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

The information and specifications included in this publication were in effect at the time of approval for printing. Honda Motor Co., Ltd. reserves the right, however, to discontinue or change specifications or design at any time without notice and without incurring any obligation whatever.

INTRODUCTION

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

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

We suggest you read the warranty policy to fully understand its coverage and your responsibilities of ownership. The warranty policy is a separate document that should have been given to you by your dealer.

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

Best Wishes,
Honda Motor Co., Ltd.

INTRODUCTION

A FEW WORDS ABOUT SAFETY

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

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

- **Safety Labels** — on the tiller.
- **Safety Messages** — preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION.

  These signal words mean:

  ⚠ DANGER You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.

  ⚠ WARNING You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.

  ⚠ CAUTION You CAN be HURT if you don't follow instructions.
- **Safety Headings** — such as *IMPORTANT SAFETY INFORMATION.*
- **Safety Section** — such as *TILLER SAFETY.*
- **Instructions** — how to use this tiller correctly and safely.

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

CONTENTS

CONTENTS

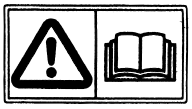
TILLER SAFETY

IMPORTANT SAFETY INFORMATION

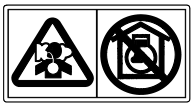
Honda tillers are designed to cultivate earth outdoors. Other uses can result in injury to the operator or damage to the tiller and other property.

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

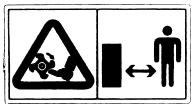
For your safety and the safety of others, pay special attention to these precautions:



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



- **Exhaust contains poisonous carbon monoxide, a colorless, odorless gas. Breathing carbon monoxide can cause loss of consciousness and may lead to death.**
- **If you run the tiller in an area that is confined, or even partially enclosed area, the air you breathe could contain a dangerous amount of exhaust gas.**
- **Never run your tiller inside a garage, house or near open windows or doors.**



- **The rotating tines are sharp and they turn at high speed. Accidental contact can cause serious injury.**
- **Keep your hands and feet away from the tines while engine is running.**
- **Stop the engine and disengage the tines clutch before inspection or maintenance of tines.**
- **Disconnect the spark plug cap to prevent any possibility of accidental starting. Wear heavy gloves to protect your hands from the tines when cleaning the tines or when inspecting or replacing the tines.**

TILLER SAFETY

- **Gasoline is extremely flammable and is explosive under certain conditions.**
- **Do not smoke or allow flames or sparks in the area where the tiller is refueled or where gasoline is stored.**
- **Do not overfill the fuel tank, and make sure the fuel tank cap is closed securely after refueling.**
- **Refuel in a well-ventilated area with the engine stopped.**

Operator Responsibility

- Know how to stop the tiller quickly in case of emergency.
- Understand the use of all tiller controls.
- Be very cautious when operating the tiller in REVERSE, especially if attachments are being used.
- Keep a firm hold on the handlebars. They may tend to lift during clutch engagement.
- Be sure the drag bar is in place and properly adjusted.
- Be sure that anyone who operates the tiller receives proper instruction. Do not let children operate the tiller. Keep children and pets away from the area of operation.
- Do not tow a trailer.
- Do not modify the tiller.
- Do not mount the tiller.

Carbon Monoxide Hazards

- Exhaust contains poisonous carbon monoxide, a colorless, odorless gas. Breathing carbon monoxide can cause loss of consciousness and may lead to death.

- If you run the tiller in a confined or even partially enclosed area, the air you breathe could contain dangerous amounts of carbon monoxide. To keep carbon monoxide from building up, provide adequate ventilation.

Fire and Burn Hazards

- The exhaust system gets hot enough to ignite some materials.
  - Keep the tiller at least 1 meter away from buildings and other equipment during operation.
  - Keep flammable materials away from the tiller.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine.
  Be careful not to touch the muffler while it is hot. Let the engine cool before storing the tiller indoors.

Refuel With Care

Gasoline is extremely flammable, and gasoline vapor can explode. Allow the engine to cool if the tiller has been in operation. Refuel only outdoors in a well-ventilated area with the engine OFF. 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.

Avoid Rotating Tines

Rotating tines can cause serious cuts and even amputate body parts. Keep away from the tine area whenever the engine is running. If you need to work around the tines to clear an object accumulation or for any other reason, always shut off the engine. Disconnect the spark plug cap, and wear heavy gloves when you need to clean the tine area or handle the tines.

TILLER SAFETY

Clear Tilling Area

A tine can throw rocks and other objects with enough force to cause serious injury. Before tilling, carefully inspect the area and remove all stones, sticks, bones, nails, pieces of wire, and other loose objects. Be aware; if children are in the shop area, stop the tiller. Do not operate the tine on gravel, cement, slab or stony mountain.

Keep Shields in Place

Guards and shields are designed to protect you from being hit by thrown objects and to keep you from touching hot engine parts and moving components. For your safety and the safety of others, keep all shields in place when the engine is running.

Wear Protective Clothing

Wearing protective clothing will reduce your risk of injury. Long pants and eye protection reduces the risk of injuries from thrown objects. Sturdy shoes with aggressive soles provide better traction.

Turn Engine Off When Not Operating the Tiller

If you need to leave the operating point for any reason, even just to inspect the area ahead, always turn the engine off.

Slope Operation

- When tilling on slopes, keep the fuel tank less than half full to minimize fuel spillage.
- Till across the slope (at equally spaced intervals) rather than up and down it.
- Be very careful when changing the direction of the tiller on a slope.
- Do not use the tiller on a slope of more than 10°. Before starting the engine, check that the tiller is not damaged and is in good condition. For your safety and the safety of others, exercise extreme care when using the tiller on a slope.

Tilling Conditions

Operate the tiller only in daylight or good artificial light. Do not operate the tiller at night or under poor light conditions.

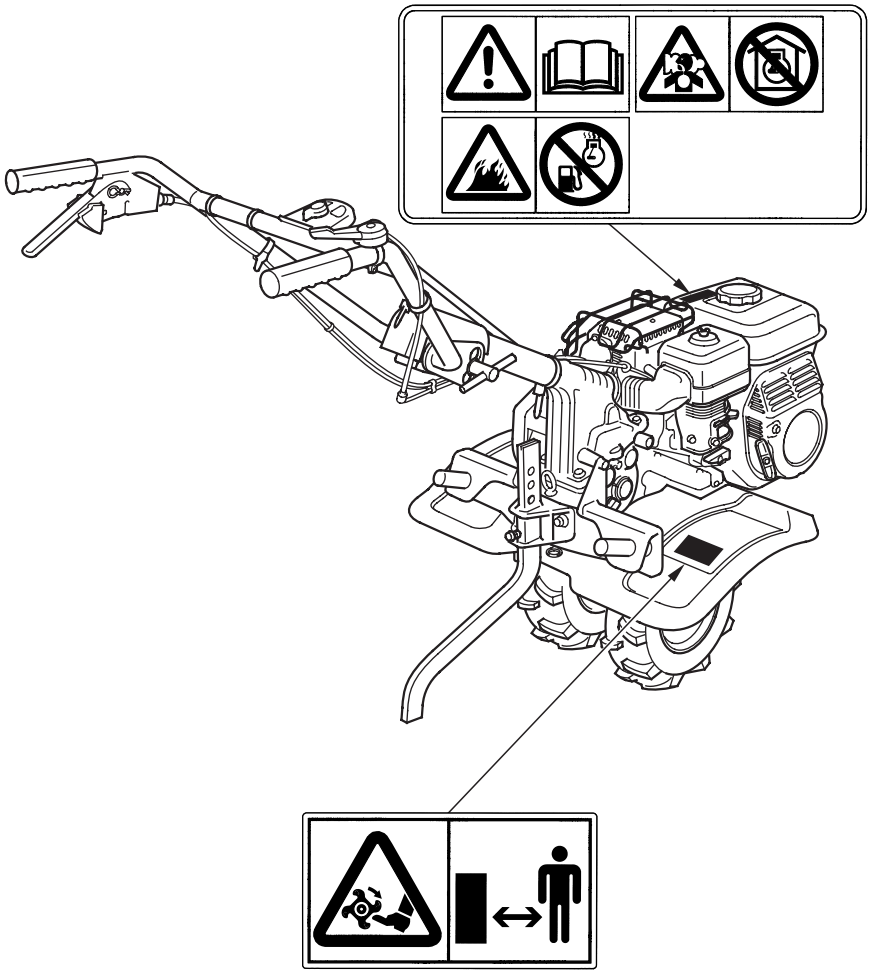
Tools and Attachments

To install a tool or attachment on the tiller, follow the instructions furnished with the tool or attachment. Ask your Honda dealer for advice if you encounter any problem or difficulty in installing a tool or attachment.

TILLER SAFETY

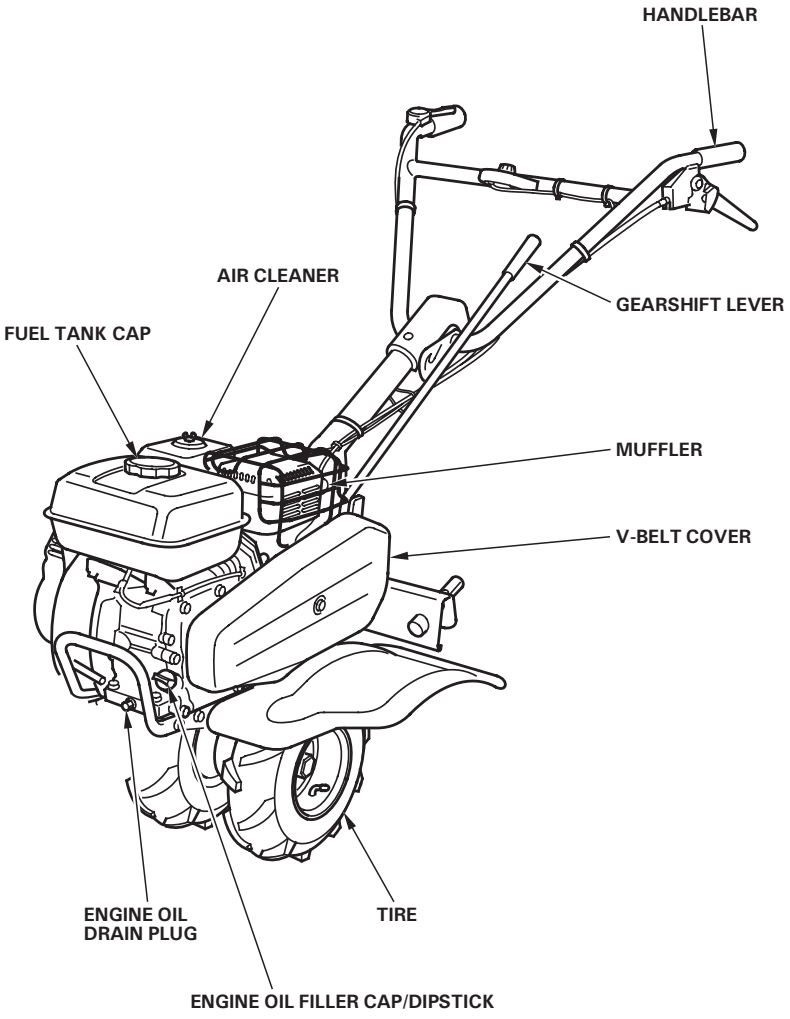
SAFETY LABEL LOCATIONS

These labels warn you of potential hazards that can cause serious injury. Read them carefully. If a label comes off or becomes hard to read, contact your Honda tiller dealer for a replacement.

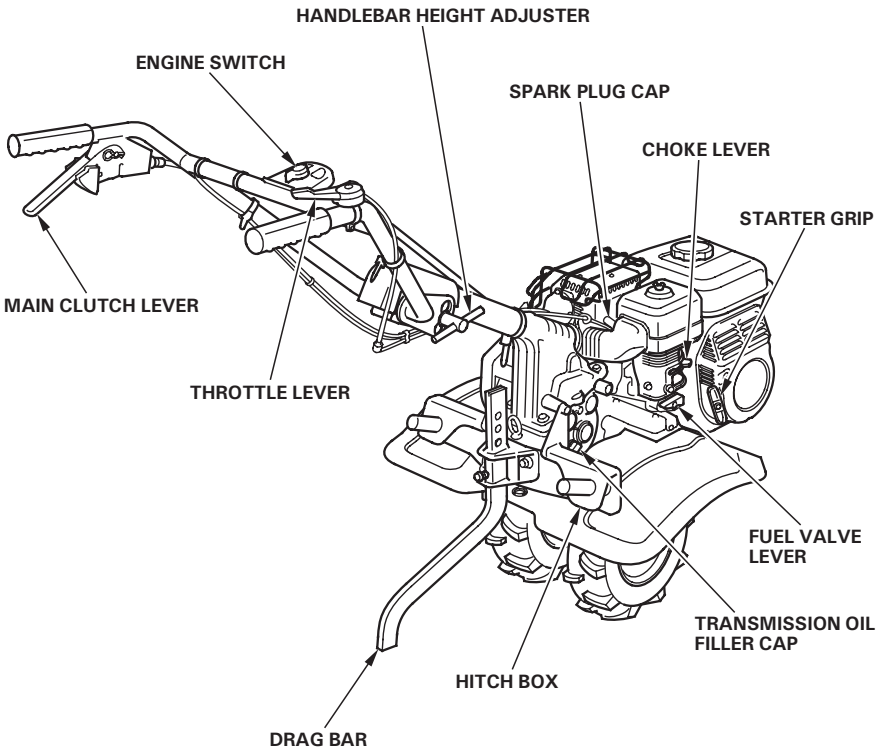


CONTROLS

COMPONENT & CONTROL LOCATIONS



CONTROLS


HANDLEBAR HEIGHT ADJUSTER
ENGINE SWITCH
SPARK PLUG CAP
CHOKE LEVER
STARTER GRIP
MAIN CLUTCH LEVER
THROTTLE LEVER
FUEL VALVE LEVER
TRANSMISSION OIL FILLER CAP
HITCH BOX
DRAG BAR

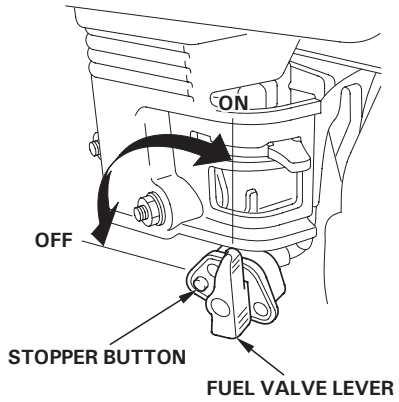
CONTROLS

Fuel Valve

The fuel valve opens and closes the connection between the fuel tank and the carburetor.

