HONDA
ENGINES

Owner's Manual

GX620•GX670

LPG/NATURAL GAS-Fueled Engine

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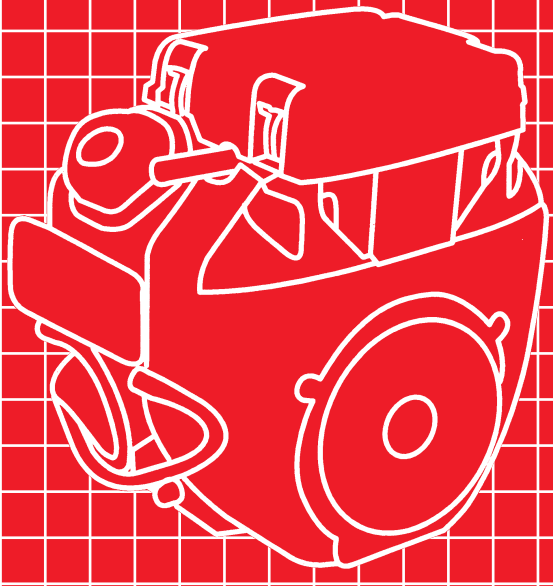

⚠ WARNING: ⚠

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

Keep this owner's manual handy, so you can refer to it at any time. This owner's manual is considered a permanent part of the engine and should remain with the engine if resold.

The information and specifications included in this publication were in effect at the time of approval for printing. Illustrations are based on the GX670 VXC2 type. Honda Motor Co., Ltd. reserves the right, however, to discontinue or change specifications or design at any time without notice and without incurring any obligation what so ever. No part of this publication may be reproduced without written permission.

INTRODUCTION

Congratulations on your selection of a Honda engine. We are certain you will be pleased with your purchase of one of the finest engines on the market.

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.

As you read this manual, you will find information preceded by a NOTICE symbol. That information is intended to help you avoid damage to your engine, other property, or the environment.

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.

When your engine needs scheduled maintenance, keep in mind that your Honda servicing dealer is specially trained in servicing Honda engines. Your Honda servicing dealer is dedicated to your satisfaction and will be pleased to answer your questions and concerns.

Best Wishes,
Honda Motor Co., Ltd.

INTRODUCTION

A FEW WORDS ABOUT SAFETY

Your safety and the safety of others are very important. Using this engine safely is an important responsibility.

To help you make informed decisions about safety, we have provided operating procedures and other information on labels and in this manual. This information alerts you to potential hazards that could hurt you or others.

Of course, it is not practical or possible to warn you about all the hazards associated with operating or maintaining an engine. You must use your own good judgment.

You will find important safety information in a variety of forms, including:

- **Safety Messages** — preceded by a safety alert symbol ⚠ and one of three signal 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.

- **Safety Headings** — such as *IMPORTANT SAFETY INFORMATION.*
- **Safety Section** — such as *ENGINE SAFETY.*
- **Instructions** — how to use this engine correctly and safely.

This entire book is filled with important safety information — please read it carefully.

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ENGINE SAFETY

IMPORTANT SAFETY INFORMATION

Most accidents with engines can be prevented if you follow all instructions in this manual and on the engine. Some of the most common hazards are discussed below, along with the best way to protect yourself and others.

Owner Responsibilities

- 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.

- Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.

- Do not allow children to operate the engine. Keep children and pets away from the area of operation.

Refuel With Care

Dry gas fuel natural gas and LPG are extremely flammable and combustible, LPG is also combustible and so is NATURAL GAS. Refuel outdoors, in a well-ventilated area, with the engine stopped. Never smoke near LPG or NATURAL GAS and keep other flames and sparks away.

Hot Exhaust

- 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.

- To prevent fire hazards and to provide adequate ventilation for stationary equipment applications, keep the engine at least 3 feet (1 meter) away from building walls and other equipment during operation. Do not place flammable objects close to the engine.

ENGINE SAFETY

Carbon Monoxide Hazard

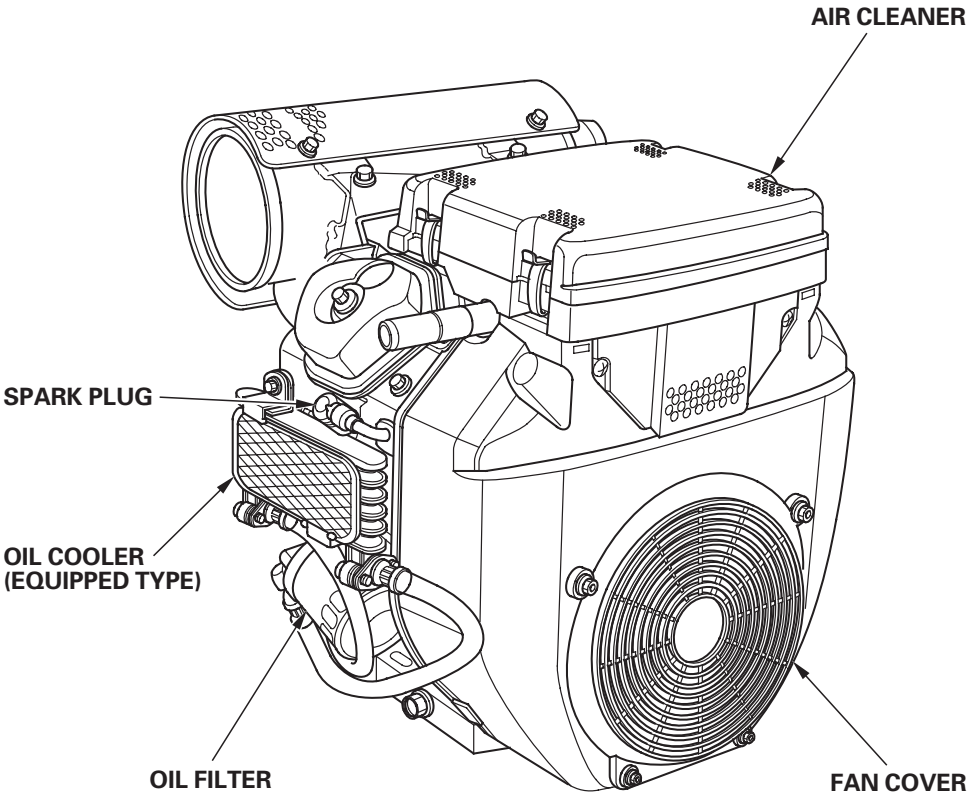
Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust gas. Never run the engine in a closed garage or confined area.

Other Equipment

Review the instructions provided with the equipment powered by this engine for any additional safety precautions that should be observed in conjunction with engine startup, shutdown, operation, or protective apparel that may be needed to operate the equipment.

