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# 1. ENGINE SAFETY

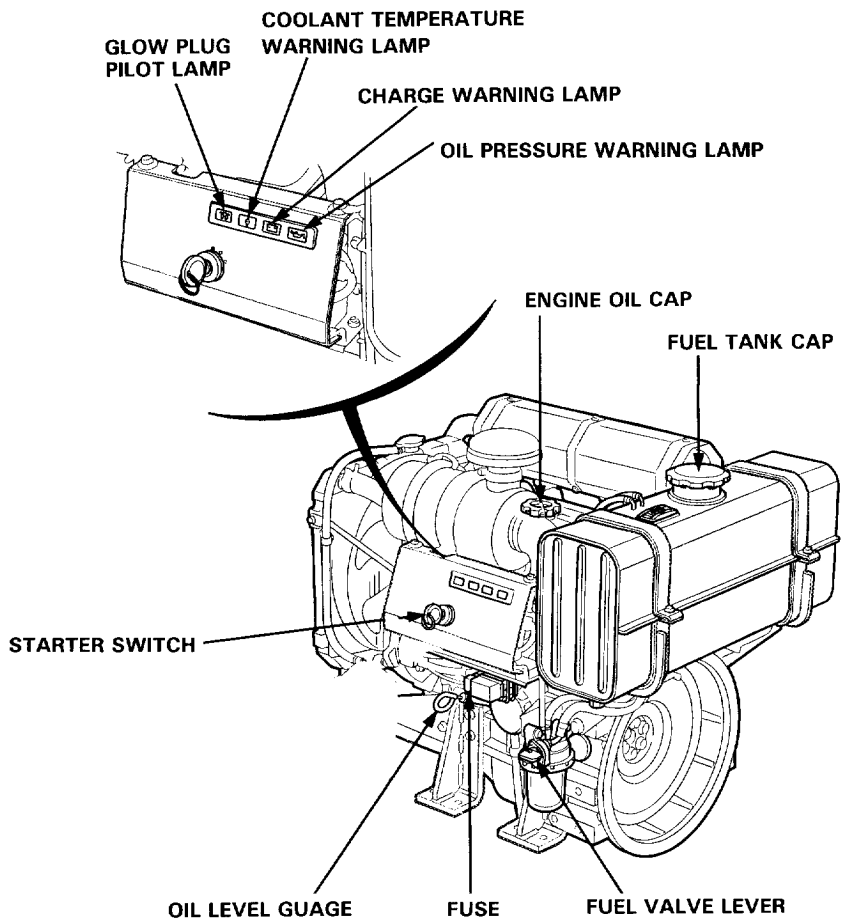
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## **▲ WARNING**

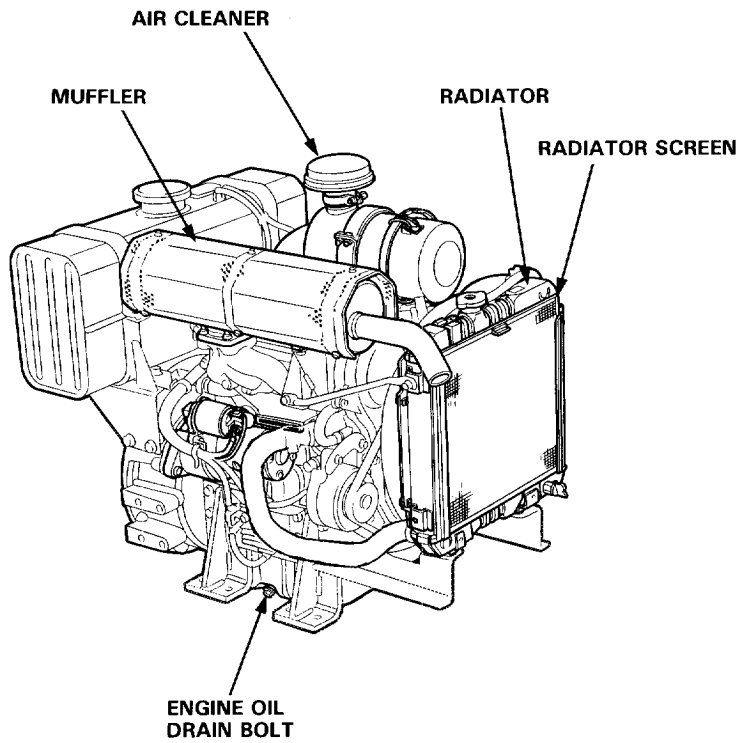
- Honda engines are designed to give safe and dependable service if operated according to instructions. Read and understand this Owner's Manual before operating the engine. Failure to do so could result in personal injury or equipment damage.
- To prevent fire hazards and to provide adequate ventilation, keep the engine at least 1 meter (3 feet) away from buildings and other equipment during operation. Do not place flammable objects close to the engine.
- Children and pets must be kept away from the area of operation due to a equipment the engine may be used to operate.
- Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.
- Diesel fuel is flammable and is under certain conditions.
- Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the refueling area or where diesel fuel is tored.
- Do not overfill the fuel tank. After refueling, make sure the tank cap is closed properly and securely.
- Be careful not to spill fuel when refueling. Fuel vapor or spilled fuel may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Never run the engine in an enclosed or confined area. Exhaust contains poisonous gas; exposure may cause loss of consciousness and may lead to death.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler or exhaust pipe while it is hot. To avoid severe burns or fire hazards, let the engine cool before transporting it or storing it indoors.
- Do NOT use gasoline, benzine or any other fuel oils.
- Place on a level and stable surface for use.  
(The levelness must be within 20 degrees in all the horizontal directions.)
- Do not remove the sealed engine components. They are critical items.