The fuel valve lever must be in the ON position for the engine to run.

After stopping the engine, turn the fuel valve lever to the OFF position so that it touches the stopper button.

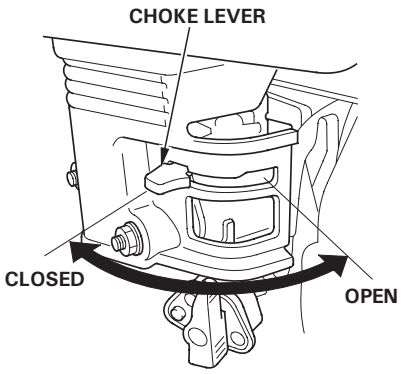


Choke Lever

The choke lever opens and closes the choke valve in the carburetor.

The CLOSED position enriches the fuel mixture for starting a cold engine.

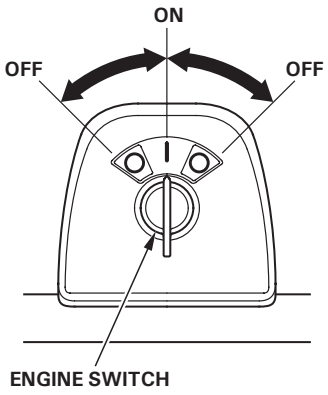
The OPEN position provides the correct fuel mixture for operation after starting and for restarting a warm engine.



Engine Switch

The engine switch controls the ignition system.

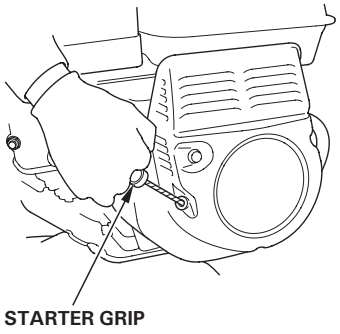
OFF - Stops the engine.
ON - Running position.



CONTROLS

Starter Grip

Pulling the starter grip operates the recoil starter to crank the engine.

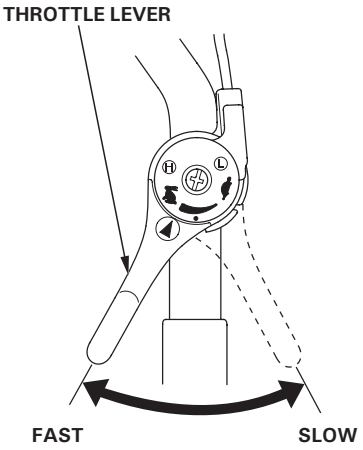


Throttle Lever

The throttle lever controls engine speed.

Moving the throttle lever in the directions shown make the engine run faster or slower.

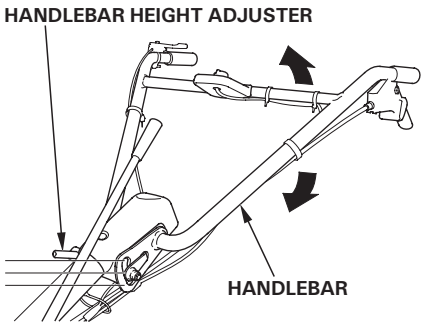
Tine speed is controlled by adjusting the throttle lever. At maximum throttle position, the tines will rotate at the highest speed. Moving the throttle lever toward the idle position will decrease the tine speed.



Handlebar Height Adjuster

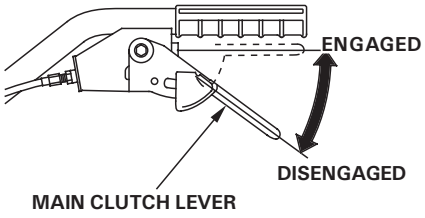
Handlebar height can be adjusted to match operator height.

For normal tilling, the most comfortable operator position is with the handlebars at waist height.



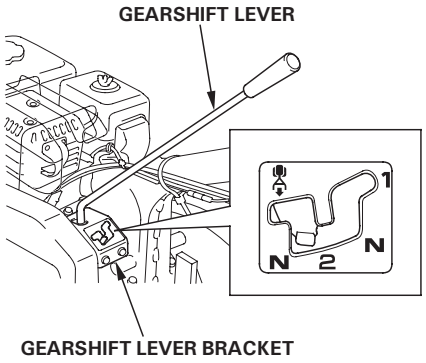
Main Clutch Lever

The main clutch lever engages and disengages the transmission that drives the tines.



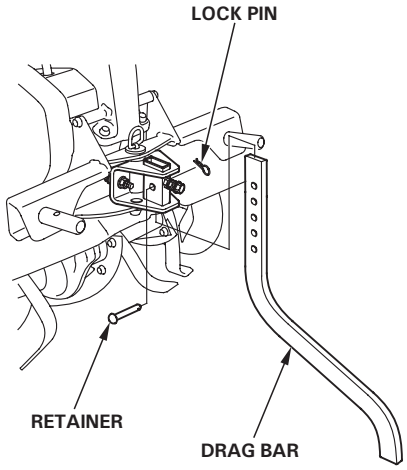
Gearshift Lever

The transmission offers a choice of two forward speeds, neutral, and one reverse speed. Shift lever positions are indicated on the gearshift lever bracket.



Drag Bar

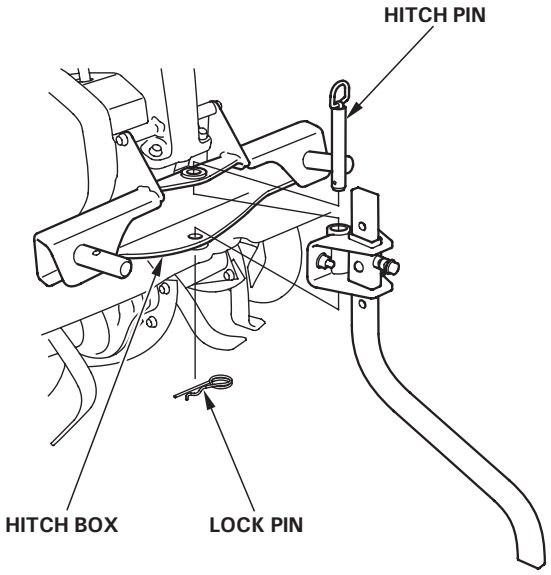
The drag bar controls tilling depth and should always be used when tilling. It enables you to compensate for the hardness of the soil. Ideal drag bar height will depend on the type of soil being tilled and soil conditions at the time of tilling. In general, the drag bar should be adjusted so that the tiller is tilted slightly backward.



CONTROLS

Hitch box

Use a hitch pin as shown below to attach the drag bar or any other attachments to the hitch box.



BEFORE OPERATION

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 tiller and its operation before you begin using it. Know how to quickly shut off the tiller in case of an emergency.

IS YOUR TILLER READY TO GO?

For your safety, to ensure compliance with environmental regulations, and to maximize the service life of your equipment, it is very important to take a few moments before you operate the tiller 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 tiller.

⚠ WARNING

Improperly maintaining this tiller, or failing to correct a problem before operation, could cause a malfunction in which you could be seriously injured.

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

BEFORE OPERATION

Do not place flammable objects close to the engine.

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

Check the Engine

Check the oil level (see page 46).

Check the air filter (see page 50). A dirty air filter will restrict air flow to the carburetor, reducing engine and tiller performance.

Check the fuel level (see page 44). Starting with a full tank will help to eliminate or reduce operating interruptions for refueling.

Check the Tiller

Check the transmission oil (see page 49).

Check that the all nuts, bolts, screws are tightened (see page 57,58).

SAFE OPERATING PRECAUTIONS

Before operating the tiller for the first time, please review both the *TILLER SAFETY* chapter and the chapter titled *BEFORE OPERATION.*

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

⚠ WARNING

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

Avoid any enclosed areas or activities that expose you to carbon monoxide.

OPERATION

STARTING THE ENGINE

Refer to *Safe Operating Precautions* on page 19.

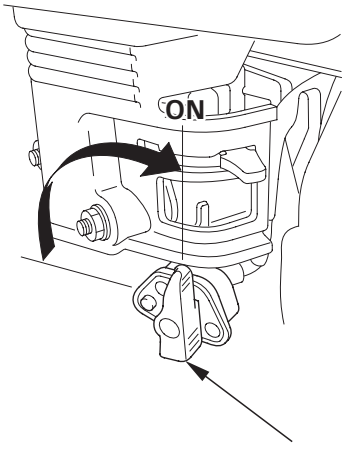
⚠ WARNING

Tines are sharp and spin fast.
Spinning tines can cut you severely and can amputate body parts.

- Wear protective footwear.
- Keep your hands and feet away from the tines while the engine is running.
- Stop the engine before performing any adjustment, inspection or maintenance.

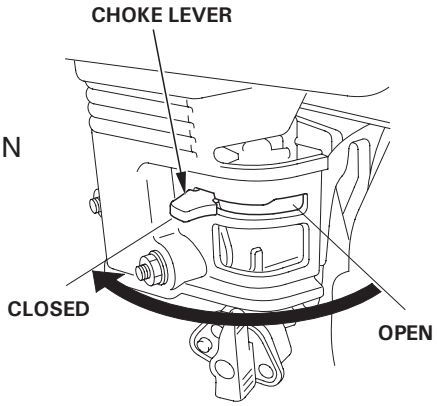
1. Move the gearshift lever to the neutral position (see page 24).

2. Turn the fuel valve lever to the ON position.

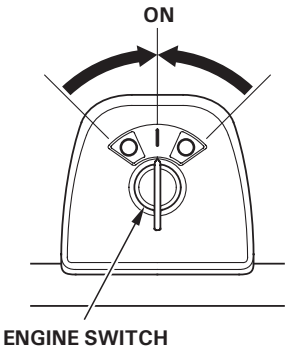


3. Move the choke lever to the CLOSED position to start a cold engine.

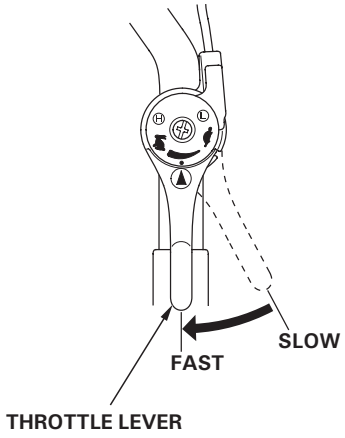
   Leave the choke lever in the OPEN position to restart a warm engine.



4. Turn the engine switch to the ON position.



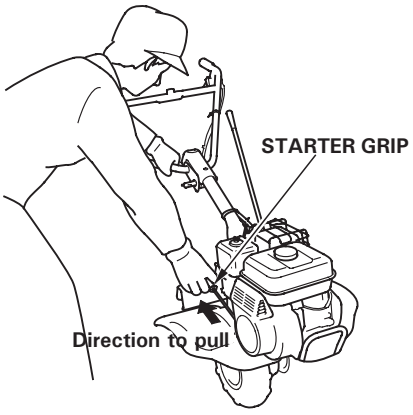
5. Move the throttle lever away from the SLOW position, about 1/3 of the way toward the FAST position.



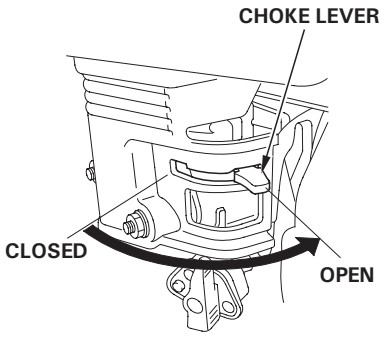
6. Pull the starter grip lightly until resistance is felt, then return the starter grip once.

NOTICE

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



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



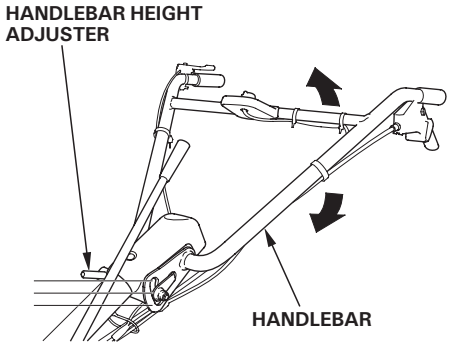
OPERATING THE CONTROLS FOR TILLING

If the tines dig in but the machine will not move forward, move the handlebars from side-to-side.

Handlebar Height Adjustment

Stop the engine before adjusting the handlebar height.

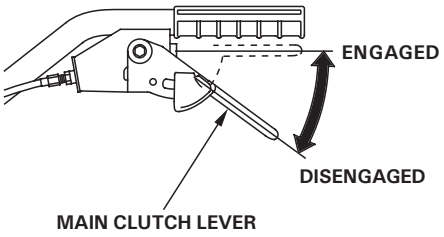
To adjust the handlebar height, loosen the handlebar height adjuster, select the appropriate holes and tighten it.



Clutch

When the main clutch lever is squeezed, the clutch is engaged, and power is transmitted to the transmission.

When the lever is released, the clutch is disengaged, and power is not transmitted.



OPERATION

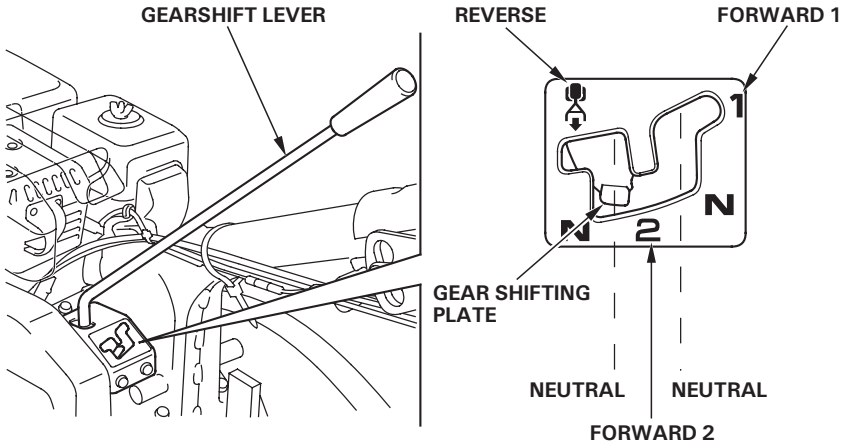
Forward Gear Selection

1. Return the throttle lever to the slowest position.

2. Release the clutch lever to disengage the clutch.

3. Move the gearshift lever to the desired gear position.
   The gearshift lever should be operated in accordance with the attached gear shifting plate.

   If the gearshift lever will not engage the desired gear, squeeze the clutch lever and move the tiller slightly to reposition the gears.



Gear Selection Table

Gear position	Tine speed *1 (rpm)
FORWARD 1	79.5
FORWARD 2	112.9
REVERSE	28.0

*1: When engine speed is 3,600 rpm

Reverse Gear Operation

Use the reverse gear only when it is necessary to move the tiller away from an obstacle.

⚠ WARNING

The tiller tines propel the tiller toward the operator when operated in reverse.

Contact with rotating tines will cause serious injury.

Be prepared to quickly release the clutch lever when operating the tiller in reverse.

1. Check the area behind you and make sure it is clear of any obstacles.

2. Move the throttle to the SLOW position.

3. Make sure the main clutch lever is released. Move the gearshift lever to the REVERSE position.

4. Raise the handlebar slightly and engage the main clutch lever. Carefully walk the tiller backwards. Be prepared to release the main clutch lever quickly.

5. Release the main clutch lever, lower the handlebar, and move the gearshift lever out of the REVERSE position when done.

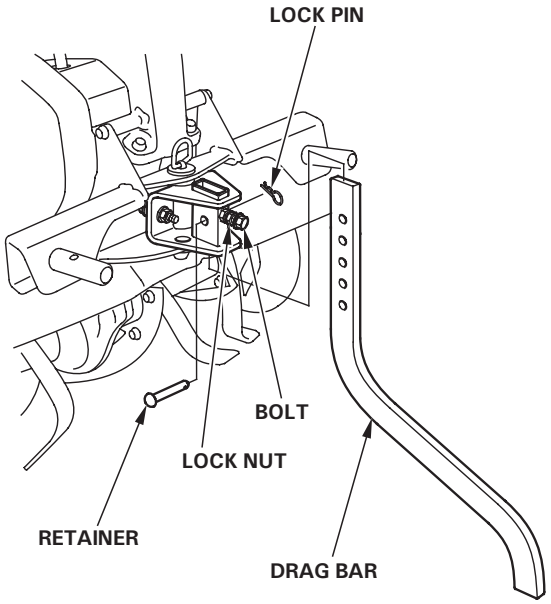
OPERATION

Tilling Depth Adjustment

The drag bar is used to control the tilling depth.

The tilling depth adjustment can be made as follows :
Remove the lock pin and retainer, loosen the lock nut and bolt securing the drag bar and sliding the drag bar up or down as necessary.
After adjustment, tighten the bolt and lock nut securely.
Insert the retainer and set the lock pin.

During operation, if the machine jerks forward while tilling, press down on the handlebars. This will cause the drag bar to dig more deeply into the soil.



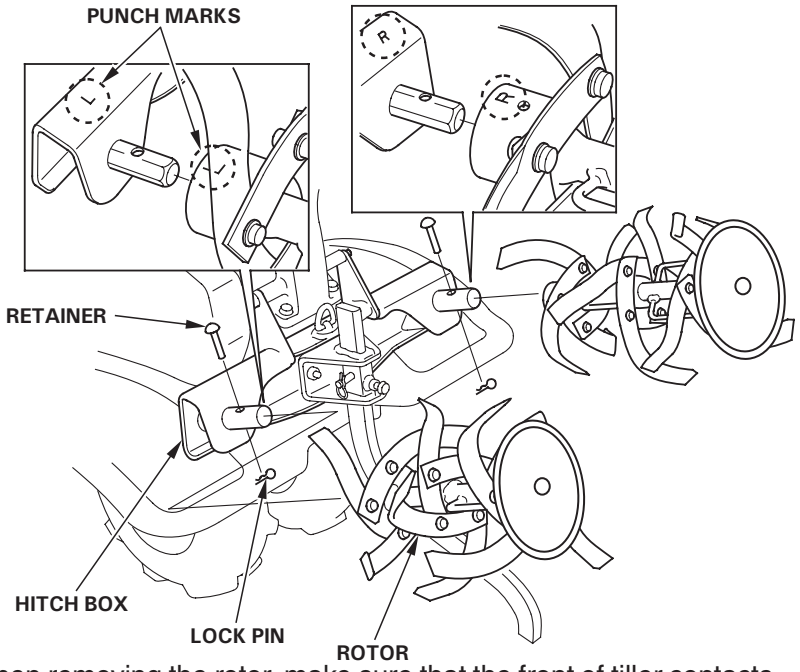
Rotor Installation on Hitch Box

The tiller can be moved with the rotor installed on the hitch box.
When installing, make sure that the drag bar contacts with the ground.
Wear heavy gloves to protect your hands.
After attaching the rotor, do not put things on it.
While moving the tiller with the rotor attached, pat attention to the tine of the rotor and your foot.

Installation

1. Before attaching the rotor, remove an adherent mud from it.
2. Align the punch mark (L or R) on the rotor with the punch mark (L or R) on the hitch box.
3. Install the rotor with its punch mark facing up.
4. Insert the retainer and set the lock pin.

Removal can be done in the reverse order of installation.



When removing the rotor, make sure that the front of tiller contacts with ground (see page 28).
You can remove and install either the deep-cultivating rotor, or the French rotor.

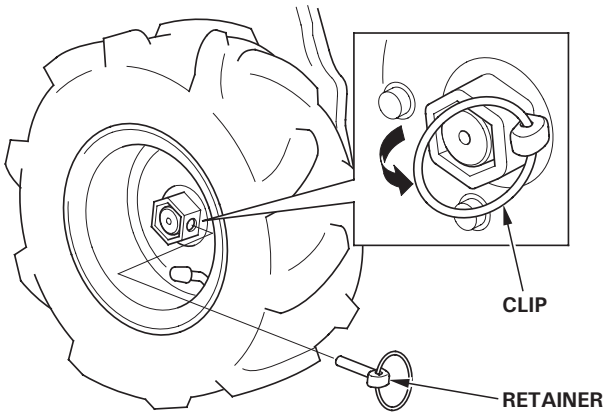
OPERATION

Change from Tire to Rotor

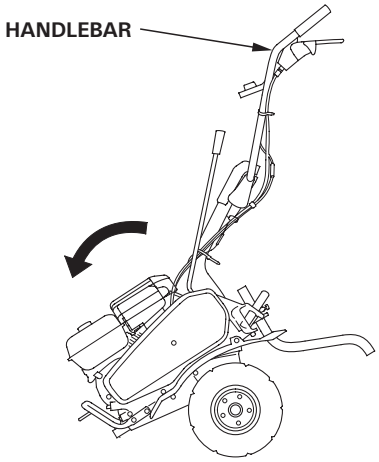
Wear heavy gloves to protect your hands.

When changing the tire to the rotor, park the tiller on level ground, stop the engine and disconnect the spark plug cap from the spark plug. Turn the fuel valve lever to the OFF position.

1. Remove the rotor from the hitch box (see page 27).
2. Remove the retainer by pulling the clip in the direction of the arrow.



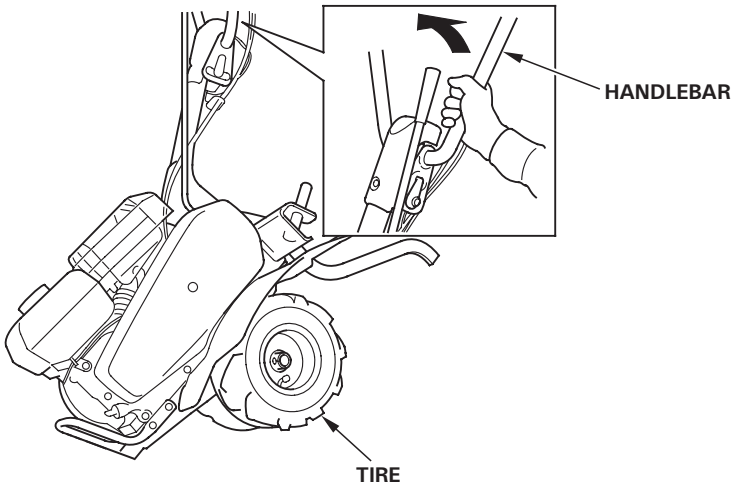
3. Pull up the handlebar while holding it to contact the front end of the tiller to the ground.



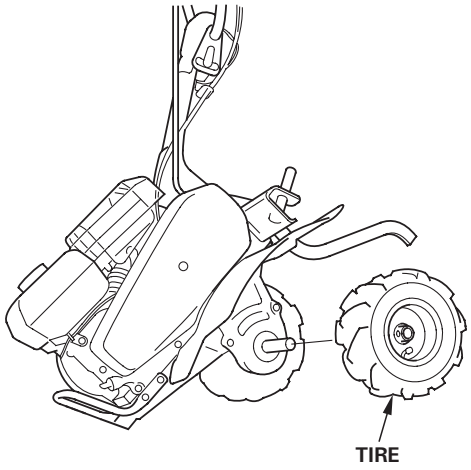
4. Grip the handlebar and push it in the direction of the arrow to lift the nearest tire off the ground. Keep this condition.

   Do not pull the cables while gripping the handlebar.

   Pay attention, when tilting the tiller. The gasoline may leak if the tilting angle is more than necessary.



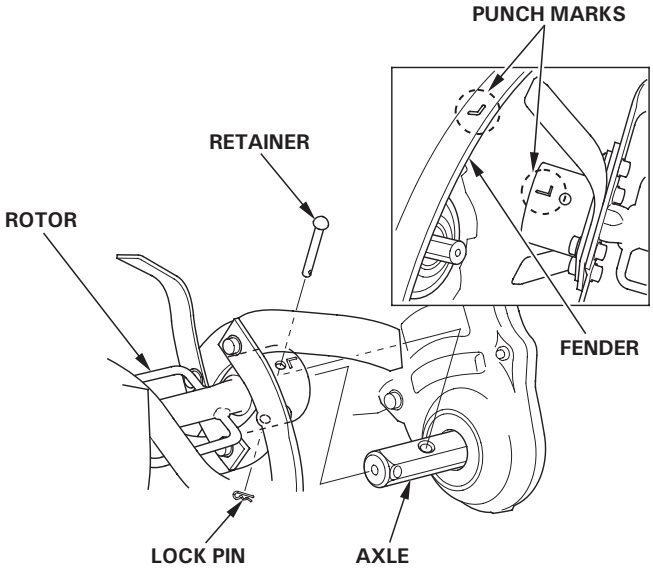
5. Remove the tire.



6. Align the punch mark (L or R) on the rotor with the punch mark (L or R) on the fender.

   Install the rotor to the axle.

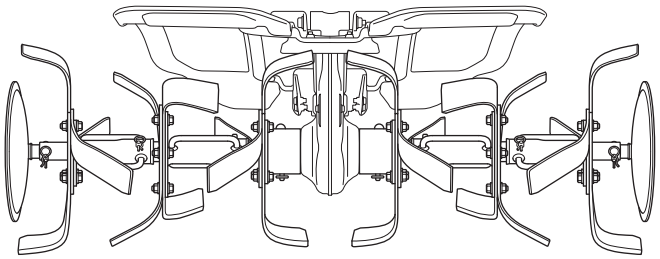
   Insert the retainer and set the lock pin.



7. The opposite side tire is similar.

   Store the removed tire and retainer to prevent losing them.

   After installing the deep-cultivating rotor, make sure that the tine locations on both sides are symmetrical.

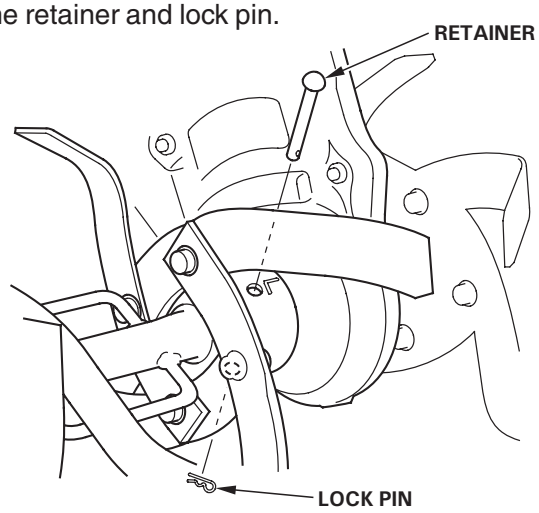


Change from Rotor to Tire

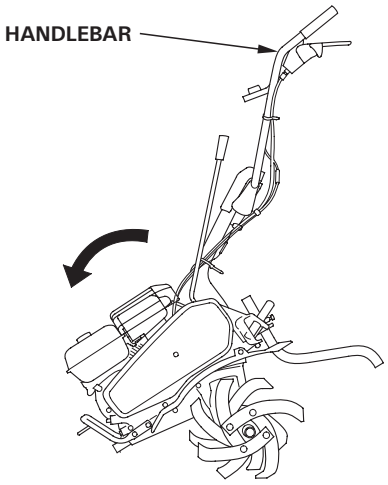
Wear heavy gloves to protect your hands.

When changing the rotor to the tire, park the tiller on level ground, stop the engine and disconnect the spark plug cap from the spark plug. Turn the fuel valve lever to the OFF position.

1. Remove the retainer and lock pin.



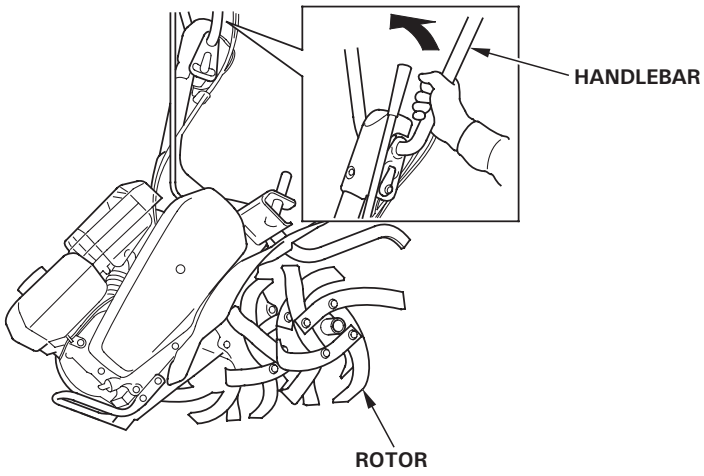
2. Pull up the handlebar while holding it to contact the front end of the tiller to the ground.



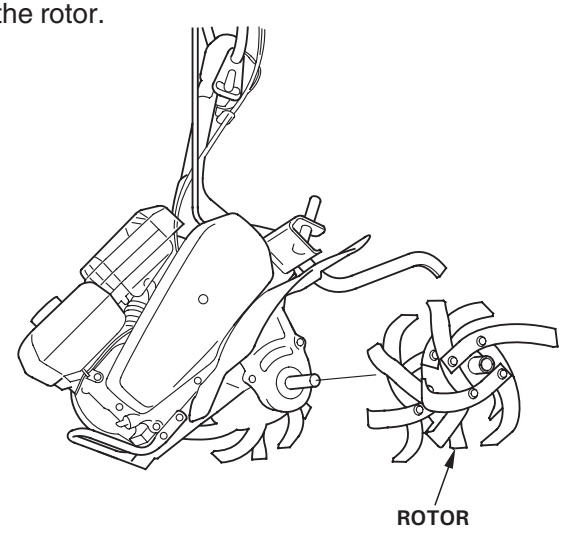
3. Grip the handlebar and push it in the direction of the arrow to lift the nearest rotor off the ground. Keep this condition.

   Do not pull the cables while gripping the handlebar.

   Pay attention, when tilting the tiller. The gasoline may leak if the tilting angle is more than necessary.



4. Remove the rotor.

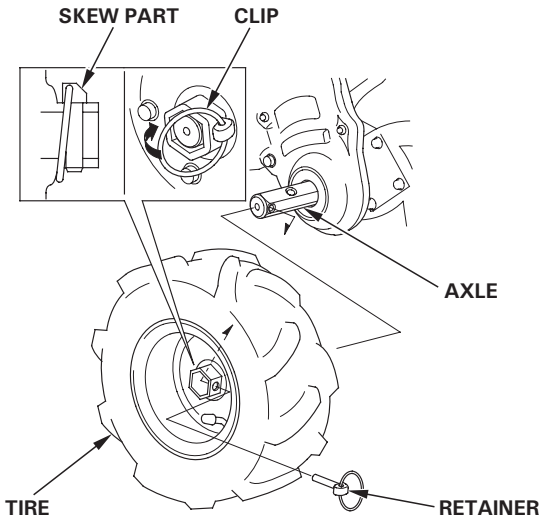


5. Install the tire to the axle.

   Insert the retainer and set the clip securely.

   Insert the clip until its tip contacts with the wheel.

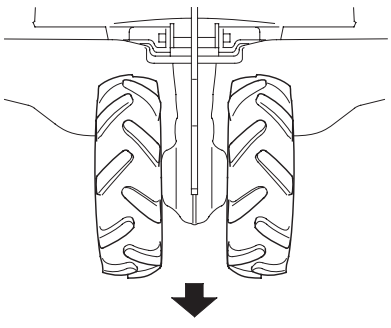
   Install the retainer with its skew part facing out.



6. The opposite side rotor is similar.

   Store the removed rotor, retainer and lock pin to prevent losing them.

   As a result of the correct tire installation, tread pattern is shown.



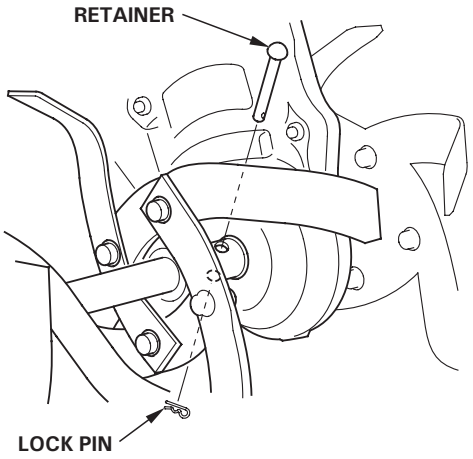
OPERATION

Rotor Removal

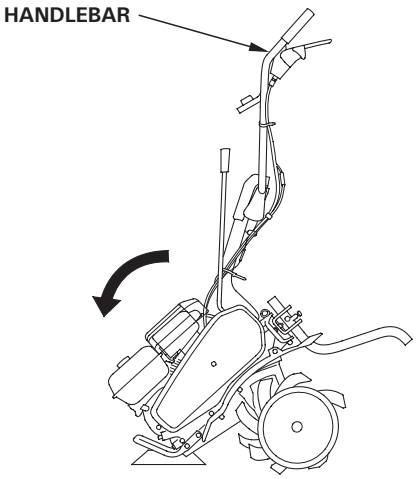
Wear heavy gloves to protect your hands.

When removing the rotor, park the tiller on level ground, stop the engine and disconnect the spark plug cap from the spark plug. Turn the fuel valve lever to the OFF position.

1. Remove the retainer and lock pin.



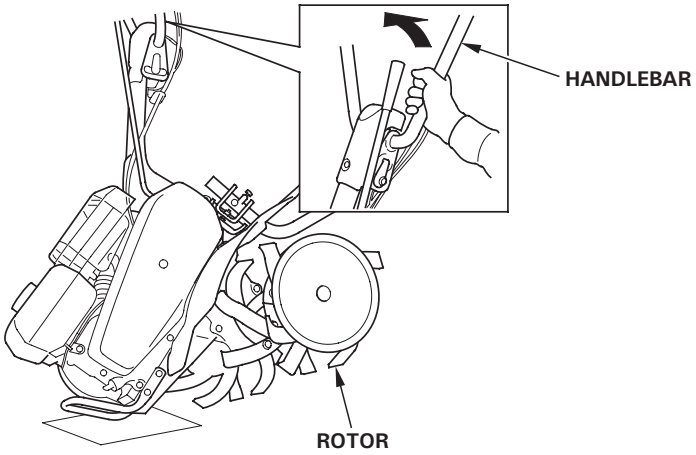
2. Pull up the handlebar while holding it to contact the front end of the tiller to the ground.



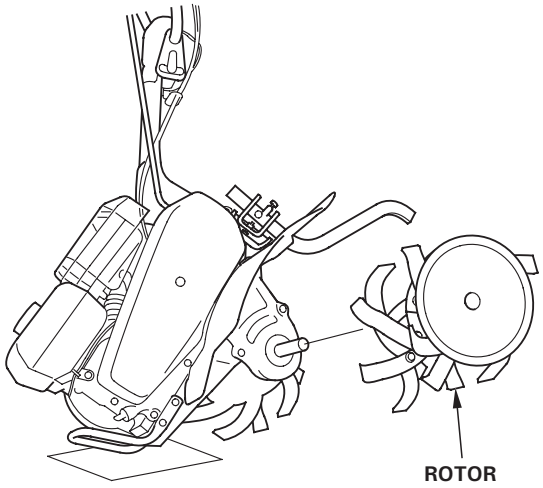
3. Grip the handlebar and push it in the direction of the arrow to lift the nearest rotor off the ground. Keep this condition.

   Do not pull the cables while gripping the handlebar.

   Pay attention, when tilting the tiller. The gasoline may leak if the tilting angle is more than necessary.



4. Remove the rotor.



   Store the removed rotor, retainer and lock pin to prevent losing them.

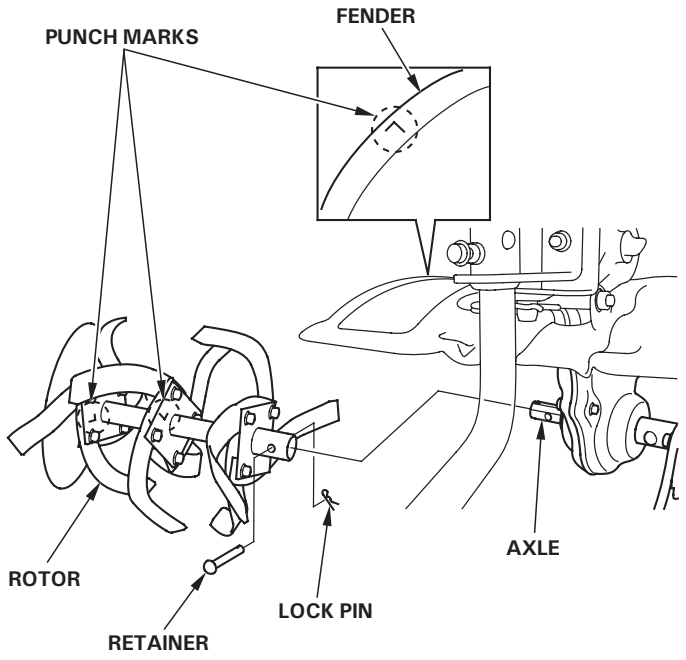
OPERATION

Rotor Installation

1. Align the punch mark (L or R) on the rotor with the punch mark (L or R) on the fender.

   Install the rotor to the axle.

   Insert the retainer and set the lock pin.



2. The opposite side rotor is similar.

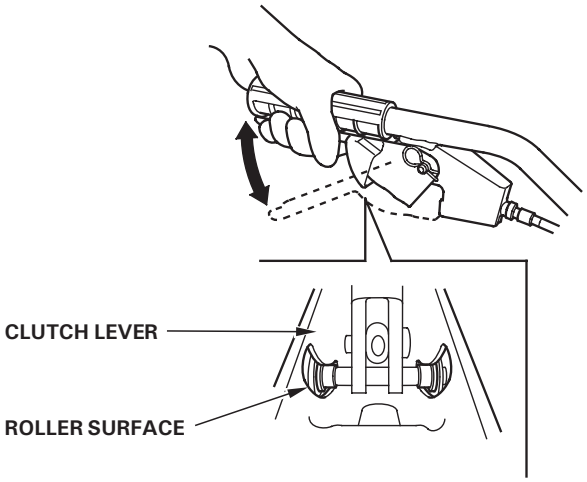
Clutch Lever Operation (Check and Cleaning)

- Check that the clutch lever operates smoothly.
- Check that there are no foreign objects (such as sand, soil, twigs, etc.) on the roller surface.

If the clutch lever roller does not move smoothly or if it is dirty, clean the clutch lever and roller (see page 38).

Do not apply any oil or cleaner liquid to the clutch lever roller.

Oil or cleaner liquid will attract dirt and foreign objects.

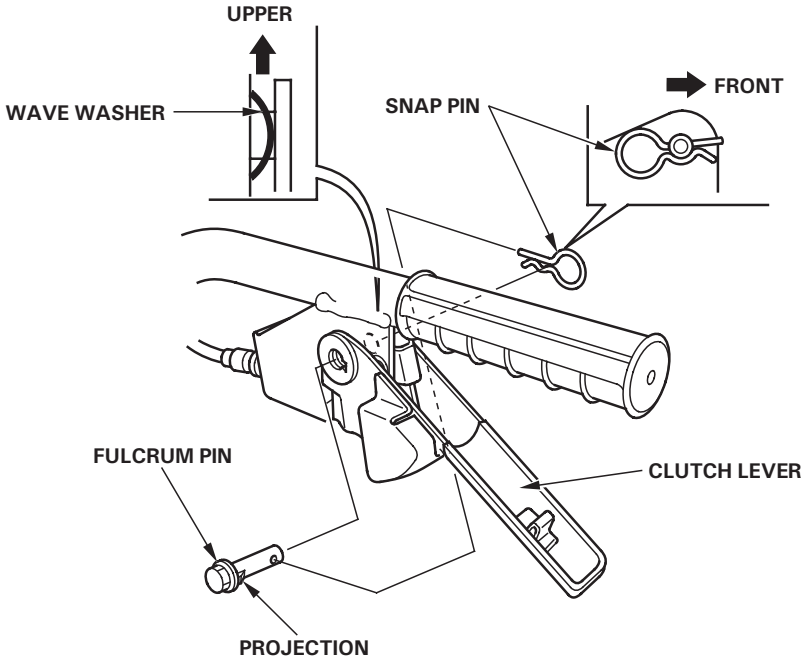


To clean the clutch lever roller, disassemble the clutch lever (see page 38).

Be aware of the wave washer coming off when you disassemble the clutch lever. The wave washer is located in between the clutch lever and the clutch lever holder stay.

OPERATION

1. Pull off the snap pin from the lever fulcrum pin.
2. By holding the clutch lever, pull out the lever fulcrum pin.
   Detach the clutch lever and the wave washer.
3. Remove any dirt or foreign objects.
   Wipe off and clean the roller surface of the clutch lever.
4. Set the inside and upper side direction of the wave washer as shown in the illustration.
   With the wave washer set in this position, attach the clutch lever and slide in the lever fulcrum pin.
5. Align the projection on the lever fulcrum pin to the groove on the side of the clutch lever hole and then set the snap pin in the direction shown in the illustration.



6. Check the clutch lever for smooth operation.
   If the clutch lever does not operate smoothly, ask your dealer or service shop for maintenance.

HANDLING TIPS

- Adjust the handlebar height to a comfortable position (waist height for normal tilling).

- The drag bar should always be used when tilling. It enables you to compensate for the hardness of the soil. The ideal height of the drag bar will depend on the type of soil being tilled and soil conditions at the time of tilling. In general, however, the drag bar should be adjusted so that the tiller is tilted slightly backward.

- If the machine jerks forward while tilling, press down on the handlebars. This will cause the drag bar to dig more deeply into the soil.

- If tines dig in but the machine will not move forward, move the handlebars from side to side.

- Stop the tines before crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.

- Stop the engine immediately if the tiller vibrates abnormally. Check the tiller for damage or loose parts, and repair or replace them before using the tiller again. Vibration is usually a sign of trouble.

- Raise the tiller immediately if it overturns. Stop the engine, look over carefully; inspect the engine for oil or fluid leaks, check the tightness of nuts and bolts, and operation of control parts such as the handlebar and control levers. If you decide that the tiller is capable of driving and safety, restart the engine. Consult your dealer, if the engine does not start again.

Break-in operation: 20 minutes

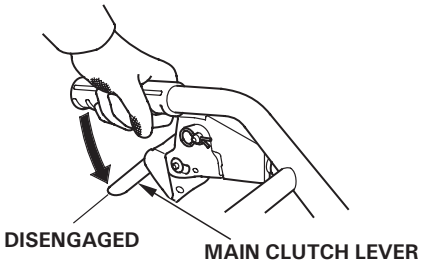
1. Before starting the engine, make sure that the gearshift lever is set in neutral position and the clutch lever is released.
2. Move the throttle lever to SLOW position and run the engine for 10 minutes, then move to FAST position and run for 10 minutes more.

OPERATION

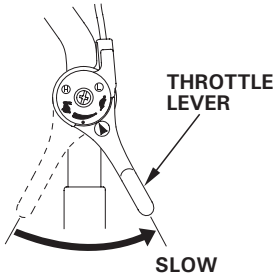
STOPPING THE ENGINE

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

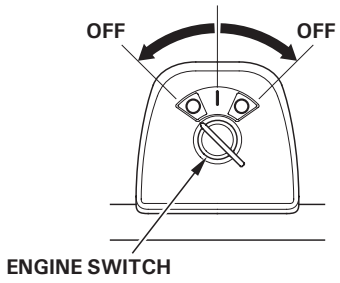
1. Release the main clutch lever to the DISENGAGED position, and move the gearshift lever to the neutral position.



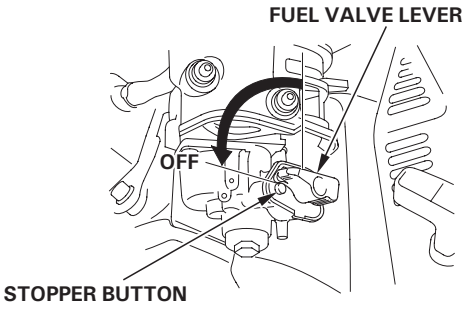
2. Move the throttle lever to the slowest position.



3. Turn the engine switch to the OFF position.



4. Turn the fuel valve lever to the OFF position so that it touches the stopper button.



SERVICING YOUR TILLER

THE IMPORTANCE OF MAINTENANCE

Good maintenance is essential for safe, economical, and trouble-free operation. It will also help reduce air pollution.

To help you properly care for your tiller, 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 tiller under unusual conditions, such as sustained high-load or high-temperature operation or use in dusty conditions consult your servicing dealer for recommendations applicable to your individual needs and use.

⚠ 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.

Remember that your servicing dealer knows your tiller best and is fully equipped to maintain and repair it.

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

SERVICING YOUR TILLER

MAINTENANCE SAFETY

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

⚠ WARNING

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

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

Safety precautions

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

MAINTENANCE SCHEDULE

REGULAR SERVICE PERIOD (1) Perform at every indicated month or operating hour interval, whichever comes first. / ITEM		Before season	Each use	First month or 20 hrs.	Every 3 months or 50 hrs.	Every 6 months or 100 hrs.	Every year or 300 hrs.
Engine oil	Check level		○				
	Change	○		○		○	
Air filter	Check		○				
	Clean				○ (2)		
	Replace						○
Tiller outside	Check		○				
Throttle lever function	Check		○				
Bolts and nuts tightness	Check		○				
Wiring and cables	Check		○				
Engine operation	Check		○				
Recoil starter cover	Check-clean		○				
Clutch lever function	Check-clean		○				
	Grease	○ (3) (6)					
Clutch cable	Check-adjust			○ (3)		○ (3)	
Drive belt	Check-adjust			○ (3) (5)		○ (3) (5)	
Transmission oil	Check	○		○			○
Sediment cup	Clean					○	
Grease application	Grease-lubricate	○ (3)					
Idle speed	Check-adjust						○ (3)
Spark plug	Check-adjust					○	
	Replace						○
Throttle cable	Check-adjust						○
Valve clearance	Check-adjust						○ (3)
Combustion chamber	Clean	After every 500 hrs. (3) (4)					
Fuel tank and filter	Clean	○ (3)				○ (3)	
Fuel tube	Check	Every 2 years (Replace if necessary) (3)					

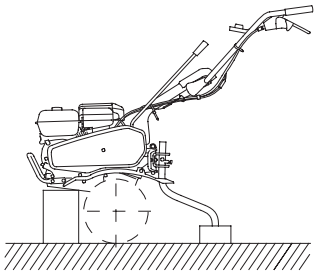
(1) For commercial use, log hours of operation to determine proper maintenance intervals.
(2) Service every 10 operating hours or every day when used in dusty areas.
(3) These items should be serviced by your Honda servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to the Honda shop manual for service procedures.
(4) Service at the indicated service interval.
(5) Check that there is no crack and abnormal wear-out in the belt, and replace if it is abnormal.
(6) Apply grease to the pin part of the clutch lever fulcrum for prevention of rust at a long time storage. (more than 30 days)

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

SERVICING YOUR TILLER

REFUELING

Park on level ground, stop the engine, put proper mounting under the front frame and put wood block under the drag bar as shown, to keep the tiller horizontal.



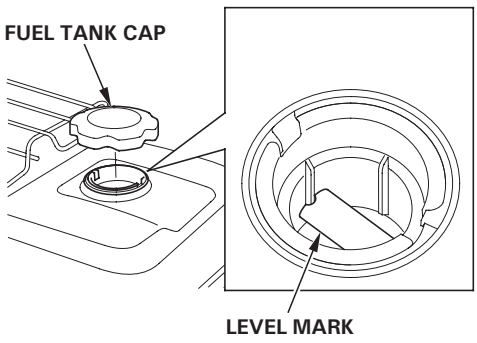
Remove the fuel tank cap and check the fuel level. Refill the tank if the fuel level is low. Do not fill above the fuel level mark.

⚠ 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.
- Refuel only outdoors.
- Wipe up spills immediately.



Refuel in a well-ventilated area before starting the engine. If the engine has been running, allow it to cool. Refuel carefully to avoid spilling fuel. Do not fill the fuel tank above the fuel level mark. After refueling, tighten the fuel tank cap securely.

Never refuel the engine 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.

NOTICE

Fuel can damage paint and plastic. Be careful not to spill fuel when filling your fuel tank. Damage caused by spilled fuel is not covered under warranty.

FUEL RECOMMENDATIONS

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

You may use regular unleaded gasoline containing no more than 10% ethanol (E10) or 5% methanol by volume. In addition, methanol must contain co-solvents and corrosion inhibitors.

Use of fuels with content of ethanol or methanol greater than shown above may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of the fuel system.

Engine damage or performance problems that result from using a fuel with percentages of ethanol or methanol greater than shown above are not covered under warranty.

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

If your equipment will be used on an infrequent or intermittent basis, please refer to the fuel section of the STORAGE chapter (see page 63) for additional information regarding fuel deterioration.

SERVICING YOUR TILLER

ENGINE OIL LEVEL CHECK

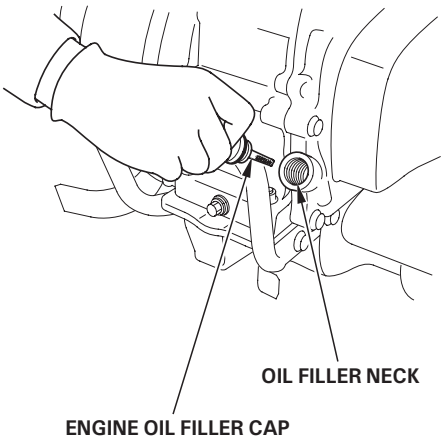
Check the engine oil level with the tiller on a level surface (see below) and the engine stopped.

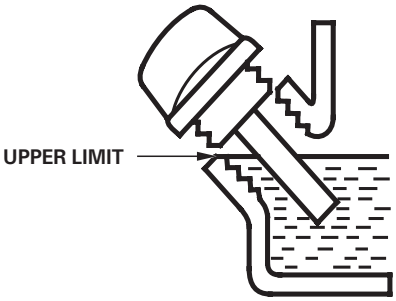
1. Remove the oil filler cap.

2. Check the oil level.

3. If the oil level is lower than the upper limit, fill with the recommended oil to the upper limit (see below).

4. Reinstall the engine oil filler cap securely.





ENGINE OIL CHANGE

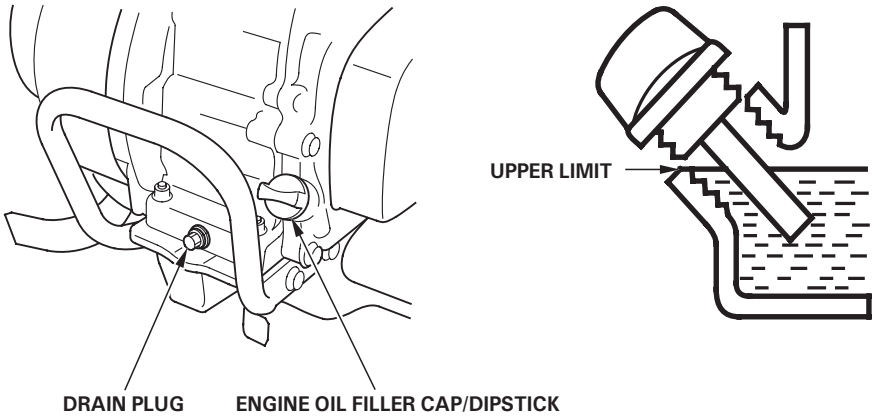
Drain the oil while the engine is warm to assure rapid and complete draining.

1. Pull up the handlebar while holding it to contact the front end of the tiller to the ground.
2. Place a suitable container below the engine to catch the used oil, and then remove the engine oil filler cap/dipstick, drain plug, and sealing washer.
3. Allow the used oil to drain completely, and then reinstall the drain plug and a new sealing washer. Tighten the plug securely.

NOTICE

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

4. With the tiller in a level position (see page 46), fill with the recommended oil to the outer edge of the oil filler hole (see below)



NOTICE

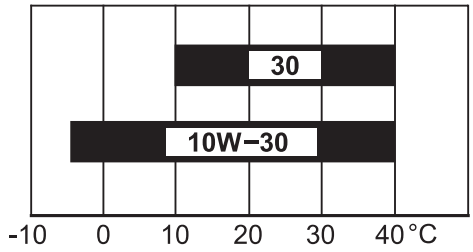
Running the engine with a low oil level is misuse and can cause engine damage. This type of damage is not covered by the warranty.

