

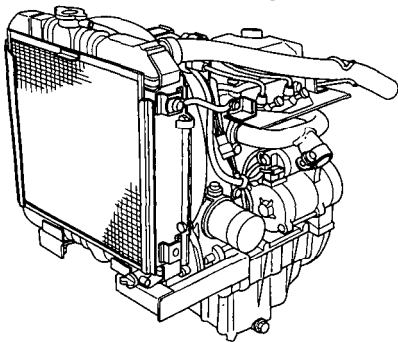
# **HONDA**

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# **ENGINES**

## **OWNER'S MANUAL**

### **GX640**



**WARNING:**



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Thank you for purchasing a Honda engine. We want to help you get the best results from your new engine and to operate it safely. This manual contains the information on how to do that; please read it carefully.

This manual covers the operation and maintenance of GX640 engines 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. Honda Motor Co., Ltd. reserves the right to make changes at any time without notice and without incurring any obligation.


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

This manual should be considered a permanent part of the engine and should remain with it if it is resold.

It is illegal in some areas to operate an engine without a USDA-qualified spark arrester. Check local laws and regulations. An optional spark arrester for this engine is available from authorized Honda servicing dealers.

## Safety Messages

Your safety and the safety of others is very important. We have provided important safety messages in this manual and on the engine. Please read these messages carefully.

A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol  and one of three words: DANGER, WARNING, or CAUTION.

These 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.

Each message tells you what the hazard is, what can happen, and what you can do to avoid or reduce injury.

## Damage Prevention Messages

You will also see other important messages that are preceded by the word **NOTICE**.

This word means:

**NOTICE**

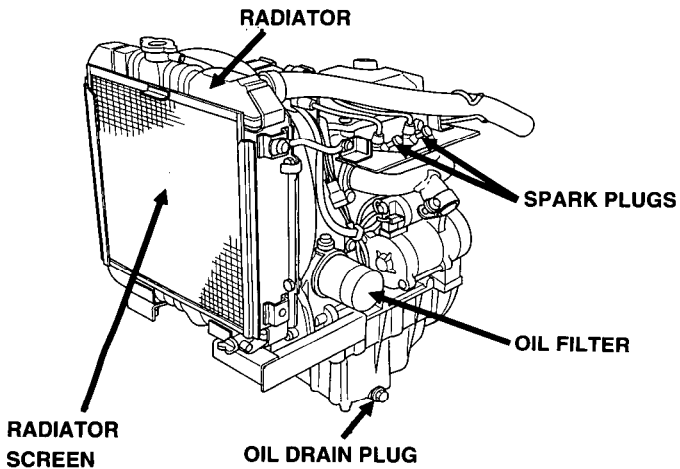
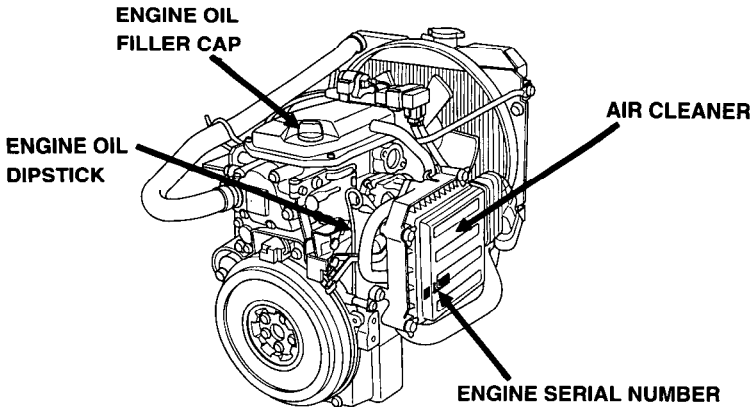
Your engine or other property could be damaged if you don't follow instructions.

The purpose of these messages is to help prevent damage to your engine, other property, or the environment.

# 1. ENGINE SAFETY

- Honda engines are designed to give safe and dependable service if operated according to instructions. Read and understand this Owner's Manual before operating the engine. Failure to do so could result in personal injury or equipment damage.
- To prevent fire hazards and to provide adequate ventilation, keep the engine at least 1 meter (3 feet) away from building walls and other equipment during operation. Do not place flammable objects close to the engine.
- Do not allow children to operate the engine. Keep children and pets away from the area of operation.
- Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.
- 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.
- Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust gas. Never run the engine in a closed garage or confined area.
- 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 it indoors.

