

INTRODUCTION

Thank you for purchasing a Honda engine. We want to help you to get the best results from your new engine and to operate it safely. This manual contains information on how to do that; please read it carefully before operating the engine. If a problem should arise, or if you have any questions about your engine, consult an authorized Honda servicing dealer.

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 the engine if resold.

Review the instructions provided with the equipment powered by this engine for any additional information regarding engine startup, shutdown, operation, adjustments or any special maintenance instructions.

United States, Puerto Rico, and U.S. Virgin Islands:
We suggest you read the warranty policy to fully understand its coverage and your responsibilities of ownership. The warranty policy is a separate document that should have been given to you by your dealer.

SAFETY MESSAGES

Your safety and the safety of others are 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 signal words mean:

- DANGER** You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.
- WARNING** You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.
- CAUTION** You CAN be HURT if you don't follow instructions.

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:

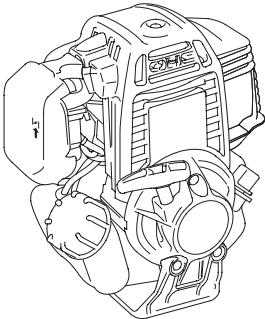
- NOTICE** Your engine or other property can be damaged if you don't follow instructions.

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

HONDA

OWNER'S MANUAL
MANUEL DE L'UTILISATEUR
MANUAL DEL PROPIETARIO
GX25-GX35

ENGLISH

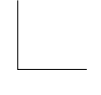


WARNING:

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

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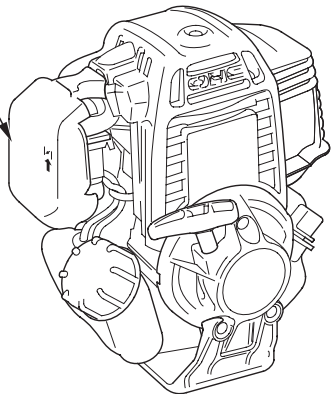
SAFETY INFORMATION

- Understand the operation of all controls and learn how to stop the engine quickly in case of emergency. Make sure the operator receives adequate instruction before operating the equipment.
- Do not allow children to operate the engine. Keep children and pets away from the area of operation.
- Your engine's exhaust contains poisonous carbon monoxide. Do not run the engine without adequate ventilation, and never run the engine indoors.
- The engine and exhaust become very hot during operation. Keep the engine at least 1 meter (3 feet) away from buildings and other equipment during operation. Keep flammable materials away, and do not place anything on the engine while it is running.

SAFETY LABEL LOCATION

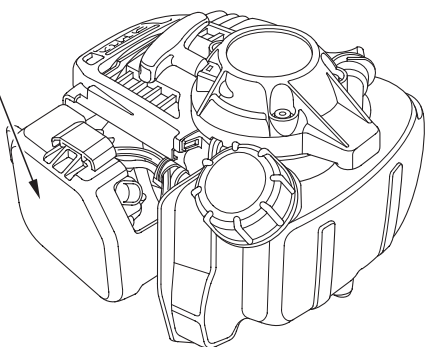
Standard/Pump type:

READ OWNER'S MANUAL BEFORE OPERATION.



Tiller type:

READ OWNER'S MANUAL BEFORE OPERATION.



The illustrations in this manual are based on the GX25.

- The illustrations may vary according to the type.

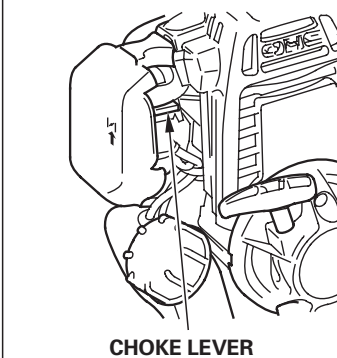
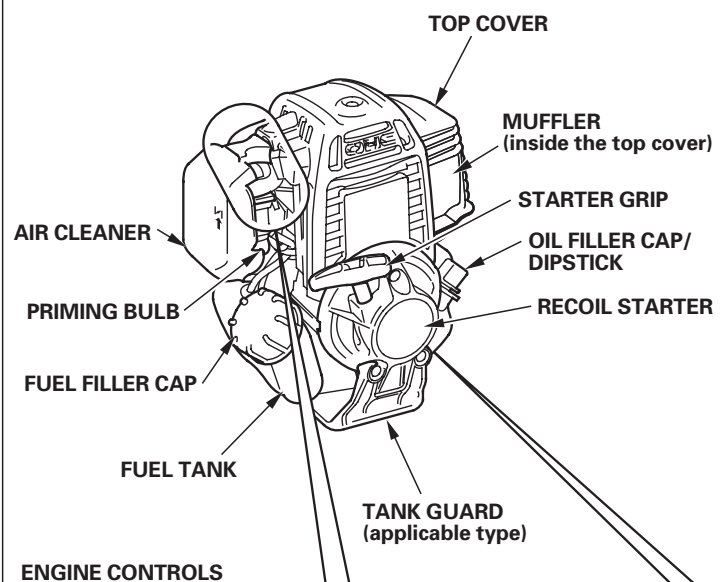
COMPONENT & CONTROL LOCATION

Standard/Pump type:

SPARK PLUG
(inside the top cover)

OIL FILLER CAP

Standard type:



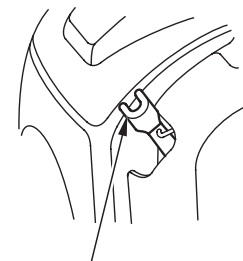
CHOKE LEVER

Standard type:

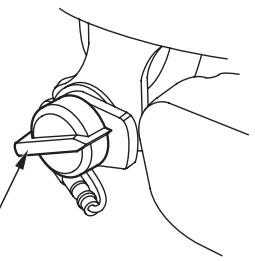


THROTTLE LEVER

Pump type:



THROTTLE LEVER

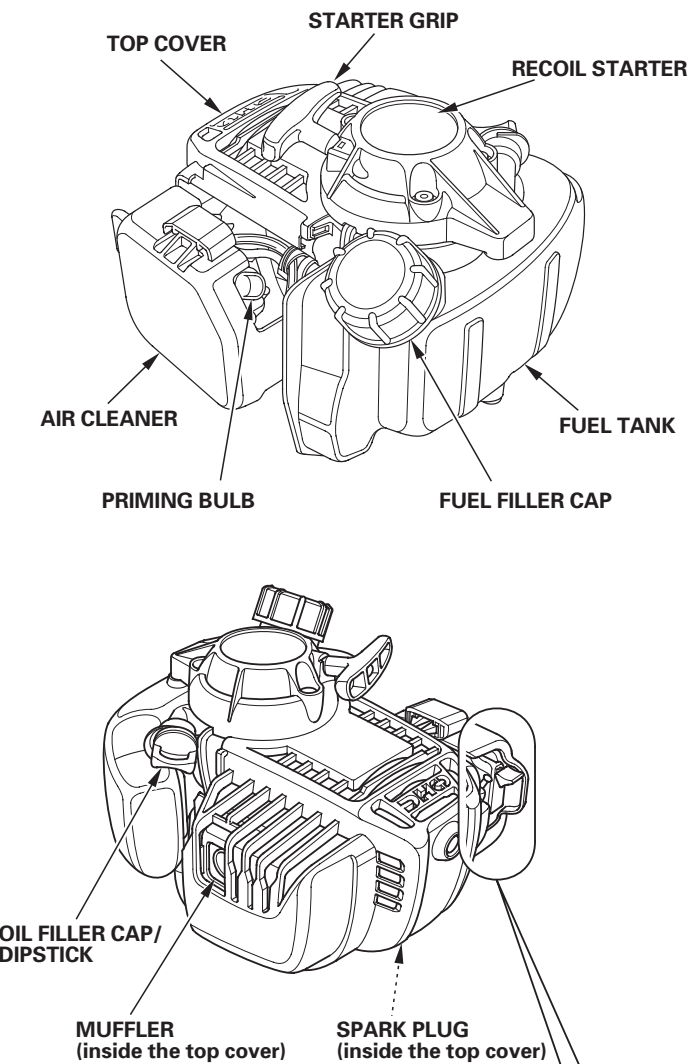


ENGINE SWITCH



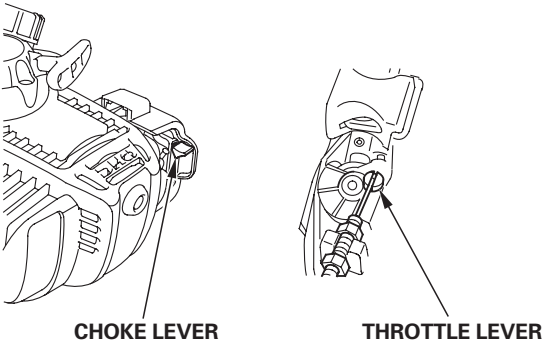


Tiller type:

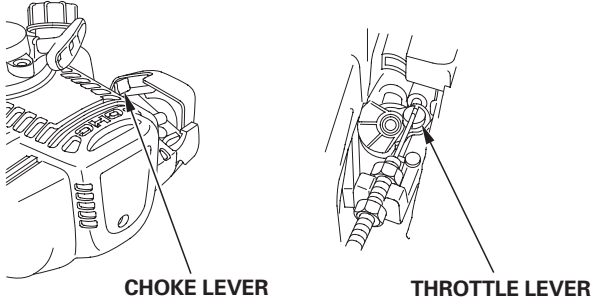


ENGINE CONTROLS

GX25



GX35



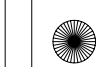
FEATURES

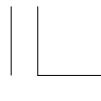
Centrifugal Clutch (Standard/Tiller type)

The centrifugal clutch automatically engages and transmits power when engine speed is increased above approximately 4,200 rpm. At idle speed, the clutch is disengaged.

