

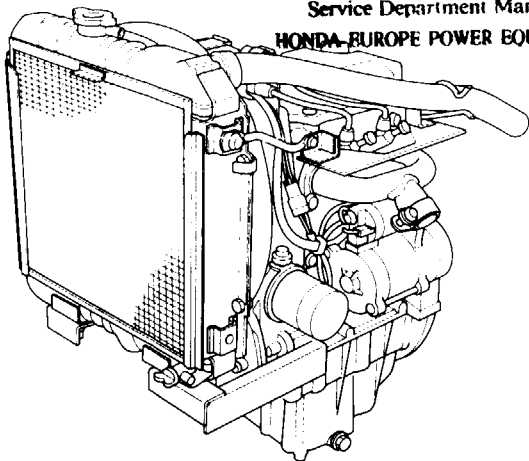
HONDA

GX640

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HONDA EUROPE POWER EQUIPMENT



OWNER'S MANUAL

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32ZG8601
00X32-ZG8-6010

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CE
英 (N) (HC) 9601

Thank you for purchasing a Honda engine.

This manual covers the operation and maintenance of GX640 engine and is based on the SD4 type.

All information in this publication is based on the latest product information available at the time of printing.

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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.

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.

I SAFETY INFORMATION

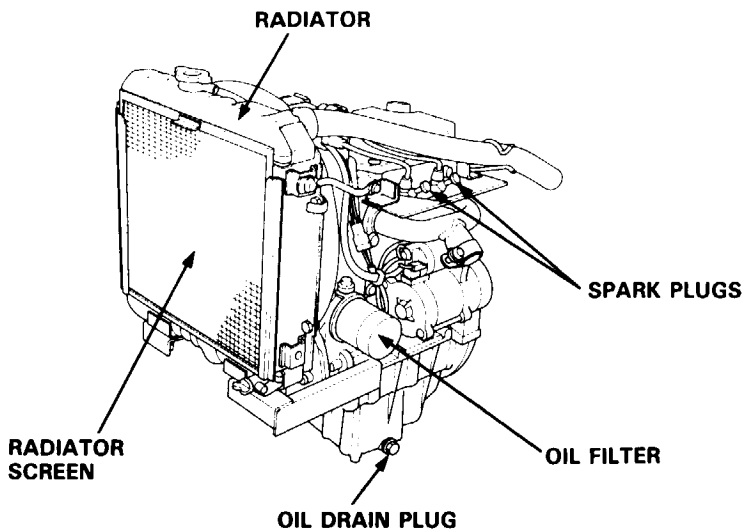
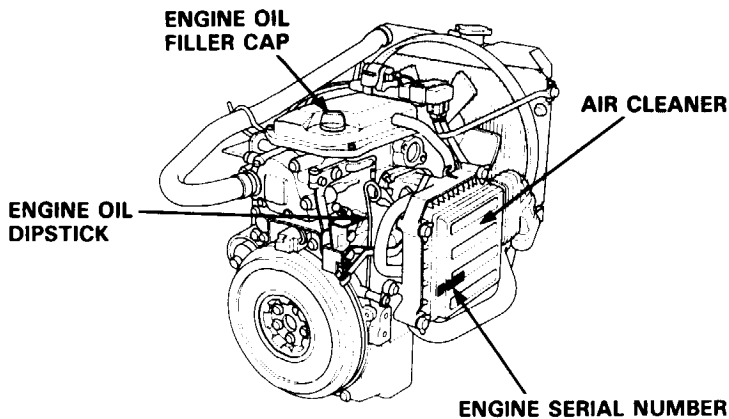
⚠ WARNING

To ensure safe operation —

- **Always make a pre-operation inspection (page 6) 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.**
- **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.**

2 COMPONENT IDENTIFICATION

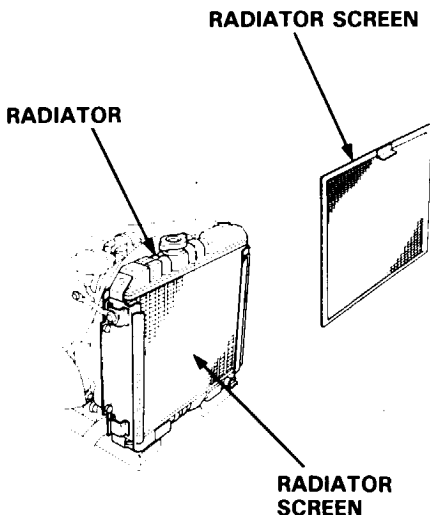


3 PRE-OPERATION CHECK

Radiator screen

CAUTION: If the engine has been running, the radiator will be very hot; allow it to cool before proceeding.

