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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 your servicing dealer.

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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.

We suggest you read the warranty policy to fully understand its coverage and your responsibilities of ownership.

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.

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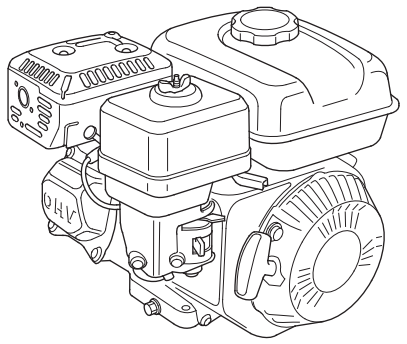
HONDA

OWNER'S MANUAL

GP160 • GP200



The illustrations herein are mainly based on: PTO shaft type S
- The illustration may vary according to the type.

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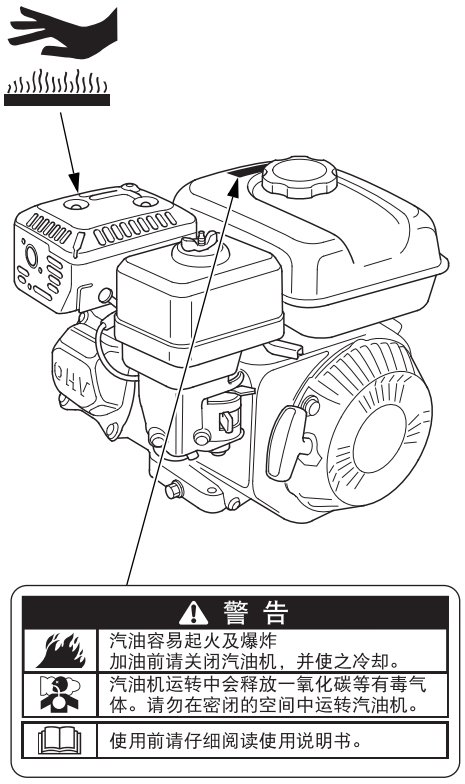
SAFETY INFORMATION

- 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 away from buildings and other equipment during operation. Keep flammable materials away, and do not place anything on the engine while it is running.
- This engine is designed for general machine use. Never attempt to use it for another purpose, such as to power an automobile or motorcycle.

SAFETY LABEL LOCATION

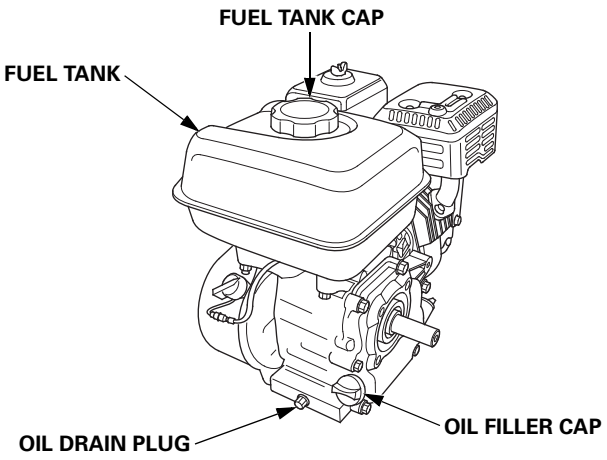
This label warns you of potential hazards that can cause serious injury. Read it carefully.
If the label comes off or becomes hard to read, contact your servicing dealer for replacement.

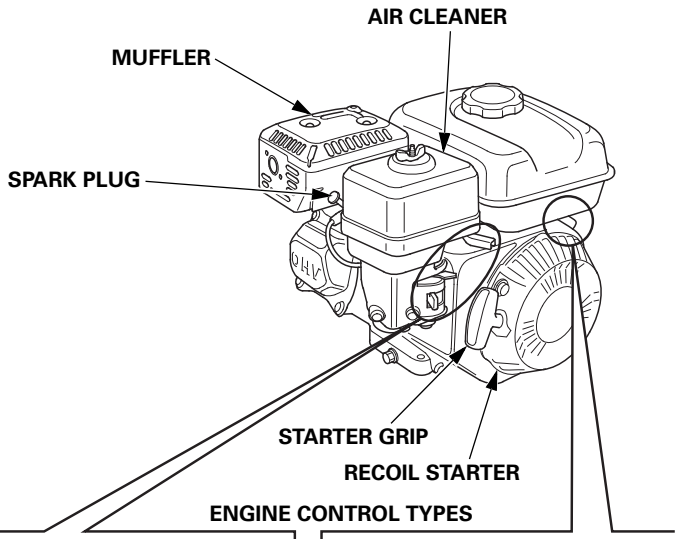
Component with high temperature.
Please do not touch it.



