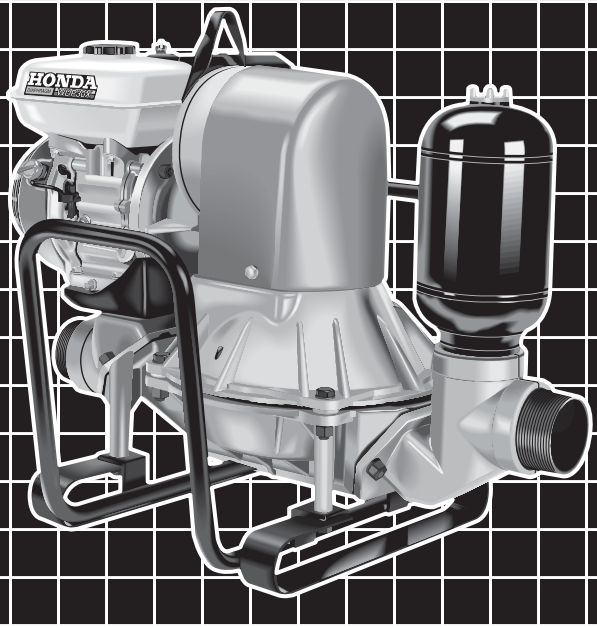
HONDA
Power
Equipment

Owner's Manual

DIAPHRAGM PUMP

WDP20X • WDP30X

Click here to save this manual to your computer.



⚠ WARNING: ⚠

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

This owner's manual is considered a permanent part of your diaphragm pump. It must be available to all operators of the pump and should remain with the pump if resold.

INTRODUCTION

Congratulations on your selection of a Honda diaphragm pump! We are certain you will be pleased with your purchase of one of the finest pumps on the market.

We want to help you get the best results from your new pump 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 pump, other property, or the environment.

We suggest you read the warranty policy to fully understand its coverage and your responsibilities of ownership. The Distributor's Limited Warranty is shown on page 69.

When your pump needs scheduled maintenance, keep in mind that your authorized Honda servicing dealer is specially trained in servicing Honda pumps and is supported by the parts and service divisions of American Honda. Your Honda dealer is dedicated to your satisfaction and will be pleased to answer your questions and concerns.

Best Wishes,
Power Equipment Division
American Honda Motor Co., Inc.

INTRODUCTION

A FEW WORDS ABOUT SAFETY

Your safety, and the safety of others, are very important. And using this pump 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 a pump. You must use your own good judgment.

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

- **Safety Label** - on the pump.
- **Safety Messages** - 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.

- **Safety Headings** - such as IMPORTANT SAFETY INFORMATION.
- **Safety Section** - such as PUMP SAFETY.
- **Instructions** - how to use this pump correctly and safely.

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

CONTENTS

CONTENTS

PUMP SAFETY

This chapter explains what you need to know to operate your diaphragm pump safely.

IMPORTANT SAFETY INFORMATION

Honda WDP20X and WDP30X pumps are not designed to pump drinking water. Pump only non-potable water, muddy water, and water containing solids. Other uses can result in injury to the operator or damage to the pump and other property.

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

Operator Responsibility

It is the operator's responsibility to provide the necessary safeguards to protect people and property. Know how to stop the pump quickly in case of emergency. Understand the use of all controls and connections. For your safety and the safety of others, keep all shields in place when the engine is running.

Be sure that anyone who operates the pump receives proper instruction. Do not let children operate the pump. Keep children, pets, and bystanders away from the area of operation.

Pump Operation

Do not pump drinking water. Pumps are designed to only pump non-potable water, muddy water, and water containing solids. Pumping flammable liquids, such as gasoline or fuel oils, can result in a fire or explosion, causing serious injury. Pumping sea water, beverages, acids, chemical solutions, or any other liquid that promotes corrosion can damage the pump.

Operate the pump on a level surface. If the engine is tilted, fuel may spill.

Refuel With Care

Gasoline is extremely flammable, and gasoline vapor can explode. Refuel outdoors, in a well-ventilated area, with the engine stopped and the pump on a level surface. Do not overfill the fuel tank. Never smoke near gasoline, and keep other flames and sparks away. Always store gasoline in an approved container. Make sure that any spilled fuel has been wiped up before starting the engine.

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 transporting the pump or storing it indoors.

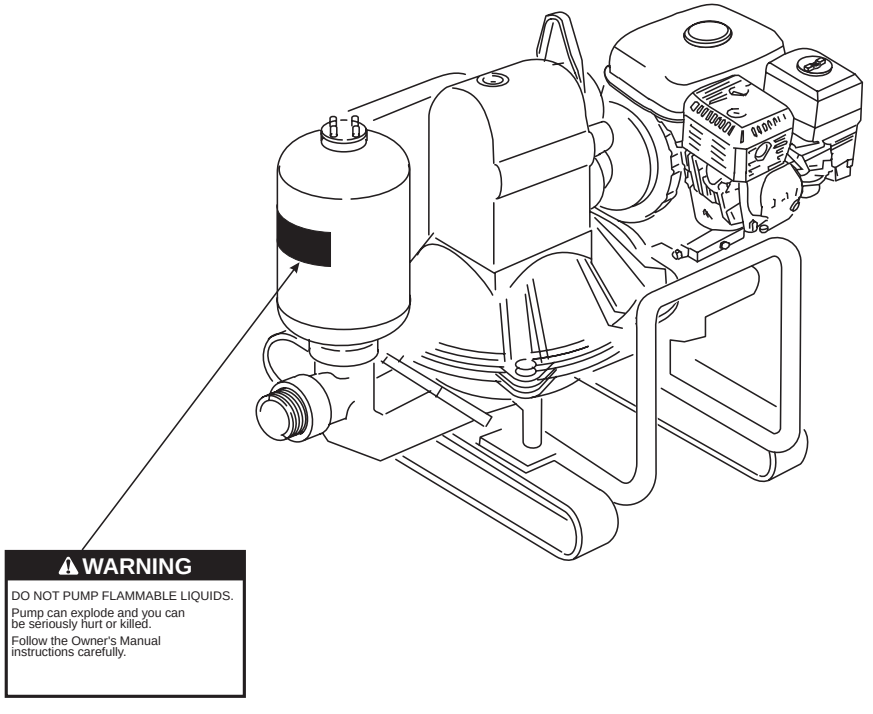
To prevent fire hazards, keep the pump at least 3 feet (1 meter) away from building walls and other equipment during operation. Do not place flammable objects close to the engine.

Carbon Monoxide Hazards

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

SAFETY LABEL LOCATION

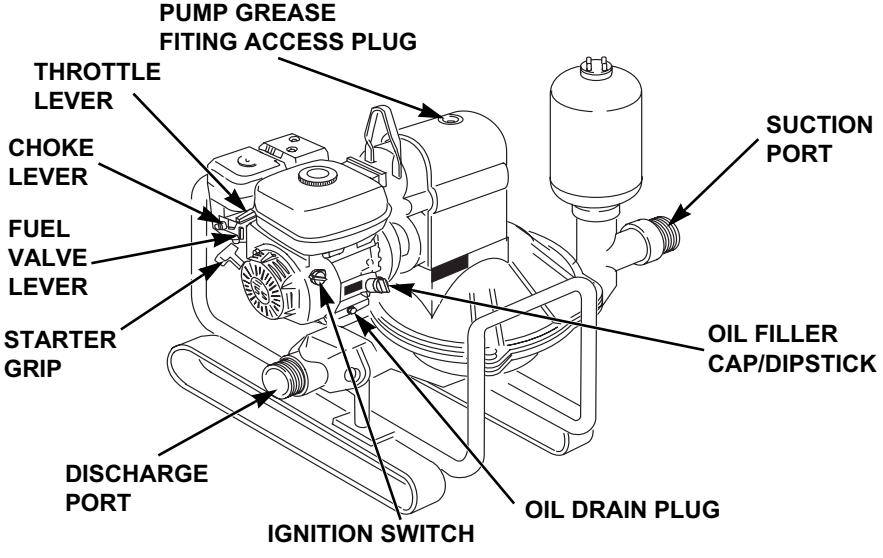
The label shown here contains important safety information. Please read it carefully. This label is considered a permanent part of your pump. So if the label comes off or becomes hard to read, contact your authorized Honda pump dealer for a replacement.

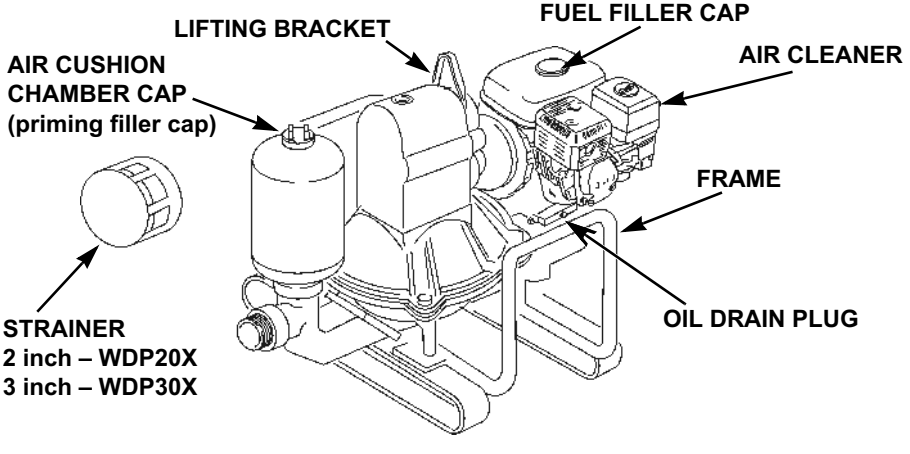


CONTROLS

This chapter shows you the locations of controls and other important parts of your pump, and tells you how the controls work.

COMPONENT IDENTIFICATION



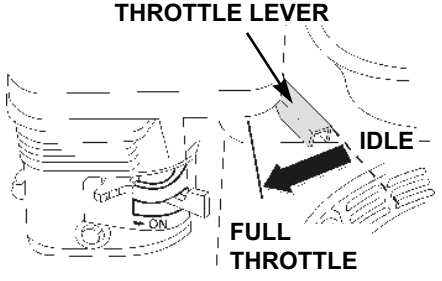


DESCRIPTION OF CONTROLS

You will use these controls every time you operate your diaphragm pump.

Throttle Lever

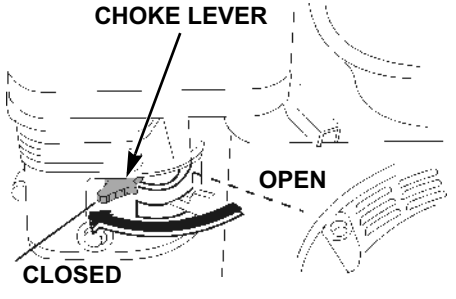
The throttle lever controls the engine speed. Moving the throttle lever fully to the left gives maximum engine speed. Moving the throttle lever fully to the right returns the engine to idle speed.



The pump output can be controlled by adjusting the throttle lever to the desired position. At maximum throttle position, the pump will deliver the highest output volume. Moving the throttle toward the idle position will decrease the output volume of the pump.

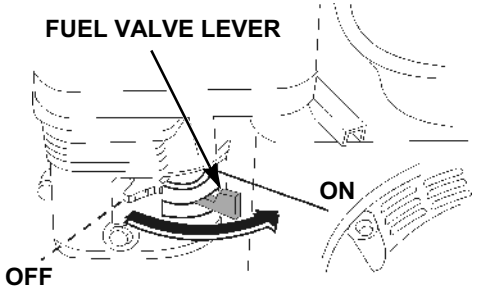
Choke Lever

The choke is used to provide an enriched mixture when starting a cold engine. Move the choke to the CLOSED position when starting a cold engine. If the engine is warm, leave the choke in the OPEN position.



Fuel Valve Lever

The fuel valve lever is used to stop flow of fuel from the fuel tank to the carburetor. The fuel valve lever must be in the ON position to start and operate the engine. Turn the fuel valve lever to the OFF position when the pump is not in use.



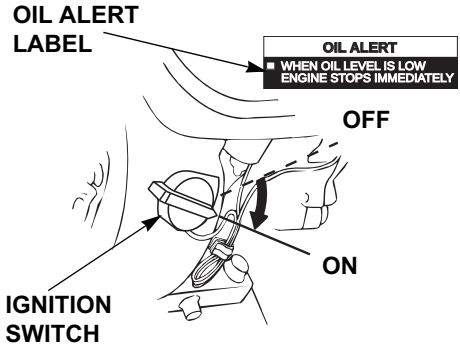
Ignition Switch

The ignition switch allows the operator to start and stop the engine.

Switch positions:

OFF: To stop the engine.

ON: To start and run the engine.



Oil Alert™ System

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 shut down the engine (the ignition switch will remain in the ON position).

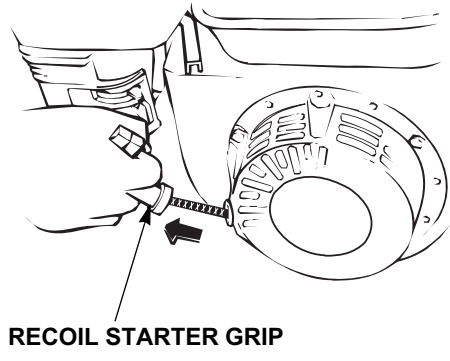
If the engine stops and will not restart, check the engine oil level (see page 29) before troubleshooting in other areas.

Recoil Starter.

To start the engine, pull the recoil starter grip lightly until resistance is felt, then pull briskly.