NOTICE

Do not run the engine without mounting it on equipment that includes the centrifugal clutch drum and housing, or centrifugal force will cause the clutch shoes to contact and damage the engine case.





BEFORE OPERATION CHECKS

IS YOUR ENGINE READY TO GO?

For your safety, and to maximize the service life of your equipment, it is very important to take a few moments before you operate the engine to check its condition. Be sure to take care of any problem you find, or have your servicing dealer correct it, before you operate the engine.

⚠ WARNING

Improperly maintaining this engine, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed.

Always perform a pre-operation inspection before each operation, and correct any problem.

Before beginning your pre-operation checks, be sure the engine is level and the engine switch is in the OFF position.

Always check the following items before you start the engine:

Check the General Condition of the Engine

1. Look around and underneath the engine for signs of oil or gasoline leaks.
2. Remove any excessive dirt or debris, especially around the muffler and recoil starter.
3. Look for signs of damage.
4. Check that all shields and covers are in place, and all nuts, bolts, and screws are tightened.

Check the Engine

1. Check the fuel level (see page 8). Starting with a full tank will help to eliminate or reduce operating interruptions for refueling.
2. Check the engine oil level (see page 9). Running the engine with a low oil level can cause engine damage.
3. Check the air filter element (see page 10). A dirty air filter element will restrict air flow to the carburetor, reducing engine performance.
4. Check the equipment powered by this engine.

Review the instructions provided with the equipment powered by this engine for any precautions and procedures that should be followed before engine startup.

OPERATION

SAFE OPERATING PRECAUTIONS

Before operating the engine for the first time, please review the *SAFETY INFORMATION* section on page 2 and the *BEFORE OPERATION CHECKS*.

⚠ WARNING

Carbon monoxide gas is toxic. Breathing it can cause unconsciousness and even kill you.

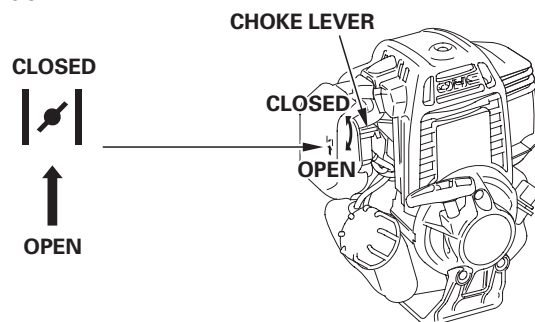
Avoid any areas or actions that expose you to carbon monoxide.

Review the instructions provided with the equipment powered by this engine for any safety precautions that should be observed with engine startup, shutdown or operation.

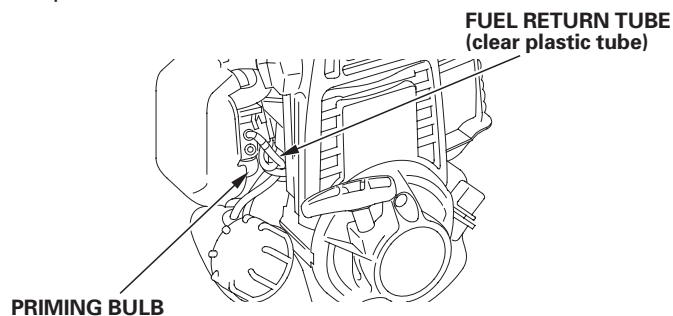
STARTING THE ENGINE

1. To start a cold engine, move the choke lever to the CLOSED position.

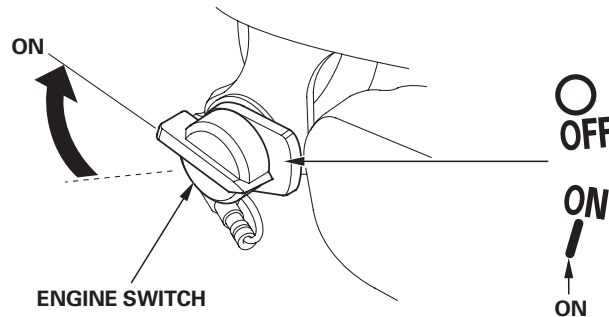
To restart a warm engine, leave the choke lever in the OPEN position.

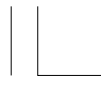


2. Press the priming bulb repeatedly until fuel can be seen in the clear-plastic fuel-return tube.



3. • Standard/Tiller type: Turn the engine switch on the equipment to the ON position.
• Pump type: Turn the engine switch to the ON position.

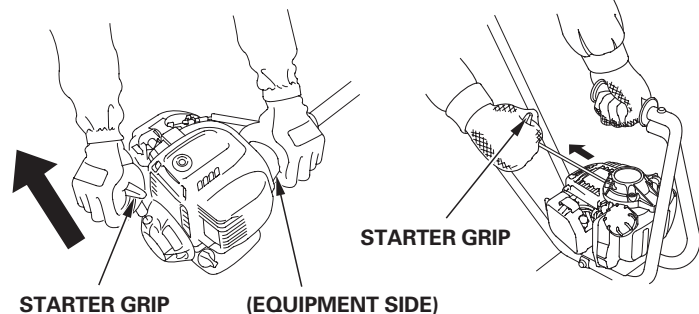




4. Pull the starter grip lightly until you feel resistance, then pull briskly. Return the starter grip gently.

Standard/Pump type:

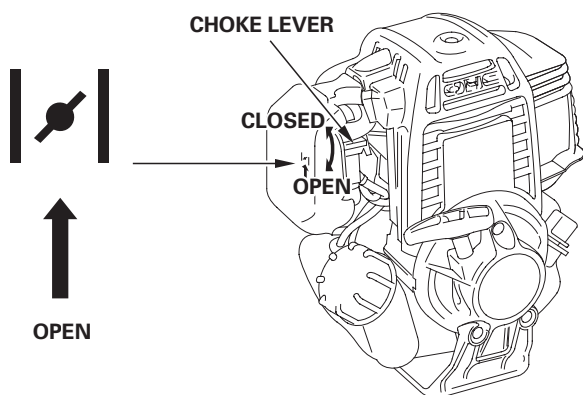
Tiller type:



NOTICE

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

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



Hot Restart

If the engine is operated at higher ambient temperatures, then turned off and allowed to sit for a short time, it may not restart on the first pull.

If necessary, use the following procedure:

IMPORTANT SAFETY PRECAUTION

Turn the engine switch to the OFF position before performing the following procedure. This will prevent the engine from starting and running at maximum speed when the throttle is in the MAX. speed position. If the engine starts with the throttle in the MAX. speed position, the equipment can move forward rapidly or the trimmer attachment can spin at maximum speed. This may result in personal injury.

• Tiller type

1. Turn the engine switch on the equipment to the OFF position.
2. Move the choke lever to the OPEN position.
3. Hold the throttle lever on the equipment in the MAX. speed position.
4. Pull the starter grip 3 to 5 times.

Follow the STARTING THE ENGINE procedure on page 4 and start the engine with the choke lever in the OPEN position.

• Pump type

1. Turn the engine switch to the OFF position.
2. Move the choke lever to the OPEN position.
3. Hold the throttle lever in the MAX. speed position.
4. Pull the starter grip 3 to 5 times.

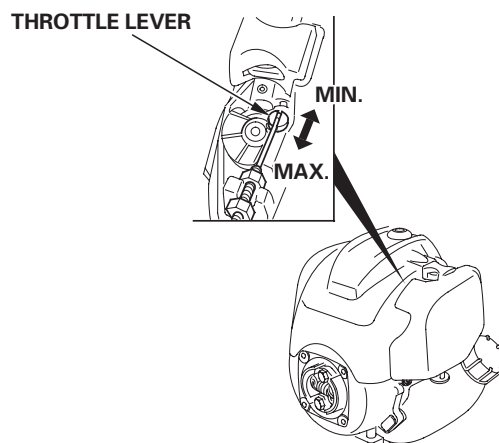
Follow the STARTING THE ENGINE procedure on page 4 and start the engine with the choke lever in the OPEN position.

SETTING ENGINE SPEED

Standard/Tiller type:

Position the throttle lever for the desired engine speed.