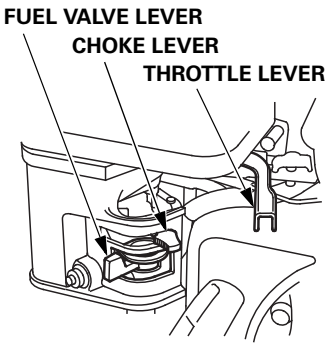
Warning Label
If this label is randomly provided (not pasted), the OEM equipment manufacturer should paste it on a location visible for the users at operationg.

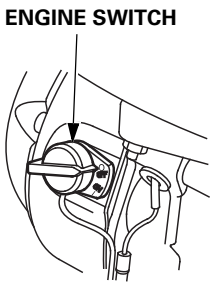
COMPONENT & CONTROL LOCATIONS





ENGINE CONTROL TYPES





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 engine switch will remain in the ON position).

If the engine stops and will not restart, check the engine oil level (see page 7) before troubleshooting in other areas.

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BEFORE OPERATION CHECKS

IS YOUR ENGINE READY TO GO?

For your safety, to ensure compliance with environmental regulations, 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 7). Starting with a full tank will help to eliminate or reduce operating interruptions for refueling.

2. Check the engine oil level (see page 7). 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.

3. Check the reduction case oil level on applicable types (see page 7). Oil is essential to reduction case operation and long life.

4. Check the air filter element (see page 8). A dirty air filter element will restrict air flow to the carburetor, reducing engine performance.

5. 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* on page 4.

A trial run of 15 minutes is recommended for a new product before putting into use, so as to bring its performance into full play.

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.

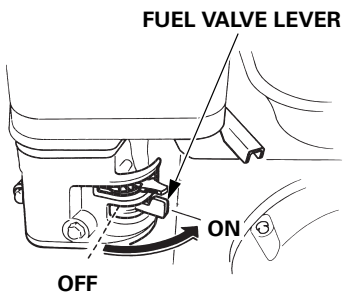
Never run the engine in a closed, or even partly closed area where people may be present.

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

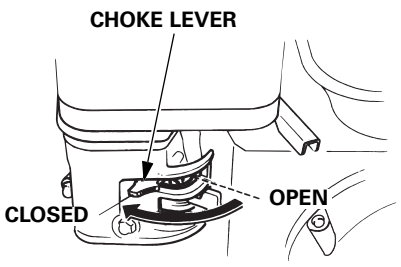
Do not operate the engine on slopes greater than 20° (36%).

STARTING THE ENGINE

1. Move the fuel valve lever to the ON position.



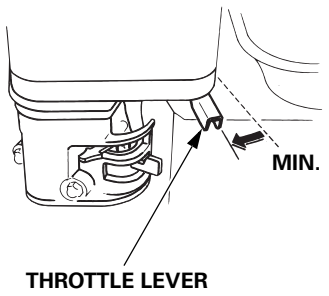
2. To start a cold engine, move the choke lever to the CLOSED position.



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

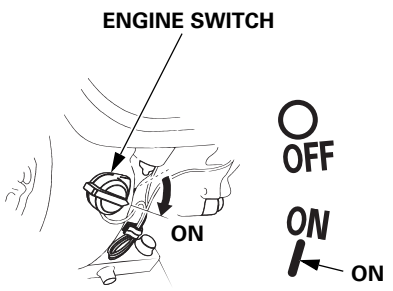
   Some engine applications use a remote-mounted choke control rather than the engine-mounted choke lever shown here. Refer to the instructions provided by the equipment manufacturer.

3. Move the throttle lever away from the MIN. position, about 1/3 of the way toward the MAX. position.

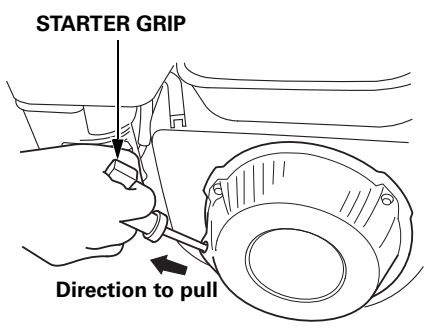


Some engine applications use a remote-mounted throttle control rather than the engine-mounted throttle lever shown here. Refer to the instructions provided by the equipment manufacturer.