NOTICE

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



BEFORE OPERATION

This chapter tells you how to prepare your pump and yourself before you begin using the pump.

ARE YOU READY TO GET STARTED?

Your safety is your responsibility. A little time spent in preparation will significantly reduce your risk of injury.

Knowledge

Read and understand this manual. Know what the controls do and how to operate them.

Familiarize yourself with the pump and its operation before you begin pumping. Know what to do in case of emergencies.

Be sure of what you are pumping. This pump is designed to pump only non-potable water, muddy water, and water containing solids.

IS YOUR PUMP 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 pump 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 pump.

⚠ WARNING

Improperly maintaining this pump, 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.

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

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

Before beginning your preoperation checks, be sure the pump is on a level surface and the ignition switch is in the OFF position.

Check the General Condition of the Pump

- Look around and underneath the pump for signs of oil or gasoline leaks.
- Remove any excessive dirt or debris, especially around the engine, muffler, and recoil starter.
- Look for signs of damage.
- Check that all nuts, bolts, screws, hose connectors and clamps are tightened.
- Keep all shields in place while operating the pump.

Check the Suction and Discharge Hoses

- Check the general condition of the hoses. Be sure the hoses are in serviceable condition before connecting them to the pump. Remember that the suction hose must be of reinforced construction to prevent hose collapse.
- Check that the sealing washer in the suction hose connector is in good condition (see page 18).
- Check that the hose connectors and clamps are securely installed (see pages 18 & 19).
- Check that the strainer is in good condition and is installed on the suction hose (see page 18).

Check the Engine

- Check the oil level (see page 29). To avoid the inconvenience of an unexpected shutdown by the Oil Alert system, always check the engine oil level before startup.
- Check the air filter (see page 30). A dirty air filter will restrict air flow to the carburetor, reducing engine and pump performance.
- Check the fuel level (see page 35). Starting with a full tank will help to eliminate or reduce operating interruptions for refueling.

Remember, be sure to correct any problem you find, or have your servicing dealer correct it, before you operate the pump.

OPERATION

This chapter tells how to operate your pump safely and effectively.

Read this chapter completely before operating the pump. Take time to familiarize yourself with the controls and how they operate. The small amount of time spent in familiarization will reward you with greater efficiency and reduced risk.

SAFE OPERATING PRECAUTIONS

To safely realize the full potential of this pump, you need a complete understanding of its operation and a certain amount of practice with its controls.

Before operating the pump for the first time, please review the *IMPORTANT SAFETY INFORMATION* on page 6 and the chapter titled *BEFORE OPERATION*.

For your safety, avoid starting or operating the engine in an enclosed area, such as a garage. Your engine's exhaust contains poisonous carbon monoxide gas which can collect rapidly in an enclosed area and cause illness or death.

Do not pump drinking water. Pump only non-potable water, muddy water, and water containing solids. Pumping flammable liquids, such as gasoline or fuel oils, can result in a fire or explosion, causing serious injury. Pumping sea water, beverages, acids, chemical solutions, or any other liquid that promotes corrosion can damage the pump.

Due to the pump diaphragm reciprocating motion, pump assembly and hoses will move up and down and side-to-side during pumping. This may cause the pump to walk or move around while pumping. Depending on the surface conditions, pump hose length, and other factors, it may be necessary to anchor the pump to limit pump movement. During operation, observe pump movement and anchor the pump frame as necessary. To anchor the pump, attach anchored tie-down straps to the pump lift handles.

While pumping, the suction hose may move out of the pumping source and the discharge hose may move away from the pumping destination. It may also be necessary to anchor hose ends to prevent hose movement.

If there is no one to monitor the pump during operation, it is advisable to anchor the pump to prevent unexpected movement.

Pump total dynamic discharge head is 50 feet. Total dynamic discharge head includes static discharge head (discharge vertical height) and head loss due to friction. Head loss makes it impractical for the static discharge head to exceed 25 feet. Pumping to a static discharge head greater than 25 feet can damage the pump.

This diaphragm pump should never be run with the discharge output shut off or restricted.

NOTICE

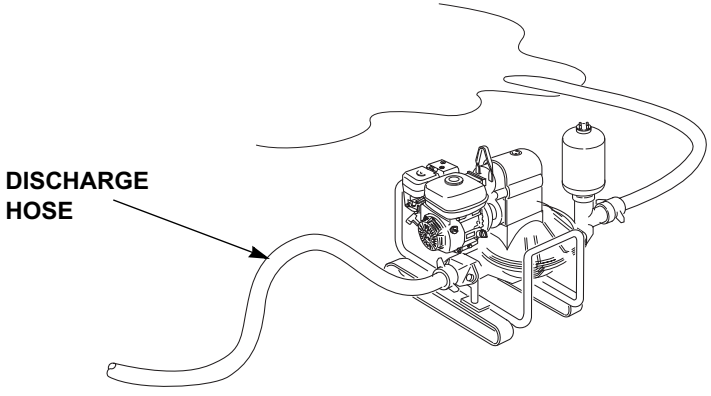
Pump case failure may result if the discharge output is shut off or restricted. To avoid pump damage, do not restrict, shut off, or momentarily stop the fluid flow from the discharge hose.

A rigid pipe should never be used with a diaphragm pump. Flexible hoses must be attached to the pump. The suction hose must be noncollapsible. Never use hoses that are smaller than the suction or discharge fittings. Example: 2 inch pump requires a 2 inch inside diameter or greater hose and 3 inch pump requires a 3 inch inside diameter or greater hose. Using rigid pipes or hoses that are too small will cause severe damage to the diaphragm pump.

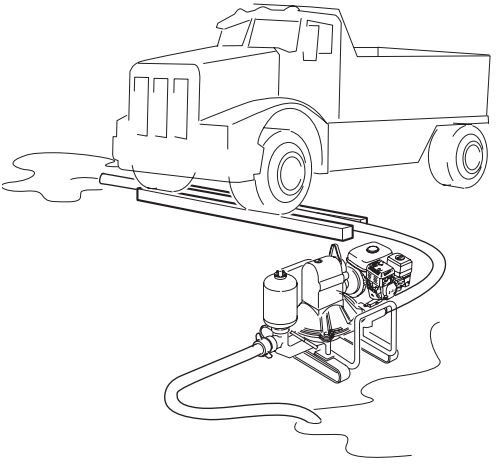
NOTICE

Due to pump movement during operation, connecting a rigid pipe to the pump will cause pump damage. Always use flexible suction and discharge hoses to prevent pump damage.

When water being pumped contains solids, the solids may get lodged under the clappet valves, which will prevent the clappet valves from closing completely. To maintain maximum pump performance, the discharge hose should angle upward as it exits the pump.



If the discharge hose must run across a roadway, the hose should cross the roadway perpendicular to traffic flow. Also, heavy boards should be placed next to the hose so the motor-vehicle weight does not shut off the discharge as vehicles cross over the hose. Driving over a discharge hose while the pump is running or even possibly when the pump is stopped will most likely cause pump case failure.



NOTICE

Collapsing the discharge hose will cause pump case and/or diaphragm damage. To prevent pump damage, take the necessary precautions to prevent the discharge hose from getting compressed or collapsed.

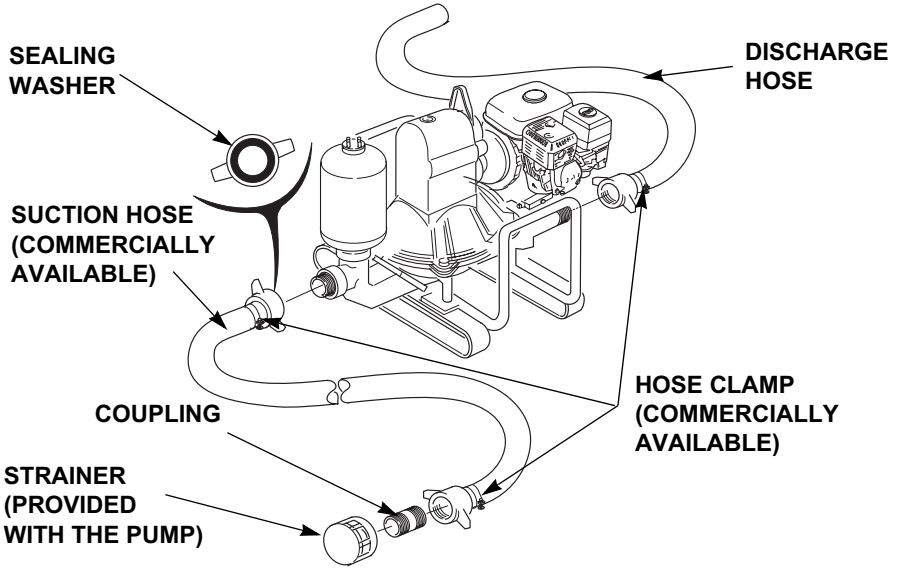
During freezing weather, always drain the pump case after use. If water is left in the pump case during freezing weather, the pump case will break.

PUMP PREPARATION

Suction Hose Connection

Use a commercially available hose, hose connector, and hose clamps. The hose must be the same size or larger than the suction port. To prevent the hose from collapsing, use a hose that is reinforced with a noncollapsible wall or braided wire construction. Keep the pump as close as possible to the pumping liquid. Avoid hose bends and sharp turns. Pump performance is best when the pump is not far above the liquid level and the hose is kept straight. Self-priming time is also proportional to the suction hose length. Using a longer suction hose will increase the self-priming time.

Tighten the hose connector to the suction hose with a hose clamp to prevent air leakage and loss of suction. Verify that the connector sealing washer is installed and in good condition. A loosely connected suction hose will reduce pump performance and self-priming ability.



The strainer provided with the pump should be attached to the end of the suction hose as shown.

Always install the strainer on the end of the suction hose before pumping. The strainer will prevent debris from entering the pump that can cause clogging, diaphragm and/or other pump damage.

Discharge Hose Connection

Use a commercially available hose, hose connector, and hose band. A short, large diameter hose will provide lower fluid friction and improve pump output. A long or small diameter hose will increase fluid friction and reduces pump output. Never use a hose size smaller than the discharge port diameter.

NOTICE

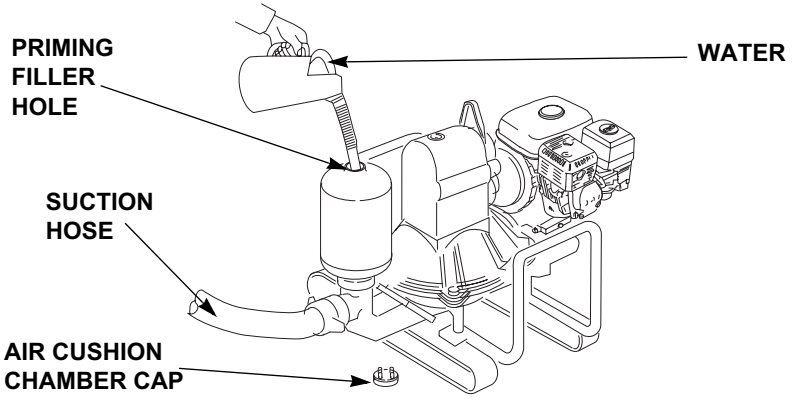
If a discharge hose is used that has a smaller inside diameter than the port size, the pump case may be damaged. To avoid pump damage, always use the correct size hose.

Tighten the hose clamp to prevent the hose from disconnecting under high pressure.

Pump Priming

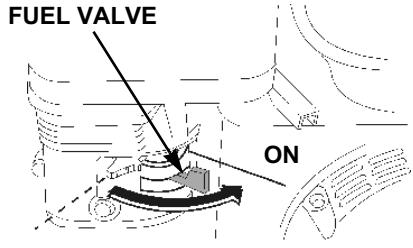
Pump priming is not required if the vertical distance from water to the pump (suction head) is less than 14 feet on WDP20X or 16 feet for a WDP30X. The suction head can be increased to 21 feet for the WDP20X or 24 feet for the WDP30X by priming the pump.

To prime the pump, remove the air cushion chamber cap. Grasp the suction hose next to the suction fitting and lift the hose about 1 foot off the ground. Pour about 1 gallon of water into the pump case through the air cushion chamber. Lifting the suction hose will help to ensure the water goes into the pump housing and not out the suction hose. Lay the hose back on the ground, and reinstall the air cushion chamber cap.



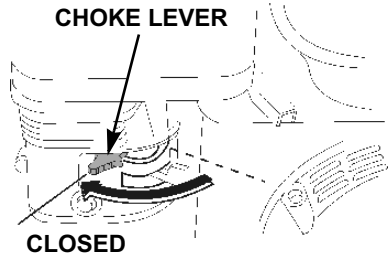
STARTING THE ENGINE

1. Turn the fuel valve to the ON position.

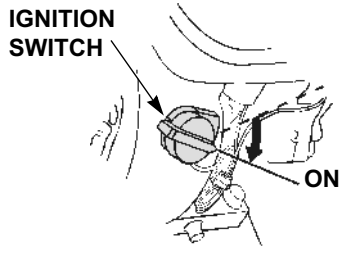


2. Move the choke lever to the CLOSED position.

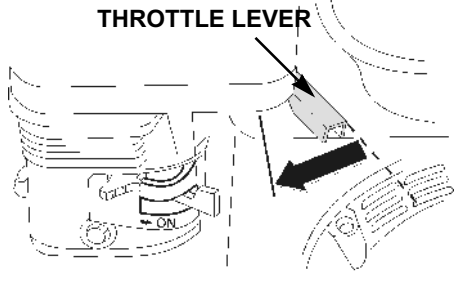
   Do not use the choke if the engine is warm or the ambient temperature is high.



