

HONDA

Power

Equipment

Owner's Manual
Riding Mower

H1011S • H1011R • H1011HS



HONDA

Harmony



WARNING:



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

Keep this owner's manual handy, so you can refer to it at any time, and make sure the manual stays with the riding mower if you sell it.

This owner's manual is considered a permanent part of your riding mower and should remain with the riding mower if resold.

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

Congratulations on your selection of the Honda H1011 Riding Mower. We are certain you will be pleased with your purchase of one of the finest riding lawn mowers on the market.

We want to help you get the best results from your new mower and to operate it safely. This owner's 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 riding mower, other property, or the environment.

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

When your riding mower needs scheduled maintenance, keep in mind that your Honda riding lawn mower dealer is specially trained in servicing Honda riding mowers 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.


SAFETY MESSAGES

Your safety and the safety of others is very important. And operating this riding mower 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 harm you or others.

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

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

- Safety Labels — on the riding mower.
- **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 Reminders or Important Safety Precautions.
- **Safety Section** — such as Riding Mower Safety.
- **Instructions** — how to use this riding mower correctly and safely.

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

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MOWER SAFETY

This section explains what you need to know to operate your riding mower safely.

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IMPORTANT SAFETY INFORMATION

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

Avoid Rotating Blades

A rotating blade can cause serious cuts and even amputate fingers, hands, toes, or feet. Keep away from the mower deck whenever the engine is running. If you need to work around the deck to clear a grass accumulation or for any other reason, always shut off the engine and remove the key. Disconnect the spark plug cap, and wear heavy gloves when you need to clean the mower deck or handle a blade.

Clear Mowing Area

A riding mower blade can throw rocks and other objects with enough force to cause serious injury. Before mowing, carefully inspect the area and remove all sticks, stones, pieces of wire, and other loose objects. Never operate the mower over gravel or any other loose objects.

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.

Refuel with Care

Gasoline is extremely flammable, and gasoline vapor can explode. Allow the engine to cool if the riding mower has been in operation. Refuel only outdoors in a well-ventilated area with the engine OFF. Never fill the fuel tank beyond the maximum fill mark. Never smoke near gasoline, and keep other flames and sparks away. Always store gasoline in an approved container.

Wear Protective Clothing

Wearing protective clothing will reduce your risk of injury. Long pants and eye protection reduce the risk of injuries from thrown objects. Sturdy shoes with aggressive soles provide better traction on the riding mower's platform and pedals.

Turn Engine Off When Not Mowing

If you need to leave the mower for any reason, even just to inspect the lawn ahead, always turn the engine off. And take the key if you go farther away.

Operation on Slopes

This riding mower is intended for use on relatively flat terrain. Operating the riding mower on slopes exceeding 10 degrees (17% grade) could cause the mower to tip over. Always mow up and down slopes, never across. When mowing up and down slopes, empty the optional grass bags when they are half full. Never use the optional grass bags without the front weight installed.

Mowing Conditions

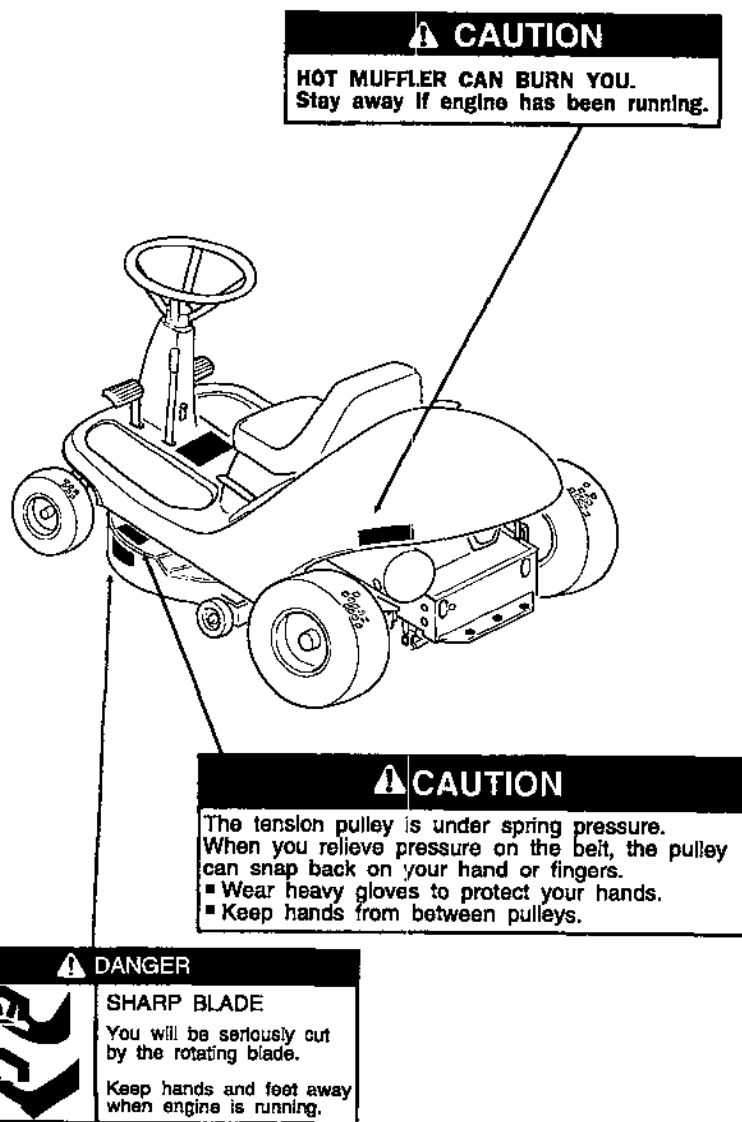
Mow only in daylight or good artificial light. Do not drive the riding mower at night or under poor light conditions.

Mowing Near Roads

Always watch for vehicle traffic when operating the riding mower near roads and driveways. Never drive the riding mower on public roads.

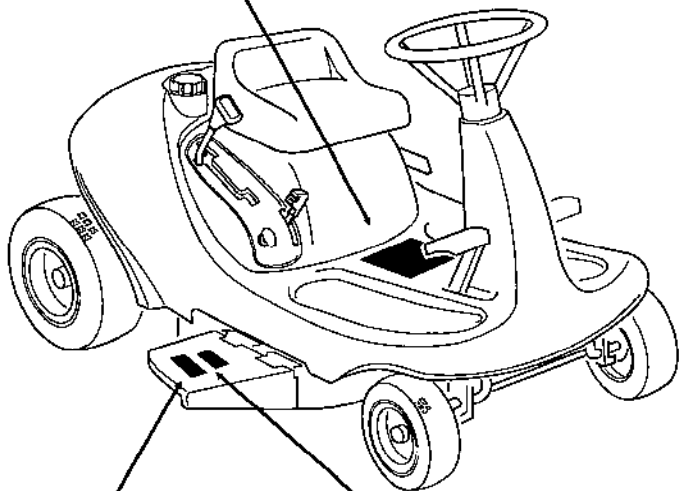
SAFETY LABEL LOCATIONS

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 riding mower dealer for a replacement.



WARNING

- Improperly driving on slopes or uneven terrain can cause the mower to tip over and you can be seriously hurt or killed.
Read "Safe Mowing Practices" in the Owner's Manual carefully.
- Objects hidden in the lawn can be thrown by the blade and can cause serious injury.
Read "Mower Safety" and "Safe Mowing Tips" in your Owner's Manual carefully.
- The rotating blade can cause serious injury.
 - Keep hands and feet away from mower deck.
 - Stop engine before leaving operator's position.
- Do not allow children to ride as passengers.
They can fall or be thrown off causing serious injury or death.
Read "Child Safety" in the Owner's Manual carefully.



DANGER



SHARP BLADE

You will be seriously cut by the rotating blade.

Keep hands and feet away when engine is running.

WARNING



Objects hidden in the lawn can be thrown by the mower blade. Thrown objects can cause serious injury.

- Clear lawn of all debris before mowing.
- Do not operate the mower without either the discharge guard or the entire grass catcher in place.
- Wear eye protection.
- Keep people away while mowing.

CHILD SAFETY: A MESSAGE TO PARENTS

YOUR CHILD'S SAFETY IS VERY IMPORTANT to Honda. Read this message if you decide to permit your youngster to operate this riding lawn mower. Riding lawn mowers are tools, not toys. As with any equipment, bad judgments can result in serious injuries. You can help prevent accidents by making good decisions about if, when, and how your youngster operates this equipment.

The first question you'll need to ask is whether your youngster is capable of operating this riding mower safely. Remember, young people vary widely, and **AGE IS NOT THE ONLY FACTOR**. Physically, a youngster must be **LARGE ENOUGH AND STRONG ENOUGH** to easily start the riding mower and control its direction. The youngster also needs enough size, strength, and coordination to comfortably reach and operate the controls.

Another, tougher question you need to ask is if your youngster has enough **MATURITY AND RESPONSIBILITY** to safely operate this riding mower. Does the young person think through problems and come to logical solutions? Be honest! Anyone who takes unnecessary risks and doesn't obey rules should not operate this riding lawn mower.

If you decide that your son or daughter can handle the riding mower safely, **CAREFULLY READ THE OWNER'S MANUAL** with your youngster. Make sure you both understand all instructions and safety information. Also, be sure your youngster wears sturdy shoes and other protective clothing when operating or handling the riding mower.

SUPERVISION is important. Walk behind your youngster during the first few minutes of mowing. Even after the youngster is confident, do not let them use the mower without supervision. An adult should also be present during refueling and maintenance. Be sure the riding mower is properly maintained and kept in safe operating condition.

By always placing safety first, your youngster will acquire useful skills and a sense of accomplishment. And you'll both get the best results from your riding lawn mower.

CONTROLS

This section helps you to identify the riding mower controls, what they do, and how they work.

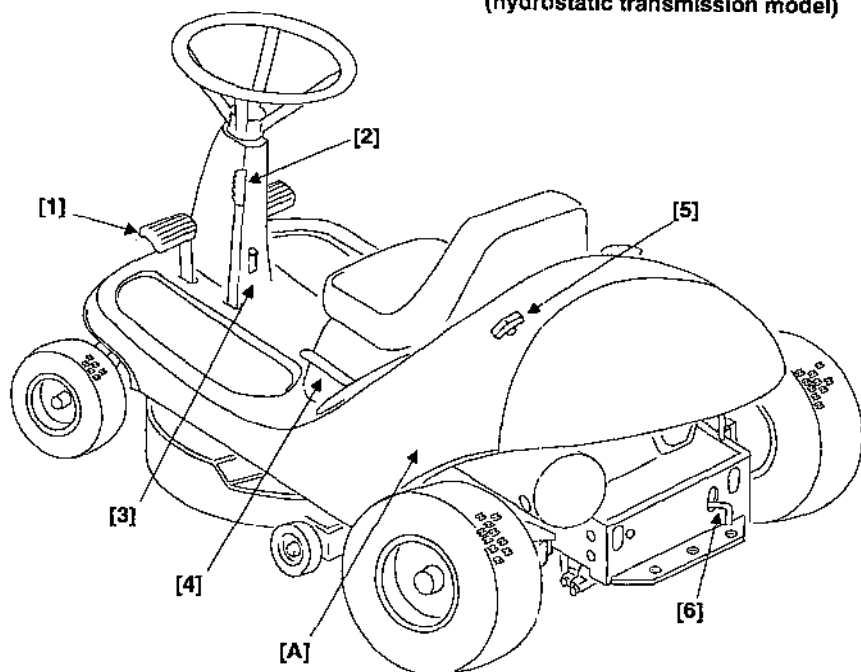
COMPONENT IDENTIFICATION	12
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CONTROLS

COMPONENT IDENTIFICATION

Use the two illustrations on these pages to locate and identify the most frequently used controls.

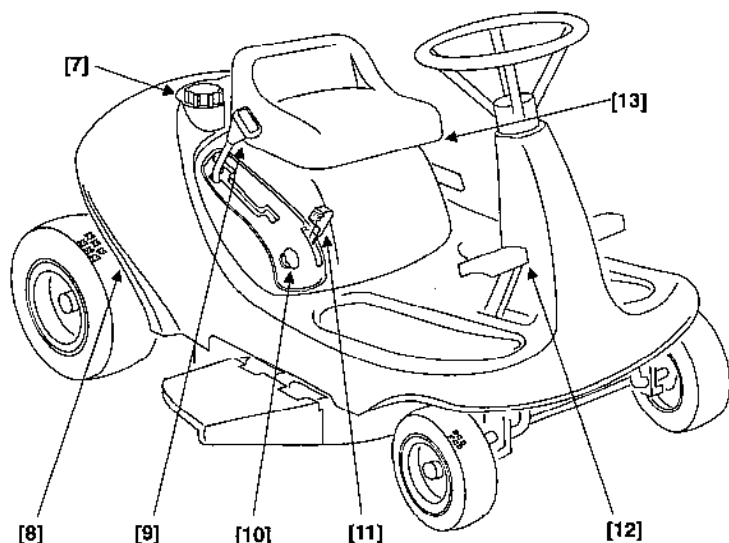
- [1] CLUTCH PEDAL
(gear transmission models)
- [2] PTO CLUTCH LEVER
- [3] PARKING BRAKE LEVER
- [4] HEIGHT ADJUSTMENT LEVER
- [5] RECOIL STARTER HANDLE
(recoil start model)
- [6] TRANSMISSION RELEASE LEVER
(hydrostatic transmission model)



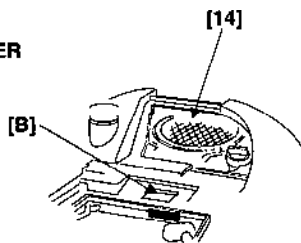
[A] RIDING MOWER SERIAL NUMBER
(near base of oil filler tube)

- H1011SA: 5-speed gear transmission, electric start
- H1011RA: 5-speed gear transmission, recoil (pull) start
- H1011HSA: Hydrostatic transmission, electric start

- [7] FUEL FILLER CAP
- [8] FUEL VALVE
- [9] SHIFT LEVER
- [10] IGNITION SWITCH
- [11] THROTTLE / CHOKE
- [12] BRAKE PEDAL
- [13] SEAT LOCK ROD (under seat)
- [14] COOLING FAN SCREEN



[B] ENGINE SERIAL NUMBER
(lift seat to view)



Record the frame and engine serial numbers in the space below. You will need these numbers when ordering parts and when making technical or warranty inquiries (see page 113).

Frame serial number: MZAW - _____

Engine serial number: GJ _____ - _____

DESCRIPTION OF CONTROLS

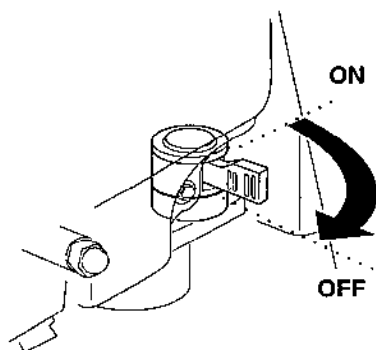
You will use these controls every time you operate the riding mower. The H1011 riding mower uses colors to identify control types. Orange levers and knobs are used to control the movement of the riding mower. For example, the parking brake lever and shift lever are color coded orange. Yellow controls identify attachment controls, such as the hand grip on the PTO clutch lever that is used to start and stop blade movement. Black is used for component lift controls (for example, deck height adjustment).

Seat

The seat can be adjusted back and forth for operator comfort and tilted forward for battery access on electric start models. Refer to page 53 for instructions.

Fuel Valve

The fuel valve is located on the carburetor, above the right rear tire. Look underneath the rear cover to find the fuel valve. The fuel valve must be ON to start the engine and should be OFF when the riding mower is not in use.

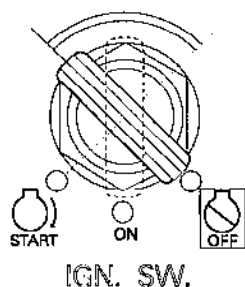


Ignition Switch

The ignition switch is used to start (electric start models) and stop the engine.

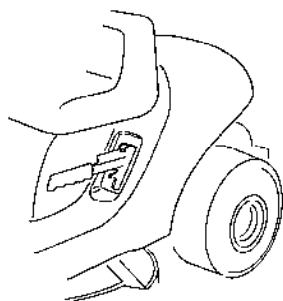
On the recoil start model, this switch must be ON before starting.

The key can only be inserted and removed when the switch is OFF.



Height Adjustment Lever

This lever is used to raise and lower the mower deck. When the mower deck is properly leveled, the numbers near the height adjustment lever indicate the approximate number of inches the forward blade tip is from the ground.