4. Turn the engine switch to the ON position.



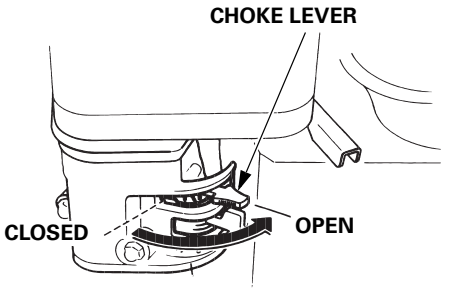
5. Operate the starter.
Pull the starter grip lightly until you feel resistance, then pull briskly in the direction of the arrow as shown below. Return the starter grip gently.



NOTICE

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

6. 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.

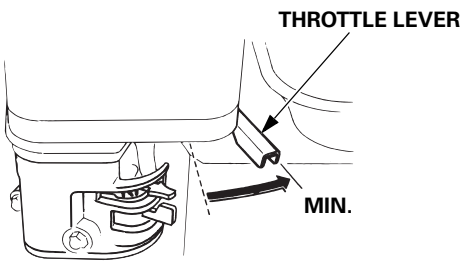


STOPPING THE ENGINE

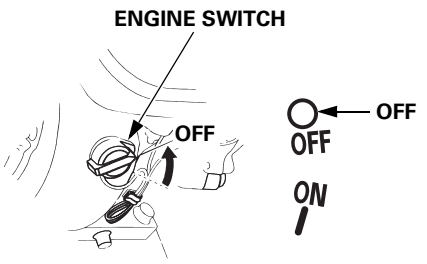
To stop the engine in an emergency, simply turn the engine switch to the OFF position. Under normal conditions, use the following procedure. Refer to the instructions provided by the equipment manufacturer.

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

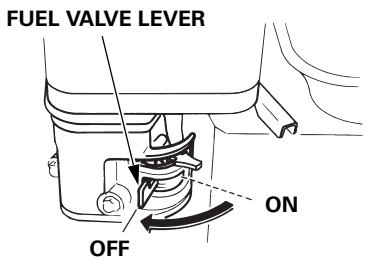
   Some engine applications use a remote-mounted throttle control rather than the engine-mounted throttle lever shown here.



2. Turn the engine switch to the OFF position.



3. Move the fuel valve lever to the OFF position.

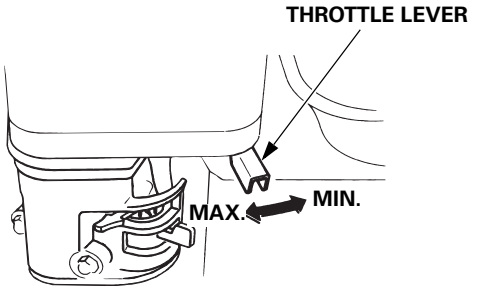


SETTING ENGINE SPEED

Position the throttle lever for the desired engine speed.

Some engine applications use a remote-mounted throttle control rather than the engine-mounted throttle lever shown here. Refer to the instructions provided by the equipment manufacturer.

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



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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.

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

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. To prevent accidental startup, disconnect the spark plug cap. 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 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 Honda Genuine parts or their equivalents for repair and replacement.

MAINTENANCE SCHEDULE

REGULAR SERVICE PERIOD (1) 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	o					7
	Change		o		o		8
Air cleaner	Check	o					8
	Clean			o (2)			8–9
	Replace					o *	
Spark plug	Check-adjust				o		10
	Replace					o	
Idle Speed	Check-adjust					o (3)	Shop manual
Valve clearance	Check-adjust					o (3)	Shop manual
Combustion chamber	Clean	After every 500 Hrs. (3)					Shop manual
Fuel tank	Clean				o (3)		Shop manual
Fuel tube	Check	Every 2 years (Replace if necessary) (3)					Shop manual

* Replace paper element type only.

(1) For commercial use, log hours of operation to determine proper maintenance intervals.

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

(3) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to the Honda shop manual for service procedures.

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

REFUELING

Recommended Fuel

Unleaded gasoline	
	Research octane rating 91 or higher
	Pump octane rating 86 or higher

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

If your equipment will be used on an infrequent or intermittent basis, please refer to the fuel section of the *STORING YOUR ENGINE* chapter (see page 10) for additional information regarding fuel deterioration.

⚠ WARNING

Gasoline is highly flammable and explosive, and you can be burned or seriously injured when refueling.
- Stop the engine and keep heat, sparks, and flame away.
- Refuel only outdoors.
- Wipe up spills immediately.

