Immediately wash off any spilled electrolyte.
- Be careful not to connect the battery in reverse polarity, as this will short circuit the battery charging system and trip the circuit breaker.

4 PRE-OPERATION CHECK

1. Engine oil level

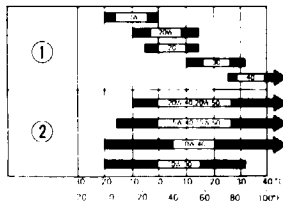
CAUTION:

- **Running the engine with insufficient oil can cause serious engine damage.**
- **Be sure to check the engine on a level surface with the engine stopped.**

1. Remove the oil filler cap and wipe the dipstick clean.
2. Insert the dipstick into the oil filler neck, but do not screw it in.
3. If the level is low, fill to the top of the oil filler neck with the recommended oil.

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

SAE 10W-30 is recommended for general, all temperature use. If single viscosity oil is used, select the appropriate viscosity for the average temperature in your area.



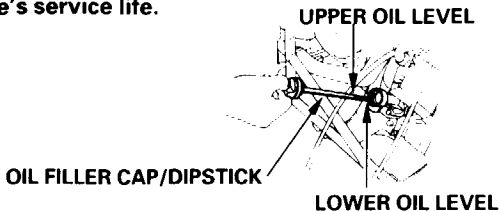
Ambient temperature

① SINGLE VISCOSITY

② MULTI VISCOSITY

CAUTION:

Using nondetergent oil or 2-stroke engine oil could shorten the engine's service life.



2. Fuel

Use automotive gasoline (Unleaded or lowleaded is preferred to minimize combustion chamber deposits).

FOR NEW SOUTH WALES ONLY:

Use unleaded fuel only.

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

▲ WARNING

- **Gasoline is extremely flammable and is 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 engine is refueled or where gasoline is stored.**
- **Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.**
- **Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.**
- **Avoid repeated or prolonged contact with skin or breathing of vapor.**

KEEP OUT OF REACH OF CHILDREN.

GASOLINES CONTAINING ALCOHOL

If you decide to use a gasoline containing alcohol (gasohol), be sure it's octane rating is at least as high as that recommended by Honda. There are two types of "gasohol": one containing ethanol, and the other containing methanol. Do not use gasohol that contains more than 10% ethanol. Do not use gasoline containing methanol (methyl or wood alcohol) that does not also contain cosolvents and corrosion inhibitors for methanol. Never use gasoline containing more than 5% methanol, even if it has cosolvents and corrosion inhibitors.

NOTE:

- Fuel system damage or engine performance problems resulting from the use of fuels that contain alcohol is not covered under the warranty. Honda cannot endorse the use of fuels containing methanol since evidence of their suitability is as yet incomplete.
- Before buying fuel from an unfamiliar station, try to find out if the fuel contains alcohol, if it does, confirm the type and percentage of alcohol used. If you notice any undesirable operating symptoms while using a gasoline that contains alcohol, or one that you think contains alcohol, switch to a gasoline that you know does not contain alcohol.

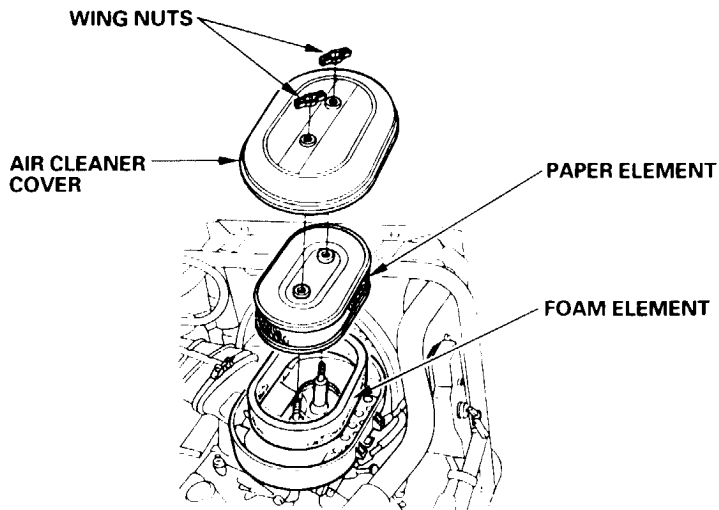
3. Air cleaner

Check the air cleaner elements to be sure they are clean and in good condition.

Clean or replace the elements if necessary (page 20).

CAUTION:

Never run the engine without the air cleaner. Rapid engine wear will result from contaminants, such as dust and dirt, being drawn through the carburetor and into the engine.