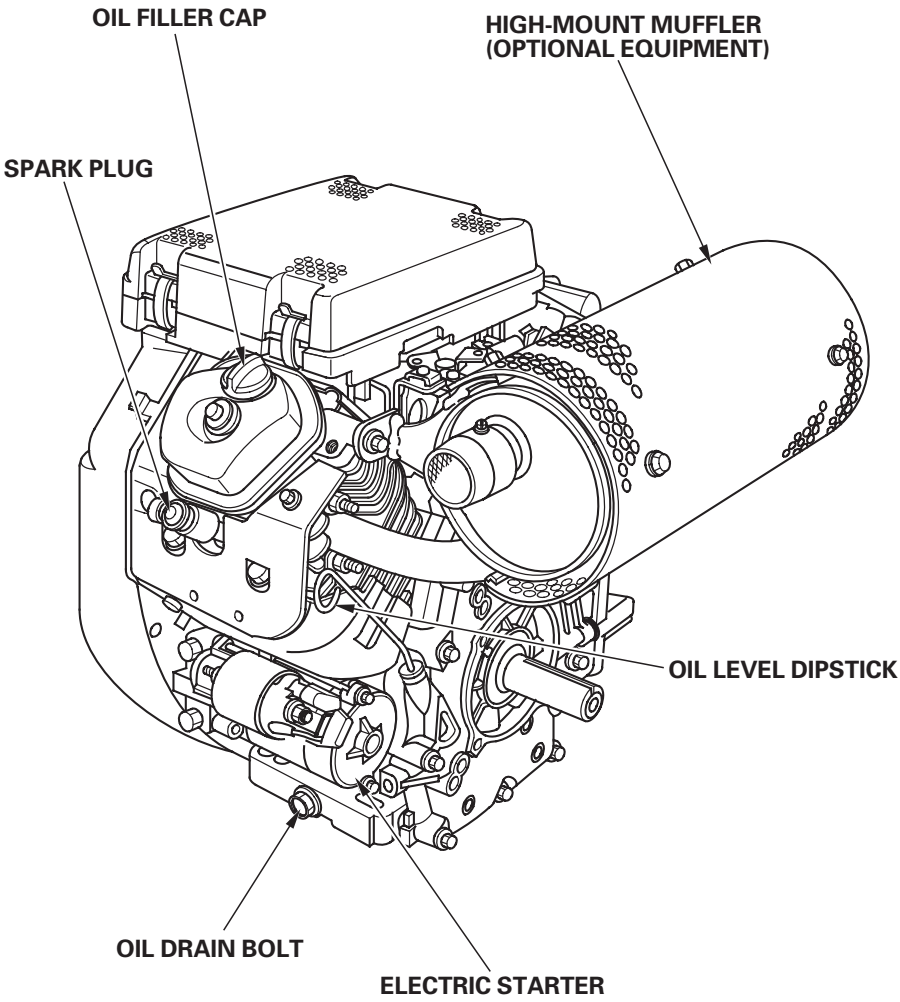
CONTROLS & FEATURES

COMPONENT & CONTROL LOCATIONS
〈GX620K1/GX670〉



CONTROLS & FEATURES

〈GX620K1/GX670〉



FEATURES

Oil Alert® System (applicable types)

The Oil Alert® system is designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. Before the oil level in the crankcase can fall below a safe limit, the Oil Alert system will automatically stop the engine (the ignition switch will remain in the ON position).

If the engine stops and will not restart, check the engine oil level (page 18) before troubleshooting in other areas.

Oil Cooler

The engine is equipped with an oil cooler to maintain the correct temperature.

Governor

Engine RPM is set by the governor when the engine is running.

Fuel System

The engine uses LPG or NATURAL GAS as the fuel with Honda specified fuel regulator and relational parts equipped on it.
The proper installation and the maintenance require a high knowledge level and skill. It should be performed by your servicing dealer.

BEFORE OPERATION

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 failing to correct a problem before operation, could cause a malfunction in which you could be seriously injured.

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

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

Check the General Condition of the Engine

- Look around and underneath the engine for signs of oil or LPG or NATURAL GAS leaks.
- Remove any excessive dirt or debris, especially around the muffler and fan cover.
- Look for signs of damage.
- Check that all shields and covers are in place, and all nuts, bolts, and screws are tightened.

Check the Engine

- Check the engine oil level (see page 18). Running the engine with a low oil level can cause engine damage.

  The Oil Alert system (applicable types) will automatically stop the engine before the oil level falls below safe limits. However, to avoid the inconvenience of an unexpected shutdown, always check the engine oil level before startup.

- Check the air filter (see page 22). A dirty air filter will restrict air flow to the carburetor, reducing engine performance.

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 *IMPORTANT SAFETY INFORMATION* on page 5 and the chapter titled *BEFORE OPERATION*.

For your safety, do not operate the engine in an enclosed area such as a garage. Your engine's exhaust contains poisonous carbon monoxide gas that can collect rapidly in an enclosed area and cause illness or death.

⚠ WARNING

Exhaust contains poisonous carbon monoxide gas that can build up to dangerous levels in closed areas. Breathing carbon monoxide can cause unconsciousness or death.

Never run the engine in an enclosed or even partially closed area where people may be present.

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

STARTING THE ENGINE

1. Turn the fuel valve to the OPEN or ON position before attempting to start the engine.

2. Turn the engine switch to the ON position.

3. Operate the starter switch.

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

   If the engine fails to start within 5 seconds, release the starter switch, and wait at least 10 seconds before operating the starter again.

NOTICE

Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.

When the engine starts, release the starter switch.

STOPPING THE ENGINE

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

1. Turn the engine switch to the OFF position.

2. Turn the fuel valve to the CLOSED or 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 air pollution.

⚠ 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 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 unusual 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 emission control devices and systems may be done 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 the 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.** Operate outside away from open windows or doors.
  - **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 LPG or NATURAL GAS. 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, Honda genuine 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. / ITEM		Each use	First month or 20 Hrs.	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs.	Refer to page
Engine oil	Check level	○					18
	Change		○	○			19
Oil filter	Replace					Every 200 hrs.	20
Air cleaner	Check	○					22
	Clean			○ (1)			23
	Replace					○ (*)	
Spark plug	Check-adjust				○		25
	Replace					○	
Spark arrester (applicable types)	Clean				○		27
Idle speed	Check-adjust					○ (2)	—
Valve clearance	Check-adjust					○ (2)	—
Combustion chamber	Clean	After every 300 hrs. (2)					—
Fuel tube	Check	Every 2 years (Replace if necessary) (2)					—

(*) Replace the paper element type only.

