

**Thank you very much for purchasing the
HONDA ROTARY MOWER.**

Printed in France

1989 - 06

Thank you for purchasing the Honda Rotary Mower.

This manual covers operation and maintenance of the HONDA ROTARY MOWER HR 194, HR 214, HR 216.

All information in this publication is based on the latest product information available at the time of going to press. Honda Motor Company Ltd. reserves the right to make changes at any time without notice and without incurring any obligation.

Any piece of electrical equipment can represent a potential source of danger if misused or improperly maintained.

Pay particular attention to statements preceded by the following words :

▲ WARNING : Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.

CAUTION : Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTE - Gives helpful information.

If any problem occurs, or if there are any questions concerning the mower, consult an authorized HONDA dealer.

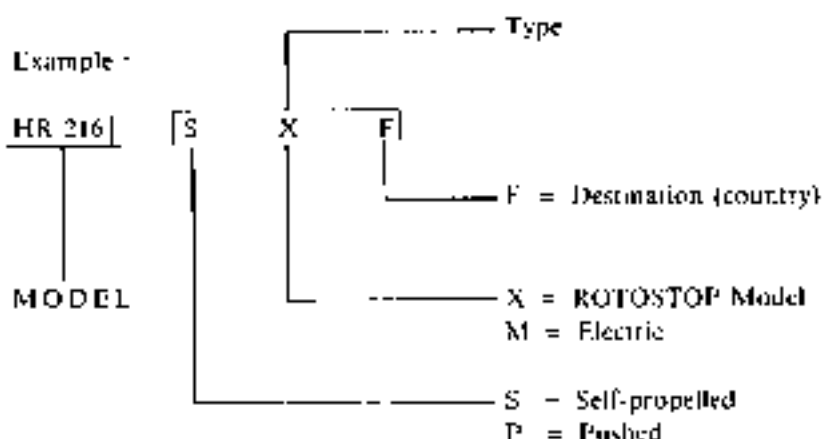
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Illustrations herein are mainly based on the model HR 216 SX.

▲ WARNING : The Honda Rotary Mower is designed to give safe and dependable service if operated according to instructions and intended use : mowing (cutting) grass and collecting cut grass, when equipped with a grass bag. Any other use could be dangerous. Read and understand the Owner's Manual before operating the mower. Failure to do so could result in personal injury or equipment damage.

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The codes used in this manual :



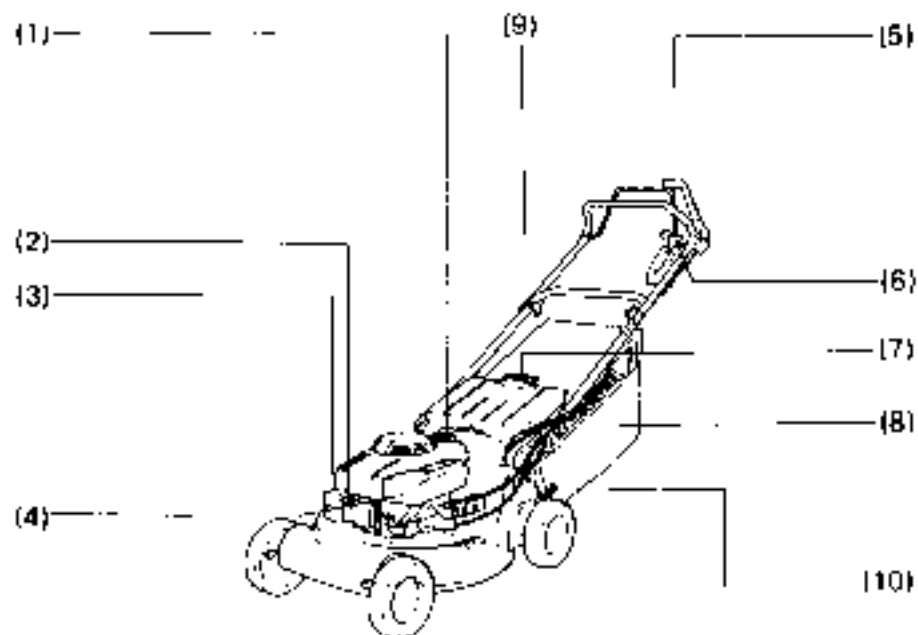
1. GENERAL SAFETY

▲ WARNING

To ensure safe operation :

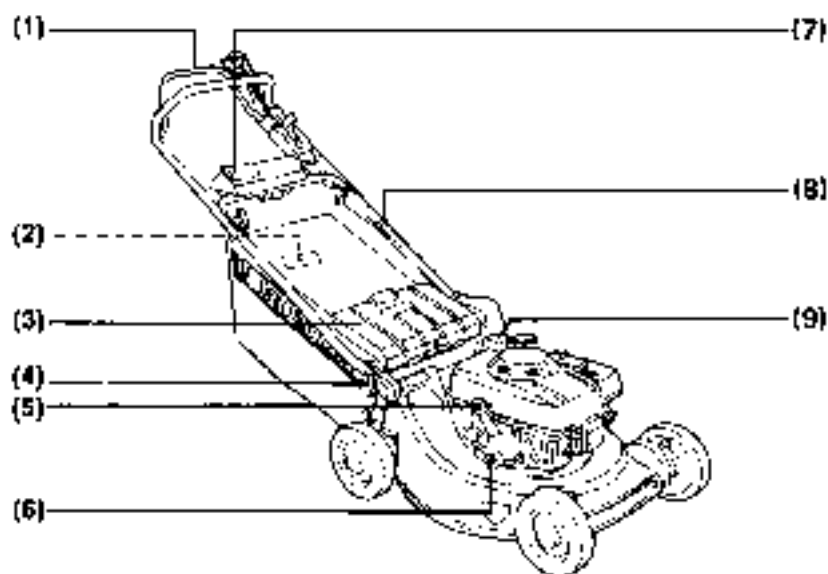
- Know how to **stop the engine quickly** and understand the operation of all controls. Never permit anyone to operate the mower without proper instruction.
- The rear shield is for your protection; keep it in place at all times.
- The blade is sharp and dangerous. Never put your hands or feet under the mower. Never tilt the mower to expose the blade while the engine is running. If you find it necessary to work on the mower, stop the engine and remove the spark plug cap.
- Never stand in front of self-propelled mowers when the engine is running. Someone may accidentally engage the drive clutch.
- Clear the lawn of sticks, stones, or debris before mowing. Mow only in cleared areas in daylight or good artificial light.
- Protect yourself by wearing long trousers and appropriate shoes. Don't wear loose fitting clothing or sandals when mowing.
- Stop the engine immediately if the blade hits an object or if the mower starts to vibrate. Remove the spark plug cap to be certain that the engine will not start accidentally and inspect the mower for damage. Replace any damaged parts before continuing to mow.
- Never operate without the grass bag or discharge adaptor (optional).
- Do not allow children to operate the mower. Keep children and pets away from the area of operation.
- Never run the engine in an enclosed or confined area. Exhaust gas contains poisonous carbon monoxide gas; exposure may cause loss of consciousness and may lead to death.
- Petrol is highly flammable and is explosive under certain conditions. Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks where the mower is refueled or where petrol is stored.
- Do not overfill the fuel tank. Make sure the filler cap is closed securely.
- Be careful not to spill fuel when refilling. Fuel vapour or spilled fuel may ignite. If any fuel is spilled, make sure the area is dry and allow petrol vapours to dissipate before starting the engine.
- The muffler becomes very hot during operation and remains hot for a while after the engine stops. Be careful not to touch the muffler while it is hot. Let the engine cool before storing the mower indoors.
- To reduce the hazard of fire, never leave grass clippings or leaves in the bag when the mower is stored. Never leave containers of clippings in or near buildings. The decomposition of vegetable matter causes a considerable rise in temperature.

2. COMPONENT IDENTIFICATION



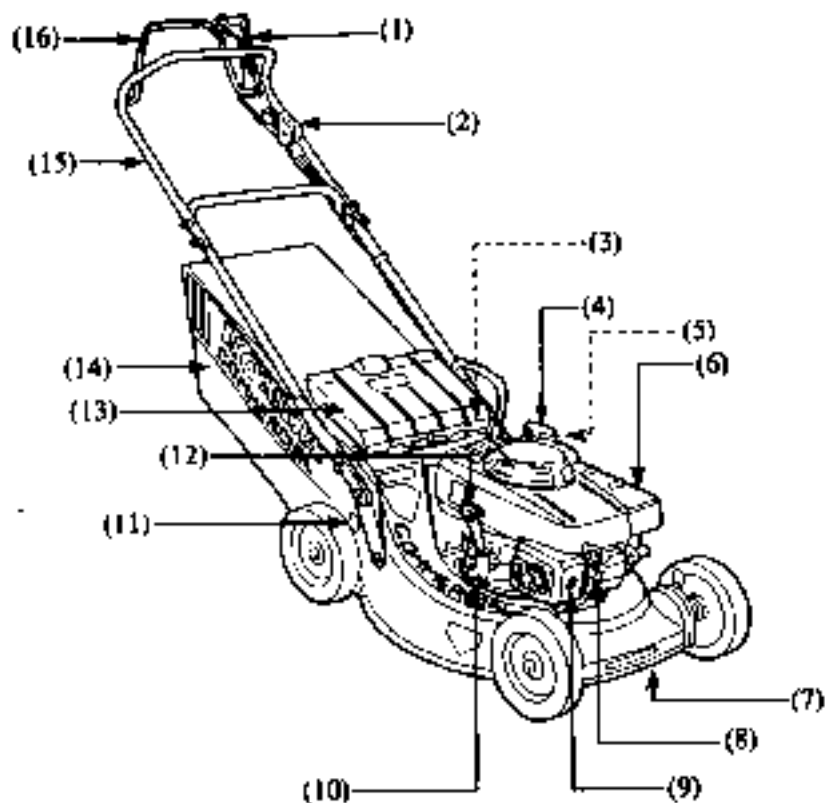
HR 194 SX
HR 214 SX

- 1/ RECOIL STARTER
- 2/ SPARK PLUG CAP
- 3/ MUFFLER
- 4/ AIR CLEANER
- 5/ ROTO-STOP LEVER
- 6/ THROTTLE CONTROL LEVER
- 7/ GRASS BAG HANDLE
- 8/ GRASS BAG
- 9/ SHIFT LEVER
- 10/ CUTTING HEIGHT ADJUSTING LEVER



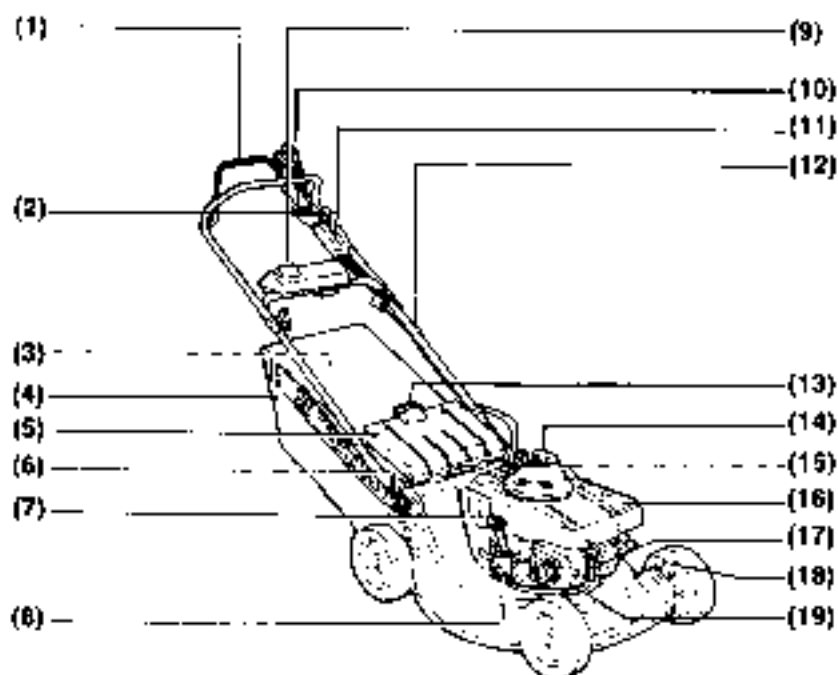
HR 194 SM
HR 214 SM

- 1/ DRIVE CLUTCH LEVER
- 2/ GRASS BAG GRIP
- 3/ DISCHARGE GUARD
- 4/ HANDLE HEIGHT ADJUSTER
- 5/ OIL FILLER CAP
- 6/ ENGINE OIL DRAIN PLUG
- 7/ CONTROL BOX
- 8/ HANDLE
- 9/ FUEL TANK CAP



HRA 216 SX

- | | |
|---------------------------|------------------------------------|
| 1/ ROTOSTOP LEVER | 10/ ENGINE OIL DRAIN BOLT |
| 2/ THROTTLE CONTROL LEVER | 11/ CUTTING HEIGHT ADJUSTING LEVER |
| 3/ SHIFT LEVER | 12/ OIL FILLER CAP |
| 4/ RECOIL STARTER | 13/ DISCHARGE GUARD |
| 5/ FUEL TANK CAP | 14/ GRASS BAG |
| 6/ AIR CLEANER | 15/ HANDLE |
| 7/ CUTTER HOUSING | 16/ DRIVE CLUTCH LEVER |
| 8/ SPARK PLUG CAP | |
| 9/ MUFFLER | |



HR 216 SM

- | | |
|--|---------------------------------------|
| 1/ DRIVE CLUTCH LEVER | 11/ THROTTLE LEVER |
| 2/ SHIFT LEVER | 12/ HANDLE |
| 3/ GRASS BAG GRIP | 13/ GRASS BAG HANDLE |
| 4/ GRASS BAG | 14/ RECOIL STARTER |
| 5/ DISCHARGE GUARD | 15/ FUEL TANK CAP |
| 6/ HANDLE HEIGHT ADJUSTER | 16/ AIR CLEANER |
| 7/ OIL FILLER CAP | 17/ SPARK PLUG CAP |
| 8/ ENGINE OIL DRAIN PLUG | 18/ CUTTING HEIGHT
ADJUSTING LEVER |
| 9/ CONTROL BOX (ELECTRIC
STARTER TYPE ONLY) | 19/ MUFFLER |
| 10/ ROTO-STOP LEVER | |

THROTTLE CONTROL LEVER

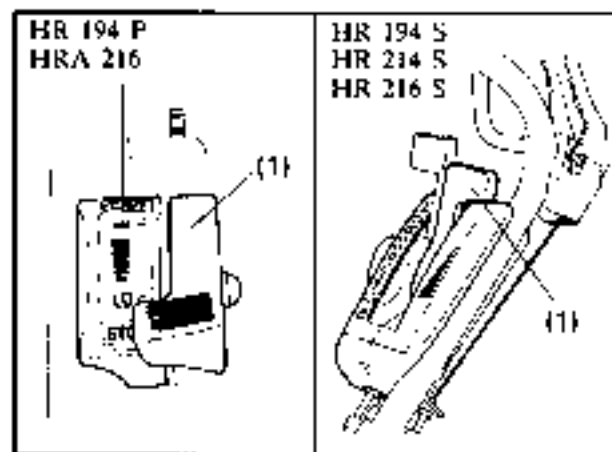
Throttle positions: START (CHOKE)

HI

LO

STOP

1/ THROTTLE CONTROL LEVER



ROTO-STOP (ROTO-STOP EQUIPPED TYPE ONLY)

The cutting blade turns when the lever is engaged and stops when the lever is released.

NOTE : It is essential that ROTO STOP engagement/disengagement be carried out with a single, sharp movement of the lever.

1/ ROTO-STOP LEVER



DRIVE CLUTCH LEVER (self-propelled types only)

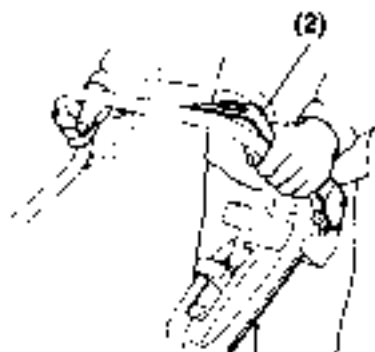
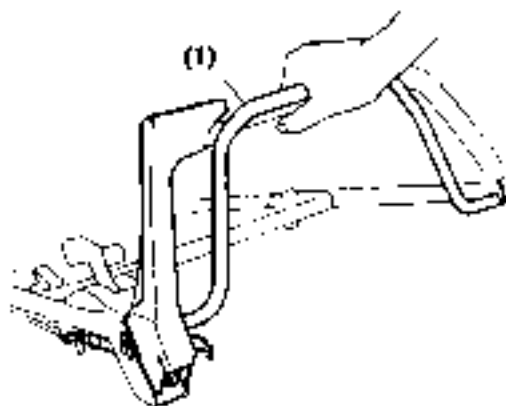
The mower moves forward only when the drive clutch lever is engaged and stops when the lever is released.

CAUTION : When cutting grass :

- First, engage the ROTO-STOP lever only. At this time, the cutting blade should be free of any obstacle such as grass, etc. to allow for rapid acceleration to normal engine RPM.
- After normal engine RPM is reached, engage the drive clutch lever, this allows the engine to operate smoothly and efficiently.

1/ DRIVE CLUTCH LEVER

2/ ROTO-STOP LEVER

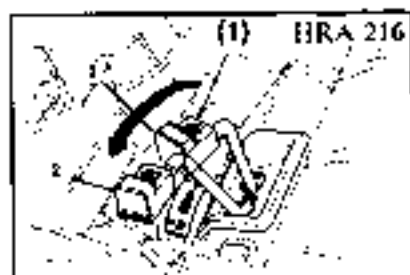


SHIFT LEVER (self-propelled types only)

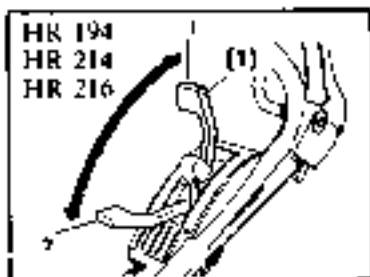
Two forward speeds are available (Excepted type QM):

Type	HR 194 - HR 214 - HR 216	HRA 216
Position	S	S
1	0,8 m/sec	1 m/sec
2	1,2 m/sec	1,2 m/sec

CAUTION : Never shift the transmission while self-propelling.



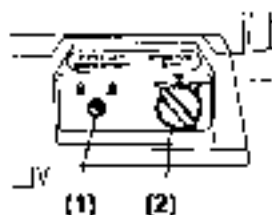
1/ SHIFT
LEVER



CONTROL BOX (ELECTRIC STARTER TYPE ONLY)

The S-M type is equipped with electric starter and control box to make for easy operation. This allows the engine to be started remotely.

- 1/ CIRCUIT BREAKER
- 2/ ENGINE SWITCH

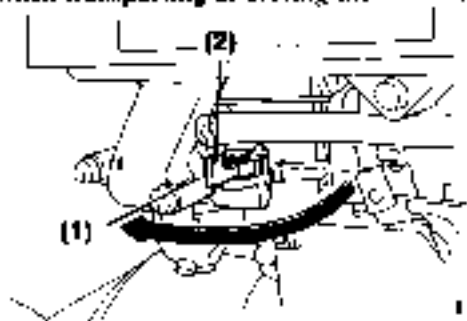


FUEL VALVE

The fuel valve controls the flow of fuel from the fuel tank to the carburetor. Always ensure the valve is turned fully to the ON (open) or OFF (closed) position.

NOTE : To avoid the risk of petrol spillage when transporting or storing the mower, turn the valve to the OFF (closed) position.

- 1/ ON
- 2/ FUEL VALVE



4. PRECAUTIONS

This mower may be used either with the grass bag or with discharge adaptor (optional part).

The following suggestions and rules are intended to help you operate your Honda mower under the safest possible conditions. Be alert and exercise extreme care when using the mower.

▲ WARNING

• Be especially careful when mowing uneven or rough ground. The mower may tilt, exposing the blade and hidden objects could be thrown by the blade.

Keep all four wheels on the ground.

• Mow across slopes. Do not mow excessively steep slopes.

• Control direction by the handle and not by foot pressure on the mower housing.

• Keep a firm hold on the handle and walk, never run, with the mower. Don't lag behind the machine or let it pull you.

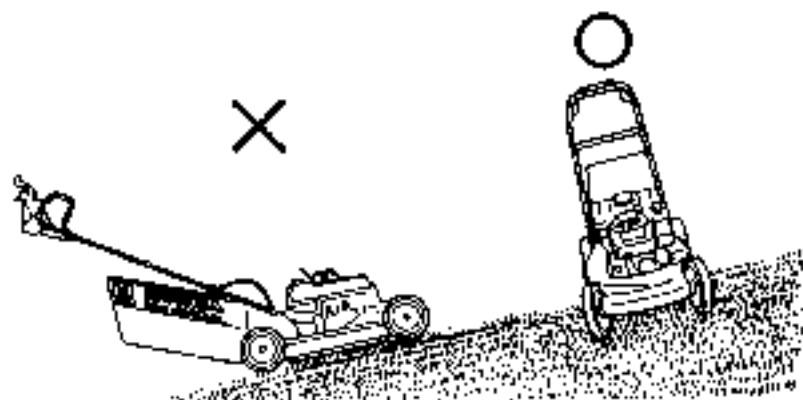
CAUTION

• Use extra care when mowing around objects to keep the blade from striking them. Never deliberately mow over any object.

• Stop the engine immediately if the blade hits an object or the mower starts to vibrate. Remove the spark plug cap (keep the wire away from the plug) and remove the engine key (Electric starter type) and then inspect for damage.

• Never move the shift lever when the mower is self-propelling.

• Do not use the drive clutch when manoeuvring around trees etc. Release the clutch and push the mower while using the ROTO-STOP for better directional control.



• When mowing on an uneven surface, always use first gear, reduce engine speed, grip the mower's handles firmly and watch your step.

5. BEFORE YOU START THE MOWER

For efficient and safe mowing, always carry out the following checks before using the mower :

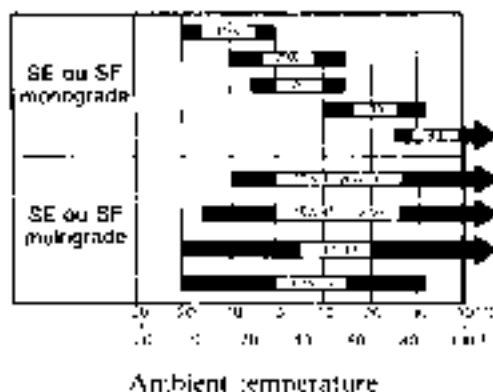
▲ WARNING

Carry out the pre-operation checks on firm and level ground, with the engine switched off and the spark plug cap removed from the spark plug.

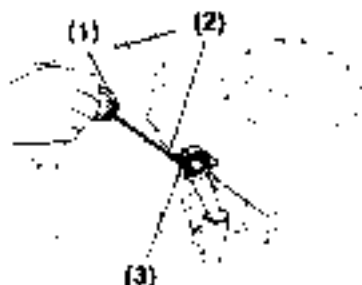
1. Check the engine oil level.

CAUTION :

- Engine oil is a major factor affecting engine performance and service life. Non-detergent oil and 2-stroke engine oil are not recommended.
- Running the engine with insufficient oil can cause serious damage to the engine. Use Honda 4-stroke oil, or an equivalent high detergent, premium quality motor oil. Select the appropriate viscosity for the average temperature in your area.



- Place the mower on a level surface.
- Remove the oil filler cap and wipe the dipstick clean.
- Insert the dipstick into the oil filler neck, but do not screw it in.
- Check the oil level shown on the dipstick. If near the lower level, fill to the upper level with the recommended oil.



- 1/ OIL FILLER CAP
2/ UPPER LEVEL
3/ LOWER LEVEL

2. Check the fuel level.

Check the fuel level and refill the tank if the fuel level is low.

Never use an oil-petrol mixture or dirty petrol. Avoid getting dirt, dust or water into the fuel tank.

After refilling the tank, screw the fuel tank filler cap back on tightly.

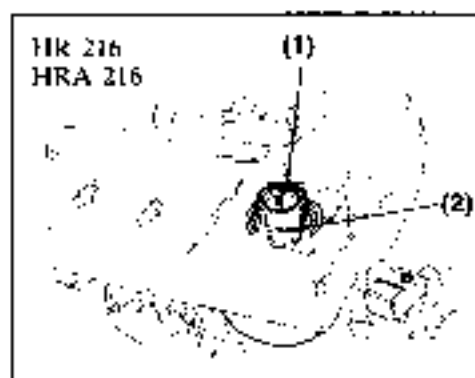
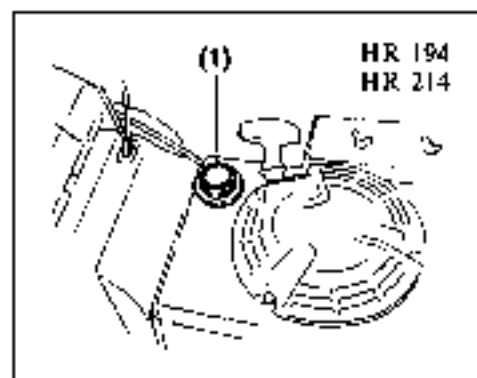
▲ WARNING

- Petrol is highly flammable and explosive under certain conditions.
- Refuel in a well-ventilated area, with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
- Do not overfill the tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.
- Be careful not to spill fuel when refueling. Spilled fuel or fuel vapour may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Avoid repeated or prolonged contact with the skin or breathing of vapour. **KEEP OUT OF REACH OF CHILDREN.**

NOTE : Petrol substitutes are not recommended and can harm the components of the petrol circuit.

	HR 194	HR 214	HR 216	HRA 216
Petrol tank capacity		1 l		2 l

1/ FUEL FILLER HOLE 2/ LEVEL MARK



3. Check the air cleaner.

a. Check the air cleaner element to see if it is dirty.

b. If the element is dirty, follow the cleaning procedure described on page 35.

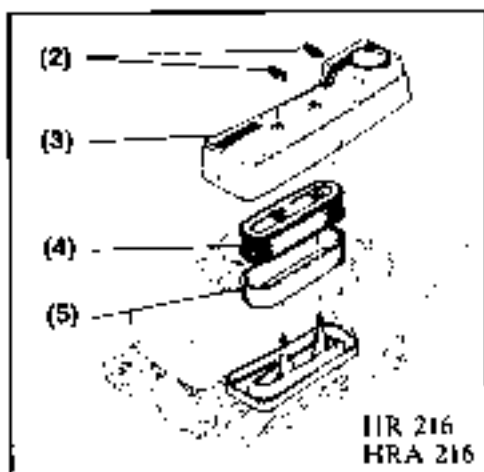
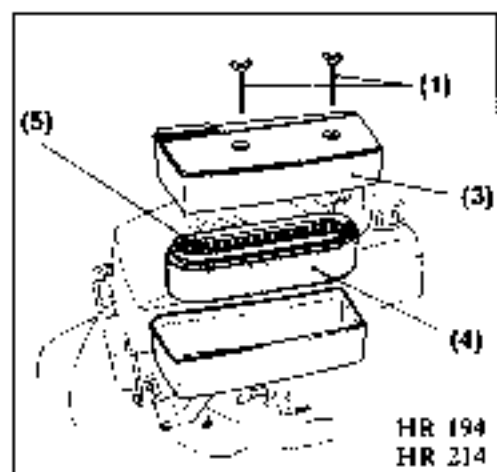
1/ BUTTERFLY SCREWS

2/ WING NUTS

3/ AIR CLEANER COVER

4/ FOAM ELEMENT

5/ PAPER ELEMENT



NOTE :

• After cleaning the air cleaner element, replace the air cleaner cover and close it securely. If the screws holding the cover are not tightened fully, the cover may not stay in place and this could cause the engine to malfunction.

• Never run the engine without an air cleaner, as premature engine wear will result.

4. Check the blade condition

Before use, check to see if the cutter blade is damaged or badly worn.

▲ WARNING : To avoid severe personal injury, disconnect the spark plug cap to prevent accidental starting, and wear heavy gloves to protect your hands from the cutter blade.

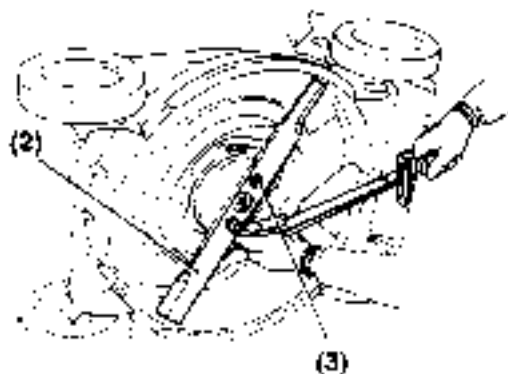
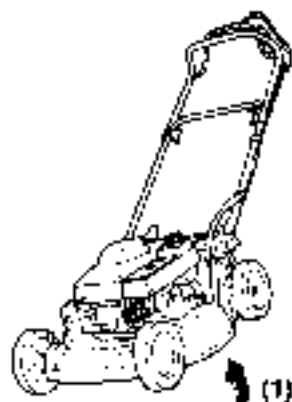
- Stop the engine and turn the fuel tap to the OFF (closed) position.
- Disconnect the spark plug cap.
- Rest the mower on its side, carburetor side up (left hand side).

CAUTION : Never position the mower with the carburetor side down, as this will result in hard starting afterwards.

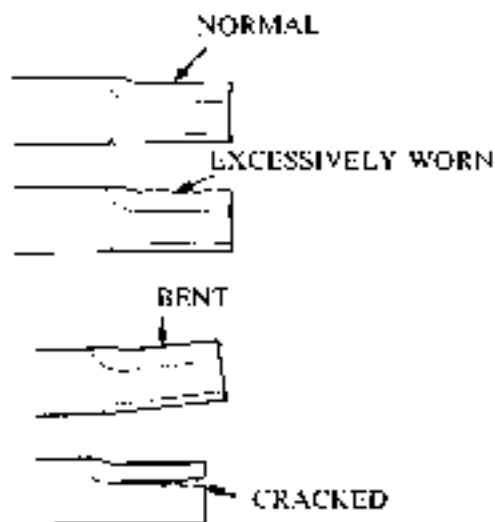
1/ CARBURETOR SIDE UP

2/ BLADE

3/ BLADE BOLTS



d. Check the blade for wear and replace if necessary.



▲ WARNING

Severe injury can result if a piece of blade breaks off and is thrown from under the mower deck during operation.

- Never operate the mower with a worn or damaged blade.
- Never operate the mower with a blade that is cracked or notched at the base of its upturned rear edge.

CAUTION :

- Use a genuine Honda replacement blade or equivalent.
- To reduce the possibility of weakening the blade, or causing imbalance or poor cutting performance, sharpening should be performed by an authorized Honda lawn mower dealer.

NOTE : Blade wear is quicker when the mower is operated in sandy environments. If the mower is to be operated in such conditions, the blade should be checked frequently.

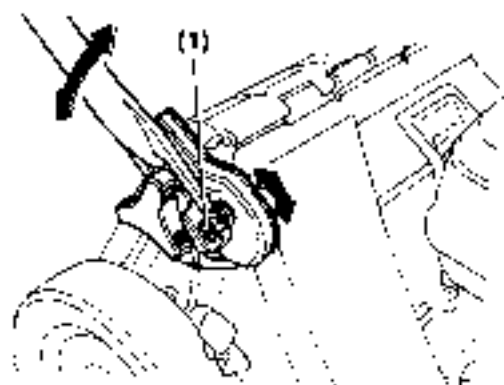
e. Check that the blade bolts are properly tightened.

Blade bolt torque: 5.0 - 6.0 kg-m (36.2 - 43.4 ft-lb)

5. Adjust handle height for convenient mowing (excepted HRA 216).

- a. Loosen both sides of handle hook bolts.
- b. Swing the handle up or down as required.
- c. After adjusting, make sure the handle hook bolts are tightened securely.

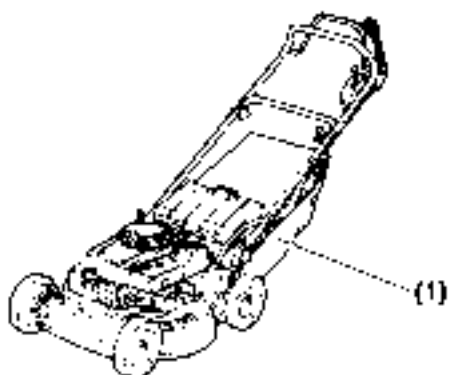
I. HANDLE HOOK BOLTS



6. Grass bag

Check the grass bag for fraying, tears and clogged mesh. Wash the bag with water if necessary, and let it dry thoroughly. Grass will not chute properly without adequate ventilation through the bag. Make sure the bag is properly installed and that the discharge guard is properly in place.

I/ GRASS BAG



CUTTING HEIGHT ADJUSTMENT

	(in)	5/8"	3/4"	1"	1 1/2"	2"	2 1/2"	3"
HR 194-HR 214-HR 216	FR-RF	13 mm*	16 mm	25 mm	38 mm	51 mm	63 mm	76 mm
HRA 216	FR	—	16 mm*	25 mm	38 mm	51 mm	63 mm	76 mm
	RL	—	—	25 mm	38 mm	51 mm	63 mm	76 mm

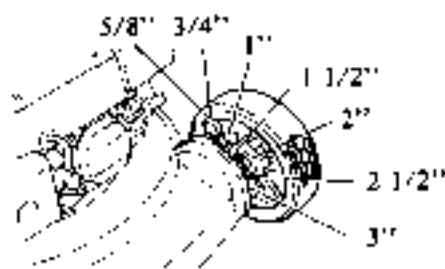
* For F type only

To change blade height :

1. Stop the engine.
 2. Push the front and rear adjusting levers toward the wheels and move them up or down to raise or lower the cutting height.
- Adjust front and rear wheels to the same height.

▲ WARNING

- Before adjusting the blade, make sure the engine is switched off.
- Be careful not to touch the muffler when adjusting the right front wheel height.
- The muffler will remain hot for a while after the engine is stopped.
- Before moving the mower from one place to another, switch off the engine and adjust the blade to the highest setting.



1/ ADJUSTING LEVER
2/ PUSH

GRASS BAG

The grass bag is subject to wear under normal usage. Frequently check for fraying and tears. Replace deteriorated bags only with Honda replacement bags or equivalent.

Removal

1. Stop the engine.
2. Lift the discharge guard, grasp the handle and remove the bag rearward while holding the bag upward.

Installation

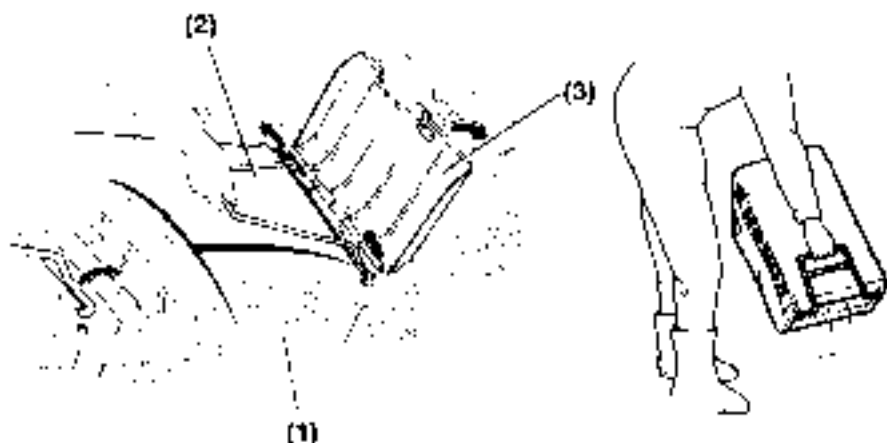
Raise the discharge guard and hook the front end of the grass bag over the retaining lugs on the mower.

▲ WARNING Make sure the grass bag fastener is securely closed before use (discharge guard).

1/ GRASS BAG

2/ GRASS BAG HANDLE

3/ DISCHARGE GUARD



6. STARTING AND STOPPING THE ENGINE

STARTING THE ENGINE

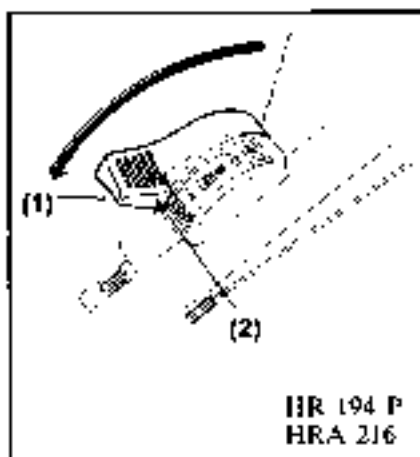
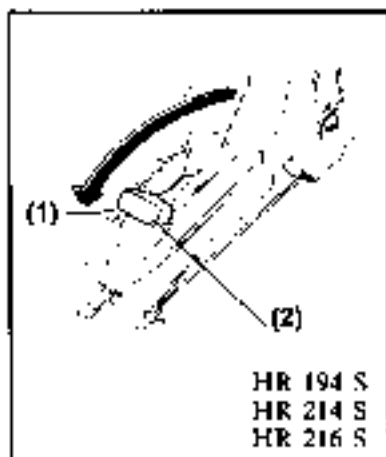
- With recoil starter (all models).

▲ WARNING: Exhaust gas contains poisonous carbon monoxide. Never run the engine in an enclosed area. Be sure to provide adequate ventilation.

1. Move the throttle lever to "CHOKE".

NOTE .

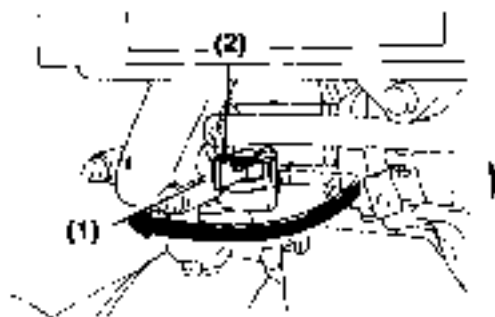
- Do not use "CHOKE" when the engine is warm or the air temperature is high.
- Move the throttle lever to "HIGH" instead.



- 1/ CHOKE
- 2/ THROTTLE LEVER

2. Turn the fuel valve "ON".

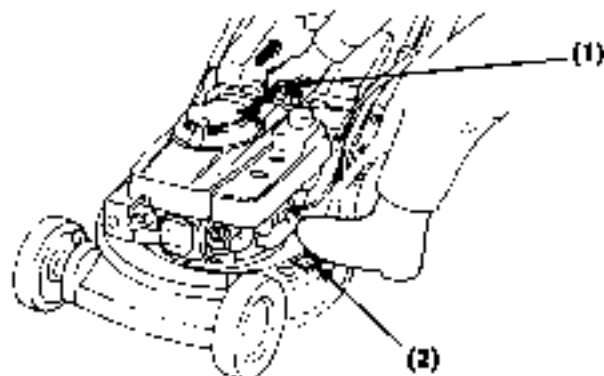
- 1/ ON
- 2/ FUEL VALVE



3. Place your foot on the non-slip step on the power housing.
4. Pull the starter rope lightly until you feel resistance, then pull briskly.

NOTE : Do not let the rope snap back; return it by hand.

- 1/ STARTER
- 2/ STEP

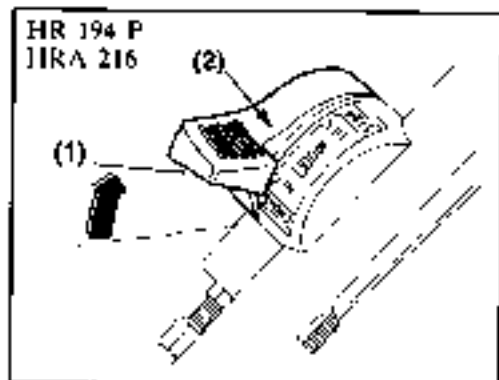
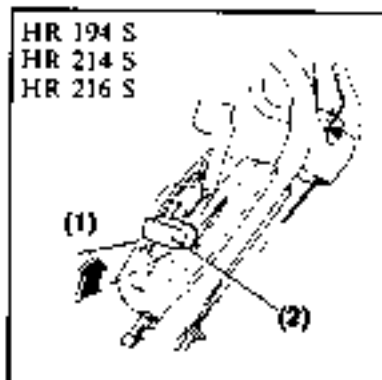


5. After the engine warms up, move the throttle to "HIGH". Engage the ROTO-STOP to turn the blade.
6. Select shift lever position 1. Engage the drive clutch and the mower will move forward. For faster speeds, shift to position 2.

NOTE :

- The throttle lever may be positioned anywhere between "HI" and "LO" to adjust engine speed during operation. Best results are achieved however on "HI".
- The engine may stall if the lever is at "LO" when the ROTO-STOP is engaged.

- 1/ HI
- 2/ THROTTLE LEVER



- With electric starter (SM models)

▲ WARNING Exhaust gas contains poisonous carbon monoxide. Never run the mower in an enclosed area. Be sure to provide adequate ventilation.

1. Move the throttle lever to "CHOKE".

NOTE :

- Do not use "CHOKE" when the engine is warm, or the air temperature is high.
- Move the throttle lever to "H" instead.

1/ CHOKE

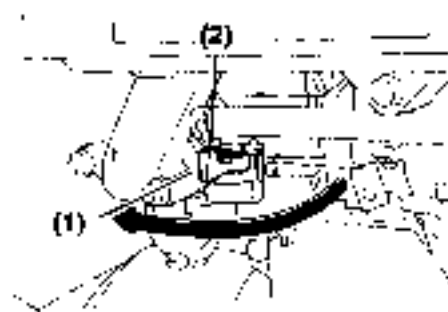
2/ THROTTLE LEVER



2. Turn the fuel valve "ON".

1/ ON

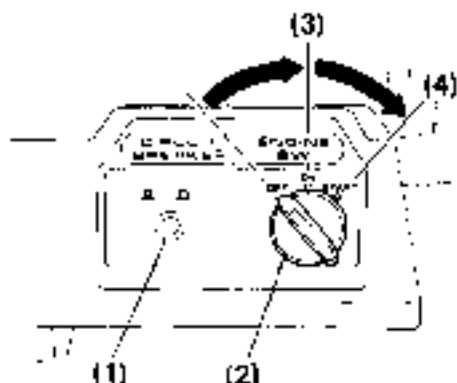
2/ FUEL VALVE



3. Depress the circuit breaker, then turn the engine switch to the "START" position and hold it there until the engine starts.

4. After the engine starts, let the engine switch return to ON. Do not use the electric starter for more than 5 seconds at a time. If the engine fails to start, release the switch and wait 10 seconds before operating the starter again.

- 1/ CIRCUIT BREAKER
- 2/ ENGINE SWITCH
- 3/ ON (DEPRESS)
- 4/ START



5. After the engine warms up, move the throttle to "HI".

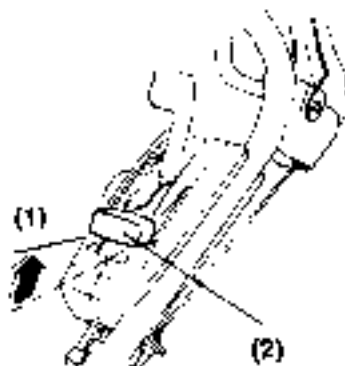
Engage the ROTO-STOP to start the blade.

6. Move the shift lever to "1". Engage the drive clutch and the mower will move forward. For faster speeds, shift to "2".

NOTE :

- The throttle lever may be moved anywhere between "HI" and "LO" to adjust engine speed during operation. Best results are obtained however on the "HI" position.
- The engine may stall if the lever is at "LO" when the ROTO-STOP is engaged.

- 1/ HI
- 2/ THROTTLE LEVER



• High altitude operation

At high altitude, the standard carburetor air/fuel mixture will be excessively rich. Performance will decrease and fuel consumption will increase.

High altitude performance can be improved by installing a smaller diameter main fuel jet in the carburetor and readjusting the pilot screw. If you operate the rotary mower at altitudes higher than 1830 m (6000 ft.) above sea level, have your authorized Honda dealer perform these carburetor modifications.

Even with suitable carburetor jetting, engine horsepower will decrease approximately 3.5% for each 305 m (1000 feet) increase in altitude. The affect of altitude on horsepower will be greater than this if no carburetor modification is made.

CAUTION : Operation of the rotary mower at an altitude lower than the carburetor is jetted for may result in overheating and serious engine damage, caused by an excessively weak air/fuel mixture.

FLOODED ENGINE

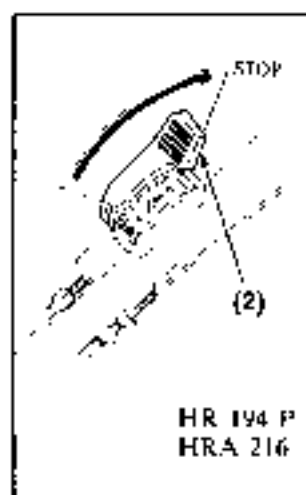
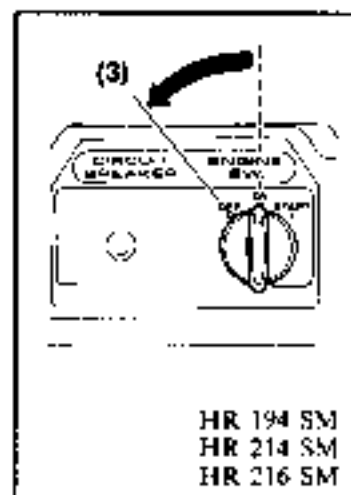
If the engine won't start after several pulls on the starter rope or presses of the starter, the engine may be flooded.

To clear a flooded engine:

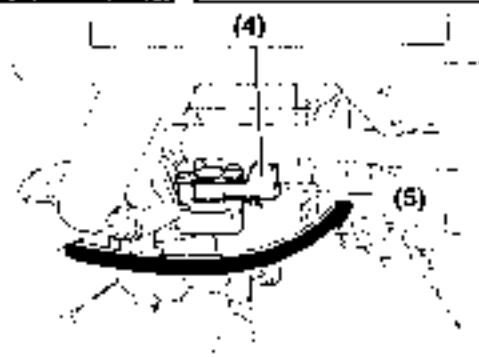
1. Move the throttle lever to "STOP" and turn off the fuel valve.
2. Remove and dry the spark plug. When re-installing the plug, thread it in by hand until it seats. Then tighten it an additional $1/8$ - $1/4$ turn with the spark plug wrench to compress the washer.
3. Move the throttle to "HI", turn on the fuel valve and repeat steps 3-6 (page 22) under "Starting the Engine".

STOPPING THE ENGINE

1. Release the drive clutch (S types).
2. Release the ROTO-STOP lever (PX, SX, SM types).
3. Move the throttle lever to "OFF".
4. Turn the contact key "OFF" (electric starter models only).
5. Close the fuel valve.



- 1/ STOP
2/ THROTTLE LEVER
3/ STOP
4/ FUEL VALVE
5/ OFF (closed)

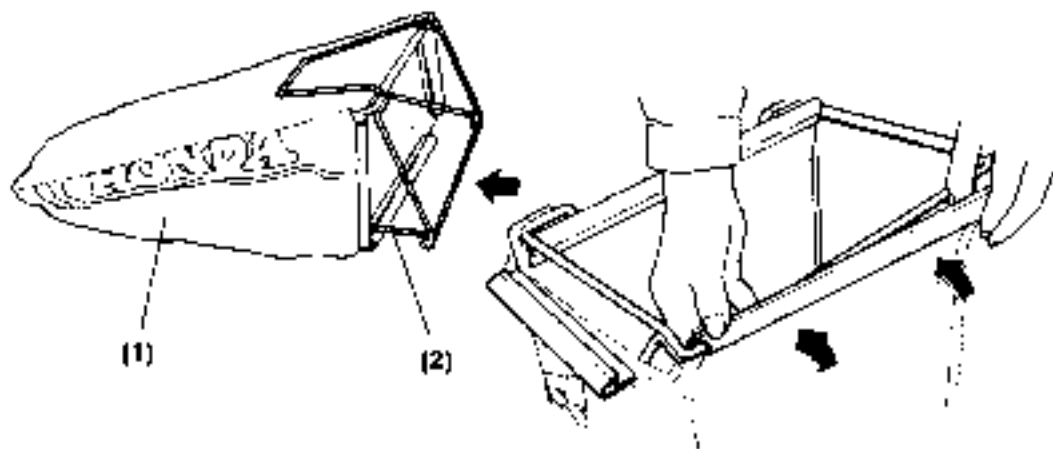


GRASS BAG CLEANING

- Blocked mesh stops grass from going into the bag.
- To clean the bag, hose it down and ensure it is completely dry before using it again. If the bag is damp it will fill up quickly.

1/ GRASS BAG

2/ GRASS BAG MOUNTING



CAUTION :

- Steam or high pressure jet wash will damage the grass bag.

7. TRANSPORTING/STORAGE

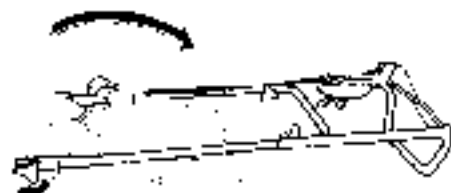
Turn the fuel valve OFF when transporting the mower.

▲ WARNING To avoid fuel and oil spillage do not tilt the mower; Spilled fuel or vapour may ignite.

The handle may be folded for convenience (excepted HRA 216) :

1. Remove the grass bag (page 20).
2. Loosen the handle knobs and fold the handle as shown

1/ OFF (closed)
2/ HANDLE

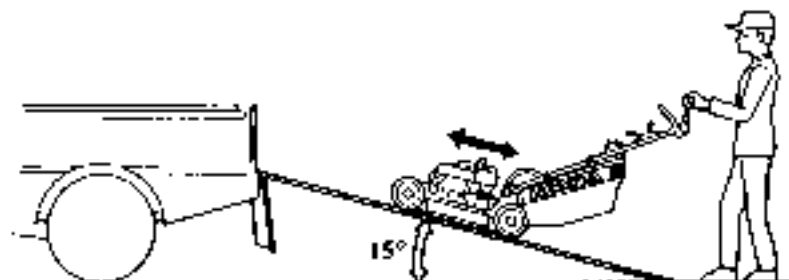


NOTE : After folding the handle, check that the cables are not kinked, twisted or pulled taut.

Loading

CAUTION :

- To avoid any possible loss of control or damage to the mower, do not use the traction system when taking the mower up or down a ramp.
- To avoid damaging the traction system, do not engage the clutch drive when the mower is moved backwards.
- Transport the mower in the normal horizontal position, the four wheels flat on the truck platform.
- Use a loading ramp, or get someone to help you load or unload the mower.
- Adjust the loading ramp, so that it is inclined at an angle of less than 15 degrees.



- When transporting the mower, tie it down and place wedges under the wheels.
- Do not let the tie cords interfere with the following components: Throttle lever, blade brake lever, fuel control valve, petrol tank, blade height adjustment and all control cables.

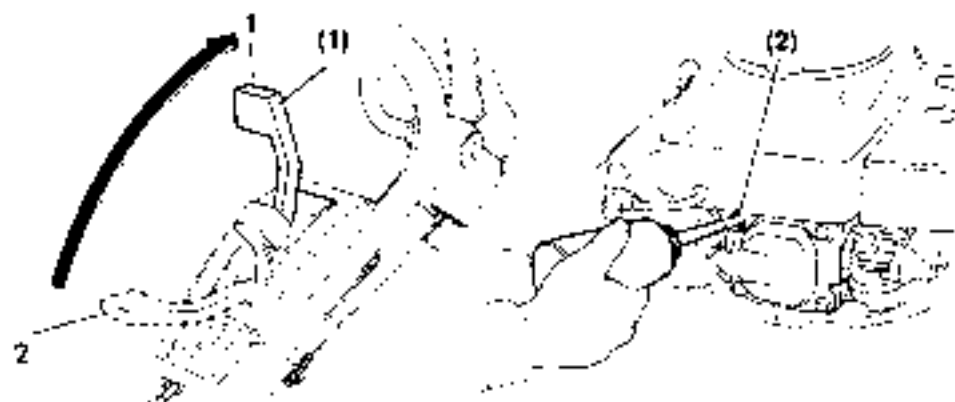
PREPARATION FOR STORAGE

The following steps should be taken to protect the mower whenever it is to be stored for a period of more than 30 days.

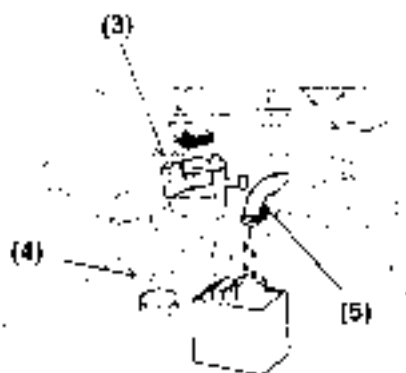
NOTE . If the mower is to be stored for a period greater than 3 months, first remove the spark plug and pour three tablespoons of clean motor oil into the cylinder. Pull the starter rope slowly two or three times to distribute the oil. Position the shift lever at position "1" (excepted JIRA 216).

▲ WARNING

- Petrol is highly flammable and explosive under certain conditions. Do not smoke or allow flames or sparks in the area.
- Do not drain the fuel tank when the exhaust system is hot.



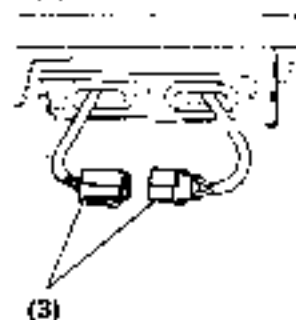
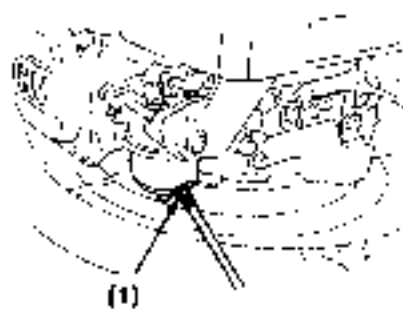
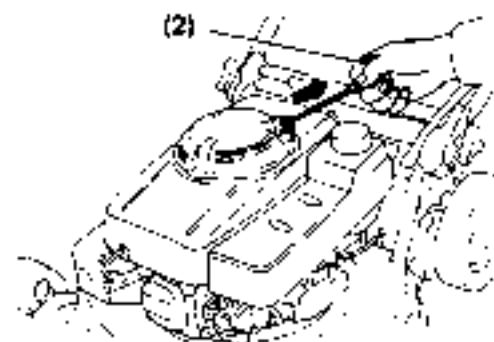
- 1/ SHIFT LEVER
- 2/ CYLINDER
- 3/ FUEL VALVE
- 4/ CARBURETOR DRAIN BOLT
- 5/ FUEL LINE



- b. Remove the drain bolt to drain the carburetor.
- c. Replace the drain bolt, connect the fuel line and turn the fuel valve OFF.

2. Change the engine oil (p.34).
3. Pull the starter rope until resistance is felt. This protects the valves and protects them from dust and corrosion.
4. Coat areas that may rust with a light film of oil. Cover the mower and store it on a level surface in a dry, dust-free area.
5. Disconnect the 2P coupler of the battery under the control box (Electric starter type only).
6. For electric starter models, recharge the battery every 6 months (p. 37).

- 1/ DRAIN BOLT
2/ STARTER ROPE
3/ 2P COUPLER



REMOVAL FROM STORAGE

1. Remove the spark plug; check that it is clean and properly gapped (p.36). Pull the starter rope several times.
2. Thread the spark plug in as far as possible by hand, then use the plug wrench to tighten 1/8 to 1/4 turn further.
3. Connect the 2P coupler of the battery under the control box (Electric starter type only).
4. Check the engine oil level and condition.
5. Fill the fuel tank and start the engine.

NOTE : If the cylinder was coated with oil, the engine will smoke at start-up; this is normal.

8. MAINTENANCE

▲ WARNING: To prevent accidental start-up, shut off the engine and disconnect the spark plug cap and remove the engine key (SM models) before carrying out any maintenance work.

CAUTION: Use only genuine Honda parts or their equivalent for maintenance or repair. Replacement parts which are not of equivalent quality may damage the mower.

Periodic inspection and adjustment of the mower is essential if a high level of performance is to be maintained. Regular maintenance will ensure a long service life. The required service intervals and the kind of maintenance to be performed are described on page 33.

For longer service life and greater efficiency, keep the underside of the mower clean and free from grass clippings by washing it down with a hose after use and/or cleaning it with a wire brush and scraper. Remove any rust and apply a rust-resistant paint. Cleaning and rust prevention are especially important before seasonal storage.

1/ SPARK PLUG CAP

2/ ENGINE SWITCH KEY (SM Models)



MAINTENANCE SCHEDULE

Item	REGULAR SERVICE PERIOD Perform at every indicated month or operating hour interval, whichever comes first.		Each use	First 3 months or 20 hours	Every 6 months or 50 hours	Every year or 100 hours	Every 3 years or 500 hours
	Item	Frequency					
Engine oil	Check level	a					
	Change		b		c		
Air cleaner	Check	a					
	Clean			d (1)			
Cross Bag	Clean	a					
Blade holder tightness	Check	a					
Spark plug	Check-Readjust					e	
Spark arrester (Optional part)	Check					f	
ROTOR SWITCH cable	Adjust	(3)				g	
ROTOR SWITCH	Check	(3)				g (2)	
Shift cable	Adjust	(3)				h	
Throttle cable	Adjust						i
Drive clutch cable	Adjust						j
Valve clearance	Check-Adjust						k (2)
Fuel tank and Filter	Clean						k (1)
Fuel Line	Check (replace if necessary)				Every 3 years (2)		
Batteries	Recharge	(3)			l (1)		

NOTE:

1. Service more frequently when used in dusty areas.
2. These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.
3. If applicable.
4. During storage.