1. Remove the screen from the front of the radiator. Clean dirt, leaves, and other obstructions from the screen.
2. Reinstall the radiator screen.

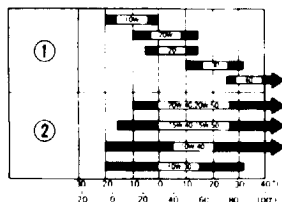


Engine oil

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.

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/CC, CD. Motor oils classified SG, SF/CC, CD 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.



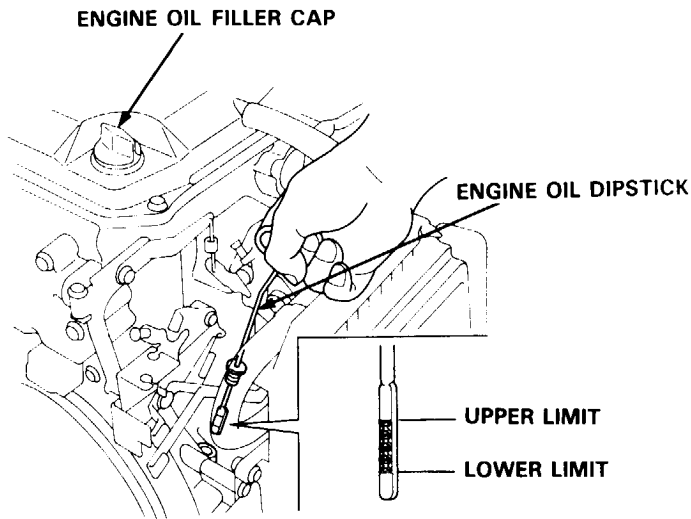
Ambient temperature

- ① SINGLE VISCOSITY
- ② MULTI VISCOSITY

CAUTION:

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

1. Be sure the engine is in a level position.
2. Remove the dipstick and wipe it clean.
3. Fully insert the dipstick, then remove it to check the oil level.
4. If the oil level is near or below the lower limit mark on the dipstick, remove the oil filler cap, and fill with the recommended oil to the upper limit mark.
5. Reinstall the dipstick and filler cap.



Fuel recommendation

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.**

Gasoline 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.

Coolant

If there is no coolant in the reserve tank, check the cooling system for leaks and repair if necessary.

▲ WARNING

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

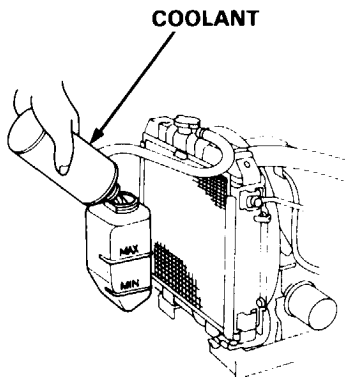
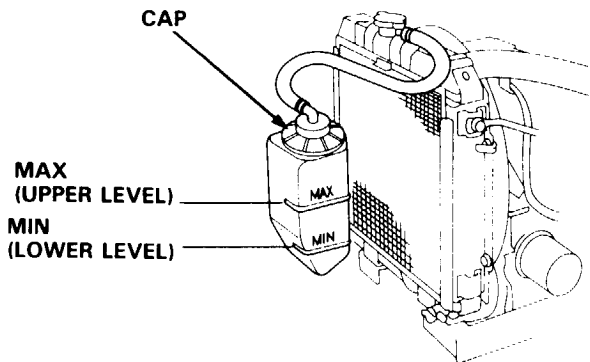
Add coolant to the radiator and the reserve tank, then check the coolant level in the reserve tank after the engine reaches operating temperature. When the engine is at operating temperature, the coolant level should be between the MIN and MAX marks on the reserve tank. If the level is near the MIN mark, 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 provided 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.

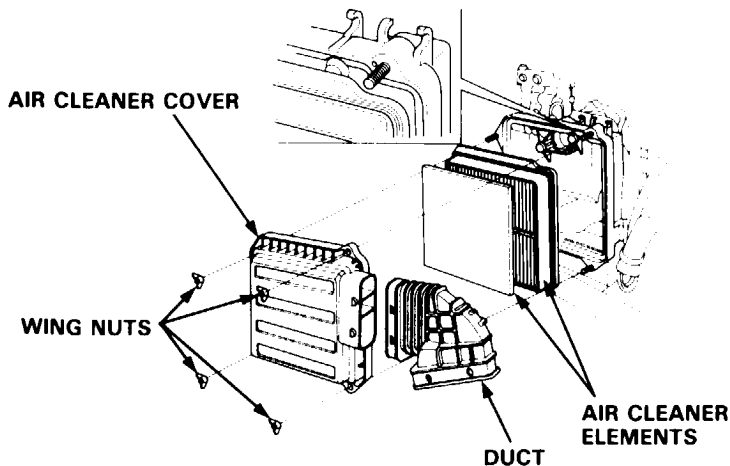


Air cleaner

Check that the air cleaner elements are clean and in good condition. A dirty air cleaner will restrict air flow to the carburetor, reducing engine performance. A damaged air cleaner will allow dirt to enter the engine, causing rapid engine wear.

1. Remove the wing nuts to remove the air cleaner cover and air cleaner elements.
2. Inspect the air cleaner elements. Clean or replace the elements if necessary. If the air cleaner elements need cleaning, follow the procedure described on page 19 and 20.
3. Reinstall the air cleaner elements and air cleaner cover. Tighten the wing nuts securely. Reinstall the plastic duct.

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



4 OPERATION

● 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 affect 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.

5 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 (3)		Each use	First month or 20 Hrs.	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs.
ITEM	Performed at every indicated month or operating hour interval, whichever comes first.					
Engine oil	Checked level	<input type="radio"/>				
	Change		<input type="radio"/>		<input type="radio"/>	
Radiator screen	Clean	<input type="radio"/>				
Radiator coolant	Check	<input type="radio"/>				
	Change	Every 2 years (2)				
Radiator core	Clean				<input type="radio"/>	
Air cleaner	Check	<input type="radio"/>				
	Clean			<input type="radio"/> (1)		
Spark plugs	Clean-Adjust				<input type="radio"/>	
	Replace					<input type="radio"/>
Spark arrester (optional part)	Clean				<input type="radio"/>	
Idle speed	Check-Adjust					<input type="radio"/> (2)
Valve clearance	Check-Adjust					<input type="radio"/> (2)
Engine oil filter	Replace					<input type="radio"/> or 200 hrs.
Fuel filter	Check				<input type="radio"/>	
	Replace					<input type="radio"/> (2)
Fuel line	Check	Every 2 years (Replace if necessary) (2)				

NOTE:

- (1) Service more frequently when used in dusty areas.
- (2) These items should be serviced by your dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.
- (3) For commercial use, log hours of operation to determine proper maintenance intervals.

Engine Oil Change

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

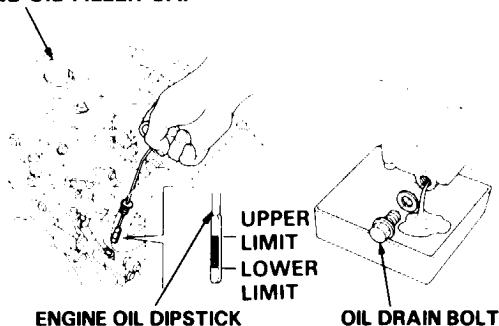
1. Remove the oil filler cap and drain bolt, and drain the oil into a suitable container.
2. Retighten the drain bolt securely.
3. Refill to the upper limit mark on the dipstick with the recommended oil (see page 8). Tighten the oil filler cap securely.

ENGINE OIL REFILL CAPACITY

without oil filter change : 2.0 l (2.1 US qt, 1.8 Imp qt)

with oil filter change : 2.3 l (2.4 US qt, 2.0 Imp qt)

ENGINE OIL FILLER CAP



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.

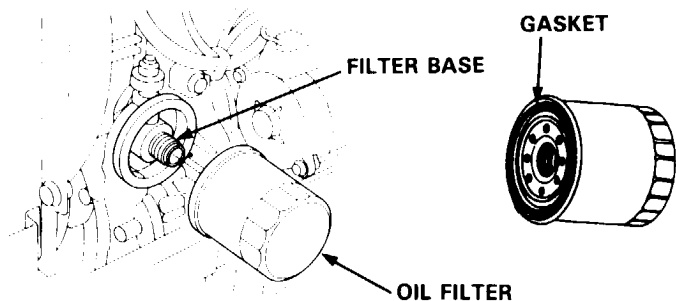
NOTE:

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.