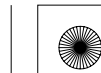
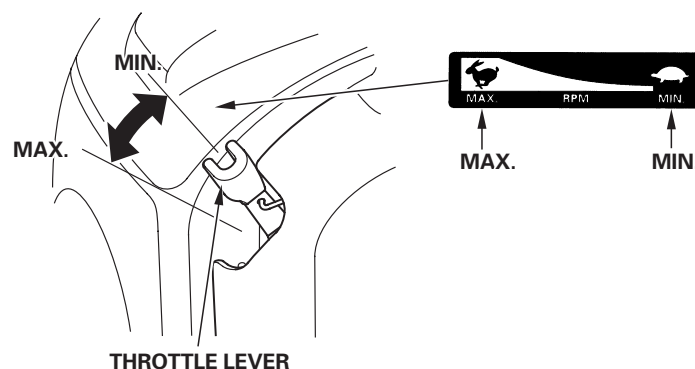
The throttle lever shown here will be connected to a remote control on the equipment powered by this engine. Refer to the instructions provided with the equipment for remote control information and for engine speed recommendations.



Pump type:

Position the throttle lever for the desired engine speed.

For engine speed recommendations, refer to the instructions provided with the equipment powered by this engine.





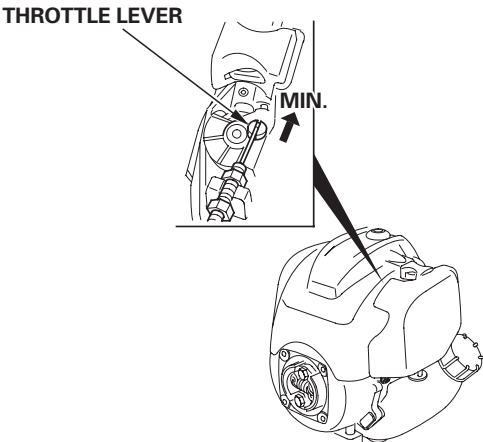
STOPPING THE ENGINE

Standard/Tiller type:

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

- 1. Move the throttle lever to the MIN. position.

The throttle lever shown here will be connected to a remote control on the equipment powered by this engine. Refer to the instructions provided with the equipment for remote control information and for engine speed recommendations.

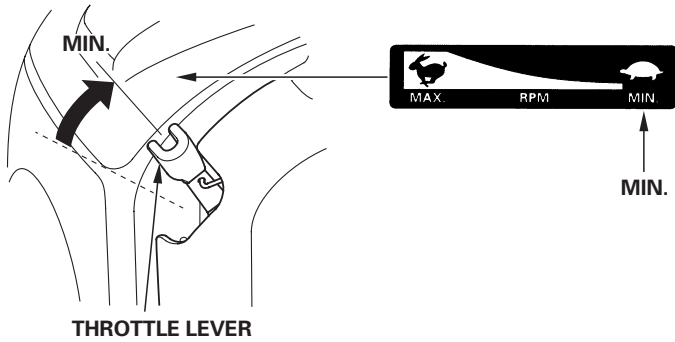


- 2. Turn the engine switch on the equipment to the OFF position.

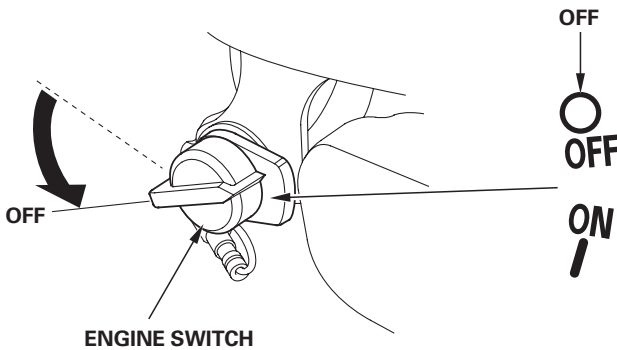
Pump type:

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

- 1. Move the throttle lever to the MIN. position.



- 2. Turn the engine switch to the OFF position.



SERVICING YOUR ENGINE

THE IMPORTANCE OF MAINTENANCE

Good maintenance is essential for safe, economical and trouble-free operation. It will also help reduce 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 non-flammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks and flames away from all fuel related parts.

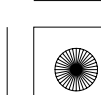
Remember that an authorized Honda servicing dealer knows your engine best and is fully equipped to maintain and repair it. To ensure the best quality and reliability, use only new genuine Honda parts or their equivalents for repair and replacement.

MAINTENANCE SCHEDULE

REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first.		Each use	First month or 10 hrs	Every 3 months or 25 hrs	Every 6 months or 50 hrs	Every year or 100 hrs	Every 2 years or 300 hrs	Refer to Page
ITEM								
Engine oil	Check level	○						9
	Change		○		○			
Air cleaner	Check	○						10
	Clean			○ (1)				
Spark plug	Check-adjust					○		11
	Replace						○	
Timing belt	Check	After every 300 hrs (2) (4)						Shop manual
Spark arrester (Applicable types)	Clean					○		12–14
Exhaust Filter (Applicable types)	Clean					○		13
Engine cooling fins	Check				○			11
Nuts, bolts, fasteners (Retighten if necessary)	Check	○						4
Clutch shoes	Check				○ (2)			Shop manual
Idle speed	Check-adjust					○ (2)		Shop manual
Valve clearance	Check-adjust					○ (2)		Shop manual
Combustion chamber	Clean	After every 300 hrs. (2)						Shop manual
Fuel filter	Check					○		12
Fuel tank	Clean					○		12
Fuel tubes	Check	Every 2 years (Replace if necessary) (2)						Shop manual
Oil tube	Check	Every 2 years (Replace if necessary) (2)						Shop manual

- (1) Service more frequently when used in dusty areas.
- (2) These items should be serviced by your Honda servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to the Honda shop manual for service procedures.
- (3) For commercial use, log hours of operation to determine proper maintenance intervals.
- (4) Check that there is no crack and abnormal wear-out in the belt, and replace if it is abnormal.

Failure to follow this maintenance schedule could result in non-warrantable failures.



REFUELING

Recommended Fuel

Unleaded gasoline		
U.S.	Pump octane rating 86 or higher	
Except U.S.	Research octane rating 91 or higher	
	Pump octane rating 86 or higher	

This engine is certified to operate on unleaded gasoline with a pump octane rating of 86 or higher (a research octane rating of 91 or higher).

Refuel in a well-ventilated area with the engine stopped. If the engine has been running, allow it to cool first. Never refuel the engine inside a building where gasoline fumes may reach flames or sparks.

You may use regular unleaded gasoline containing no more than 10% Ethanol (E10) or 5% Methanol by volume. In addition, Methanol must contain cosolvents and corrosion inhibitors. Use of fuels with content of Ethanol or Methanol greater than shown above may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of the fuel system. Engine damage or performance problems that result from using a fuel with percentages of Ethanol or Methanol greater than shown above are not covered under warranty.



WARNING

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

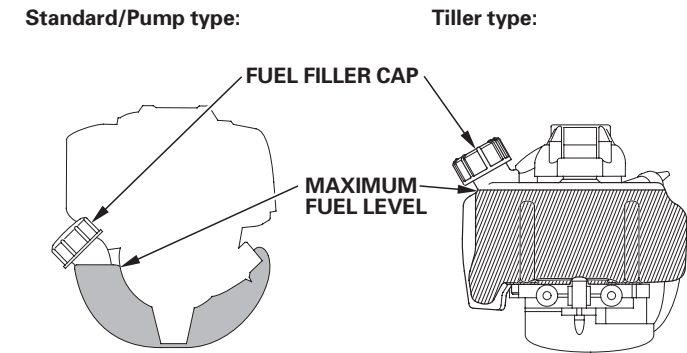
- Stop engine and keep heat, sparks, and flame away.
- Refuel only outdoors.
- Wipe up spills immediately.

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 the Distributor's Limited Warranty.

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

1. Check the fuel level by looking through the translucent fuel tank.
2. If the fuel level is low, refuel in a well-ventilated area with the engine stopped. If the engine has been running, allow it to cool.



To refuel, rest the engine a level surface with the fuel filler cap facing up, as shown. Remove the fuel filler cap, and fill the tank with gasoline to the bottom of the filler neck. Refuel carefully to avoid spilling fuel. Do not overfill. There should be no fuel in the filler neck. After refueling, tighten the fuel filler cap securely.

Keep gasoline away from appliance pilot lights, barbecues, electric appliances, power tools, etc.

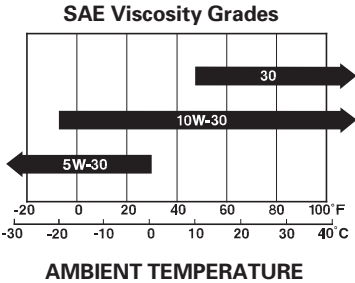
Spilled fuel is not only a fire hazard, it causes environmental damage. Wipe up spills immediately.

ENGINE OIL

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil.

Recommended Oil

Use 4-stroke motor oil that meets or exceeds the requirements for API service classification SJ or later (or equivalent). Always check the API service label on the oil container to be sure it includes the letters SJ or later (or equivalent).



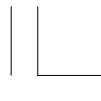
SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

Standard/Tiller type:

The recommended operating range of this engine is -5°C to 40°C (23°F to 104°F).