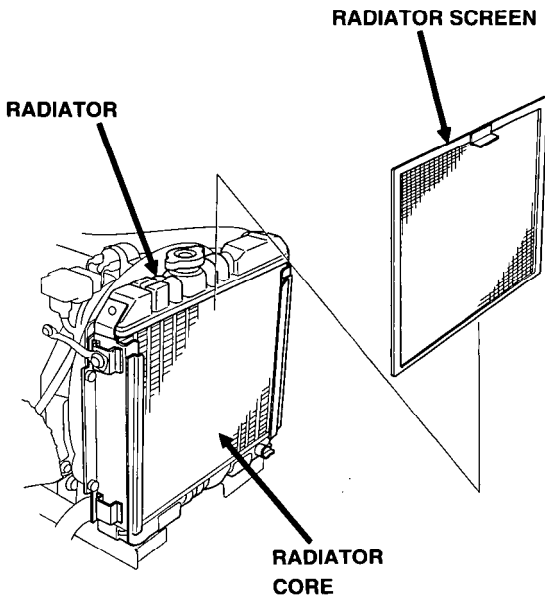
## 2. COMPONENT IDENTIFICATION



### **3. PRE-OPERATION CHECK**

#### **RADIATOR SCREEN and RADIATOR CORE**

1. Allow the radiator to cool, then remove the screen from the front of the radiator.
2. Clean debris from the screen and radiator core.
3. Reinstall the radiator screen.

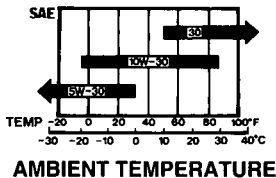


# ENGINE OIL

## NOTICE

- Engine oil is a major factor affecting engine performance and service life. Nondetergent oils and 2-stroke engine oils are not recommended because they have inadequate lubricating characteristics.
- Check the oil level with the engine on a level surface and the engine stopped.

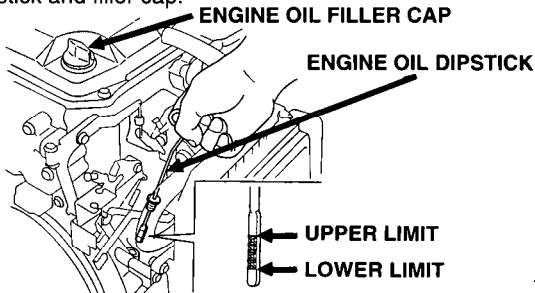
Use 4-stroke motor oil that meets or exceeds the requirements for API service classification SF or SG. Always check the API SERVICE label on the oil container to be sure it includes the letters SF or SG. SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.



## Oil Level Check

Check the oil level with the engine stopped and level.

1. Remove the dipstick and wipe it clean.
2. Fully insert the dipstick, then remove it to check the oil level.
3. 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.
4. Reinstall the dipstick and filler cap.



## NOTICE

Running the engine with a low oil level can cause engine damage.

## FUEL

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.

### WARNING

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

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

### NOTICE

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

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

Occasionally you may hear 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 servicing dealer.



**NOTICE**

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

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

## Oxygenated Fuels

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

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

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

The following are the EPA approved percentages of oxygenates:

- ETHANOL** — (ethyl or grain alcohol) 10% by volume  
You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name "Gasohol".
- MTBE** — (methyl tertiary butyl ether) 15% by volume  
You may use gasoline containing up to 15% MTBE by volume.
- METHANOL** — (methyl or wood alcohol) 5% by volume  
You may use gasoline containing up to 5% methanol by volume as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

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

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

## COOLANT

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

### **▲ WARNING**

Removing the radiator cap while the engine is hot can cause the coolant to spray out, seriously scalding you.

Always let the engine and radiator cool down before removing the radiator cap.

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.

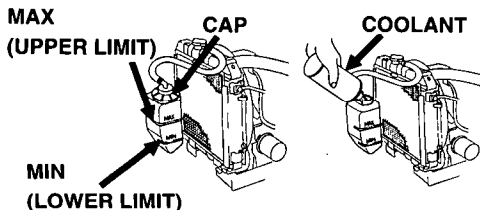
### **Coolant Recommendation**

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 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.