Oil filter change

1. Drain the engine oil (see page 17).
2. Remove the oil filter with an oil filter wrench and let the remaining oil drain out. Discard the oil filter.
3. Clean the filter base.
4. Coat the gasket on the new filter with clean engine oil.
5. Reinstall the oil drain plug (see page 17), and tighten it securely.
6. Screw the new oil filter on by hand until the gasket contacts the filter base, then use an oil filter wrench to tighten the filter 7/8 turn.

**OIL FILTER TIGHTENING TORQUE: 8 N·m
0.8 kg-m, 5.6 ft-lb)**



Use only a genuine Honda oil filter or a filter of equivalent quality specified for your model. Using the wrong Honda filter, or a non-Honda filter which is not of equivalent quality, may cause engine damage.

7. Pour the specified amount of recommended oil into the engine (see page 17). Start the engine and check the filter for leaks.
8. Stop the engine and recheck the oil level. If necessary, add oil to bring it up to the proper level.

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.

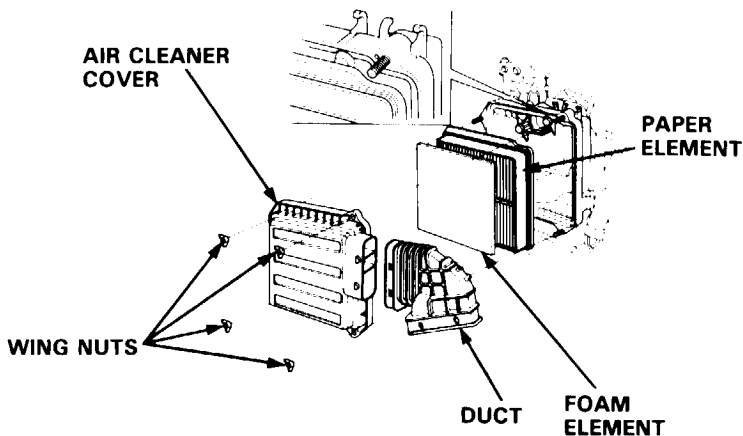
⚠ WARNING

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 into the engine.

1. Remove the wing nuts and remove the air cleaner cover. Remove the elements and separate them. Carefully check both elements for holes or tears and replace if damaged.
NOTE: Be sure to remove the foam element from the air cleaner cover so that you can inspect both sides.
2. Foam element: Clean in warm, soapy water, rinse, and dry thoroughly. Or, clean in nonflammable solvent and dry. Dip the element in clean engine oil, then squeeze out all excess oil. The engine will smoke when started if too much oil is left in the foam.
3. Paper element: Tap the element several times on a hard surface to remove loose dirt, or blow low pressure (30 psi or less) compressed air through the filter from the inside. Do not try to brush off dirt. Brushing will force dirt into the fibers.
4. Reinstall the air cleaner elements. Tighten the wing nuts securely.



Spark plug service

**Recommended spark plugs: BPR5ES-11 (NGK)
W16EPR-U11 (NIPPONDENSO)**

CAUTION:

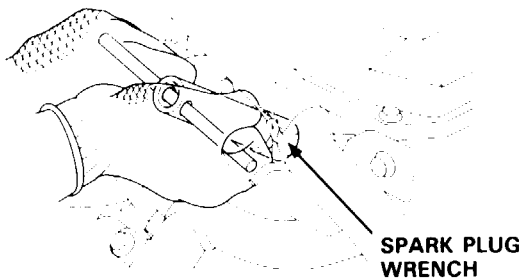
Never use a spark plug of incorrect heat range.

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

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

▲ WARNING

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

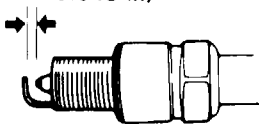


2. Visually inspect the spark plugs. Discard the spark plug if there is apparent wear, or if the insulator is cracked or chipped. Clean the spark plugs with a wire brush if they are to be reused.
3. Measure the plug gap with a feeler gauge. Correct as necessary by bending the side electrode.

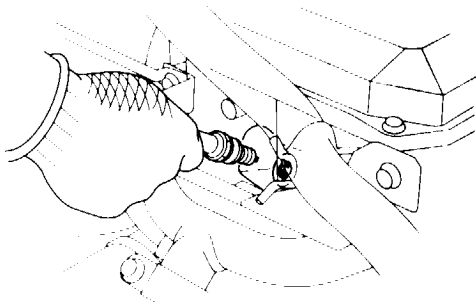
The gap should be:

1.0–1.1 mm (0.039–0.043 in)

1.0–1.1 mm
(0.039–0.043 in)



4. Check that the spark plug washers are in good condition, and thread the spark plugs in by hand to prevent cross-threading.
5. After the spark plugs are seated, tighten with a spark plug wrench to compress the washers.



NOTE: When installing new spark plugs, tighten $1/2$ turn after the spark plugs seat to compress the washers. When reinstalling used spark plug, tighten $1/8 - 1/4$ turn after the spark plugs seat to compress the washers.

CAUTION: The spark plugs must be securely tightened. Improperly tightened spark plugs can become very hot and may damage the engine.

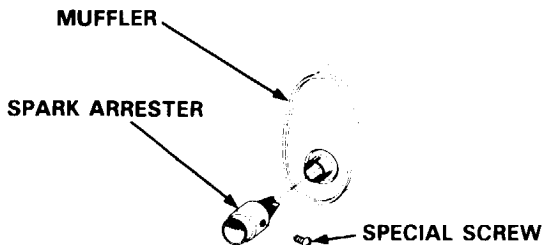
Spark arrester maintenance (Optional parts)

WARNING

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

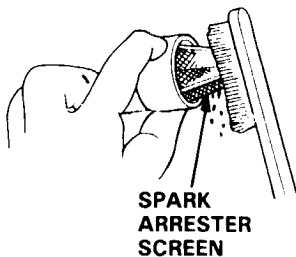
CAUTION: The spark arrester must be serviced every 100 hours to maintain its efficiency.

1. Remove the special screw from the muffler and remove the spark arrester.



2. 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.

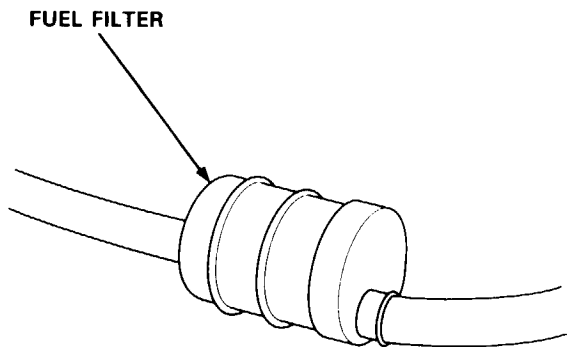
3. Install the spark arrester and the muffler in the reverse order of disassembly.

Fuel filter inspection and replacement

A fuel filter must be installed between the fuel tank and carburetor to prevent any dirt or sediment from reaching the carburetor.

The fuel filter available from Honda (shown below) should be inspected periodically and must be replaced if there is an accumulation of dirt. Additionally, scheduled replacement every year, or 300 operating hours, will help to ensure continued troublefree operation.

If another type of fuel filter is installed, follow the inspection and/or replacement recommendations of the filter manufacturer.



6 STORAGE

Storage preparation

The following steps will help to keep rust and corrosion from impairing your engine's function and appearance, and will make the engine easier to start when you use it again.

1. CLEANING

Clean all exterior surfaces.

- a. Wash the engine with a garden hose or other low pressure equipment. If the engine has been running, allow it to cool for at least half an hour before spraying water on it. Never spray water on a hot engine.
- b. Start the engine, and let it run until it reaches normal operating temperature to evaporate any remaining water.
- c. Stop the engine, and allow it to cool.

2. FUEL

Gasoline will oxidize and deteriorate in storage. Old gasoline will cause hard starting, and it leaves gum deposits that clog the fuel system. If the gasoline in your fuel system deteriorates during storage, you may need to have the carburetor and other fuel system components serviced or replaced.

The length of time that gasoline can be left in your fuel tank and carburetor without causing functional problems will vary with such factors as gasoline blend, your storage temperatures, and whether the fuel tank is partially or completely filled. The air in a partially filled fuel tank promotes fuel deterioration. Very warm storage temperatures accelerate fuel deterioration. Fuel deterioration problems may occur within a few months, or less if the gasoline was not fresh when you filled the fuel tank.