4. Coolant

If there is no coolant in the reserve tank, check the cooling system for leaks and repair if necessary. Add coolant to the radiator, bleed the cooling system as described on page 22, then check the coolant level in the reserve tank after the engine reaches operating temperature.

▲WARNING

Never remove the radiator cap when the engine is hot. The coolant is under pressure and severe scalding could result.

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 it up to the MAX mark.

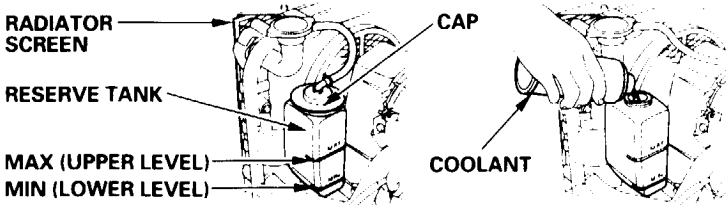
Coolant recommendation

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

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

CAUTION:

The use of unsuitable antifreeze, hard water, or salt water may cause corrosion damage that will shorten the life of the engine.

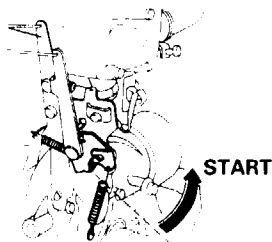


5 STARTING THE ENGINE

1. Turn the fuel valve ON at the source.
2. Move the control lever to the START position.

NOTE:

If the engine is warm or the air temperature is high, move the control lever away from the START position as soon as the engine starts.



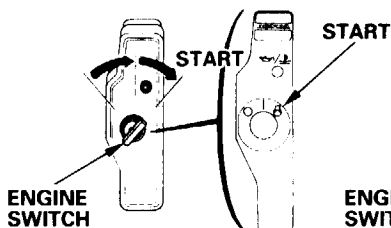
3. Turn the engine switch to the START position and hold it there until the engine starts.

NOTE:

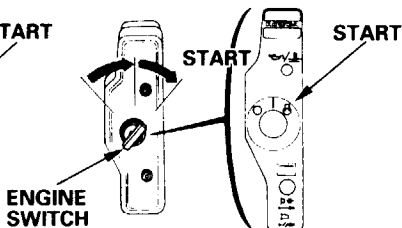
Do not use the electric starter for more than 5 seconds at a time. If the engine fails to start, release the key and wait 10 seconds before operating the starter again.

When the engine starts, release the key and allow the engine switch to return to the ON position.

(10A CHARGE COIL AND CONTROL BOX TYPE)



(3A CHARGE COIL AND CONTROL BOX TYPE)



● 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 engine at altitudes higher than 1,830m (6,000 feet) above sea level, have your authorized Honda dealer perform these carburetor modifications.

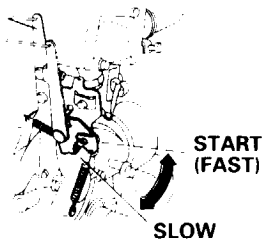
Even with suitable carburetor jetting, engine horsepower will decrease approximately 3.5% for each 305 m (1,000 feet) increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

CAUTION:

Operation of the engine 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.

6 OPERATION

When the engine warms up, move the control lever from the START position to the operating position for the desired engine speed.



Alert system

The alert lamp will light and the engine will shut down if either the engine oil level is low, the oil pressure is low or the coolant temperature is high.

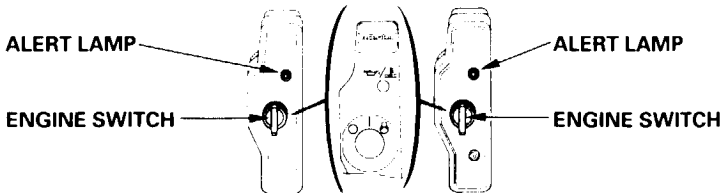
Be sure to establish the cause and correct the problem before continuing to operate the engine.

If the engine stops and the alert lamp lights:

First check the oil level. If the oil level is normal, check for sufficient coolant in the reserve tank and, if necessary, the radiator for clogging.