Pump type:

The recommended operating range of this engine is 5°C to 40°C (41°F to 104°F).

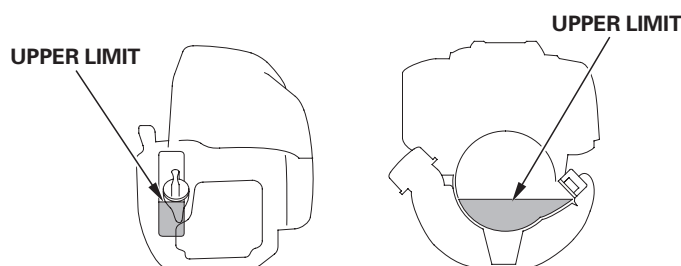
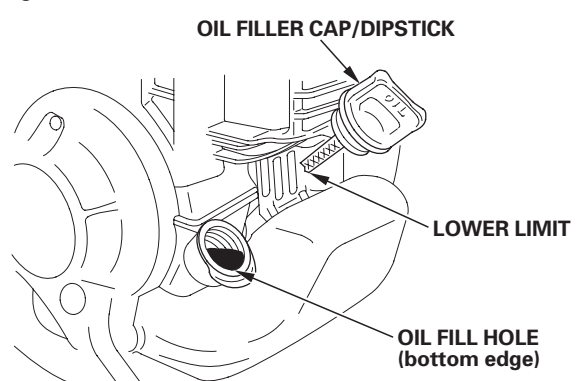


Oil Level Check

Check the engine oil level before each use, or every 10 hours if operated continuously.

Check the engine oil level with the engine stopped and in a level position.

1. Remove the oil filler cap/dipstick and wipe it clean.
2. Insert and remove the oil filler cap/dipstick without screwing it into the oil filler neck, then remove it to check the oil level shown on the dipstick.
3. If the oil level is near or below the lower limit mark on the dipstick, fill to the bottom edge of the oil fill hole with the recommended oil (see page 8). To avoid overfilling or underfilling, be sure the engine is in a level position, as shown, while adding oil.



4. Reinstall the oil filler cap/dipstick and tighten securely.

NOTICE

Running the engine with a low oil level can cause engine damage. This type of damage is not covered by the Distributor's Limited Warranty.

Oil Change

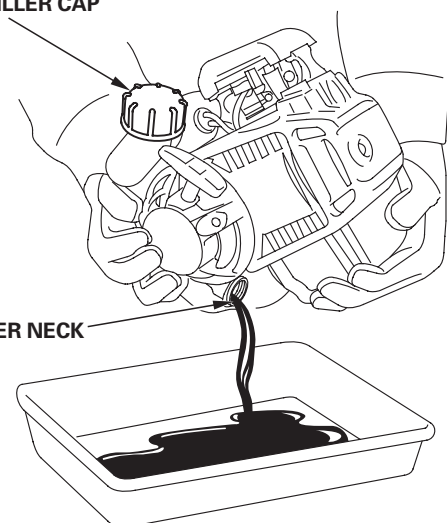
Drain the used oil when the engine is warm. Warm oil drains quickly and completely.

1. Check that the fuel filler cap is tightened securely.
2. Place a suitable container below the engine to catch the used oil.
3. Remove the oil filler cap/dipstick and drain the oil into the container by tipping the engine toward the oil filler neck.

Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash, pour it on the ground, or pour it down a drain.

FUEL FILLER CAP

OIL FILLER NECK

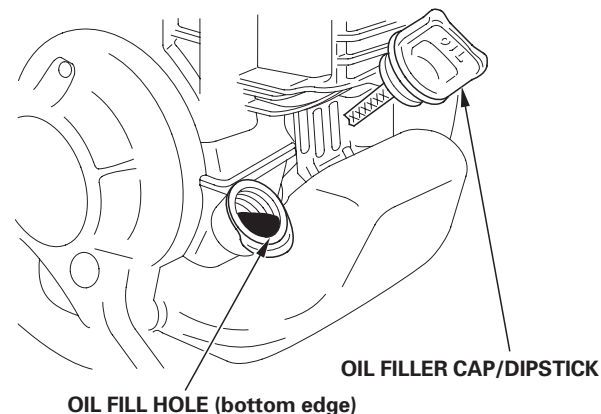


4. With the engine in a level position, fill to the bottom edge of the oil fill hole with the recommended oil (see page 8).

Some oil will remain in the engine after draining. When refilling with fresh oil, start with less than 80 cm³ (2.7 US oz, 2.8 Imp oz). Slowly add enough oil to fill to the bottom edge of the oil fill hole as shown below.

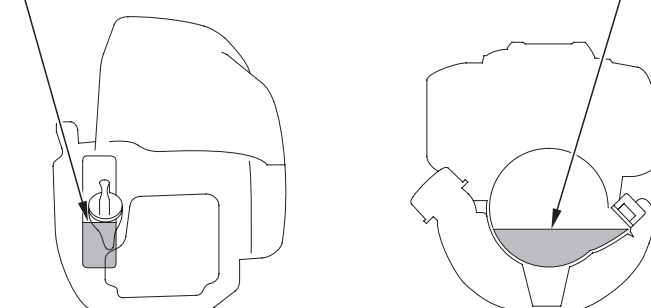
NOTICE

Running the engine with a low or excessive oil level can cause engine damage. This type of damage is not covered by the Distributor's Limited Warranty.

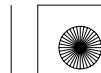


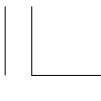
UPPER LIMIT

UPPER LIMIT



5. Reinstall the oil filler cap/dipstick securely. If any oil is spilled, make sure to wipe it up.





AIR CLEANER

A dirty air cleaner will restrict air flow to the carburetor, reducing engine performance. If you operate the engine in very dusty areas, clean the air filter element more often than specified in the MAINTENANCE SCHEDULE.

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

Inspection

Press the latch tab on the top of the air cleaner cover, and remove the cover. Inspect the filter element. Clean or replace dirty filter elements. Always replace damaged filter elements.

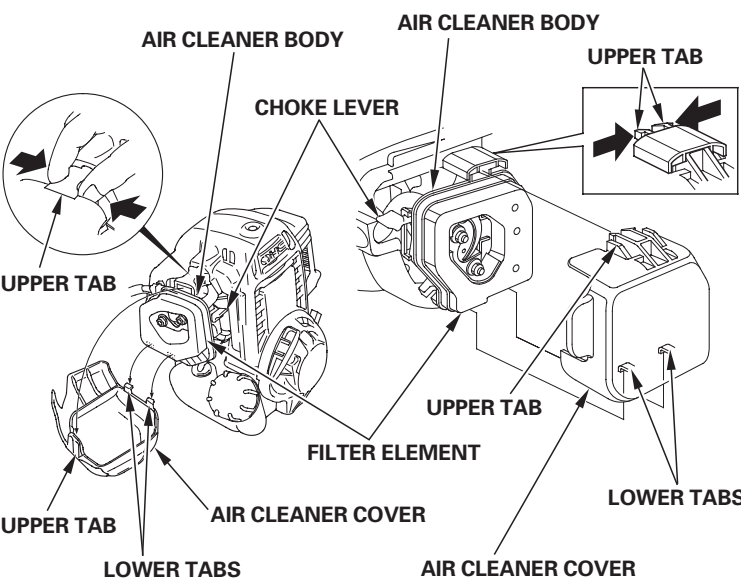
Refer to this page for instructions that apply to the air cleaner and filter service.

Reinstall the filter element and air cleaner cover.

GX25

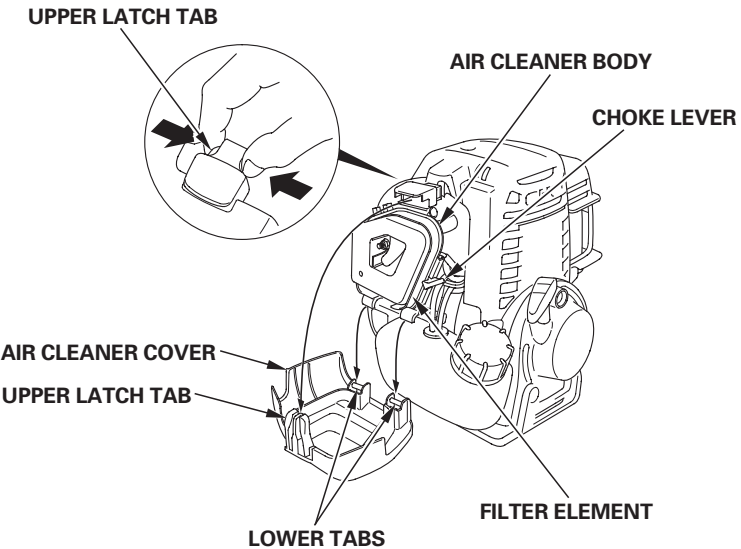
Standard/Pump type:

Tiller type:



GX35

Standard/Tiller type:



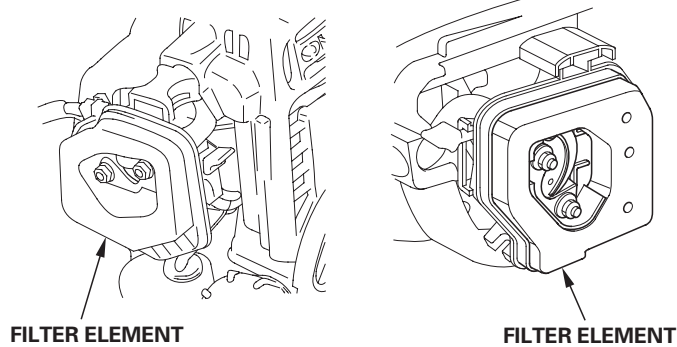
Cleaning

1. Clean the filter element in warm soapy water, rinse, and allow to dry thoroughly. Or clean in nonflammable solvent and allow to dry.
2. Dip the filter 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 element.
3. Wipe dirt from the air cleaner body and cover, using a moist rag. Be careful to prevent dirt from entering the carburetor.