## 2. COMPONENT IDENTIFICATION

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\* The parts shown by dotted lines may vary according to the conditions under which the engine is mounted, and are not offered by Honda.



### 3. CONTROLS

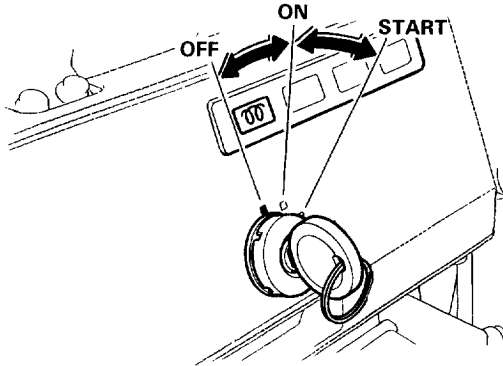
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#### Starter switch

Use this switch to "start" and "stop" the electric starter.

#### NOTE:

- This switch cannot be used to stop the engine.
- During operation, maintain the starter switch at the "ON" position. When the engine stop, move the starter switch to the "OFF" position.



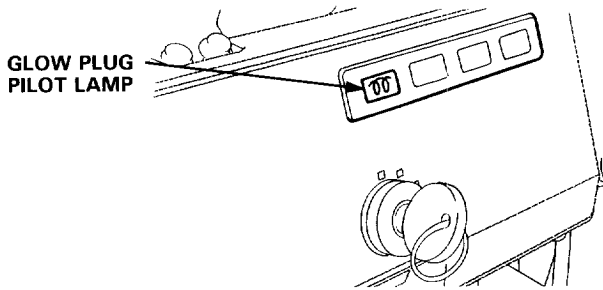
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## Glow plug pilot lamp

The glow plug pilot lamp indicates the pre-heating of the ignition system.

Turn the starter switch to the "ON" position starting the engine.

The glow plug pilot lamp comes on for a few second and goes out, indicating that the preheating of the system is completed.

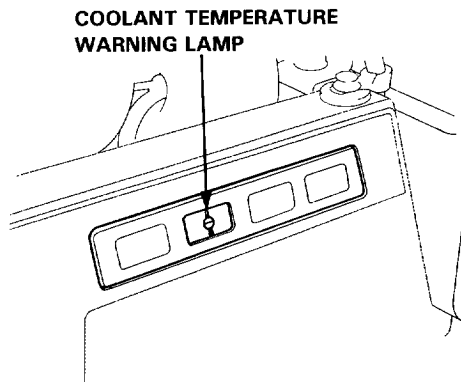


## Coolant temperature warning lamp

The coolant temperature warning lamp comes on when the coolant temperature gets excessively high.

If it comes on while operating the engine, stop the engine, inspect the coolant level and fill the reservoir tank up to the proper level, as instructed in page 13.

**⚠ WARNING** The coolant temperature warning lamp also comes on when the engine is overloaded. Be sure not to operate the engine with the coolant temperature warning lamp turned on.



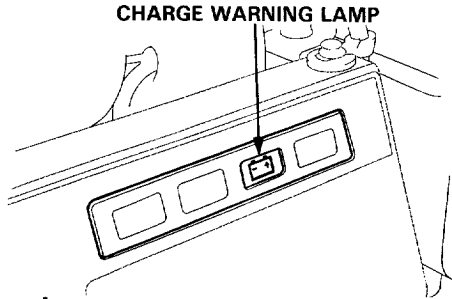
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## Charge warning lamp

The charge warning lamp comes on when there is any abnormality in the charging system.

It should come on when the engine switch is turned to "ON" and should go out after the engine is started.

If the charge warning lamp comes on while operating the engine, consult your authorized Honda dealer for inspection at once.



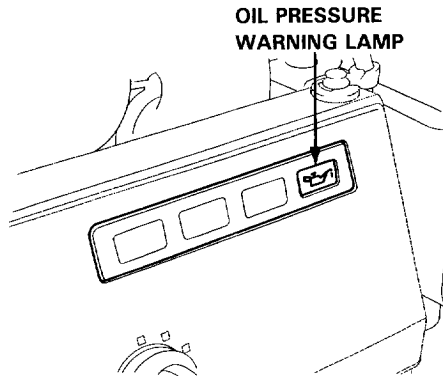
## Oil pressure warning lamp

The oil pressure warning lamp comes on when there is any abnormality in the engine lubricating system.

It should come on when the engine switch is turned to "ON" and should go out after the engine is started.

If the oil pressure warning lamp comes on while operating the engine, park it in a safe place, stop the engine, and check the engine oil level.

If the level is not low, consult your authorized Honda dealer for inspection and service.