### **NOTICE**

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



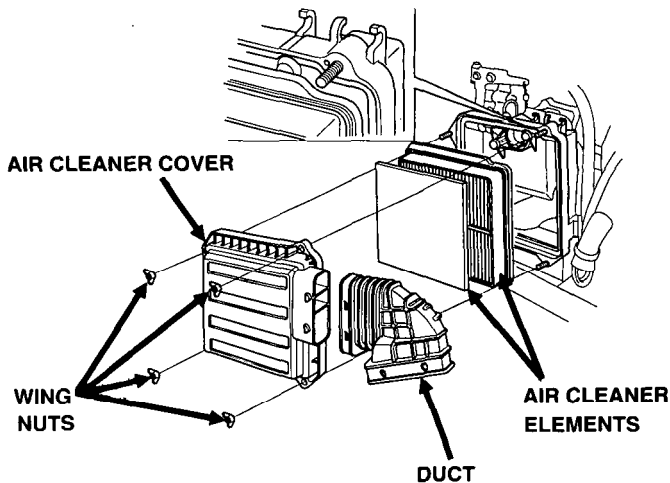
## AIR CLEANER

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.

### NOTICE

Operating the engine without air filters, or damaged filters, will allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by the Distributor's Limited Warranty.

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 pages 21, 22.
3. Reinstall the air cleaner elements and air cleaner cover. Tighten the wing nuts securely. Reinstall the plastic duct.



## **4. OPERATION**

### **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 plugs and cause hard starting.

High altitude performance can be improved by specific modifications to the carburetor. If you always operate your engine at altitudes above 1,800 meters (6,000 feet), have your dealer perform this carburetor modification.

Even with carburetor modification, engine horsepower will decrease about 3.5% for each 300 meter (1,000 foot) 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 1,800 meters (6,000 feet) with a modified carburetor may cause the engine to overheat and result in serious engine damage. For use at low altitudes, have your dealer return the carburetor to original factory specifications.

## 5. MAINTENANCE

### THE IMPORTANCE OF MAINTENANCE

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

#### WARNING

Improper maintenance, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed.

Always follow the inspection and maintenance recommendations and schedules in this owner's manual.

To help you properly care for your engine, 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 engine under severe conditions, such as sustained high-load or high-temperature operation, or use in unusually wet or dusty conditions, consult your servicing dealer for recommendations applicable to your individual needs and use.

**Maintenance, replacement, or repair of the emission control devices and systems may be performed by any engine repair establishment or individual, using parts that are "certified" to EPA standards.**

## MAINTENANCE SAFETY

Some of the most important safety precautions follow. However, we cannot warn you of every conceivable hazard that can arise in performing maintenance. Only you can decide whether or not you should perform a given task.

### WARNING

Failure to properly follow maintenance instructions and precautions can cause you to be seriously hurt or killed.

Always follow the procedures and precautions in this owner's manual.

## Safety Precautions

- Make sure the engine is off before you begin any maintenance or repairs. This will eliminate several potential hazards:
  - **Carbon monoxide poisoning from engine exhaust.**  
Be sure there is adequate ventilation whenever you operate the engine.
  - **Burns from hot parts.**  
Let the engine and exhaust system cool before touching.
  - **Injury from moving parts.**  
Do not run the engine unless instructed to do so.
- Read the instructions before you begin, and make sure you have the tools and skills required.
- To reduce the possibility of fire or explosion, be careful when working around gasoline. Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks and flames away from all fuel related parts.

Remember that your servicing dealer knows your engine 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 and replacement.