GX25

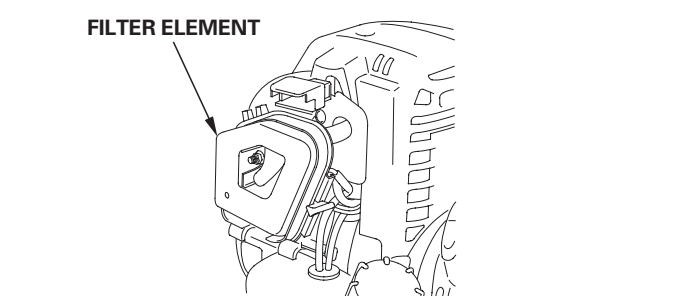
Standard/Pump type:

Tiller type:

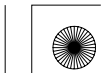


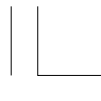
GX35

Standard/Tiller type:



4. Reinstall the filter element and air cleaner cover securely.





SPARK PLUG

Recommended Spark Plug: CM5H (NGK), CMR5H (NGK)

The recommended spark plug has the correct heat range for normal engine operating temperatures.

NOTICE

An incorrect spark plug can cause engine damage.

For good performance, the spark plug must be properly gapped and free of deposits.

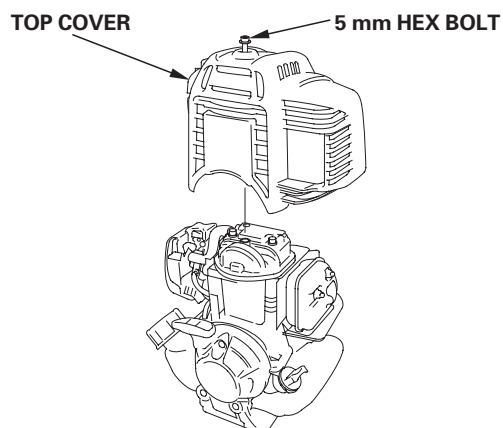
1. Remove the top cover.

Loosen the 5 mm hex bolt with a hexagon wrench, then remove the top cover.

CAUTION

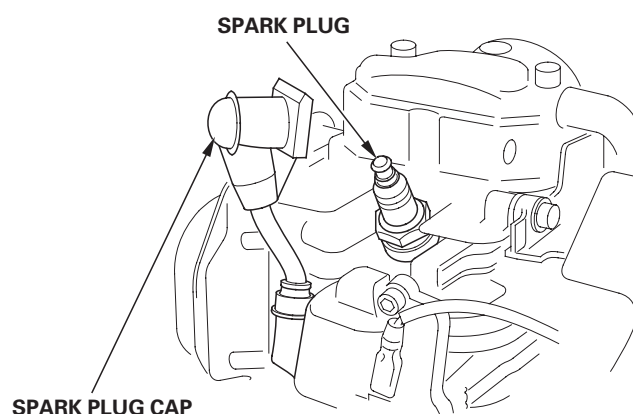
Do not operate the engine when the top cover is removed.
Do not pull the recoil starter handle when the top cover is removed.

You may be injured from the rotating parts or burned by the muffler.



2. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.

3. Remove the spark plug with a 5/8-inch spark plug wrench.

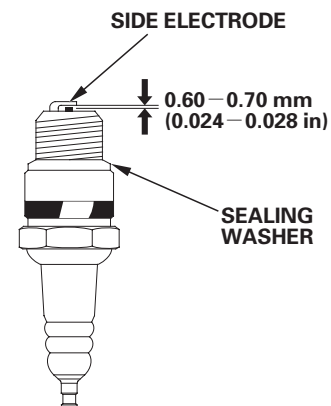


4. Inspect the spark plug.

Replace it if damaged or badly fouled, if the sealing washer is in poor condition, or if the electrode is worn.

5. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode. The gap should be:

0.60–0.70 mm (0.024–0.028 in)



6. Install the spark plug carefully, by hand, to avoid cross-threading.

7. After the spark plug is seated, tighten with a 5/8-inch spark plug wrench to compress the sealing washer.

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

9. When reinstalling the original spark plug, tighten 1/8–1/4 turn after the spark plug seats to compress the washer.

NOTICE

*A loose spark plug can overheat and damage the engine.
Overtightening the spark plug can damage the threads in the cylinder head.*

10. Attach the spark plug cap to the spark plug.

11. Install the top cover, and tighten the 5 mm hex bolt securely with a hexagon wrench.

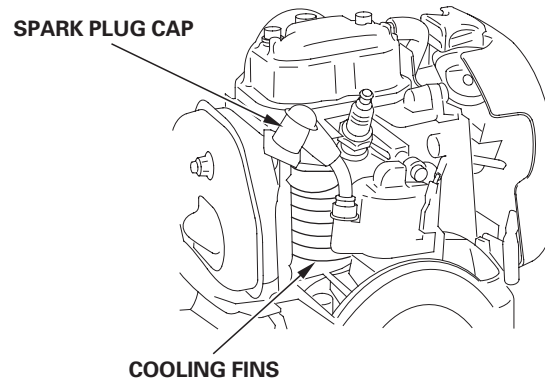
COOLING FINS

Inspection

1. Loosen the 5 mm hex bolt, then remove the top cover.

2. Disconnect the spark plug cap.

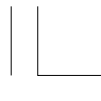
3. Inspect the engine cooling fins, and clean out debris if necessary.



4. Reconnect the spark plug cap.

5. Install the top cover, and tighten the 5 mm hex bolt securely.





FUEL FILTER AND FUEL TANK

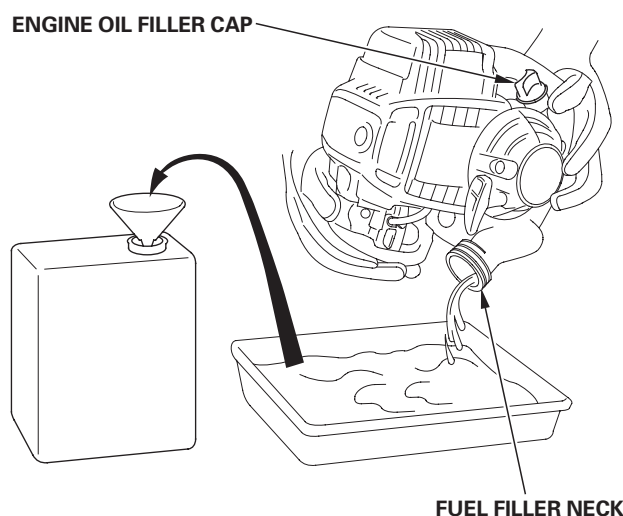
Fuel filter inspection and Fuel tank cleaning

⚠ WARNING

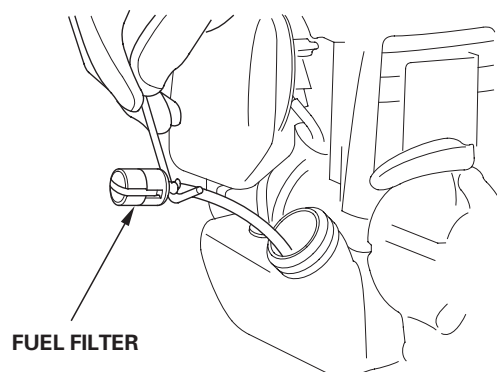
Gasoline is highly flammable and explosive, and you can be burned or seriously injured when handling fuel.

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

1. Check that the engine oil filler cap is tightened securely.
2. Remove the fuel filler cap, and drain the fuel into an approved gasoline container by tipping the engine toward the fuel filler neck.



3. Pull the fuel filter out through the fuel filler neck by hooking the black fuel tube with a piece of wire, such as a partly straightened paper clip.
4. Inspect the fuel filter. If the fuel filter is dirty, wash it gently with non-flammable or high flash point solvent. If the fuel filter is excessively dirty, replace it.



5. Remove water and dirt from the fuel tank by rinsing the inside of the fuel tank with non-flammable or high flash point solvent.
6. Insert the fuel filter into the fuel tank and tighten the fuel filler cap securely.

SPARK ARRESTER (applicable types)

The spark arrester may be standard or an optional part, depending on the engine type. 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.