(10A CHARGE COIL AND
CONTROL BOX TYPE)

(3A CHARGE COIL AND
CONTROL BOX TYPE)

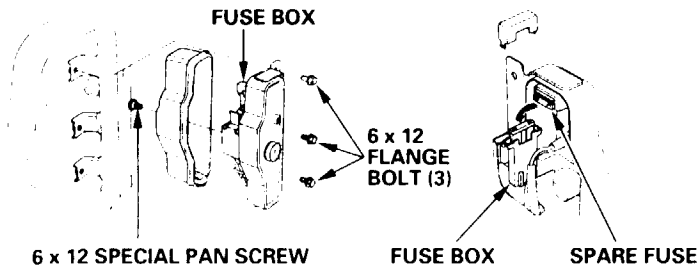


If the engine stops but the alert lamp does not light, check the fuse. If necessary, replace the fuse.

SPECIFIED FUSE:

- 15A (10A CHARGE COIL AND CONTROL BOX TYPE),
- 5A (3A CHARGE COIL AND CONTROL BOX TYPE)

To inspect/replace the fuse, unscrew the 6 x 12 SPECIAL PAN SCREW and the three 6 x 12 FLANGE BOLTS, then take out the fuse.

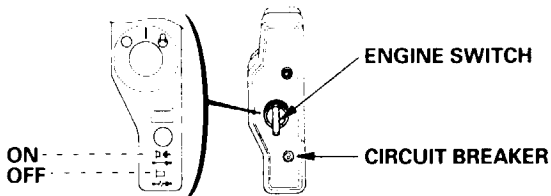


Circuit breaker (3A CHARGE COIL AND CONTROL BOX TYPE)

The circuit breaker protects the battery charging circuit. A short circuit or a battery connected in reverse polarity will trip the circuit breaker.

The green indicator inside the circuit breaker will pop out to show that the circuit breaker has switched off. If this occurs, determine the cause of the problem, and correct it before resetting the circuit breaker.

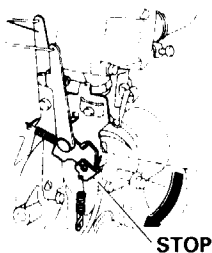
Push the circuit breaker button to reset.



7 STOPPING THE ENGINE

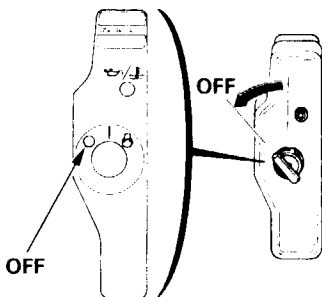
To stop the engine in an emergency, turn the engine switch to the OFF position. Under normal conditions, use the following procedure:

1. Move the control lever to the IDLE position.

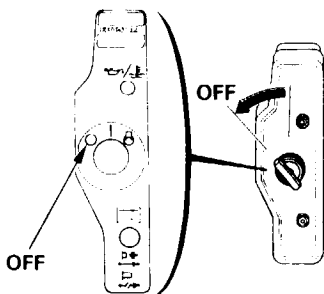


2. Turn the engine switch to the OFF position.

(3A CHARGE COIL AND CONTROL BOX TYPE)



(10A CHARGE COIL AND CONTROL BOX TYPE)



3. Turn the fuel valve OFF at the source.

8 MAINTENANCE

▲WARNING

- Shut off the engine before performing any maintenance.
- To prevent accidental start-up, turn OFF the engine switch key and disconnect the spark plug caps.
- The engine should be serviced by an authorized Honda dealer unless the owner has proper tools and service data and feels he is mechanically qualified.

CAUTION:

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

Periodic inspection and adjustment of the Honda engine is essential if high level performance is to be maintained. Regular maintenance will also ensure a long service life. The required service intervals and the kind of maintenance to be performed are described on the table below.

Maintenance Schedule

REGULAR SERVICE PERIOD Perform at every indicated month or operating hour interval, whichever occurs first.		EACH USE	FIRST MONTH OR 20 HRS	EVERY 3 MONTH OR 50 HRS	EVERY 6 MONTH OR 100 HRS	EVERY YEAR OR 300 HRS
ITEM						
Engine oil	Check level	○				
	Change		○		○	
Air cleaner	Check	○				
	Clean			○ (1)		
Radiator screen	Clean	○				
Radiator coolant	Check level	○				
	Change				Every 2 years	
Spark plug	Check-clean				○	
Spark arrester (optional part)	Clean				○	
Fuel filter	Check (Replace if necessary)				○	
Valve clearance	Check-Adjust					○ (2)
Oil filter	Change				Every 2 years or 200 HRS	
Fuel line	Check (Replace if necessary)				Every 2 years (2)	

- 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.

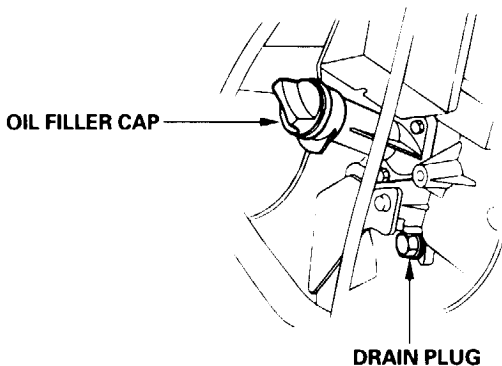
1. Changing oil

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

1. Remove the oil filler cap and drain plug to drain the oil.
2. Install the drain plug, and tighten it securely.
3. Refill with the recommended oil (see page 7) and check the oil level.
4. Install the oil filler cap.

ENGINE OIL CAPACITY:

1.4 ℓ (1.5 US qt , 1.2 Imp qt)



CAUTION:

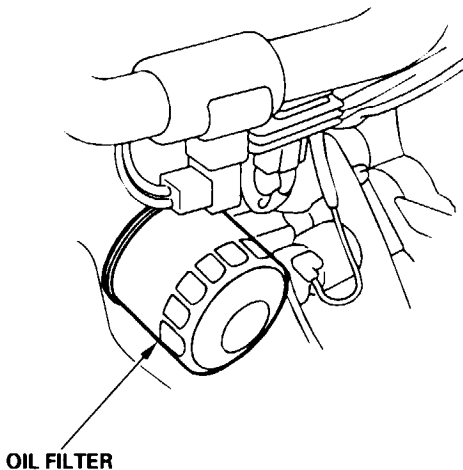
Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

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 waste disposal site. Do not throw it in the dustbin or pour it onto the ground, down sewers or drains.

2. Oil filter change

1. Remove the oil filter with a filter wrench and let the remaining oil drain out.
2. Apply a thin coat of engine oil to the filter rubber seal and screw it on by hand until you feel it seat against the engine, then turn it $\frac{3}{4}$ of a turn more.
3. Fill the crankcase with the recommended oil (See page 7) and check the level. Recheck the level after running the engine for a few minutes.



3. 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 engine in extremely dusty areas.

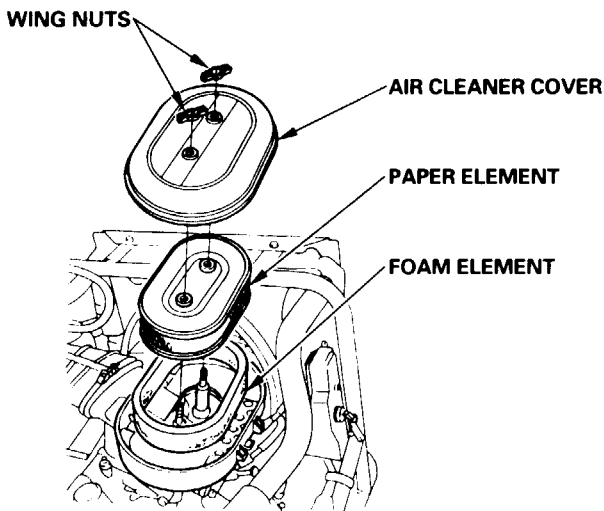
▲WARNING

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

CAUTION:

Never run the engine without the air cleaner. Rapid engine wear will result from contaminants, such as dust and dirt, being drawn through the carburetor and into the engine.

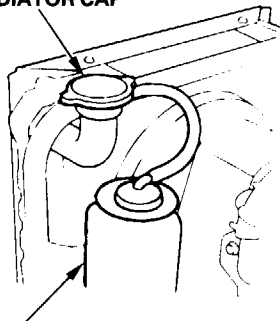
1. Remove the wing nuts and the air cleaner cover. Remove the elements and separate them. Carefully check both elements for holes or tears and replace if damaged.
2. Foam element: Wash the element in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flash point solvent. Allow the element to dry thoroughly.
Soak the element in clean engine oil and squeeze out the excess oil. The engine will smoke during initial start-up if too much oil is left in the foam.
3. Paper element: Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air 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.



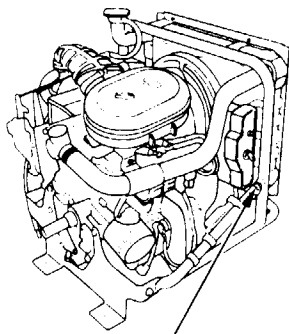
4. Coolant replacement procedure

1. Remove the radiator cap and coolant drain plug, and drain the coolant into a suitable container.

RADIATOR CAP



RADIATOR RESERVE TANK



COOLANT DRAIN PLUG

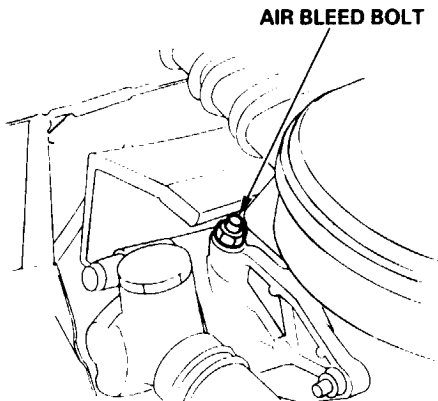
2. Remove and empty the reserve tank, then reinstall the tank.
3. Reinstall the drain plug and tighten it securely.

4. Loosen the air-bleed bolt at the side of the cylinder head; this will allow air to escape when the cooling system is filled.

Pour coolant into the radiator until the coolant level reaches the filler opening. Tighten the air-bleed bolt as soon as coolant starts to run out in a steady stream, without bubbles.

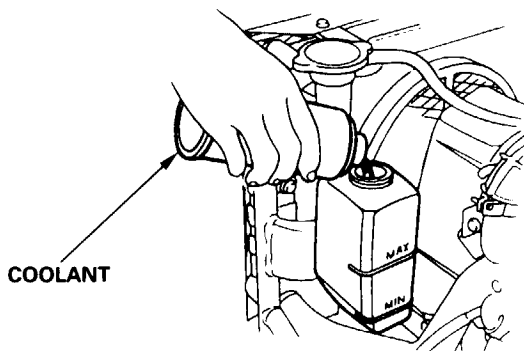
NOTE:

Refer to Coolant Recommendation on page 11.



5. Put the radiator cap on the filler opening without tightening. Start the engine and let it run until warmed up (upper water hose becomes warm).

6. Stop the engine and remove the radiator cap. Check the coolant level and refill if necessary. Fill the reserve tank to the **MAX** mark.



7. Install the radiator cap without tightening, and restart the engine. Run the engine for a few minutes, then check the coolant level and add coolant if necessary. Repeat this procedure until the coolant level becomes stable.
8. Tighten the radiator cap.

5. Spark plug service

CAUTION:

Use only the recommended spark plugs or equivalent. Spark plugs which have an improper heat range may cause engine damage.

▲WARNING

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

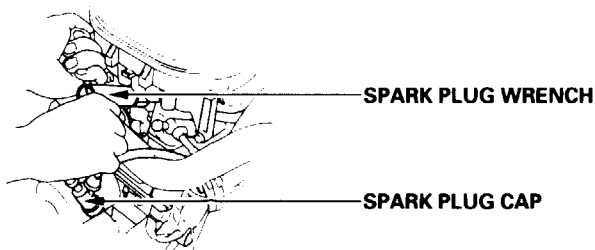
Recommended spark plug: BPR4HS

CAUTION:

Never use a spark plug of incorrect heat range.

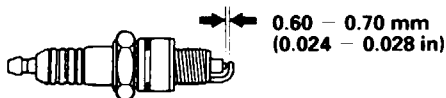
To ensure proper engine operation, the spark plugs must be properly gapped and free of deposits.

1. Remove the spark plug cap and use a spark plug wrench to remove each plug.

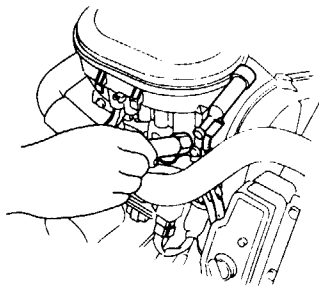


2. Visually inspect the spark plug. Discard the spark plug if there is apparent wear, or if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.
3. Measure the plug gap with a feeler gauge. Correct as necessary by bending the side electrode.

The gap should be: 0.60 – 0.70 mm (0.024 – 0.028 in)



4. Check that each spark plug washer is in good condition, and thread the spark plug in by hand to prevent cross-threading.



5. After each spark plug is seated, tighten with a spark plug wrench to compress the washer.

NOTE:

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

CAUTION:

Each spark plug must be securely tightened. An improperly tightened spark plug can become very hot and may damage the engine.

6. Spark arrester maintenance (optional part)

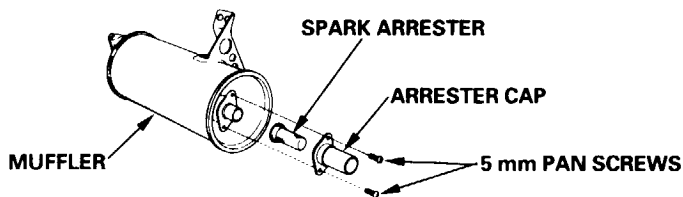
▲WARNING

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. Allow it to cool before proceeding.

CAUTION:

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

1. Loosen 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. Check the muffler exhaust port for carbon deposits; clean if necessary.
4. Install the spark arrester and arrester cap on the muffler.
5. Tighten two 5 mm pan screws to the arrester cap.



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

CAUTION:

Be careful not to damage the spark arrester screen.



NOTE:

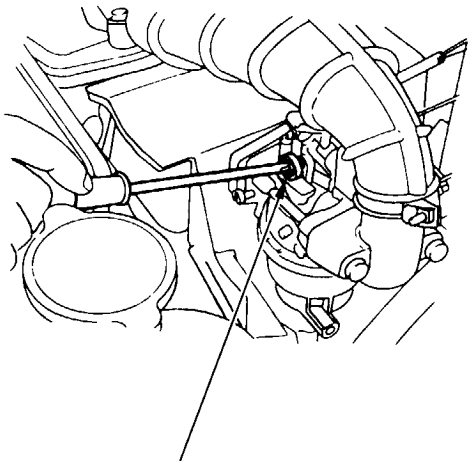
The spark arrester must be free of breaks and holes. Replace, if necessary.

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

7. Carburetor idle speed adjustment

1. Start the engine and allow it to warm up to normal operating temperature.
2. With the engine idling, turn the throttle stop screw to obtain the standard idle speed.

Standard idle speed: 1,300 – 1,500 rpm.



THROTTLE STOP SCREW

9 TRANSPORTING/STORAGE

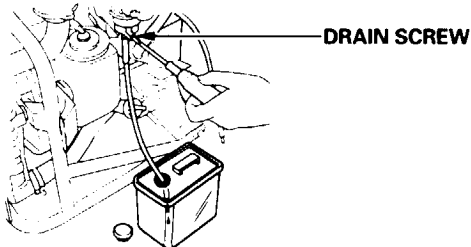
▲ WARNING

- To avoid severe burns or fire hazards, let the engine cool before transporting it or storing it indoors.
- Prevent fuel spillage when transporting the engine. If the fuel tank has a shut-off valve, turn it off. If the fuel tank does not have a valve, drain the tank and carburetor. Spilled fuel or fuel vapor may ignite.

Storage preparation:

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 tank and carburetor into a suitable gasoline container.
 - a. Remove the fuel tube and drain the fuel tank.
 - b. Loosen the carburetor drain screw to drain the carburetor.



- c. Retighten the drain screw and connect the fuel tube.

▲ WARNING

Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in the area.

3. Change the engine oil (page 18).
4. Remove each spark plug and pour about a tablespoon of clean engine oil into the cylinders. Crank the engine several revolutions to distribute the oil, then reinstall the spark plugs.
5. Remove the battery and store it in a cool dry place.
6. Electric starter type: Remove the battery and store it in a cool, dry place. Recharge it once a month.
7. Cover the engine to keep out dust.

Removal from storage:

1. Recharge the battery and install.
2. Remove the spark plugs and check that they are clean and properly gapped (see page 25). Turn the engine a few revolutions by hand without the spark plugs.
3. Thread the spark plugs in as far as possible by hand, then tighten them 1/8 to 1/4 turn further with a plug wrench.
4. Check the engine oil level (see page 18).
5. Check the coolant level (see page 24).
6. Fill the fuel tank, and start the engine by following the starting instructions (see page 12).

NOTE:

If the cylinders were coated with oil, the engine will smoke at start up; this is normal.

10 TROUBLESHOOTING

Engine will not start using electric starter:

1. Are the battery cables securely connected and free of corrosion?
2. Is the battery fully charged?
3. Is there sufficient engine oil?
4. Is there sufficient engine coolant? (Refer to page 14 , alert system).

NOTE:

If the engine does not charge the battery, check the circuit breaker.

▲WARNING

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

5. Is there a spark at both plugs?
 - 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 any engine ground, and pull the recoil starter to see if sparks jump across the gap.
 - e. If there is no spark, replace the plug.
If OK, reinstall the spark plug and try to start the engine again according to the instructions.
6. If the engine still does not start, take the engine to an authorized Honda dealer.