3. Turn the ignition switch to the ON position.



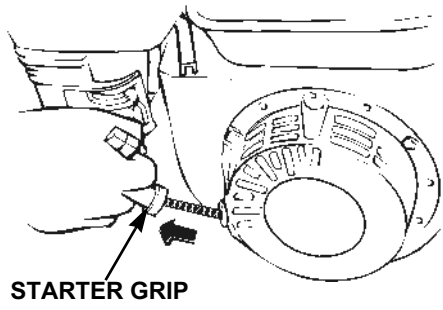
4. Move the throttle lever slightly to the left.



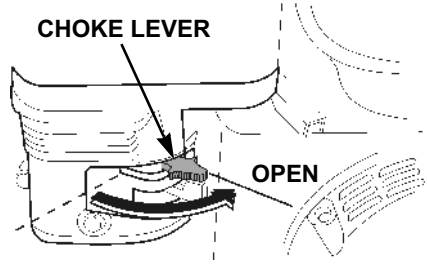
5. Pull the starter grip lightly until resistance is felt, then pull it briskly.

NOTICE

Return the starter grip slowly back to the engine to prevent damage to the starter.

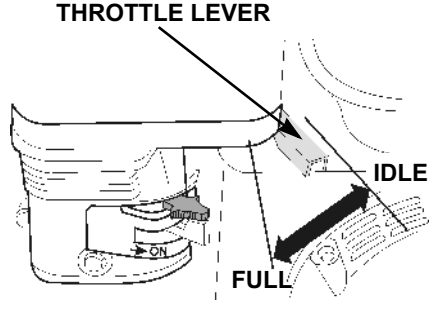


6. As the engine warms up, gradually move the choke lever to the OPEN position.



7. Set the throttle at the desired speed to produce the best pumping conditions.

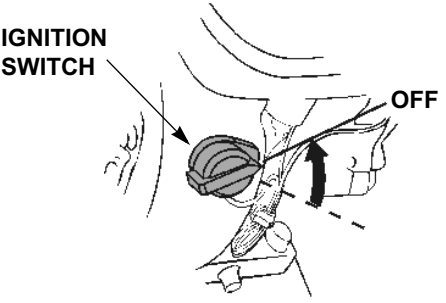
   The pump output can be controlled by adjusting the throttle lever to the desired position. At FULL throttle position, the pump will deliver the highest output volume. Moving the throttle toward the IDLE position will decrease the output volume of the pump.



STOPPING THE ENGINE

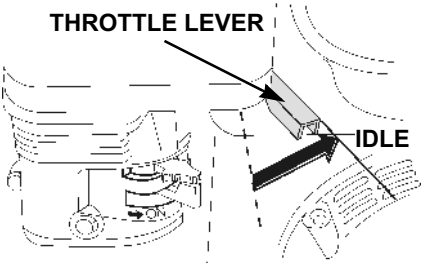
Emergency

To stop the engine in an emergency, turn the ignition switch to the OFF position.

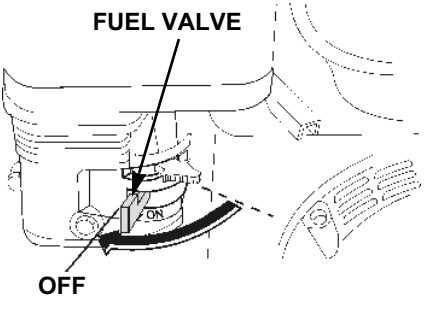


Normal

1. Move the throttle lever fully to the right to the IDLE position.
2. Turn the ignition switch to the OFF position.



3. Turn the fuel valve to the OFF position.
4. If the pump is not going to be used again for the rest of the day, or is going to be stored for a long period of time, refer to page 51 for procedures on properly storing your pump.



5. After each use, drain the pump chamber and flush with fresh water.

SERVICING YOUR PUMP

This chapter explains when and how to perform routine inspection, service, and adjustments for do-it-yourself maintenance. More difficult maintenance tasks should be done by your dealer. Your dealer is best equipped and staffed to provide the level of service and safety you and your pump deserve.

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 pump, 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 pump 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.

Remember that an authorized Honda servicing dealer knows your pump best and is fully equipped to maintain and repair it.

To ensure the best quality and reliability, use only new genuine Honda parts or their equivalents for repair and replacement.

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

MAINTENANCE SAFETY

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

⚠ WARNING

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

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

Safety Precautions

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

MAINTENANCE SCHEDULE

ITEM / REGULAR SERVICE PERIOD (4) (Perform at every indicated month or operating hour interval, whichever comes first.)		Before Each Use	After Each Use	First month or 20 hours	Every 3 months or 50 hours	Every 6 months or 100 hours	Every year or 300 hours	Refer to page
Engine oil	Check level	O						26
	Change			O		O		27
Air cleaner	Check	O						30
	Clean				O(1)			
	Replace						O*(1)	
Spark plug	Check-adjust					O		32
	Replace						O	
Spark arrester (optional equipment)	Clean					O(3)		34
Idle speed	Check-adjust						O(2)	37
Sediment cup	Clean				O			37
Valve clearance	Check-adjust						O(2)	–
Fuel tank and filter	Clean						O(2)	38
Pump chamber	Flush		O					39
Pump hoses and strainer	Check	O						39
Pump connecting rod bearing	Grease			O	O			40
Pump gear box oil	Check level				O			42
	Change						O	41
Pump clappet valve	Inspect						O	43
Pump diaphragm	Inspect						O	45
Nuts and bolts	Check torque						O	–
Fuel line	Check	Every 2 years (2) (Replace if necessary)						38

* Replace the paper element only.

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

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

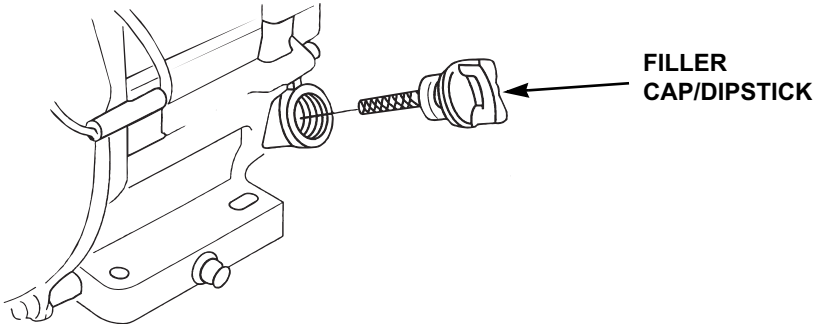
(3) The spark arrester is an optional part and does not come standard.

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

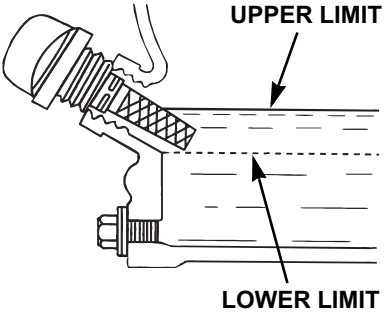
ENGINE OIL LEVEL CHECK

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

1. Remove the filler cap/dipstick and wipe it clean.



2. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.



3. If the oil level is low, fill to the edge of the oil filler hole with the recommended oil (see page 29).

4. Screw in the filler cap/dipstick securely.

NOTICE

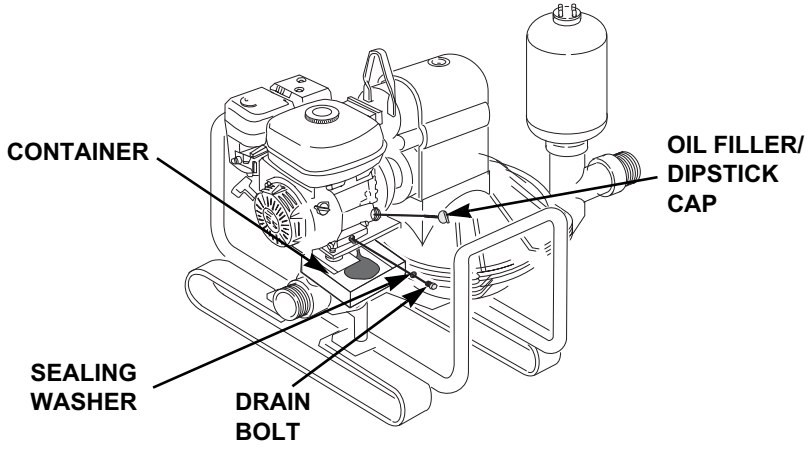
Running the engine with a low oil level can cause engine damage.

The Oil Alert® system 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 oil while the engine is warm. Warm oil drains quickly and completely.

1. Remove the oil filler/dipstick cap, drain bolt and sealing washer. Drain the oil into a suitable container.



2. Reinstall the drain bolt and sealing washer. Tighten the plug securely.

NOTICE

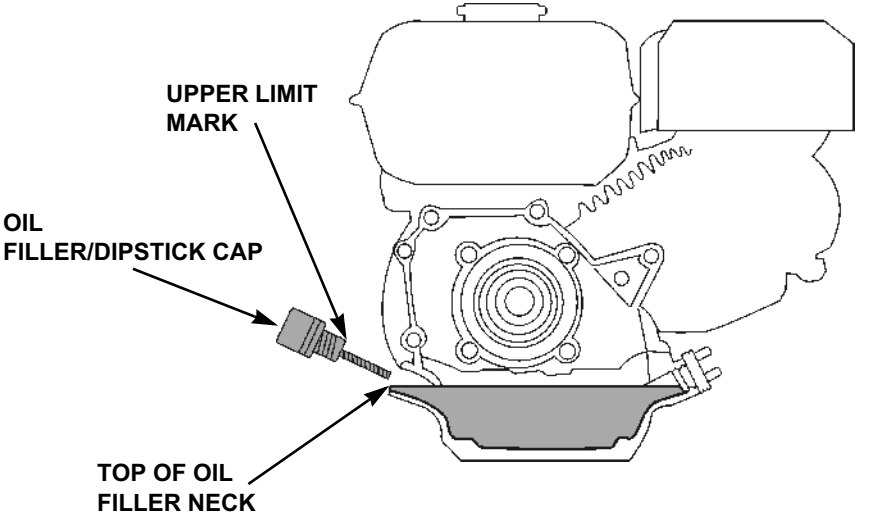
Improper disposal of engine oil can be harmful to the environment. If you change your own oil, please dispose of the used oil properly. Put it in a sealed container, and take it to a recycling center. Do not discard it in a trash bin, dump it on the ground, or pour it down a drain.

3. Fill with the recommended oil to the top of the oil filler neck (see page 29).

NOTICE

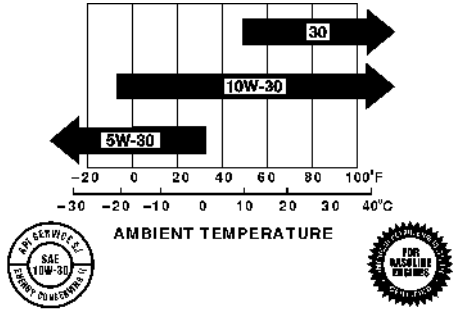
Using nondetergent oil can shorten the engine's service life, and using 2-stroke oil can damage the engine.

4. Screw in the oil filler cap/dipstick securely.



ENGINE OIL RECOMMENDATIONS

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

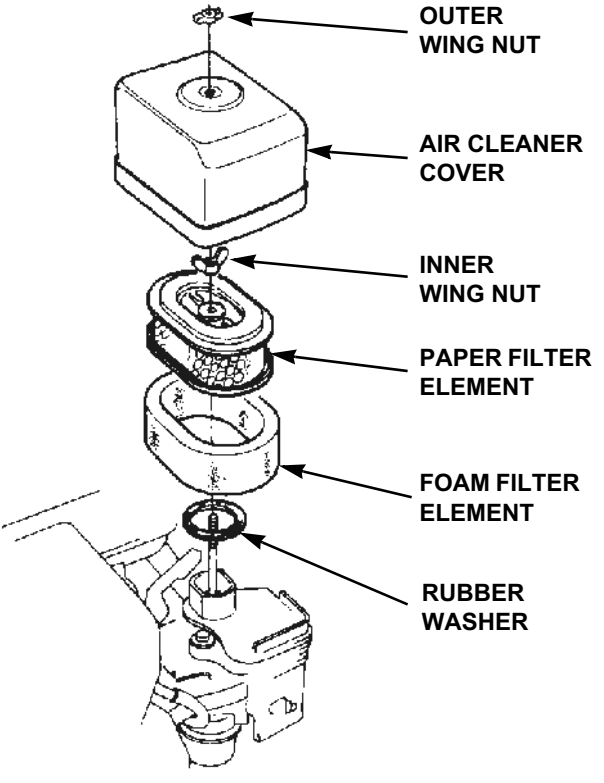


SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the recommended range.

The SAE oil viscosity and service classification are in the API label on the oil container. Honda recommends that you use API SERVICE category SH, SJ, or SL oil with the ILSAC “starburst” certification mark displayed on the container.

AIR FILTER INSPECTION

1. Unscrew the outer wing nut and remove the air cleaner cover.
2. Remove the inner wing nut and both air filter elements.
3. Separate both air filter elements and carefully check them for holes or tears. Replace the filter elements if they are damaged.
4. If the air filter elements are dirty, clean them as described on page 31.



5. Wipe dirt from the inside of the air cleaner housing and cover. Be careful to prevent dirt from entering the air duct that leads to the carburetor.
6. Install the foam element over the paper element, and install the assembled air filter. Secure the air filter with the inner wing nut. Make sure the rubber washer is in place under the filter elements.
7. Install the air cleaner cover, and secure with the outer wing nut.