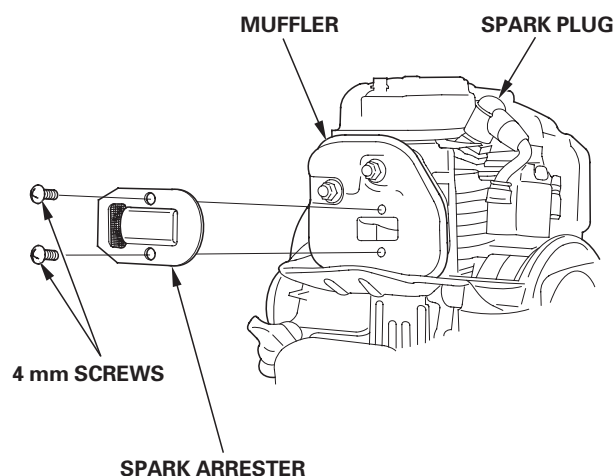
If the engine has been running, the muffler will be hot. Allow it to cool before servicing the spark arrester.

GX25

Standard/Pump type:

Spark Arrester Removal

1. Loosen the 5 mm hex bolt, then remove the top cover (see page 11).
2. Remove the 4 mm screws from the spark arrester, and remove the spark arrester from the muffler.

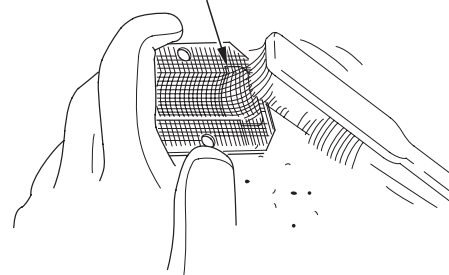


Spark Arrester Cleaning & Inspection

1. Use a brush to remove carbon deposits from the spark arrester screen. Be careful to avoid damaging the screen.

The spark arrester must be free of breaks and holes. Replace the spark arrester if it is damaged.

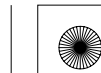
SPARK ARRESTER SCREEN

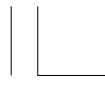


2. Install the spark arrester in the reverse order of disassembly.

When you install the spark arrester, the spark arrester's outlet must point to the side opposite the spark plug.

3. Install the top cover, and tighten the 5 mm hex bolt securely (see page 11).



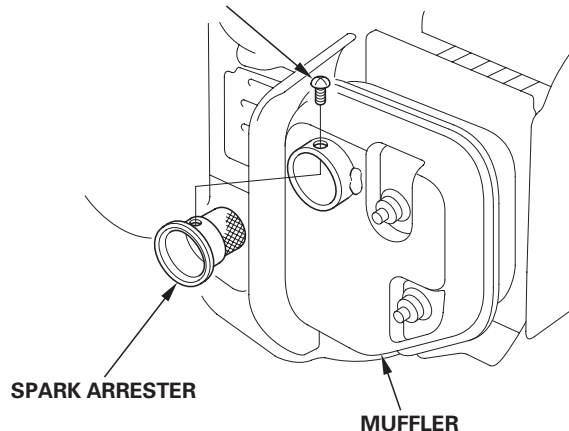


Tiller type

Spark Arrester Removal

1. Loosen the 5 mm hex bolt, then remove the top cover (see page 11).
2. Remove the 3 × 6 mm self-tapping screws from the spark arrester, and remove the spark arrester from the muffler.

3 × 6 mm SELF-TAPPING SCREW



Spark Arrester Cleaning & Inspection

1. Use a brush to remove carbon deposits from the spark arrester screen. Be careful to avoid damaging the screen.

The spark arrester must be free of breaks and holes. Replace the spark arrester if it is damaged.

SPARK ARRESTER SCREEN



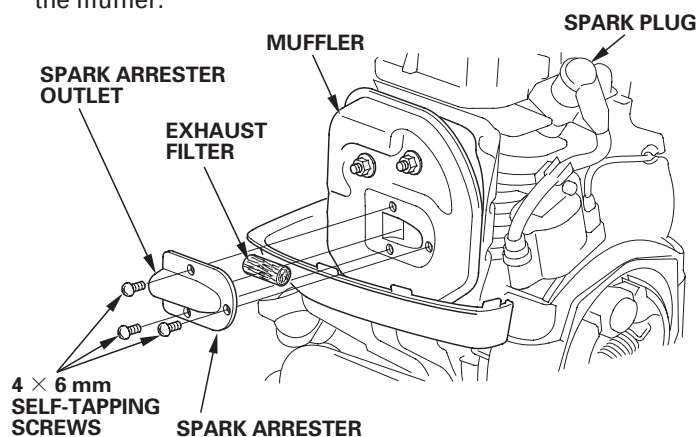
2. Install the spark arrester in the reverse order of disassembly.
3. Install the top cover, and tighten the 5 mm hex bolt securely (see page 11).

GX35

Standard Type:

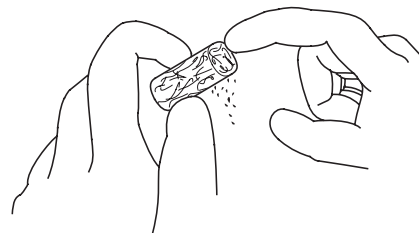
Spark Arrester Removal

1. Loosen the 5 mm hex bolt, then remove the top cover (see page 11).
2. Remove the 4 × 6 mm self-tapping screws from the spark arrester, and remove the spark arrester and exhaust filter from the muffler.



Exhaust Filter Cleaning & Inspection

Pinch the exhaust filter, and strike it lightly with a finger, to remove carbon deposits. Be careful not to strike it too hard. The exhaust filter must be free of breaks and holes. If it is damaged or fouled excessively, have it serviced by your Honda dealer.

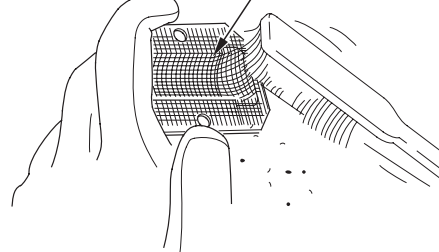


Spark Arrester Cleaning & Inspection

1. Use a brush to remove carbon deposits from the spark arrester screen. Be careful to avoid damaging the screen.

The spark arrester must be free of breaks and holes. Replace the spark arrester if it is damaged.

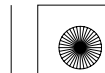
SPARK ARRESTER SCREEN



2. Install the exhaust filter and spark arrester in the reverse order of disassembly.

When you install the spark arrester, the spark arrester's outlet must point to the side opposite the spark plug.

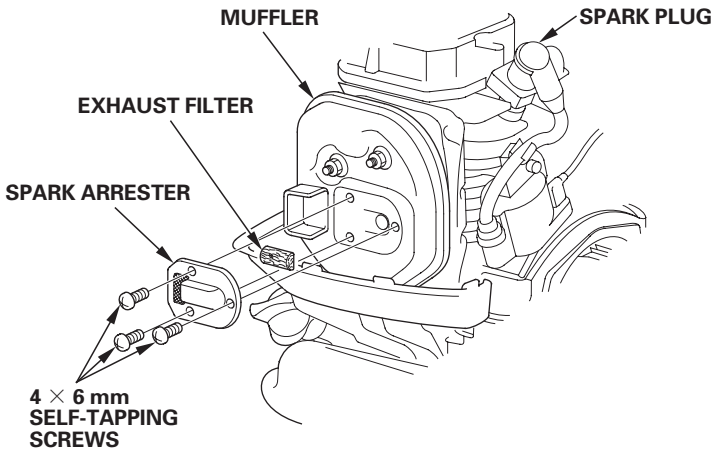
3. Install the top cover, and tighten the 5 mm hex bolt securely (see page 11).





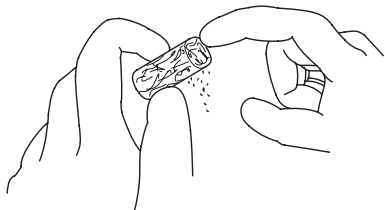
**Tiller type:
Spark Arrester Removal**

1. Loosen the 5 mm hex bolt, then remove the top cover (see page 11).
2. Remove the 4 × 6 mm self-tapping screws from the spark arrester, and remove the spark arrester from the muffler.



Exhaust Filter Cleaning & Inspection

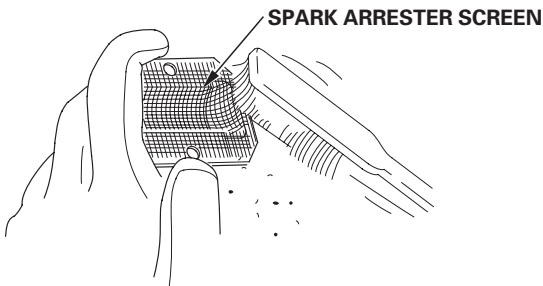
Pinch the exhaust filter, and strike it lightly with a finger, to remove carbon deposits. Be careful not to strike it too hard. The exhaust filter must be free of breaks and holes. If it is damaged or fouled excessively, have it serviced by your Honda dealer.