(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.

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

FUEL RECOMMENDATIONS

LPG: Propane content of 95% or higher.
NATURAL GAS: Methane content of 90% or equivalent.

This engine is certified to operate on LPG or NATURAL GAS only.

Occasionally you may hear a 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, see an authorized Honda servicing dealer.

NOTICE

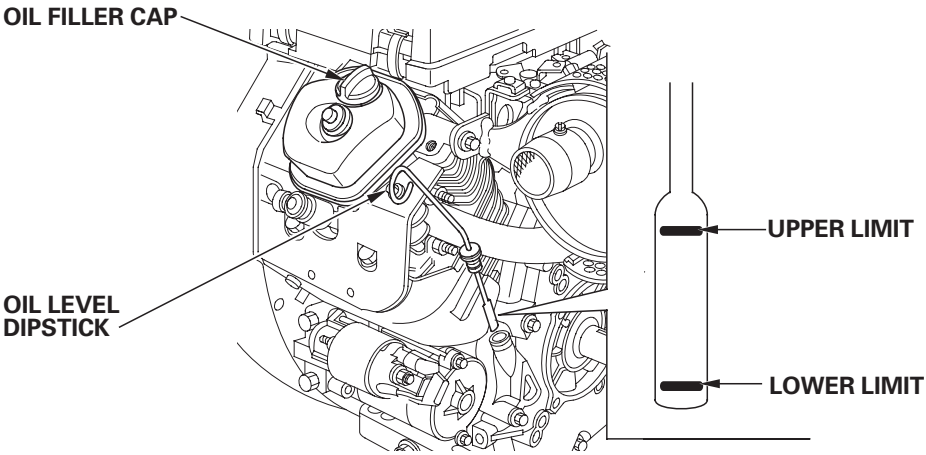
Running the engine with persistent spark knock or pinging can cause engine damage.

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

ENGINE OIL LEVEL CHECK

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

1. Place the engine horizontally on a level surface.
2. Start the engine and let it idle for 1 or 2 minutes. Stop the engine and wait for 2 or 3 minutes.
3. Remove the oil level dipstick and wipe it clean.
4. Fully insert the oil level dipstick, then remove it to check the oil level.
5. If the oil level is low, remove the oil filler cap, and fill to the upper limit mark on the oil level dipstick with the recommended oil (see page 21).
6. Reinstall the oil level dipstick and oil filler cap securely.



NOTICE

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

The Oil Alert system (applicable types) will automatically stop the engine before the oil level falls below the safe limit. However, to avoid the inconvenience of an unexpected shutdown, always check the engine oil level before startup.

ENGINE OIL CHANGE

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

1. Place a suitable container below the engine to catch the used oil, then remove the oil filler cap, drain bolt and sealing washer.

2. Allow the used oil to drain completely, then reinstall the drain bolt and new sealing washer, and tighten it securely.

   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.

3. With the engine in a level position, fill to the upper limit mark on the oil level dipstick with the recommended oil (see page 21).

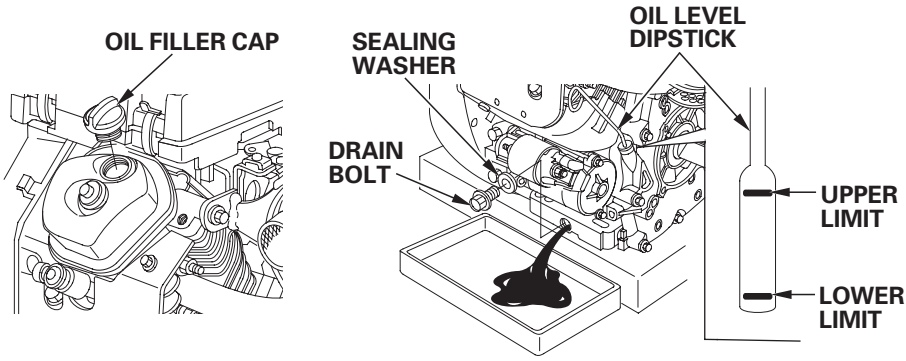
   Refer to the power equipment manual, because the capacity of engine oil differs by the oil cooler that is attached.

NOTICE

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

The Oil Alert system (applicable types) will automatically stop the engine before the oil level falls below the safe limit. However, to avoid the inconvenience of an unexpected shutdown, fill to the upper limit, and check the oil level regularly.

4. Reinstall the oil filler cap and oil level dipstick securely.



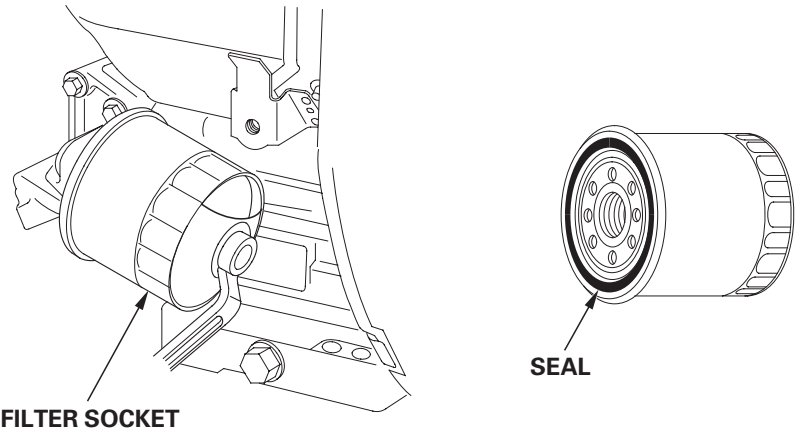
OIL FILTER CHANGE

1. Drain the engine oil, and retighten the drain bolt securely (see page 19).

2. Remove the oil filter, and drain the oil into a suitable container. Discard the used oil filter.

NOTICE

Use an oil filter socket, rather than a strap wrench, to avoid striking and damaging the oil pressure switch.



3. Clean the filter mounting base, and coat the seal of the new oil filter with clean engine oil.

NOTICE

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

4. Screw on the new oil filter by hand until the seal contacts the filter mounting base, then use an oil filter socket tool to tighten the filter an additional 7/8 turn.

   Oil filter tightening torque: 16 lbf·ft (22 N·m , 2.2 kgf·m)

5. Refill the crankcase with the specified amount of the recommended oil. Reinstall the oil filler cap and oil level dipstick securely.

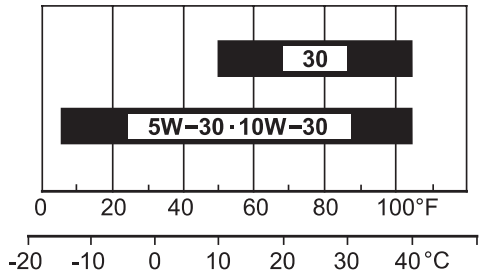
6. Start the engine, and check for leaks.