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.

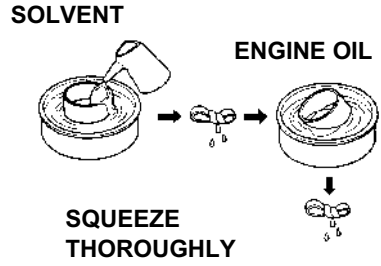
AIR FILTER CLEANING

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

1. To clean the paper filter element, tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air [not exceeding 30 psi (207 kPa)] through the filter element from the inside out.

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

2. To clean the foam filter element, wash the element in a solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable solvent.



3. Allow the foam filter element to dry thoroughly.

4. Soak the foam filter element in clean engine oil and squeeze out the excess oil.

   NOTICE

   Excess oil will restrict air flow through the foam filter element and may transfer to the paper filter element, soaking and clogging it.

5. Reassemble the air filter as shown on page 30.

SPARK PLUG SERVICE

Recommended spark plugs: NGK – BPR6ES
DENSO – W20EPR-U

NOTICE

Spark plugs of the wrong size or incorrect heat range can cause engine damage.

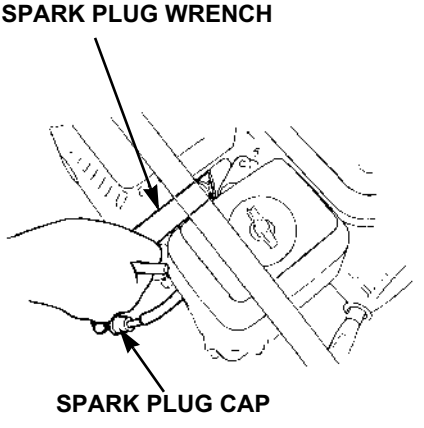
For good performance, the spark plug must be properly gapped and free of deposits.

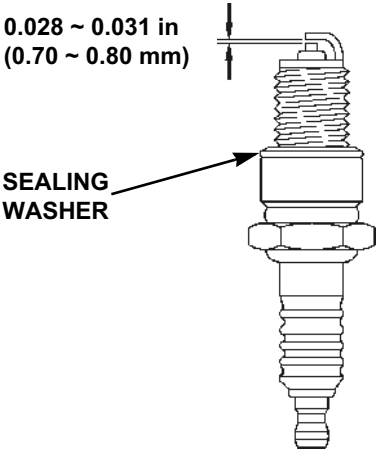
Allow the engine to cool before servicing the spark plug.

1. Disconnect the spark plug cap and remove any dirt from around the spark plug area.
2. Use a 13/16 in (21 mm) spark plug wrench to remove the spark plug.
3. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped.
4. Measure the plug gap with a suitable gauge.

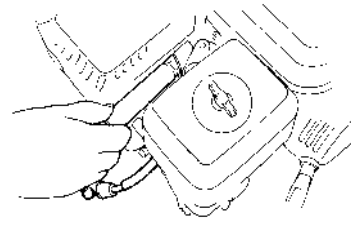
   Correct as necessary by carefully bending the side electrode.

   Plug gap: 0.028 ~ 0.031 in (0.70 ~ 0.80 mm)





5. Check that the spark plug washer is in good condition, and thread the spark plug in by hand to prevent cross-threading.



6. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.

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

   If reinstalling a used spark plug, tighten 1/8 - 1/4 turn after the spark plug seats to compress the washer.

   NOTICE

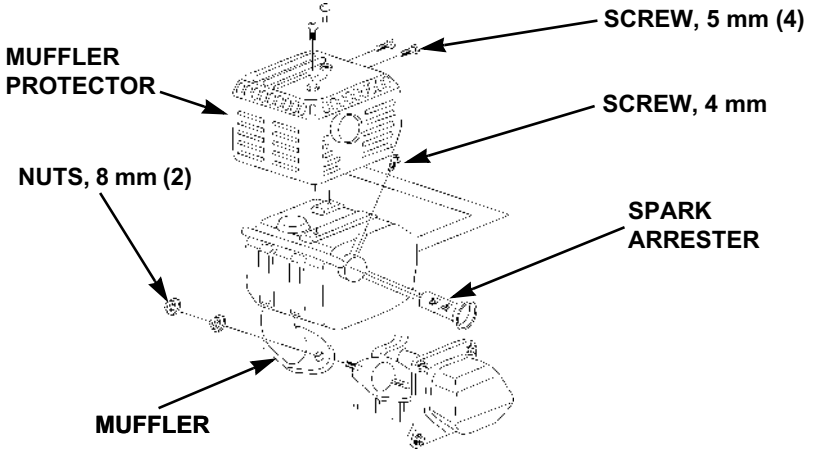
   A loose spark plug can overheat and damage the engine. Overtightening the spark plug can damage the threads in the cylinder head.

7. Reconnect the spark plug cap.

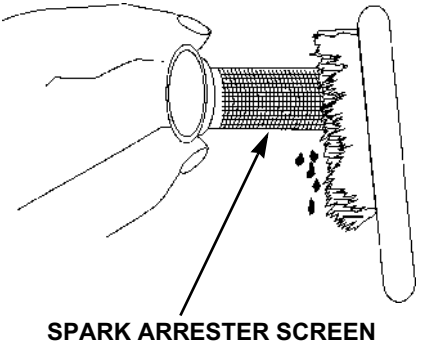
SPARK ARRESTER SERVICE (optional equipment)

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

1. Allow the engine to cool, then remove the two 8 mm nuts and remove the muffler from the cylinder head.
2. Remove the four 5 mm screws from the muffler protector and remove the muffler protector.
3. Remove the 4 mm screw from the spark arrester and remove the spark arrester from the muffler.



4. Use a soft brush to remove carbon deposits from the spark arrester screen. Be careful not to damage the spark arrester screen.
5. Inspect the spark arrester for breaks and holes. Replace it if necessary.
6. Install the spark arrester and the muffler in the reverse order of disassembly.



REFUELING

Fuel tank capacity: 0.66 US gal (2.5 ℓ)

Refuel in a well-ventilated area with the engine stopped. If the engine has been running, allow it to cool. Refer to page 36 for fuel recommendations and page 61 for information about oxygenated fuels.

Never refuel the pump inside a building where gasoline fumes may reach flames or sparks. Keep gasoline away from appliance pilot lights, barbecues, electric appliances, power tools, etc.

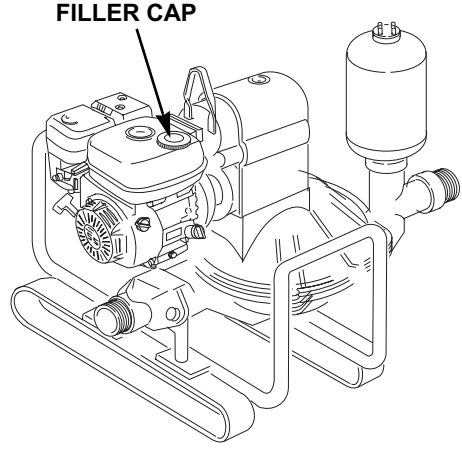
Spilled fuel is not only a fire hazard, it causes environmental damage. Wipe up spills immediately.

⚠ WARNING

Gasoline is highly flammable and explosive. 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. Remove the filler cap and check the fuel level.
2. Refill the tank if the fuel level is low. Do not fill above the shoulder of the fuel filler neck.
3. After refueling, make sure the tank filler cap is closed properly and securely.



FUEL RECOMMENDATIONS

Use unleaded gasoline with a pump octane rating of 86 or higher.

This engine is certified to operate on unleaded gasoline. Unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust system life.

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

Occasionally you may hear light “spark knock” or “pinging” (metallic rapping noise) while operating under heavy loads. This is no cause for concern.

If spark knock or pinging occurs at a steady engine speed, under normal load, change brands of gasoline. If spark knock or pinging persists, see an authorized Honda servicing dealer.

NOTICE

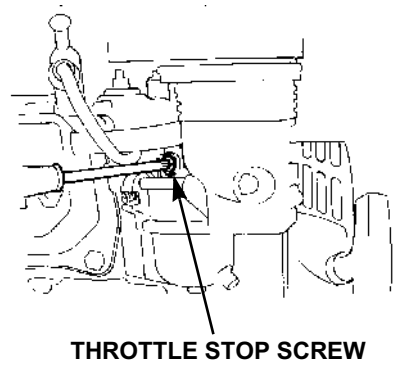
Running the engine with persistent spark knock or pinging can cause engine damage.

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

For oxygenated fuel information refer to page 61.

CARBURETOR ADJUSTMENT

1. Start the engine outdoors and let it warm up to normal operating temperature.
2. Move the throttle lever to the slowest position.
3. Using a screwdriver, turn the throttle stop screw to obtain the standard idle speed.

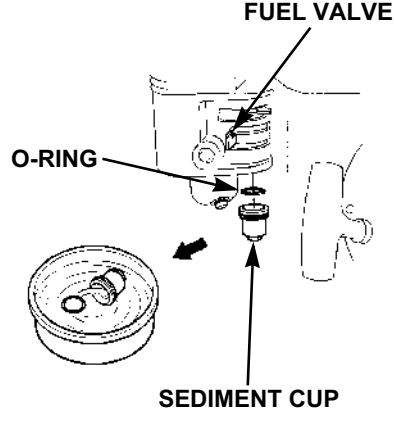


Standard Idle Speed:

1,400 $^{+200}_{-150}$ rpm

Sediment Cup Cleaning

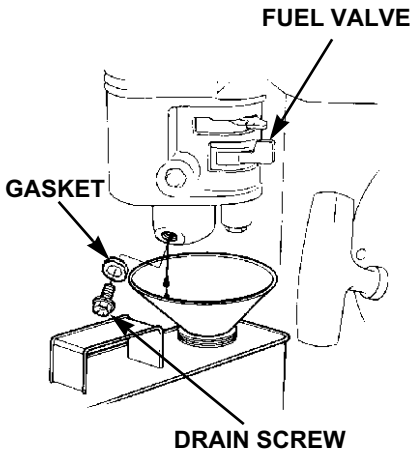
1. Turn the fuel valve to the OFF position.
2. Remove the sediment cup and O-ring and wash them in nonflammable solvent. Dry them thoroughly.
3. Install the O-ring and sediment cup and tighten securely.
4. Turn the fuel valve to the ON position and check for leaks.

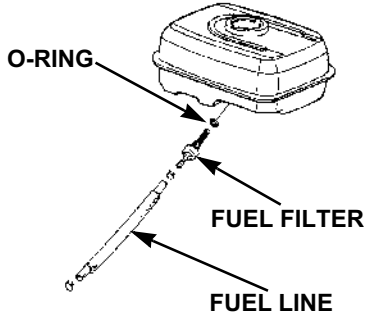


FUEL FILTER/FUEL LINE

1. Turn the fuel valve to the OFF position.
2. Remove the carburetor drain screw and gasket.
3. Turn the fuel valve to the ON position and drain the fuel into a suitable container. Disconnect the fuel line at the carburetor. Remove the two 6 mm nuts and one 6 x 25 mm bolt securing the fuel tank. Remove the fuel tank.
4. Disconnect the fuel line, and unscrew the fuel filter from the tank. Inspect the fuel line and replace if cracked or worn.
5. Clean the filter with nonflammable solvent, and check that the filter screen is not damaged. Replace as necessary.
6. Clean the inside of the tank with nonflammable solvent and dry thoroughly.
7. Place the O-ring on the filter and install the filter in the tank. Tighten the filter to the specified torque.

   Torque: 17 in-lb
   (20 kg-cm, 2 N•m)



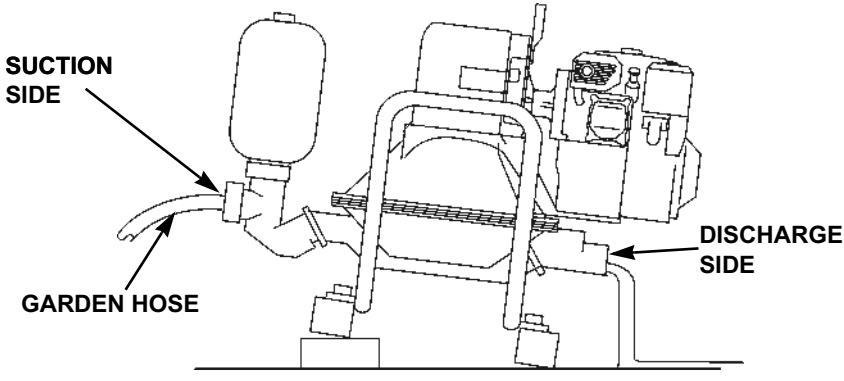


8. Install the fuel line on the fuel filter, and install the tank on the engine.
9. After the tank is installed, add fuel and check for leaks.

PUMP CHAMBER FLUSHING

With the engine stopped, the pump case should be flushed after each use to prevent sediment from building up in the case.

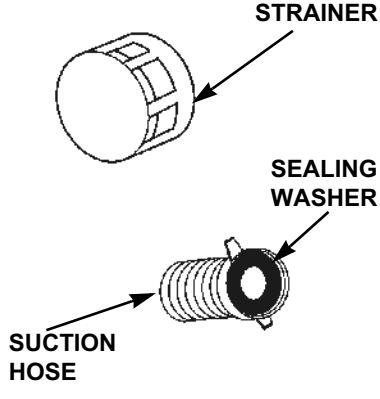
1. Disconnect the suction and discharge hoses.
2. Insert a garden hose into the suction side of the pump. Turn on the water and thoroughly flush sediment out the discharge side.