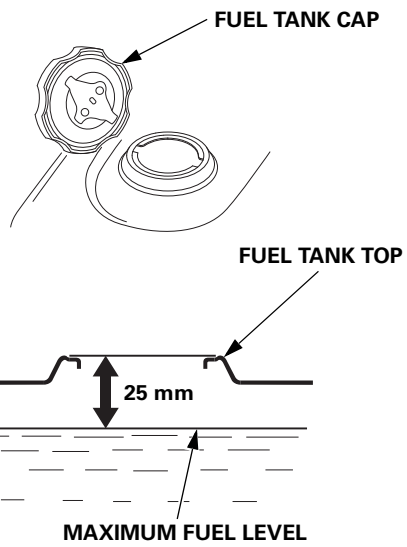
NOTICE

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 Warranty.

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

1. With the engine stopped and on a level surface, remove the fuel tank cap and check the fuel level. Refill the tank if the fuel level is low.

2. Add fuel to the maximum fuel level of the fuel tank. Do not fill the fuel tank completely. Do not overfill. Wipe up spilled fuel before starting the engine.



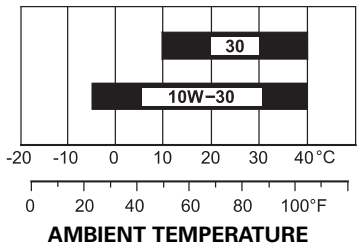
Refuel carefully to avoid spilling fuel. It may be necessary to lower the fuel level depending on operating conditions. After refueling, tighten the fuel tank cap securely.
Keep gasoline away from appliance pilot lights, barbecues, electric appliances, power tools, etc.
Spilled fuel is not only a fire 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 category SE or later (or equivalent). Always check the API service label on the oil container to be sure it includes the letters SE 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.

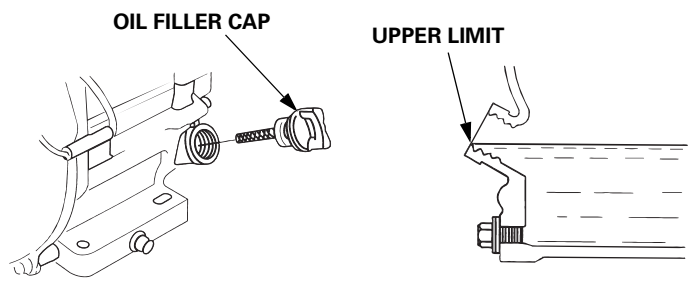
Oil Level Check

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

1. Remove the oil filler cap.

2. Check the oil level. If it is below the upper limit, fill with the recommended oil to the upper limit (see page 7).

3. Reinstall the oil filler cap securely.



NOTICE

Running the engine with a low oil level can cause engine damage. This type of damage is not covered under the Warranty.

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.

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Oil Change

Drain the used oil when 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, oil drain plug and washer.

2. Allow the used oil to drain completely, then reinstall the oil drain plug and a new washer, and tighten the oil drain plug securely.

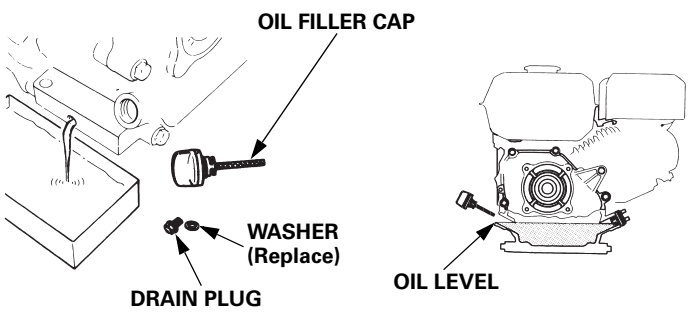
3. With the engine in a level position, fill with the recommended oil (see page 7) to the upper limit.

   NOTICE

   Running the engine with a low oil level can cause engine damage. This type of damage is not covered under the Warranty.

   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. Install the oil filler cap and tighten securely.



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

NOTICE

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

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 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 under the Warranty.

Inspection

Remove the air cleaner cover and inspect the filter elements. Clean or replace dirty filter elements. Always replace damaged filter elements. If equipped with an oil-bath air cleaner, also check the oil level.

Refer to the following instructions that apply to the air cleaner and filter for your engine type.

Cleaning

[Dual-Filter Element Types]

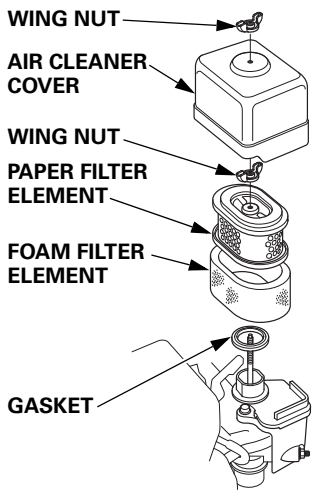
1. Remove the wing nut from the air cleaner cover, and remove the cover.