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## Engine speed control lever

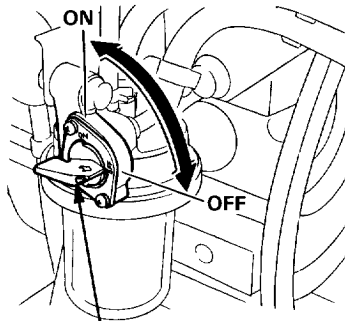
This lever is used to “start” and “stop” the engine as well as to adjust the engine speed.

## Fuel valve lever

The fuel valve opens and closes the fuel line from the fuel tank to the pump.

Turn the fuel valve lever to ON to open the line and turn it to OFF to close. Do not turn the fuel lever halfway; it should always be at either ON or OFF position exactly.

**⚠ WARNING** Before transporting the engine or tilting it for service be sure to turn the fuel valve lever to OFF to prevent possible fuel leaks; spilled fuel or fuel vapor may ignite.



FUEL VALVE LEVER



## 4. PRE-OPERATION CHECK

### Engine oil

#### CAUTION:

- Engine oil is a major factor affecting engine performance and service life.
- Be sure to check the engine on a level surface with the engine stopped.

#### INSPECTION

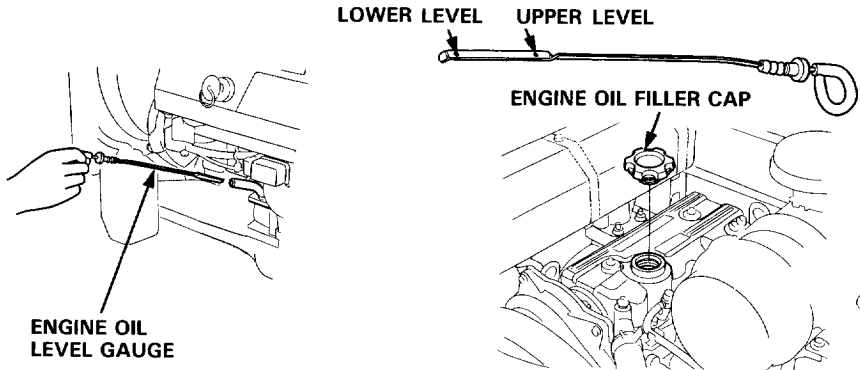
Remove the engine oil level gauge and wipe it clean.

Reinsert it all the way down, then pull it out and read the level. The level should be between the upper and lower levels.

#### REFILLING

If the level has dropped close to the lower level, fill oil until it is even. With the upper level:

1. Turn the oil filler cap counterclockwise to remove. Fill oil, then check the level again. Do not overfill.
2. Reinstall the cap and twist clockwise until it stops.

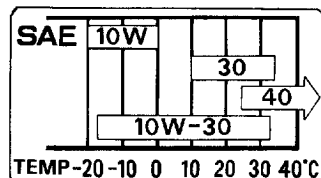


SAE 10W-30 diesel oil certified to meet or US automobile manufacturer's requirements for API Service Classification CC or CD (Diesel oils intended for Service CC or CD will show this designation on the container).

SAE 10W-30 is recommended for general, all temperature use. Select the appropriate viscosity for the average temperature in your area.

Replace the oil if it is excessively contaminated or discolored.

(Refer to page 20 for engine oil change interval and procedure.)



## Fuel level

### INSPECTION

Place the engine on level ground with the engine stopped. Check the fuel gauge to see whether the gauge needle is at "FULL". Remove the fuel cap and add the fuel, if necessary.

### REFILLING

**FUEL TANK CAPACITY: 20 l (5.3 US gal, 4.4 Imp gal)**

Remove the fuel cap and tank with the recommended diesel fuel up to the upper level.

Use diesel fuel.

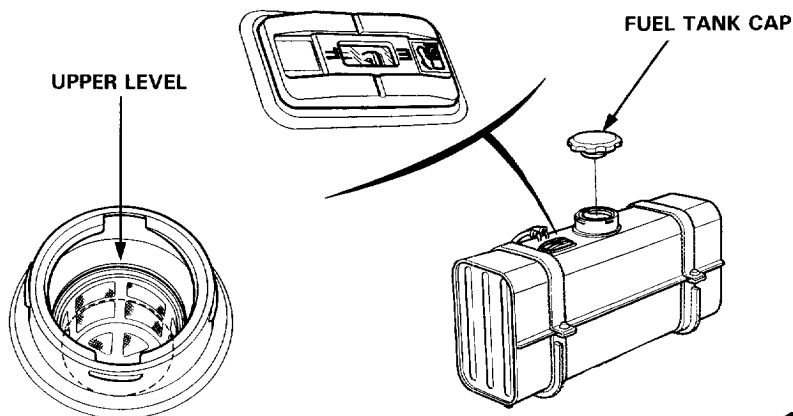
Do not use fouled or mixed diesel fuel.

Avoid getting dirt, dust or water in the fuel tank.

After refueling, be sure to tighten the fuel tank cap firmly.

#### **⚠ WARNING**

- Diesel fuel oil is flammable and is under certain conditions. Refuel in a well ventilated area with the engine stopped.
- Do not smoke or allow flames or sparks in the area where the engine is refueled or where diesel fuel is stored.
- Do not overfill the tank, and make sure the filler cap is securely closed after refueling.
- Be careful not to spill fuel when refueling or spilled fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Use diesel fuel only. Do not use gasoline, benzine, kerosene or any other fuel oils.