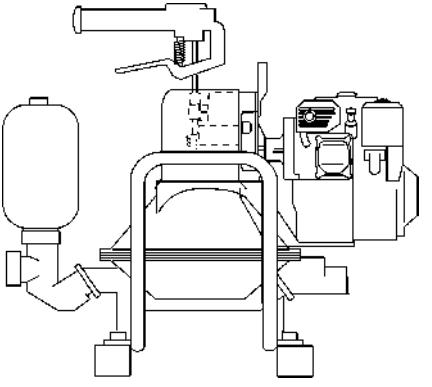
3. After flushing, lift the suction side of the pump and allow water to drain out the discharge side.

Pump Hoses and Strainer

1. Check both hoses to make sure they are not torn or cracked. It is especially important that there are no tears in the suction hose. Tears or air leaks on the suction side will prevent the pump from priming properly.
2. Inspect the suction hose sealing washer to make sure it is in good condition.
3. Inspect the strainer to be sure it is not plugged or damaged.



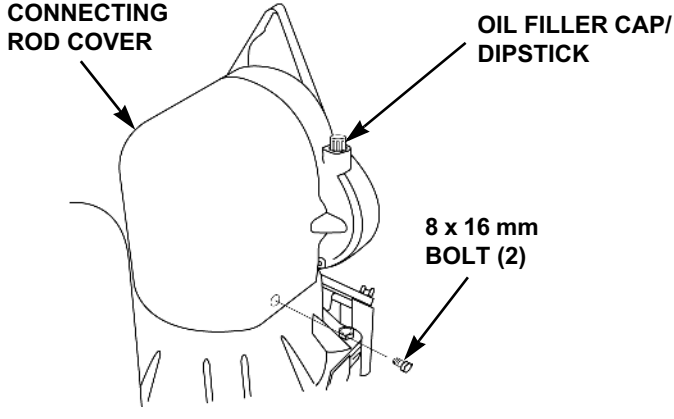
GREASE THE PUMP CONNECTING ROD



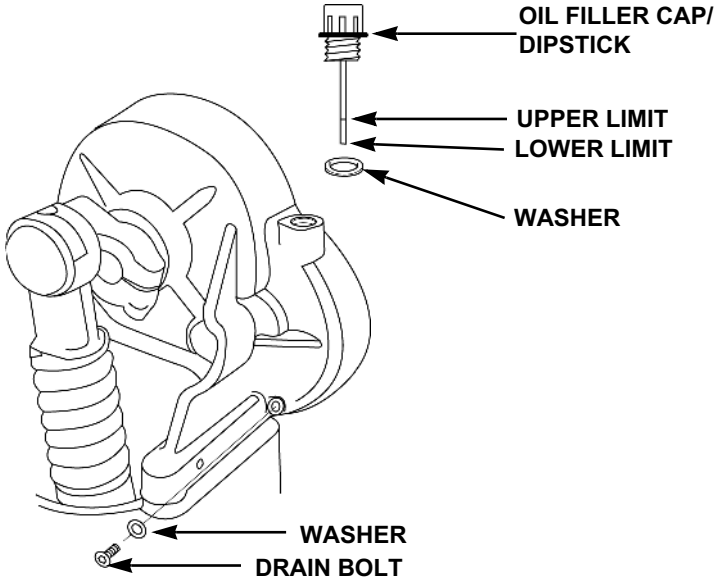
1. Remove the plastic access plug.
2. Disconnect the spark plug cap and pull the recoil starter until the grease fitting is below the access opening.
3. Wipe the grease fitting clean to prevent dirt from getting into the bearing. Using a manual grease gun, pump one or two strokes of NLGI #2 general purpose grease into the bearing.
4. Reinstall the access plug securely.

PUMP GEAR BOX OIL CHANGE

1. Run the engine for 10 minutes to warm up the gear box oil. Warm oil drains quickly and completely.
2. Shut off the engine.
3. Remove the two 8x16 mm bolts from the connecting rod cover and remove the cover.



4. Remove the drain bolt and drain the gear oil from the gear box.



5. Replace the drain bolt washer and reinstall the drain bolt.
6. Fill the gear box to the upper limit on the oil filler cap/dipstick. Screw the dipstick in to measure the oil level.
7. Dispose of the used oil properly (see page 27).
8. Reinstall the connecting rod cover.

Gear box oil:
Type - SAE 80W/90 GL5 gear oil

NOTICE

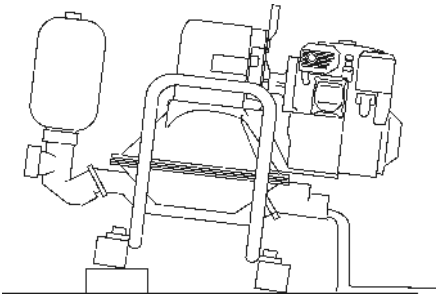
Avoid getting gear oil on the diaphragm. Drain the oil into a drain pan to prevent oil from running down the pump case onto the diaphragm. If gear oil comes in contact with the diaphragm, the diaphragm will be damaged.

Pump Gear Box Oil Check

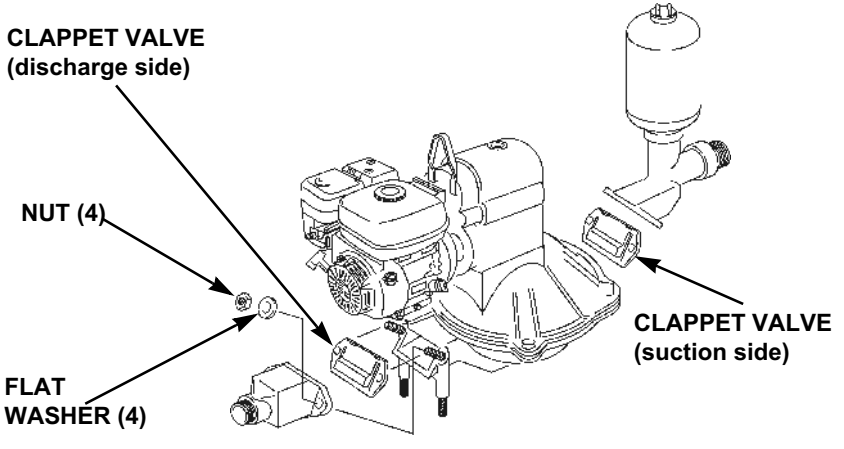
With the pump cold and on a level surface, remove the oil filler cap/dipstick. The oil level should be just below the UPPER LIMIT mark on the dipstick. Screw the dipstick in to check the oil level.

PUMP CLAPPET VALVES

1. Disconnect the spark plug cap from the spark plug, refer to page 32.
2. Turn the fuel valve lever to the OFF position, refer to page 10.
3. Flush the pump chamber, refer to page 39.
4. Lift the suction side of the pump and allow all the water to drain out the discharge fitting.

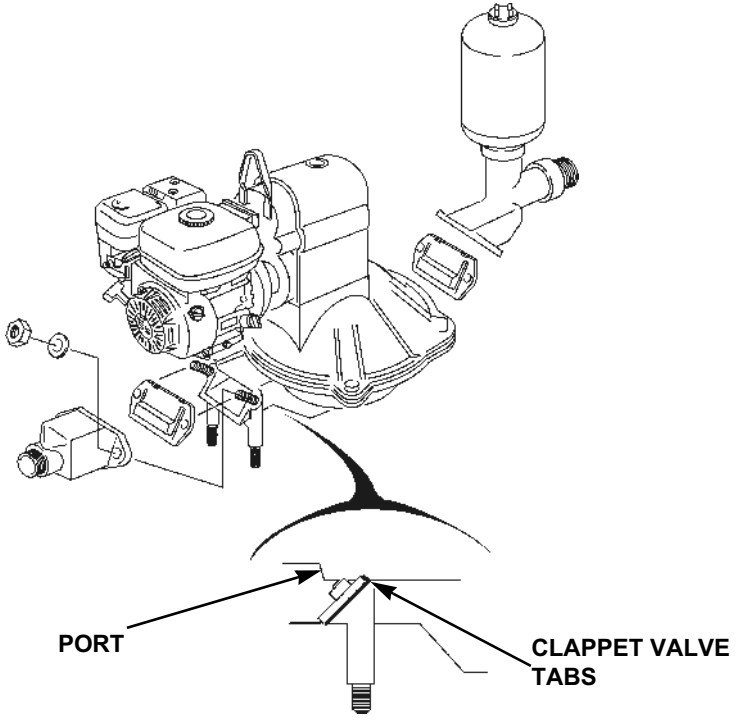


5. Use a 19 mm wrench and remove the nuts and flat washers from both the suction and discharge ports.
6. Remove both ports.
7. The clappet valves are directional, so when removing the valves, note of the water flow direction.



8. Inspect the ports, case sealing surfaces, and clappets for damage. If the clappets are worn, torn or damaged, replace them. If the case sealing surface is damaged and cannot be cleaned, an optional wear plate is available from your Honda water pump dealer.

9. Install the clappet valves over the studs. On the discharge side, the flat side of the valve should face the housing. On the suction side, the flat side of the valve should face the port.



10. Install both ports, making sure all clappet valve tabs are positioned correctly.

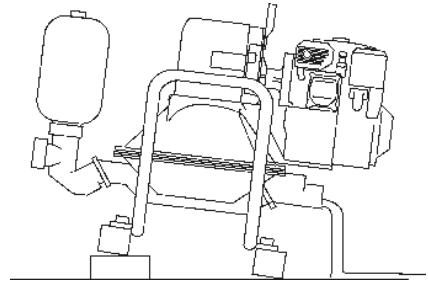
11. Apply several drops of Hondalock 2 or equivalent thread lock to the stud threads. Hand tighten the nuts, then torque evenly to 20 ft-lb (27 N•m, 2.8 kg-m).

12. After tightening the nuts, insert a screwdriver into each port and check clappet valve operation. Clappets should operate freely and should seal when released. If a clappet does not operate properly, reinstall the clappet and recheck.

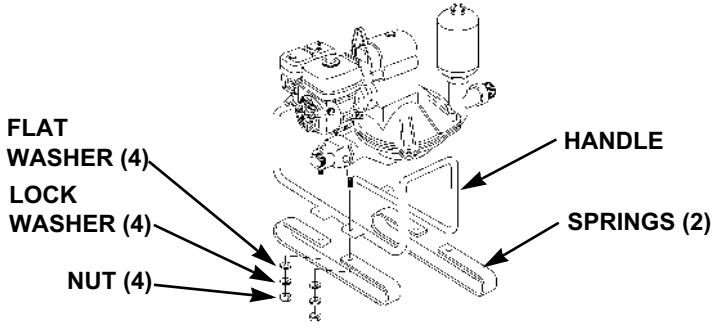
13. Run the pump and check for leaks.

PUMP DIAPHRAGM DISASSEMBLY

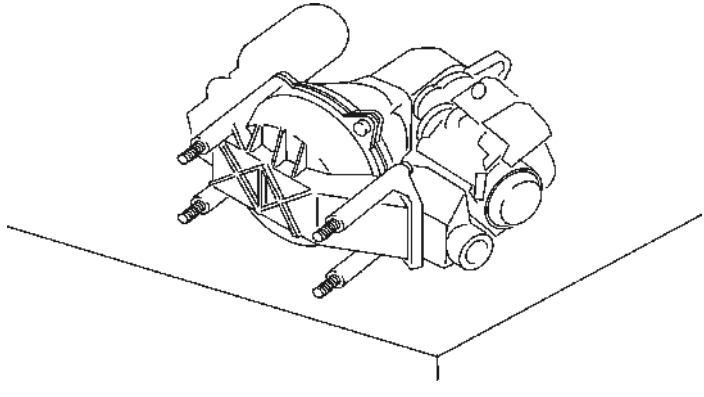
1. Disconnect the spark plug cap from the spark plug, refer to page 32.
2. Drain the fuel tank, refer to page 38 for fuel tank draining.
3. Flush the pump chamber, refer to page 39.



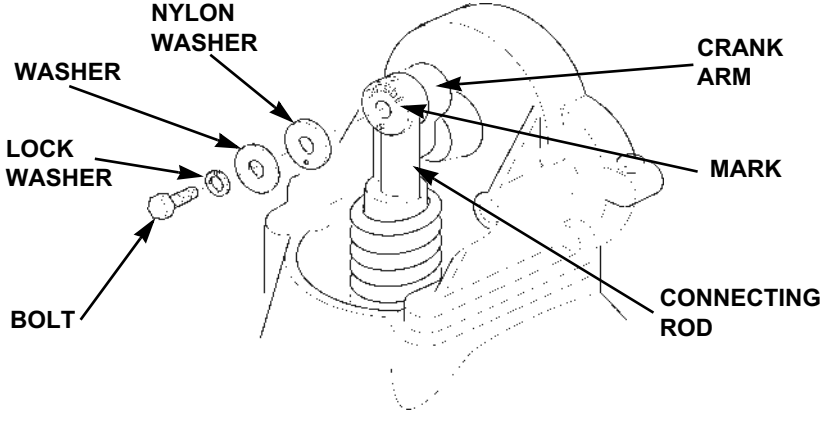
4. Lift the suction side of the pump and allow all the water to drain out the discharge fitting.
5. Remove the hardware securing the pump handle and springs.