2. Remove the wing nut from the air filter, and remove the filter elements.

3. Remove the foam filter element from the paper filter element.

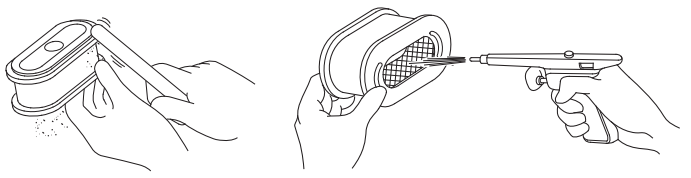
4. Inspect both air filter elements, and replace them if they are damaged. Always replace the paper air filter element at the scheduled interval (see page 6).

STANDARD DUAL-FILTER-ELEMENT TYPE

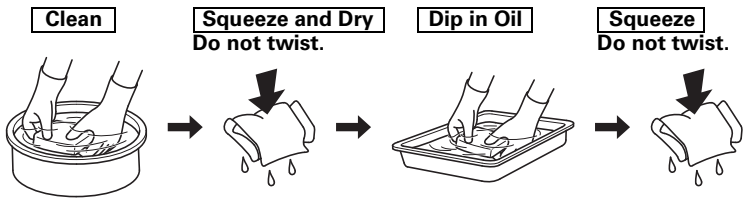


5. Clean the air filter elements if they are to be reused.

   Paper filter element: Tap the filter element several times on a hard surface to remove dirt, or blow compressed air [not exceeding 207 kPa (2.1 kgf/cm^2)] through the filter element from the inside. Never try to brush off dirt; brushing will force dirt into the fibers.



Foam filter element: Clean in warm soapy water, rinse, and allow to dry thoroughly. Or clean in non-flammable solvent and allow to dry. Dip the filter element in clean engine oil, and then squeeze out all excess oil. The engine will smoke when started if too much oil is left in the foam.



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

7. Place the foam air filter element over the paper element, and reinstall the assembled air filter. Be sure the gasket is in place beneath the air filter. Tighten the air filter wing nut securely.

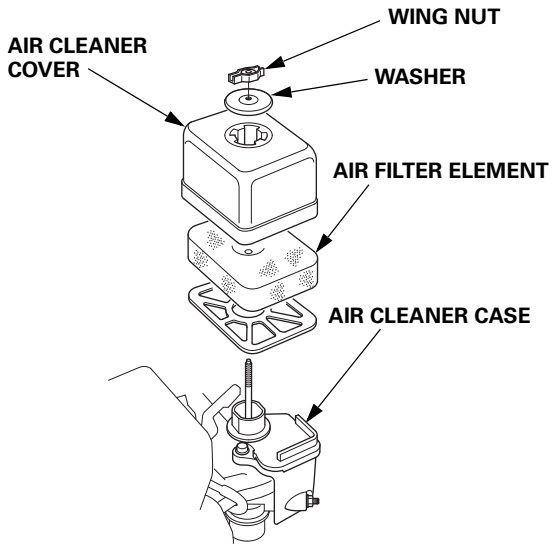
8. Install the air cleaner cover, and tighten the wing nut securely.

[Semi Dry Element Types]

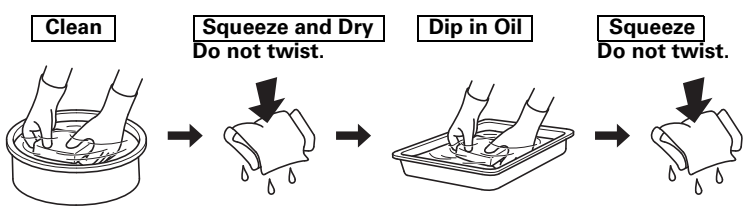
1. Unscrew the wing nut, remove the washer and the air cleaner cover.

2. Remove the air filter element from the air cleaner case.

3. Inspect the air filter element, and replace it if it is damaged.



4. Clean the air filter element if it is to be reused.



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

6. Install the air filter element to the air cleaner case.

7. Install the air cleaner cover and washer.

8. Screw the wing nut securely.

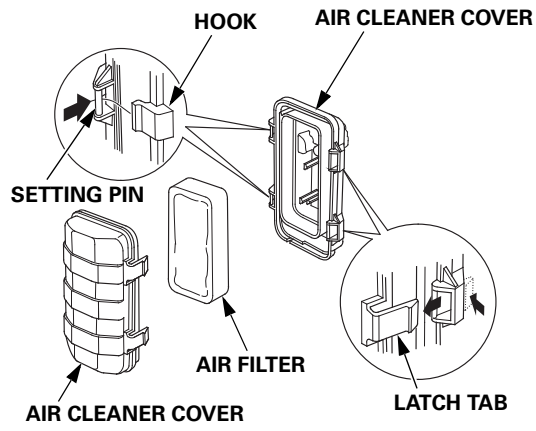
[Low Profile Types]

1. Push the latch tabs and open the air cleaner cover.

2. Free the hooks from the setting pins on the air cleaner case and remove the air cleaner cover to the right side of the frame pipe, taking care not to damage the air cleaner cover.

3. Remove the air filter from the air cleaner case.

4. Check the air filter to be sure it is clean and in good condition. If the air filter is dirty, clean it as described on page 8. Replace the air filter if it is damaged.

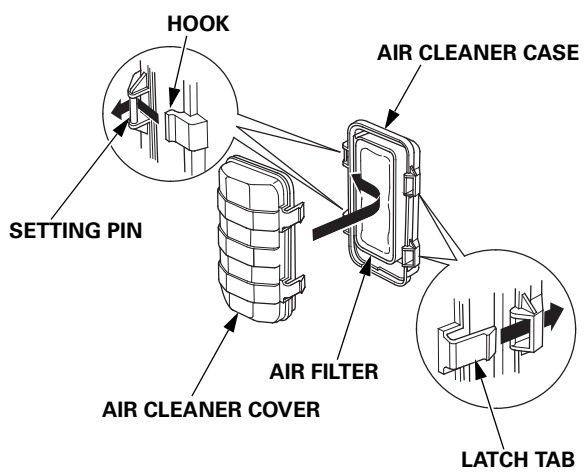


5. Reinstall the air filter in the air cleaner case.

6. Set the hooks of the air cleaner cover to the setting pins securely, then push the air cleaner cover to lock the latch tabs. Be sure that the cover is set securely. There must be no clearance between the air cleaner cover and case.

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 warranty.



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SPARK PLUG

Recommended Spark Plug: BPR6ES (NGK)
W20EPR-U (DENSO)

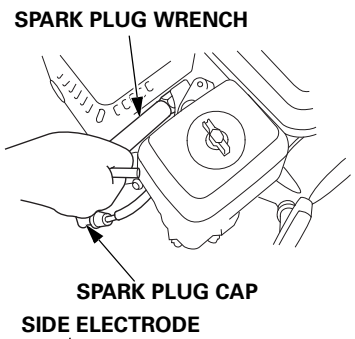
The recommended spark plug has the correct heat range for normal engine operating temperatures.

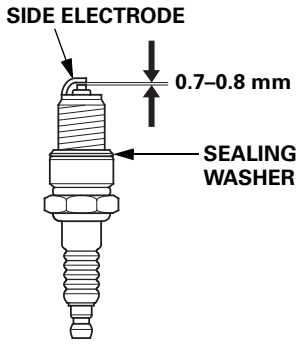
NOTICE

An incorrect spark plug can cause engine damage.

If the engine has been running, let it cool before servicing the spark plug.

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





1. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.
2. Remove the spark plug with a 21 mm spark plug wrench.
3. 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.
4. 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: 0.7–0.8 mm
5. Install the spark plug carefully by hand, to avoid cross-threading.
6. After the spark plug is seated, tighten with a 21 mm spark plug wrench to compress the sealing washer.

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

   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.
7. Attach the spark plug cap to the spark plug.

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

NOTICE

Depending on the region where you operate your equipment, fuel formulations may deteriorate and oxidize rapidly. Fuel deterioration and oxidation can occur in as little as 30 days and may cause damage to the carburetor and/or fuel system. Please check with your servicing dealer for local storage recommendations.

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 deterioration problems may occur after 30 days from keeping the fuel in the fuel tank, 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 Warranty.

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Draining the Fuel Tank and Carburetor

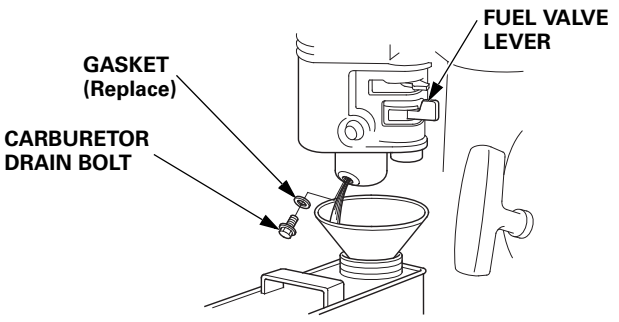
⚠ WARNING

Gasoline is highly flammable and explosive, and you can be burned or seriously injured when handling fuel.
- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

1. Move the fuel valve lever to the OFF position (see page 5).

2. Place an approved gasoline container below the carburetor, and use a funnel to avoid spilling fuel.

3. Remove the carburetor drain bolt and gasket. Move the fuel valve lever to the ON position (see page 4).



4. After all the fuel has drained into the container, reinstall the carburetor drain bolt, new gasket. Tighten the carburetor drain bolt securely.

Engine Oil

1. Change the engine oil (see page 8).

2. Remove the spark plug (see page 10).

3. Pour a teaspoon 5–10 cm^3 of clean engine oil into the cylinder.

4. Pull the starter rope several times to distribute the oil in the cylinder.

5. Reinstall the spark plug.

6. Pull the starter rope slowly until resistance is felt and the notch on the starter pulley aligns with the hole at the top of the recoil starter cover. This will close the valves so moisture cannot enter the engine cylinder. Return the starter rope gently.

7. Cover the engine to keep out dust.

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.

If equipped with a battery for electric starter types, 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 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.

Keep the engine level when transporting to reduce the possibility of fuel leakage. Move the fuel valve lever to the OFF position (see page 5).

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TAKING CARE OF UNEXPECTED PROBLEMS

ENGINE WILL NOT START

Possible Cause	Correction
Fuel valve OFF.	Move lever to ON position.
Choke open.	Move lever to CLOSED position unless the engine is warm.
Engine switch OFF.	Turn engine switch to ON position.
Engine oil level low (Oil Alert models).	Fill with the recommended oil to the proper level (p.7).
Out of fuel.	Refuel (p. 7).
Bad fuel; engine stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p. 11). Refuel with fresh gasoline (p. 7).
Spark plug faulty, fouled, or improperly gapped.	Gap or replace spark plug (p. 10).
Spark plug wet with fuel (flooded engine).	Dry and reinstall spark plug. Start engine with throttle lever in MAX. position.
Carburetor malfunction, ignition malfunction, valves stuck, etc.	Take engine to your servicing dealer, or refer to shop manual.

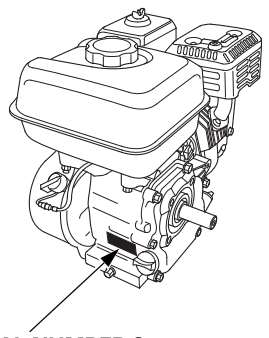
ENGINE LACKS POWER

Possible Cause	Correction
Filter element(s) restricted.	Clean or replace filter element(s) (p. 8–9).
Bad fuel; engine stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p. 11). Refuel with fresh gasoline (p. 7).
Carburetor malfunction, ignition malfunction, valves stuck, etc.	Take engine to your servicing dealer, or refer to shop manual.