Spark Arrester Cleaning & Inspection

1. Use a brush to remove carbon deposits from the spark arrester screen. Be careful to avoid damaging the screen.

The spark arrester must be free of breaks and holes. Replace the spark arrester if it is damaged.



2. Install the exhaust filter and spark arrester in the reverse order of disassembly.

When you install the spark arrester, the spark arrester's outlet must point to the side opposite the spark plug.

3. Install the top cover, and tighten the 5 mm hex bolt securely (see page 11).

HELPFUL TIPS & SUGGESTIONS

STORING YOUR ENGINE

Storage Preparation

Proper storage preparation is essential for keeping your engine trouble-free and looking good. 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

If the engine has been running, allow it to cool for at least half an hour before cleaning. Clean all exterior surfaces, touch up any damaged paint, and coat other areas that may rust with a light film of oil.

NOTICE

Using a garden hose or pressure washing equipment can force water into the air cleaner or muffler opening. Water in the air cleaner will soak the air filter, and water that passes through the air filter or muffler can enter the cylinder, causing damage.

Fuel

Gasoline will oxidize and deteriorate in storage. Deteriorated gasoline will cause hard starting, and it leaves gum deposits that clog the fuel system. If the gasoline in your engine 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 problems may occur within a few months, or even less if the gasoline was not fresh when you filled the fuel tank.

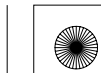
Fuel system damage or engine performance problems resulting from neglected storage preparation are not covered under the *Distributor's Limited Warranty*.

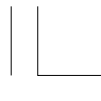
You can extend fuel storage life by adding a gasoline stabilizer that is formulated for that purpose, or you can avoid fuel deterioration problems by draining the fuel tank and carburetor.

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.
3. Stop the engine.





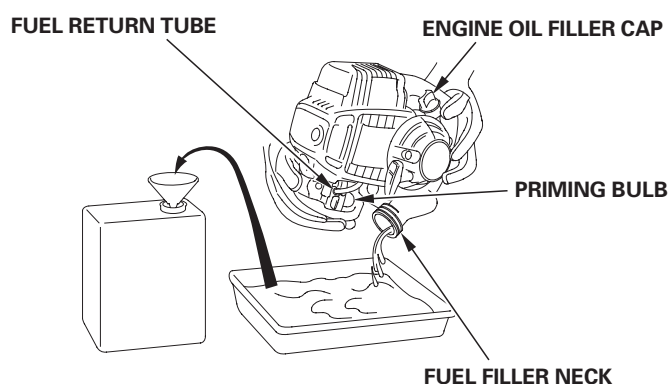
Draining the Fuel Tank and Carburetor

⚠ 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.

1. Make sure the engine oil filler cap is tightened securely.
2. Remove the fuel filler cap and drain the fuel into an approved gasoline container by tipping the engine toward the fuel filler neck.
3. Press the priming bulb several times until there is no more fuel in the fuel return tube.
4. Tip the engine toward the fuel filler neck again to drain the fuel.



5. After all fuel has drained, reinstall the fuel filler cap securely.

Engine Oil

1. Change the engine oil (see page 9).
2. Loosen the 5 mm hex bolt, then remove the top cover (see page 11).
3. Remove the spark plug (see page 11).
4. Apply a couple of drops of clean engine oil into the cylinder.
5. Install the top cover temporarily.
6. Pull the starter grip several times to distribute the oil in the cylinder.
7. Remove the top cover, then reinstall the spark plug.
8. Install the top cover, and tighten the 5 mm hex bolt securely (see page 11).
9. Pull the starter grip slowly until resistance is felt.

Storage Precautions

If your engine will be 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, water heater, or clothes dryer. 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.

Keep the engine level in storage. Tilting can cause fuel or oil leakage.

With the engine and exhaust system cool, cover the engine 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 your engine as described in the *BEFORE OPERATION CHECKS* section of this manual (see page 4).

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

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

TRANSPORTING

If the engine has been running, allow it to cool for at least 15 minutes before loading the engine-powered equipment on the transport vehicle. A hot engine and exhaust system can burn you and can ignite some materials.





TAKING CARE OF UNEXPECTED PROBLEMS

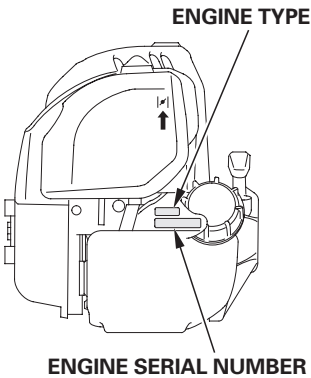
ENGINE WILL NOT START	Possible Cause	Correction
1. Check control positions.	Choke open.	Move lever to CLOSED position unless the engine is warm.
	Engine switch OFF.(on the equipment)	Turn engine switch to ON position.
2. Check fuel.	Out of fuel.	Refuel (p. 8).
	Bad fuel; engine stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p. 15). Refuel with fresh gasoline(p. 8).
3. Remove and inspect spark plug.	Spark plug faulty, fouled, or improperly gapped.	Gap or replace spark plug (p. 11).
	Spark plug wet with fuel (flooded engine).	Allow the spark plug to dry. After drying, install the spark plug and start the engine (p. 4).
4. Take engine to an authorized Honda servicing dealer, or refer to shop manual.	Fuel filter restricted, carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

ENGINE LACKS POWER	Possible Cause	Correction
1. Check air filter.	Filter element restricted.	Clean or replace filter element (p. 10).
2. Check fuel.	Bad fuel; engine stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p. 15). Refuel with fresh gasoline (P. 8).
3. Take engine to an authorized Honda servicing dealer, or refer to shop manual.	Fuel filter restricted, carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

TECHNICAL & CONSUMER INFORMATION

TECHNICAL INFORMATION

Serial Number Location
Record the engine serial number, type and purchase date in the space below. You will need this information when ordering parts and when making technical or warranty inquiries.



Engine serial number: _ _ _ _ _ - _ _ _ _ _

Engine type: _ _ _ _ _

Date Purchased: _ _ _ / _ _ _ / _ _ _

Remote Control Linkage

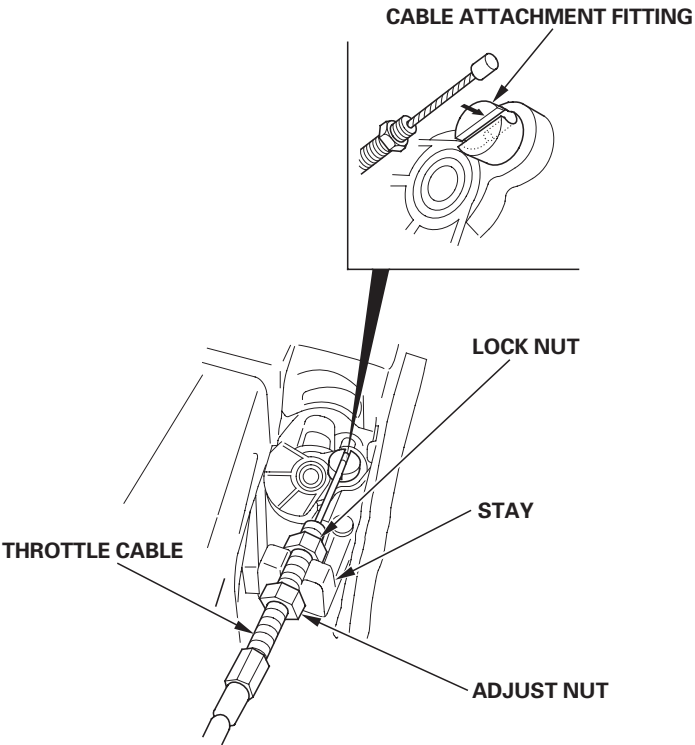
Standard/Tiller type:

The throttle control lever is provided with a fitting for cable attachment.

Remove the air cleaner cover (see page 10) for access to the throttle lever and cable fitting.

Attach the throttle cable as shown in the illustration.

To adjust the throttle cable, follow the equipment manufacturer's instructions.



Carburetor Modifications for High Altitude Operation

At high altitude, the standard carburetor air-fuel mixture will be too rich. Performance will decrease, and fuel consumption will increase. A very rich mixture will also foul the spark plug and cause hard starting. Operation at an altitude that differs from that at which this engine was certified, for extended periods of time, may increase emissions.

High altitude performance can be improved by specific modifications to the carburetor. If you always operate your engine at altitudes above 1,500 meters (5,000 feet), have your servicing dealer perform this carburetor modification. This engine, when operated at high altitude with the carburetor modifications for high altitude use, will meet each emission standard throughout its useful life.

Even with carburetor modification, engine horsepower will decrease about 3.5% for each 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 1,500 meters (5,000 feet) with a modified carburetor may cause the engine to overheat and result in serious engine damage. For use at low altitudes, have your servicing dealer return the carburetor to original factory specifications.

Emission Control System Information

Source of Emissions

The combustion process produces carbon monoxide, oxides of nitrogen, and hydrocarbons. Control of hydrocarbons and oxides of nitrogen is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Honda utilizes lean carburetor settings and other systems to reduce the emissions of carbon monoxide, oxides of nitrogen, and hydrocarbons.

The U.S., California Clean Air Acts and Environment Canada

EPA, California and Canadian 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, California and Canadian 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 7 . Remember that this schedule is based on the assumption that your machine will be used for its designed purpose. Sustained high-load or high-temperature operation, or use in unusually wet or dusty conditions, will require more frequent service.

Air Index

An Air Index Information hang tag/label is applied to engines certified to an emission durability time period in accordance with the requirements of the California Air Resources Board.

The bar graph is intended to provide you, our customer, the ability to compare the emissions performance of available engines. The lower the Air Index, the less pollution.

The durability description is intended to provide you with information relating to the engine's emission durability period. The descriptive term indicates the useful life period for the engine's emission control system. See your *Emission Control System Warranty* for additional information.

Descriptive Term	Applicable to Emissions Durability Period
Moderate	50 hours [0 – 80 cm ³ (0 – 80 cc) inclusive] 125 hours [greater than 80 cm ³ (80 cc)]
Intermediate	125 hours [0 – 80 cm ³ (0 – 80 cc) inclusive] 250 hours [greater than 80 cm ³ (80 cc)]
Extended	300 hours [0 – 80 cm ³ (0 – 80 cc) inclusive] 500 hours [greater than 80 cm ³ (80 cc)] 1,000 hours [225 cm ³ (225 cc) and greater]

The Air Index Information hang tag/label must remain on the engine until it is sold. Remove the hang tag before operating the engine.

Specifications

GX25 (Basic types)

Type	S3 (Standard) (Without tank guard)	W3 (Pump)	T3 (Tiller)
Power equipment description code	GCART		
Length	192 mm (7.6 in)	247 mm (9.7 in)	192 mm (7.6 in)
Width	221 mm (8.7 in)	221 mm (8.7 in)	210 mm (8.3 in)
Height	230 mm (9.1 in)	230 mm (9.1 in)	236 mm (9.3 in)
Dry weight (Without clutch)	2.78 kg (6.13 lbs)	3.10 kg (6.83 lbs)	2.96 kg (6.53 lbs)
Engine type	4-stroke, overhead camshaft, single cylinder		
Displacement [Bore × Stroke]	25 cm ³ (1.5 cu-in) [35 × 26 mm (1.4 × 1.0 in)]		
Max. output	0.72 kW (1.0 PS, 1.0 bhp) at 7,000 rpm		
Max. torque	1.0 N·m (0.10 kgf·m, 0.74 lbf·ft) at 5,000 rpm		
Engine oil capacity	0.08 ℓ (0.08 US qt , 0.07 Imp qt)		
Fuel tank capacity	0.58 ℓ (0.153 US gal , 0.128 Imp gal)		0.57 ℓ (0.151 US gal , 0.125 Imp gal)
Fuel consumption	0.54 ℓ /h at 7,000 rpm		
Cooling system	Forced air		
Ignition system	Transistorized magneto		
PTO shaft rotation	Counterclockwise		

GX35 (Basic types)

Type	S3 (Standard) (Without tank guard)	T3 (Tiller)	TR3 (Tiller)
Power equipment description code	GCAST		
Length	198 mm (7.8 in)	198 mm (7.8 in)	198 mm (7.8 in)
Width	234 mm (9.2 in)	243 mm (9.6 in)	243 mm (9.6 in)
Height	240 mm (9.4 in)	242 mm (9.5 in)	242 mm (9.5 in)
Dry weight (Without clutch)	3.33 kg (7.34 lbs)	3.52 kg (7.76 lbs)	3.52 kg (7.76 lbs)
Engine type	4-stroke, overhead camshaft, single cylinder		
Displacement [Bore × Stroke]	35.8 cm ³ (2.18 cu-in) [39 × 30 mm (1.5 × 1.2 in)]		
Max. output	1.0 kW (1.4 PS, 1.3 bhp) at 7,000 rpm		
Max. torque	1.6 N·m (0.16 kgf·m, 1.2 lbf·ft) at 5,500 rpm		
Engine oil capacity	0.10 ℓ (0.11 US qt , 0.09 Imp qt)		
Fuel tank capacity	0.63 ℓ (0.166 US gal , 0.139 Imp gal)	0.70 ℓ (0.185 US gal , 0.154 Imp gal)	
Fuel consumption	0.71 ℓ/h at 7,000 rpm		
Cooling system	Forced air		
Ignition system	Transistorized magneto		
PTO shaft rotation	Counterclockwise		



Tuneup Specifications

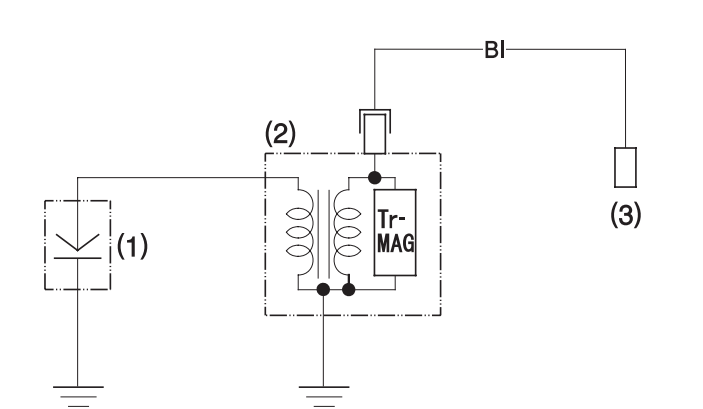
ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.60—0.70 mm (0.024—0.028 in)	Refer to page: 11
Idle speed	3,100±200 rpm	See your authorized Honda dealer
Valve clearance (cold)	IN: 0.08 ± 0.02 mm EX: 0.11 ± 0.02 mm	
Other specifications	No other adjustments needed.	

Quick Reference Information

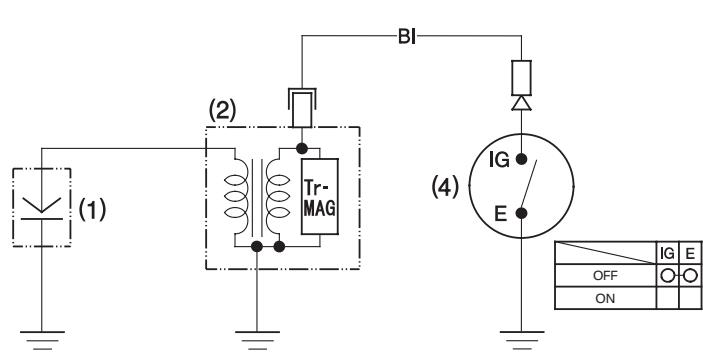
Fuel	Unleaded gasoline (Refer to page 8)	
	U.S.	Pump octane rating 86 or higher
	Except	Research octane rating 91 or higher
	U.S.	Pump octane rating 86 or higher
Engine oil	SAE 10W-30, API SJ or later, for general use. Refer to page 8.	
Spark plug	CM5H (NGK) CMR5H (NGK)	
Maintenance	Before each use:	
	• Check engine oil level. Refer to page 9.	
	• Check air filter. Refer to page 10.	
	First 10 hours:	
	Change engine oil. Refer to page 9.	
	Subsequent:	
	Refer to the maintenance schedule on page 7.	

Wiring Diagrams

Standard/Tiller type:



Pump type:



- (1) SPARK PLUG
- (2) IGNITION COIL
- (3) Engine switch on the equipment powered by the engine.
- (4) ENGINE SWITCH

BI	Black
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CONSUMER INFORMATION

Distributor/Dealer Locator Information

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

Call (800) 426-7701
or visit our website: www.honda-engines.com

Canada:

Call (888) 9HONDA9
or visit our website: www.honda.ca

For European Area:

visit our website: <http://www.honda-engines-eu.com>

Customer Service Information

Servicing dealership personnel are trained professionals. They should be able to answer any question you may have. If you encounter a problem that your dealer does not solve to your satisfaction, please discuss it with the dealership's management. The Service Manager, 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.

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

All Other Areas:

If you are dissatisfied with the decision made by the dealership's management, contact the Honda Office as shown.

«Honda's Office»

When you write or call, please provide this information:

- Equipment manufacturer's name and model number that the engine is mounted on
- Engine model, serial number, and type (see page 16)
- Name of 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

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

American Honda Motor Co., Inc.

Power Equipment Division
Customer Relations Office
4900 Marconi Drive
Alpharetta, GA 30005-8847

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

Canada:

Honda Canada, Inc.

715 Milner Avenue
Toronto, ON
M1B 2K8

Telephone:	(888) 9HONDA9 (888) 946-6329	Toll free
English:	(416) 299-3400	Local Toronto dialing area
French:	(416) 287-4776	Local Toronto dialing area
Facsimile:	(877) 939-0909 (416) 287-4776	Toll free
		Local Toronto dialing area

For European Area:

Honda Europe NV.

European Engine Center

<http://www.honda-engines-eu.com>

All Other Areas:

Please contact the Honda distributor in your area for assistance.

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