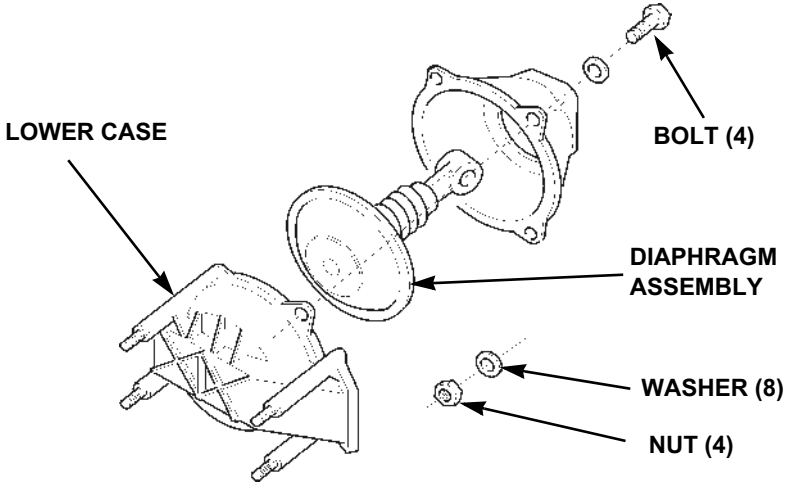
6. Connect a hoist to the lifting bracket or have an assistant help lift the pump off the handle and onto a workbench. Position the pump on a workbench as shown.



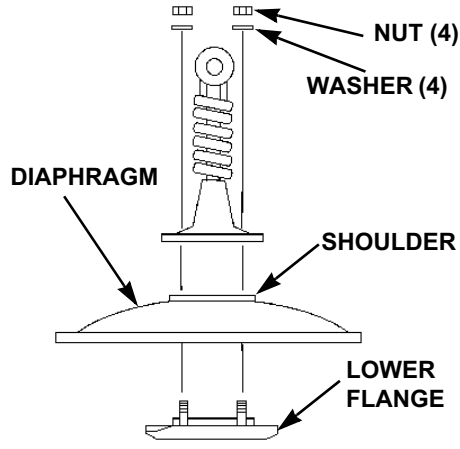
7. Remove the connecting rod plastic cover.
8. Use a 17 mm wrench and remove the bolt securing the connecting rod to the crank arm. Wipe the rod surface clean and use a felt tip marker to mark the outside of the connecting rod for reassembly.



9. Pull the recoil starter to rotate the connecting rod to the down position.
10. Remove the bolts and the lower pump case using a 19 mm wrench. Remove the connecting rod and diaphragm assembly.



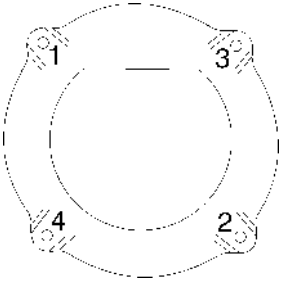
11. If the diaphragm is to be reused, mark the diaphragm to allow it to be installed in the same position. With a 19 mm wrench, remove the four nuts securing the connecting rod to the lower flange. Remove the diaphragm. For reassembly, note the shoulder on top of the diaphragm.



PUMP DIAPHRAGM REASSEMBLY

During reassembly, note the following:

- Apply several drops of Hondalock 2 or equivalent thread lock to bolt threads.
- To prevent pump case and/or diaphragm damage, follow the torque sequence shown below.



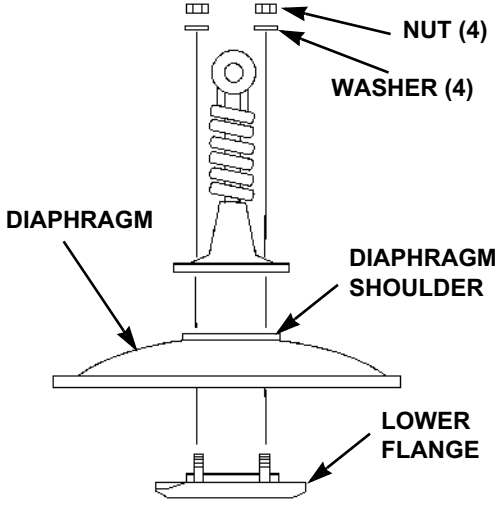
Torque: Start in one corner, increasing the amount or torque 1/8 to 1/4 turn each time around until the specified torque is achieved.

Pump case bolts	35 ft-lb (47 N•m, 4.8 kg-m)
Diaphragm flange nuts	35 ft-lb (47 N•m, 4.8 kg-m)
Connecting rod bolt	40 ft-lb (54 N•m, 5.5 kg-m)

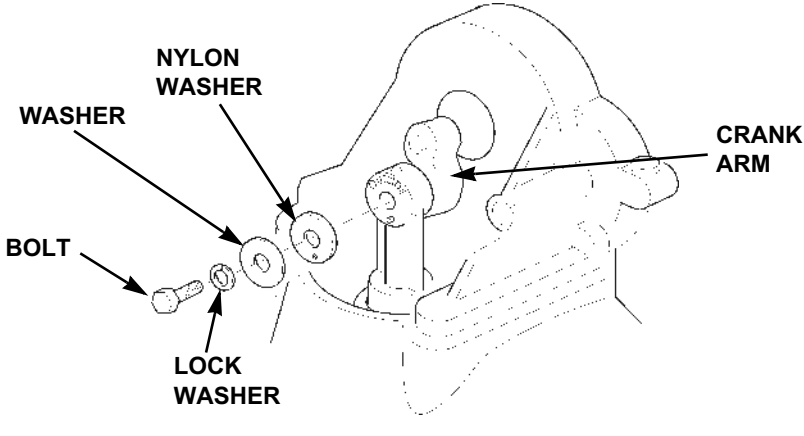
NOTICE

The pump case and/or diaphragm may be damaged if the torque sequence is not followed.

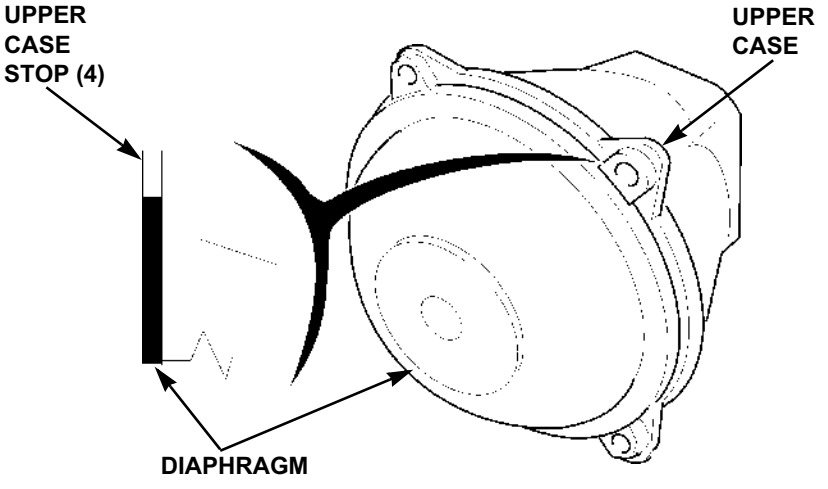
1. Position the diaphragm between the connecting rod flange and the lower flange, then install the nuts and washers. Note the diaphragm shoulder on top. See page 48 for tightening torque.



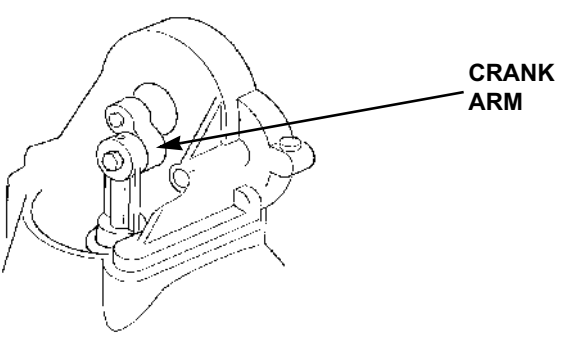
2. Apply NLGI #2 general purpose grease to the connecting rod bearing.
3. Rotate the crank arm to the bottom by pulling the recoil starter. Install the diaphragm and connecting rod into the pump case, then install the connecting rod with the mark made during disassembly facing out.
4. Install the connecting rod with the hardware shown below and torque the connecting rod bolt to 40 ft-lb (54 N•m, 5.5 kg-m).



5. Pull the recoil starter slowly until the diaphragm pulls up against the upper case stops.



The crank arm should be approximately at the angle shown below.



6. Install the lower case, making sure the diaphragm is centered and not pinched between the case stops. Tighten the hardware following the torque procedure on page 48.
7. If removed, install the clappet valves. Refer to page 43.
8. Install the pump handle and springs.
9. Check the gear box oil level and fill if necessary. Refer to page 42.
10. Run and test the pump for correct operation.

This chapter tells you how to protect your pump and ensure that it will start easily when you want to use it again.

STORAGE PREPARATION

The following steps will help to keep rust and corrosion from impairing your pump's function and appearance, and will make the engine easier to start when you use the pump again.

Cleaning the Engine

Wash the engine by hand, and be careful to prevent water from entering the air cleaner or muffler.

NOTICE

- Using a garden hose or pressure washing equipment can force water into the air cleaner. Water in the air cleaner will soak the filter and can enter the carburetor or engine, 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.

Cleaning the Pump

1. Flush the pump chamber (see page 39).
2. Wash the pump with a garden hose or other low pressure equipment. Keep water away from controls and all other places that are difficult to dry, as water may promote rust.
3. After washing, remove as much standing water as possible with a dry cloth. Start the engine outdoors and let it run until it reaches normal operating temperature to evaporate any water remaining on the engine.
4. Stop the engine and allow it to cool.
5. After the pump is clean and dry, touch up any damaged paint, and coat other areas that may rust with a light film of oil. Lubricate controls with a silicone spray lubricant.

Fuel

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

The Distributor's Limited Warranty does not cover fuel system damage or engine performance problems resulting from neglected storage preparation.

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

Adding fuel stabilizer to extend fuel storage life

Fill the fuel tank with fresh gasoline. If only partially filled, air in the tank will promote fuel deterioration during storage. If you keep a container of gasoline for refueling, be sure that it contains only fresh gasoline.

1. Add fuel stabilizer following the manufacturer’s instructions.
2. After adding a fuel stabilizer, run the engine outdoors for 10 minutes to be sure that treated gasoline has replaced the untreated gasoline in the carburetor.
3. Stop the engine and turn the fuel valve to the OFF position. Drain the pump chamber.

Draining the Fuel Tank and Carburetor

1. Remove the carburetor drain screw with a 10 mm wrench or screwdriver, and drain the fuel system into an approved gasoline container.

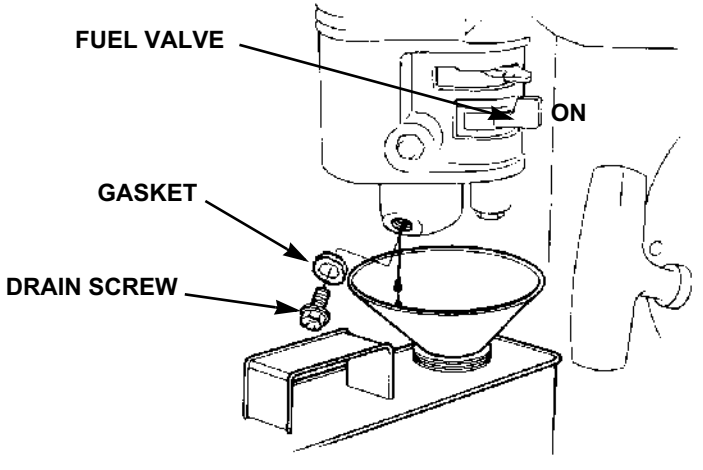
⚠ WARNING

Gasoline is highly flammable and explosive.

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.

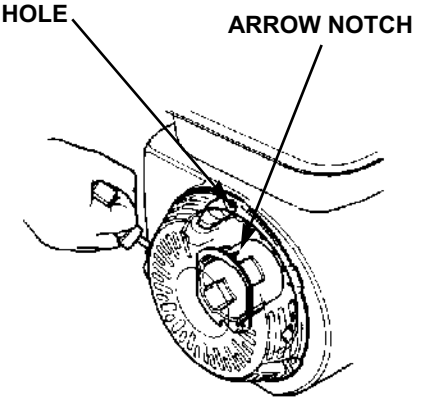
2. Turn the fuel valve to the ON position. This will allow fuel in the fuel tank to drain through the carburetor bowl.



3. Reinstall the drain screw and gasket.

Engine Oil

1. Change the engine oil (see page 27).
2. Check the air filter and clean as necessary (see page 30).
3. Remove the spark plug (see page 32).
4. Pour a tablespoon (5 - 10 cc) of clean engine oil into the cylinder.
5. Slowly pull the recoil starter rope a few times to distribute the oil in the cylinder.
6. Reinstall the spark plug.
7. Pull the starter rope slowly until resistance is felt. Continue pulling slowly until the arrow notch on the starter pulley aligns with the hole on the recoil starter. Return the starter grip gently. This will close the valves so moisture cannot enter the engine cylinder.



PLACING IN STORAGE

If your pump 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.

Unless all fuel has been drained from the fuel tank, leave the fuel valve in the OFF position to reduce the possibility of fuel leakage.

Place the pump on a level surface. Tilting can cause fuel or oil leakage.

With the engine and exhaust system cool, cover the pump 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 pump, promoting rust and corrosion.

REMOVAL FROM STORAGE

Check your pump as described in the BEFORE OPERATION chapter of this manual.

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 that 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 may smoke briefly at startup. This is normal.