TECHNICAL INFORMATION

SERIAL NUMBER LOCATION

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



SERIAL NUMBER & ENGINE TYPE LOCATION

Engine serial number: __ __ __ __ __ — __ __ __ __ __ __ __

Engine type: ___ ___ ___ ___

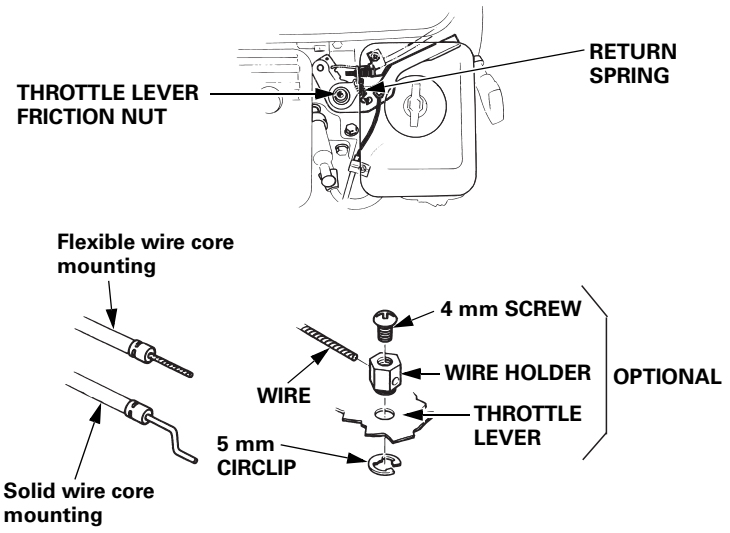
Date Purchased: _____ / _____ / _____

REMOTE CONTROL LINKAGE

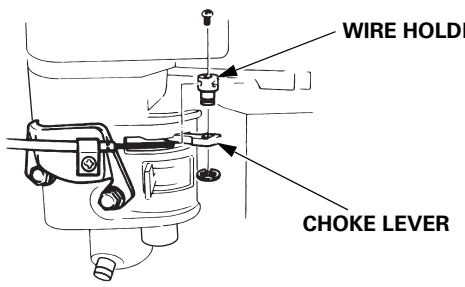
The throttle and choke control levers are provided with holes for optional cable attachment. The following illustrations show installation examples for a solid wire cable and for a flexible, braided wire cable. If using a flexible, braided wire cable, add a return spring as shown.

It is necessary to loosen the throttle lever friction nut when operating the throttle with a remote-mounted control.

REMOTE THROTTLE LINKAGE



REMOTE CHOKE LINKAGE



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, 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 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 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.

SPECIFICATIONS

GP160 (PTO shaft type S)

Length×Width×Height	306×363×335 mm
Dry mass [weight]	14.9 kg
Engine type	4-stroke, overhead valve, single cylinder
Displacement [Bore×Stroke]	163 ml [68.0×45.0 mm]
Net power (in accordance with SAE J1349*)	3.6 kW (4.9 PS) at 3,600 rpm
Max. net torque (in accordance with SAE J1349*)	10.3 N·m (1.05 kgf·m) at 2,500 rpm
Engine oil capacity	0.58 L
Fuel tank capacity	3.1 L
Cooling system	Forced air
Ignition system	Transistorized magneto
PTO shaft rotation	Counterclockwise

GP200 (PTO shaft type S)

Length×Width×Height	315×378×335 mm
Dry mass [weight]	16.0 kg
Engine type	4-stroke, overhead valve, single cylinder
Displacement [Bore×Stroke]	196 ml [68.0×54.0 mm]
Net power (in accordance with SAE J1349*)	4.3 kW (5.8 PS) at 3,600 rpm
Max. net torque (in accordance with SAE J1349*)	12.4 N·m (1.26 kgf·m) at 2,500 rpm
Engine oil capacity	0.60 L
Fuel tank capacity	3.1 L
Cooling system	Forced air
Ignition system	Transistorized magneto
PTO shaft rotation	Counterclockwise

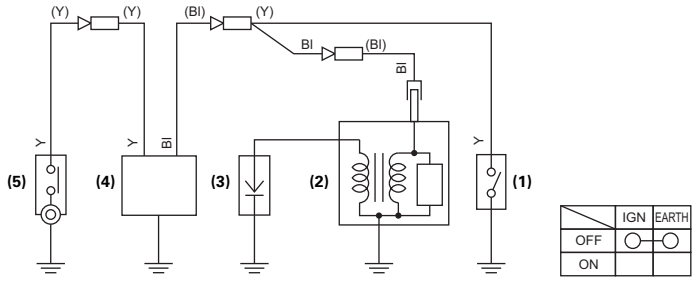
* The power rating of the engine indicated in this document is the net power output tested on a production engine for the engine model and measured in accordance with SAE J1349 at 3,600 rpm (Net Power) and at 2,500 rpm (Max. Net Torque). Mass production engines may vary from this value.
Actual power 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.

TUNE-UP SPECIFICATIONS GP160/200

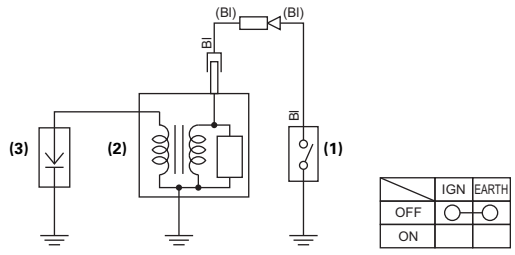
ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.7–0.8 mm	Refer to page: 10
Valve clearance (cold)	IN: 0.15±0.02 mm EX: 0.20±0.02 mm	See your servicing dealer
Other specifications	No other adjustments needed.	

WIRING DIAGRAMS

With Oil Alert



Without Oil Alert



(1) ENGINE SWITCH
(2) IGNITION COIL
(3) SPARK PLUG
(4) OIL ALERT UNIT
(5) OIL LEVEL SWITCH

Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

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HONDA

The Power of Dreams