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**NOTE:**

- According to season and ambient temperature, a different grade of diesel fuel should be used. The fuel might freeze and prevent the engine from starting if summer fuel is used in winter. If winter fuel is used in summer, it could result in a lack of power. Be sure to use the proper grade of diesel fuel which complies with the ambient temperature.
- Refill the fuel frequently, especially in winter. Water could accumulate if there is much air in the fuel tank. We recommend that you refill after each use of the diesel engine.

**Air bleeding (Restart of the engine after the fuel has run out)**

The diesel engine is equipped with an automatic air bleeding system. Turn the fuel valve lever to ON position, make sure that fuel is supplied to the fuel filter, and start the engine without load.

**NOTE:** Light blue exhaust gas is seen while bleeding air. Keep the engine running, and the exhaust smoke color leans and the engine speed stabilizes after the air bleeding.

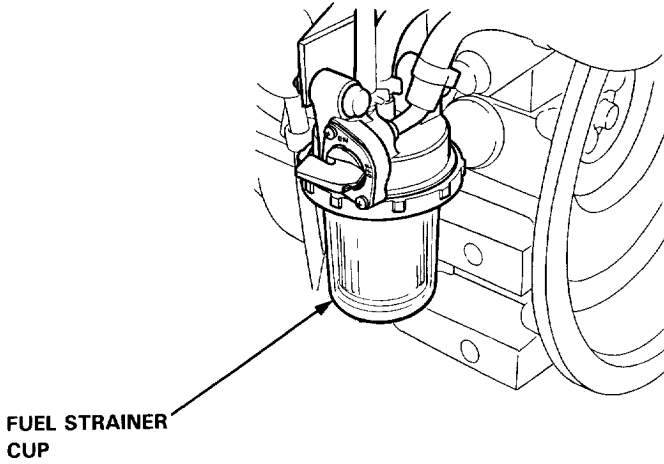


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## Fuel strainer cup

Check the fuel strainer cup dirt or sediment.

If the cup is abnormal, consult your authorized Honda dealer for inspection and service.



## 5. BATTERY CONNECTIONS (For electric starter)

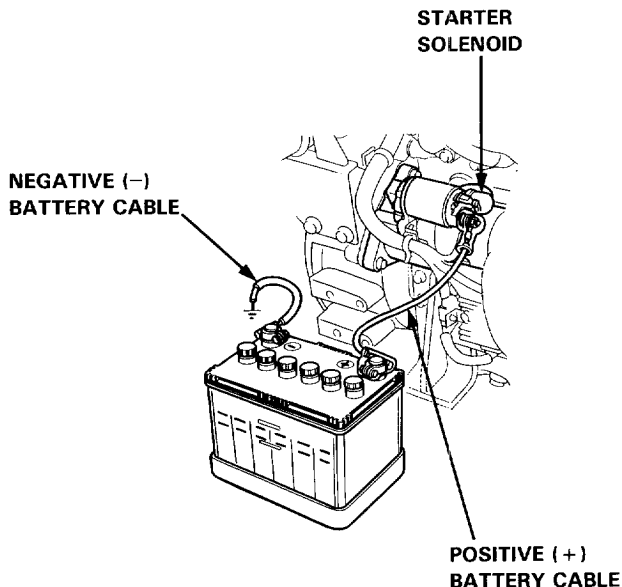
Use a 12 volt battery with an ampere-hour rating of at least 45 AH.

Connect the battery positive (+) cable to the starter solenoid terminal, as shown.

Connect the battery negative (-) cable to an engine mounting bolt, frame bolt, or other good engine ground connection.

Check the battery cable connections to be sure the cables are tightened and free of corrosion. Remove any corrosion and coat the terminals and cable ends with grease.

Always connect the battery positive (+) cable first, then connect the battery negative(-) cable. To disconnect the battery cables, disconnect the battery negative (-) cable first, then the positive (+) cable.



**⚠ WARNING** Batteries produce explosive gases. Keep sparks, flames, and cigarettes away. Always shield the eyes when working near batteries.

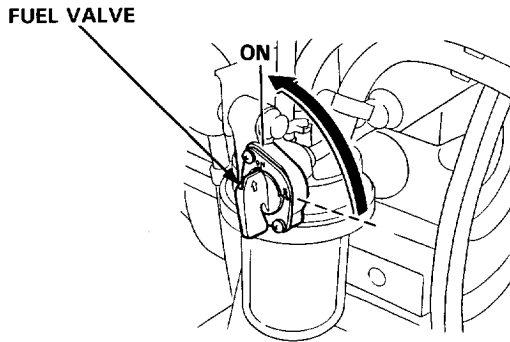
## 6. STARTING THE ENGINE

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### Starting the engine

**⚠ WARNING** Exhaust gas contains poisonous gas. Avoid inhalation of exhaust gases. Never run the engine in a closed garage or confined area.

1. Turn the fuel valve to the "ON" position.



2. Set the engine speed control lever to the "START" position marked.

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3. Turn the starter switch to the "ON" position.

The glow plug pilot lamp comes on for a few second then it goes out. After the glow plug pilot lamp goes out, turn the starter switch to the "START" position.