7. Stop the engine, and check the oil level as described on page 18. If necessary, add oil to bring the oil level to the upper limit mark on the oil level dipstick.

ENGINE OIL RECOMMENDATIONS

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil that is designed for engines operating on LPG or NATURAL GAS.

Use 4-stroke motor oil that meets or exceeds the requirements for API service category 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).

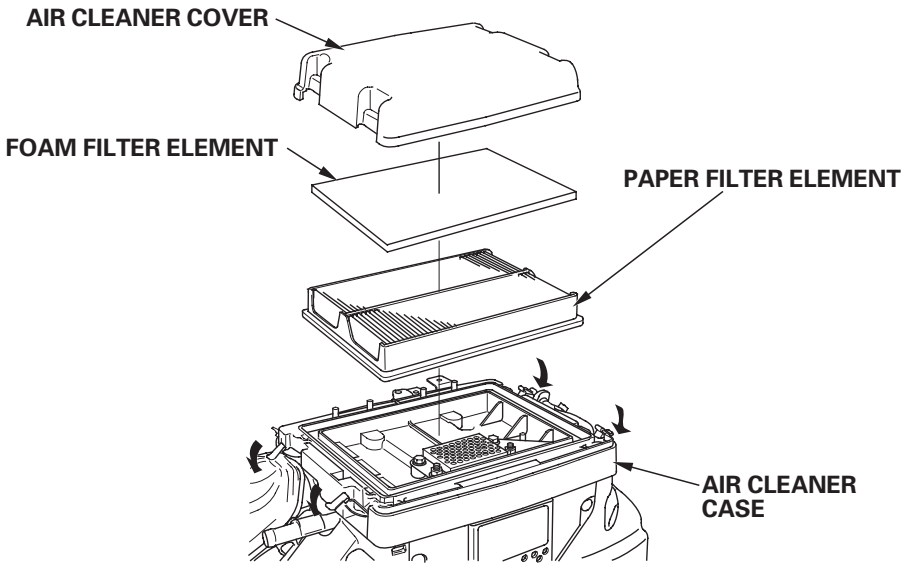


SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

AIR FILTER INSPECTION

Remove the air cleaner cover and inspect the filter elements. Clean or replace dirty filter elements. Always replace damaged filter elements.

Refer to page 23 for instructions that apply to the air cleaner and filter service.



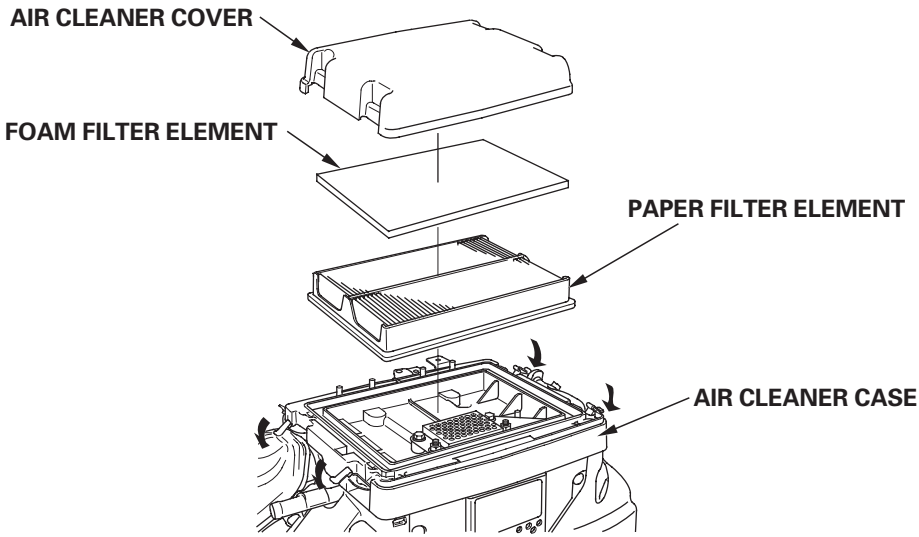
AIR CLEANER SERVICE

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

NOTICE

Operating the engine without an air filter, or with a damaged air filter, 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. Release four latch tabs from the air cleaner cover, and remove the cover.
2. Remove the foam filter from the cover.
3. Remove the paper filter from the air cleaner case.



4. Inspect both air filter elements, and replace them if they are damaged. Always replace the paper air filter element at the scheduled interval (see page 16).
5. Clean the air filter elements if they are to be reused.

Paper air filter element: Tap the filter element several times on a hard surface to remove dirt, or blow compressed air [not exceeding 30 psi (207 kPa, 2.1 kgf/cm^2)] through the filter element from the air cleaner case side.

Never try to brush off dirt; brushing will force dirt into the fibers. Replace the paper element if it is excessively dirty.

Foam air filter element: Clean in warm soapy water, rinse, and allow to dry thoroughly. Or clean in nonflammable solvent and allow to dry. Do not put oil to the foam element.

6. Wipe dirt from the inside of the air cleaner body and cover, using a moist rag. Be careful to prevent dirt from entering the air chamber that leads to the carburetor.

7. Place the foam air filter element to the air cleaner cover. Make sure the seal around the paper air filter element is seated properly. Then reinstall the paper air filter element and cover to the air cleaner case. Hook four latch tabs securely.

SPARK PLUG SERVICE

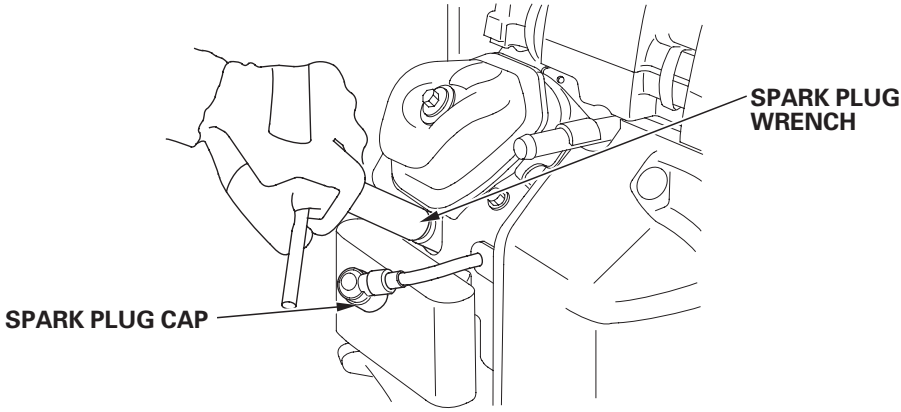
Recommended spark plugs: ZGR5A-4 (NGK)

NOTICE

Incorrect spark plugs can cause engine damage.

1. Disconnect the spark plug caps, and remove any dirt from around the spark plug area.

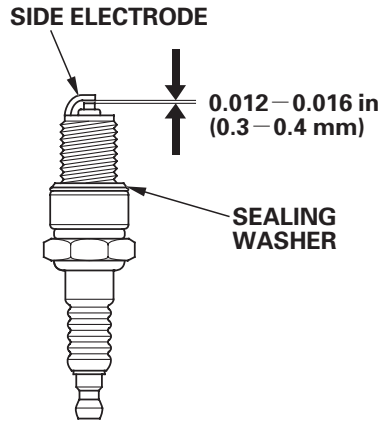
2. Remove the spark plugs with a 13/16-inch spark plug wrench.



3. Inspect the spark plugs. Replace them if the electrodes are worn, or if the insulator is cracked or chipped. Clean the spark plugs with a wire brush if you are going to reuse them.

4. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode. 0.012—0.016 in (0.3—0.4 mm)

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



6. After the spark plug seats, tighten with a 13/16-inch spark plug wrench to compress the washer.

   If reinstalling the used spark plugs, tighten 1/8－1/4 turn after the spark plug seats.

   If installing a new spark plugs, tighten 1/2 turn after the spark plug seats.

   NOTICE

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

7. Attach the spark plug caps.

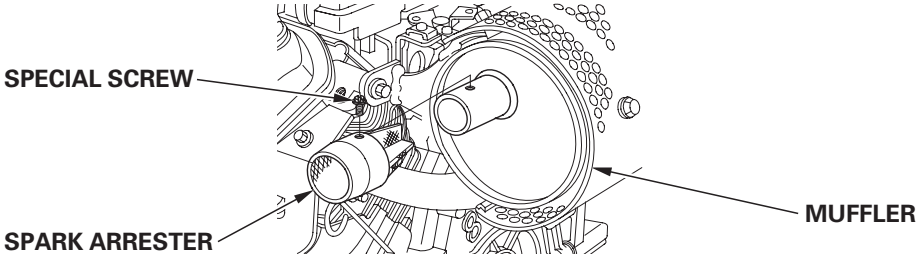
SPARK ARRESTER SERVICE (optional equipment)

Your engine is not factory-equipped with a spark arrester. 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 6 month or 100 hours to keep it functioning as designed.

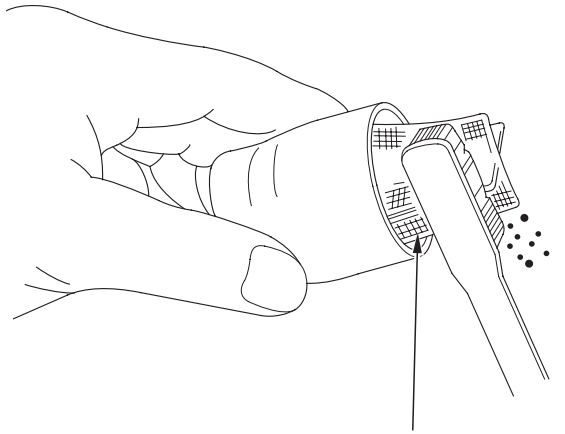
If the engine has been running, the muffler will be very hot. Allow the muffler to cool before servicing the spark arrester.

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



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



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

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 after storage.

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.*

- *Water contacting a hot engine can cause damage. If the engine has been running, allow it to cool for at least half an hour before washing.*

Engine Oil

1. Change the engine oil (see page 19).

Engine Cylinder

1. Remove the spark plugs (see page 25).

2. Pour a tablespoon (5—10 cc) of clean engine oil into the cylinders.

3. Turn the crank shaft several times to distribute the oil in the cylinders.

4. Reinstall the spark plugs.

Storage Precautions

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.

Position the equipment so the engine is level. Tilting can cause 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.

If installed, remove the battery and store it in a cool, dry place. Recharge the battery once a month while the engine is in storage. This will help to extend the service life of the battery.

Removal From Storage

Check your engine as described in the *BEFORE OPERATION* chapter of this manual (see page 10).

If the cylinders were coated with oil during storage preparation, the engine may 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.

Before you can transport or store the engine, the LPG or NATURAL GAS supply line must be disconnected. A qualified LPG or NATURAL GAS technician must do this. Consult a local LPG or NATURAL GAS supplier or your servicing dealer.

TAKING CARE OF UNEXPECTED PROBLEMS

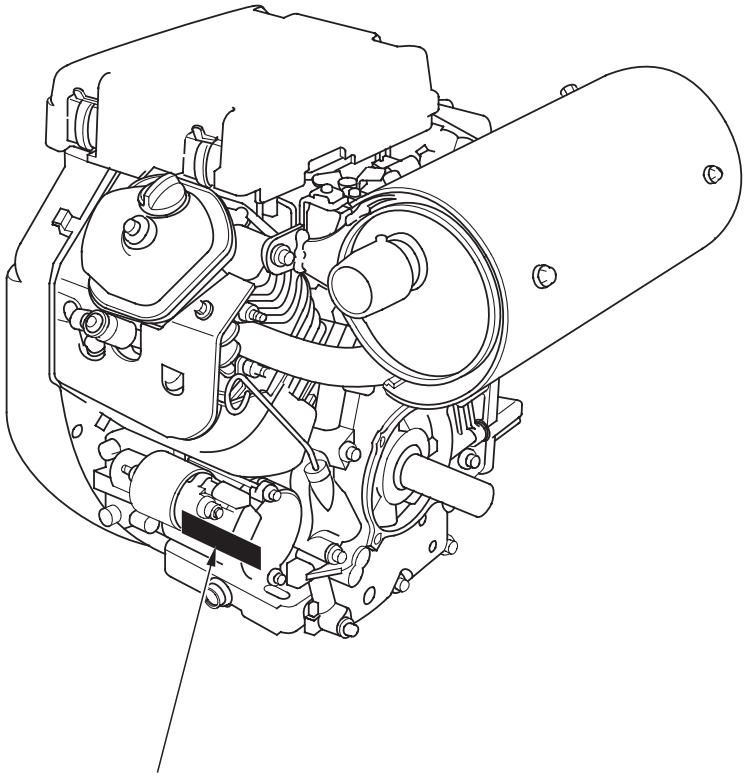
ENGINE WILL NOT START	Possible Cause	Correction
1. Check battery and fuse. (power equipment side)	Battery discharged.	Recharge battery.
	Fuse burnt out.	Replace fuse.
2. Check control positions. (power equipment side)	Fuel valve CLOSED or OFF. (if equipped)	Move fuel valve to OPEN or ON.
	Engine switch OFF.	Turn engine switch to ON.
3. Check fuel.	Out of fuel.	Refuel.
4. Remove and inspect spark plugs.	Spark plugs faulty, fouled, or improperly gapped.	Clean, gap, or replace spark plugs (p. 25).
5. Check engine oil level.	Low oil level caused Oil Alert to stop engine. (if equipped)	Add oil (p. 18).
6. Take engine to an authorized Honda servicing dealer, or refer to shop manual.	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(s) clogged.	Clean or replace filter element(s) (p. 23).
2. Take engine to an authorized Honda servicing dealer, or refer to shop manual.	Carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

TECHNICAL & CONSUMER INFORMATION

TECHNICAL INFORMATION

Serial Number Location



SERIAL NUMBER & ENGINE TYPE

Record the engine serial number, engine type and purchase date in the space below. You will need this information when ordering parts and when making technical or warranty inquires (see page 43).

Engine serial number: _____

Engine type: _____

Date of purchase: _____

Battery Connections for Electric Starter

Use a 12-volt battery with an ampere-hour rating of at least 45 Ah.

Be careful not to connect the battery in reverse polarity, as this will short circuit the battery charging system. Always connect the positive (+) battery cable to the battery terminal before connecting the negative (−) battery cable, so your tools cannot cause a short circuit if they touch a grounded part while tightening the positive (+) battery cable end.

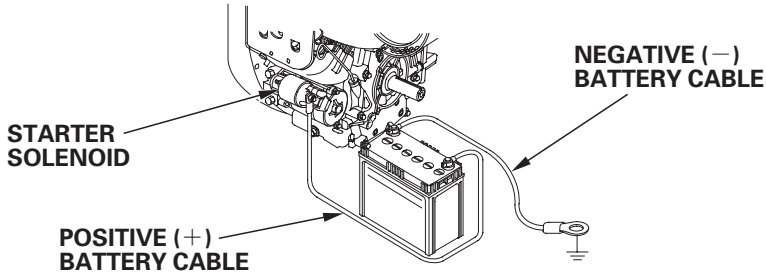
⚠ WARNING

A battery can explode if you do not follow the correct procedure, seriously injuring anyone nearby.

Keep all sparks, open flames, and smoking materials away from the battery.

WARNING: Battery posts, terminals, and related accessories contain lead and lead components. **Wash hands after handling.**

1. Connect the battery positive (+) cable to the starter solenoid terminal as shown.
2. Connect the battery negative (−) cable to an engine mounting bolt, frame bolt, or other good engine ground connection.
3. Connect the battery positive (+) cable to the battery positive (+) terminal as shown.
4. Connect the battery negative (−) cable to the battery negative (−) terminal as shown.
5. Coat the terminals and cable ends with grease.



Carburetor Modification for High Altitude Operation

The LPG/NATURAL GAS-fueled engine does not require any modifications for high-altitude operation. However, performance will decrease at high altitudes.

Fuel Regulator Information

This engine is certified to comply with U.S. EPA and California ARB emission regulations using the Impco Beam regulator specified in the installation instructions (see below).
Honda used this regulator and other specific parts and adjustments to demonstrate compliance with the emission regulations. Adjustable fuel system parts must have U.S. EPA and California ARB approved tamper resistant features to limit the available adjustment after the fuel system is correctly installed.
If an equipment manufacturer did not install your engine in a product, you will need the installation instructions for the Honda certified system (see below).
If you choose not to use the Honda fuel system, you must use a system that has been certified by the fuel system manufacturer to be used on this Honda engine.
Or, if you use a fuel system that is not already certified, you must have certification test data satisfactory to the U.S. EPA or California ARB.
The test data must prove the system will meet the emission standard both when the engine is new and at the end of its emission durability period (hours).

To obtain a copy of the installation instructions for this engine, contact an independent Honda engine distributor, or our Customer Service Department (page 43).

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 appropriate air/fuel ratios and other emissions control 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 specified 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 16. 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
(Models certified for sale in California)

An Air Index Information 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 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]

Specifications

GX620K1-VXC2 Type

Length × Width × Height	16.1 × 18.5 × 18.0 in (408 × 471 × 457 mm)	
Dry mass [weight]	93.7 lbs (42.5 kg)	
Engine type	4-stroke, overhead valve, 2 cylinders (90° V-Twin)	
Displacement [Bore × Stroke]	37.5 cu-in (614 cm^3) [3.03 × 2.60 in (77.0 × 66.0 mm)]	
Net power (in accordance with SAE J1349*1)	Natural gas	15.2 bhp (11.3 kW) at 3,600 rpm
	LPG	18.4 bhp (13.7 kW) at 3,600 rpm
Max. Net torque (in accordance with SAE J1349*1)	Natural gas	23.1 lbf·ft (31.3 N·m) at 3,000 rpm
	LPG	28.3 lbf·ft (38.4 N·m) at 3,000 rpm
Engine oil capacity	Without oil filter replacement: approximatly 1.2 US qt (1.1 ℓ)*2 With oil filter replacement: approximatly 1.5 US qt (1.4 ℓ)*2	
Cooling system	Forced air	
Ignition system	Transistor magneto	
PTO shaft rotation	Counterclockwise	

*1 The power rating of the engine indicated in this document is the net power output tested on a production engine for the engine model and measured in accordance with SAE J1349 at 3,600 rpm (Net Power) and at 3,000 rpm (Max. Net Torque). Mass production engines may vary from this value.
Actual power output for the engine installed in the final machine will vary depending on numerous factors, including the operating speed of the engine in application, environmental conditions, maintenance, and other variables.

*2 The engine oil capacity varies, depending on the oil cooler that is attached. Refer to the instructions provided with the equipment powered by this engine.

Specifications

GX670-VXC2 Type

Length × Width × Height	16.1 × 18.5 × 18.0 in (408 × 471 × 457 mm)	
Dry mas [weight]	96.8 lbs (43.9 kg)	
Engine type	4-stroke, overhead valve, 2 cylinders (90° V-Twin)	
Displacement [Bore × Stroke]	40.9 cu-in (670 cm^3) [3.03 × 2.83 in (77.0 × 72.0 mm)]	
Net power (in accordance with SAE J1349*1)	Natural gas	17.6 bhp (13.1 kW) at 3,600 rpm
	LPG	20.4 bhp (15.2 kW) at 3,600 rpm
Max. Net torque (in accordance with SAE J1349*1)	Natural gas	27.4 lbf·ft (37.1 N·m) at 3,000 rpm
	LPG	32.2 lbf·ft (43.6 N·m) at 3,000 rpm
Engine oil capacity	Without oil filter replacement: approximatly 1.2 US qt (1.1 ℓ)*2 With oil filter replacement: approximatly 1.5 US qt (1.4 ℓ)*2	
Cooling system	Forced air	
Ignition system	Transistor magneto	
PTO shaft rotation	Counterclockwise	

*1 The power rating of the engine indicated in this document is the net power output tested on a production engine for the engine model and measured in accordance with SAE J1349 at 3,600 rpm (Net Power) and at 3,000 rpm (Max. Net Torque). Mass production engines may vary from this value.
Actual power output for the engine installed in the final machine will vary depending on numerous factors, including the operating speed of the engine in application, environmental conditions, maintenance, and other variables.

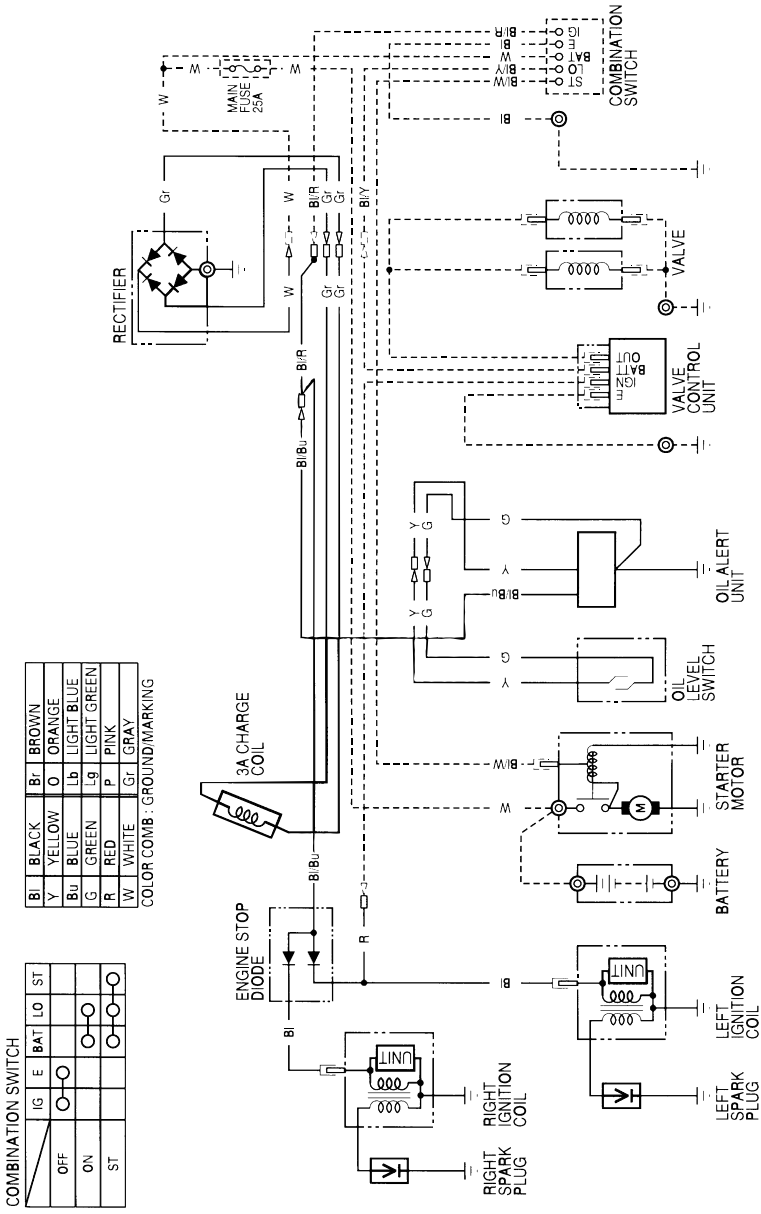
*2 The engine oil capacity varies, depending on the oil cooler that is attached. Refer to the instructions provided with the equipment powered by this engine.

GX620K1/670 Tuneup

ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.012−0.016 in (0.3−0.4 mm)	Refer to page 25
Valve clearance (cold)	IN: 0.15±0.02 mm EX: 0.20±0.02 mm	See your authorized Honda dealer
Other specifications	No other adjustments needed.	

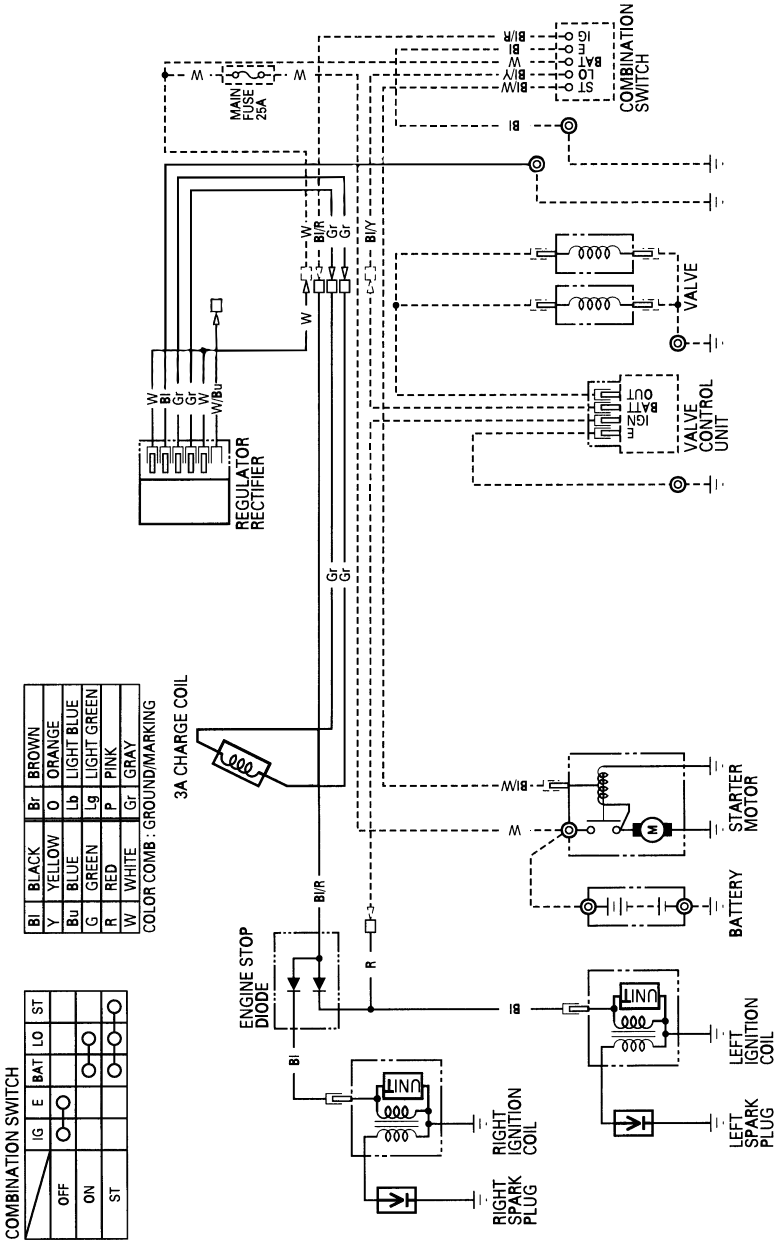
Wiring Diagrams

Recommended wiring for engines equipped with Charge Coil and* Oil Alert *system.



Wiring Diagrams

Recommended wiring for engines not equipped with* Oil Alert *system.



CONSUMER INFORMATION

DEALER LOCATOR INFORMATION

To find an authorized Honda Servicing Dealer anywhere in the United States:

Visit our web site:
www.hondapowerequipment.com

Honda PUBLICATIONS

These publications will give you additional information for maintaining and repairing your engine. You may order them from your Honda engine dealer.

Shop Manual

This manual covers complete maintenance and overhaul procedures. It is intended to be used by a skilled technician.

Available through your Honda dealer or through Helm Inc. at 1 888-292-5395 or visit www.hondapowerequipment.com

Parts Catalog

This manual provides complete, illustrated parts lists. Available through your Honda dealer.

TECHNICAL & CONSUMER INFORMATION

CUSTOMER SERVICE INFORMATION

Servicing dealership personnel are trained professionals. They should be able to answer any questions 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
4900 Marconi Drive
Alpharetta, GA 30005-8847

Or telephone: (770) 497-6400 8:30 am to 7:00 pm ET

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

- Model and serial number (see page 33)
- Name of the dealer who sold the engine to you
- Name and address of the dealer who services your engine
- Date of purchase
- Your name, address and telephone number
- A detailed description of the problem

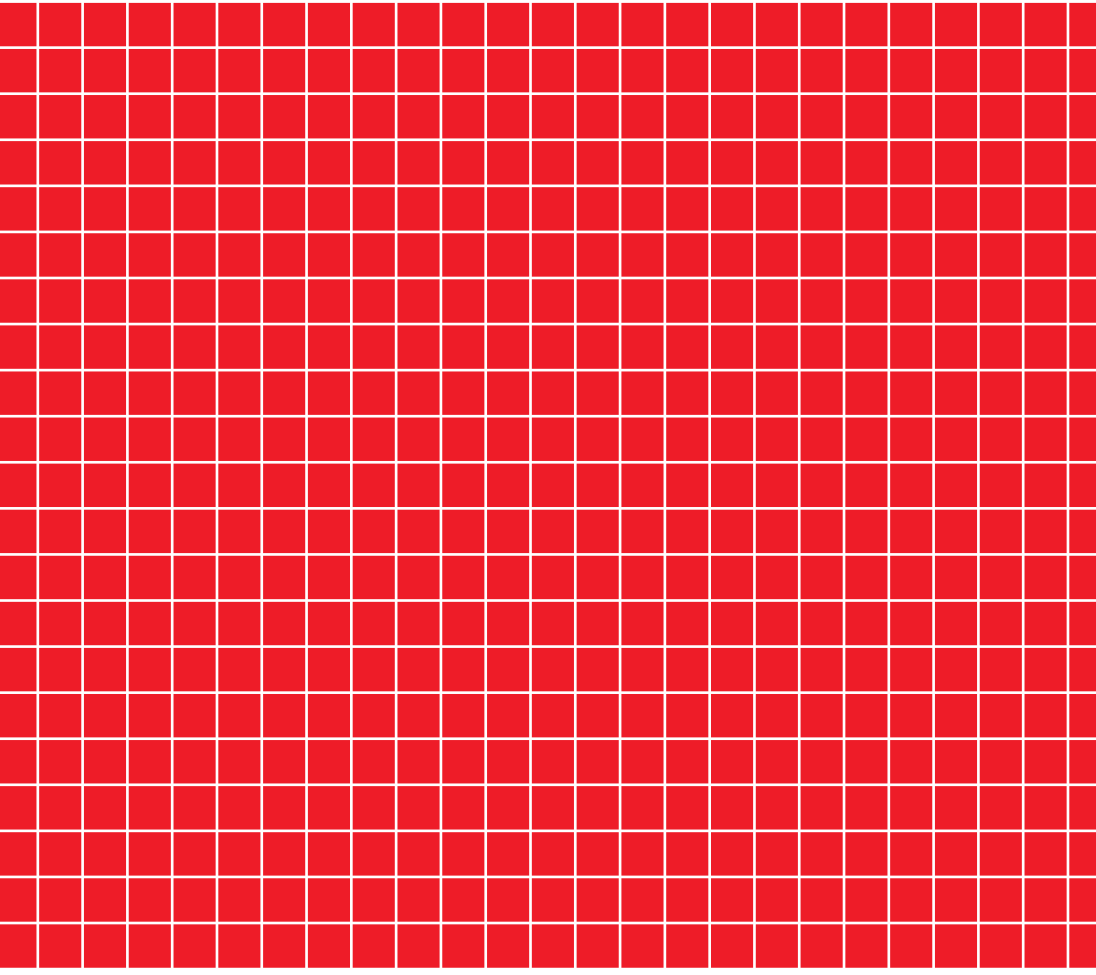
QUICK REFERENCE INFORMATION

Fuel	Type	LPG: Propane content of 95% or higher (page 17). NATURAL GAS: Methane content of 90% or equivalent (page 17).
Engine Oil	Type	SAE 10W-30, API SJ or later (or equivalent), for general use (page 21)
	Capacity	Without oil filter replacement: approximately 1.2 US qt (1.1 ℓ) ∗ With oil filter replacement: approximately 1.5 US qt (1.4 ℓ) ∗
Spark Plug	Type	NGK: ZGR5A-4
	Gap	0.012－0.016 in (0.3－0.4 mm) (page 25)
Carburetor	Idle speed	LPG: 3,000 ± 300 rpm NATURAL GAS: 2,600 ± 300 rpm
Maintenance	Before each use	Check engine oil level. Check air filter.
	First 20 hours	Change engine oil.
	Subsequent	Refer to the maintenance schedule on page 16.

∗ The engine oil capacity varies, depending on the oil cooler that is attached. Refer to the instructions provided with the equipment powered by this engine.

HONDA

The Power of Dreams



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