# **EMISSION CONTROL SYSTEM**

## **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 18. 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.

# MAINTENANCE SCHEDULE

REGULAR SERVICE PERIOD			Each use	First month or 20 Hrs. (3)	Every 3 months or 50 Hrs. (3)	Every 6 months or 100 Hrs. (3)	Every year or 300 Hrs.	
ITEM	Perform at every indicated month or operating hour interval, whichever comes first.							
●	Engine oil	Check level	O					
		Change		O		O		
	Radiator screen	Clean	O					
	Radiator coolant	Check	O					
		Change		Every 2 years (2)				
	Radiator core	Clean				O		
●	Air cleaner	Check	O					
		Clean			O(1)			
		Replace					O(*)	
●	Spark plugs	Clean-Readjust				O		
		Replace					O	
	Spark arrester (optional part)	Clean				O		
●	Idle speed	Check-Readjust					O(2)	
●	Valve clearance	Check-Readjust					O(2)	
●	Engine oil filter	Replace					O or 200 hrs	
●	Fuel filter	Check				O		
		Replace					O(2)	
●	Fuel line	Check		Every 2 years (Replace if necessary) (2)				

● Emission related items.

(\*) Replace the paper element only.

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

(2) These items should be serviced by an authorized Honda servicing 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 warm to assure rapid and complete draining.

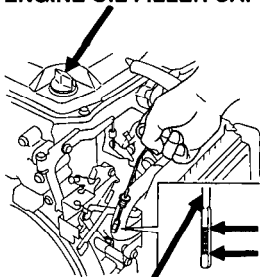
1. Remove the oil filler cap and drain bolt, and drain the oil into a suitable container.
2. Retighten the drain plug securely.
3. Refill to the upper limit mark on the dipstick with the recommended oil (see page 7). Tighten the oil filler cap securely.

## ENGINE OIL REFILL CAPACITY

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

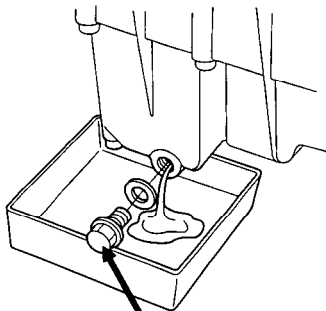
With oil filter change : 2.3 ℓ (2.4 US qt, 2.0 Imp qt)

### ENGINE OIL FILLER CAP



UPPER LIMIT  
LOWER LIMIT

### ENGINE OIL DIPSTICK



OIL DRAIN  
BOLT

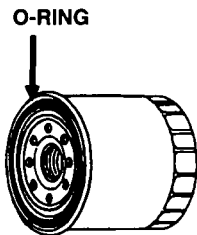
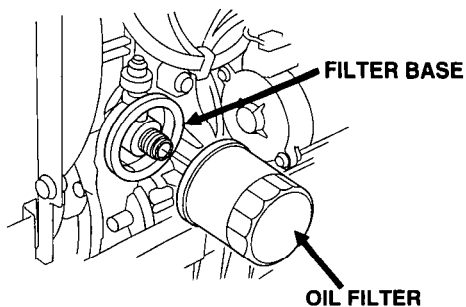
Wash your hands with soap and water after handling used oil.

Please dispose of used motor oil in a manner that doesn't harm 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, pour it on the ground or down a drain.

## OIL FILTER CAHNGE

1. Drain the engine oil, and retighten the drain bolt securely (see page 19).
2. Remove the oil filter with a filter wrench and let the remaining oil drain out. Discard the oil filter.
3. Clean the filter base.
4. Coat the O-ring on the new filter with clean engine oil.
5. Screw on the new oil filter by hand, until the O-ring contacts the filter mounting base, then use an oil filter wrench to tighten the filter an additional  $7/8$  turn.

**TORQUE: 8 N·m (0.8 kg-m, 5.6 ft-lb)**



### NOTICE

Use only a Honda genuine 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.

6. Pour the specified amount of recommended oil into the engine (see page 19). Start the engine and check the filter for leaks.
7. Stop the engine and recheck the oil level. If necessary, add oil to bring it up to the proper level.