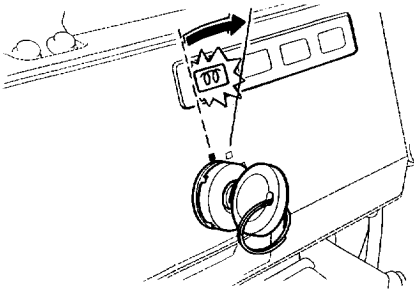
Turn the starter switch to the "ON" position.

Release the switch when the engine starts. It will be returned to the "RUN" position automatically.

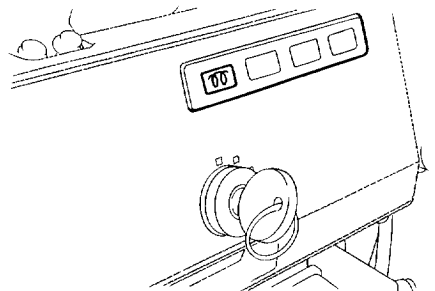
**NOTE:** Do not use the starter for more than 5 seconds at a time. If the engine fails to start, release the switch and wait 10 seconds before operating the starter again.

When you restart the engine after the system is warmed up, it is not necessary that you turn the starter switch to the "ON" position again.

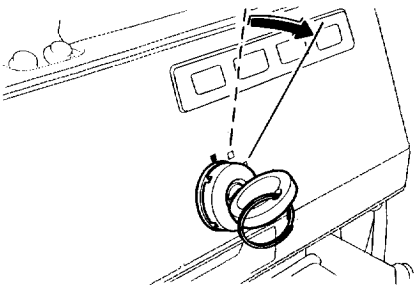
(1.) Glow plug pilot lamp comes on while the engine is on.



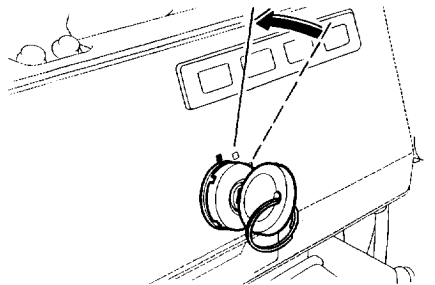
(2.) Glow plug pilot lamp goes off a few second after it comes on.



(3.) Turn the starter switch to the "START" after the glow plug pilot lamp goes out.



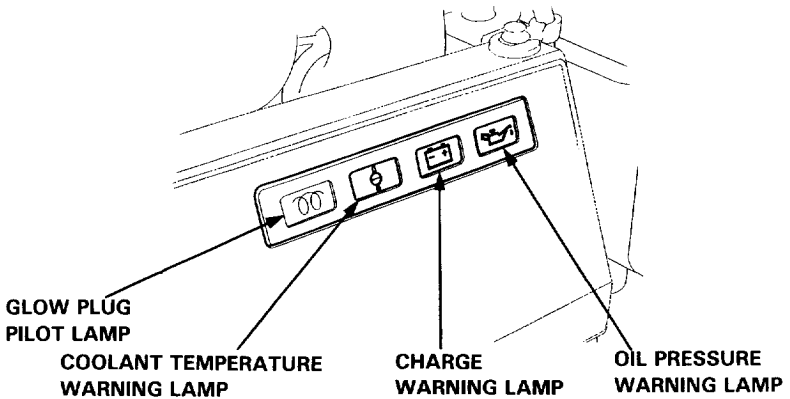
(4.) Release the starter switch. It returns to "ON" automatically.





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4. Position the engine speed control lever for the desired speed.
  5. If the light comes on while operating the engine, stop the engine at once.

- (1) GLOW PLUG PILOT LAMP ----- Consult your authorized Honda dealer.
- (2) COOLANT TEMPERATURE WARNING LAMP----- Check the coolant level and fill the reserve tank up to the proper level.
- (3) CHARGE WARNING LAMP----- Consult your authorized Honda dealer.
- (4) OIL PRESSURE WARNING LAMP -- Check the engine oil level.

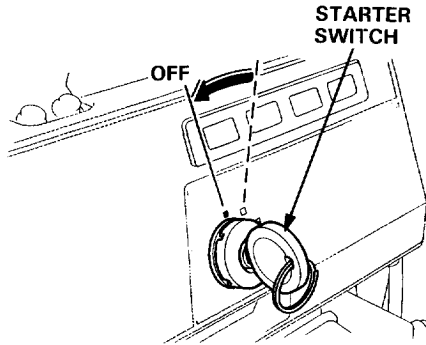


## 7. STOPPING THE ENGINE

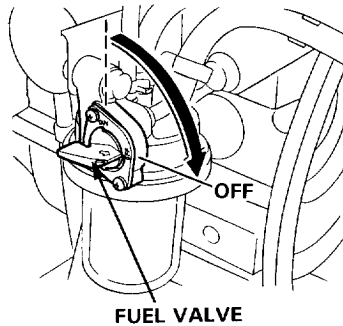
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### Stopping the engine

1. Move the engine speed control lever to the "STOP" position.
2. Turn the starter switch to the "OFF" position.



3. Turn the fuel valve to the "OFF" position.



# 8. MAINTENANCE

- Be sure to check the engine on a level surface with the engine stopped.

Periodic maintenance and adjustment is necessary to keep the engine in good operating condition. Perform the service and inspection scheduled in the following table.