TRANSPORTING

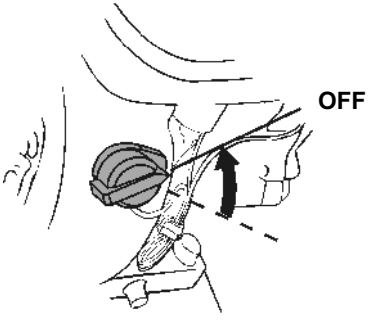
This chapter explains how to load and carry your pump safely.

BEFORE LOADING

When transporting the pump, be sure to keep it upright. If the pump is tilted or overturned, fuel may spill from the tank, which can result in a fire hazard.

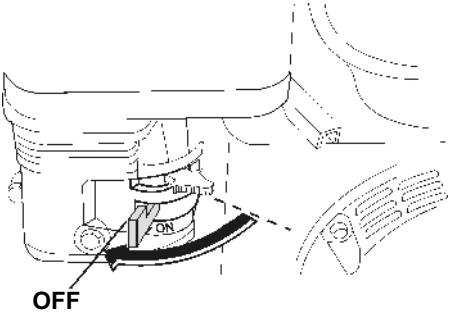
Allow the engine to cool before transporting the pump.

1. Turn the ignition switch to the OFF position.



2. Turn the fuel valve to the OFF position.

3. Drain the pump chamber (refer to page 39).



LOADING AND UNLOADING

Have two people lift the pump or use a hoist connected to the lifting bracket to load the pump on and off the transport vehicle.

Position the pump so it is level on the transport vehicle. Tie the pump down with rope or straps. Keep the tie-down rope or straps away from the controls and carburetor.

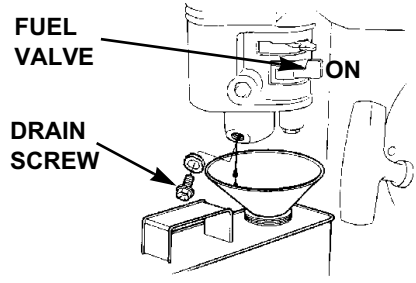
TAKING CARE OF PROBLEMS

This chapter tells you what to check for if you encounter problems with your pump.

ENGINE WILL NOT START

Fuel

1. Is there enough fuel in the fuel tank? (page 35).
2. Is the fuel valve ON?
3. Is the choke lever in the closed position for cold engine or open position for a warm engine?



4. Is fuel reaching the carburetor? To check, place a suitable container under the float bowl and remove the drain screw. Turn fuel valve ON. Fuel should flow out freely.

Spark Plug

1. Is the ignition switch ON? (page 11).
2. Make sure the oil level is correct (page 26).
3. Remove the spark plug and clean, gap, or replace as necessary (page 32).
4. If the engine still will not start, take the pump to an authorized Honda servicing dealer.

PUMP WILL NOT PUMP

1. Is the strainer clogged? (page 18).
2. Is there a restriction or foreign material in the pump casing?
3. Are the suction hose clamps installed securely? (page 18).
4. Is the suction hose connector sealing washer installed? (page 18).
5. Is the suction hose or suction hose nipple face damaged?
6. Is the suction head too high? (page 19).

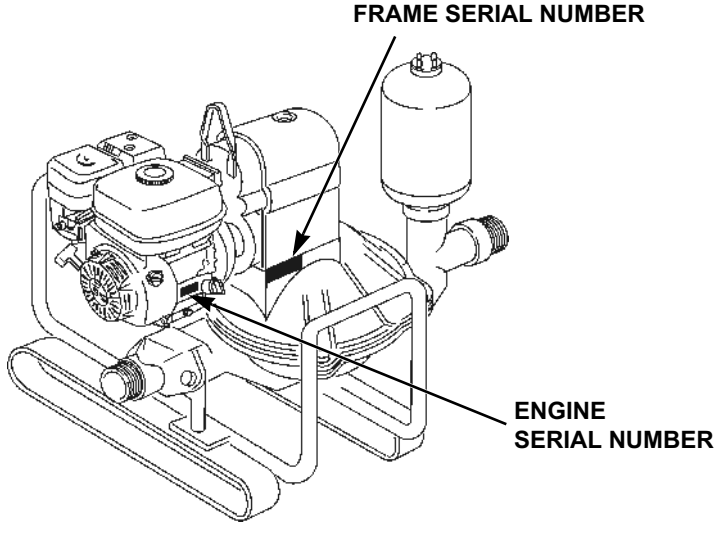
7. Does the pump require priming? (page 19).
8. Is debris under the clappet valves or are the valves damaged? (page 43).
9. Is the diaphragm torn? (page 45).
10. If the pump still does not pump, take the pump to an authorized Honda servicing dealer.

TECHNICAL AND CONSUMER INFORMATION

This chapter gives you dimensions, capacities, and other technical information.

TECHNICAL INFORMATION

Serial Number Locations



Record the frame and engine serial numbers in the space below. You will need these serial numbers when ordering parts and when making technical or warranty inquiries (see page 73).

Frame serial number: WZBC or WZCA _____

Engine serial number: _____

Carburetor Modification 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 the pump above 5,000 feet (1,500 meters), have an authorized Honda 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 1,000-foot (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 is modified for high altitude operation, the air fuel mixture will be too lean for low altitude use. Operation at altitudes below 5,000 feet (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 an authorized Honda servicing dealer return the carburetor to original factory specifications.

Oxygenated Fuels

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

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

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

The following are the EPA approved percentages of oxygenates:

ETHANOL ——(ethyl or grain alcohol) 10% by volume
You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name “Gasohol.”

MTBE ——— (methyl tertiary butyl ether) 15% by volume
You may use gasoline containing up to 15% MTBE by volume.

METHANOL — (methyl or wood alcohol) 5% by volume
You may use gasoline containing up to 5% methanol by volume as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

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

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

EMISSION CONTROL SYSTEM

Source of Emissions

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

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

The U.S. and California Clean Air Acts

EPA and California regulations require all manufacturers to furnish written instructions describing the operation and maintenance of emission control systems.

The following instructions and procedures must be followed in order to keep the emissions from your Honda engine within the emission standards.

Tampering and Altering

Tampering with or altering the emission control system may increase emissions beyond the legal limit. Among those acts that constitute tampering are:

- Removal or alteration of any part of the intake, fuel or exhaust systems.
- Altering or defeating the governor linkage or speed adjusting mechanism to cause the engine to operate outside its design parameters.

Problems that may Affect Emissions

If you are aware of any of the following symptoms, have your engine inspected and repaired by your servicing dealer.

- Hard starting or stalling after starting.
- Rough idle.
- Misfiring or backfiring under load.
- Afterburning (backfiring).
- Black exhaust smoke or high fuel consumption.

Replacement Parts

The emission control systems on your new Honda engine were designed, built, and certified to conform with EPA and California emission regulations. We recommend the use of genuine Honda parts whenever you have maintenance done. These original-design replacement parts are manufactured to the same standards as the original parts, so you can be confident of their performance. The use of replacement parts that are not of the original design and quality may impair the effectiveness of your emission control system.

A manufacturer of an aftermarket part assumes the responsibility that the part will not adversely affect emission performance. The manufacturer or rebuilder of the part must certify that use of the part will not result in a failure of the engine to comply with emission regulations.

Maintenance

Follow the maintenance schedule on page 25. Remember that this schedule is based on the assumption that your machine will be used for its designed purpose. Sustained high-load or high-temperature operation, or use in unusually wet or dusty conditions, will require more frequent service.

Air Index

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

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

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

Descriptive Term	Applicable to Emissions Durability Period
Moderate	50 hours (0–65 cc) 125 hours (greater than 65 cc)
Intermediate	125 hours (0–65 cc) 250 hours (greater than 65 cc)
Extended	300 hours (0–65 cc) 500 hours (greater than 65 cc)

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

SPECIFICATIONS

Dimensions and Weight

Model	WDP20XTA	WDP30XTA
Description code	WZBZ	WZCA
Length x Width x Height	32.5 x 23.4 x 25.0 in (826 x 594 x 635 mm)	
Dry weight	120 lbs (54.4 kg)	

Engine Design and Performance

Model	GX120T1QX2
Engine type	4-stroke, overhead-valve, single cylinder
Displacement [bore x stroke]	7.2 cu in (119 cc) [2.4 x 1.7 in (60 x 42 mm)]
Maximum output	4.0 hp (2.9 kW) at 3,600 rpm
Cooling system	Forced air
Ignition system	Transistorized magneto
PTO shaft direction	Counterclockwise

Pump

Pump type	Diaphragm with spring-type connecting rod	
Suction port diameter/thread type	2 in NPT	3 in NPT
Discharge port diameter/thread type		
Maximum total head	50 ft (15 m)	
Maximum suction head (dry)	14 ft (4.3 m)	16 ft (4.9 m)
Maximum suction head (after priming pump housing)	21 ft (6.4 m)	24 ft (7.3 m)
Maximum discharge capacity	60 gpm (227 ℓ/min)	80 gpm (303 ℓ/min)
Self-priming time	20 sec. at 20 ft (6.1 m)	
Maximum solid size	1.8 in (46 mm)	2.4 in (60 mm)
Diaphragm	Neoprene with nylon cloth	
Valves	Neoprene with cast iron inserts	

Gear Box

Pump operating frequency	73 strokes/min.	
Gear reduction	43:1	
Pump stroke	2.56 in (65.0 mm)	2.77 in (70.4 mm)
Gear box oil capacity	0.8 qt (0.8 ℓ)	
Gear box oil type	80W/90 GL5 gear oil	

Maintenance

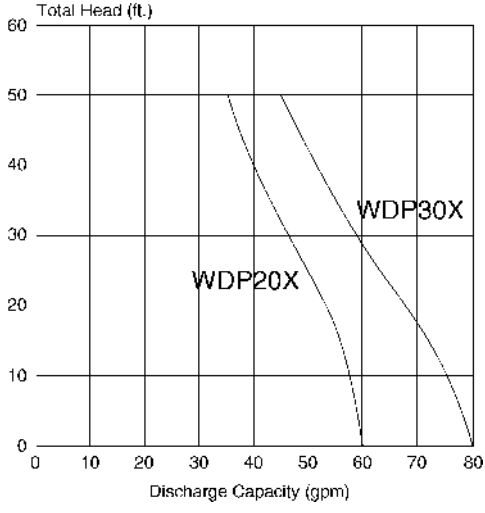
Fuel	Unleaded gasoline with a pump octane rating of 86 or higher	See page 36
Engine oil	SAE 10W-30 API SH, SJ, or SL	See page 29
Gear box oil	SAE 80W/90 GL5 gear oil	See page 41
Spark plug type	NGK – BPR6ES DENSO – W20EPR-U	See page 32
Maximum governed speed	3,000 ~ 3,150 rpm	See shop manual

Tune-up

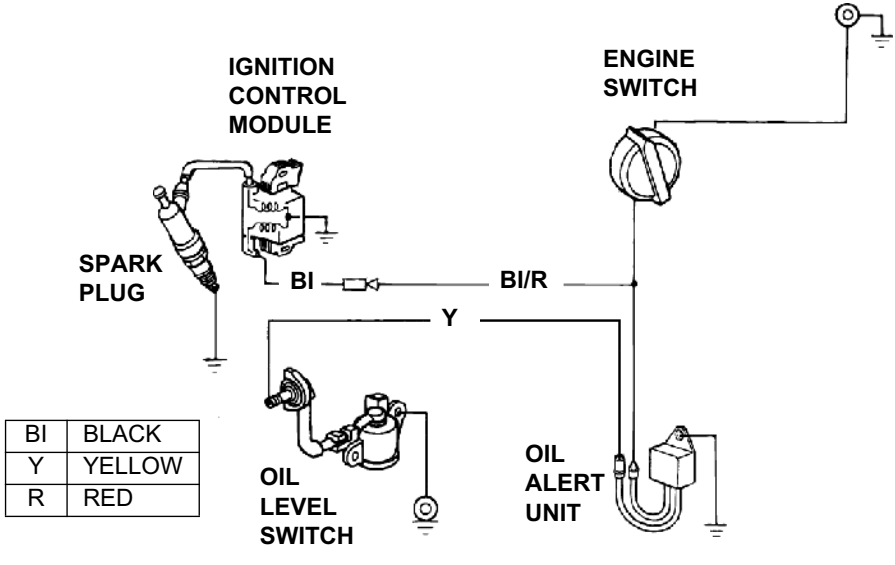
Spark plug gap	0.028 - 0.031 in (0.70 - 0.80 mm)	See page 32
Carburetor idle speed	1,400 $^{+200}_{-150}$ rpm	See page 37
Valve clearance (cold)	Intake: 0.15 ± 0.02 mm Exhaust: 0.20 ± 0.02 mm	See shop manual
Other specifications	No other adjustments needed	

Pump Performance Curve

This graph shows the relationship between the pump discharge capacity and the total dynamic head, based on clear water at sea level. As you increase the total head, the discharge capacity will decrease.



Wiring Diagram



CONSUMER INFORMATION

This chapter contains additional information, Honda publications available to you, and tells you how to contact us if you have a question or a warranty repair problem.

Honda Publications

This publication will give you additional information about maintaining your pump. You may order it from your Honda water pump dealer.

Parts Catalog

This provides a complete pictorial parts listing.

Distributor's Limited Warranty

PRODUCTS COVERED BY THIS WARRANTY	LENGTH OF WARRANTY (FROM DATE OF ORIGINAL PURCHASE)		
PRODUCT	**NONCOMMERCIAL/ NONRENTAL**	**COMMERCIAL**	**RENTAL**
ENGINE	24 MONTHS	24 MONTHS	24 MONTHS
PUMP AND FRAME COMPONENTS	24 MONTHS	12 MONTHS	12 MONTHS

TO QUALIFY FOR THIS WARRANTY:
The product must be purchased in the United States, Puerto Rico, or the U.S. Virgin Islands from American Honda or a dealer authorized by American Honda to sell those products. This warranty applies to first retail purchaser and each subsequent owner during the applicable warranty time period.