5. Screw in the engine oil filler cap/dipstick securely.

ENGINE OIL RECOMMENDATIONS

Oil is a major factor affecting performance and service life. Use a 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.



AMBIENT TEMPERATURE

The SAE oil viscosity and service category are in the API label on the oil container. Honda recommends that you use API SERVICE category SE or later (or equivalent) oil.

NOTICE

Running the engine with wrong type/grade of Oil is misuse and can cause engine damage. This type of damage is not covered by the warranty.

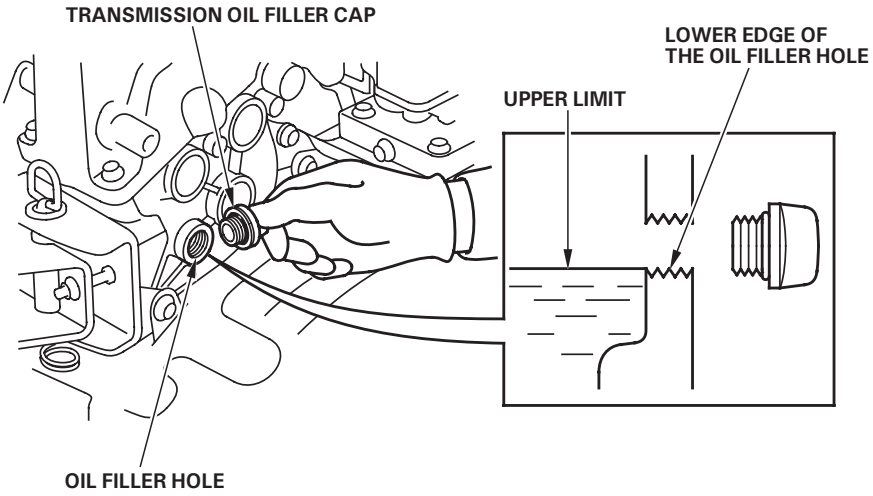
TRANSMISSION OIL LEVEL CHECK

Check the transmission oil level with the tiller on a level surface (see below) and the engine stopped.

1. Remove the transmission oil filler cap. The oil should be level with the lower edge of the oil filler hole.

2. If the oil level is low, remove the transmission oil filler cap and add the same type of oil recommended for the engine (see page 48).

3. Reinstall the oil filler cap securely.



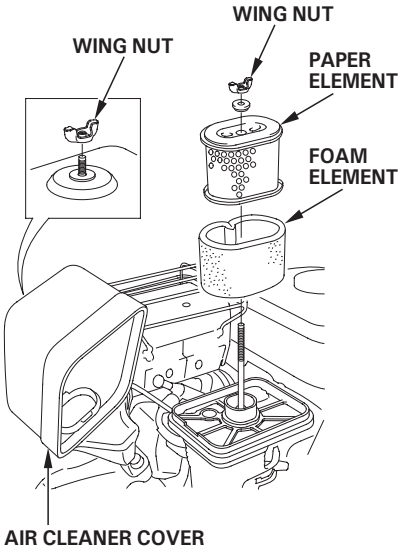
SERVICING YOUR TILLER

AIR FILTER INSPECTION

1. Unscrew the wing nut, and remove the air cleaner cover. Check the air filter elements to be sure they are clean and in good condition.

2. If the air filter elements are dirty, clean them as described on page 45 . Replace the air filter elements if they are damaged.

3. Reinstall the air cleaner cover, and tighten the wing nut securely.



NOTICE

Operating the engine without an air filter, or with a damaged air filter, will allow dirt to enter the engine, causing rapid engine wear. This type of damage is not covered by the warranty.

AIR FILTER CLEANING

A dirty air filter will restrict air flow to the carburetor, reducing engine performance. If you operate the tiller in very dusty areas, clean the air filter more frequently than specified in the *Maintenance Schedule.*

1. Remove the wing nut and air cleaner cover.
2. Remove the wing nut and grommet, remove the air filter elements and separate them.
3. Carefully check both filter elements for holes or tears and replace if necessary.

4. Clean both filter elements if they are to be reused.

   Foam element: Clean in warm soapy water, rinse and allow to dry thoroughly, or clean with a high flash point solvent and allow to dry.

   Dip the element in clean engine oil and squeeze out all the excess oil.

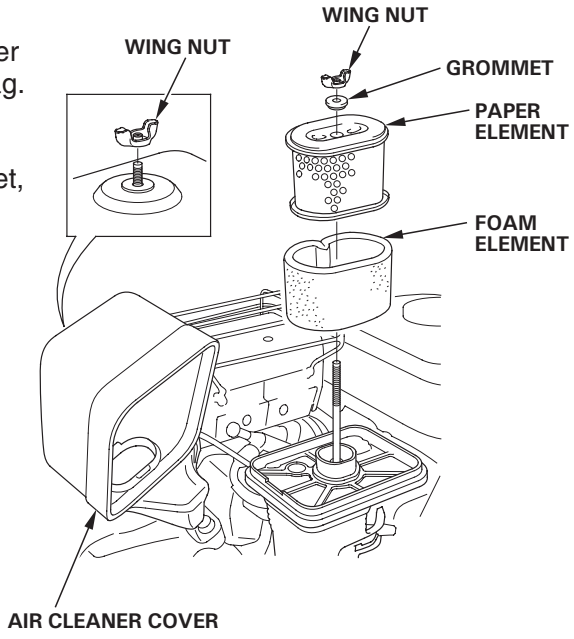
   Excess oil will restrict air flow through the foam element and may cause the exhaust to smoke when the engine starts.

   Paper element: Tap the filter element several times to remove dirt. Never try to brush off dirt; brushing will force dirt into the fibers.

5. Install the foam element onto the paper element.

6. Wipe dirt from the inside of the air cleaner cover using a moist rag.

7. Reinstall the filter elements and grommet, and tighten the wing nut. Install the air cleaner cover, and tighten the wing nut.



SERVICING YOUR TILLER

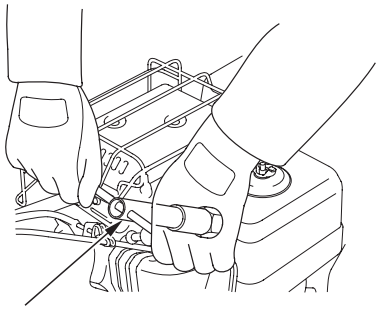
SPARK PLUG SERVICE

Recommended spark plug: BPR5ES (NGK) , W16EPR-U (DENSO)

NOTICE

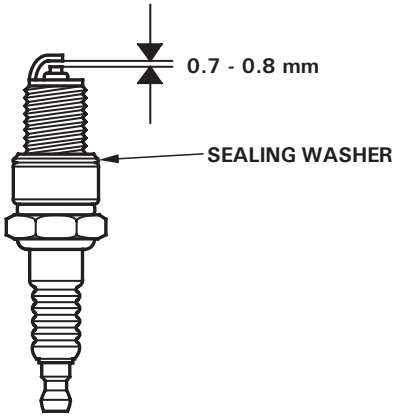
An incorrect spark plug can cause engine damage.

1. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.
2. Remove the spark plug with the spark plug wrench.



3. Inspect the spark plug. Replace it if the electrodes are worn, or if the insulator is cracked or chipped.
4. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode.

   The gap should be:
   0.7 - 0.8 mm



5. Install the spark plug carefully, by hand, to avoid cross-threading.
6. After the spark plug seats, tighten with the spark plug wrench to

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

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

NOTICE

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

7. Attach the spark plug cap.

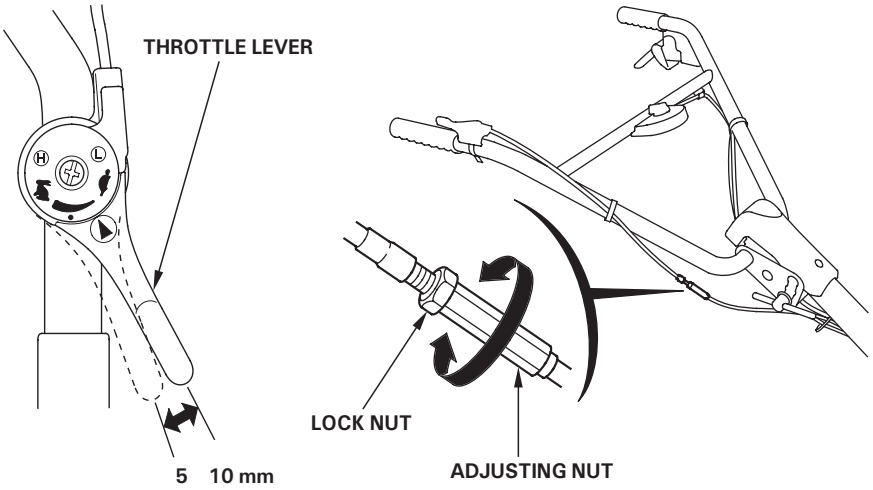
SERVICING YOUR TILLER

THROTTLE CABLE ADJUSTMENT

Measure the free play at the lever tip.

Free play: 5 - 10 mm

If the free play is incorrect, loosen the lock nut and turn the adjusting nut in or out as required. After adjustment, tighten the lock nut.



SEDIMENT CUP CLEANING

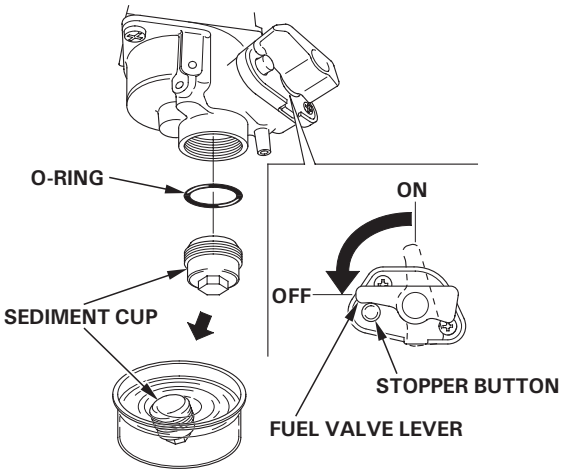
1. Turn the engine switch to the OFF position.
2. Turn the fuel valve lever to the OFF position so that it touches the stopper button.
3. Remove the sediment cup with a 10 mm wrench.
4. Empty the sediment cup, and wash it in non-flammable solvent.
5. Inspect and reinstall the O-ring. Replace the O-ring if it is damaged.
6. Install the sediment cup, and tighten it securely.
7. Turn the fuel valve to the ON position, and check for leaks.

⚠ 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.
- Refuel only outdoors.
- Wipe up spills immediately.



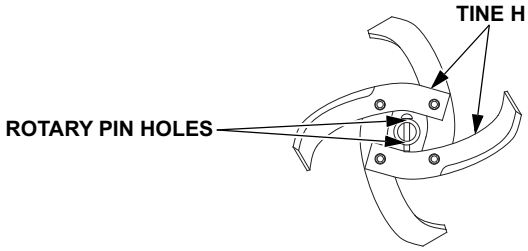
SERVICING YOUR TILLER

TINE INSTALLATION

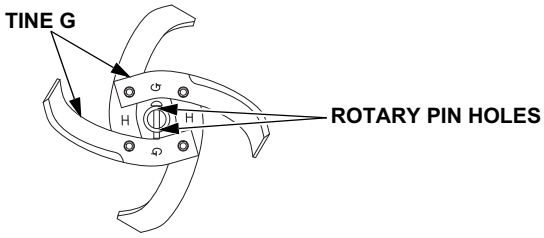
Install the tines properly.
Incorrect arrangement of the tines or installing the tines in the wrong direction will cause vibration and hinder proper tilling.

Two types of tines (G and H) are provided. Tine G has engraved “G” mark on its face and tine H has “H” mark.

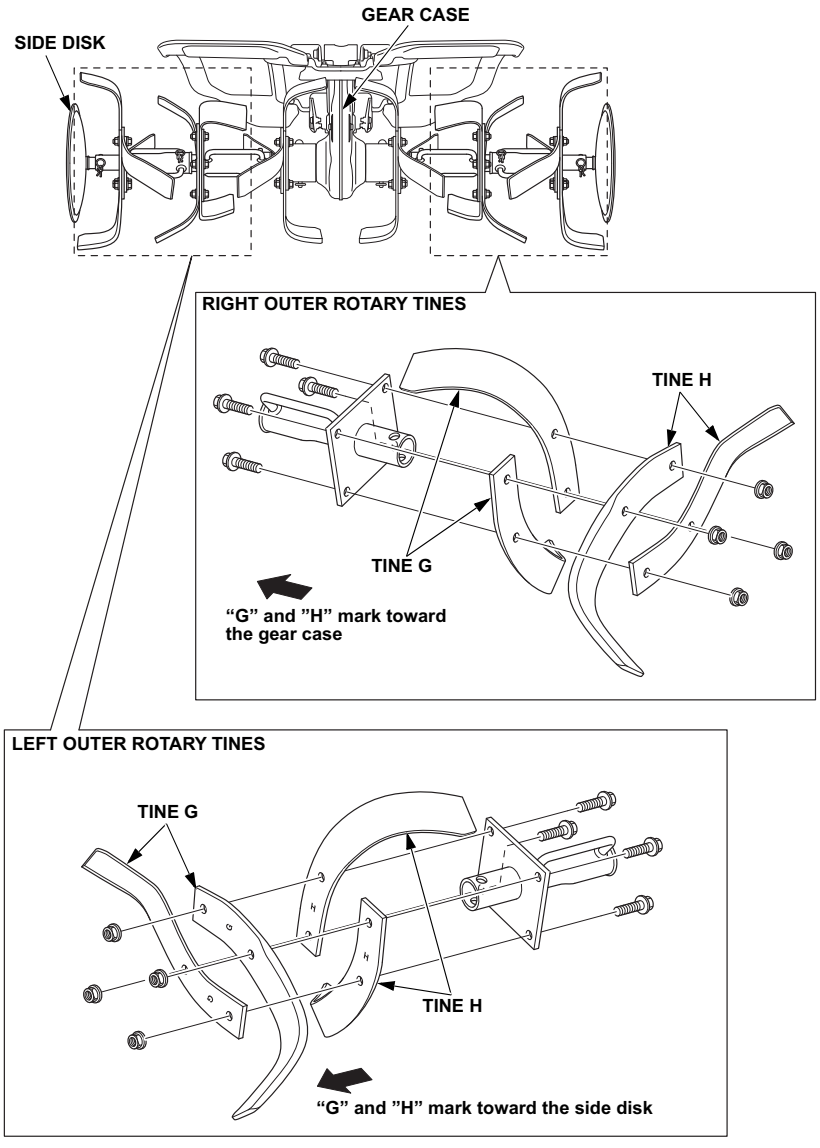
- **Right side:**
  Install the right side outer rotary tines and inner rotary tines with the “G” and “H” mark facing toward the gear case.
  (The “G” and “H” mark will be invisible from outside.)
  The tine “H” mark should align with the rotary pin holes.



- **Left side:**
  Install the left side outer rotary tines and inner rotary tines with the “G” and “H” mark facing toward the side disk.
  The tine “G” mark should align with the rotary pin holes.

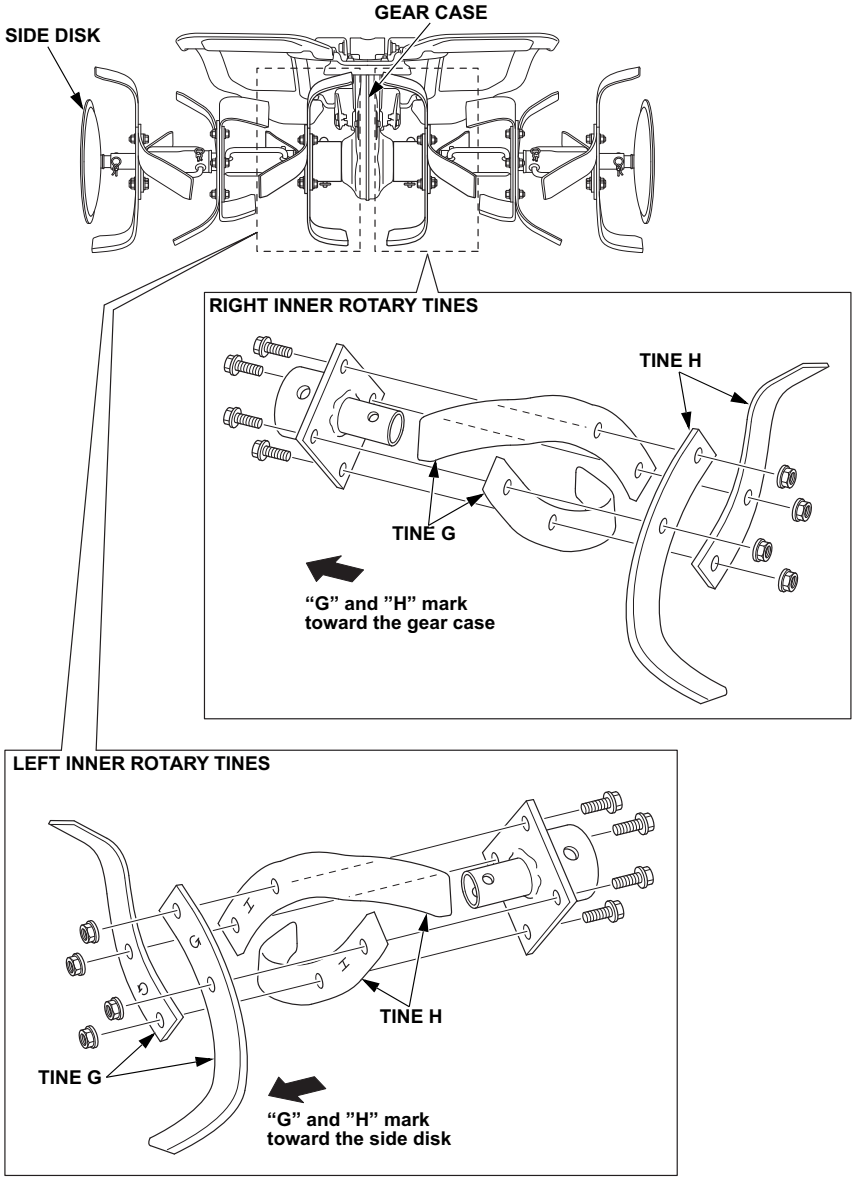


OUTER ROTARY TINE



SERVICING YOUR TILLER

INNER ROTARY TINES



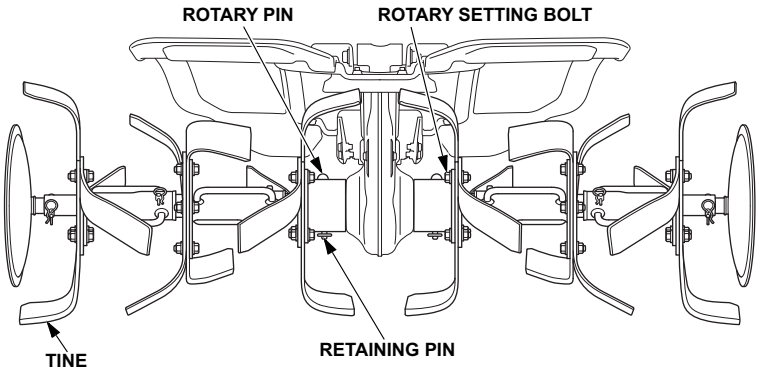
TINES AND FASTENERS CHECK

Use Honda Genuine replacement tines or their equivalent.
Wear heavy gloves to protect your hands.

1. Check for damage, bent, or loose tines. If abnormality is found, tighten or replace the damaged part (see page 56).

2. Check the tine setting bolts and nuts for looseness, tighten if necessary.

3. Check for damaged or missing retainers and lock pins, and replace with new ones if necessary.

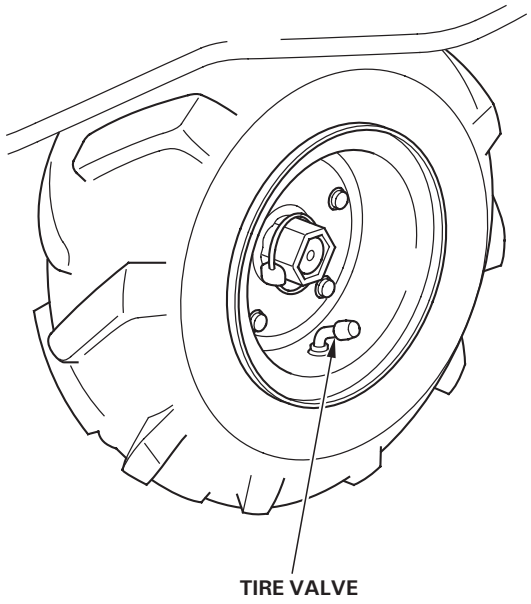


SERVICING YOUR TILLER

TIRE PRESSURE CHECK

Check the tire pressure. Improper inflation can reduce both tire life and load carrying capacity. If tire pressure is inappropriate, adjust the pressure as below.

Tire size: 3.50 - 5
Tire pressure: 150 - 180 kpa (1.53 - 1.84 kgf/cm^2)



RECOIL STARTER COVER CHECK AND CLEANING

Check

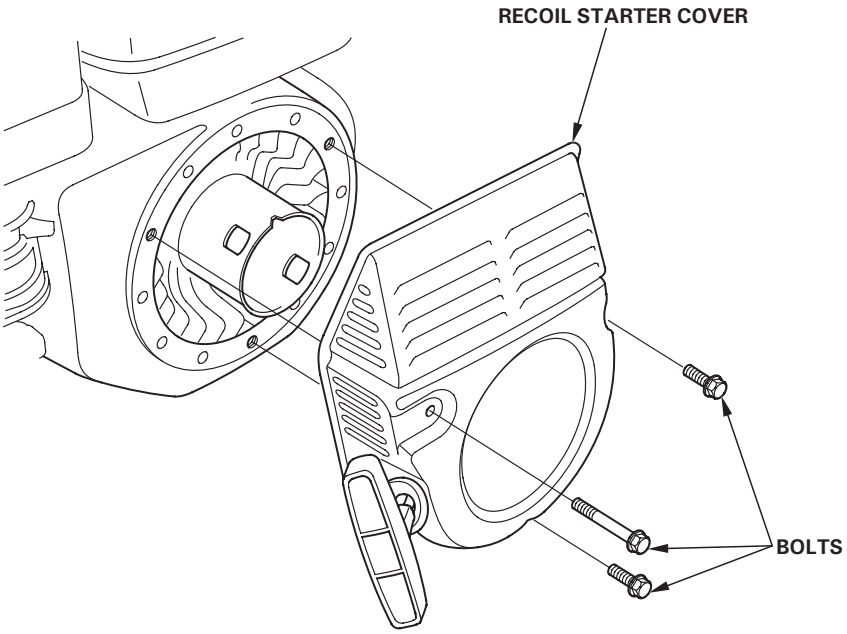
Make sure that grass, clay, mud water or other similar material is not inside the recoil starter cover through the hole located on the side of the cover. Clean if necessary.

Cleaning

1. Remove the recoil starter cover by removing the three bolts.

2. Remove mud, grass tips, dirt and other foreign matter from inside the cover.

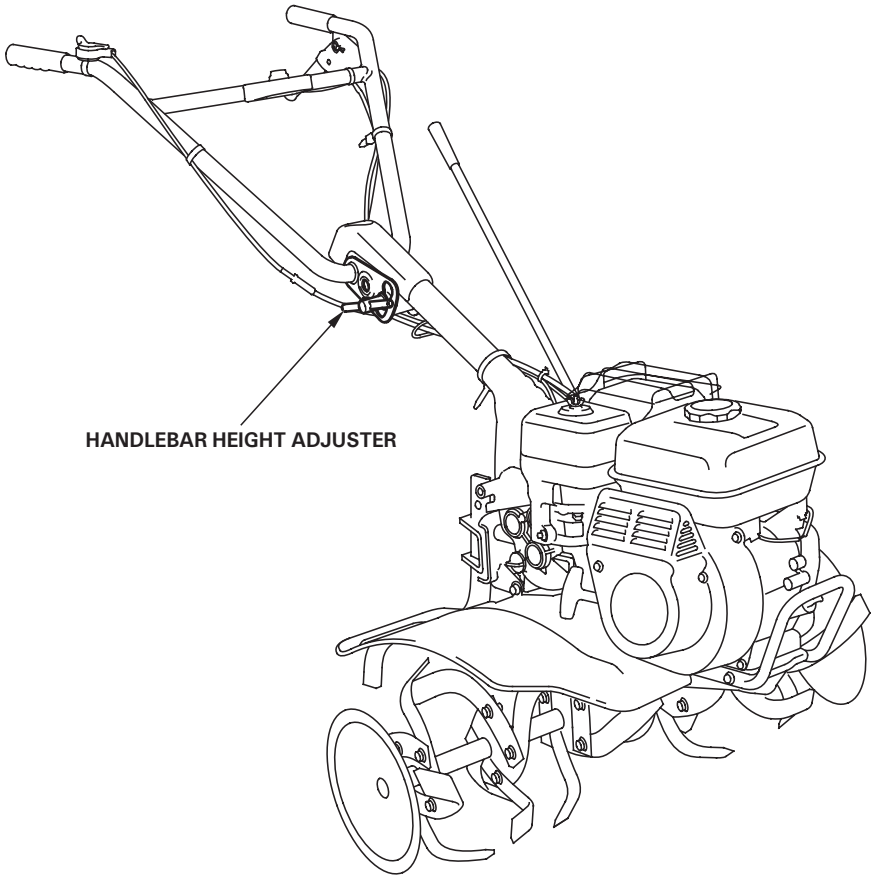
3. After cleaning, replace the cover and tighten the three bolts securely.



SERVICING YOUR TILLER

HANDLEBAR HEIGHT ADJUSTER TIGHTNESS CHECK

Check for looseness in fastened part.
Securely tighten the handlebar height adjuster.



STORAGE

STORAGE PREPARATION

Proper storage preparation is essential for keeping your tiller trouble-free and looking good. The following steps will help to keep rust and corrosion from impairing your tiller's function and appearance, and will make the engine easier to start when you use the tiller again.