ENGINE OIL CHANGE

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

1. Remove the filler cap.
2. Remove the drain bolt, drain the oil and re-tighten the bolt securely.

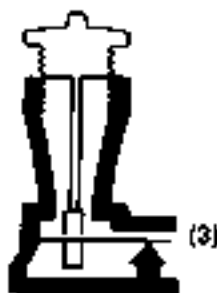
1/ FILLER CAP

2/ OIL DRAIN BOLT



3. Refill to the "upper" level with the recommended oil (see p. 13). Tighten the cap securely to prevent leakage.

3/ UPPER OIL LEVEL



CAUTION :

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

NOTE : Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local waste disposal site for recycling. Do not throw it in the dustbin or pour it onto the ground, down sewers or drains.

AIR CLEANER SERVICE

A dirty air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner frequently.

▲ WARNING: Never use petrol or flammable solvents for cleaning the air cleaner element; a fire or explosion could result.

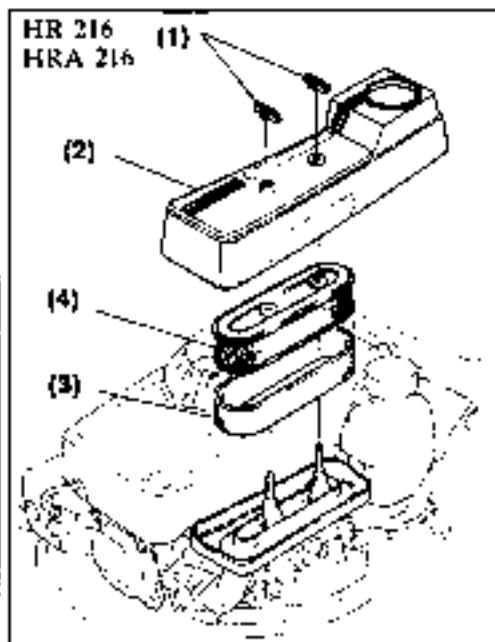
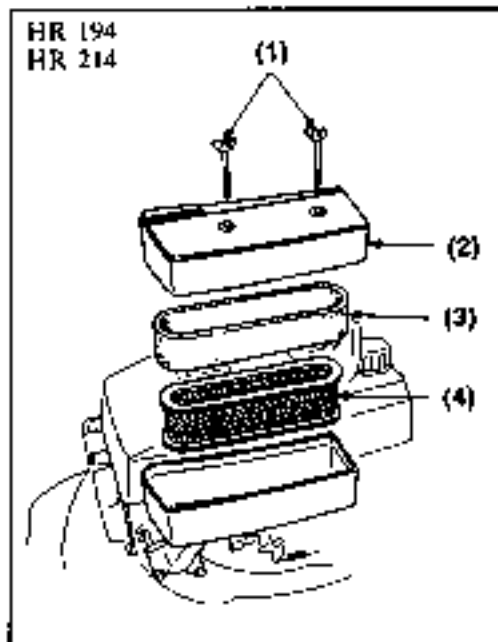
1. Remove the fasteners and the air cleaner cover. Remove the elements and separate them. Carefully check elements for holes or tears and replace as required.
2. Foam element: Clean in warm soapy water, rinse and allow to dry thoroughly. Or clean in high flash-point solvent and allow to dry. Dip the element in clean engine oil and squeeze out all excess oil. The engine will smoke during start-up if too much oil is left in the foam.
3. Paper element: Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air through the filter from the inside out. Never try to brush the dirt off; brushing will force dirt into the fibres.

1/ FASTENERS

2/ AIR CLEANER COVER

3/ FOAM ELEMENT

4/ PAPER ELEMENT



SPARK PLUG

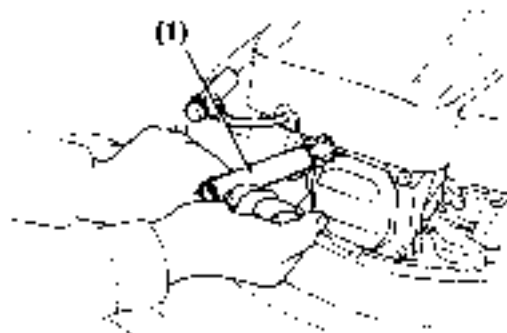
Standard plugs : 4PR5ES (NGK)
W16FPR-U (ND)

CAUTION : Use only recommended sparkplugs or their equivalent. Spark plugs which have an improper heat range may cause engine damage.

▲ WARNING If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

1. Disconnect the cap and remove the spark plug
2. Visually inspect the plug. Discard the plug if heavily deposited or if the insulator is cracked or chipped.

1/ SPARK PLUG WRENCH



0.7-0.8 mm
10.028-0.031 in)



3. Measure the plug gap with a wire-type feeler gauge; it should be 0.7-0.8 mm (0.028-0.031 in). If adjustment is necessary, bend the side electrode carefully.
4. Make sure the sealing washer is in good condition, then thread the spark plug in by hand until it seats.
5. Use the wrench to tighten a new plug 1/2 turn further to compress the washer. If you are reusing the plug, it should only take 1/8-1/4 turn after the plug seats.
6. Replace the spark plug cap.

CAUTION : The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and may damage the engine.

BATTERY CHARGING (ELECTRIC STARTER MODELS ONLY)

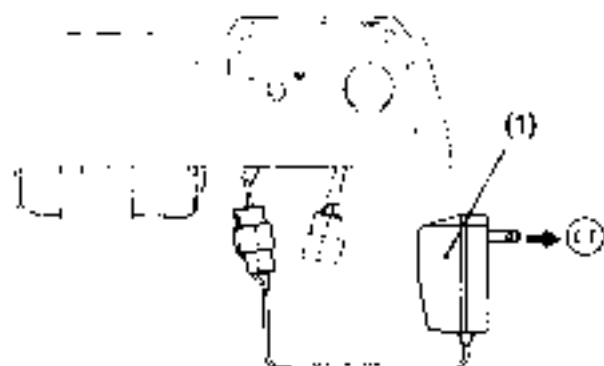
The battery will automatically recharge while the mower is operated. A plug-in charger is provided for additional charging if the mower is not operated frequently enough to keep the battery charged. Use the plug in charger to recharge the battery after prolonged storage, or whenever you notice a decrease in starter motor speed.

1. Disconnect the 2P battery connector, located under the control box.
2. Connect the 2P battery connector to the charger.
3. Plug the charger into a standard AC power outlet and allow the battery to charge for 24 hours.

NOTE : It is normal for the charger to become a little warm during charging.

4. When the battery has been fully charged, disconnect the charger and reconnect the 2P connectors under the mower box.

17. OPTIONAL CHARGER



NOTE : Only use the genuine Honda charger or equivalent.
The use of a charger whose electrical characteristics are different from the recommended one could cause damage to the battery.

FUSE (FOR HR 216 SM ONLY)

If the fuse has blown, check the cause and replace the fuse with a spare fuse of the rated capacity.

Unless the cause is corrected, the fuse may blow again.

Replacement method,

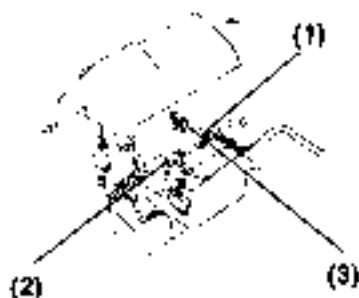
Pull out the spare fuse and install it in place of the blown fuse, as shown in the figure.

Specified fuse . 1 A

1/ NEGATIVE (-) TERMINAL

2/ POSITIVE (+) TERMINAL

3/ SPARE FUSE



BLADE REMOVAL AND SHARPENING

▲ WARNING

- Wear heavy gloves to protect your hands.
- Disconnect the spark plugs to prevent accidental start-up.

1. Close the fuel valve and drain the carburetor (see p. 29).
2. Tilt the mower with carburetor side up.
Remove the blade bolts to disassemble the blade.

NOTE : Never tilt the mower so the carburetor side is down, or hard starting will result.

3. Sharpen the blade cutting edges with a file. File the top side only. Maintain the original bevel for a fine cutting edge. File both ends evenly to maintain blade balance.
4. After sharpening, test the blade's balance using a screwdriver as shown. If either side dips slightly below the horizontal, file that side. Replace the blade if it dips excessively.



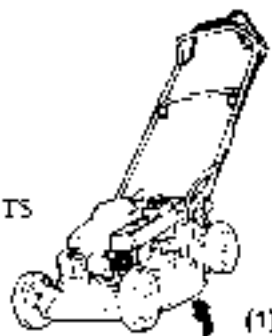
CAUTION :

- Blade balance is critical to proper mower performance. Replace any blade that is damaged or out of balance.
- Use only a genuine HONDA replacement blade or equivalent.

5. Clean away any dirt and grass from the blade housing and from around the blade shaft.
6. Install the blade and tighten the blade bolts to the specific torque.
Torque: 5.0-6.0 kg m (36.2-43.4 ft-lb).

NOTE : As shown below, the blade turns counterclockwise; install the blade so its cutting edges face this direction of rotation.

- 1/ UP
- 2/ BLADE
- 3/ BLADE BOLTS



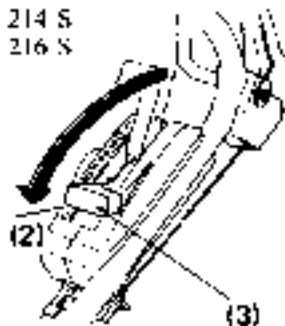
THROTTLE CONTROL CABLE ADJUSTMENT

1. With the throttle lever in the **CHOKE** position, the carburetor choke arm should move all the way to the right, as far as it will go. Push the choke arm with your finger to check whether it is all the way to the right.
2. If adjustment is necessary, loosen the control cable lock nuts and move the the adjuster up or down as required. Tighten the lock nuts and recheck the carburetor choke arm position.
3. Start the engine and make sure the engine stops when the throttle lever is moved to the **STOP** position. Readjust the cable if necessary.

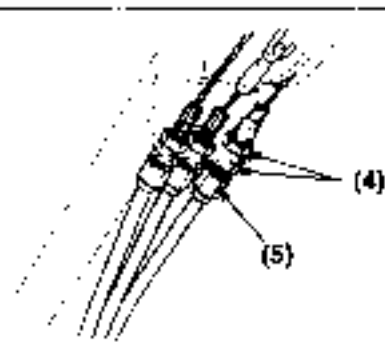
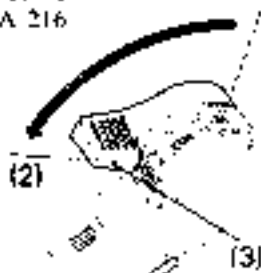
- 1/ CHOKE ARM
- 2/ CHOKE POSITION
- 3/ THROTTLE LEVER
- 4/ LOCK NUT
- 5/ ADJUSTING BOLT



HR 194 S
HR 214 S
HR 216 S



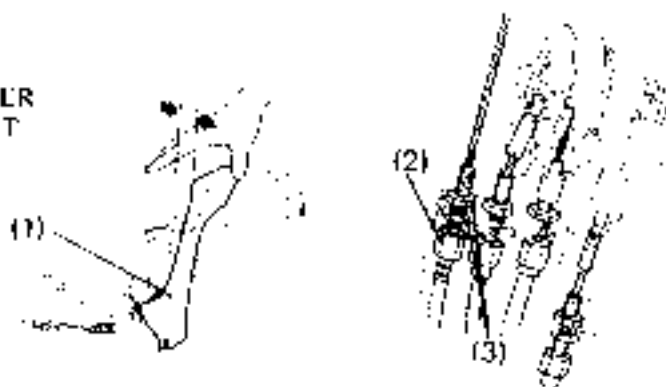
HR 194 P
HRA 216



ROTO-STOP LEVER FREE PLAY (ROTO-STOP equipped type only)

1. Measure free play at the tip of the lever as shown; it should be between 5-10 mm (3/16-3/8 in).
2. If adjustment is necessary, loosen the lock nuts at the cable lever and turn the adjusting bolt to increase or decrease play.
3. Tighten the lock nuts securely.
4. After adjusting, make sure the rotary blade is stopped when releasing the ROTO-STOP lever.