**⚠ WARNING** Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas; exposure can cause loss of consciousness and may lead to death.

**CAUTION:** Use only genuine HONDA parts or their equivalent. The use of replacement parts which are not of equivalent quality may damage the engine.

ITEM	REGULAR SERVICE PERIOD Perform at every indicated month or operating hour interval, whichever comes first.	EACH USE	FIRST MONTH OR 20 HRS	EVERY 3 MONTHS OR 50 HRS	EVERY 6 MONTHS OR 100 HRS	EVERY YEAR OR 200 HRS	EVERY YEAR OR 300 HRS	EVERY 2 YEARS OR 500 HRS	EVERY 3 YEARS OR 1000 HRS	REMARKS
Engine oil	Check level	○								
	Change		○		○					
Engine oil filter	change					○ (2)				Every other oil change
Fuel filter	Check	○				○				
	Clean							○ (2)		
	Change							○ (2)		
Radiator coolant	Check	○								
	Change							Every 2 years (2)		
Radiator screen clean				○						
Air cleaner	Check-Clean			○ (1)						
	Change							○		
Fan belt	Check			○						
Injection nozzle	Check							○ (2)		
Fuel tank	Clean							○ (2)		
Fuel line	Check (Replace if necessary)							Every 2 years (2)		
Combustion chamber	Clean								○ (2)	
Valve clearance	Check-Adjust								○ (2)	
All fasteners (for tightness): Fuel system etc.	Check-Retighten							○ (2)		Without special cylinder head bolts

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

(2) These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.

## Oil change

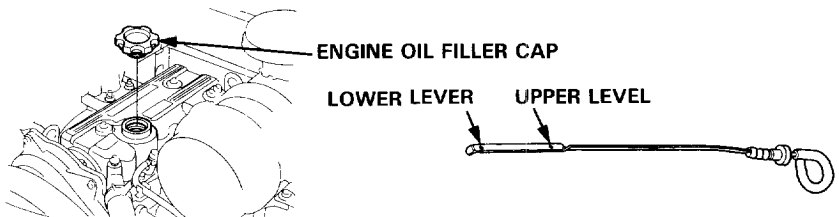
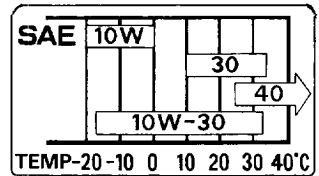
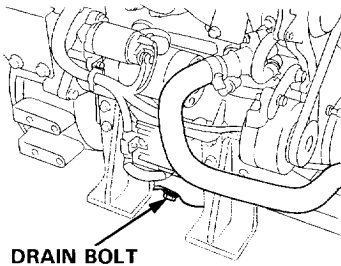
Drain the oil while the engine is still warm to assure rapid and complete draining.

1. Remove the oil filler cap and drain plug to drain the oil.
2. Install the drain plug and tighten it securely.
3. Refill with the diesel oil (see page 10) and check the oil level.
4. If the level is low, fill to the upper level with the recommended oil.
5. Install the oil filler cap.

SAE 10W-30 diesel oil certified to meet or US automobile manufacturer's requirements for API Service Classification CC or CD (Diesel oils intended for Service CC or CD will show this designation on the container). SAE 10W-30 is recommended for general, all temperature use. Select the appropriate viscosity for the average temperature in your area.

### ENGINE OIL CAPACITY:

- GD1100 3.5 ℓ [3.7 US qt, 3.1 Imp qt (S1)]  
4.7 ℓ [5.0 US qt, 4.1 Imp qt (S2,S3)]
- GD1250 3.5 ℓ [3.7 US qt, 3.1 Imp qt (S1)]  
4.7 ℓ [5.0 US qt, 4.1 Imp qt (S2,S3)]



**⚠ WARNING** Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

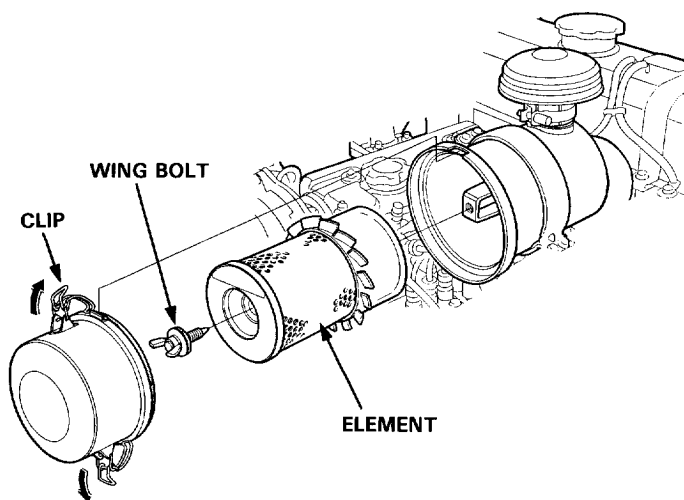
**NOTE:** Please dispose of used motor oil in a manner that is compatible with the environment. Do not throw it in the trash or pour it on the ground.

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## Air cleaner service

A clogged air cleaner results in loss of power and increase in fuel consumption. Service the air cleaner periodically.

1. Unhook the clips on the air cleaner cover and remove the air cleaner cover.
2. Remove the wing bolt and air cleaner element.
3. Clean the element by blowing compressed air or lightly tapping on it. Replace with a new element if it is excessively contaminated.



### CAUTION:

- Install and tighten the air cleaner cover and element securely. Improper installation might cause damage to the engine and, while the engine is in operation, the air cleaner cover might come off due to the vibration.

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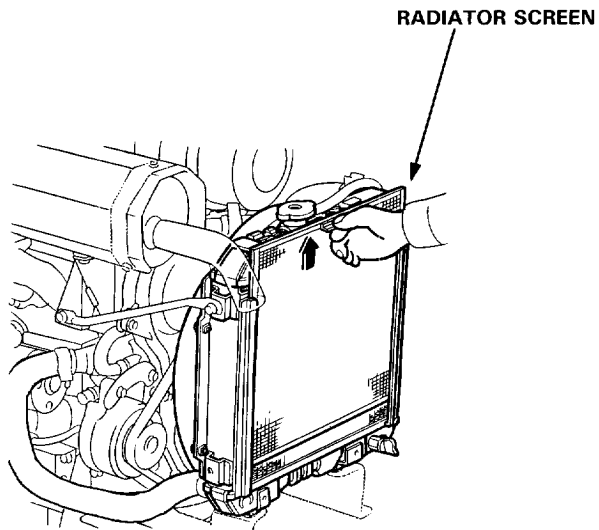
## Radiator screen cleaning

Pull the radiator screen up and remove it.  
Clean dust or dirt off the radiator and radiator screen.  
Reinstall the radiator screen by pushing it down until it seats securely.

### CAUTION:

Engine becomes very hot while it is in operation and remains hot for a while after it is stopped.

Be sure to perform the radiator screen cleaning after the engine cooled down so that you do not get burned.



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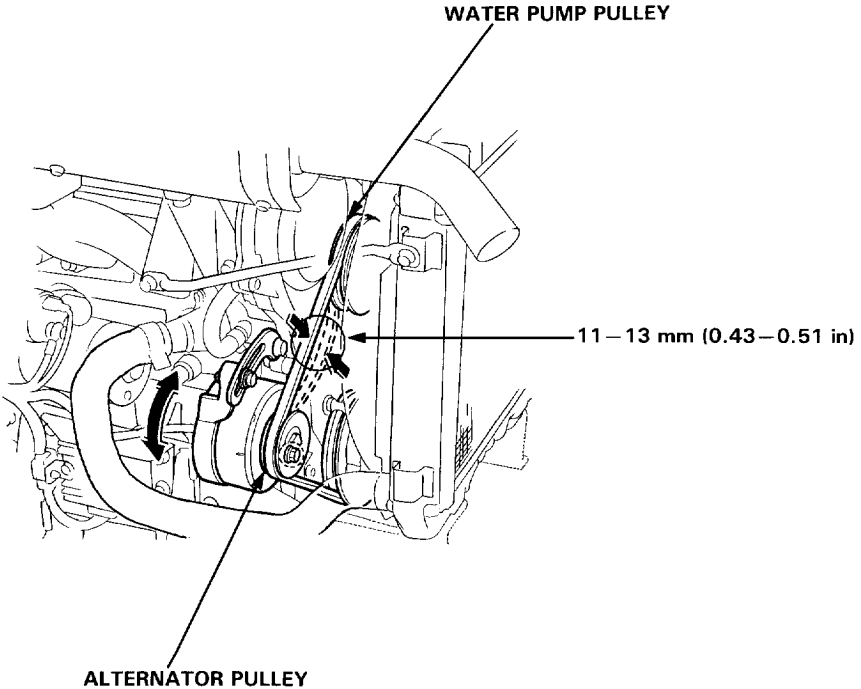
## Fan belt

Push the fan belt midway between the water pump pulley and alternator pulley with the force of 10 kg (22 lb) and measure the slack in the belt.

**Belt slack (when pushed with 10 kg (22 lb) of force):**  
**11–13 mm (0.43–0.51 in)**

If the belt slack is out of the specification, loosen the two alternator mounting bolts and rotate the alternator pulley until the slack is within the specification.

Replace the fan belt if it is worn or damaged, consult your authorized Honda dealer.



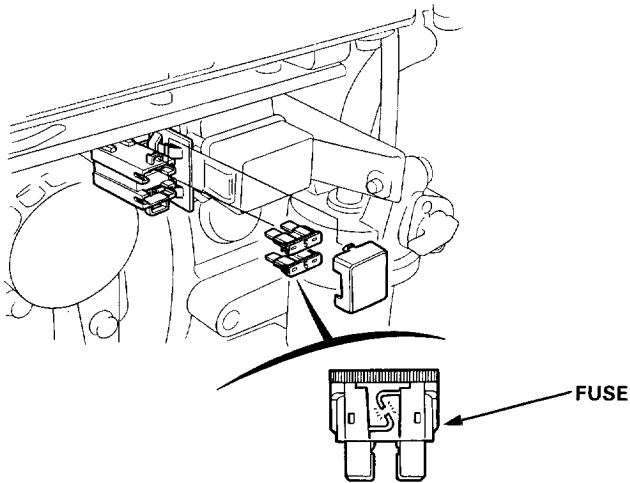
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## Fuse replacement

In the event of a burned out fuse, replace it with another fuse of the rated capacity only after investigating the cause for the failure. If the fuse is replaced without correcting the reason for the failure, the new fuse may burn out quickly again.

**CAUTION:** Never replace a burned out fuse with any object other than another fuse of the rated capacity. Using any other object such as wire or aluminum foil may cause fires in wiring or other parts.

Replace the fuse as shown in the illustration.





## 9. TRANSPORTING/STORAGE

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**⚠ WARNING** Fuel vapor or spilled fuel may ignite.

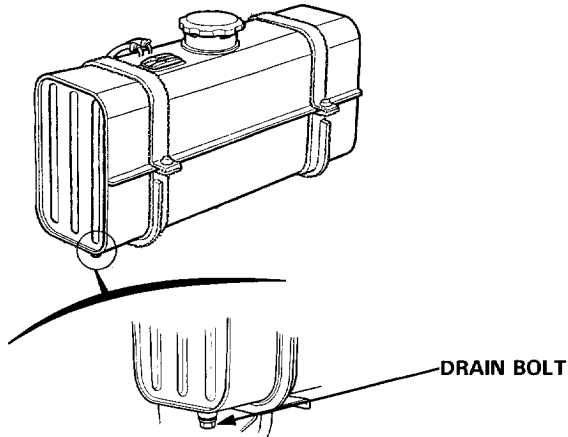
Before storing the unit for an extended period;

1. Be sure the storage area is free of excessive humidity and dust.
2. Drain the fuel...

Drain fuel from the fuel tank by removing the drain bolt at the bottom of fuel tank.

**⚠ WARNING** Diesel fuel is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in the area.

NOTE: Please dispose of used fuel in a manner that is compatible with the environment.



3. Change the engine oil (see page 21).
4. Clean the entire engine thoroughly, place a protective cover it, and place in a safe place free of dust and moisture.

## 10. TROUBLESHOOTING

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Do not disassemble the GD1100/1250 more than necessary unless you are mechanically proficient and are well equipped.

We recommend you to bring the GD1100/1250 to your authorized Honda dealer to have it serviced. Proper service will ensure the long service life of the product.

When the engine will not start;

1. Is there enough fuel ?
2. Is the fuel valve on ?
3. Was the engine started in the correct manner as described in the Owner's Manual ?

# 11. SPECIFICATIONS

Dimensions	GD1100			GD1250		
Description code	GRA			GRB		
Length	520 mm (20.5 in)					
Width	415 mm (16.3 in)					
Height	S1	S2	S3	S1	S2	S3
	540 mm (21.3 in)	555 mm (21.9 in)		540 mm (21.3 in)	555 mm (21.9 in)	
Dry weight	100 kg (221 lb)					
Engine type	4-stroke, OHC, 3 cylinder diesel water cooled					
Displacement [Bore x Stroke]	1.061 cm <sup>3</sup> (64.7 cu. in) [76 x 78 mm (3.0 x 3.1 in)]			1.235 cm <sup>3</sup> (75.3 cu. in) [82 x 78 mm (3.2 x 3.1 in)]		
	S1	S2	S3	S1	S2	S3
Rated out put	13.2 KW/ 2,600 rpm	14.7 KW/ 3,000 rpm	16.2 KW/ 3,600 rpm	14.7 KW/ 2,600 rpm	16.2 KW/ 3,000 rpm	17.7 KW/ 3,600 rpm
	17.8 HP/ 2,600 rpm	19.7 HP/ 3,000 rpm	21.7 HP/ 3,600 rpm	19.7 HP/ 2,600 rpm	21.7 HP/ 3,000 rpm	23.7 HP/ 3,600 rpm
Fuel used	Diesel fuel					
Engine start system	Electric starter					
Combustion system	Direct injection system					
Fuel injection pump	PFR-3KX made by DKKC					
Injection nozzle	DLLA-P made by DKKC					
Engine oil capacity	S1	S2	S3	S1	S2	S3
	3.5 ℓ (3.7 US qt, 3.1 Imp qt)	4.7 ℓ (5.0 US qt, 4.1 Imp qt)		3.5 ℓ (3.7 US qt, 3.1 Imp qt)	4.7 ℓ (5.0 US qt, 4.1 Imp qt)	
Fuel tank capacity	20 ℓ (5.3 US gal, 4.4 Imp gal)					

NOTE: Specifications are subject to change without notice.

# OWNER'S MANUAL

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Thank you for purchasing a Honda engine.

This manual covers operation and maintenance of GD1100 and GD1250 diesel engines. 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 diesel engine and should remain with the diesel engine if it is resold.

Pay special attention to statements preceded by the following words:

**⚠ WARNING** Indicates a strong possibility of severe personal injury or death if instructions are not followed.

**CAUTION:** Indicates a possibility of equipment or property damage if instructions are not followed.

**NOTE:** Gives helpful information.

If a problem should arise, or if you have any questions about your engine, consult an authorized Honda dealer.

**⚠ WARNING** Honda engines are designed to give safe and dependable service if operated according to instructions. Read and understand the Owner's Manual before operating the engine. Failure to do so could result in personal injury or equipment damage.

**NOTE:** If you purchased the engine separately and you plan to use it for some particular application, be sure to follow HONDA's recommended conditions. For details, consult with your authorized Honda engine dealer.