Clutch Pedal (gear transmission models)

The clutch pedal is used when shifting between gears and when stopping and starting the riding mower. Pressing the clutch pedal all the way down disengages the engine from the transmission and allows you to move the shift lever smoothly between gears.

Brake Pedal (gear transmission models)

The brake pedal applies a brake to the rear wheels. The brake pedal should only be used once the clutch pedal is pressed all the way down, except when starting on a sloped surface.

NOTICE

Partially pressing the brake pedal without first pressing the clutch pedal all the way down can cause the drive belt to wear prematurely.

Brake Pedal (hydrostatic transmission model)

The brake pedal is linked to both the shift lever and the rear wheel brake. When the brake pedal is fully pressed, the shift lever returns to **NEUTRAL** and a brake is applied to the rear wheels.

When the shift lever is not in **NEUTRAL** and the brake pedal is partially pressed, the shift lever moves toward **NEUTRAL**.

CONTROLS

Shift Lever (gear transmission models)

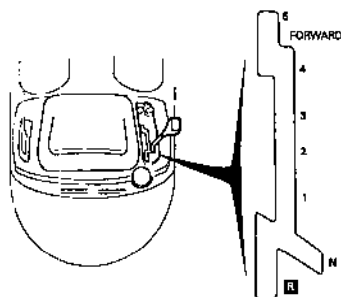
This lever is used to select one of the five forward speeds, NEUTRAL, or REVERSE. 1st, 2nd and 3rd gears are recommended for varying mowing conditions. 4th and 5th gears are used when not mowing and greater ground speed is desired.

Cut quality will suffer if you attempt to mow using 4th or 5th gear.

Moving the shift lever to NEUTRAL permits you to release the clutch pedal when the riding mower is stopped and the engine is running.

REVERSE is used to back up the riding mower.

You can damage the transmission of the riding mower if you move the shift lever between REVERSE and any forward gear without coming to a full stop. Press on the brake pedal (if needed) to bring the riding mower to a full stop before moving the shift lever.

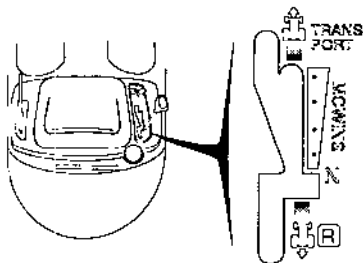


Shift Lever (hydrostatic transmission model)

This lever is used to select the travel (ground) speed of the riding mower.

Moving the shift lever out of NEUTRAL will cause the riding mower to move.

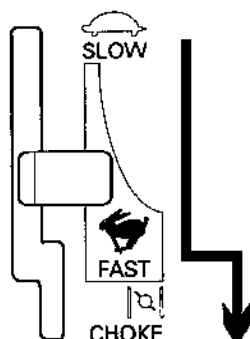
Small movements of the shift lever will in turn cause small changes in travel speed.



The MOWING range is for mowing, REVERSE is used to backup and TRANSPORT offers faster travel speeds when driving the riding mower to and from the mowing area. Cut quality will suffer if you attempt to mow in the TRANSPORT range.

Throttle

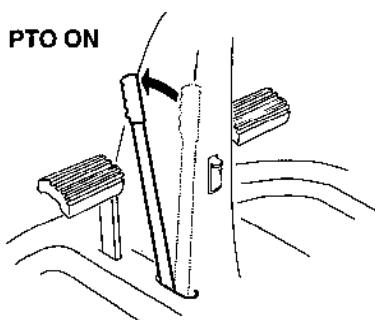
The throttle lever controls engine speed. Push the throttle down to the SLOW position for idle. Pull it up to the FAST position for mowing. Pulling the throttle upward past the detent near FAST to the CHOKE position applies the choke for starting a cold engine.



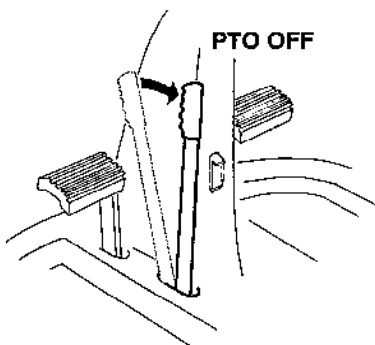
PTO Clutch Lever

PTO stands for *Power Takeoff* and refers to the part of your riding mower where engine power is applied to the mower deck.

The forward position is ON; this starts the mower blade spinning. The rear position is OFF, and this stops the mower blade from spinning. When the PTO is moved to ON, you'll notice a temporary drop in engine speed.



The PTO clutch lever should always be engaged with a smooth and quick motion. You should always disengage the PTO when not actually mowing.

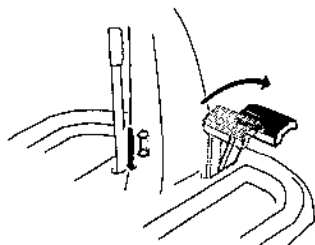


The riding mower will not start if the PTO is ON. The engine will stop if you rise off the seat when the PTO lever is ON.

Parking Brake Lever

This lever is used to prevent movement of the riding mower when it is parked. You should always set the parking brake lever ON before getting off the riding mower. Release the parking brake lever before moving the shift lever into any gear.

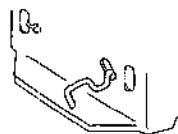
The parking brake is set by pressing and holding the brake and clutch pedals (gear transmission models) or just the brake pedal (hydrostatic transmission model) all the way down, then moving the parking brake lever down. The pedal(s), remain locked down by the parking brake lever.



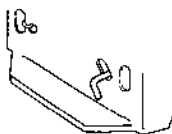
To release the parking brake, press down and hold the brake and clutch pedals (gear transmission models) or just the brake pedal (hydrostatic transmission model), then move the parking brake lever up. You can then gently release the pedal(s). The engine will stop if you rise off the seat without the parking brake engaged. You should always move the shift lever to NEUTRAL before setting the parking brake.

Transmission Release Lever (hydrostatic transmission model)

This lever is used to engage or disengage the hydrostatic transmission. When operating the riding mower under its own power, leave the lever in the ENGAGED position. Should you need to push the riding mower, move the lever to DISENGAGED.



DISENGAGED



ENGAGED

NOTICE

Pushing or towing the riding mower with the transmission engaged will damage the transmission.

BEFORE MOWING

This section shows you how to prepare your riding mower, the lawn, and yourself.

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BEFORE MOWING

CHECK YOUR LAWN

For your safety and the safety of others, always inspect the area before mowing.

Objects

Anything which can be picked up by the blade and thrown is a potential hazard to you and others. Look for things like stones, sticks, bones, and wire, and remove them from the mowing area.

People and Pets

People and animals near the mowing area can move into your mowing path or into a position where they could be struck by thrown objects. Clear the area of people, especially children and pets. Their safety is your responsibility.

Lawn

Check the length and condition of the grass. Adjust your mowing speed and cutting height accordingly.

Avoid mowing wet grass. Not only does mowing wet grass result in poor cut quality, it also affords poor traction, increasing the risk of loss of control of your riding mower.

CHECK YOUR RIDING LAWN MOWER

For your safety and the service life of your equipment, always inspect your riding mower before using it. Before beginning your pre-operation checks, be sure:

- The riding mower is parked on a level surface.
- The PTO clutch lever is OFF and the shift lever is in NEUTRAL.
- The ignition switch is OFF and the key is removed.
- The parking brake is ON.

General Items

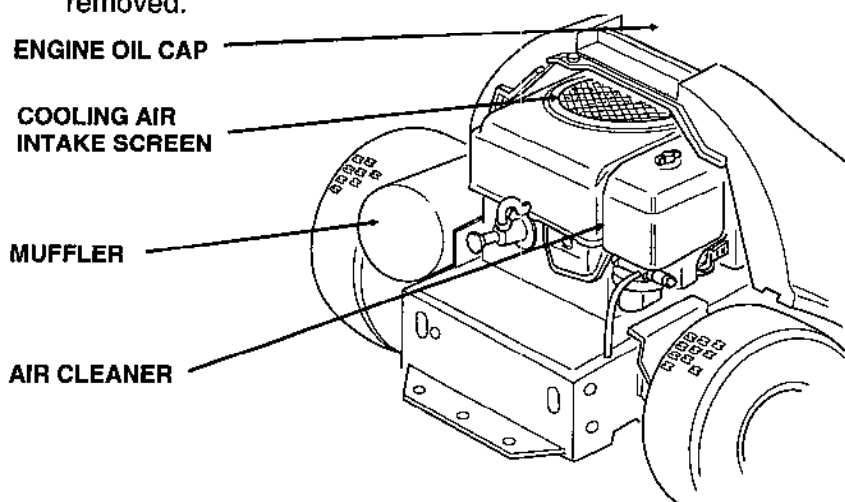
Walk around the riding mower and check its general condition. Look around and underneath it for signs of fluid leaks.

Remove any excessive dirt and debris, especially around the engine, mower deck, and moving components. Look for signs of damage. Check nuts, bolts, screws, and pins for tightness.

Keep all shields and covers in place while operating the riding mower. If you find any problems, have them repaired before mowing.

BEFORE MOWING

The following items should be checked with the rear cover removed.



Engine Oil

Oil is essential to engine operation and long life. Always check the oil level before mowing (see page 59.)

Air Intake, Cleaner and Filters

Clogged air intake areas and dirty air filters make it difficult for an engine to breathe. The cooling air for the engine is drawn in from behind the seat. Make sure the cooling air path is not obstructed with grass or covered in any way. Remove the rear cover (see page 54) and make sure the cooling air intake screen is free of grass or any other objects.

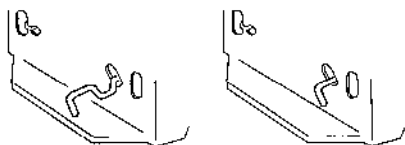
Follow the steps on page 54 to check the condition of the air cleaner and air filter elements.

Muffler and Exhaust Area

When the engine is cool, examine the area around the muffler and exhaust area. Be sure it's clear of any grass clippings or other foreign objects.

Transmission Release Lever (hydrostatic transmission model)

This lever is located on the rear frame and is used to engage or disengage the hydrostatic transmission. Before using the riding mower, make sure this lever is in the **ENGAGED** position. If it becomes necessary to push the riding mower, move this lever to **DISENGAGED**.

**Grass Bag**

If your riding mower is equipped with the optional grass bag kit, check it for proper installation (including the front counterweight) and verify the bags are in good condition.

Brake Pedal

Gear Transmission Models: Verify that the clutch pedal operates when the brake is pressed and there is not excessive freeplay in the brake pedal. Check the brake wear indicator. See page 73.

Hydrostatic Transmission Model: Move the shift lever out of **NEUTRAL**. Press the brake pedal all the way down. Make sure the shift lever returns to **NEUTRAL**.

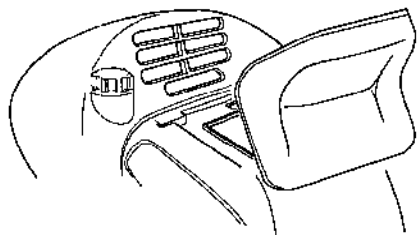
Parking Brake

Make sure the brake pedal remains locked down in place when the parking brake is **ON**.

BEFORE MOWING

Cooling Air Intake

Tilt and lock the seat (page 53), then make sure the air intake path is free from obstructions.



Fuel

Remove the cap on the tank and check the fuel level. See page 56 for refueling details.

Cutting Height

The cutting height of your riding mower should be set for the mowing conditions. See page 41.

Tire Pressure

Check the tires for proper inflation. See page 68.

Blade

Before each use, check the mower blade for damage or abnormal wear. See page 83 for details.

Belts

Check the blade and drive belts for wear and correct tension. See page 80.

Mower Deck

Clear grass and debris from the top of the mower deck near belts, pulleys and springs.

Battery Electrolyte (electric start models)

Lift and lock the seat, then check the electrolyte level of the battery. See page 63.

ARE YOU READY TO MOW?

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

Knowledge

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

Familiarize yourself with the riding mower and its operation before you begin mowing. Know what to do in case of emergencies.

Clothing

Wearing protective clothing will reduce your risk of injury.

Long pants and eye protection reduce the risk of injuries from thrown objects.

Sturdy shoes with aggressive soles will help protect your feet and give you better traction on the pedals and platform of the riding mower.

While the sound level of the riding mower is well within safe limits, hearing protection will further protect your hearing.

BEFORE MOWING

OPERATING THE MOWER

This section tells you how to operate the riding mower for safe and effective mowing.

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MOWING PRECAUTIONS

Before operating the riding mower for the first time, please review the *IMPORTANT SAFETY INFORMATION* beginning on page 6 and the previous section, titled *BEFORE MOWING*.

Even if you have operated other riding mowers, take time to become familiar with how this riding mower works, and practice in a safe area until you build up your skills.

Never tamper with, or alter any of the controls or safety devices on the riding mower.

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

The Honda H1011 riding mower is easy to operate and highly maneuverable. You need a complete understanding of its operation and a certain amount of practice with its controls to safely realize the full potential of this riding mower.

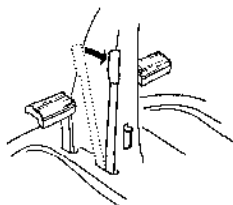
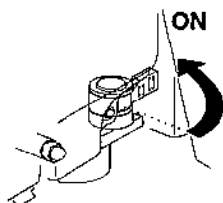
Read this section completely before operating the riding mower. Take time to familiarize yourself with the controls and how they operate.

The small amount of time spent in familiarization will reward you with greater efficiency and reduced risk.

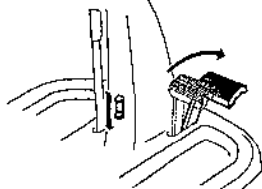
Starting the Engine

Start the engine outside in an open area with good ventilation.

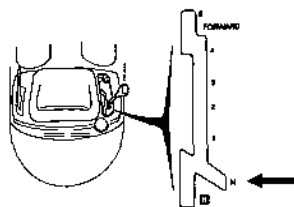
1. Locate the fuel valve on the carburetor, just above the right rear tire. Move the fuel valve to the ON position. Pushing the fuel valve handle toward the engine to ON allows fuel to flow.



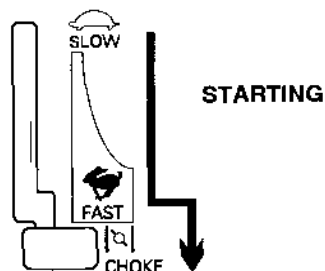
2. Make sure the PTO lever is OFF (disengaged), the parking brake is set ON, and the shift lever is in NEUTRAL.



The engine will not start unless these controls are properly set.



3. To start a cold engine, move the throttle lever to FAST, then press the lever outward, slightly past a detent to CHOKE. To restart a warm engine, move the throttle lever to the FAST position.



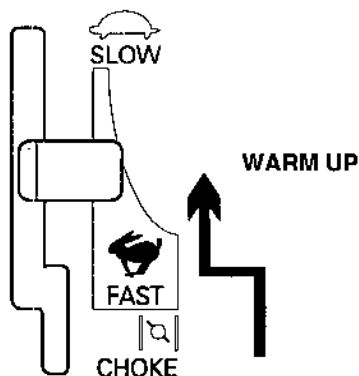
OPERATING THE MOWER

4. (**electric start**) Insert the ignition key into the ignition switch. Turn the key clockwise to START and hold it there briefly until the engine starts. When it does, let the key return to the ON position.
- 4a. (**recoil start**) Insert the key into the ignition switch and turn it to ON. Grasp the handle on the pull rope and slowly pull until resistance is felt, then pull it briskly. Do not allow the rope to snap back toward the engine.

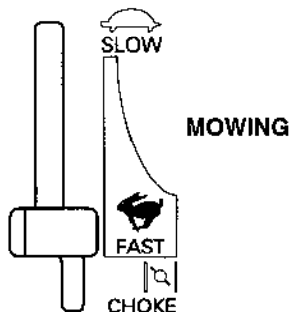
NOTICE

(electric start models) Holding the ignition key in the START position for more than five seconds may damage the starter.

5. If the engine fails to start, wait at least ten seconds before trying again. If you can't get the engine to start after multiple tries, refer to "Troubleshooting" on page 103.
6. After the engine has started, slowly move the throttle lever from CHOKE to a point halfway between SLOW and FAST while the engine warms up.



Once the engine has warmed, you should keep the throttle in the FAST position while mowing. This keeps the mower blade spinning at the proper speed (when the PTO is ON) and provides the best cut quality.