Cleaning

1. Wash the tiller, including the underside.

Engine

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

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

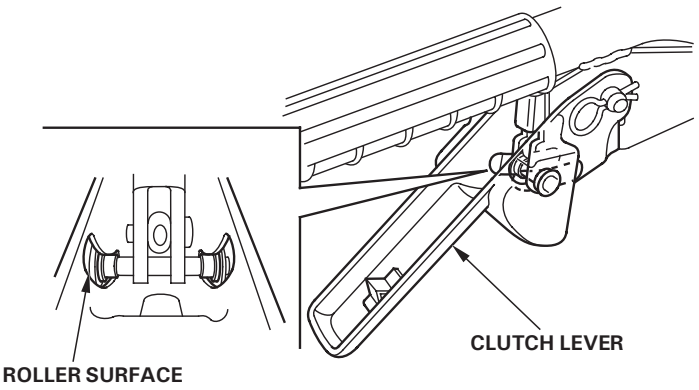
Tiller

If using a garden hose or pressure washing equipment to clean the tiller, be careful to avoid getting water on the belts.

NOTICE

Spraying water on hot tine shaft bearings can cause them to be damaged from cooling too quickly.

2. After washing the tiller, wipe dry all accessible surfaces.
3. Start the engine outdoors, and let it run until it reaches normal operating temperature to evaporate any water remaining on the engine.
4. While the engine is running, operate the clutch lever to expel water from the pulleys, belts, and other moving items.
5. Stop the engine and allow it to cool.
6. After the tiller is clean and dry, touch up any damaged paint and coat other areas with a light film oil. Lubricate the throttle cable core with a silicone spray lubricant.
7. Apply oil or grease to the pivot points of the clutch lever.



Do not place the tiller with the handlebars on the ground. It will cause the oil to enter the cylinder or fuel will spill over.

Fuel

NOTICE

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

STORAGE

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 tiller 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 warranty does not cover fuel system damage or engine performance problems resulting from neglected storage preparation.

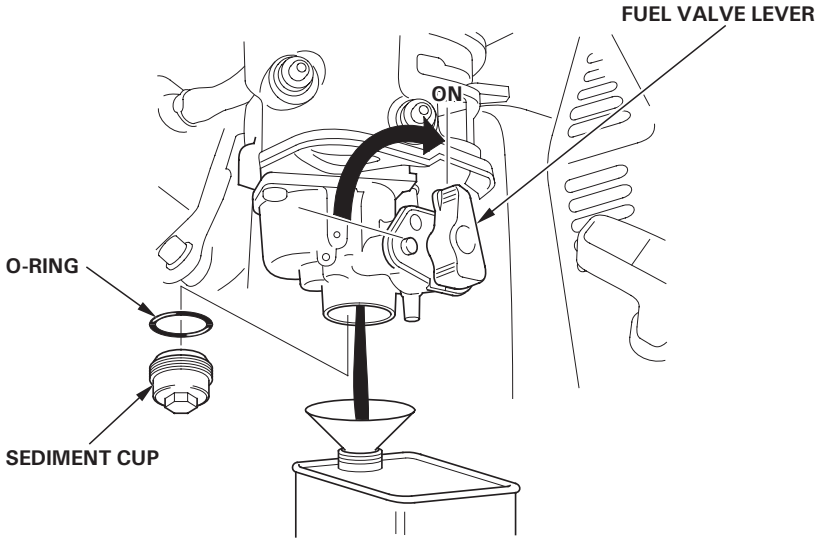
STORAGE

Draining the Fuel Tank and Carburetor

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

   To drain the gasoline of the carburetor only, place a suitable container under the carburetor and follow procedures “5.” and “6.”.

2. Remove the sediment cup and O-ring.



⚠ WARNING

Gasoline is highly flammable and explosive.

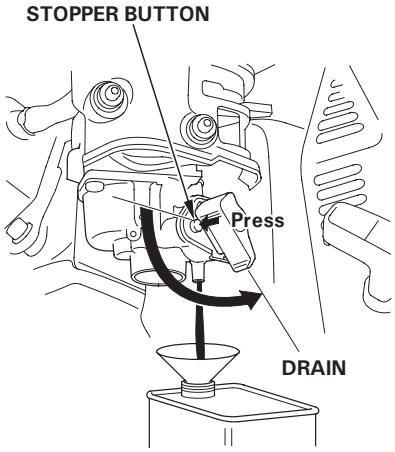
You can be burned or seriously injured.

Never use gasoline to clean engine parts. Use a nonflammable solvent.

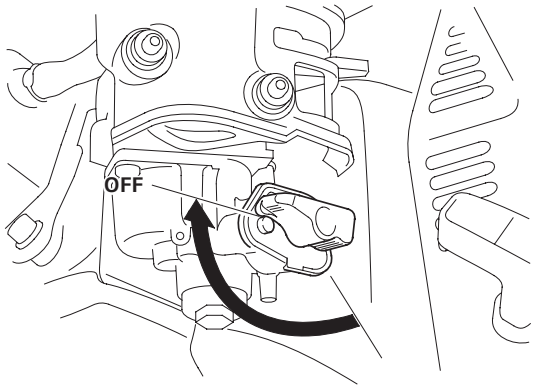
3. Turn the fuel valve lever to the ON position. Drain the gasoline into a suitable container.

4. Allow the gasoline to drain completely, and turn the fuel valve lever to the OFF position.

5. Turn the fuel valve lever to the DRAIN position while keeping the stopper button pressed. Drain the gasoline into a suitable container.



6. Allow the gasoline to drain completely. Turn the fuel valve lever back to the OFF position so that it touches the stopper button.



7. Reinstall the O-ring and sediment cup.

STORAGE

Engine Oil

1. Change the engine oil (see page 47).

2. Remove the spark plug (see page 52).

3. Pour a tablespoon (5 - 10 cc) of clean engine oil into the cylinder.

4. Gently pull the starter grip several times to distribute the oil in the cylinder.

5. Reinstall the spark plug and spark plug cap.

6. Pull the starter grip (see page 22) slowly until you feel resistance, then return the starter grip gently. This closes the valves so moisture cannot enter.

STORAGE

STORAGE PRECAUTIONS

If your tiller 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 tiller on a level surface. Tilting can cause fuel or oil leakage.

When the engine and exhaust system is cool, cover the tiller 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 tiller, promoting rust and corrosion.

REMOVAL FROM STORAGE

Check your tiller as described in the *BEFORE OPERATION* chapter of this manual (see page17).

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 start-up. This is normal.

TRANSPORTING

BEFORE LOADING

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

Always turn the engine switch to the OFF position. Make sure to turn the fuel valve OFF.

LOADING AND UNLOADING

If a suitable loading ramp is not available, two people should lift the tiller on and off the transport vehicle while holding the tiller level.

Position the tiller so it sits flat on the bed of the transport vehicle. Tie the tiller down with rope or straps. Keep the tie-down rope or straps away from the controls, adjustment levers, cables, and the carburetor.

TAKING CARE OF UNEXPECTED PROBLEMS

ENGINE PROBLEMS

Engine Will Not Start	Possible Cause	Correction
1. Check control positions.	Fuel valve OFF.	Turn valve ON.
	Choke OPEN.	Move to CLOSED unless engine is warm.
	Engine switch OFF.	Turn engine switch to ON.
2. Check fuel.	Out of fuel.	Refuel (p. 44).
	Bad fuel; tiller stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p. 66). Refuel with fresh gasoline (p. 44).
3. Remove and inspect spark plug.	Spark plug faulty, fouled, or improperly gapped.	Clean gap or replace spark plug (p. 52).
	Spark plug wet with fuel (flooded engine).	Dry and reinstall spark plug. Start engine with throttle lever in FAST position and the choke open.
4. Take tiller to an authorized Honda servicing dealer, or refer to the shop manual.	Fuel filter clogged, carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

TAKING CARE OF UNEXPECTED PROBLEMS

Engine Lacks Power	Possible Cause	Correction
1. Check air filter.	Air filter clogged.	Clean or replace air filter (p. 50)
2. Check fuel.	Bad fuel; tiller stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor (p. 66). Refuel with fresh gasoline (p. 44).
3. Take tiller to an authorized Honda servicing dealer, or refer to the shop manual.	Fuel filter clogged, carburetor malfunction, ignition malfunction, valves stuck, etc.	Replace or repair faulty components as necessary.

TAKING CARE OF UNEXPECTED PROBLEMS

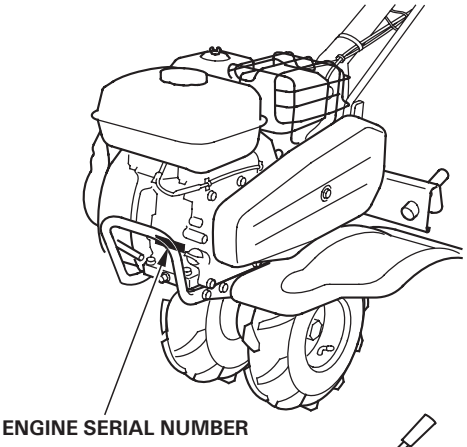
TILLING PROBLEMS

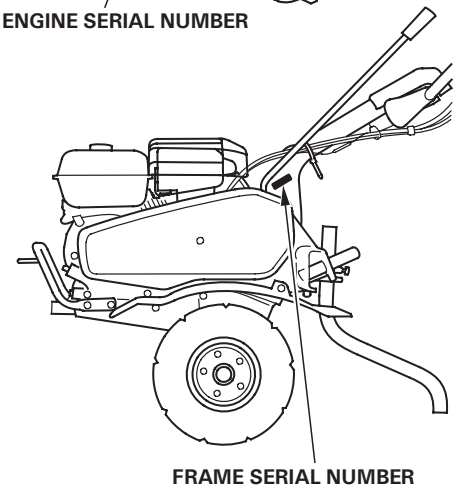
Poor Tilling Quality	Possible Cause	Correction
1. Check that the throttle lever is in the SLOW position.	Engine speed is too slow for soil conditions.	Move the throttle to the FAST position (p. 14).
2. Reduce forward speed.	Tiller is moving too fast for soil conditions.	Shift to slower speed (p. 21).
3. Check drag bar depth setting.	Drag bar adjustment set to high.	Lower drag bar adjustment (p. 26).
4. Check tines.	Tines dull, worn, or damaged.	Replace tines if necessary (p. 56).
	Wrong tines installed.	Install correct tines (p. 56).
	Tines installed incorrectly.	Install tines correctly (p. 56).

TECHNICAL & CONSUMER INFORMATION

TECHNICAL INFORMATION

Serial Number Locations





Record the engine and frame serial numbers and date of purchase in the spaces below. You will need these serial numbers when ordering parts, and when making technical or warranty inquires.

Engine serial number: _____

Frame serial number: _____

Date of purchase: _____

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 your tiller at altitudes above 1,500 meters, have your servicing dealer perform this carburetor modification. This engine, when operated at high altitude with the carburetor modifications for high altitude use, will meet each emission standard throughout its useful life.

Even with carburetor modification, engine horsepower will decrease about 3.5% for each 300-meter increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

NOTICE

When the carburetor has been modified for high altitude operation, the air-fuel mixture will be too lean for low altitude use. Operation at altitudes below 1,500 meters with a modified carburetor may cause the engine to overheat and result in serious engine damage. For use at low altitudes, have your servicing dealer return the carburetor to original factory specification.

TECHNICAL & CONSUMER INFORMATION

Emission Control System Information

Source of Emissions

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

Honda utilizes appropriate air/fuel ratios and other emissions control systems to reduce the emissions of carbon monoxide, oxides of nitrogen and hydrocarbons.

Additionally, Honda fuel systems utilize components and control technologies to reduce evaporative emissions.

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 intake, fuel or exhaust system.
- 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 authorized Honda 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 to applicable emission regulations. We recommend the use of Honda Genuine 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 43 . 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.

TECHNICAL & CONSUMER INFORMATION

Specifications

Model	FJ500
Description code	FAAC
Type	FJ500-RD
Dry mass [weight]	61 kg
Length	1,340 mm * 1
Width	925 mm *1
Height	1,080 mm
Engine model	GX160
Engine type	4-stroke, Single cylinder, OHV, forced air cooled
Displacement	163 cm^3
Bore x Stroke	68.0 x 45.0 mm
Ignition system	Transistor magneto
Spark plug	BPR5ES (NGK), W16EPR-U (DENSO)
Oil capacity	0.58 L
Fuel tank capacity	2.4 L
Clutch	Belt tension
Transmission oil capacity	0.95 L

* 1: When the handlebar height adjustment point is in the second position from the top.

Specifications may vary according to the types, and are subject to change without notice.

Tune-up Specifications

ITEM	SPECIFICATION	MAINTENANCE
Spark plug gap	0.7 - 0.8 mm	Refer to page: 52
Valve clearance	IN: 0.15 ± 0.02 mm cold EX: 0.20 ± 0.02 mm cold	See your authorized Honda dealer
Other specifications	No other adjustments needed.	

TECHNICAL & CONSUMER INFORMATION

CONSUMER INFORMATION

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.

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

- Model and serial numbers (see page 74).
- Name of the dealer who sold the tiller to you
- Name and address of the dealer who services your tiller
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem

QUICK REFERENCE INFORMATION

Fuel	Type	Unleaded gasoline with a research octane number of 91 or higher (a pump octane rating of 86 or higher) (page 45)
Engine Oil	Type	SAE 10W-30, API SE or later (or equivalent), for general use (page 48)
Spark Plug	Type Gap	NGK: BPR5ES DENSO: W16EPR-U 0.7 - 0.8 mm
Maintenance	Before each use	Check the following: Engine oil level Air filter Tiller outside Throttle lever function Bolt and nut torque Cables and wires Engine operation Recoil starter cover Clutch lever operation
	First 20 hours	Change engine oil Check transmission oil
	Subsequent	Refer to maintenance schedule (page 43)