WHAT AMERICAN HONDA WILL REPAIR OR REPLACE UNDER WARRANTY:
American Honda will repair or replace, at its option, any part that is proven to be defective in material or workmanship under normal use during the applicable warranty time period. Warranty repairs and replacements will be made without charge for parts or labor. Anything replaced under warranty becomes the property of American Honda Motor Company, Inc. All parts replaced under warranty will be considered as part of the original product and any warranty on those parts will expire coincident with the original product warranty.

TO OBTAIN WARRANTY SERVICE:
You must take the Honda Power Equipment product, accessory, replacement part, apparel or the power equipment on which the accessory or replacement part is installed, and proof of purchase, at your expense, to any Honda Power Equipment dealer in the United States, Puerto Rico, or the U.S. Virgin Islands who is authorized to sell that product, during the dealer's normal business hours. If you are unable to obtain warranty service, or are dissatisfied with the warranty service you receive, take the following steps: First, contact the owner of the dealership involved; normally this will resolve the problem. However, if you should require further assistance, write or call the Power Equipment Customer Relations Department of American Honda Motor Co., Inc. Refer to page 73 for contact information.

EXCLUSIONS:
THIS WARRANTY DOES NOT EXTEND TO PARTS AFFECTED OR DAMAGED BY ACCIDENT AND/OR COLLISION, NORMAL WEAR, FUEL CONTAMINATION, USE IN AN APPLICATION FOR WHICH THE PRODUCT WAS NOT DESIGNED OR ANY OTHER MISUSE, NEGLECT, INCORPORATION OR USE OF UNSUITABLE ATTACHMENTS OR PARTS, UNAUTHORIZED ALTERATION, OR ANY CAUSES OTHER THAN DEFECTS IN MATERIAL OR WORKMANSHIP OF THE PRODUCT.

THE AUGER AND PADDLE ASSEMBLIES OF SNOWTHROWERS, TILLER TINES OF ROTO-TILLERS, MOWER BLADES AND MOWER DECK HOUSINGS, ARE SPECIFICALLY NOT WARRANTED AGAINST IMPACT DAMAGE, INCLUDING BUT NOT LIMITED TO, ABRASIVE DAMAGE.

DISCLAIMER OF CONSEQUENTIAL DAMAGE AND LIMITATION OF IMPLIED WARRANTIES:

AMERICAN HONDA DISCLAIMS ANY RESPONSIBILITY FOR LOSS OF TIME OR USE OF THE PRODUCT, TRANSPORTATION, COMMERCIAL LOSS, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGE. ANY IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THIS WRITTEN LIMITED WARRANTY. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Emission Control System Warranty

Your new Honda Power Equipment engine complies with both the U.S. EPA and State of California emission regulations. American Honda provides the same emission warranty coverage for engines sold in all 50 states.

Your Warranty Rights And Obligations:

California

The California Air Resources Board and American Honda Motor Co., Inc., are pleased to explain the emission control system warranty on your Honda Power Equipment engine. In California, new utility and lawn and garden equipment engines must be designed, built, and equipped to meet the State's stringent anti-smog standards.

Other States

In other areas of the United States, your engine must be designed, built, and equipped to meet the U.S. EPA emission standards for spark-ignited engines at or below 19 kilowatts.

All States

American Honda Motor Co., Inc., must warrant the emission control system on your power equipment engine for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your power equipment engine. Where a warrantable condition exists, American Honda Motor Co., Inc., will repair your power equipment engine at no cost to you including diagnosis, parts, and labor.

Your emission control system may include such parts as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, connectors, and other emission-related assemblies.

Manufacturer's Warranty Coverage

The 1995 and later power equipment engines are warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by American Honda Motor Co., Inc.

Owner's Warranty Responsibility:

As the power equipment engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. American Honda Motor Co., Inc., recommends that you retain all receipts covering maintenance on your power equipment engine, but American Honda Motor Co., Inc., cannot deny warranty coverage solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the power equipment engine owner, you should however be aware that American Honda Motor Co., Inc., may deny you warranty coverage if your power equipment engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications.

You are responsible for presenting your power equipment engine to a Honda Power Equipment dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, write or call the Power Equipment Customer Relations Department of American Honda Motor Co., Inc. Refer to page 73 for contact information.

Warranty Coverage:

Honda power equipment engines manufactured after January 1, 1995, and sold in the State of California, and U.S. EPA certified engines manufactured on or after September 1, 1996, and sold in all of the United States, are covered by this warranty for a period of two years from the date of delivery to the original retail purchaser. This warranty is transferable to each subsequent purchaser for the duration of the warranty period.

Warranty repairs will be made without charge for diagnosis, parts, or labor. All defective parts replaced under this warranty become the property of American Honda Motor Co., Inc. A list of warranted parts is on the reverse side of this warranty statement. Normal maintenance items, such as spark plugs and filters, that are on the warranted parts list are warranted up to their required replacement interval only.

American Honda Motor Co., Inc., is also liable for damages to other engine components caused by a failure of any warranted part during the warranty period.

Only Honda approved replacement parts may be used in the performance of any warranty repairs and must be provided without charge to the owner. The use of replacement parts not equivalent to the original parts may impair the effectiveness of your engine emission control system. If such a replacement part is used in the repair or maintenance of your engine, and an authorized Honda dealer determines it is defective or causes a failure of a warranted part, your claim for repair of your engine may be denied. If the part in question is not related to the reason your engine requires repair, your claim will not be denied.

To Obtain Warranty Service:

You must take your Honda Power Equipment engine or the product on which it is installed, along with your sales registration card or other proof of original purchase date, at your expense, to any Honda Power Equipment dealer who is authorized by American Honda Motor Co., Inc., to sell and service that Honda product during his normal business hours. Claims for repair or adjustment found to be caused solely by defects in material or workmanship will not be denied because the engine was not properly maintained and used.

If you are unable to obtain warranty service, or are dissatisfied with the warranty service you received, contact the owner of the dealership involved. Normally this should resolve your problem. However, if you require further assistance, write or call the Power Equipment Customer Relations Department of American Honda Motor Co., Inc.

Exclusions:

FAILURES OTHER THAN THOSE RESULTING FROM DEFECTS IN MATERIAL OR WORKMANSHIP ARE NOT COVERED BY THIS WARRANTY. THIS WARRANTY DOES NOT EXTEND TO EMISSION CONTROL SYSTEMS OR PARTS WHICH ARE AFFECTED OR DAMAGED BY OWNER ABUSE, NEGLECT, IMPROPER MAINTENANCE, MISUSE, MISFUELING, IMPROPER STORAGE, ACCIDENT AND/OR COLLISION, THE INCORPORATION OF, OR ANY USE OF, ANY ADD-ON OR MODIFIED PARTS, UNSUITABLE ATTACHMENTS, OR THE UNAUTHORIZED ALTERATION OF ANY PART.

THIS WARRANTY DOES NOT COVER REPLACEMENT OF EXPENDABLE MAINTENANCE ITEMS MADE IN CONNECTION WITH REQUIRED MAINTENANCE SERVICES AFTER THE ITEM'S FIRST SCHEDULED REPLACEMENT AS LISTED IN THE MAINTENANCE SECTION OF THE PRODUCT OWNER'S MANUAL, SUCH AS: SPARK PLUGS AND FILTERS.

Disclaimer of Consequential Damage and Limitation of Implied Warranties:

AMERICAN HONDA MOTOR CO., INC., DISCLAIMS ANY RESPONSIBILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SUCH AS LOSS OF TIME OR THE USE OF THE POWER EQUIPMENT, OR ANY COMMERCIAL LOSS DUE TO THE FAILURE OF THE EQUIPMENT; AND ANY IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. THIS WARRANTY IS APPLICABLE ONLY WHERE THE CALIFORNIA OR U.S. EPA EMISSION CONTROL SYSTEM WARRANTY REGULATION IS IN EFFECT.

Emission Control System Warranty Parts:

SYSTEMS COVERED BY THIS WARRANTY:	**PARTS DESCRIPTION:**
Fuel Metering	Carburetor assembly, Fuel injection pump, Fuel injection nozzle, Fuel regulator
Exhaust	Catalyst
Air Induction	Air filter housing, Air filter element*, Crankcase breather tube
Ignition	Flywheel magneto, Ignition pulse generator, Ignition coil assembly, Ignition control module, Spark plug cap, Spark plug*
Miscellaneous Parts	Tubing, fittings, seals, gaskets, and clamps associated with these listed systems.
* Covered up to the first required replacement only. See the Maintenance Schedule in the owner's manual.	

Customer Service Information

Honda power equipment dealership personnel are trained professionals. They should be able to answer any question you may have. If you encounter a problem that your dealer does not solve to your satisfaction, please discuss it with the dealership's management. The Service Manager or General Manager can help. Almost all problems are solved in this way.

If you are dissatisfied with the decision made by the dealership's management, contact the Honda Power Equipment Customer Relations Office. You can write to:

American Honda Motor Co., Inc.
Power Equipment Division
4900 Marconi Drive
Alpharetta, Georgia 30005-8847

Or telephone:(770) 497-6400

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

- Model and serial number (see page 59)
- Name of dealer who sold the pump to you
- Name and address of dealer who services your pump
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the pump application and problem

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QUICK REFERENCE INFORMATION

Fuel	Type	Unleaded gasoline with pump octane rating of 86 or higher (page 36).
	Capacity	0.66 US gallons (2.5 ℓ)
Engine Oil	Type	SAE 10W-30, API SH, SJ, or SL (page 29)
	Capacity	0.6 US quarts (0.6 ℓ)
Spark Plug	Type	Resistor: NGK – BPR6ES DENSO – W20EPR-U
	Gap	0.028 ~ 0.031 in (0.70 ~ 0.80 mm) (page 32)
Carburetor	Idle speed	1,400 $^{+200}_{-150}$ rpm (page 37)
Maintenance	Before each use	Check fuel level (page 35). Check engine oil level (page 27). Check air cleaner (page 30). Check pump hoses and strainer (page 39).
	First 20 hours	Check engine oil (page 27). Grease pump connecting rod bearing (page 40).
	Subsequent	Refer to the maintenance schedule on page 25.
	After each use	Flush the pump chamber (page 39).

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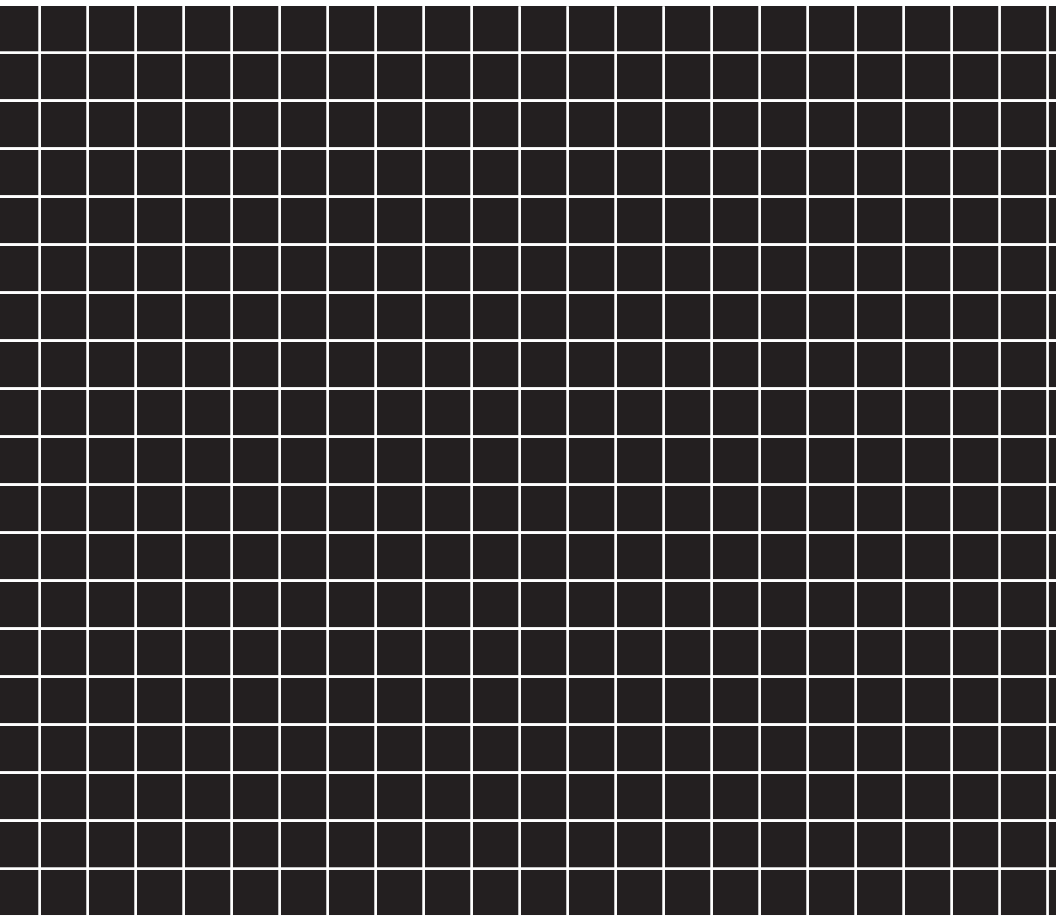

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