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

You can extend fuel storage life by adding a gasoline stabilizer that is formulated for that purpose, or you can avoid fuel deterioration problems by draining the fuel tank and carburetor.

Adding a gasoline stabilizer to extend fuel storage life:

- a. When adding a gasoline stabilizer, fill the fuel tank with fresh gasoline. If only partially filled, air in the tank will promote fuel deterioration during storage. If you keep a container of gasoline for refueling, be sure that it contains only fresh gasoline.

▲ WARNING

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

- **Stop the engine, and keep heat, sparks, and flame away.**
 - **Refuel in a well-ventilated area.**
 - **Wipe up spills immediately.**
- b. Add a gasoline stabilizer, following the manufacturer's instructions.
 - c. After adding a gasoline stabilizer, run the engine for 10 minutes to be sure that treated gasoline has replaced the untreated gasoline in the carburetor.

▲ WARNING

Exhaust contains poisonous carbon monoxide, a colorless and odorless gas. Breathing exhaust can cause loss of consciousness and may lead to death. To keep exhaust gas from building up, provide adequate ventilation.

Draining the fuel tank and carburetor:

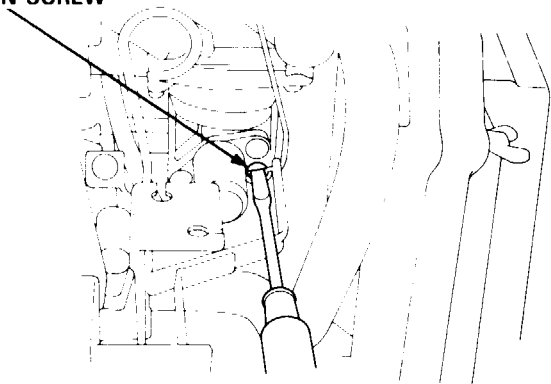
- a. Drain the fuel tank into an approved gasoline container, following the manufacturer's instructions.

▲ WARNING

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

- Stop the engine, and keep heat, sparks, and flame away.
 - Drain fuel in a well-ventilated area.
 - Wipe up spills immediately.
- b. Loosen the carburetor drain screw, and drain the fuel into an approved gasoline container. After draining, tighten the drain screw securely.

DRAIN SCREW



3. ENGINE OIL

Change the engine oil (see page 17).

4. ENGINE CYLINDERS

Remove the spark plugs (see page 21). Pour a tablespoon (5–10 cc) of clean engine oil into each cylinder. Crank the engine for a few revolutions to distribute the oil in the cylinders. Reinstall the spark plugs.

Placing in Storage

If stored with gasoline in the fuel tank and carburetor, it is important to reduce the hazard of gasoline vapor ignition. Select a well-ventilated storage area away from any appliance that operates with a flame, such as a furnace or water heater. Also avoid any area with a spark-producing electric motor, or where power tools are operated.

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

Unless all fuel has been drained from the fuel tank, turn off the fuel supply valve, following the manufacturer's instructions.

With the engine and exhaust system cool, cover to keep out dust. A hot engine and exhaust system can ignite or melt some materials. Do not use sheet plastic as a dust cover. A nonporous cover will trap moisture around the engine, promoting rust and corrosion.

Removal from Storage

Check the engine as described in the PRE-OPERATION CHECKS section of this manual.

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

If the cylinders were coated with oil during storage preparation, the engine will smoke briefly at startup. This is normal.

7 SPECIFICATIONS

GX640

DIMENSIONS	GX640			
Description code	GAAD			
Type	SD1	SD2	SD3	SD4
Engine type	4-stroke, OHC, 2 cylinder			
Displacement [Bore x Stroke]	635 cm ³ (38.7 CU in) 76 x 70 mm (3.0 x 2.8 in)			
Max. output	14.7 kW (20 HP) / 3,600 rpm			
Max. torque	46 N·m (4.7 kg-m, 34 ft-lb) / 2,500 rpm			
Fuel consumption	306 g/kWh (0.503 lb/hph)			
Cooling system	Liquid cooled			
Ignition system	C.D.I.			
PTO shaft rotation	Counterclockwise			

Dimensions and weight (Standard Type: SD1)

Overall length	449 mm (17.6 in)
Overall width	420 mm (16.5 in)
Overall height	551 mm (21.6 in)
Dry weight	50 kg (110.2 lbs)

NOTE: Specification are subject to change without notice.