## AIR CLEANER SERVICE

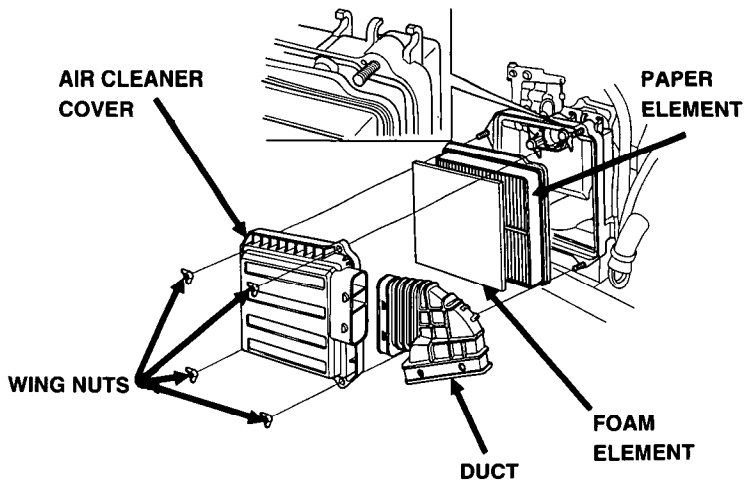
A dirty air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the engine in extremely dusty areas.

### NOTICE

Operating the engine without air filters, or damaged filters, will allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by the Distributor's Limited Warranty.

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.

# Air Cleaner



## SPARK PLUG SERVICE

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

### NOTICE

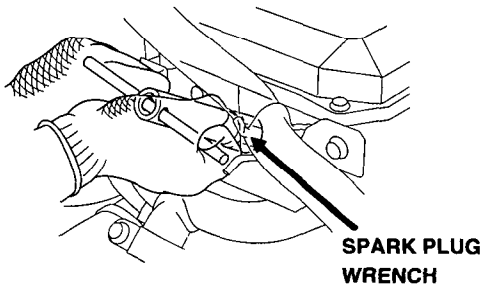
Incorrect spark plugs can cause engine damage.

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

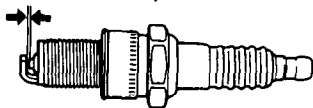
1. Remove the spark plug caps.
2. Clean any dirt from around each spark plug base.
3. Use the proper size plug wrench to remove the spark plugs.

### CAUTION

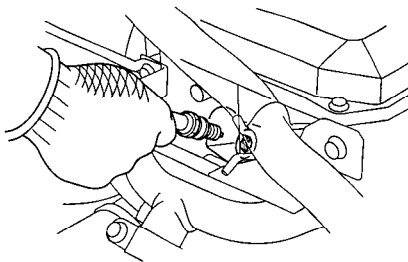
The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot.



4. Visually inspect the spark plugs. Discard them if the insulator is cracked or chipped. Clean the spark plugs with a wire brush if they are to be reused.
5. Measure the plug gap with a feeler gauge. Correct as necessary by carefully bending the side electrode. **1.0 – 1.1 mm**  
The gap should be:  
1.0 – 1.1 mm (0.039 – 0.043 in)



6. Check that the spark plug washers are in good condition, and thread the spark plugs in by hand to prevent cross-threading.



7. After the spark plugs are seated, tighten with the spark plug wrench to compress the washers.
- If installing new spark plugs, tighten  $1/2$  turn after the spark plugs seat to compress the washers.
  - If reinstalling used spark plugs, tighten  $1/8$  –  $1/4$  turn after the spark plugs seat to compress the washers.

#### **NOTICE**

Loose spark plugs can overheat and damage the engine. Overtightening the spark plugs can damage the threads in the cylinder head.

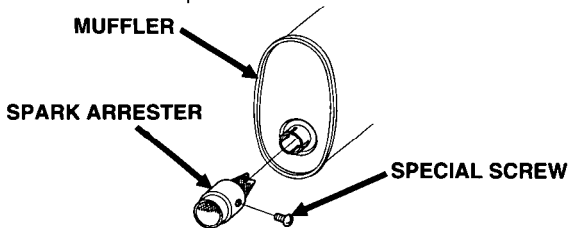


## **SPARK ARRESTER MAINTENANCE (optional part)**

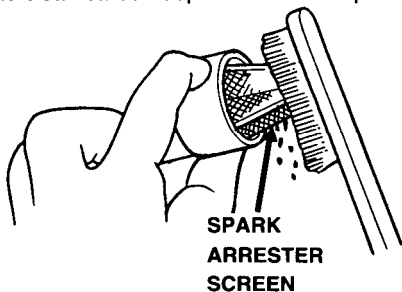
In some areas, it is illegal to operate an engine without a spark arrester. Check local laws and regulations. A spark arrester is available from authorized Honda servicing dealers.

The spark arrester must be serviced every 100 hours to keep it functioning as designed.