Do not use the throttle to adjust the riding mower ground speed. Use the shift lever to select a different speed instead. Slowing the riding mower's ground speed with the throttle causes the blade to spin slower, and cut quality will suffer.

Driving the Riding Mower

Once the riding mower is moving forward, you'll need to know how to steer correctly, shift gears to adjust speed, begin mowing, and how to stop.

Steering

To make it easier to cut various lawns, the H1011 riding mower is very maneuverable and can turn quickly.

WARNING

Turning sharply when using higher ground speeds can cause the riding mower to lose traction.

The riding mower can tip over and you can be injured or killed.

Avoid sharp turns when using higher gears.

After using the riding mower for a while, you'll get a better feel for how much effort to use on the steering wheel for a particular turn.

The speed of the riding mower greatly affects how the steering responds. For this reason, you should shift the transmission to a lower ground speed before entering sharp turns.

Avoid turning the riding mower when operating on a sloped surface. See "Mowing on Slopes" (page 38) for more details.

Selecting the Right Speed

Your Honda riding mower is equipped with a transmission that offers multiple ground speeds. The shift lever is used to select the appropriate ground speed for the task at hand.

OPERATING THE MOWER

For the best cut quality, the engine should always be operated with the throttle set in the FAST position. When you need to speed up or slow down the riding mower, use the shift lever (not the throttle) to change the ground speed.

Gear Transmission Models: 1st - 3rd gears work best for most mowing jobs. 4th and 5th gears should be used only for transporting the mower (when the PTO is OFF) and are not recommended for mowing.

Hydrostatic Transmission Model: Keep the shift lever in the MOWING range. The TRANSPORT range should only be used for transporting the mower (when the PTO is OFF) and is not recommended for mowing.

On slopes or hills, use a slower shift lever setting to maintain a controllable, steady speed. Also, use slower ground speeds under the following conditions:

- For sharp turns
- Mowing in narrow areas or near trees
- When edging or trimming near obstructions
- Cutting tall or very thick grass

REVERSE is used to back up the riding mower. Before traveling in REVERSE, make sure the PTO is off and the path is clear of people, pets and obstructions.

Mowing

When ready to begin mowing, approach the mowing area at a reduced ground speed. Bring the riding mower to a full stop, and check the position of the height adjustment lever. You may have to make some trial cuts to determine which setting is best for the lawn.

To begin mowing, make sure the throttle is set to FAST, then move the PTO clutch lever to ON with a smooth, quick motion. When you do, the blade starts to turn. To stop the blade from turning, move the PTO to OFF.

NOTICE

Do not operate the PTO clutch lever in an attempt to clear a clogged mower deck. Doing so can damage the mower belt.

See the “Mowing Tips” section later in this chapter for details on getting the best cut possible from the riding mower.

Braking (gear transmission models)

For best control, avoid stopping the riding mower on sloped surfaces.

1. When approaching the area where you wish to stop, smoothly press the clutch pedal all the way down and hold it there. If necessary, press the brake pedal down, but only do this when the clutch pedal is pressed first.
2. Once the riding mower has fully stopped, hold the clutch and brake pedals down and move the shift lever to NEUTRAL.
3. If this is an extended stop, set the parking brake ON, then release the pedals.

NOTICE

Partially pressing the brake pedal without first pressing the clutch pedal can cause the drive belt to wear prematurely. When using the brake pedal, press the brake pedal all the way down and only when the clutch pedal is pressed first.

Braking (hydrostatic transmission model)

For best control, avoid stopping the riding mower on sloped surfaces. The hydrostatic transmission on the H1011H allows you two options for braking. You can either move the shift lever or the brake pedal to slow down or stop the riding mower.

Using the shift lever: To reduce the ground speed of the riding mower, move the shift lever toward NEUTRAL. Moving the shift lever fully into NEUTRAL will bring the riding mower to a full stop as long as the ground is level. If the riding mower is on a slope, you must press and hold the brake pedal to completely stop the riding mower.

OPERATING THE MOWER

Using the brake pedal: Partially pressing the brake pedal causes the shift lever to move toward NEUTRAL. This action causes the hydrostatic transmission to act as a hydraulic brake and the riding mower slows down. Pressing the brake pedal all the way down moves the shift lever fully into the NEUTRAL position *and* applies a mechanical brake to the rear wheels.

Adjusting Speeds (gear transmission models)

Always use the clutch pedal before moving the shift lever between any forward gears. If shifting between any forward gear and REVERSE, use the clutch and brake pedals to bring the riding mower to a full and complete stop.

⚠ WARNING

Operating the shift lever on a sloped surface can cause the riding mower to lose traction.

The riding mower can tip over and you can be killed or seriously injured.

Do not operate the shift lever while the riding mower is on a sloped surface.

When shifting between forward speeds, always use the clutch pedal and move to the next higher or lower gear. You can start off from a complete stop when any gear is selected.

Shifting From a Forward Gear to Another Forward Gear

1. Push the clutch pedal all the way down.
2. Move the shift lever to the desired gear position.
3. Gently release the clutch pedal.
4. You don't need to bring the riding mower to a full stop if shifting from one forward gear to another.

Shifting Between Any Forward Gear and Reverse

1. Press the clutch pedal all the way down, then press the brake pedal all the way down to stop the riding mower.
2. Move the shift lever to the desired gear.
3. Gently release the brake pedal, then the clutch pedal.

Adjusting Speeds (hydrostatic transmission model)

The hydrostatic transmission in the H1011H offers you an infinitely variable range of speeds. This means you only need to move the shift lever to change the ground speed and to move in reverse.

Adjusting Forward Speed

1. To make the riding mower move faster when moving forward, push the shift lever away from NEUTRAL.
2. To slow down, pull the shift lever back toward NEUTRAL.

Adjusting Reverse Speed

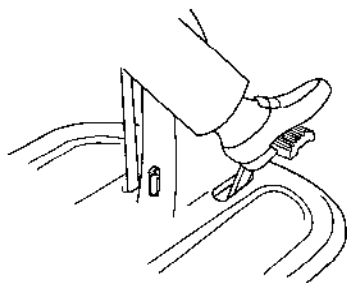
1. To make the riding mower move faster in REVERSE, pull the shift lever away from NEUTRAL.

To slow down, push the shift lever toward NEUTRAL.

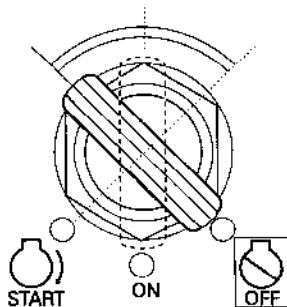
Stopping the Riding Mower

In an emergency:

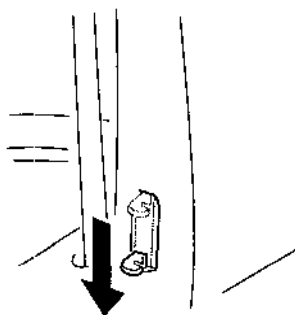
1. Press the brake pedal all the way down and hold it there.



2. Turn the ignition switch to OFF.



3. Move the parking brake ON.



Normal Stop

1. (***Gear transmission models***) Use the clutch pedal first, then the brake pedal to stop the riding mower.
2. (***Hydrostatic transmission model***) Move the shift lever to NEUTRAL, then press and hold the brake pedal all the way down.
3. Move the PTO lever to OFF.
4. (***Gear transmission models***) Move the shift lever to NEUTRAL.
5. With the brake pedal pressed all the way down, press the parking brake ON.
6. Remove your foot from the brake pedal.
7. Turn the ignition switch OFF.
8. Remove the ignition switch key.
9. Turn the fuel valve OFF.

Try to park on level ground. If you must park the riding mower on a slope, block the wheels to prevent it from rolling. Always remove the key when leaving the mower unattended to prevent unauthorized use.

Safe Mowing Practices

For your safety, keep all four wheels on the ground, and avoid losing control of the riding mower.

Keep a firm grip on the steering wheel. Be very careful when mowing uneven or rough ground.

Do not operate the riding mower near embankments, drop offs or ditches. The riding mower could suddenly turn over if a wheel is near the edge and it caves in or gives way.

Do not attempt to stabilize the riding mower by putting your foot on the ground. Keep your feet on the platform and near the pedals.

Take extra care when mowing near blind corners, shrubs, trees or any other objects that may obscure your vision. If you do strike an object, set the parking break, remove the ignition key and inspect the riding mower for damage. Repair any damage before any further operation.

WARNING

The blades are sharp and spin at high speed.

A spinning blade can cut you severely and can amputate fingers and toes.

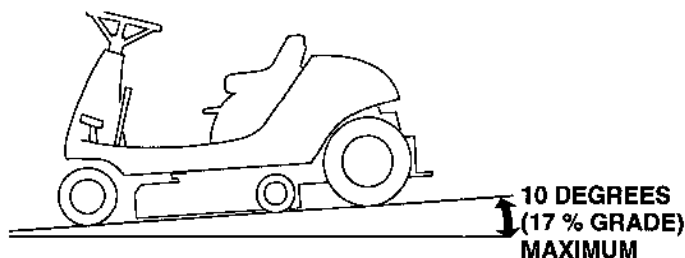
- Wear protective footwear.
- Keep your hands and feet away from the mower deck while the engine is running.

Stop the engine before performing any adjustment, inspection, or maintenance.

OPERATING THE MOWER

Mowing on Slopes

Never mow on a sloped surface greater than 10 degrees (17% grade), since this can cause the riding mower to tip over. Use a lower gear for better control and avoid sudden stops or starts when on a sloped surface. If you are unsure of the grade, obtain an inclinometer from a hardware store to measure the area in question.



Always mow up and down a sloped surface, never across. When mowing on slopes, empty the optional grass bags when they are half full. Never operate the shift lever when mowing on a sloped surface. Never mow a sloped surface when the grass is wet. Avoid stopping on a sloped surface. If it becomes necessary to stop on a sloped surface, use the following special procedure when restarting the riding mower.

Starting on a Sloped Surface

⚠ WARNING

Improper starting on sloped surfaces can cause the riding mower to lose traction and tip over.

The riding mower can fall on you and cause serious injury or death.

Use the following procedure if you must start the riding mower on a sloped surface.

Gear Transmission Models:

1. Press the clutch pedal first, then the brake pedal and set the parking brake ON. Move the shift lever to 1st gear.
2. Hold both pedals down and release the parking brake.
3. Slowly remove your foot from the clutch pedal, then from the brake pedal.

Hydrostatic Transmission Model:

1. Press the brake pedal all the way down and hold it there.
2. Move the parking brake lever to OFF.
3. Slowly release the brake pedal while moving the shift lever as required for a safe ground speed.

Obstacles

Use the side of the mower deck to cut close to large obstacles, such as fences or walls.

Be careful when mowing over obstacles embedded in the lawn, such as sprinkler heads, paving, edging, etc. Avoid anything that sticks up above the surface of the lawn.

If a blade hits something, or if any part of the riding mower starts to vibrate, stop the engine immediately and check for damage. Striking objects may damage a belt, blade, and/or break the mower deck or other components. Vibration usually indicates serious trouble.

⚠ WARNING

A worn, cracked or damaged blade can break, and pieces of the damaged blade can become projectiles.

Thrown objects can cause serious injury.

Inspect the blade regularly, and do not operate the riding mower with a worn or damaged blade.

The distributor's limited warranty does not cover parts damaged by accident or collision.

Gravel and Loose Objects

Gravel, loose stones, and landscaping material can be picked up by the riding mower and thrown many feet with enough force to cause serious personal injury and/or property damage. The best way to prevent potential injury from thrown objects is to move the PTO lever to OFF prior to reaching areas with gravel, loose stones, or landscaping material.

Mowing Tips

In this section, you'll learn some tips to getting a high quality cut with your Honda riding mower.

General Tips

The mower blade must spin very fast for a good quality cut. Keep the throttle in the FAST position when mowing. In general, a slower ground speed produces a better quality cut.

Try to maintain a constant travel speed when possible. Changing speeds can produce an uneven finish.

Grass Condition

Mow when the grass is dry. Mowing wet grass does not produce a neat finish. The inside of the mowing deck or bagging chute may clog when mowing wet grass. Clumps of wet grass will collect on the lawn and can create harmful thatch.

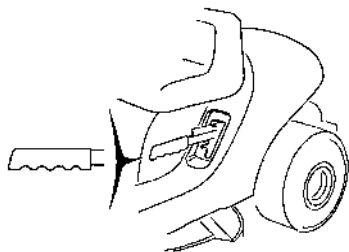
A wet lawn reduces traction and braking performance of your riding mower. Further, the tires may leave marks on wet soil softened by moisture. This can detract from the overall appearance.

How Often?

A well-groomed lawn requires mowing at short, regular intervals. During the growing season, a lawn may require mowing twice a week.

Height of the Mower Deck

To adjust the height of the mower deck, grip the mower deck height adjustment lever firmly, then slightly lift to clear the notches in the handle guide.



Move the lever outward from the riding mower and away from the handle guide. Raise or lower the lever to the desired position. Move the lever into the position notch and allow the weight of the lever to lock it onto the handle guide.

The mowing deck can be positioned in a range of equally spaced heights: 1.0, 1.5, 2.0, 2.5, 3.0 and 3.5. These numbers indicate the approximate cutting height in inches.

To prevent possible damage to the mower deck, always raise it fully (3.5) when driving the riding mower to and from the mowing area; this provides maximum ground clearance.

To avoid damaging or disabling the mower deck height adjustment lever, never attempt to move the lever when the riding mower is moving.

A higher cut may be needed to protect the lawn during the hotter summer months. Consult a local nursery or lawn and garden center for advice about specific types of grasses and growing conditions in your area.

Most grasses should be cut when they have grown 1/2 to 1 inch above the recommended height. If your grass grows too tall, cut it back a little at a time, allowing a few days for the grass to recover between mowings. Avoid cutting more than one third of the total grass height in any one mowing.

Mowing Patterns

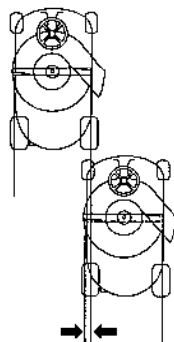
The mowing pattern you use on the lawn can greatly affect the overall quality of the finished cut.

Side-Discharge Mowing

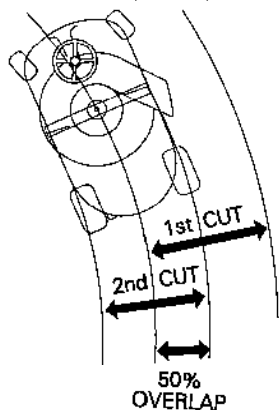
Start mowing from the outside edge of the mowing area and work toward the center. Avoid mowing patterns that cause clippings to be discharged onto uncut grass and cause clumping. Typically, a counterclockwise pattern is a good choice and provides a smooth, even finish. However, you may wish to alter the pattern to prevent clippings from accumulating in areas such as a nearby patio or driveway.

Overlapping Your Path

Allow an adequate amount of overlap in the cutting path when mowing. Four to six inches is recommended; this is roughly the same width as a front tire.



When overlapping in a curve, shift to a lower speed and overlap the previous cut by 50%, or approximately half the width of the mower deck. In extremely tall or thick grass, you may have to cut a larger overlap.



If Cut Quality is Poor

If you experience poor cut quality, check the following items:

- Air pressure in tires
- Condition of blade

- Mower deck height and leveling
- Correct ground speed for lawn conditions
- Engine throttle in FAST position
- Sufficient overlap
- Mowing deck is clear of grass or other obstructions

Adjustments to Improve Cut Quality

Blade

Verify the blade is leveled per the instructions in the “Maintenance and Adjustments” chapter.

Make sure the blade is in good condition and has a properly sharpened edge. See page 83 for details.

Cutting height

Make sure the cutting height adjustment lever is properly set. See page 41.

Tires

Underinflated tires can cause uneven mowing or allow the mower deck to cut lower than indicated on the cutting height adjustment lever. Overinflated tires produce a harsher, less comfortable ride and can also damage the grass and tires. See page 68.

After Mowing

Always take a few moments to inspect the riding mower when you've finished mowing. A few simple steps done now can greatly prolong the life of your riding mower and make it easier to use the next time.

Under most conditions, the riding mower accumulates clippings, mud, dirt and other debris on the mower deck and other areas. Frequently, such debris contains moisture and if allowed to remain on the mower frame, mower deck or other metal parts, rust can form. Regular cleaning not only helps prevent such rusting, but also makes the riding mower operate better. Also, it is much easier to clean these parts when the debris or clippings are fresh rather than stuck on the riding mower for days or weeks at a time.

OPERATING THE MOWER

Mower Deck Cleaning

After each use, allow the engine and exhaust areas to cool. Inspect, then clear and clean the mower deck of debris. A good spraying of water can clear most clippings, dirt and mud.

Wash the mower deck only when the riding mower is cool. The bearings on the blade pulley shaft expand as they heat up. Cooling rapidly with water can allow moisture to be trapped inside the bearings. This can cause rust to form on the bearing surfaces and shorten bearing life.

Clean both the top and bottom of the mower deck and also the area around the discharge chute. Operate the engine and mower for a few minutes after washing to dry moving parts.

Cleaning Other Areas

Certain parts other than the mower deck can accumulate clippings and other debris. When the riding mower is cool, you should inspect these areas and brush or wipe off any debris with a soft brush or slightly damp rag. Specifically, remove the rear cover and look around the top of the engine, exhaust area and muffler and by the rear axle near the frame. Do not spray water directly on the engine.

Check and clean (if needed) the footwells, lower and upper chutes (when the optional grass bag kit is used), engine cooling fan screen and air intake path behind the seat.

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.

High altitude performance can be improved by installing a smaller diameter main fuel jet in the carburetor. If you always operate the mower at altitudes higher than 1,800 meters (6,000 feet) above sea level, have an authorized Honda riding mower dealer perform this carburetor modification.

Even with carburetor modification, engine horsepower will decrease about 3.5% for each 300 meter (1,000 foot) increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made. A reduction in engine horsepower will reduce mowing performance.

When the carburetor is modified for high altitude operation, the air-fuel mixture will be too lean for low altitude use.

NOTICE

Operation at altitudes below 1,800 meters (6,000 feet), with high altitude carburetor modifications, may cause the engine to overheat and result in serious engine damage.

For low altitude use, reinstall the standard main fuel jet.

MAINTENANCE & ADJUSTMENTS

This section tells you how to perform normal maintenance and adjustments.

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THE IMPORTANCE OF MAINTENANCE

Good maintenance is essential for safe, economical, and trouble free operation. It will also help reduce air 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 riding mower, 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 riding mower under unusual conditions, consult your servicing dealer for recommendations applicable to your individual needs and use.

Remember that your servicing dealer knows your riding mower 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 can not warn you of every conceivable hazard that can arise while 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 nonflammable solvent, not gasoline to clean parts. Keep cigarettes, sparks, and flames away from all fuel-related parts.
- For certain operations, the riding mower must be raised off the ground. Be sure the riding mower is solidly supported before you put any part of your body under the riding mower.

MAINTENANCE & ADJUSTMENTS

- Disconnect the spark plug cap and wear heavy gloves when working near the mower deck, belts, or blades.
- Never support or stand the riding mower on either side or end. Fuel, oil, or battery electrolyte can leak out.

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 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 instruction describing the operation and maintenance of emission control systems.

The following instructions and procedures must be followed to keep the Honda engine emissions 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 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 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 the 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 52. 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.

Maintenance Schedule

Item	Action	Interval (months / hours) *					For more information...
		each use	3/20	6/50	12/100	3 6/150	
Engine oil	check	•					p. 59
	change		• ¹		• ²		p. 61
Air cleaner	check	•					p. 54
	clean			◆			p. 55
Cooling air intake	check	•					p. 19
Muffler pipe	check	•					p. 22
Cooling fan screen	check	•					p. 22
Battery electrolyte	check	•		•			p. 63
Tires & air pressure	check	•					p. 68
Blade belt	check	•					p. 80
	adjust		• ¹	• ²			p. 81
drive belt	check		•				p. 90
Brake pedal	check	•					p. 23
Blade bolt tightness	check		♣ ¹	♣ ²			p. 86
Blade condition	check	•					p. 83
Brake & clutch fastener tightness	check		♣ ¹	♣ ²			Shop Manual
Brake pedal freeplay	check & adjust			♣			p. 71
Front & rear axle grease	one pump			♣			p. 93
PTO freeplay	check & adjust			♣			p. 70
Parking brake	check			♣			p. 23
Spark plug	check & clean				•		p. 62
Spark arrester (optional part)	clean				•		p. 89
Clutch pedal freeplay	check & adjust			♣			p. 67
Throttle cable	check & adjust				♣		Shop Manual
Fuel tank, line and filter	check					♣	p. 58
Valve clearance	check & adjust					♣	Shop Manual
Engine cooling fins & shroud	clean					♣	Shop Manual

* Whichever comes first.

◆ Service the air cleaner more frequently when used in dusty areas.

♣ These items should be serviced by an authorized Honda riding mower dealer, unless the owner has proper tools and is mechanically proficient. See the Shop Manual for the H1011.

¹ This interval for first service only

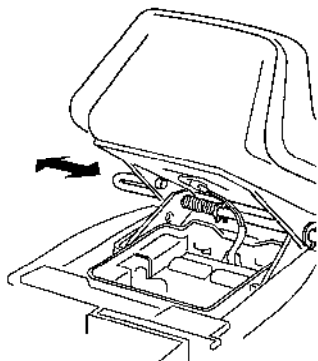
² This interval for second and future service

Seat

To access the battery compartment or to adjust the seat position, you must raise and lock the seat.

Raising and Locking the Seat

1. On the left side of the riding mower, just below the seat cushion, there is a spring loaded, U-shaped pin used to lock the seat in either a raised or lowered position. Pull the pin outward and away from the seat, then raise the seat up.
2. With the seat in the fully raised position, allow the pin to slide back toward the seat bracket to lock it in the up position.
3. Verify the seat is locked in the upright position by pressing down on the seat.



Adjusting the Seat Position

1. Locate and loosen (don't remove) the four hex bolts used to attach the seat to the seat bracket.
2. Move the seat back and forth to obtain the desired position.
3. Securely tighten the four hex bolts, then lower and lock the seat.

Lowering and Locking the Seat

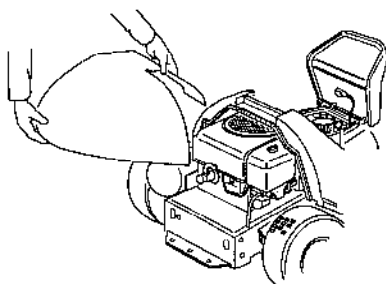
1. To lower the seat, slightly move the seat upward, to take pressure off the locking pin.
2. While grasping the seat with one hand, use your other hand to pull the locking pin away from the seat bracket.
3. Lower the seat all the way down, then release the locking pin, so it locks into the hole on the side of the seat bracket. Verify that the seat is locked down by trying to lift the seat.

Rear Cover

The rear cover must be removed to perform some maintenance procedures. It must also be removed prior to transporting the riding mower.

To Remove the Rear Cover

1. Stand behind the riding mower and grasp the edge underneath the rear cover.
2. Pull upward, then lift the rear cover away from the riding mower.



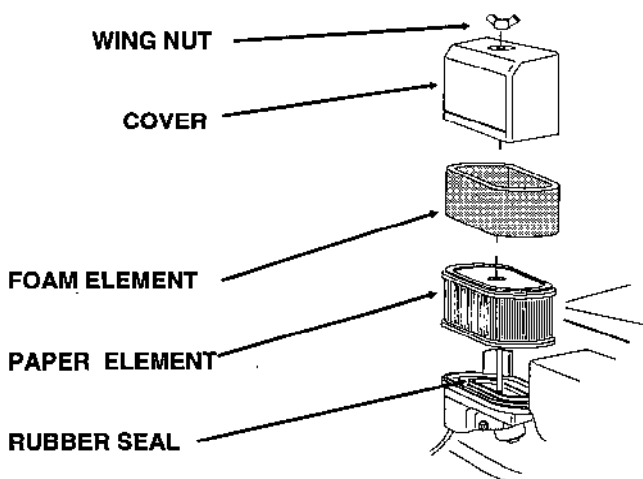
To Reattach the Rear Cover

1. There are square tabs molded into the front edge of the rear cover, near the air intake area. Insert these tabs into the riding mower rear body, just behind the seat.
2. Lower the rear cover so the rounded edge aligns with the clips in the rear body.
3. The two posts on the lower edges of the rear cover should be carefully pressed into the rubber grommets on the rear body.

Air Cleaner

Check that the air cleaner elements are clean and in good condition. A dirty air cleaner assembly restricts air flow to the engine, reducing performance. A damaged element allows dirt to enter the engine, causing rapid engine wear.

1. Remove the rear cover. As you face the rear part of the exposed engine, the air cleaner is located on the right rear side of the engine. Remove the wing nut from the top of the air cleaner housing cover.
2. The air cleaner assembly has two parts. The outer foam section covers the paper element and can be removed.



3. If the foam element appears clean over more than half its surface, it does not need cleaning. Reinstall the air cleaner housing cover. If the foam element appears dirty, continue to the next step.

NOTICE

Operating the engine without the air cleaner or with damaged elements can cause rapid engine wear.

4. Remove the air cleaner assembly. Separate the foam element from the paper element, and carefully check for holes or tears. Replace any damaged element(s).
5. Clean the foam element by squeezing it in warm soapy water, rinsing it, and allowing it to dry. You may also use a nonflammable solvent and then allow it to dry.
6. Oil the foam element by dipping it in clean engine oil and squeezing out all excess oil. If too much oil is left in the foam, the engine may smoke when started.
7. Clean the paper element by tapping it on a hard surface to knock off dirt or by blowing compressed air (at less than 30 psi) through the element from the inside. Never try to brush off the dirt — that just forces it into the paper filter fibers.
8. Use a damp rag to wipe any dirt from the inside of the air cleaner housing and cover. Be careful not to allow dirt into the duct leading to the carburetor. Be sure the rubber seal in the base is in place and in good condition.

MAINTENANCE & ADJUSTMENTS

- Place the foam element over the paper element, and install them back onto the air cleaner housing.
- Reinstall the air cleaner housing cover and wing nut.

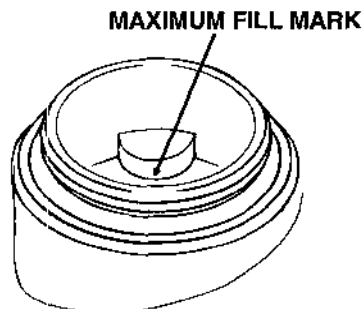
Fuel

Fuel tank capacity: 3.4 l (0.9 US gal)

Pump octane rating: 86

Refueling

Remove the cap on the tank and check the fuel level. Refuel carefully to avoid overfilling or spilling fuel. Just inside the filler neck is a maximum fill marker. Do not fill past this marker.



NOTICE

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

WARNING

Gasoline is highly flammable and explosive, and you can be burned or seriously injured when refueling.

- Stop engine and keep heat, sparks, and flame away.
- Refuel only outdoors.
- Wipe up spills immediately.

Never refuel the riding mower inside a building where fumes may reach an open flame or spark. Keep gasoline away from appliance pilot lights, electric motors, etc.

Refuel in a well ventilated area before starting the engine. If the engine has been running, allow it to cool. Avoid overfilling the tank or spilling fuel.

Spilled fuel not only creates a fire hazard, it can cause environmental damage. Wipe up spills immediately. Dispose of gasoline properly.

Fuel Recommendation

Honda recommends unleaded fuel (86 pump octane) because it produces fewer engine and spark plug deposits and extends exhaust system life.

Be sure the gasoline you use is as fresh as possible. Stale or contaminated gasoline or an oil/gasoline mixture can damage the engine or its fuel system. Avoid getting dirt or water in the fuel tank.

When the engine speed drops under heavy loads, you may hear light "spark knock" or "pinging" (a metallic rapping noise). This is no cause for concern.

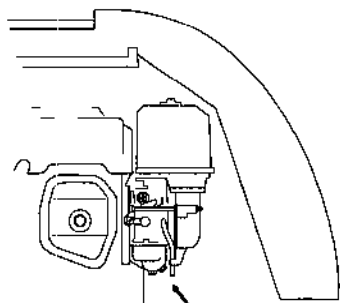
However, if this spark knock or pinging occurs at a steady engine speed, under a normal load, the engine can be damaged. Try using fresh gasoline in the tank or change brands of gasoline. If spark knock or pinging persists, contact your authorized Honda riding mower dealer.

Running the engine with persistent spark knock or pinging can cause engine damage. This type of damage is not covered by the Distributor's Limited Warranty.

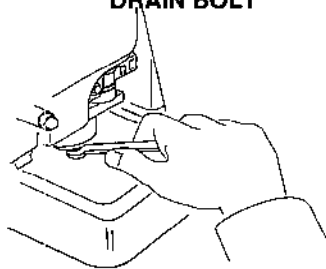
Fuel Filter Replacement

We suggest you perform this procedure when the fuel tank is nearly empty.

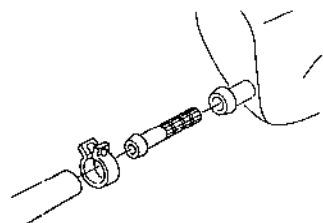
1. Remove the rear cover and move the fuel valve to ON (page 14). Locate the carburetor near the lower right side of the engine. There are two bolts on the round carburetor bowl. The angled screw is used for fuel draining, while the other is to remove the bowl itself.
2. Drain any remaining fuel from the riding mower into an approved container by removing the angled carburetor drain bolt.



DRAIN BOLT



3. Locate the fuel supply line between the carburetor and fuel tank. Loosen the hose clamp where the fuel supply line connects to the fuel tank and disconnect the fuel line from the tank.



4. The fuel filter is a white plastic piece inside the fuel line. The filter partially sticks out of the fuel line. Note how the fuel filter is installed when you remove it from the fuel line.
5. Install a new fuel filter into the fuel line.
6. Dispose of the old filter and any spilled fuel properly.

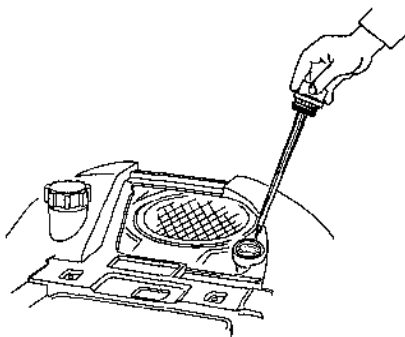
Engine Oil

Engine Oil Capacity: 1.1ℓ (1.16 US quarts)

Checking the Level

1. Remove the rear cover.
2. The oil filler cap is located on the left side of the engine.

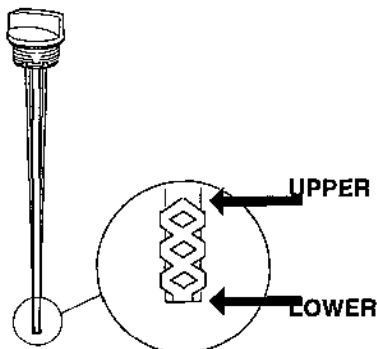
Clean the area around the oil filler cap, unscrew it, and wipe the dipstick with a clean cloth.



3. Insert the dipstick as shown here (don't screw it back in).
4. If the oil level is low (near the bottom), add enough oil to bring the level to the upper mark. Recheck the oil level after adding any new oil.



5. If the oil level is close to the upper mark, no additional oil is needed. Replace the dipstick and screw it back in securely. Do not overfill.



NOTICE

Running the engine at a low oil level or with no oil causes engine damage.

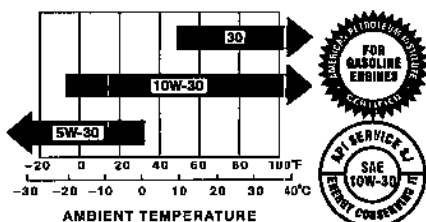
MAINTENANCE & ADJUSTMENTS

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 or SJ oil with the API certification mark displayed on the container.

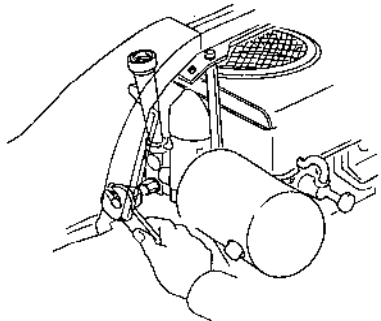


Changing the Oil

Change the oil at the recommended interval (page 52) or more frequently under extreme operating conditions.

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

1. Remove the rear cover.
2. Clean the area around the oil filler cap and unscrew it.
3. Near the bottom of the oil filler tube is the oil drain petcock and drain tube fitting. Attach the supplied tubing to the drain fitting. Position the other end of the tubing in a suitable oil collection container that can hold at least 2.2 l (2 US quarts).
4. Using a 10 mm wrench, open, but do not remove, the petcock valve.



5. Once the used oil has drained, close the petcock valve and seat it lightly. Do not over tighten. Remove the drain tube and wipe it clean.
6. Fill the engine with the correct amount of the recommended oil through the oil filler tube. Do not overfill; measure the oil level as shown on page 60.
7. Start and operate the engine for a few minutes, then recheck the oil level and adjust if necessary. Verify there is no oil leaking from the oil filler tube, petcock, or drain tube fitting areas.

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

Spark Plug

Recommended Types

NGK: BPR5ES

ND: W16EPR-U

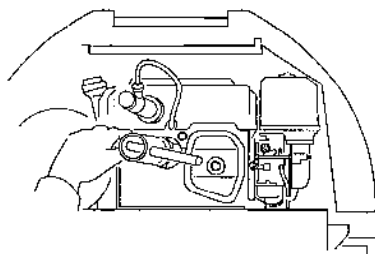
NOTICE

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

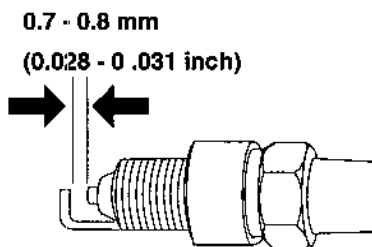
Spark Plug Removal, Inspection and Replacement

For good performance, the spark plug should have the correct gap and be free of deposits.

1. Remove the rear cover, then disconnect the spark plug cap and remove any dirt from around the spark plug area.
2. Remove the spark plug.
3. Inspect the spark plug for excessively worn electrodes, chips or cracks in the insulator, or excessive deposits. Replace the spark plug if you have any doubts about its condition.

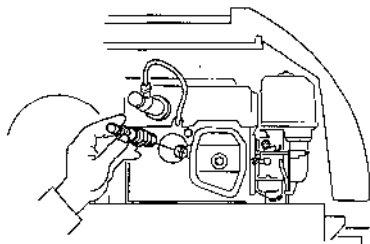


4. Measure the electrode gap with a wire gap gauge. Adjust the gap to 0.7 - 0.8 mm (0.028 - 0.031 inch) by bending the side electrode with a proper spark plug tool.



5. Install the spark plug carefully, by hand, to avoid cross threading of the cylinder head.

Use a spark plug wrench to tighten the plug enough to compress the washer. For a used plug, tighten $1/8$ to $1/4$ of a turn after the spark plug seats. For a new plug, tighten $1/2$ turn after the spark plug seats.



NOTICE

A loose spark plug can become hot enough to damage the engine. Overtightening a spark plug can damage the threads in the engine.

6. Reconnect the spark plug cap.

Battery Service (electric start models)

The riding mower charging system charges the battery while the engine is running. However, if the riding mower is only used periodically, the battery must be charged monthly to maintain the battery service life.

A lead-acid battery self-discharges at a rate of 0.5 - 1.0 % per day. If the riding mower is not operated for a month, the battery can discharge as much as 30%. This could cause the engine not to start or shorten the service life of the battery. To charge the battery, follow the procedures below.

Removal

1. Raise and lock the seat (see page 53).
2. Remove the negative (-) cable from the battery negative (-) terminal; then remove the positive (+) cable from the battery positive (+) terminal.
3. Remove the battery from the battery tray.

MAINTENANCE & ADJUSTMENTS

Inspection


1. Remove the battery cell caps.
2. Inspect the electrolyte level of each cell. The electrolyte level must be maintained between the upper and lower level indicators.
3. If the electrolyte level is below the lower indicator, add distilled water as necessary.

Emergency Procedures

Eyes — Flush with water from a cup or other container for at least fifteen minutes. (Water under pressure can damage the eye.) Immediately call 911 (USA only) or a physician immediately.

Skin — Remove contaminated clothing. Flush the skin with large quantities of water. Call a physician immediately.

Swallowing — Drink water or milk. Call your local Poison Control Center (USA only) or a physician immediately.

 WARNING	
The battery contains sulfuric acid (electrolyte) which is highly corrosive and poisonous.	
Getting electrolyte in your eyes or on your skin can cause serious burns.	
Wear protective clothing and eye protection when working near the battery.	

Charging

The battery is rated at 14Ah (ampere-hours). 10% of the ampere-hour rating should be used as the charging current. A battery charger should be used that can be adjusted to deliver 1.4 amperes.

WARNING

The battery gives off explosive hydrogen gas during normal operation.

A spark or flame can cause the battery to explode with enough force to kill or seriously hurt you.

Wear protective clothing and a face shield, or have a skilled mechanic do the battery maintenance.

Charging the Battery

1. Remove the battery cell caps.
2. Connect the battery charger following the manufacturer's instructions, then charge the battery 3-4 hours.
3. After the battery is charged, inspect the electrolyte level in each of the cells. Add distilled water as necessary, then install the battery caps.
4. Clean the outside of the battery and the battery compartment with a solution of baking soda and water. Don't allow any of the solution to drip down the vent caps into the battery cells.

Installation

1. With the seat raised and locked, install the battery into the riding mower. The battery terminals should face the rear.
2. Install the positive (+) cable onto the battery positive (+) terminal; then install the negative (-) cable onto the battery negative (-) terminal, then lower and lock the seat.

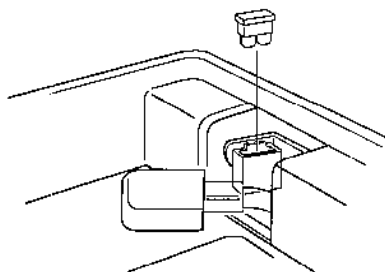
Fuse Replacement (electric start models)

The fuse and fuse holder are next to the positive (+) connector near the battery. The riding mower will not start if the fuse is blown. To replace the fuse:

MAINTENANCE & ADJUSTMENTS

1. Turn the ignition switch to OFF, then raise and lock the seat. See page 53.
2. The fuse used in the riding mower is a blade type. Grip the edge of the fuse with one hand and the fuse holder with the other. Pull the fuse straight out of the holder.

A blown fuse is indicated by a broken link, visible between the two blades on the fuse. Discard a blown fuse and replace it with one of the same value.



If fuse failure occurs, determine the cause and correct the problem before operating the riding mower further.

NOTICE

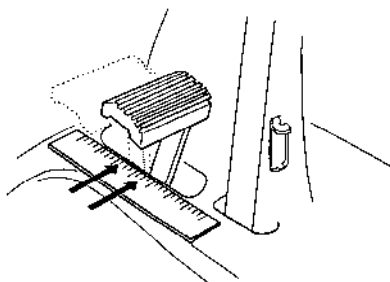
Never use a fuse with a different rating from that specified. Serious damage to the electrical system or fire may result.

Clutch Pedal Freeplay (gear transmission models)

Gear transmission models use a tensioner arm clutch and the only adjustment is the freeplay in the clutch pedal.

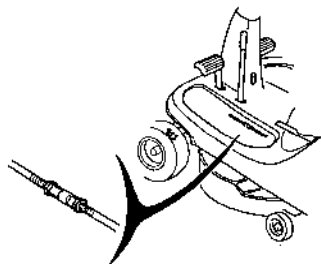
Inspection

1. Place a ruler flat, so it is up against the clutch pedal arm.
2. Move the clutch pedal and measure arm movement until resistance is felt.
3. Freeplay distance should be between 25 – 27.5 mm (1 – 1-1/16 inch). You should adjust the freeplay when it reaches 17 mm (11/16 inch).



Adjustment

1. Lower the mower deck all the way down.
2. From the right side, look between the riding mower frame and the mower deck. Locate the clutch arm turnbuckle and lock nuts. The clutch arm runs along the inner left hand side of the riding mower frame.
3. The forward locking nut on the clutch arm turnbuckle is a standard right hand thread. The rear locking nut is a left hand thread. There are flat spots on the side of the turnbuckle for a 12 mm wrench.
4. To decrease freeplay, loosen both locknuts and turn the turnbuckle to shorten clutch rod.

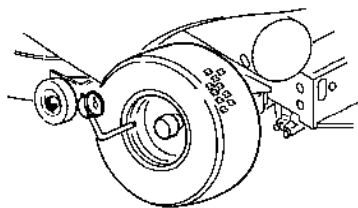


MAINTENANCE & ADJUSTMENTS

- To increase freeplay, loosen both the locknuts and turn the turnbuckle to lengthen the clutch rod.
- If adjustments fail to bring the freeplay to within 25 mm (1 inch) the drive belt may need to be replaced (Page 90).

Tires and Wheels

Tires should be kept at the proper inflation pressure and periodically inspected for tread wear or damage. Keeping the tire treads clean and free of mud and other debris improves traction and steering control.



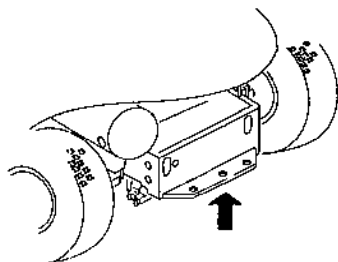
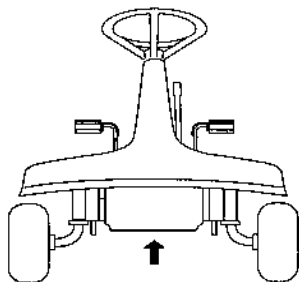
Tire pressure:

Front: 98 kPa (14 psi)

Rear: 69 kPa (10 psi)

Do not attempt to remove a wheel unless the riding mower is on firm, level ground and you have the equipment and knowledge to do so properly. Circlip pliers are required to remove and install any wheel. Block the grounded wheels securely.

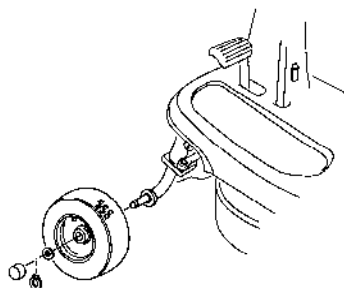
Jack Points



Front Wheels

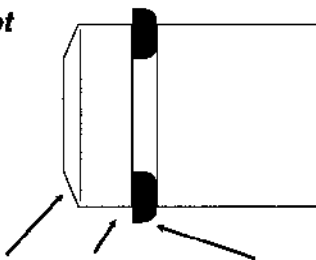
Removal

1. Place the riding mower on a flat, level surface and place the parking brake ON. Block the rear wheels securely.
2. Lift and securely support the front end of the riding mower. Remove the dust cap, then use circlip pliers to remove and discard the old circlip. Remove the flat washer and wheel.



Installation

1. Apply grease to the axle shaft and inside the wheel hub. Install the wheel back onto the axle.
2. Install a new circlip. **Do not use the old circlip.** Circlips have a round side and a flat side. Install the new circlip with the flat side out, being careful not to expand the clip too far. Install the dust cap.



Rear Wheel

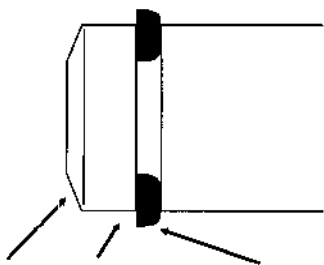
Removal

1. Block the front wheels securely. Lift and securely support the rear end of the riding mower. Remove the dust cap, then use circlip pliers to remove and discard the old circlip.
2. Remove the flat washer, then rotate the wheel, so the square key on the axle is upright and won't fall off when you remove the wheel.
3. Carefully pull the wheel and key straight off the axle.
4. Be sure to remove the square key from the axle, otherwise, it can be difficult to get the wheel back on the axle properly.

MAINTENANCE & ADJUSTMENTS

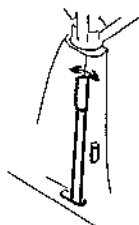
Installation

1. Grease the axle thoroughly. Slide the wheel onto the axle. Line the notch on the axle with the notch on the inside of the wheel. Install the square key between the axle and wheel.
2. Install a flat washer on the outside of the wheel and a new circlip. **Do not use the old circlip.** Circlips have a flat side and a round side. Install the circlip with the flat side out, being careful not to expand the clip too far. Replace the dust cap.



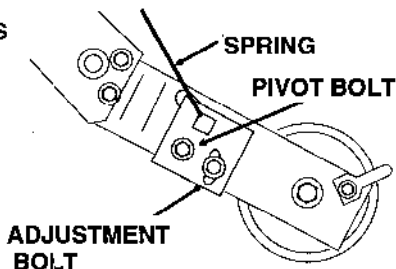
PTO Lever Freeplay

With the PTO clutch lever OFF and the mower deck in the highest position, there should be no freeplay in the PTO clutch lever. If you feel freeplay, the PTO clutch spring should be adjusted.



1. Move the PTO clutch lever to OFF. Locate the PTO clutch lever spring where it is attached to the PTO tensioner arm.

2. The PTO clutch lever spring is held in place by a square plate, which is fastened to the PTO clutch tensioner arm by two bolts. The bolt closest to the pulley is the adjustment bolt, while the other bolt acts as a pivot point.



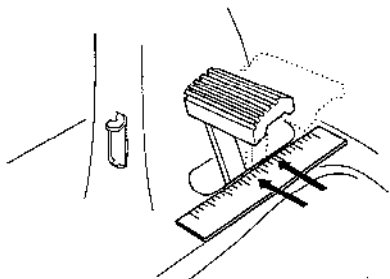
3. To eliminate freeplay, loosen, but do not remove the two bolts. Rotate the plate clockwise until there is no freeplay in the PTO clutch lever. Tighten the adjustment bolt, then tighten the pivot bolt.

Brake Maintenance

Before performing any maintenance on the brake system, park the riding mower on a flat, level surface. Release the parking brake, remove the ignition key and disconnect the spark plug cap.

Brake Pedal Freeplay Inspection (Gear Transmission Model)

1. Gear transmission model: Place a ruler flat along the opening in the riding mower platform where the brake pedal arm is located. Stand in front of the riding mower and hold the clutch pedal all the way down with one hand.
2. With your other hand, slowly press the brake pedal down and note a strong resistance. At this point, measure the brake pedal arm travel.



3. Brake pedal arm travel from rest to the point of strong resistance should be between 57 – 62 mm (2-1/4 – 2-7/16 inches).

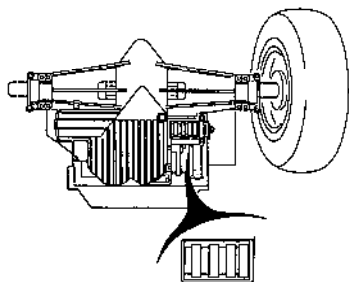
Adjustment is needed if freeplay exceeds 73 mm (2-3/4 inches).

Brake Pedal Freeplay Inspection (Hydrostatic Transmission Model)

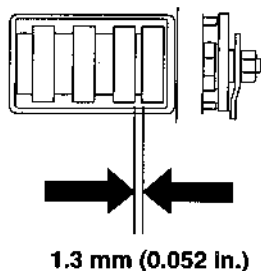
1. Hydrostatic transmission model: Park the riding mower on a flat, level surface. Set the parking brake OFF, remove the ignition key and disconnect the spark plug wire.
2. Block the front wheels. Raise and support the rear end of the riding mower with a jack and jack stand.

MAINTENANCE & ADJUSTMENTS

3. Looking underneath the transmission on the left side of the riding mower, locate the rectangular brake plate inspection opening in the transmission case.

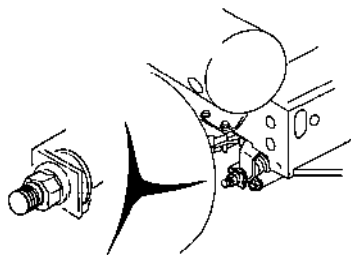


4. Using a feeler gauge, measure the gap between the first and second plate, as shown. If the gap is not 1.3 mm (0.052 inch), the freeplay must be adjusted.



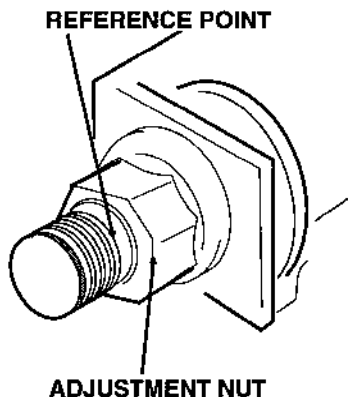
Brake Pedal Freeplay Adjustment

1. Locate the brake assembly and adjustment nut below the muffler. Tighten the adjustment nut until resistance is felt, then turn it back 3/4 turn for gear transmission models or 1/2 turn for the hydrostatic transmission model. (The hydrostatic model has a locknut. Loosen it before tightening the adjustment nut.) Recheck the freeplay measurement again. Take care not to overtighten the adjustment nut.



Brake Wear Inspection (gear transmission models)

Brake wear is determined by measuring the amount of exposed threads between the reference point and the adjustment nut. If the visible threads measure 1 – 1.5 mm (about the thickness of a nickel), the brake pads have exceeded their service life and must be replaced.



Mower Deck

When the mower deck is removed, check and adjust these items after the mower deck is reinstalled:

- Mower deck height and leveling
- PTO lever freeplay
- Blade belt tension

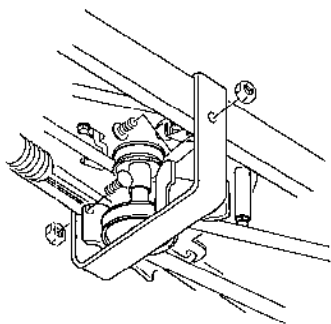
Removing the Mower Deck

To do this job properly and safely, use heavy gloves when handling the mower deck.

1. Place the riding mower on a solid, level surface.
2. Engage the parking brake, put the shift lever in NEUTRAL and move the PTO lever to OFF.
3. Disconnect the spark plug cap and remove the ignition key to prevent accidental starting.
4. If the optional grass bag chute is installed, remove the lower chute from the mower deck.
5. Position the front wheels straight ahead and use the height adjustment lever to lower the mower deck all the way down.

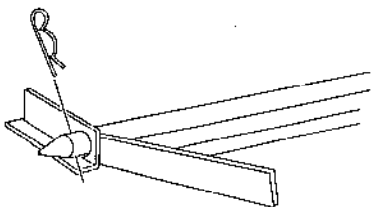
MAINTENANCE & ADJUSTMENTS

6. Look under the riding mower, just forward of the transmission, and locate the belt holder (U-shaped bracket). Remove the two bolts that hold the bracket to the riding mower frame. Note how the bracket is installed, as it must be reattached in the same way.

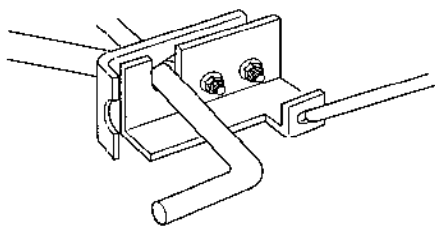


7. Wearing heavy gloves, pull the blade belt off the lower pulley on the engine crankshaft.

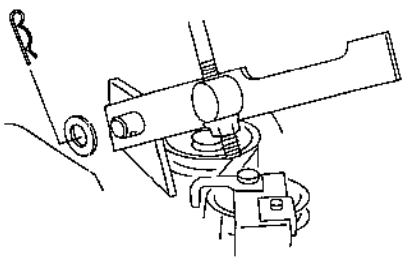
8. A single cross rod mounts the front of the mower deck. This cross rod is held in place with a single spring clip; remove the spring clip.



9. From the left front side of the mower deck, locate the L-shaped handle. Support the front of the mower deck and pull the cross rod straight out. Remove the support and allow the mower deck to rest on the ground.



10. Locate the height adjustment link connected to the rear part of the mower deck. Remove the spring clip and washer.



Put on heavy gloves, then push the mower deck slightly toward the right side of the riding mower to disconnect the mower deck .

11. Raise the height adjustment lever all the way up. Move the PTO clutch lever to ON.
12. Push the mower deck slightly forward until the PTO clutch lever spring falls clear. Note the other end of the spring remains attached to the PTO clutch tensioner arm. Push the mower deck slightly rearward, until the front link falls clear.
13. Turn the steering wheel all the way to the right. Put on heavy gloves and pull the mower deck out from the left side. Take care not to snag the deck on any part of the riding mower.

Installation is the reverse order of removal. After installing the mower deck, you should always perform the three mower deck adjustments as outlined in the next section.

Mower Deck Height Adjustments

For the best cut quality, the mower deck must sit at a proper angle to the ground. There are three adjustments that can be made to the mower deck.

- Left to right mower deck leveling adjustment
- Front to rear mower deck adjustment
- Mower deck height adjustment

All three adjustments should only be performed **after** the following seven steps have been completed:

1. Park the riding mower on a smooth, flat, level surface.
2. Move the PTO lever to OFF.
3. Set the parking brake ON.
4. Disconnect the spark plug cap and remove the ignition key.
5. Verify correct tire pressure. See page 68.
6. Inspect the blade. See page 84.
7. Remove the lower chute from grass bag equipped models.

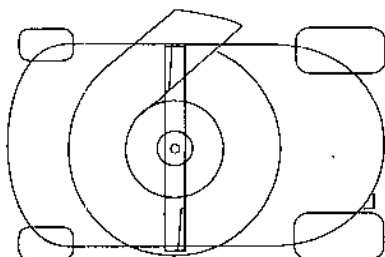
MAINTENANCE & ADJUSTMENTS

Left to Right Mower Deck Leveling

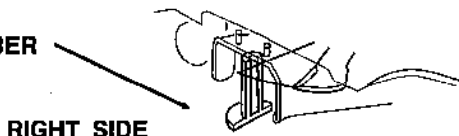
Inspection

1. Prepare the riding mower as previously outlined.
2. Set the mower deck height adjustment lever to the number 2 position.
3. Put on heavy gloves, as you need to rotate the blade.
4. Rotate the blade so it is parallel to the front axle.

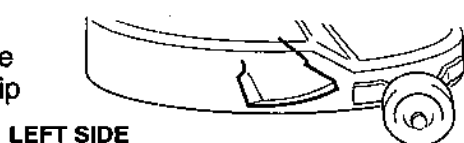
Using a blade height measuring tool, measure the height of the blade tip on the right side.



**MEASURING TOOL
(HONDA PART NUMBER
07JPJ-750010A)**



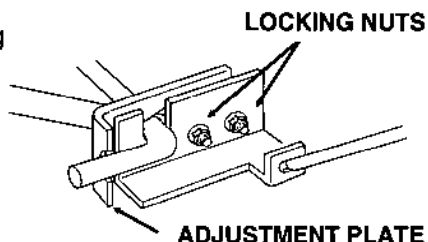
5. Using a blade height measuring tool, measure the height of the blade tip on the left side.



6. For best results, the height of the blade from the ground should be the same on both sides. However, it is okay if the right side is slightly higher, but no more than 5 mm (3/16 inch).
7. If the right side is more than 5 mm (3/16 inch) higher or is lower than the left, you'll need to adjust the left to right mower deck level.

Adjustment

1. From the left side of the riding mower, locate the link adjust plate on the mower deck near the left front wheel. This plate is used to adjust the height of the left side of the mower deck.
2. Loosen the two plate locking nuts enough so the plate can move. To lower the left side of the mower deck, tap the plate forward toward the front of the riding mower.
3. To raise the left side of the mower deck, tap the plate rearward, toward the rear of the riding mower.
4. Once the left and right blade heights are within specification, carefully tighten the plate locking nuts and then verify the measurements again.

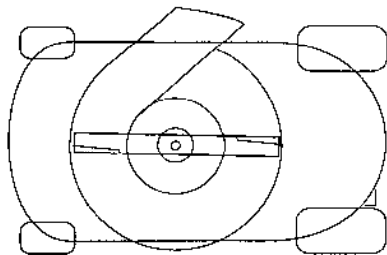


Front to Rear Mower Deck Adjustment

Inspection

1. Prepare the riding mower as previously outlined.
2. Set the mower deck height adjustment lever to the number 2 position.
3. Put on heavy gloves, as you need to rotate the blade.
4. Rotate the blade so it is perpendicular to the front axle.

Using a blade height measuring tool, measure the height of the cutting edge of the blade to the ground, from the front and rear tips of the blade.

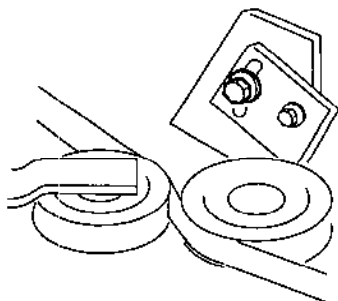


5. The rear tip of the blade should be 6 – 9 mm (1/4 – 3/8 inch) higher than the front. For mulching, the blade can be set level or 6 mm (1/4") higher in front.
6. If the rear is not within this specification, you'll need to perform the front to rear mower deck adjustment.

Adjustment

1. From the left side of the riding mower, locate the square, black adjustment plate where the rear section of the mower deck attaches to the height adjustment lever.

2. There are two bolts connected to this plate. The front bolt passes through a curved portion of the plate. The smaller, bolt near the rear provides a pivot point for the position of the adjusting plate.



3. Loosen both bolts to allow the plate to move.
4. Put on heavy gloves, as you now must support the mower deck.
5. Turn the plate clockwise (as viewed from the left side) to lower the rear of the mower deck.
6. Turn the plate counterclockwise (as viewed from the left side) to raise the rear of the mower deck.
7. Once you have obtained a proper measurement [rear blade tip at least 6 mm (1/4 inch) but no more than 9 mm (3/8 inch) higher than the front blade tip], tighten the front bolt to lock the plate into position, then tighten the smaller bolt.

Mower Deck Height Adjustment

The height adjustment lever on the left side of the riding mower is used to raise and lower the mower deck. When the mower deck height is properly adjusted, the reference numbers near the lever can roughly approximate the number of inches the front edge of the blade is from a flat, level surface.

Inspection

1. Prepare the riding mower as previously outlined.
2. Set the height adjustment lever to the number 2 position.
3. Put on heavy gloves, as you must move the blade.

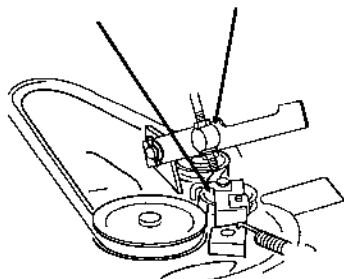
4. Rotate the blade so it is perpendicular to the front axle.
5. Using a blade height measuring tool, measure the distance from the ground to the front tip of the blade.

This measurement should be between 48 – 54 mm (1-7/8 – 2-1/8 inches). This verifies the setting on the height adjustment lever as an approximate 2 inch cutting height.

Adjustment

1. From the right side of the riding mower, locate where the rear deck mounting plate attaches to a flat, black link. Halfway up this link is a rod attached to the height adjustment lever.
2. The end of the link pivots on the frame. Where the rod and link attach, there is a threaded section of the rod where two locknuts hold a mounting pin in position. The position of this mounting pin on the rod determines how high the mower deck is in relation to the height adjustment lever.
3. If the front blade tip is measuring too high off the ground, loosen the lower self-locking nut and allow the mower deck to drop enough to obtain a correct height measurement. Tighten the upper locknut to hold the mounting pin in this position.
4. If the front blade tip is measuring too low, loosen the upper lock nut and thread it upward about 13 mm (1/2 inch), then use a wrench to turn the lower self-locking nut upward and raise the mower deck. Continue turning the lower self-locking nut until a correct height measurement is obtained. Turn the upper lock nut back down toward the mounting pin, then tighten it securely.

ADJUSTMENT LOCK NUTS



Blade Belt

Never attempt to change a belt while the engine is running. Remove the ignition key from the ignition switch and disconnect the spark plug cap to prevent accidental start up.

Wear heavy gloves to protect your hands when replacing belts or when working with the mower blade.

Blade Belt Tension

You should check and adjust (if needed) the blade belt tension whenever the mower deck is removed and reinstalled.

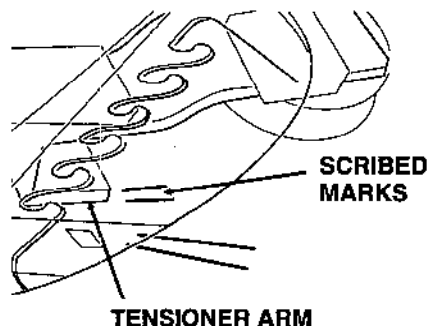
Before the blade belt tension is adjusted, make sure there is no freeplay in the PTO spring. Inspecting and adjusting PTO lever freeplay is described on page 70.

You should also verify correct cutting height before adjusting the blade belt tension. This procedure is on page 78.

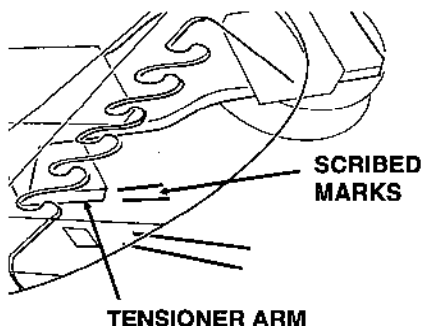
To check and adjust the blade belt tension:

Inspection

1. Set the steering wheel in the straight-ahead position.
2. Move the PTO clutch lever to ON.
3. Lower the mower deck to the number 1 position.
4. Move the height adjustment lever away from the position notches and look down through the lever opening in the body at the PTO clutch tensioner arm.

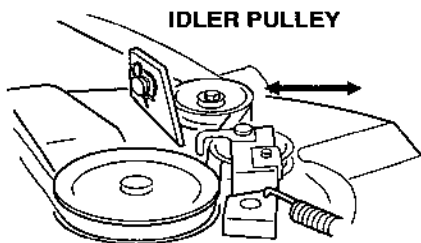


5. Look for the two inner scribed marks (the two longer scribe marks are not used) on the mower deck, just below the edge of the PTO tensioner arm. The edge of the PTO tensioner arm should line up between the two marks.



Adjustment

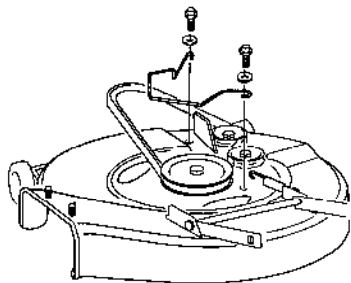
1. If the tensioner arm does not line up, loosen the adjustment nut on the idler pulley shaft.
2. Slide the pulley (and its bracket / belt holder) left or right to bring the PTO clutch tensioner arm to line up with the inner set of scribed marks.



3. Tighten the idler pulley adjustment nut securely. If the idler pulley can't be adjusted within the two scribed marks, the blade belt may be excessively worn and must be replaced.

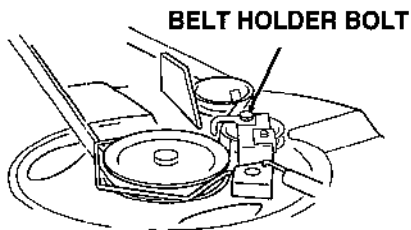
Removing the Blade Belt

1. Remove the mower deck; see page 73.
2. Loosen and remove the two bolts that hold the belt holder around the blade pulley and remove the belt holder. Do not loosen one bolt and attempt to bend the holder out of position. This can deform the belt holder.



MAINTENANCE & ADJUSTMENTS

3. Loosen the nut and bolt securing the belt holder to the PTO clutch tensioner arm. This holder does not need to be removed to free the blade belt from the pulley.



⚠ CAUTION

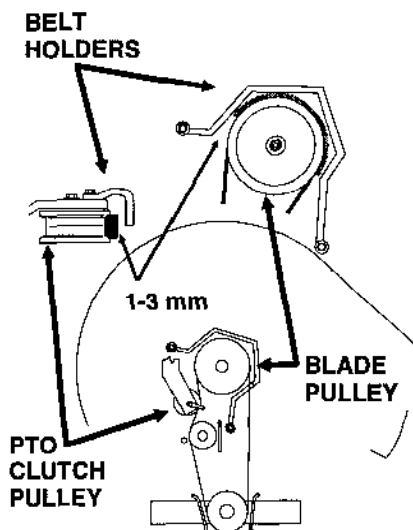
The PTO clutch arm is under tension from a spring.

You can injure your hands or fingers if they are caught when moving the pulley or clutch arm.

Wear heavy gloves, and keep fingers and hands clear from the path of the moving PTO clutch arm.

4. Put on some heavy gloves. Carefully push the PTO clutch tensioner arm toward the center of the mower deck.
5. Move the arm enough to provide clearance for the blade belt to be removed from the blade pulley. The tensioner arm is under tension from a spring, so be careful not to let the arm snap back when releasing it.
6. Once the blade belt is free of the blade pulley, move the belt enough to free it from the belt holder on the pulley.
7. Examine the belt for cracks, tears or other damage or wear. Replace if necessary with a genuine Honda belt.

8. Installation of the new blade belt is the reverse of removal. Use the illustrations shown here for proper belt routing and spacing. Be sure both the belt holders around the blade pulley and the belt holder around the PTO clutch pulley have 1 – 3 mm (1/16 inch) clearance.



Blade Maintenance

Inspect, check bolt tightness, remove, sharpen and replace the blade as described in this section. Always complete these steps before working around the mower blade:

1. Move the PTO clutch lever to OFF. Engage the parking brake.
2. Turn the ignition switch to OFF and remove the key.
3. Disconnect the spark plug cap.

Blade Inspection

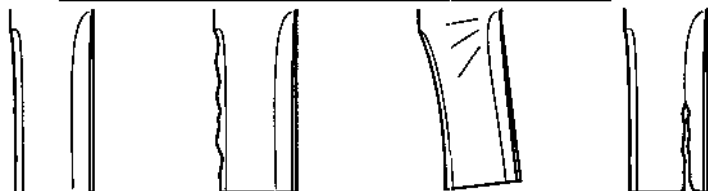
The blade is subject to wear during operation and should be inspected each time the riding mower is used. A dull blade can be sharpened, but a blade that is worn out, bent, cracked, or otherwise damaged must be replaced.

WARNING

A worn, cracked, or damaged blade can break and throw pieces with great force.

Thrown blade pieces can seriously injure you and any bystanders.

Always inspect the blade before using the riding mower. Replace the blade if worn or damaged. Do not operate the riding mower with a worn or damaged blade.



NEW

WORN

BENT

CRACKED

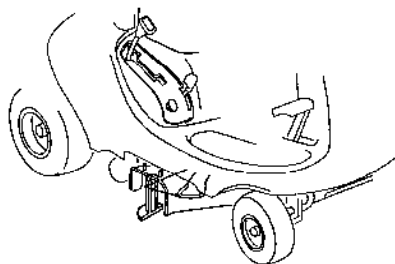
When the blade needs sharpening or replacement, take the riding mower to an authorized Honda riding mower dealer. Or, if you have a torque wrench, you can remove and install the blade yourself, as described later in this chapter.

Inspecting for a Bent Blade

Perform this inspection prior to attempting any mower deck leveling adjustments.

1. Wearing heavy gloves, position the mower blade so it is parallel to the front axle.

- Using a blade height measuring tool, measure the height of the blade tip at right side of the mower deck and record this measurement.



- Turn the blade 180 degrees and again measure the blade tip on the right hand side. The two measurements should be the same. Any difference indicates a bent blade and/or a bent blade spindle. Install a new blade and re-check the measurements. If there is still a difference, the blade spindle is bent. A bent blade and/or bent blade spindle must be replaced.

Blade Bolt Tightness

Blade bolt tightness should be checked at the correct interval (page 52).

WARNING

The blade is sharp, and it spins at high speed during operation.

Contact with a moving blade can cut you severely and can amputate fingers.

Before working on or near the blade, always disengage the PTO, and remove the ignition key to prevent accidental starting.

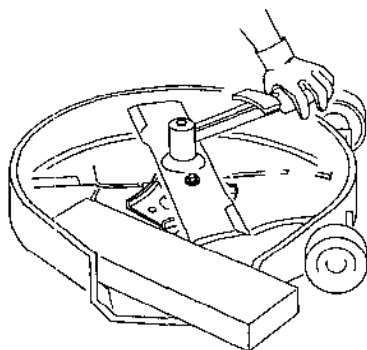
Wear heavy gloves to protect your hands.

Disconnect the spark plug cap.

1. Remove the mower deck from the riding mower; see page 73.
2. Put on heavy gloves and turn the mower deck upside down.
3. Wearing heavy gloves, clean dirt and grass from the blade and the inside of the mower deck.
4. Hold the blade firmly, or block it with a piece of wood, and use a torque wrench to check bolt torque on the three bolts.

**Center 10 x 28 mm bolt
tightening torque:
5.0 kg-m (36.2 ft-lb)**

**Side blade bolts
(12 x 25 mm) tightening
torque:
8.5 kg-m (61.5 ft-lb)**

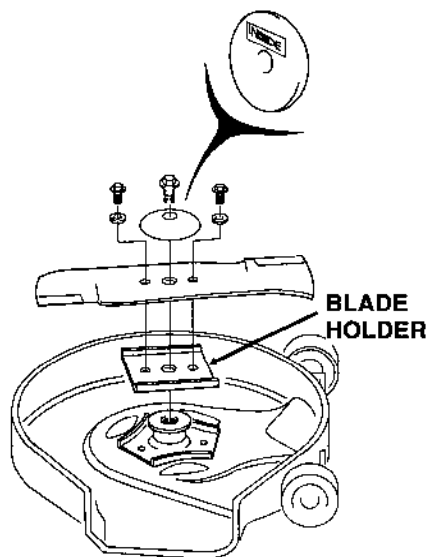


Blade Removal

Before attempting to remove and install the blade, be sure you have the proper tools and equipment, including a torque wrench to tighten the blade bolts and heavy gloves to protect your hands from the blade.

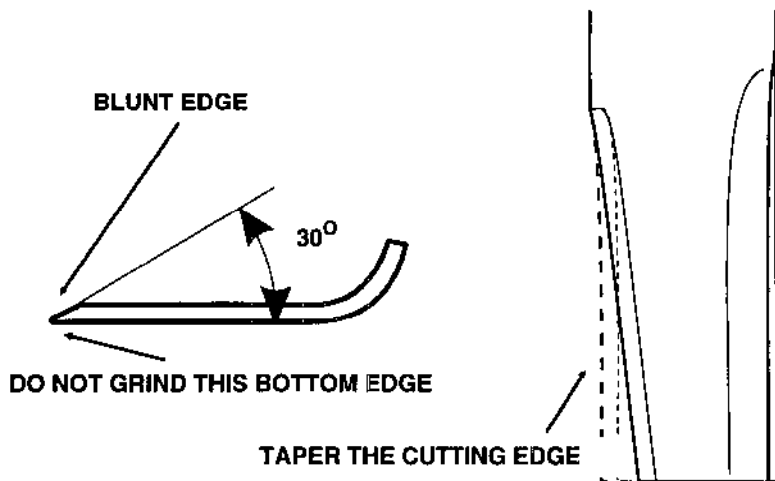
Remove the mower deck from the riding mower; (see page 73).

1. Wearing heavy gloves and with the mower deck removed, loosen the center blade bolt and special washer.
2. Note how the cone-shaped washer is aligned on the pulley shaft. The side marked "INSIDE" goes toward the blade.
3. Remove the blade and blade holder.
4. If the blade is to be replaced or sharpened, remove the blade holder from the blade.



Blade Sharpening

A dull blade may be sharpened, but a blade that is worn out, bent, cracked, or otherwise damaged must be replaced; (see page 83). Always use a genuine Honda replacement blade or high quality equivalent.



Sharpening Guidelines

- Maintain the original angle of the blade (about 30°).
- Leave a blunt edge of 0.8 – 1.5 mm (1/32 to 1/16 inch). Do not sharpen to a knife edge, as service life will be reduced.
- Remove an equal amount of material from each end of the blade to maintain balance.
- Do not remove material from the inner area of the cutting edge. If you need to remove material to restore the cutting edge, taper the edge toward the tip. Do not taper beyond 1/3 of the blade width.
- Do not grind the back side of the blade.
- Check the balance of the blade by placing a dowel through the center hole. Should one end of the blade drop, remove additional material from that end of the blade to achieve balance.

Blade Installation

Use a genuine Honda replacement blade or high quality equivalent.

1. Clean any dirt and grass from around the blade shaft and inside the deck.
2. If the blade holder was removed from the blade, reinstall the blade holder bolts, lock washers and blade holder as shown on page 87.

3. Install the blade with the lift section of the blade toward the mower deck.
4. Install the washer with the side marked **INSIDE** facing the blade.
5. The blade bolt and washer are specific to this application and must **not** be replaced with any other bolt or washer.
6. Hold the blade firmly and use a torque wrench to check that all blade bolts are properly tightened.

Center bolt (10 x 28 mm) torque: 5.0 kg-m (36.2 ft-lb)

Side blade bolts (12 x 25 mm) torque: 8.5 kg-m (61.5 ft-lb)

Spark Arrester Maintenance

The spark arrester is not standard on your riding mower, but may be required for legal operation in some areas. If a spark arrester is installed on your riding mower, it should be inspected, cleaned and replaced if necessary.

NOTICE

The spark arrester must be serviced every 100 hours to maintain its efficiency.

If the riding mower has been running, allow it to cool before proceeding.

1. Remove the rear cover. Locate the muffler and spark arrester on the left rear side of the engine.
2. Remove the hold-down screw connecting the spark arrester to the muffler.

Inspection and Cleaning

1. Remove the single screw holding the two parts of the spark arrester together. Use a wire brush to remove carbon deposits from the spark arrester screen.

Inspect the spark arrester screen for holes or tears. Replace it if it is damaged.

2. Reinstall all parts in the reverse order of removal.

Drive Belt

The drive belt should be inspected at the interval specified in the Maintenance Schedule on page 52.

Drive Belt Inspection

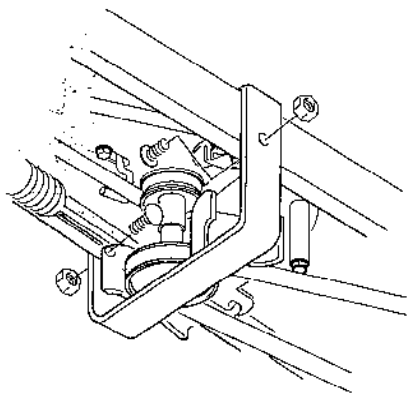
1. Park the riding mower on a flat, level surface. Set the parking brake, remove the ignition key and disconnect the spark plug cap.
2. Securely block the front and rear wheels to prevent the riding mower from moving. Release the parking brake lever.
3. Lower the mower deck all the way down with the height adjustment lever.
4. Examine the drive belts for cracks, tears or other physical damage. Replace the belt if it is damaged.
5. Release the parking brake lever.
6. Check the drive belt; make sure it is snug and routed through all the belt guards, pulleys and the clutch tensioner arm.
7. Reconnect the spark plug cap.

Drive Belt Replacement

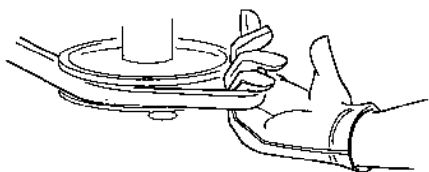
The drive belt is used to transfer engine power to the transmission. To replace the drive belt:

1. Place the riding mower on a solid, level surface. Put the shift lever to NEUTRAL and engage the parking brake. Move the PTO clutch lever to OFF.
2. Disconnect the spark plug cap and remove the ignition key to prevent accidental starting.
3. Underneath the riding mower, between the mower deck and the rear axle, you can see where the blade belt and drive belt are connected to the engine by two separate pulleys. The blade belt must be disconnected from its pulley before the drive belt can be removed.

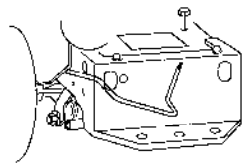
4. To disconnect the blade belt, locate the large belt holder (U-shaped bracket) partially covering the blade belt pulley. Remove the two bolts holding this bracket to the riding mower frame and then remove the bracket itself. Note how the bracket is attached to the frame. It must be reattached in the same position.



5. Verify that the PTO lever is OFF, then put on some heavy gloves and pull the blade belt away and off of its pulley.



6. Locate the belt guide bolted to the frame near the drive belt pulley. Loosen, but do not remove this guide.
7. Remove the rear cover. On the frame, just below the spark plug, locate a self-tapping screw that holds down a metal access plate on the frame. Remove the screw and plate.
8. Loosen and remove the single flange nut holding the belt holder to the right side of the frame. Allow the belt holder to fall clear of the transmission pulley.



9. **Gear transmission models:** Verify that the clutch pedal is locked down by the parking brake.
10. **Hydrostatic transmission model:** Using a spring removal tool, disconnect the drive belt tensioner arm spring from the hole located on the left rear end of the frame.
11. Locate the belt guide bolted to the top of the clutch pulley. Loosen (but do not remove) the center bolt from the pulley enough to permit the drive belt to move off the pulley.

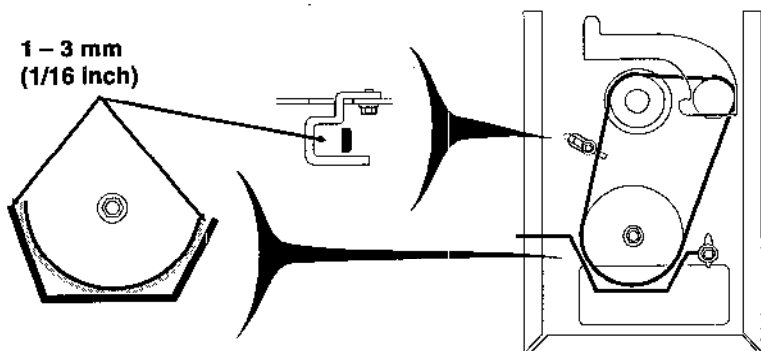
MAINTENANCE & ADJUSTMENTS

12. Release the parking brake. Remove the drive belt from the pulley on the clutch tensioner arm. Remove the drive belt from the pulley on the engine and the transmission pulley.

Inspect the drive belt for excessive wear, cracks or other damage. If needed, replace with a genuine Honda belt.

Installation of the new drive belt is the reverse of removal. Use the illustration shown here for proper belt routing and spacing. Be sure the belt holders all have 1 – 3 mm (1/16 inch) clearance as shown.

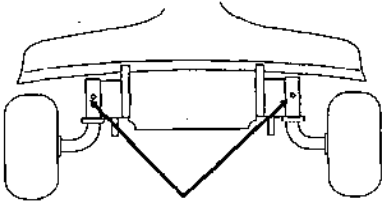
Before tightening the belt guide on the clutch pulley, make sure the alignment tab on one side of the guide is properly inserted into the guide hole on the tensioner arm.



Lubrication Points

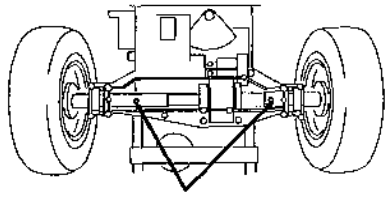
Grease: NGLI #2 Lithium Base EP

Lubricate the following grease points.



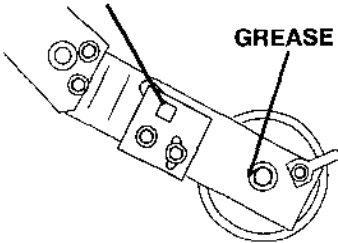
GREASE

Front axle shaft grease fittings



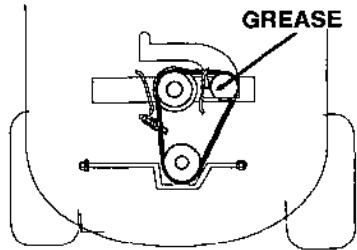
GREASE

Rear axle shaft grease fittings*



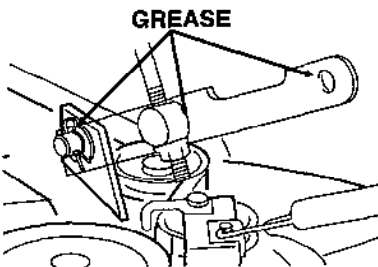
GREASE

PTO clutch pulley shaft



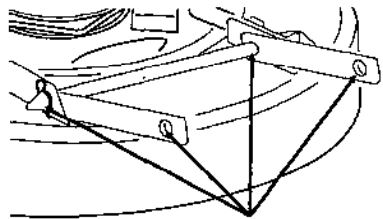
GREASE

Drive clutch pulley shaft



GREASE

Mower deck rear



GREASE

Mower deck front

*Gear transmission model only.

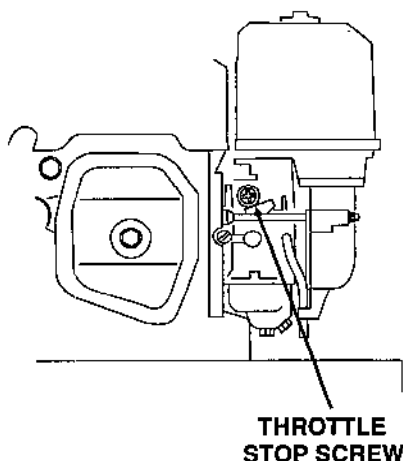
Carburetor

Idle Speed Adjustment

Perform this adjustment if the idle is slow or rough and you're sure the air cleaner and spark plug are in good condition. You must have an accurate tachometer to properly measure engine speed.

1. Start the engine in an area with adequate ventilation to avoid carbon monoxide poisoning. Allow the engine to warm to normal operating temperature.
2. With the throttle on **SLOW**, turn the throttle stop screw (brass colored) in or out to obtain the specified idle speed.

IDLE SPEED:
1750-1950 RPM



Transmission

There is no scheduled maintenance required for the transmission in the H1011H (hydrostatic transmission) model. The H1011S and H1011R (gear transmission) models do require periodic lubrication to the rear axle shafts. Refer to the Maintenance Schedule on page 52 for the interval and the Lubrication section on page 93 for details.

TRANSPORTING and STORING

This section tells you how to safely transport and store your riding mower.

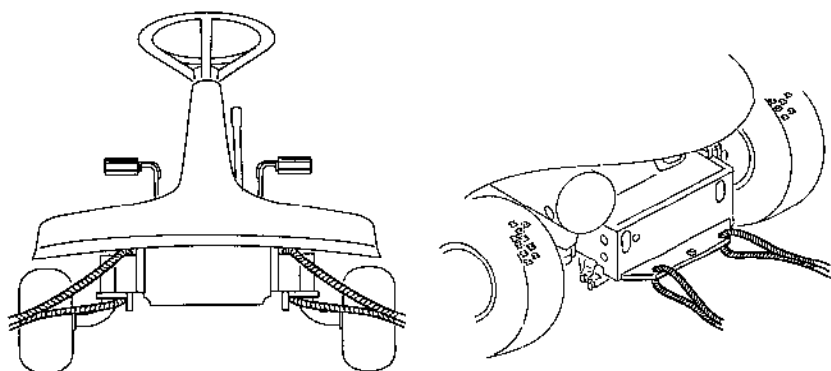
Transporting Your Riding Mower	96
Storage Preparation	97
Storage	100
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Transporting Your Riding Mower

Remove the rear cover (page 54) when transporting the riding mower. If your riding mower is equipped with an optional grass bag kit, remove the bags, hopper cover and upper chute. The rear support arms and lower chute are bolted directly to the riding mower and may remain in place when transporting.

If the engine has been running, allow it to cool for at least 15 minutes before loading the riding mower.

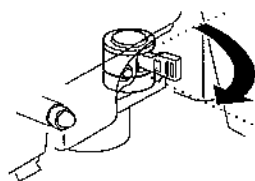
Make sure the transmission engagement lever is set to **DISENGAGE** (hydrostatic transmission model only). See page 18.



Transport the riding mower on a flat level trailer or truck bed. The tie down points should be near or on the floor.

Securely tie the mower down, front and rear, with ropes or straps. Use the points shown here when attaching the tie downs. Do not attach tie downs to the steering rods.

When the riding mower is in position, turn the fuel valve **OFF** to reduce the possibility of fuel leaking.



The riding mower may spill fuel if tilted during loading or transporting. Wipe up spilled fuel immediately.

Storage Preparation - Including Winter Storage

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

Cleaning

Clean all surfaces of the riding mower, including the underside of the mower deck. Wear heavy gloves to protect your hands from the blade.

1. Wash the riding mower with a garden hose or other low pressure equipment.

If the riding mower has been running, allow the engine to cool for at least half an hour before spraying water on it.

NOTICE

Spraying water on a hot engine or hot mower deck bearings can cool them too quickly causing damage.

Keep water away from controls, cable ends, and all other places that are difficult to dry, as water promotes rust.

2. 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.
 - Engage the PTO to expel water from the mower deck.
3. Stop the engine, and allow it to cool.
4. After the riding mower is clean and dry, touch up any damaged paint, and coat other areas that may rust with a light film of oil.

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 riding mower 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.

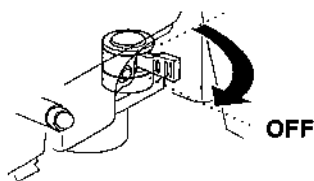
The Distributor's Limited Warranty does not cover fuel system damage or engine performance problems resulting from neglected storage preparation.

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

Adding a Gasoline Stabilizer

1. 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.
2. Add gasoline stabilizer following manufacturer's instructions.
3. After adding a gasoline stabilizer, run the engine outdoors for 10 minutes to be sure that treated gasoline has replaced the untreated gasoline in the carburetor.

4. Stop the engine, and turn the fuel valve to the OFF position.



Draining the Fuel Tank and Carburetor

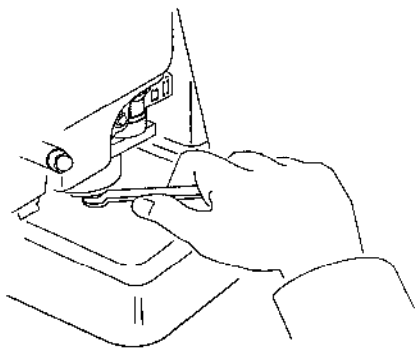
1. Remove the carburetor drain bolt with a 10 mm wrench or screwdriver and turn the fuel valve to the ON position.

⚠ WARNING

Handling gasoline improperly can cause it to ignite or explode, causing you to be seriously or fatally injured.

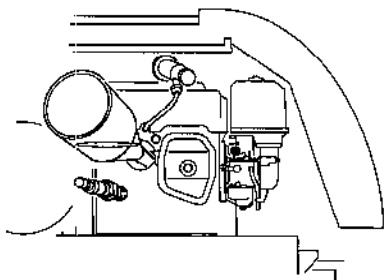
Always put out cigarettes and other smoking materials, and keep all sparks and open flames away when you are around gasoline.

2. Drain the fuel system into an approved gasoline container.
3. Reinstall the drain bolt.



Engine Oil

1. Change the engine oil (see page 61).
2. Remove the spark plug (see page 62). Pour a tablespoon (5 – 10 cc) of clean engine oil into the cylinder. Operate the electric starter for a few seconds (or slowly pull the recoil starter rope a few times) to distribute the oil in the cylinder. Reinstall the spark plug.



Grease

Lubricate all grease points (see page 93).

Tires

Check tire air pressure (see page 68).

Battery

Remove and charge monthly.

Storage

If your riding mower 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.

Park the riding mower on a level surface. Tilting can cause fuel or oil leakage.

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

Recharge the battery once a month while the riding mower is in storage. This will help to extend the service life of the battery.

Removal From Storage

Check your riding mower as described in the “Before Mowing” 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.

TROUBLESHOOTING

This section tells you what to look for if you encounter problems.

Engine.....	104
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Engine...

...starts, but shuts off when operator rises off seat:

PTO clutch lever must be OFF, shift lever must be in NEUTRAL, and parking brake must be ON.

...starter doesn't operate (electric start models):

Shift lever must be in NEUTRAL.

PTO clutch lever must be OFF.

Parking brake must be ON or operator must be in seat.

Fuse may be blown.

Battery must be charged.

...doesn't start:

Parking brake must be ON (recoil start model).

Throttle should be in CHOKE for cold engine, FAST for warm engine (page 17).

Fuel valve must be ON (page 14).

Fuel tank should be full of fresh fuel.

Fuel filter should be clean and free of obstructions (page 58).

Spark plug cap should be securely attached to the spark plug (page 62).

Spark plug should have the correct gap and be free of deposits (page 62).

...has low power:

Tall grass should be cut at lower speeds or higher cutting heights (page 41).

Mower deck should be free of grass accumulation (page 44).

Air cleaner elements should be clean (page 54).

Spark plug should be correctly gapped and be free of deposits (page 62).

Carburetor must be properly jetted for elevation (page 44).

Engine must have proper cooling; check air intake path and engine fan for clogging (page 44).

Optional spark arrestor must be clean (page 89).

Riding mower...

...doesn't move:

Shift lever must be moved out of NEUTRAL.

Transmission engagement lever (hydrostatic transmission model only) must be engaged (page 18).

Parking brake must be OFF (page 18).

Both clutch (gear transmission models) and brake (all models) pedals must be released.

Drive belt worn, broken or not on pulleys (page 90).

...vibrates:

Blade must be in good condition (page 83).

Mower deck must be free of any obstructions, grass, mud, etc. (page 44).

Drive and blade belts should be in good condition and at correct tension (pages 90 and 80).

Drive or blade belt pulleys may be bent or damaged (page 90).

Lower chute may be clogged on models with optional grass bag kit.

Mower deck...

...doesn't cut:

PTO clutch lever must be ON (page 17).

Height adjustment lever set too high for grass conditions (page 15).

Blade belt broken or not engaged (page 80).

...cuts poorly:

Throttle should be in FAST (page 17).

Mower deck must be free of obstructions, grass, mud, etc. (page 44).

TROUBLESHOOTING

Moving too fast for conditions; use a slower travel speed (page 31).

Tall grass should be cut at lower speeds or higher cutting heights (page 41).

Grass is wet; don't mow wet grass.

Mower deck must be at proper level to ground (page 75).

Blade should be in good condition and properly installed (page 83).

Drive and blade belts should be in good condition and at correct tension (pages 90 and 80).

...doesn't discharge grass well:

Throttle should be in FAST (page 17).

Mow only dry grass.

Mower deck height not set properly (page 15).

Improper overlap (page 42).

Mow tall or thick grass with two cutting passes.

Operate riding mower in lower gear (page 31).

Blade may not be properly installed (page 87).

...stalls engine when PTO clutch lever is ON:

Throttle should be set to FAST (page 17).

Mower deck clogged.

Lower chute may be clogged on models with optional grass bag kit.

Engine power is low (see "Low Power" in previous section).

SPECIFICATIONS

This section provides you with important dimensions and capacities.

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SPECIFICATIONS

Honda H1011

Models	H1011S (Electric start, gear transmission) H1011R (Recoil start, gear transmission) H1011H (Electric start, hydrostatic transmission)
ENGINE	
Max. Horsepower	11hp
Model	GXV340K1
Type	OHV, air cooled, single cylinder
Displacement	337 cc (20.6 cubic inches)
Bore and stroke	82 mm x 64 mm (3.23 x 2.52 inches)
Compression ratio	7.7:1
Ignition timing	20° ± 2° BTDC
Ignition system	Transistorized magneto
Starting system	12 Vdc electric (H1011S & H) Recoil (H1011R)
Cooling system	Forced air
Fuel type & capacity	Unleaded / 3.4 liters (0.9 US gallons)
Air filter	Dual element, foam and paper
Lubrication	Forced / splash
Oil capacity	1.1 liters (1.16 US quart)
FRAME	
Length	1560 mm (61.4 inches)
Width	825 mm (32.5 inches)
Height	1005 mm (39.6 inches)
Wheel base	1150 mm (45.3 inches)
Dry weight	160 kg (353 pounds) (H1011S) 150 kg (330 pounds) (H1011R) 161 kg (355 pounds) (H1011H)
Front tires	11 x 4.0–5: 98 kPa (1.0 kg/cm ² , 14 psi)
Rear tires	16 x 6.5–8: 59 kPa (0.7 kg/cm ² , 10 psi)

TRANSMISSION	
Gear Type	Parallel shaft, constant mesh, sliding key
Gear selections	5 forward, 1 reverse plus neutral
Ground speeds	
First	2.4 km/h (1.5 mph)
Second	3.1 km/h (1.9 mph)
Third	4.9 km/h (3.0 mph)
Fourth	6.2 km/h (3.9 mph)
Fifth	7.3 km/h (4.5 mph)
Reverse	3.7 km/h (2.3 mph)
Hydrostatic type	Sealed hydrostatic motor and pump
Approximate ground speeds	REVERSE, MOWING and TRANSPORT
REVERSE	0 – 3.4 km/h (0 – 2.1 mph)
MOWING	0 – 5.2 km/h (0 – 3.2 mph)
TRANSPORT	5.2 – 6.6 km/h (3.2 – 4.1 mph)
MOWER DECK	
Type	Belt drive, side discharge, 3-point link
Size	760 mm (30 inches)
Height range	25 – 90 mm (1 – 3.5 inches)
Blade brake	Mechanical arm
Adjustments	Left & right, front & rear, and height
MISCELLANEOUS	
Minimum uncut grass diameter (left turn)	1150 mm (45.3 inches)
Brakes	Cam disc
Battery	U1-L (12V/RC 22min CCA 170A)

ADDITIONAL INFORMATION

This section gives you sources for more information about your riding mower.

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Honda Publications

These publications will give you additional information about maintaining your riding mower. You may order them from your Honda riding mower dealer.

Shop Manual

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

Parts Catalog

This provides a complete pictorial parts listing.

WARRANTY**Distributor's Limited Warranty****PRODUCTS COVERED BY
THIS WARRANTY:****LENGTH OF WARRANTY:***
(from date of original retail purchase)

Noncommercial/Nonrental Commercial/Rental

Harmony Riding Mowers

24 months

3 months

Attachments

24 months

3 months

*LENGTH OF WARRANTY: Batteries supplied with applicable products as standard, original equipment are covered by this warranty for a period of 12 months (noncommercial use) or 3 months (commercial/rental use) from the date of original retail product purchase.

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 Harmony riding mower and proof of original retail purchase date, 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 service 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 should 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 120 for contact information.

ADDITIONAL 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, NEGLIGENCE, INCORPORATION OR USE OF UNSUITABLE ATTACHMENTS OR PARTS, UNAUTHORIZED ALTERATION, OR ANY CAUSES OTHER THAN DEFECTS IN MATERIAL OR WORKMANSHIP OF THE PRODUCT.

MOWER BLADES AND MOWER DECK HOUSINGS, ARE SPECIFICALLY NOT WARRANTED AGAINST 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.

Accessories, Replacement Parts, and Apparel Warranty**PRODUCTS COVERED BY
THIS WARRANTY:****LENGTH OF WARRANTY:**
(from date of original retail purchase)

	Noncommercial/Nonrental	Commercial/Rental
Accessories	12 months	3 months
Replacement Parts	6 months	3 months
Apparel	6 months	3 months

To Qualify for this Warranty:

1. The accessories, replacement parts, or apparel 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.
2. You must be the first retail purchaser. This warranty is not transferable to subsequent owners.

What American Honda will Repair or Replace Under Warranty:

American Honda will repair or replace, at its option, any power equipment accessories, replacement parts, or apparel that are proven to be defective in material or workmanship under normal use during the applicable warranty time period. 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.

Accessories and replacement parts, installed by a dealer who is authorized by American Honda to sell them, will be repaired or replaced under warranty without charge for parts or labor. If installed by anyone else, accessories and replacement parts will be repaired or replaced under warranty without charge for parts, but any labor charges will be the responsibility of the purchaser.

Apparel will be repaired or replaced under warranty without any charge.

To Obtain Warranty Service:

You must take the Honda Power Equipment 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 service 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 120 for contact information.

ADDITIONAL INFORMATION

Exclusions:

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

MOWER BLADES AND MOWER DECK HOUSINGS, ARE SPECIFICALLY NOT WARRANTED AGAINST 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, OR THE POWER EQUIPMENT ON WHICH THE PRODUCT IS INSTALLED, TRANSPORTATION, COMMERCIAL LOSS, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGE. ANY IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THIS WRITTEN 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 Phase I Emission standard 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.

ADDITIONAL INFORMATION

If you have any questions regarding your warranty rights and responsibilities, you should write or call the Honda Power Equipment Customer Relations Department. Refer to page 119 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 warranty 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, NEGLIGENCE, 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 System	Catalyst
Air Induction	Air filter housing Air filter element*
Ignition	Crankcase breather tube Flywheel magneto Ignition pulse generator Ignition control module Ignition coil assembly Spark plug cap Spark plug*
Miscellaneous Parts	Tubings, 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.

WARRANTY 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:

American Honda Motor Co., Inc.
Power Equipment Division
Customer Relations Office
4475-A River Green Parkway
Duluth, GA 30096-2565

Or telephone: (770) 497-6400

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

- Model and serial numbers
- Name of the dealer who sold the lawn tractor to you
- Name and address of the dealer who services your lawn tractor
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem

Current customer service contact information:

United States, Puerto Rico, and U.S. Virgin Islands:

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:

American Honda Motor Co., Inc.
Power Equipment Division
Customer Relations Office
4900 Marconi Drive
Alpharetta, GA 30005-8847

Or telephone: (770) 497-6400 M-F, 8:30 am - 7:00 pm EST

When you write or call, please provide the following information:

- Model and serial numbers
- Name of the dealer who sold the Honda power equipment to you
- Name and address of the dealer who services your equipment
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem

Additional Fuel Information

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 requirement.

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 another brand of gasoline.

ADDITIONAL INFORMATION

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

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