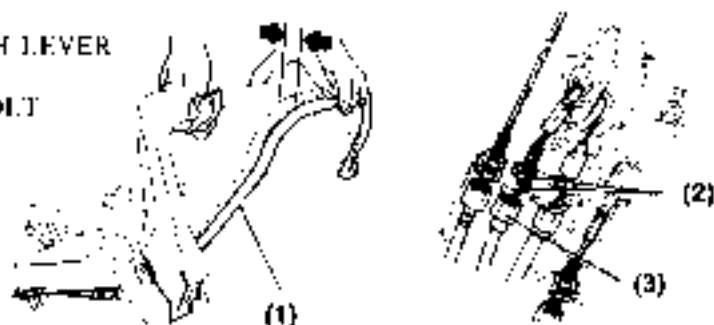
- 1/ ROTO STOP LEVER
- 2/ ADJUSTING BOLT
- 3/ LOCK NUTS



DRIVE CLUTCH FREE PLAY (self-propelled types only)

1. Measure free play at the top of lever as shown; it should be between 5-10 mm (3/16-3/8 in).
2. If adjustment is necessary, loosen the clutch cable lock nuts and turn the adjusting bolt to increase or decrease free play.
3. Tighten the lock nuts securely.
4. After adjusting, make sure the drive clutch operates properly, the mower should move forward when the clutch is engaged and stop when it is released.

- 1/ DRIVE CLUTCH LEVER
- 2/ LOCK NUTS
- 3/ ADJUSTING BOLT



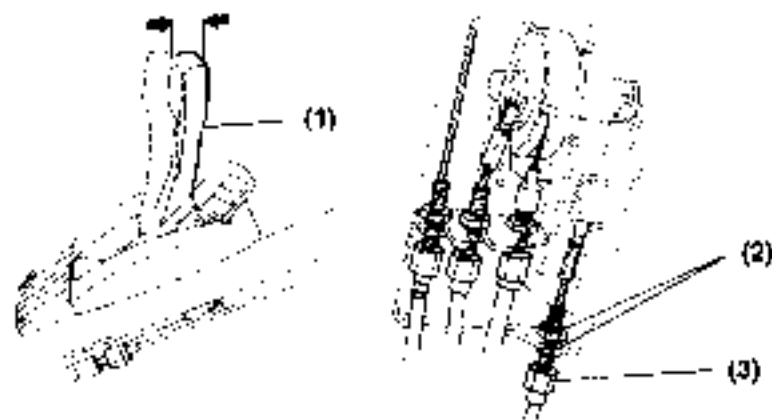
SHIFT LEVER FREE PLAY (self-propelled models, excepted HRA 216)

1. Measure free play at the tip of the lever, it should be 1-3 mm (3/64-1/8 in).
2. If adjustment is necessary, loosen the lock nuts and turn them to run the adjuster up or down as required. Tighten the lock nuts and recheck the free play.
3. Start the engine and operate the shift lever. Check to be sure the transmission is shifted into gear smoothly.

1/ SHIFT LEVER

2/ LOCK NUTS

3/ ADJUSTER



SPARK ARRESTER MAINTENANCE (Optional part)

▲ WARNING

If the mower has been running, the muffler will be very hot. Allow it to cool before proceeding.

• It is illegal in some areas to operate an engine without a spark arrester. Check local laws and regulations before operating. An optional spark arrester is available from Honda dealers.

1. Loosen the two 6 mm nuts and remove the muffler protector, identification plate, muffler and gasket.
2. Remove the spark arrester from the muffler. (Taking care not to damage the wire mesh).

NOTE: Check for carbon deposits around the exhaust port and the spark arrester and clean if necessary.

3. Install spark arrester in the muffler.
4. Install gasket, muffler, identification plate, muffler protector and then tighten the two 6 mm screws securely.

1/ GASKET (OPTIONAL PART)

2/ SPARK ARRESTER (OPTIONAL PART)

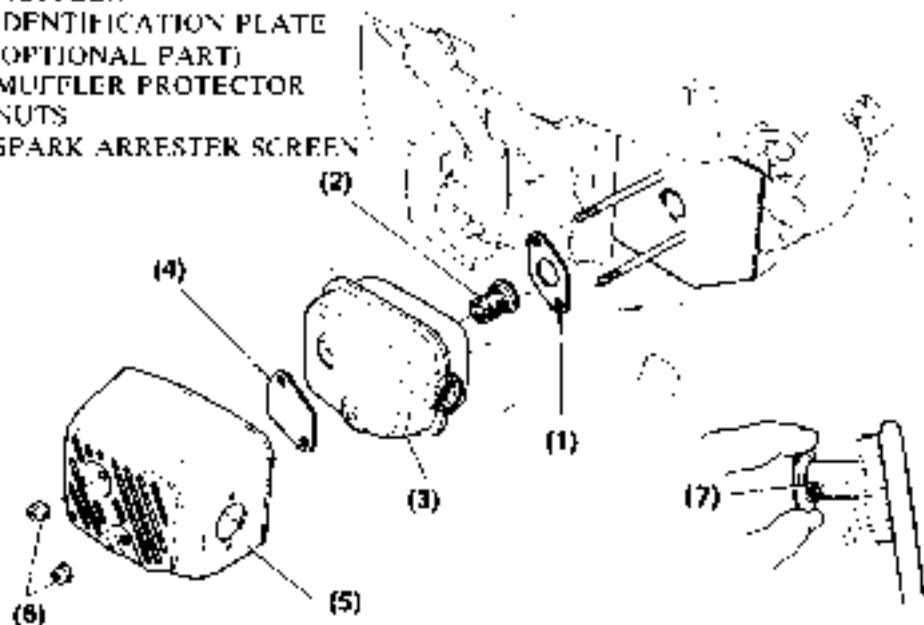
3/ MUFFLER

4/ IDENTIFICATION PLATE
(OPTIONAL PART)

5/ MUFFLER PROTECTOR

6/ NUTS

7/ SPARK ARRESTER SCREEN



CARBURETOR ADJUSTMENT

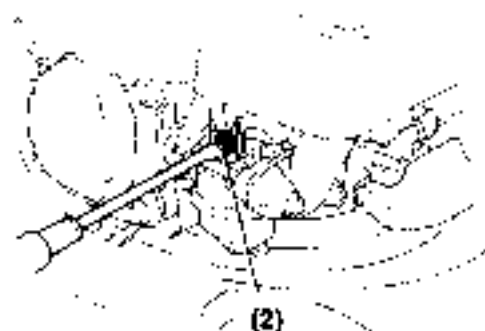
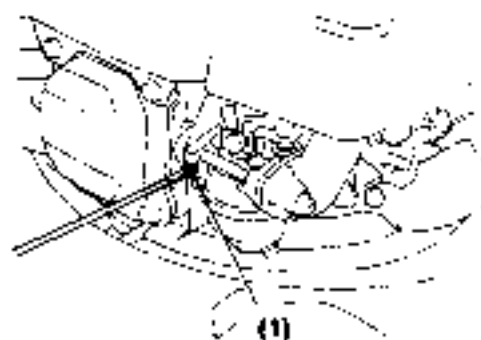
1. Start the engine and allow it to warm up to normal operating temperature.
2. Place the throttle lever in the LO position.
3. Turn the pilot screw in or out to the setting which produces the highest idle rpm.
The correct position will usually be approximately 2 turns out from the fully closed position.

Standard idle speed :

	HR 194	HR 214	HR 216-HRA 216
LO	2000 \pm 150 rpm		1500 \pm 150 rpm

1/ PILOT SCREW

2/ THROTTLE STOP SCREW

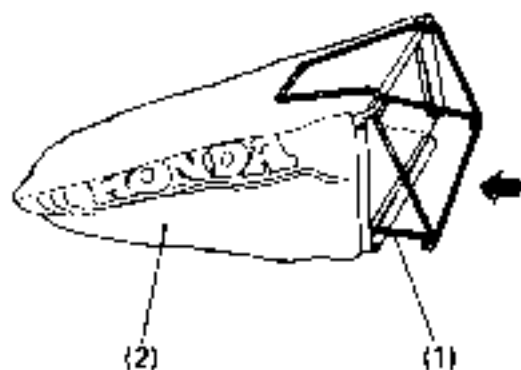


GRASS BAG ASSEMBLY

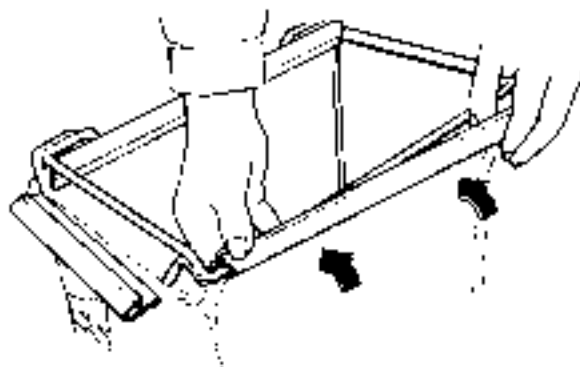
1. Insert the bag frame into the grass bag as shown.

1: GRASS BAG FRAME

2: GRASS BAG



2. Hook the plastic edges of the grass bag onto the frame.



9. TROUBLESHOOTING

Engine will not start

1. No fuel.
 2. Throttle lever in STOP position.
 3. Spark plug wire loose or disconnected.
 4. Spark plug faulty or improperly gapped (p.36).
 5. Engine flooded (p.26).
- Battery discharged.

Hard starting or loss of power

1. Dirt in petrol tank.
2. Dirty air cleaner.
3. Water in petrol tank and carburetor
4. Vent in fuel cap and/or carburetor clogged.

Erratic operation

1. Spark plug faulty or improperly gapped (p.36).
2. Dirty air cleaner.

Engine overheats

1. Spark plug improperly gapped.
2. Dirty air cleaner.
3. Dirty cooling fins.
4. Low oil level.
5. Starter pulley clogged by grass etc.

Excessive vibration

1. Loose blade or engine mounting bolts.
2. Blade unbalanced.

The starter won't turn
(SM type)

1. Battery disconnected (p.37).
2. Circuit breaker on O/F (p.24).
3. Battery discharged (p.37).

MODEL	HR 194	HR 214
DESCRIPTION CODE	HR 194	HR 214
ENGINE	GXX 170	GXX 120
ENGINE TYPE	OVERHEAD VALVE, SINGLE-CYLINDER, FOUR-STROKE PETROL ENGINE	OVERHEAD VALVE, SINGLE-CYLINDER, FOUR-STROKE PETROL ENGINE
DISPLACEMENT	118 cm ³	135 cm ³
BORE AND STROKE	60 X 42 mm (2.4 X 1.7 in)	60 X 42 mm (2.4 X 1.7 in)
IGNITION TIMING	25° at 27° BTDC	25° at 27° BTDC
IGNITION SYSTEM	TRANSISTORISED MAGNETO IGNITION	TRANSISTORISED MAGNETO IGNITION
COOLING	FORCED AIR	FORCED AIR
ENGINE OIL CAPACITY	0.6 l (0.63 US qt, 0.53 Imp qt)	0.6 l (0.63 US qt, 0.53 Imp qt)
FUEL TANK CAPACITY	1 l (0.26 US gal, 0.22 Imp gal)	1 l (0.26 US gal, 0.22 Imp gal)
SPARK PLUG	BPR 5 ES (NGK) W 16-FPR 11 (ND)	BPR 5 ES (NGK) W 16-FPR 11 (ND)
FRAME DIMENSIONS Length x width x height	PE 195 x 570 x 1020 mm PL 175 x 510 x 402 mm PL 1575 x 510 x 1020 mm PE 195 x 570 x 1020 mm PXE, PXB, PXE, PXG : 1,390 x 510 x 1,010 mm SXS, SF, SXB, SB, SXT, SF, SAG, SML, SMB, SMI, SMC : 1,000 x 510 x 1,010 mm SL 160 x 300 x 42.1 mm SXL, SL, SMI : 1,615 x 510 x 470 mm PL 164 x 30.1 x 42.1 mm	PE 195 x 570 x 1020 mm (68.9 x 22.4 x 30.2 in) SL : 175 x 510 x 1020 mm (68.9 x 20.1 x 40.2 in) SX : 1750 x 600 x 1020 mm (68.9 x 23.6 x 40.2 in) SML : 1275 x 570 x 1020 mm (50.2 x 22.4 x 40.2 in) SMB : 1790 x 600 x 1020 mm (70.5 x 23.6 x 40.2 in) PE, PXB, PXE, PXG : 1400 x 570 x 1115 mm PXC : 22.4 x 42.1 in SL, SB, SF, SXT : 170 x 570 x 1020 mm (66.9 x 22.4 x 42.1 in) PXE, PXB, PXG, SAG, SAE, SXC, SML, SMB, SMI, SMC, SMD : 1700 x 570 x 1020 mm (66.9 x 22.4 x 42.1 in) PS : 1750 x 400 x 1020 mm (68.9 x 15.7 x 40.2 in)
	PE, PB, P, PS : 31.0 kg (68.4 lb) PL : 11.6 kg (25.7 lb) PXE, PXG, PXB, PXE : 34.0 kg (75.0 lb) SXF, SXB, SML, SXC, SMD : 41 kg (90.4 lb) SXS : 11.5 kg (25.4 lb), SF, SB, SF, SC : 17.2 kg SL : 3E.5 kg (7.4 lb), SL : 36.0 kg (79.4 lb) SMC : 45.1 kg (100.1 lb) SME, SMB, SMI, SMC : 45 kg (99.2 lb)	PL : 32.0 kg (70.4 lb), PS : 29.0 kg (64.0 lb) SL : 47.0 kg (103.4 lb) SM : 44.0 kg, SXS : 46.0 kg (101.4 lb), SMI : 38.0 kg, SMI : 39.5 kg (87.0 lb) PE, PB, PE, PG : 26.5 kg (58.4 lb) SL, SB, SF, SAG, SAE, PXE, PXF : 40.0 kg (88.2 lb) PXE : 40.0 kg (88.2 lb) SXF, SXT, SXC : 43.5 kg (96.0 lb) SML, SMB, SMI, SMC : 51.5 kg, SF : 47.5 kg
Grass bag capacity	65 l (17.2 US gal, 14.1 Imp gal)	73 l (19.4 US gal, 16.1 Imp gal)
Cutting width	470 mm (18.5 in)	530 mm (21 in)

MODIFI.

Power products description code

ENGINE

Eng. no. type

Displacement bore and stroke

Injection timing

Injection system

Engine oil capacity

Coolant capacity

Spark plug

HR 216

M.A.C.R.

GVV 160

Overhead valve, vertical, forced air

cooled four-stroke gasoline engine

163 cm³ (9.9 cu in.) 60 x 54 mm (2.36 x 2.13 in.)

30° BTDC

Transistorized magnetic ignition

0.65 L (0.68 US qt., 0.47 imp qt.)

2 L (0.53 US gal., 0.44 imp gal.)

BPR 5 (NGK) W 16 EPR II (ND)

HWA 216

M.A.C.R.

GVV 160

Overhead valve, single-cylinder, forced air-

cooled four-stroke gasoline engine

163 cm³ (9.9 cu in.) 60 x 54 mm (2.36 x 2.13 in.)

30° BTDC

Transistorized magnetic ignition

0.65 L (0.68 US qt., 0.47 imp qt.)

2 L (0.53 US gal., 0.44 imp gal.)

BPR 5 U.S. BPR 5 K.S. (NGK)

or W 16 EPR II, W 16 PR U (ND)

FRAME DIMENSIONS

Length x width x height

Dry weight

Covers top tube only

Covers top tube

SL - 1735 x 750 x 1030 mm (68.3 x 29.5 x 40.5 in.)

SXL - 2200 x 1145 x 1720 mm

SXL 2200 x 1145 x 1720 mm

SL - 500 x 310 x 1100 mm

SXL - 500 x 310 x 1100 mm

SXL - 500 x 310 x 1100 mm

SXL - 500 x 310 x 1100 mm

SXL - 500 x 310 x 1100 mm

SXL - 500 x 310 x 1100 mm

SXL - 500 x 310 x 1100 mm

SXL - 500 x 310 x 1100 mm

SXL - 500 x 310 x 1100 mm

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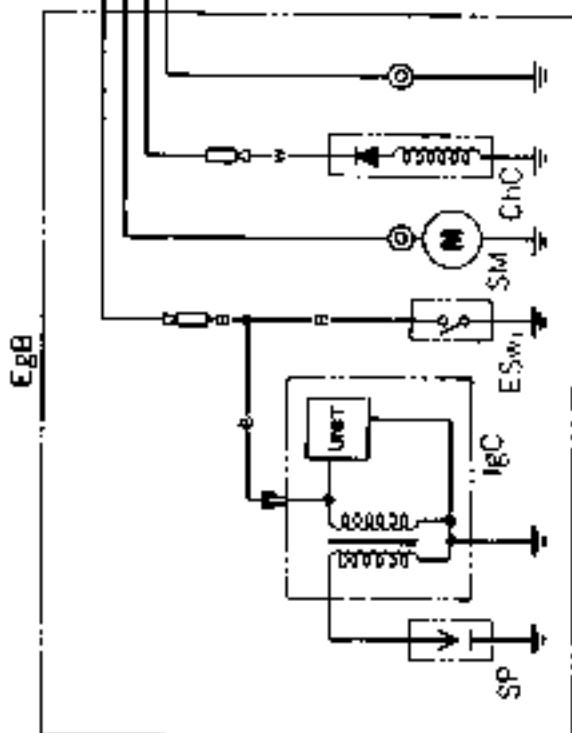
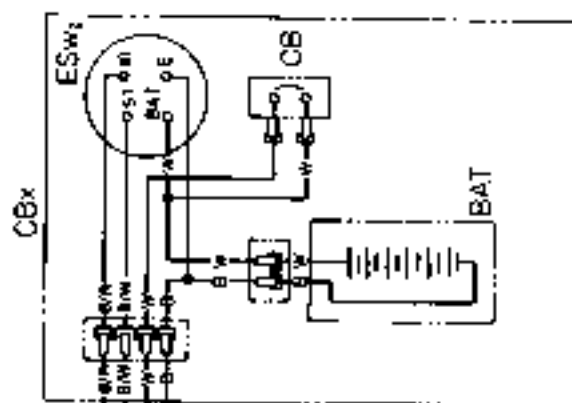
SXL - 500 x 310 x 1100 mm

Note: Specifications are subject to change without notice.

11. WIRING DIAGRAM

HR 194 SM

HR 214 SM



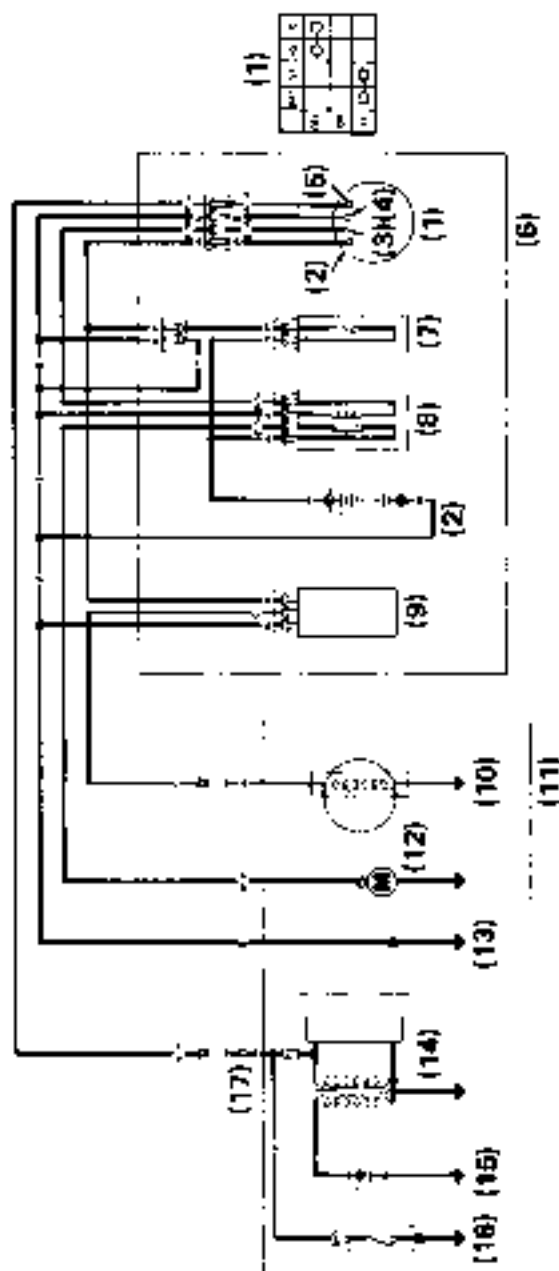
PART NAME

BAT	Battery
CB	Circuit Breaker
CBx	Control Box
ChC	Charge Coil
EgB	Engine Block
ESw	Engine Switch
IgC	Ignition Coil
SM	Starter Motor
SP	Spark Plug

H
R
W

Black
Red
White

11R 216 SM ELECTRIC STARTER TYPE ONLY



	PART NAME
(1)	COMBINATION SWITCH
(2)	BATTERY
(3)	STARTER
(4)	GROUND
(5)	IGNITION
(6)	CONTROL BOX BLOCK
(7)	MAIN FUSE
(8)	STARTER RELAY SWITCH
(9)	REGULATOR / RECTIFIER
(10)	CHARGE COIL
(11)	ENGINE BLOCK
(12)	STARTER MOTOR
(13)	GROUND TERMINAL
(14)	IGNITION COIL
(15)	SPARK PLUG
(16)	ENGINE STOP
(17)	RED MARK

Bk	BLACK
Br	BROWN
Y	YELLOW
O	ORANGE
Bu	BLUE
Lb	LIGHT BLUE
G	GREEN
Lg	LIGHT GREEN
R	RED
P	PINK
W	WHITE
Gr	GREY

THE ASBESTOS PRODUCTS (SAFETY) REGULATION 1985

SOME OR ALL of the following The following precautions must components may contain be taken, when replacing these ASBESTOS' components:

- **Brake Pads** Use vacuum cleaner to prevent spread of dust.
- **Brake Shoes** Use vacuum cleaner to prevent spread of dust.
- **Gaskets or Insulator** Do not bend or break into small pieces.
- **Clutch Discs** Do not bend or break into small pieces.
- **High Tension Plug Caps** Do not bend or break into small pieces.
- **Muffler Assembly** Do not separate or sever.
- **Noise Suppressor Assembly** Do not separate or sever.