1. Allow the engine to cool, then remove the special screw from the muffler and remove the spark arrester.



2. Use a brush to clean carbon deposits from the spark arrester screen.



3. The spark arrester must be free of breaks and holes. Replace, if necessary.
4. Install the spark arrester and the muffler in the reverse order of disassembly.

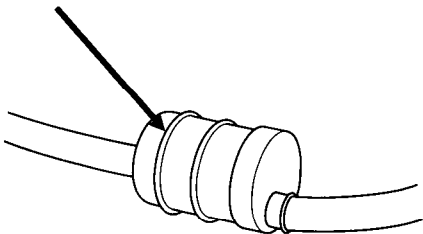
## FUEL FILTER INSPECTION AND REPLACEMENT

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.

FUEL FILTER



## **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.

#### **Cleaning**

1. Stop the engine, and allow it to cool.
2. Clean all exterior surfaces.

#### **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**

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.

1. Add gasoline stabilizer following the manufacturer's instructions.
2. After adding a gasoline stabilizer, run the engine outdoors for 10 minutes to be sure that treated gasoline has replaced the untreated gasoline in the carburetor.

## Draining the Fuel Tank and Carburetor

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

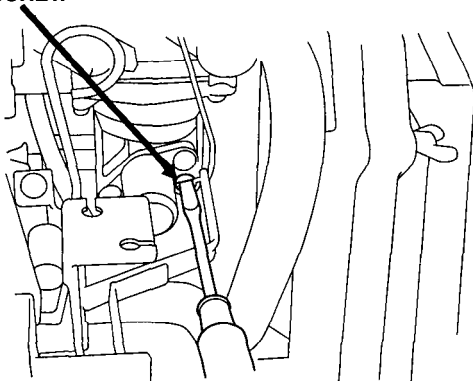
### **▲ WARNING**

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

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

2. 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 19).

#### 4. Engine Cylinders

Remove the spark plugs (see pages 23, 24). 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 sheel plastic as a dust cover. A nonporous cover will trap moisture around the mower, 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. GENERAL SPECIFICATIONS

ITEM	GX640			
Description code	GAAD			
Type	SD1	SD2	SD3	SD4
Engine type	4-stroke, OHC, 2 cylinder			
Displacement [Bore × Stroke]	635 cm <sup>3</sup> (38.7 cu in) 76 × 70 mm (3.0 × 2.8 in)			
Max. output	14.7 kW (20 HP) at 3,600 rpm			
Max. torque	46 N·m (4.7 kg·m, 34 ft·lb) at 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 (21.7 in)
Dry weight	50 kg (110.2 lbs)

NOTE: Specifications are subject to change without notice.

## 8. TUNERUP SPECIFICATIONS

ITEM	SPECIFICATION	PAGE
Spark plug gap	1.0 – 1.1 mm (0.039 – 0.043 in)	23
Engine idle speed	1,400 ± 100 rpm	See your authorized Honda servicing dealer
Valve Clearance (cold)	Intake: 0.12 ± 0.02 mm Exhaust: 0.20 ± 0.02 mm	
Other specifications	No other adjustments needed.	

## **9. WARRANTY SERVICE INFORMATION**

Honda power equipment 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  
4475 River Green Parkway  
Duluth, Georgia 30136-2565

Or telephone: (770) 497-6400

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

- Model and serial numbers (see page 5)
- Name of dealer who sold the engine to you
- Name and address of dealer who services your engine
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem



## **Current customer service contact information:**

Serviceing 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, General Manager, or Owner can help. Almost all problems are solved in this way.

### **United States, Puerto Rico, and U.S. Virgin Islands:**

If you are dissatisfied with the decision made by the dealership's management, contact the Honda Regional Engine Distributor for your area ([www.honda-engines.com/dea.htm](http://www.honda-engines.com/dea.htm)).

If you are still dissatisfied after speaking with the Regional Engine Distributor, you may contact the Honda Office as shown.

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

Or telephone: (770) 497-6400 M-F, 8:30 am - 7:00 pm EST

When you write or call, please provide the following information:

- Equipment manufacturer's name and model number that the engine is mounted on
- Engine model, serial number, and type
- Name of the dealer who sold the engine to you
- Name, address, and contact person of the dealer who services your engine
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem