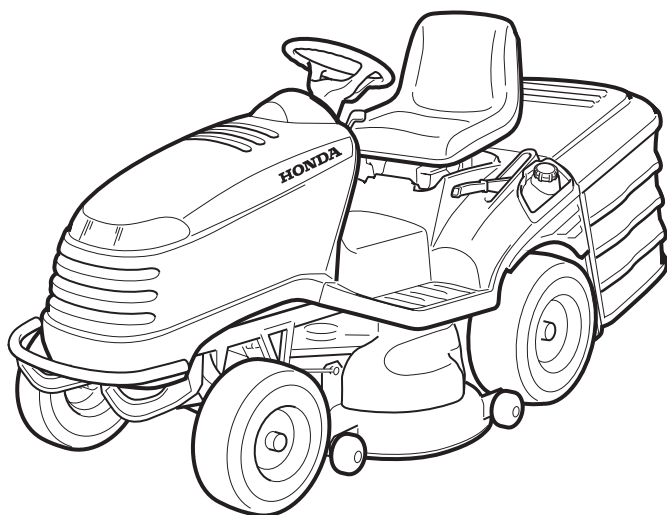


TONDEUSE AUTOPORTEE
LAWN-TRACTOR
RASENTRAKTOR
MINITRACTOR CORTADOR DE CESPED
TRATTORINO RASAERBA
ZITMAAIER



HF2315SBE
HF2315HME
HF2417HME
HF2417HTE
HF2620HME
HF2620HTE

MANUEL D'UTILISATION
OPERATOR'S MANUAL
GEBRAUCHSANWEISUNG
MANUAL DE INSTRUCCIONES
MANUALE DI ISTRUZIONI
GEBRUIKERSHANDLEIDING

INTRODUCTION

Dear Customer,

thank-you for having chosen one of our products. We hope that you will get complete satisfaction from using your new lawn-tractor and that it will fully meet all your expectations.

This manual has been compiled in order that you may get to know your machine and to be able to use it safely and efficiently. Don't forget that it forms an integral part of the machine, so keep it handy so that it can be consulted at any time, and pass it on to the purchaser if you resell the machine.

This new machine of yours has been designed and made in line with current regulations, and is safe and reliable if used for cutting and collecting grass exactly following the instructions given in this manual (**proper usage**). Using the machine in any other way or ignoring the instructions for safe usage, maintenance and repair is considered "**incorrect usage**" which will invalidate the guarantee, and the manufacturer will decline all responsibility, placing the blame with the user for damage or injury to himself or others in such cases.

Since the product is continually being improved, you may find slight differences between your machine and the descriptions contained in this manual. Certain modifications can be made to the machine without prior warning and without the obligation to update the manual, although the essential safety and function characteristics will remain unaltered. In case of any doubts, do not hesitate to contact your Dealer. And now enjoy your work!

AFTER-SALES SERVICE

This manual gives all the necessary instructions for using the machine and the basic maintenance that may be carried out by the user.

Contact your Dealer for operations not described in this manual.

TABLE OF CONTENTS

1. SAFETY REGULATIONS	3
Regulations for using the machine safely	
2. IDENTIFICATION OF THE MACHINE AND COMPONENTS	7
Explanations on how to identify the machine and its main components	
3. UNPACKING AND ASSEMBLY	9
Explanations on how to remove the packing and on how to assemble separated parts	
4. CONTROLS AND INSTRUMENTS	15
Position and functions of all the controls	
5. HOW TO USE THE MACHINE	22
Provides indications for working efficiently and safely	
5.1 Safety recommendations	22
5.2 Why the safety devices cut in	22
5.3 Preliminary operations before starting work	24
5.4 Using the machine	27
5.5 Using on slopes	35
5.6 Transporting	36
5.7 Advice on how to obtain a good cut	36
5.8 Summary of the main operations to be carried out in various conditions	37
6. MAINTENANCE	39
All the information for maintaining the machine in peak efficiency	
6.1 Safety recommendations	39
6.2 Routine maintenance	39
6.3 Checks and adjustments	44
6.4 Dismantling and renewing parts	52
7. TROUBLESHOOTING	60
A help in quickly resolving any problems	
8. ACCESSORIES ON REQUEST	63
A description of the accessories available for particular types of work	
9. SPECIFICATIONS	64
A summary of the main specifications of your machine	
10. ALPHABETICAL INDEX	65
Where information can be found	

1. SAFETY REGULATIONS

1.1 HOW TO READ THE MANUAL

Some paragraphs in the manual containing information of particular importance for safety and operation are highlighted at various levels of emphasis, and signify the following:

NOTE

or

IMPORTANT

These give details or further information on what has already been said, and aim to prevent damage to the machine.

⚠ WARNING!


Non-observance will result in the risk of injury to oneself or others.


⚠ DANGER!

Non-observance will result in the risk of serious injury or death to oneself or others.

This manual describes various versions of the machine, which mainly differ in:

- type of transmission: with mechanical gear-change or with hydrostatic continuous speed adjustment;
- blade engagement system, manual, pneumatic or electromagnetic clutch;
- special equipment and/or accessories.

The symbol  highlights all differences in usage and is followed by the indication of the version to which it refers.

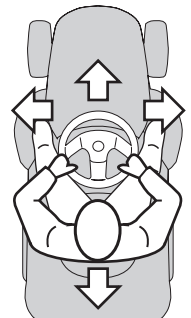
The symbol “” makes a reference to another part of the manual where further information or clarification can be found.

NOTE

Whenever a reference is made to a position on the machine “front”, “back”, “left” or “right” hand side, this is determined by facing the direction of forward travel.

IMPORTANT

For all usage and maintenance operations on the battery which are not described in this manual, consult the relevant manual which form an integral part of all the documentation supplied with the machine.



1.2 SAFETY REGULATIONS

⚠ WARNING! *Read carefully before using the machine.*

A) TRAINING

- 1) **Read the instructions carefully.** Be familiar with the controls and the proper use of the equipment.
- 2) Never allow children or people unfamiliar with these instructions to use the lawnmower. Local regulations can restrict the age of the operator.
- 3) **Never mow while people, especially children, or pets are nearby.**
- 4) Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.
- 5) Do not carry passengers.
- 6) All drivers should seek and obtain professional and practical instruction. Such instruction should emphasise:
 - the need for care and concentration when working with ride-on machines;
 - control of a ride-on machine sliding on a slope will not be regained by the application of the brake.
 The main reasons for loss of control are:
 - insufficient wheel grip;
 - being driven too fast;
 - inadequate braking;
 - the type of machine is unsuitable for its task;
 - lack of awareness of the effect of ground conditions, especially slopes;
 - incorrect hitching and load distribution.

B) PREPARATION

- 1) While mowing, always wear substantial footwear and long trousers. Do not operate

the equipment when barefoot or wearing open sandals.

- 2) Thoroughly inspect the area where the equipment is to be used and remove all objects which can be thrown by the machine.
- 3) **DANGER! Petrol is highly flammable:**
 - store fuel in containers specifically designed for this purpose;
 - refuel outdoors only and do not smoke while refuelling;
 - **add fuel before starting the engine. Never remove the cap of the fuel tank or add petrol while the engine is running or when the engine is hot;**
 - If petrol is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until the petrol vapours have dissipated;
 - replace all fuel tank and container caps securely.
- 4) Replace faulty silencers.
- 5) **Before using**, always visually inspect to see that the blades, blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged blades and bolts in sets to preserve balance.
- 6) On multi-bladed machines, take care as rotating one blade can cause other blades to rotate.

C) OPERATION

- 1) Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
- 2) Mow only in daylight or good artificial light.
- 3) Before attempting to start the engine, disengage all blade attachment clutches and shift into neutral.

4) **Do not use on slopes of more than 10° (17%).**

5) **Remember there is no such thing as a “safe” slope.** Travel on grass slopes requires particular care. To guard against overturning:

- do not stop or start suddenly when going up or downhill;
- engage the clutch slowly and always keep the machine in gear, especially when travelling downhill;
- machine speeds should be kept low on slopes and during tight turns;
- stay alert for humps and hollows and other hidden hazards;
- **never mow across the face of the slope.**

6) Use care when pulling loads or using heavy equipment:

- use only approved drawbar hitch points;
- limit loads to those you can safely control;
- do not turn sharply. Use care when reversing;

7) Stop the blades rotating before crossing surfaces other than grass.

8) **Never operate the machine with defective guards, or without safety protective devices in place.**

9) **Do not change the engine governor settings or overspeed the engine.** Operating the engine at excessive speed can increase the hazard of personal injury.

10) Before leaving the operator's position:

- disengage the power take-off and lower the attachments;
- change into neutral and set the parking brake;
- stop the engine and remove the key.

11) **Disengage drive to attachments, stop the engine and remove the ignition key:**

- before clearing blockages or unclogging chutes;
- before cleaning, checking or working on the machine;
- after striking a foreign object. Inspect the

machine for damage and make repairs before restarting and operating the equipment;

- If the machine starts to vibrate abnormally (check immediately).

12) Disengage drive to blades when transporting or not in use.

13) **Stop the engine and disengage drive to the attachment:**

- before refuelling;
- before removing the grass catcher.

14) Reduce the throttle setting during engine run-out and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of mowing.

D) MAINTENANCE AND STORAGE

1) Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.

2) Never store the equipment with petrol in the tank inside a building where fumes may reach an open flame or spark.

3) Allow the engine to cool before storing in any enclosure.

4) To reduce the fire hazard, keep the engine, silencer, battery compartment and petrol storage area free of grass, leaves, or excessive grease.

5) Check the grass catcher frequently for wear or deterioration.

6) Replace worn or damaged parts for safety.

7) If the fuel tank has to be drained, this should be done outdoors.

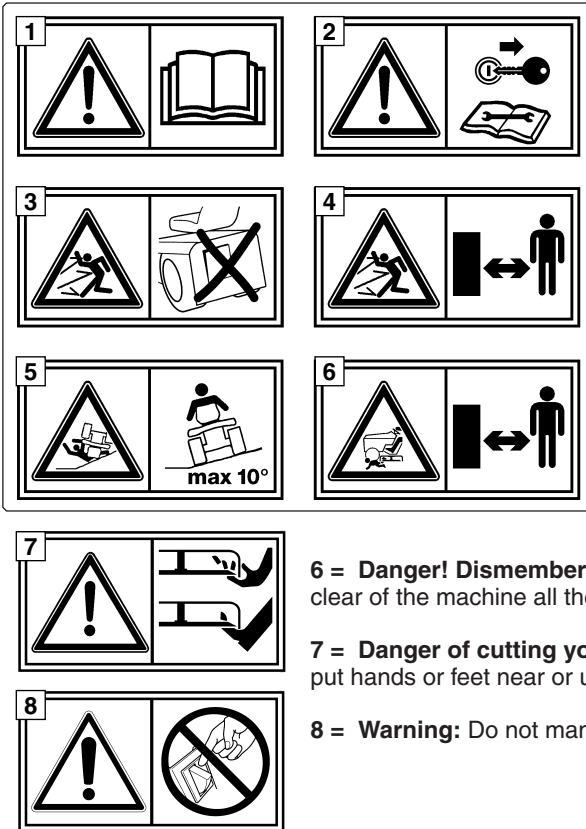
8) On multi-bladed machines, take care as rotating one blade can cause other blades to rotate.

9) When the machine is to be stored or left unattended, lower the cutting deck.

1.3 SAFETY DECALS

Your machine must be used with care. Therefore, decals have been placed on the machine, to remind you pictorially of the main precautions to take during use. These decals are to be considered an integral part of the machine.

If a decal should fall off or become illegible, contact your Dealer to replace it. Their meaning is explained below.



1 = Warning: Read the instructions before operating this machine.

2 = Warning: Disconnect the ignition key and read the instructions before carrying out any repair or maintenance work.

3 = Danger! Ejected objects: Do not operate without either the stone-guard or grass-catcher in place.

4 = Danger! Ejected objects: Keep bystanders away.

5 = Danger! Machine rollover: Do not use this machine on slopes greater than 10° .

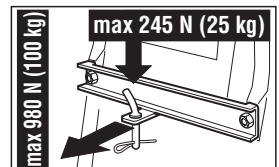
6 = Danger! Dismemberment: Make sure that children stay clear of the machine all the time when engine is running.

7 = Danger of cutting yourself. Blades in movement. Do not put hands or feet near or under the opening of the cutting plate.

8 = Warning: Do not manipulate the microswitch.

1.4 REGULATIONS FOR TOWING

A kit for towing a small trailer is available on request. This accessory is to be fitted as per the instructions provided. When using, do not exceed the recommended drawbar loads stated on the decal and follow the safety instructions, (↪ 1.2, C-6).



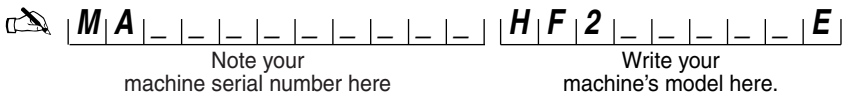
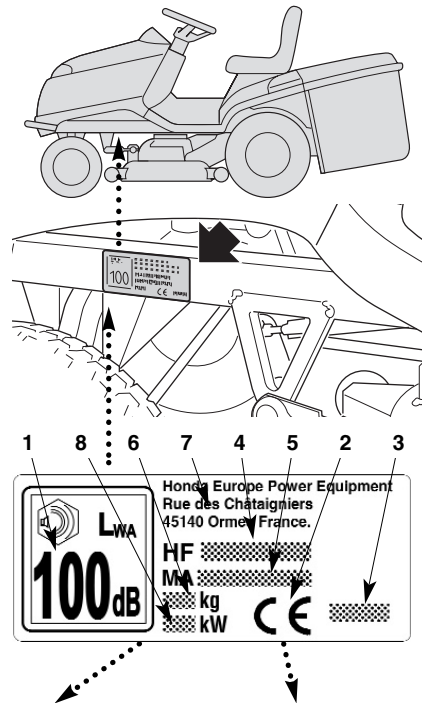
2. IDENTIFICATION OF THE MACHINE AND COMPONENTS

2.1 IDENTIFICATION OF THE MACHINE

The plate located on the left side of the main frame has the essential data of each machine.

The serial number (5) must be quoted when you require technical assistance or spare parts.

1. Acoustic power level according to directive 2000/14/EEC
2. Conformity mark according to directive 98/37/EEC
3. Year of manufacture
4. Type of machine
5. Serial number
6. Weight in kg
7. Name and address of Manufacturer
8. Engine nominal power (at 2800 rpm).



HOW TO RECOGNIZE YOUR MACHINE

Preparation, use and maintenance of a range of machines with many differing features are described in this manual. It is therefore important to clearly identify your machine's model in order to following all of the information regarding it.

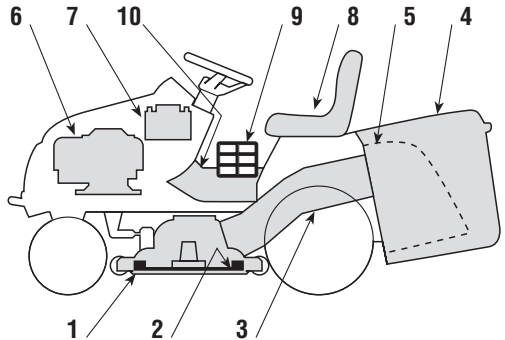
Your machine's model is indicated on the "identification label" in point 4 and is composed of a series of letters and numbers.

In the following pages of this manual, the model or models to which operations refer are indicated beforehand. The absence of any indication means it is valid for all models.

2.2 IDENTIFICATION OF MAIN COMPONENTS

Various main components can be seen on the machine, and these have the following functions:

1. **Cutting deck:** this is the guard enclosing the rotating blades.
2. **Blades:** these are what cut the grass. The wings at the ends help convey the cut grass towards the collector channel.
3. **Collector channel:** this is the part connecting the cutting deck to the grass-catcher.
4. **Grass-catcher:** as well as collecting the grass cuttings, this is also a safety element in that it stops any objects drawn up by the blades from being thrown outside of the machine.
5. **Stone-guard or deflector (available as optional part):** this can be fitted in place of the grass-catcher and prevents objects drawn up by the blades from being thrown outside of the machine.
6. **Engine:** this moves the blades and drives the wheels.
7. **Battery:** provides the energy for starting the engine. Its specifications and regulations for use are described in a specific manual.
8. **Driver seat:** this is where the machine operator sits. It has a sensor for detecting the presence of the operator which is a safety device.
9. **Decals for regulations and safety:** give reminders on the main provisions for working safely, each of which is explained in chapter 1.
10. **Inspection hatch:** for access to make several adjustments.



3. UNPACKING AND ASSEMBLY

For storage and transport reasons, some components of the machine are not directly installed in the factory, but have to be assembled after their removal from the packing. Final assembly is carried out by following these simple instructions.

IMPORTANT

The machine is supplied without engine oil or fuel. Before starting up the engine, fill with oil and fuel following the instructions.

3.1 UNPACKING

When unpacking the machine, take care to gather all individual parts and fittings, and do not damage the cutting deck when taking the machine off the base pallet.

The packing contents:

- the machine;
- the steering wheel;
- the seat;
- the front bumper (if fitted);
- the grass-catcher brackets;
- the grass-catcher components;
- the battery charger;
- an envelope containing:
 - the operator's manuals and documents,
 - the nuts and bolts including a pin for blocking the steering wheel,
 - 2 starter keys and a spare 10 A fuse.

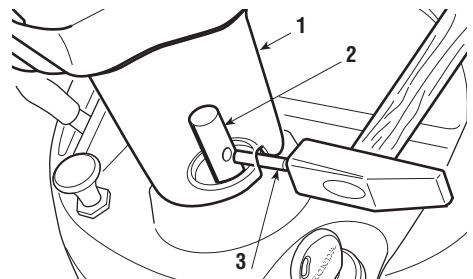
NOTE

To prevent damaging the cutting deck when getting the machine down from the pallet, take it to the maximum height (☛ 4.6) and be very careful. In the hydrostatic drive models, to get the machine off the pallet and to move it more easily, put the drive disengage lever in position «B» (☛ 4.34).

3.2 FITTING THE STEERING WHEEL

Put the machine on a flat surface and straighten up the front wheels.

Fit the steering wheel (1) onto the protruding shaft (2) with the spokes directed towards the seat.



Line up the hole in the steering wheel hub with the hole in the shaft and insert the pin supplied (3) using a hammer, ensuring that the end comes completely through to the opposite side.

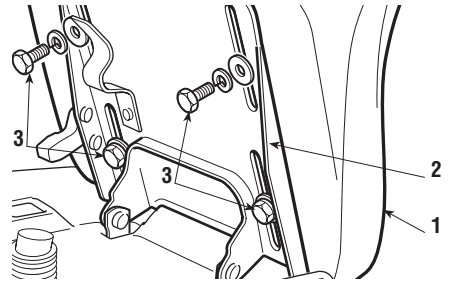
NOTE

To avoid damaging the steering wheel, use a punch of the same size to push the pin in the last part.

3.3 FITTING THE SEAT

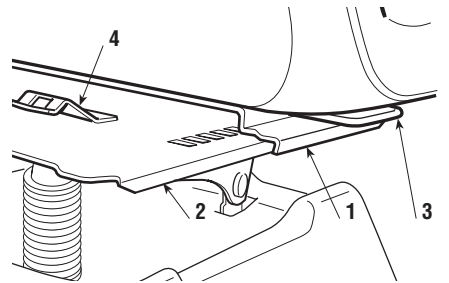
▶ **HF2...◇BE**

-
- Mount the seat (1) on the plate (2) using
- the screws (3).

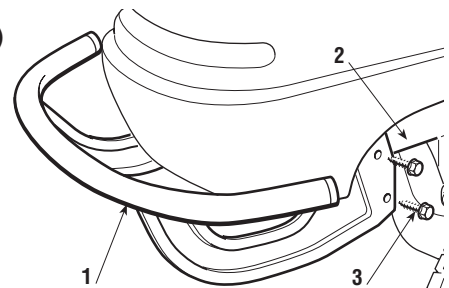


▶ **HF2...◇ME** **HF2...◇TE**

-
- Raise the adjustment lever (3) and fit the
- seat (1) in the slide (2), introducing it
- from the steering wheel's side, till the
- seat engages in one of the 6 positions.
-
- At this point the seat is engaged and
- cannot be removed unless the lever (4) is
- pressed, freeing it from its retainer.

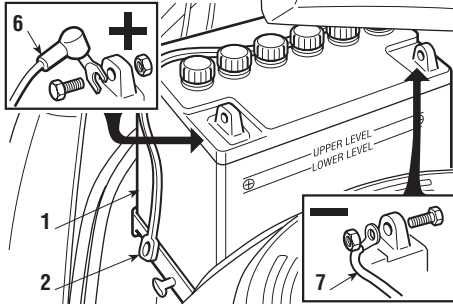
**3.4 FRONT BUMPER ASSEMBLY (if fitted)**

Fit the front bumper (1) on the lower part of the frame (2) using the four screws (3).

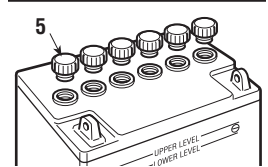
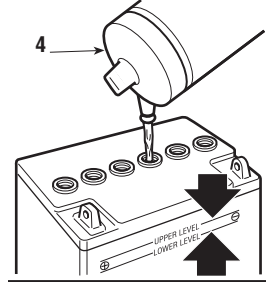
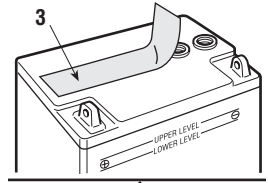
**3.5 CONNECTING THE BATTERY**

The battery (1) is situated behind the engine and is held in place by an elastic strap (2). Unhook the elastic strap (2), remove the battery and its protective cover

(3) and pour the electrolytic solution (4) (Acid not supplied: specific gravity 1,280 or 31,5° Baumé) until the indicated level is reached, distributing it evenly among the six elements.



Close the six caps (5) which are included and begin charging the battery. Remount the battery on the machine. The elastic strap (2) should be placed behind the filling



caps (5) of the battery.

Connect the red cable (6) to first the positive terminal (+) then the black cable (7) to the negative terminal (-) using the supplied screws as indicated.

Grease the terminals with silicon grease, making sure that the protective cap of the red cable (6) is positioned correctly.

IMPORTANT

After having activated the battery, continue charging it completely. Contact your Dealer who has all of the proper equipment available. The battery charger supplied is NOT able to carry out the first charging of the battery after it has been activated.

IMPORTANT

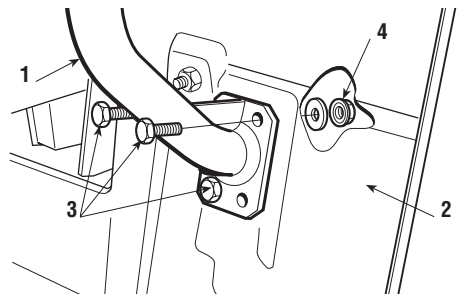
To prevent the safety device in the electronics card from cutting in, never start the engine until the battery is fully charged!

⚠ WARNING!

Battery acid is corrosive and a pollutant. When handling, use protective gloves and dispose of properly following current regulations.

3.6 GRASS-CATCHER SUPPORT ASSEMBLY

Fit the two brackets (1) on the rear plate (2), using for each bracket three screws (3) which are supplied, as shown, without fully tightening the nuts (4).

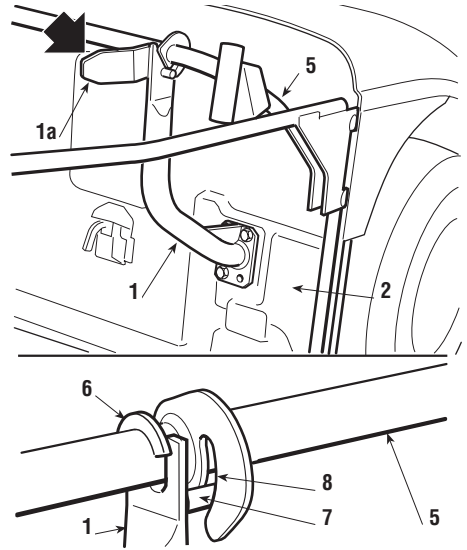


The supports (1) must be mounted so that the wings (1a) are turned inwards.

Hook the upper part of the grass-catcher frame (5) onto the brackets and centre it up with the rear plate (2).

Adjust the position of the two brackets (1) to the stop (6) so that, when turning the grass-catcher frame, the pin (7) slots into the seat (8) correctly.

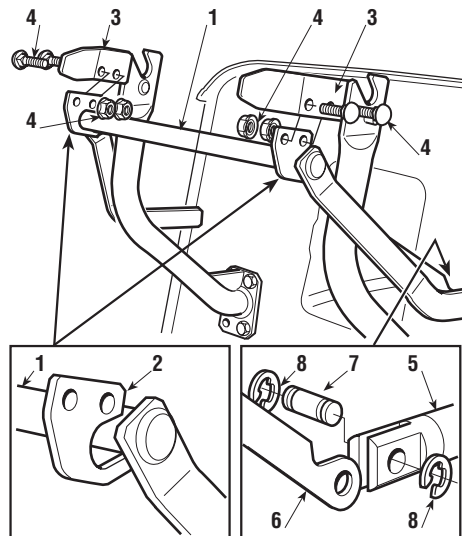
Check again that the frame (5) is properly centred with the rear plate (2) and that it rotates correctly, as shown above, and then fully tighten the screws (3) and the nuts (4).



3.7 ASSEMBLING THE LEVERS FOR TIPPING THE GRASS-CATCHER

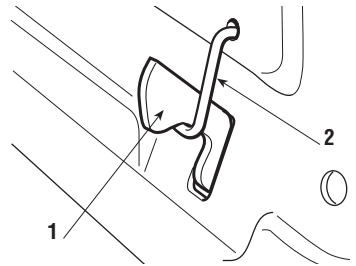
▶ HF2...HTE

- Position the lever axle (1) in the notch of the two plates (2) and attach them on the internal side of the grass-catcher supports (3), using the included screws (4) in the sequence shown.
- Connect the end of the rod (5) of the lifting piston to the lever (6) with the pin (7) and attach the two snap rings (8).
- Before attaching the grass-catcher to its supports, make sure that the tipping lever moves properly.

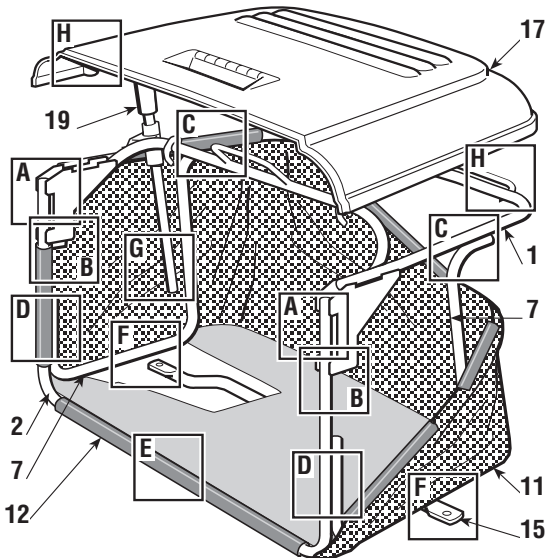


3.8 REMOVAL OF THE STOP FROM THE HOOKING PAWL OF THE GRASS-CATCHER

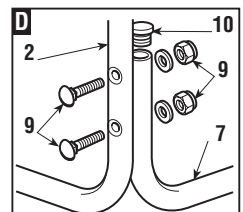
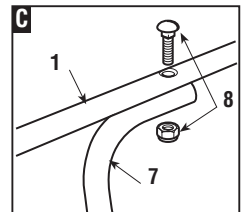
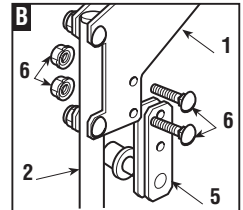
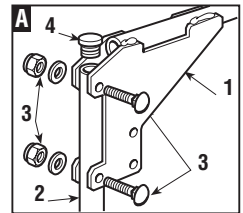
For transport purposes, the pawl (1) hooking the grass-catcher is held onto the rear plate by a stop (2). This stop must be removed before fitting the grass-catcher brackets, and is not to be subsequently used.



3.9 GRASS-CATCHER ASSEMBLY



A) Join the upper part of the frame (1) to the front component (2) using the supplied screws and nuts (3) as shown. Fit the two rubber caps (4) into the holes in the tube of front frame (2).



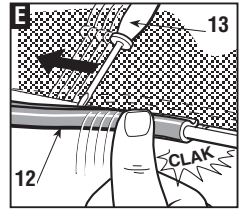
▶ HF2...HTE

- **B)** Before fully tightening the nuts (3), insert the two supports (5) between the plates of the upper frame (1) with the rollers turned inwards. Fasten them with the screws and nuts (6) and then fully tighten the nuts (3).

C-D) Attach the two side elements (7), using the screws and nuts (8 and 9) as

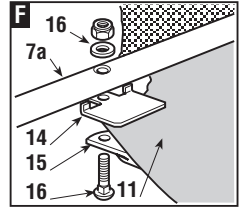
shown. Fit the two rubber caps (10) into the holes in the two side elements (7).

E) Insert the frame in the canvas cover (11) making sure it is correctly positioned on the base perimeter. Hook the plastic profiles (12) onto the frame tubes with the aid of a screw-driver (13).

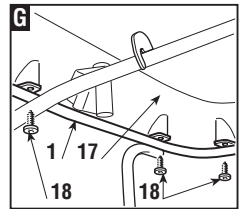


HF2...SBE HF2...HME

- **F**) Place the plate (14) between the canvas and the lower part of the frame's right side element (7a), lining up the holes.



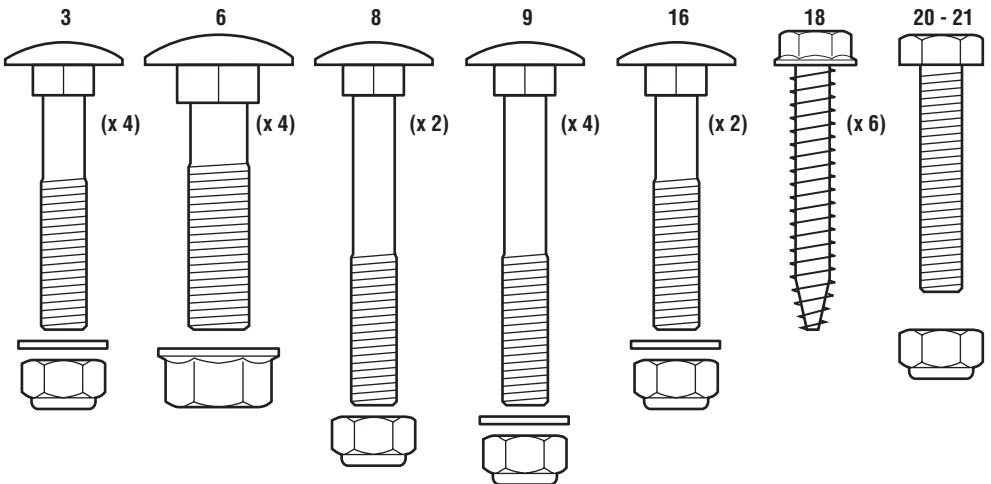
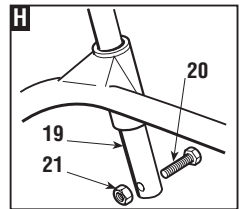
F) Attach the stiffening bar (15) under the frame with screws and nuts (16) keeping the flat part turned towards the canvas.



G) Using the six screws (18), attach the cover (17) to the frame's upper part (1).

HF2...SBE HF2...HME

- **H**) Insert the emptying lever (19) in its position and put in the limit stop screw (20) with its nut (21).



4. CONTROLS AND INSTRUMENTS

4.1 STEERING WHEEL

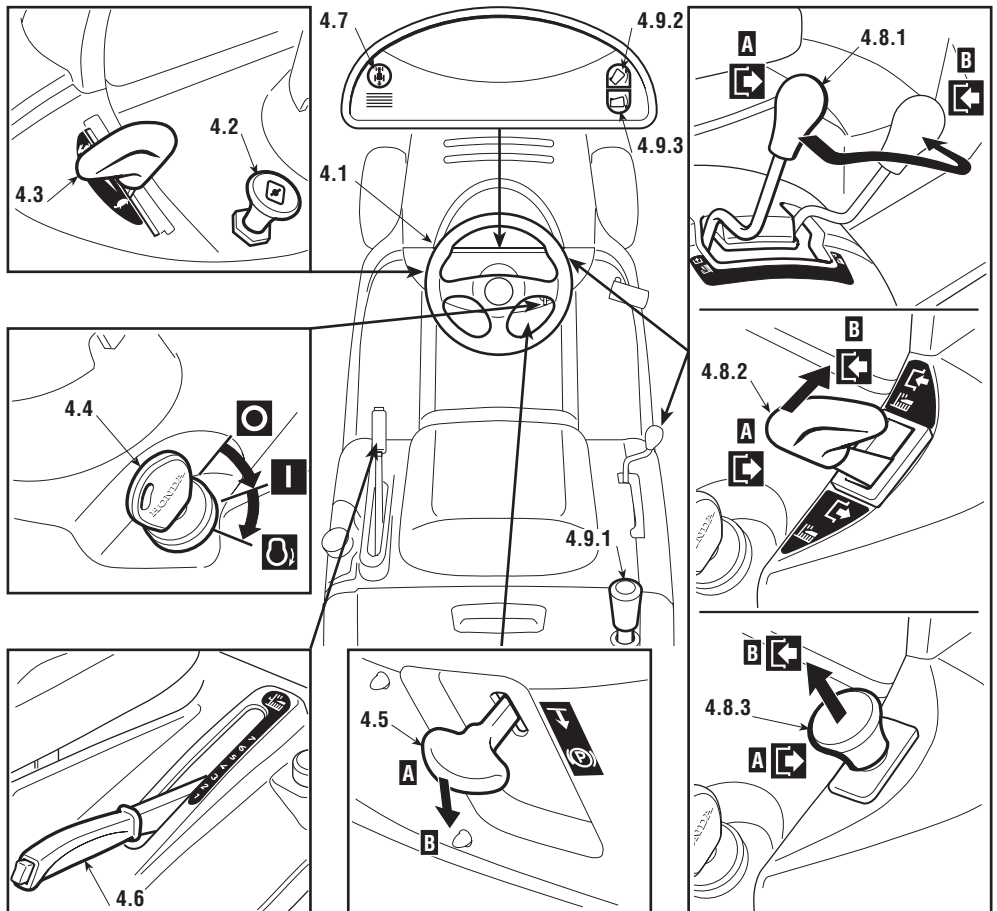
Turns the front wheels.

4.2 CHOKE CONTROL

This enriches the mixture so must only be used for the time necessary when starting from cold.


4.3 ACCELERATOR LEVER

Regulates the engine's r.p.m. The positions are indicated on the plate and corre-



spond to:

 «SLOW» for minimum engine speed

 «FAST» for maximum engine speed

- When moving from one area to another, put the lever in a position between «SLOW» and «FAST».
- When cutting, go to the «FAST» position.

4.4 KEY IGNITION SWITCH

This key operated control has three positions:

 «OFF» everything is switched off;

 «ON» activates all parts;

 «START» engages the starter motor.

On being released at the «START» position, the key will automatically return to «ON».

4.5 PARKING BRAKE LEVER

This lever is to stop the machine from moving when it has been parked. There are two positions:

«A» = Brake off

«B» = Brake engaged

- The brake is engaged by fully pressing the pedal (4.21 or 4.31) and moving the lever to position «B». When you take your foot off the pedal it will be blocked in the down position.
- In models which include it, a pilot lamp will warn that the “brake is engaged” (4.10.d).
- To disengage the parking brake, press the pedal (4.21 or 4.31). The lever will return to position «A».

4.6 CUTTING HEIGHT ADJUSTING LEVER

There are seven positions for this lever, shown as «1» to «7» on the label, which

correspond to just as many cutting heights. Their values are indicated in the “Specifications table” (☛ Chapter 9).

- To go from one height to another, press the release button at the end of the lever.

4.7 PUSH-BUTTON FOR REVERSE MOWING

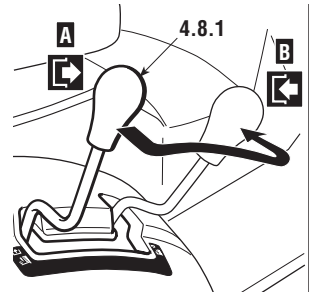
By keeping the push-button pressed, it is possible to engage the reverse gear and go backwards even with the blades engaged, without causing the engine to stop.

4.8 BLADE ENGAGEMENT AND BRAKE CONTROL

▶ **HF2...SBE**

- The lever (4.8.1) has two positions, as shown on the label and correspond to:

- ☛ «A» = Blades disengaged
- ☛ «B» = Blades engaged

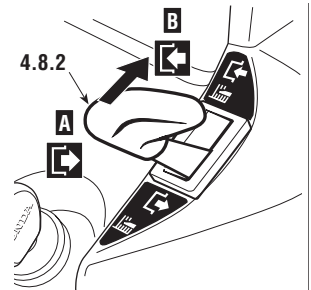


▶ **HF2315HME HF2417◇◇**

- The lever (4.8.2) inserts the blades with a pneumatic clutch and has two positions, as shown on the label.
- They correspond to:

- ☛ «A» = Blades disengaged
- ☛ «B» = Blades engaged

- The “Blades engaged” condition is indicated by a pilot lamp (4.10.c).

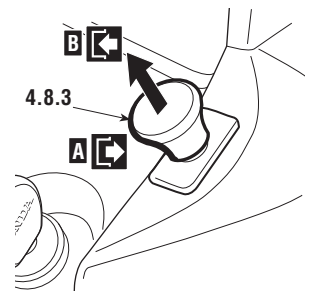


▶ **HF2620◇◇**

- The mushroom switch (4.8.3) is for engaging the blades by an electromagnetic clutch:

- ☛ «A» Pressed = Blades disengaged
- ☛ «B» Pulled = Blades engaged

- The “Blades engaged” condition is indicated by a pilot lamp (4.10.c).

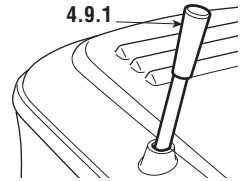


- If the blades are engaged when safety conditions have not been complied with, the engine shuts down and cannot be restarted (☛ 5.2).
- On disengaging the blades (position «A»), a brake is simultaneously activated which stops their rotation in few seconds.
- It is possible to engage the blades in reverse only by pressing push-button 4.7.

4.9 CONTROL FOR TIPPING GRASS-CATCHER

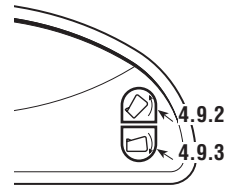
HF2...SBE HF2...HME

- The grass-catcher may be tipped to empty by pulling the lever (4.9.1), which can be extracted from its housing.



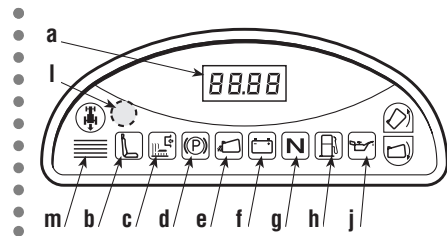
HF2...HTE

- The grass-catcher may be emptied by pressing the push-button (4.9.2), keeping it pressed until the control motor stops.
- The grass-catcher returns to the working position by pressing the push-button (4.9.3), keeping it pressed until the pawl hooks into place and the control motor stops.



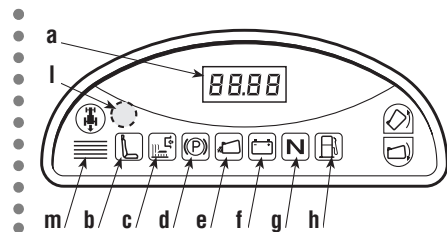
4.10 INDICATOR LIGHTS AND SOUND WARNINGS ON THE DASHBOARD

HF2620HTE



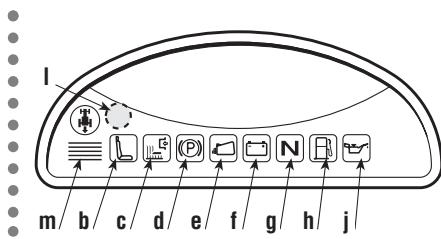
- a) The display comes on when the key is inserted (4.4):
 - it indicates the battery voltage in the «ON» position, before starting the engine;
 - it indicates the engine's total operation time in the «ON» position, with the engine started;
 - a blinking decimal point (.) indicates that the counter is working.

HF2417HTE



The warning lights come on when the key is in the «ON» position and stay on simultaneously for approximately 2 seconds (in combination with an intermittent warning sound) to indicate proper functioning.

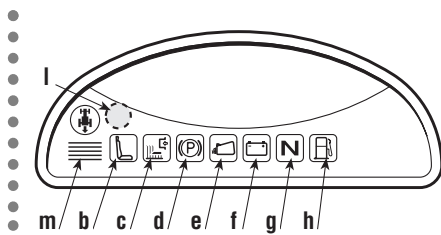
▶ **HF2620HME**



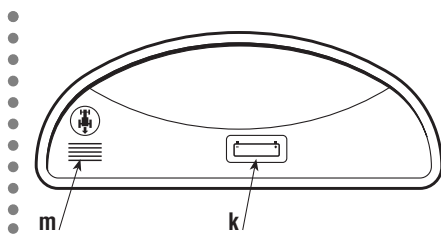
Afterwards, when a warning light comes on, it indicates:

- b) seat without operator;
- c) blades engaged;
- d) parking brake engaged;
- e) missing grass-catcher or stone-guard;
- f) insufficient battery recharge; look for the causes in chapter 7 of this manual;
- g) **N** transmission in “neutral” position.
- h) low fuel: it means that approx. 1.5 liters are left in the tank, which is enough for 30-40 minutes of normal work;
- j) problems with the engine’s lubrication: turn the engine off immediately and check the oil level (☛ 5.3.3). If the problem persists, contact your Dealer.

▶ **HF2315HME HF2417HME**



▶ **HF2315SBE**



- k) This warning light comes on when the key (4.4) is in the «ON» position and always stays on while operating.
 - If it blinks, it means that the engine cannot be started (☛ 5.2).
- l) The sensor located inside the dashboard turns on the headlights automatically (in models where included) after approximately few of darkness and turns them off after few seconds of light.
 - To avoid unnecessary use of them, keep the area near the sensor clean and do not place rags or objects on the dashboard.
- m) There are two types of sound warnings:
 - **continuous** the electronic card’s protection device has cut in;
 - **intermittent** warning that the grass-catcher is full.

▶ HF2...SBE

4.21 CLUTCH / BRAKE PEDAL

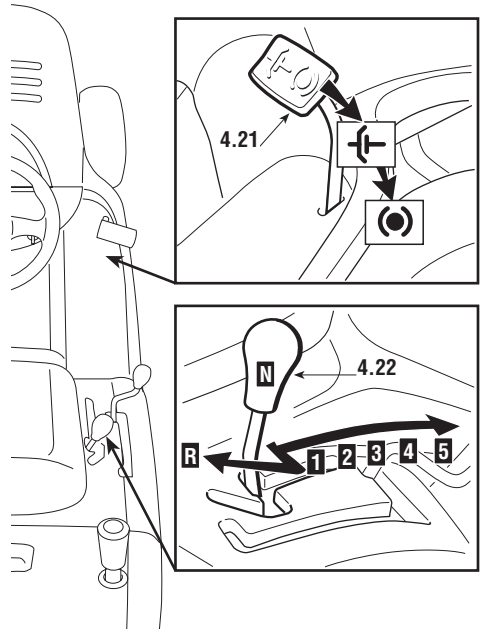
This pedal has a dual function: during the first part of its stroke, it acts as a clutch, engaging and disengaging drive to the wheels, and in the second part it acts as a brake on the rear wheels.

IMPORTANT

Do not keep the pedal halfway between clutch engagement and disengagement for a long time; this can cause overheating and consequent damage to the transmission belt.

NOTE

When the machine is in movement, keep your foot off the pedal.



4.22 SPEED CHANGE LEVER

This lever has seven positions for the five forward speeds, the neutral position «N», and reverse «R». To go from one speed to another, press the pedal (4.21) halfway and move the lever as per the instructions on the label.

⚠ WARNING!

Reverse must be engaged only when the machine is stopped.

▶ HF2...HME HF2...HTE

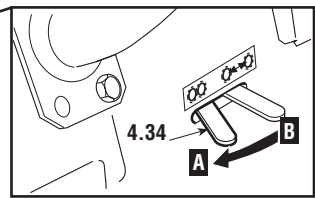
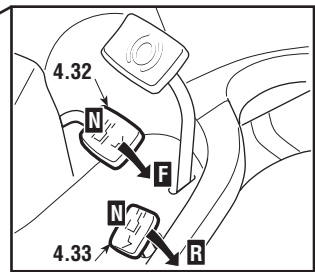
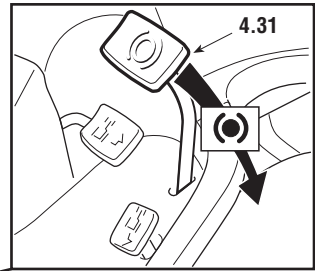
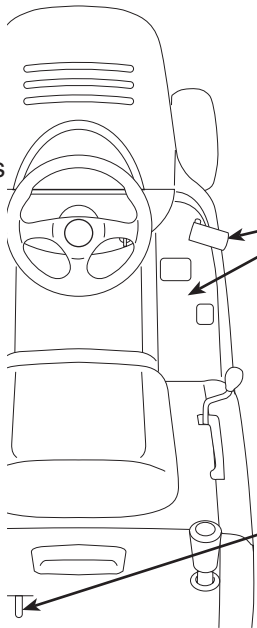
4.31 BRAKE PEDAL

This pedal works the brake on the rear wheels.

4.32 FORWARD GEAR PEDAL

This pedal engages drive in the rear wheels and modulates the machine's

- speed.
- – Increasing pressure on the pedal progressively increases the speed of the machine.
- – The pedal automatically goes into neutral «N» when released.
- – The neutral condition «N» is shown by the lighting of an indicator light (4.10.g).



4.33 REVERSE PEDAL

This pedal engages reverse drive in the wheels and modulates the machine's speed.

- – Increasing pressure on the pedal progressively increases the speed of the machine
- – The pedal automatically goes into neutral «N» when released.
- – The neutral condition «N» is shown by the lighting of an indicator light (4.10.g).

⚠ WARNING!

Reverse must be engaged only when the machine is stopped.

NOTE

If one of the drive pedals is used when the parking brake (4.5) is engaged, the engine stops.

4.34 LEVER TO RELEASE THE HYDROSTATIC TRANSMISSION

This lever has two positions as shown on the label:



«A» = Transmission engaged: for all usage conditions, when moving and during cutting;



«B» = Transmission released: considerably reduces the effort required for moving the machine by hand, with the **engine turned off**.

5. HOW TO USE

5.1 SAFETY RECOMMENDATIONS

⚠ DANGER! *The machine must only be used for the purpose for which it was designed (cutting and collection of grass).*

Do not tamper with or remove the safety devices fitted to the machine.

REMEMBER THAT THE USER IS ALWAYS RESPONSIBLE FOR DAMAGE AND INJURIES TO OTHERS. Before using the machine:

- *read the general safety regulations (☛ 1.2), paying particular attention to driving and cutting on slopes;*
- *carefully read the instructions for use, become familiar with the controls and on how to quickly stop the blades and engine.*
- *never put your hands or feet next to or beneath the rotating parts and always keep away from the discharge opening.*

Do not use the machine when in a precarious state of health or under the effect of medicines or other substances that can reduce your reflex actions and your ability to concentrate.

It is the user's responsibility to assess the potential risk of the area where work is to be carried out, as well as to take all the necessary steps to ensure his own safety and that of others, particularly on slopes or rough, slippery and unstable ground.

Do not leave the machine stopped in high grass with the engine running in order to avoid the risk of starting a fire.

⚠ WARNING! *This machine must not be used on slopes greater than 10° (17%) (☛ 5.5).*

IMPORTANT *All the references relating to the positions of controls are those described in chapter 4.*

5.2 WHY THE SAFETY DEVICES CUT IN

The safety devices work in two ways:

- they prevent the engine from starting if all the safety requirements have not been met;
- they stop the engine if even just one of the safety requirements is lacking.

To start the engine, in all cases it is necessary that:

- the transmission is in “neutral”;
- the blades are not engaged;
- the operator is seated or the parking brake is engaged.

The engine stops when:

- the operator leaves his seat when the blades are engaged;
- the operator leaves his seat when the transmission is not in “neutral”;
- the operator leaves his seat with the transmission in “neutral” but without engaging the parking brake;
- the grass-catcher is lifted or the stone-guard is removed when the blades are engaged;
- the reverse gear is engaged with the blades engaged. This can be avoided by keeping the push-button 4.7 pressed.

The table below shows various operating conditions, **highlighting** why the safety device shuts down the engine.

OPERATOR	GR.-CATCHER	BLADES	TRANSMISSION	BRAKE	ENGINE
A) PILOT LAMPS ON (Key in «ON» position)					
Sitting	YES	Disengaged	«N»	Engaged	Stopped
Sitting	NO	Disengaged	«N»	Disengaged	Stopped
B) WHEN STARTING (Key in «START» position)					
Sitting	-/-	Disengaged	<u>1...5 - F / R</u>	Engaged	Does NOT start
Sitting	-/-	Engaged	«N»	Engaged	Does NOT start
Absent	-/-	Disengaged	«N»	<u>Disengaged</u>	Does NOT start
C) WHEN MOVING (Key in «ON» position)					
Sitting	YES	Disengaged	<u>1...5 - F / R</u>	Engaged	Stops
Absent	YES	Disengaged	«N»	<u>Disengaged</u>	Stops
D) WHEN CUTTING GRASS (Key in «ON» position)					
Sitting	NO	Engaged	-/-	Disengaged	Stops
Sitting	YES	Engaged	R	Disengaged	Stops*
Absent	YES	Disengaged	«N»	<u>Disengaged</u>	Stops
Absent	YES	Engaged	-/-	Engaged	Stops

* This may be avoided by keeping the push-button 4.7 pressed.

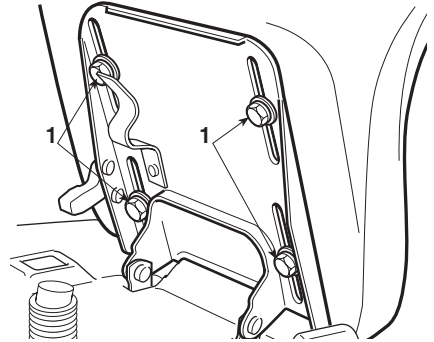
5.3 PRELIMINARY OPERATIONS BEFORE STARTING WORK

Before starting to work it is necessary to carry out several checks and operations to ensure that the work gives the best results and is done in maximum safety.

5.3.1 SEAT ADJUSTMENT

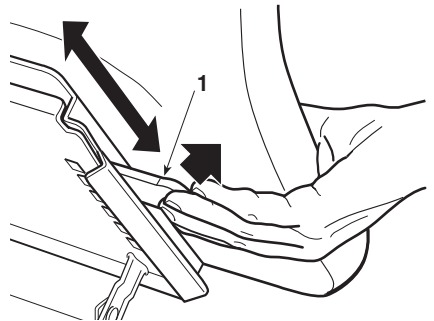
▶ HF2...◇BE

-
- To adjust the seat position, the four fixing screws (1) must be loosened. Move the seat along the support slots.
-
- When you find the desired position, tighten the four screws (1).



▶ HF2...◇ME HF2...◇TE

-
- The sliding seat can be adjusted onto six different positions.
-
- The position is changed by pulling up the handle (1) and sliding the seat until it is locked into the desired position.



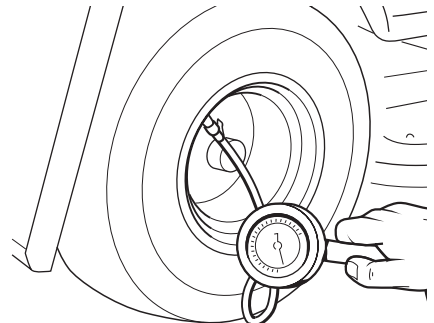
5.3.2 TYRE PRESSURE

Unscrew the hubcaps and connect the valve caps to a compressed air line with a gauge.

Proper tyre pressure levels are vital for perfect alignment of the cutting deck and thus mows evenly.

The pressures are:

FRONT	1.5 bar (13 x 5.00-6)
	1.0 bar (15 x 5.00-6)
REAR	1.2 bar



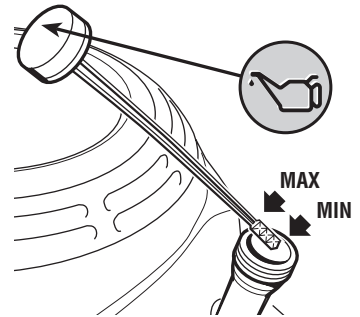
5.3.3 FILLING WITH OIL AND FUEL

IMPORTANT

Use oil SAE 10W30 and Petrol Unleaded Euro 95.

IMPORTANT

Running the engine with an insufficient amount of oil can damage it very seriously. The use of a non-detergent or two-stroke engine oil can reduce the life of the engine.



On a flat surface and with the engine off, remove the cap with the dipstick and dry it. Push it fully in without screwing it on, then take it out and check the oil level. If the level is close to or below the lower limit (MIN) of the dipstick, top up with the recommended oil until the upper limit (MAX) is reached. Screw the dipstick cap back on.

Refuel using a funnel. Avoid overfilling; filler neck has a max level indication. The tank's capacity is 5.4 litres.

NOTE

In the event of spilling on the body, quickly remove petrol traces.

⚠ DANGER!

Refuelling should be carried out in an open or well ventilated area with engine stopped. Always remember that petrol fumes are inflammable. **DO NOT TAKE A NAKED FLAME TO THE TANK'S OPENING IN ORDER TO SEE THE TANK'S CONTENTS AND DO NOT SMOKE WHEN REFUELLING.**



5.3.4 CHECKING THE BRAKING SYSTEM

Make sure that the machine's braking capacity is adequate for the conditions of usage. Avoid starting the machine if you have doubts on the brake efficiency. If necessary, adjust the brake (➡ 6.3.4). If you still have doubts about its efficiency, contact your Dealer.

5.3.5 FITTING THE PROTECTION DEVICES AT THE EXIT (GRASS-CATCHER OR STONE-GUARD)

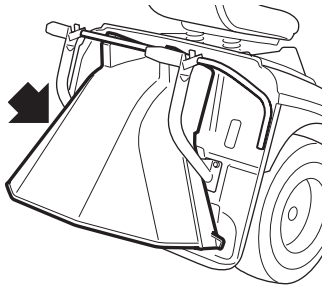
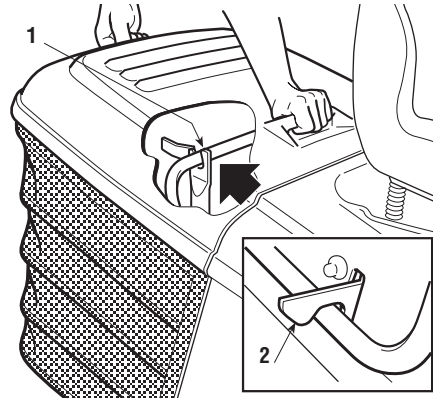
⚠ WARNING! *Never use the machine without having fitted the protection devices at the exit!*

▶ HF2...HTE

- The protection devices must be fitted with
- the tipping levers lowered.

Attach the grass-catcher inserting the upper tube of the frame into the slots of the 2 brackets (1).

Make sure that the lower tube of the opening of the grass-catcher hooks onto the pawl (2). If the hook is too stiff or too loose, adjust the return spring (☛ 6.3.6).



If you would like to mow without using the grass-catcher, an optional stone-guard kit (☛ 8.2) is available on request. This has to be attached to the rear plate as indicated in the relevant instructions.

5.3.6 CHECKING THE EFFECTIVENESS OF THE SAFETY DEVICES

Check that the safety systems are working properly by simulating the various situations of usage listed (☛ 5.2) and making sure that the indicated result is achieved for each situation.

5.3.7 CHECKING THE BLADES

Check that the blades are sharpened properly and firmly fixed to their hubs.

- A badly sharpened blade pulls at the grass and causes the lawn to turn yellow.
- A loose blade causes unusual vibrations and can be dangerous.

⚠ WARNING! *Wear heavy gloves when handling the blades.*

⚠ WARNING! *Disengage drive to attachments, stop the engine and remove the ignition key before cleaning, checking or working on the machine.*

5.4 USING THE MACHINE

5.4.1 STARTING

⚠ DANGER! *All starting operations have to be effected in an open or well-ventilated area! ALWAYS REMEMBER THAT THE ENGINE'S EXHAUST FUMES ARE TOXIC!*

To start the engine:

- engage the parking brake (☛ 4.5), on sloping ground;
- put the transmission into neutral («N») (☛ 4.22 or 4.32/33);
- disengage the blades (☛ 4.8);
- if started cold, use the choke (☛ 4.2);
- position the accelerator lever (☛ 4.3) between «SLOW» and «FAST»;
- put in the key (☛ 4.4), and turn to «ON» to make electrical contact, then turn to «START» to start the engine;
- release the key once the engine has started.

When the engine has started, put the accelerator in the «SLOW» position and close the choke (if fitted).

IMPORTANT *The choke must be closed as soon as the engine is running smoothly. Using it when the engine is already warm can foul the spark plug and cause the engine to run erratically.*

NOTE *Should you have difficulties in starting do not persist with using the starter motor as this can run down the battery or flood the engine. Turn the key to the «OFF» position, wait for a few seconds and then repeat the operation. Should the malfunction persist, refer to chapter «7» of this manual.*

IMPORTANT *Always bear in mind that the safety devices prevent the engine starting when:*

- the blades are engaged;
- the transmission is not in neutral («N»).
- the operator is absent with the parking brake disengaged.

In these cases, once the situation has been corrected, the key must first be turned back to «OFF» before the engine can be restarted.

5.4.2 FORWARD DRIVE AND MOVING WITHOUT MOWING

⚠ WARNING! *This machine has not been approved for use on public roads. It has to be used (as indicated by the Highway Code) in private areas closed to traffic.*

NOTE

When moving the machine, the blades must be disengaged and the cutting deck put at its highest position (position «7»).

▶ HF2...SBE

- Put the accelerator control between the «SLOW» and «FAST» positions, and the gear change lever in the 1st speed position (☛ 4.22).
- Keep the pedal pressed down and disengage the parking brake. Slowly release the pedal which will turn from «brake» to «clutch», thus operating the rear wheels (☛ 4.21).

⚠ WARNING! *The pedal has to be released gradually as a sudden engagement may cause tipping up and loss of control of the vehicle.*

- Gradually reach the desired operating speed using the accelerator and gear lever. To change the gear speed the clutch must be used pushing the pedal down half way (☛ 4.21).

▶ HF2...HME HF2...HTE

- Put the accelerator lever in a midway position between «SLOW» and «FAST».
- Disengage the parking brake and release the brake pedal (☛ 4.31).
- Press the drive pedal forward (☛ 4.32) and go to the required speed by gradually increasing pressure on the pedal and pressing the accelerator appropriately.

⚠ WARNING! *Drive must be engaged in the way already described (☛ 4.32) to prevent sudden engagement from causing tipping up and loss of control of the vehicle, particularly on slopes.*

5.4.3 BRAKING

First, reduce the machine's speed by reducing the engine's r.p.m. and then push the brake pedal (☛ 4.21 or 4.31) to further reduce the speed until the machine stops.



NOTE

The machine already slows down considerably by just releasing the drive pedal in forward or reverse.

5.4.4 REVERSE

Reverse must be engaged ONLY when the machine is stopped.



-
- Push down the pedal until the machine stops and then insert reverse by moving the lever sideways and putting it into position «R» (☛ 4.22). Gradually
- release the pedal to engage the clutch and then begin moving in reverse.



-
- When the machine is stopped, start the reverse movement by pressing the
- drive pedal in the «R» direction (☛ 4.33).

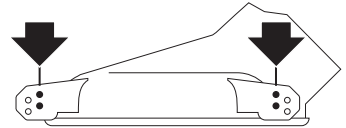
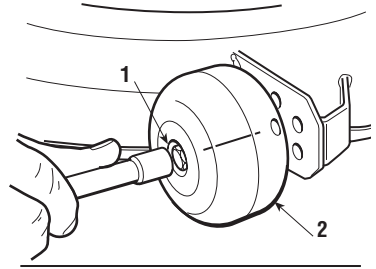
5.4.5 GRASS-CUTTING

When you have reached the area to be mowed, make sure that the grass-catcher or stone-guard is positioned correctly



-
- The cutting deck wheels (1) are included so that a space is always kept
- between the ground and the edge of the cutting deck to prevent the lawn damage if the ground is uneven.
-
- Each cutting deck wheel can be fitted at two different heights: it serves to main-

- tain space in the lowest position, whereas it
- does not function when in the highest position.
-
- To change the position, unscrew end remove
- the pin (1) then reposition the wheel (2) in the
- upper or lower hole of the wale shown on the
- diagram.



⚠ WARNING! *This work is to be done to all four wheels, WITH THE ENGINE OFF AND THE BLADES DISENGAGED.*

To start cutting:

- put the accelerator into the «FAST» position;
- bring the cutting deck to the highest position;
- engage the blades (☛ 4.9);
- start moving forwards onto the grass area very gradually and with particular caution, as previously described;
- adjust the forward speed and the cutting height (☛ 4.6) according to the lawn condition (height, density and dampness of the grass). On flat ground, these general conditions can be followed:

High and dense grass - wet lawn	2,5 km/h
Average condition grass	4 ... 6 km/h
Low grass - dry lawn	over 6 km/h

▶ **HF2...HME** **HF2...HTE**

- The speed is controlled in a gradual and progressive way by the pressure on
- the drive pedal.

⚠ WARNING! *When cutting on sloping ground, the forward speed must be reduced to ensure safe conditions (☛ 1.2 - 5.5).*

In any case, the speed should always be lowered if you note a reduction in engine speed, since a forward speed that is too fast compared to the amount of grass being cut will never mow the grass well.

Disengage the blades and put the cutting deck in the highest position whenever you need to get past an obstacle.

5.4.6 EMPTYING THE GRASS-CATCHER

Do not let the grass-catcher become too full as this may block the collector channel. When the grass-catcher is full there is an intermittent audible warning. At this point:

- lower the engine speed;
- go into neutral (N) (☛ 4.22 or 4.32/33) and stop forward movement;
- engage the parking brake on slopes;
- disengage the blades (☛ 4.8) and the audible signal will stop;

▶ HF2...SBE HF2...HME

NOTE

Emptying the grass-catcher can only be done with the blades disengaged, otherwise the engine stops.

- pull out the lever (1) (☛ 4.9.1) and tip up the grass-catcher to empty it;
- close up the grass-catcher so that it hooks onto the pawl stop (2) and put the lever (1) back into place.

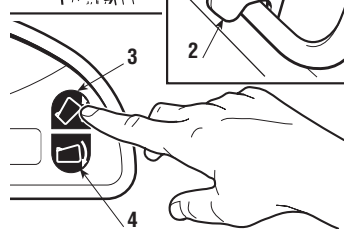


▶ HF2...HTE

NOTE

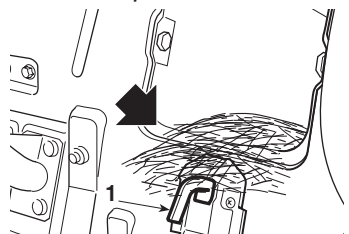
The dumping switch operates only with the blades disengaged.

- with the operator seated, keep the button (3) (☛ 4.9.2) pressed until the grass-catcher is completely tipped over;
- once emptied, keep the button (4) (☛ 4.9.3) pressed until the grass-catcher has completely gone down while checking that the pawl (2) stays hooked on.



NOTE

At times the audible warning may be heard at the moment of engaging the blade even when the grass-catcher has been emptied. This is due to grass-cuttings left on the sensor of the micro-switch (1). To stop the signal, disengage the blades and then immediately engage them again. If the warning sound continues, stop the engine, take off the grass-catcher and remove any accumulated grass-cuttings from the sensor (1).



5.4.7 UNBLOCKING THE COLLECTOR CHANNEL

Cutting very tall or wet grass, particularly at too high speed, can cause the collector channel to become blocked. Should this happen, it will be necessary to:

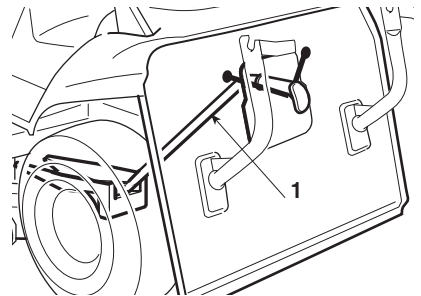
- stop forward movement immediately, disengage the blades, stop the engine and remove the key;
- take off the grass-catcher or stone-guard;
- remove the accumulated cuttings, reaching them from the outlet of the collector channel.

⚠ WARNING! *This job must only be performed with the engine turned off.*

5.4.8 “MULCHING” FUNCTION (OPTIONAL)

The “Mulching” cap recycles grass inside the cutting deck, chopping it into fine strands and strewing them evenly on the lawn.

This accessory must be fastened to the rear plate and used as shown in the relevant instructions.



5.4.9 END OF MOWING

When you have finished mowing, disengage the blades, lower the engine speed and return with the cutting deck in the highest position.

5.4.10 END OF WORK

Stop the machine, put the accelerator lever in the «SLOW» position and turn off the engine by putting the key into the «OFF» position.

This operation makes the fuel valve automatically close.

⚠ WARNING! *Always take out the ignition key if leaving the machine unattended!*

5.4.11 CLEANING AND STORAGE

Put the machine away in a dry place protected from weather and, if possible, cover with a cloth. After each mowing, clean the outside of the machine, empty the grass-catcher and shake it to remove residual grass and earth.

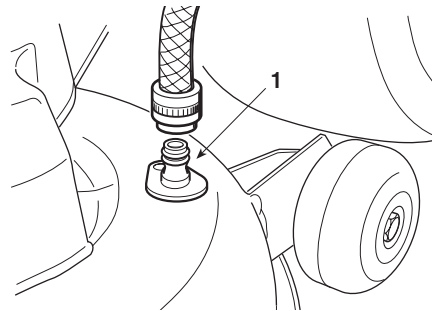
⚠ WARNING! *Always empty the grass-catcher and do not leave containers full of cut grass inside a room.*

Clean the plastic parts of the body with a damp sponge using water and detergent, taking care not to put water on the engine, the electrical parts or the electronic card located under the dashboard.

IMPORTANT *Never use hose-nozzles or harsh detergents for cleaning the body and engine!*

For washing the inside of the cutting deck and the collector channel the machine must be on firm ground with:

- the grass-catcher or stone-guard fitted;
- the operator seated;
- the engine running;
- the transmission in neutral;
- the parking brake engaged;
- the blades engaged.



Connect a water hose to the pipe fittings (1) alternating, and run water through for a few minutes each, with the blades turning.

When washing, the cutting deck should be fully lowered. Then take off the grass-catcher, empty and rinse it, and then put it in a position where it can dry quickly.

▶ HF2620◆◆

IMPORTANT *To avoid impairing the efficient working of the electromagnetic clutch:*

- prevent the friction from coming into contact with oil;
- do not direct jets of high-pressure water directly onto the clutch unit;
- do not clean the clutch with petrol.

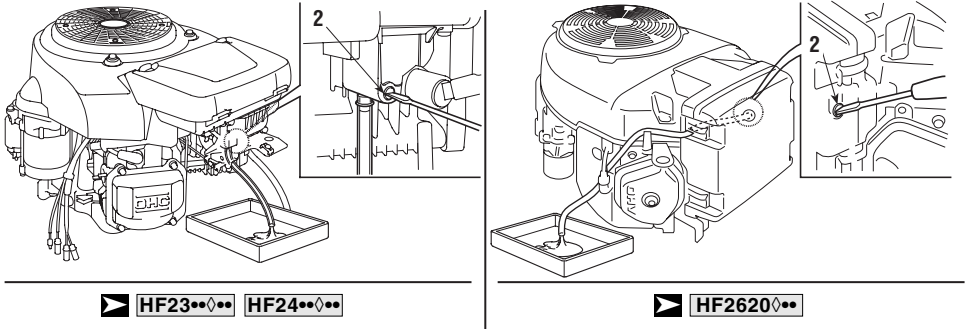
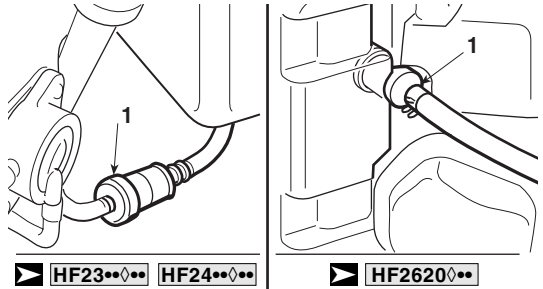
5.4.12 STORAGE AND INACTIVITY FOR LONG PERIODS

If the machine is likely to be unused for a long period (more than 1 month), disconnect the ground (black) cable from the battery. Lubricate all joints as directed (☛ 6.2.1).

⚠ WARNING! *Carefully remove any dry grass cuttings which may have collected around the engine or silencer to prevent their catching fire the next time the machine is used!*

Empty the fuel tank by disconnecting the tube situated at the inlet of the fuel filter (1).

Reconnect the fuel tube.



Loosen the carburetor drain screw (2), and drain the fuel into an approved gasoline container. Tighten the carburetor drain screw.

Remove the two spark plugs and pour about a tablespoon of clean engine oil into the cylinders. In order to distribute the oil in the cylinders evenly, crank the engine during 1 or 2 seconds using the starter motor, turning the starter key; then reinstall the spark plugs (☛ 6.4.5).

⚠ DANGER! *Petrol is highly flammable. Store the fuel in special containers. Always put the tank and fuel container caps back on and tighten well.*

IMPORTANT

The battery must be kept in a cool and dry place. Before a long storage period (more than 1 month), always charge the battery, only with the specific charger supplied with your machine, and then recharge before using again (☛ 6.2.4).

The next time the machine is used, check that there are no fuel leaks from the tubes or carburettor.

5.4.13 CARD PROTECTION DEVICE

The electronic card has a self-resetting protector which breaks the circuit if there is a fault in the electrical system. It results in the stopping of the engine and an audible signal which can only be stopped by removing the key.

The circuit automatically resets after a few seconds but the cause of the fault should be ascertained and dealt with to avoid re-activating the protection device.

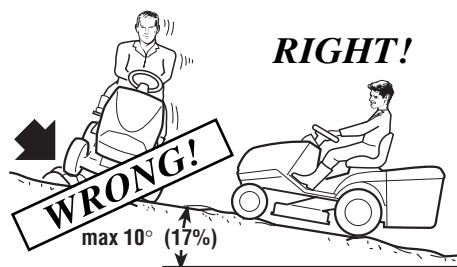
IMPORTANT

To avoid activating the protection device:

- *do not reverse the leads on the battery terminals;*
- *do not use the machine without its battery or damage may be caused to the charging regulator;*
- *be careful not to cause short-circuits.*

5.5 USING ON SLOPING GROUND

Only mowing in any case on the maximum gradients already mentioned (**max 10° - 17%**), lawns on a slope have to be mowed moving up and down and never across them, taking great care when changing direction that the highest wheels do not hit obstacles (such as stones, branches, roots, etc.) that may cause the machine to slide sideways, tip over or otherwise cause loss of control.

**⚠ DANGER!**

REDUCE SPEED BEFORE ANY CHANGE OF DIRECTION ON SLOPES, and always engage the parking brake before leaving the machine stopped and unattended.

⚠ WARNING! *Take care when beginning forward movement on sloping ground to prevent the risk of tipping up. Reduce the forward speed before going on a slope, particularly downhill.*

⚠ DANGER! *Never use reverse to reduce speed going downhill. control of the machine may be lost, particularly on slippery surfaces.*

▶ HF2...SBE

⚠ DANGER! *Never ride the machine on slopes in neutral gear or with the clutch out! Always engage a low gear before leaving the machine stopped and unattended.*

▶ HF2...HME **HF2...HTE**

- Go down slopes without touching the pedal (☛ 4.32/33) to take advantage of
- the braking effect of the hydrostatic drive when the transmission is not
- engaged.

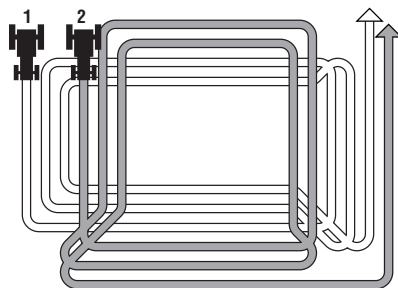
5.6 TRANSPORTING

⚠ WARNING! *If the machine must be transported on a lorry or trailer car, use access ramps having proper strength, width and length. Load the machine with the engine turned off, without driver and only pushed by a proper number of people. Lower the cutting deck, engage the parking brake and properly secure the machine to the means of transportation with cables or chains during transportation.*

5.7 ADVICE ON HOW TO OBTAIN A GOOD CUT

1. To keep a lawn green and soft with a good appearance, it should be cut regularly and without damaging the grass.
2. It is always better to cut the grass when dry.
3. The blades must be in good condition and well sharpened so that the grass is cut straight without any ragged edge that leads to yellowing at the ends.

4. The engine must run at full speed, both to ensure a sharp cut of the grass and to get the necessary thrust to push the cuttings through the collector channel.
5. The frequency of mowing should be in relation to the rate of growth of the grass, which should not be left to grow too much between one cut and the next.
6. During hot and dry periods, the grass should be cut a little higher to prevent the ground from drying out.
7. If the grass is very tall, it should be cut twice in a twenty-four hour period. The first time with the blades at maximum height, possibly reducing the cutting width, and the second cut at the desired height.
8. The appearance of the lawn will improve if you alternate the cutting in both directions.
9. If the collector system tends to get blocked with grass, you should reduce the forward speed since this may be too high for the condition of the grass. If the problem persists, the probable causes are either badly sharpened blades or deformed wings.
10. Be very careful when mowing near bushes or low kerbs which could distort the horizontal position and damage the edge of the cutting deck as well as the blades.



5.8 SUMMARY OF THE MAIN OPERATIONS TO BE CARRIED OUT IN VARIOUS CONDITIONS OF USE

To ...	You will need to ...
Start the engine (☛ 5.4.1)	Ensure that all the conditions allowing starting are met, and then turn the key.
Go forward (☛ 5.4.2)	Move the accelerator; ► [HF2***SBE] : push the pedal right down, engage the gear (☛ 4.22) and then gradually release the pedal; ► [HF2***HME] [HF2***HTE] : press the drive pedal forward (☛ 4.32);
Brake or stop (☛ 5.4.3)	Reduce the engine speed and press the brake pedal.
Reverse (☛ 5.4.4)	Stop the machine; ► [HF2***SBE] : put into neutral (N), push the pedal right down, engage reverse, (☛ 4.22) and then gradually release the pedal; ► [HF2***HME] [HF2***HTE] : press the drive pedal in reverse; (☛ 4.33).

To ...	You will need to ...
Cut the grass (☛ 5.4.5)	Fit the grass-catcher or stone-guard, adjust the height of the cutting deck wheels and move the accelerator; engage the blades and adjust the cutting height. ▶ [HF2***SBE] : push the pedal right down, engage the gear (☛ 4.22) and then gradually release the pedal; ▶ [HF2***HME] [HF2***HTE] :press the drive pedal forward (☛ 4.32);
Empty the grass-catcher (☛ 5.4.6)	Stop forward movement, disengage the blades, and activate the control for tipping up the grass-catcher.
Unblock the collector channel (☛ 5.4.7)	Stop forward movement, disengage the blades and turn off the engine; remove the grass-catcher and clean the channel.
End mowing (☛ 5.4.8)	Disengage the blades and reduce the engine speed.
Stop the engine (☛ 5.4.9)	Reduce the engine speed, wait a few seconds, and turn the key.
Store the machine (☛ 5.4.10)	Engage the parking brake, remove the key and, if necessary, wash the machine, the inside of the cutting deck, the collector channel and the grass-catcher.

6. MAINTENANCE

6.1 SAFETY RECOMMENDATIONS

⚠ WARNING! *Before cleaning, maintenance or repair work, take out the ignition key and read the relevant instructions. Wear suitable clothing and heavy gloves when dismantling and refitting the blades and in all other hazardous situations for hands.*

⚠ WARNING! *Never use the machine with worn or damaged parts. Faulty or worn-out parts must always be replaced and not repaired. Only use genuine spare parts: those that are not of an equivalent quality may damage the machine or endanger the safety of yourself and others.*

IMPORTANT *Never get rid of used oil, fuel or other pollutants in unauthorised places!*

Summary of the main situations where work may be required

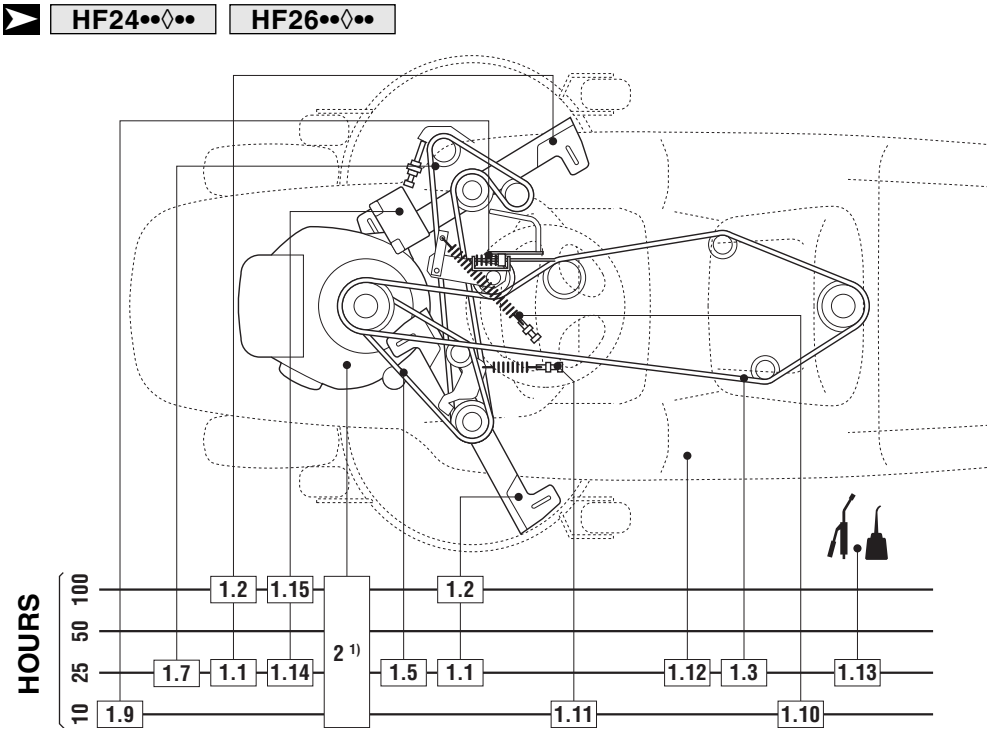
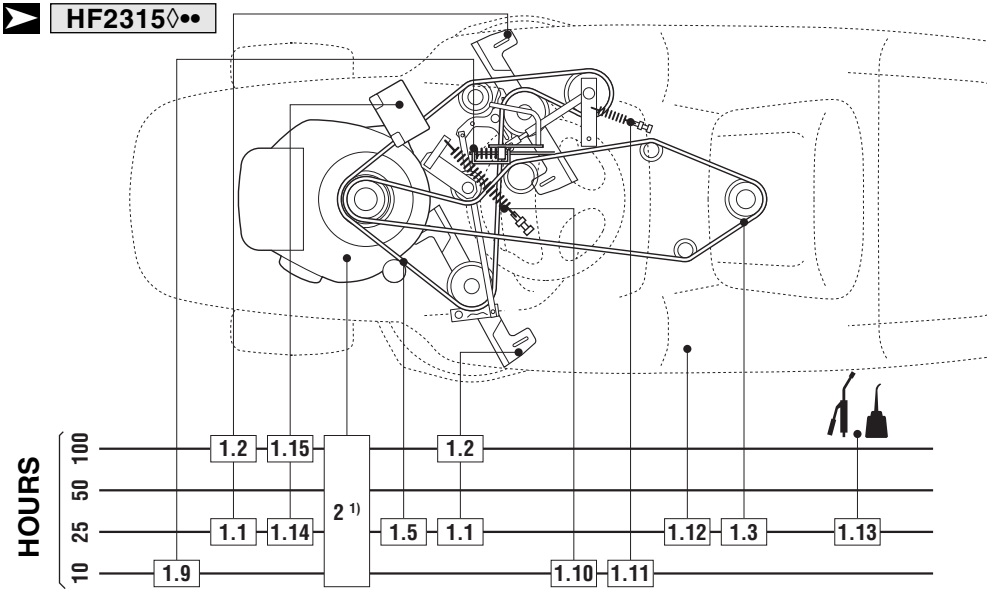
Every time that ...	You will need to ...
The blades vibrate	Check the bolts (☛ 6.3.1) or balance the blades (☛ 6.3.1).
The blades tear the grass and the lawn becomes yellow	Sharpen the blades (☛ 6.3.1).
The cut is uneven	Adjust the alignment of the cutting deck (☛ 6.3.2).
The blades engage in an abnormal way	Regulate the blade engagement adjuster (☛ 6.3.3).
The machine does not brake	Adjust the brake spring (☛ 6.3.4).
Forward movement is erratic	Adjust the stretcher spring (☛ 6.3.5).
The grass-catcher jumps around and tends to open up.	Adjust the spring (☛ 6.3.6).

6.2 ROUTINE MAINTENANCE

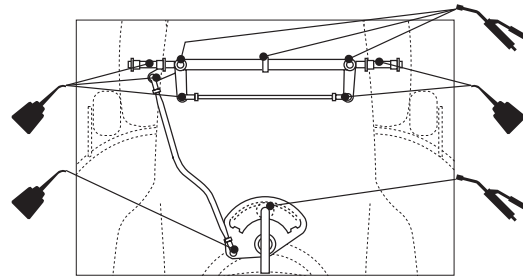
6.2.1 MAINTENANCE AND GENERAL LUBRICATION

Follow the diagrams which show the points requiring checks, lubricating and routine maintenance, together with the type of lubricant to be used and the frequency required.


a) Periodic maintenance (↪ 6.2.2)

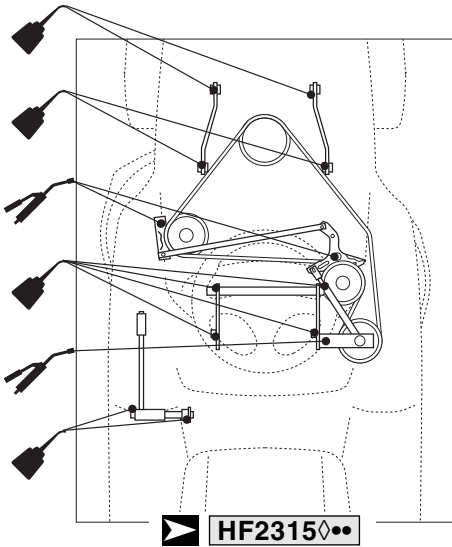


b) Lubrication

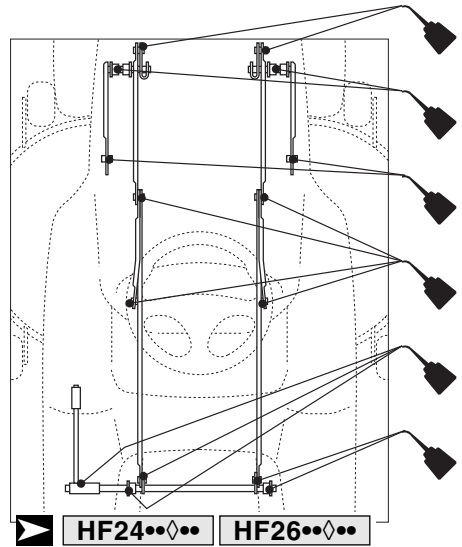


 GREASE

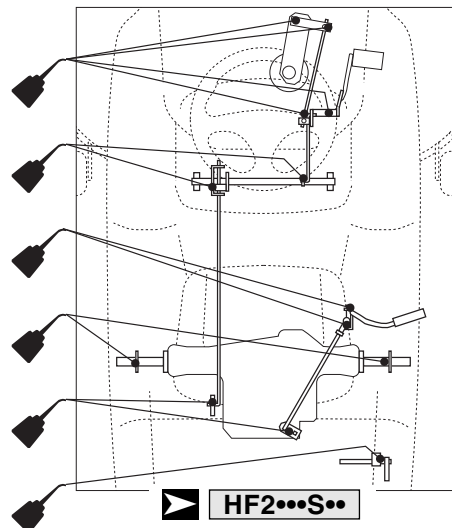
 OIL - SAE 30



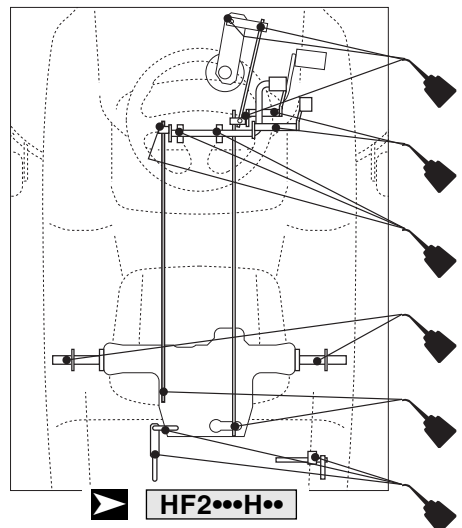
 HF2315◆●●



 HF24●●◆●● HF26●●◆●●



 HF2●●S●●



 HF2●●H●●

6.2.2 GUIDE TO SCHEDULED MAINTENANCE

This table is to help you maintain your machine's safety and performance. It shows the main maintenance and lubrication work, indicating the frequency with which it should be carried out.

To the right of each item there is a box where you write the date or after how many hours of operation the work was carried out.

WORK	HOURS	DONE (DATE OR N° OF HOURS)							
1. MACHINE									
1.1 Check of tightness and sharpness of blades	25								
1.2 Blade replacement	100								
1.3 Check the transmission belt	25								
1.4 Transmission belt replacement ²⁾	–								
1.5 Check the blade drive belt	25								
1.6 Blade drive belt replacement ²⁾	–								
1.7 Check the belt connecting blades	25								
1.8 Replacement of belt connecting blades ²⁾	–								
1.9 Check and adjustment of brake	10								
1.10 Check and adjustment of drive	10								
1.11 Check engagement and brake of blade	10								
1.12 Check all fastenings for tight fitting	25								
1.13 General lubrication ³⁾	25								
1.14 Check the battery level	25								
1.15 Battery charge	100								
2. ENGINE ¹⁾									
2.1 Check oil level ¹⁾	–								
2.2 Engine oil change ⁴⁾	100								
2.3 Oil filter replacement ⁴⁾	100								
2.4 Check and cleaning of air filter	50								
2.3 Air filter replacement	300								
2.4 Check fuel filter	100								
2.5 Fuel filter replacement	300								
2.6 Check and cleaning of spark plug points	100								
2.7 Replacement of spark plug	300								

¹⁾ Check each time used.

²⁾ Replace at the first signs of wear, contacting your authorized Honda engine dealer.

³⁾ General lubrication should also be carried out whenever the machine is to be left unused for a long period.

⁴⁾ Operation to be performed also after the first 20 hours of operation.

⁵⁾ Carry out maintenance of the air filter more frequently in the case of use on dusty ground.

⁶⁾ Replace the paper element only.

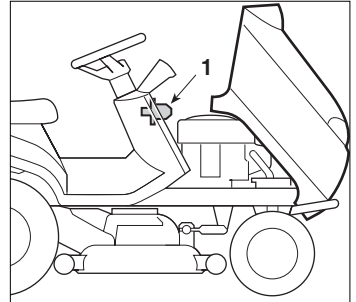
6.2.3 REAR AXLE

This is a sealed single unit which does not require maintenance. It is permanently lubricated and this lubricant does not need changing or topping up.

6.2.4 BATTERY

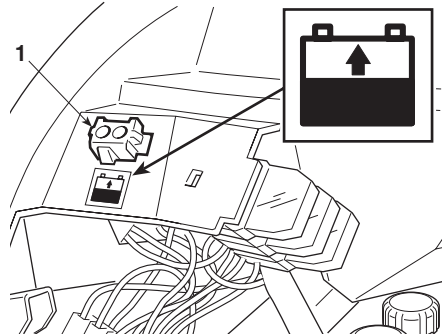
To ensure long life to the battery, it is essential to keep it carefully maintained. The battery on your machine must be charged **before using for the first time** (☛ 3.4).

During periods when it is not used, the charge level can be kept constant by using the maintenance battery charger supplied. For this purpose the machine is supplied with a connector (1) to be connected to the corresponding battery charger connector.



IMPORTANT *No device other than the battery charger is to be connected to this connector.*

IMPORTANT *The charge must be maintained with the battery charger, following the instructions given in the instruction booklet. Other recharging systems may definitively damage the battery.*



A low battery **must** be recharged as soon as possible. Otherwise, irreparable damage could be done to the battery's elements.

Periodically check the electrolyte level, which must be between the MIN and MAX marks on the battery. When topping off, use **ONLY** distilled water for batteries.

6.3 CHECKS AND ADJUSTMENTS

6.3.1 DISMANTLING, SHARPENING AND BALANCING BLADES

Blades that are badly sharpened tear at the grass, reduce collection and make the lawn turn yellow.

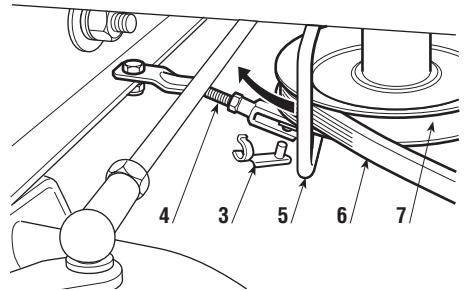
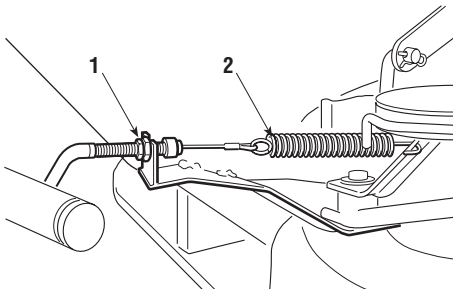
IMPORTANT

When accessing the blades, remove the cutting deck that is equipped with a quick release system that makes their removal from the machine easy.

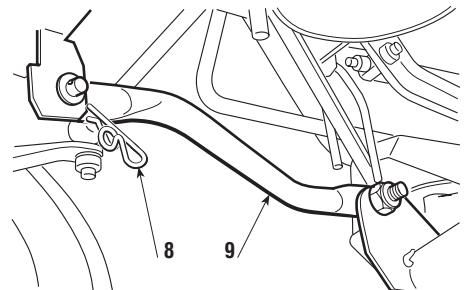
a) Removing the cutting deck

▶ HF2315♦♦

- After moving the cutting height lever to position «1», loosen the engagement cable adjuster (1), pull it out and release the spring (2).
- Release the safety pin (3) and move the fork (4) to the side; rotate forward the belt guide (5) as much as necessary to free the belt (6) from the pulley (7).
- Release the two cotter pins (8) which hold the two rods (9) onto the frame.



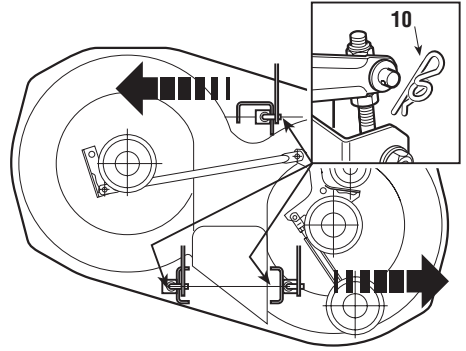
- Release the three cotter pins (10) holding the pins onto the lifting lever, being careful not to touch the nuts or locknuts in order to keep them parallel for assembly.



- Having checked that there is nothing in the way, the deck can be removed, tak-

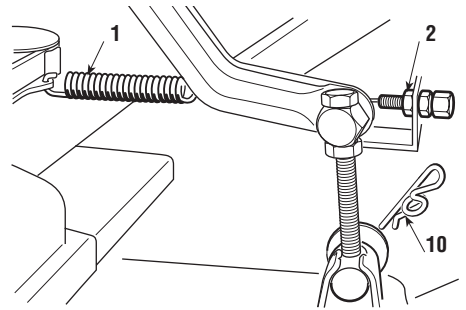
ing it out towards the left so that all the pins come out of their positions.

When assembling, perform the operations described above in reverse while making sure that the front terminal of the collector channel properly fits into the exit of the cutting deck.



▶ **HF24** ♦♦♦ ♦♦ **HF26** ♦♦♦ ♦♦

Put the cutting height adjustment lever into the notch at position "1".

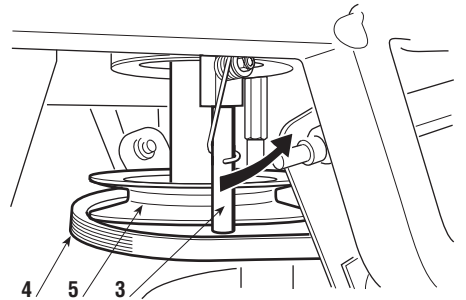


▶ Only for **HF24** ♦♦♦ ♦♦:

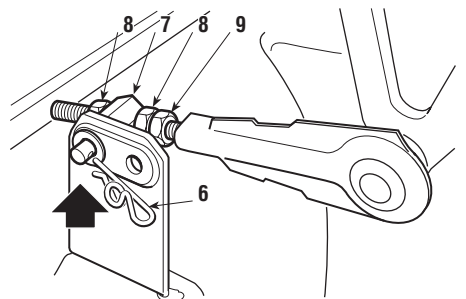
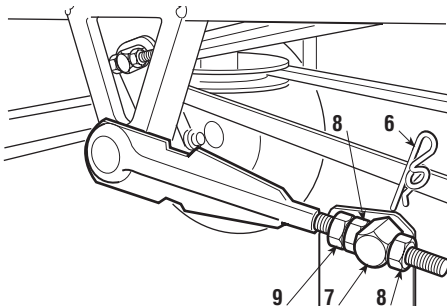
release the spring (1) of the blade engagement.

Loosen the engagement cable register (2) and extract it from the seat.

Shift the mobile guide pulley (3) backwards just enough to free the belt (4) from the motor pulley (5).



Remove the two cotter pins (6) from the two front connecting rod pins (7), with-



- out loosening or changing the position of the nuts (8) and locknuts (9).
-
- Remove the two cotter pins (10) of the rear pins.
- After checking that there are no obstructions, remove the deck in such a way
- that all the pins come out of their housings.
-
- When assembling, ensure that the two rear holes of the corner joints are used
- for fixing the pins (7). Perform the operations described above in reverse while
- making sure that the front terminal of the collector channel properly fits onto
- the exit of the cutting deck.

b) Dismantling, sharpening and balancing blades

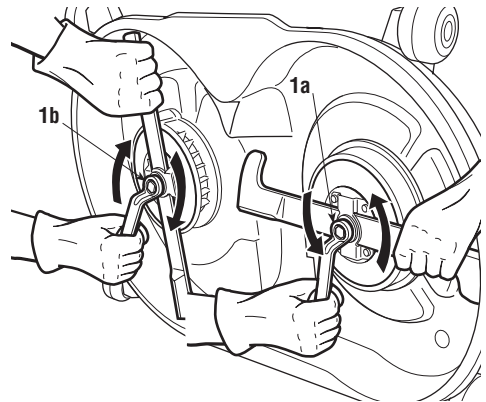
⚠ WARNING! *All operations on the blades (dismantling, sharpening, balancing, remounting and/or replacing) require a certain familiarity and special tools. For safety reasons, go to a specialized centre if you do not have the right tools or experience.*

⚠ WARNING! *Wear heavy gloves when handling the blades.*

To remove a blade, hold it firmly and undo the central bolt (1a - 1b) (use 15 mm wrench) **in the direction indicated by the arrow for each blade, noting that one of the fixing bolts has a right-hand thread and the other one has a left-hand thread.**

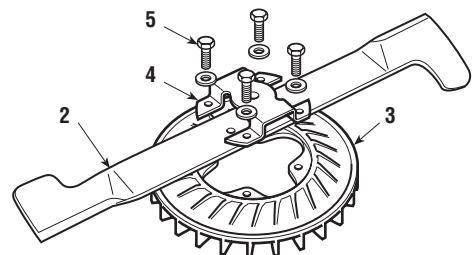
1a = screw with right thread (loosen anti-clockwise)

1b = screw with left thread (loosen clockwise)



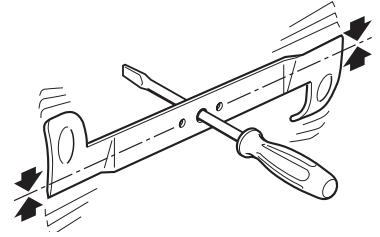
▶ HF2417♦♦ **HF2620♦♦**

- The blade (2) is attached to the fan (3)
- by a bracket (4) and four screws with
- washers (5).
- Use a 10 mm key to loosen the four
- screws (5) and free the blade (2) from
- its bracket (4).



Sharpen the two cutting edges using a

medium grade grinding wheel and check the balance by holding the blade up with a screw driver inserted in the central hole.

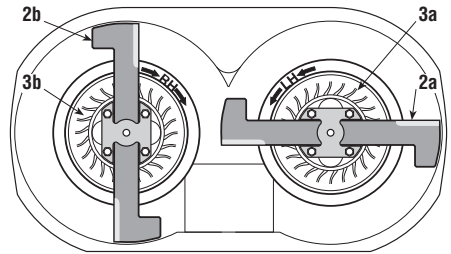


⚠ WARNING! *Damaged or bent blades must always be replaced; never try to repair them! ALWAYS USE MANUFACTURER'S GENUINE BLADES!*

⚠ WARNING! *The blades (2) and fans (3) differ and are contra-rotating. When installing them, make sure that they are correctly positioned.*

▶ **HF2417◆◆** **HF2620◆◆**

- Reassemble each blade (2a – 2b) onto the respective fan (3a – 3b), following the “RH” (right) and “LH” (left) indications printed on the fan and inside the cutting plate, then tighten the four screws (5) with the washers using a dynamometric key which is calibrated at 9.5 Nm.

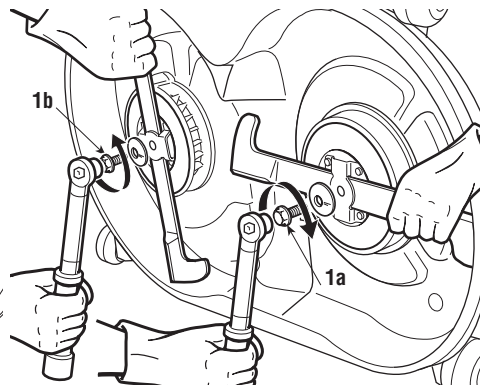
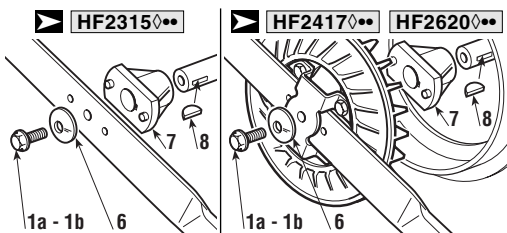


NOTE *The “right” and “left” indications refer to the driving position.*

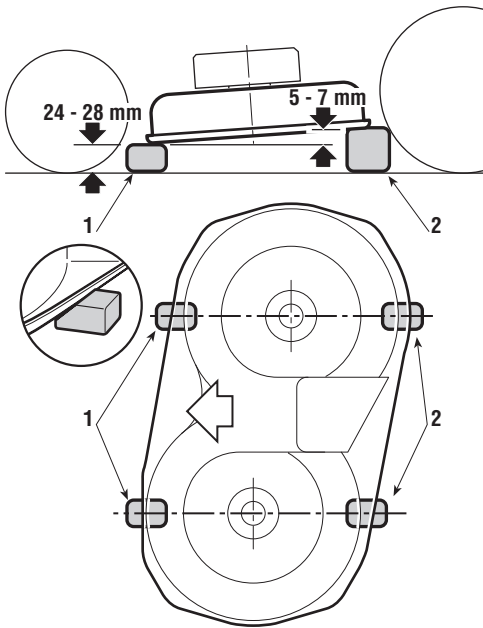
⚠ WARNING! *If one or both shaft hubs (7) come off when dismantling the blades, make sure the keys (8) are securely lodged in place. When re-fitting the blades, always follow the indicated sequence, making sure that the blades' wings are facing towards the interior of the cutting deck and that the cupped side of the cup washer (6) is pressing against the blade. Tighten the fixing screws (1a – 1b) using a torque wrench set to 45-50 Nm.*

1a = screw with right thread (tighten clockwise)

1b = screw with left thread (tighten anti-clockwise)



6.3.2 CUTTING DECK ALIGNMENT



The cutting deck should be properly set to obtain a good cut.

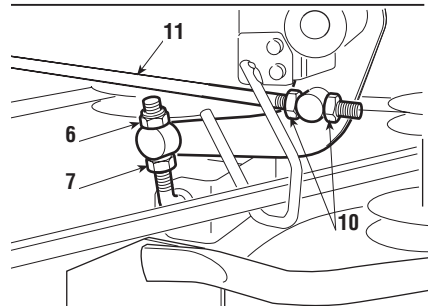
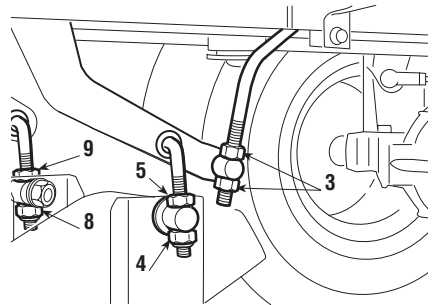
NOTE

For achieving good results from cutting, the front part should always be 5 - 7 mm lower than the rear.

- Put the machine onto a flat surface and check the tyre pressures;
- aligned to the center lines of the two blades, put two blocks (1) 24-28 mm thick under the front edge of the deck and two blocks (2) 5-7 mm higher under the rear edge;
- put the height adjusting lever into position «1».

▶ HF2315◆◆

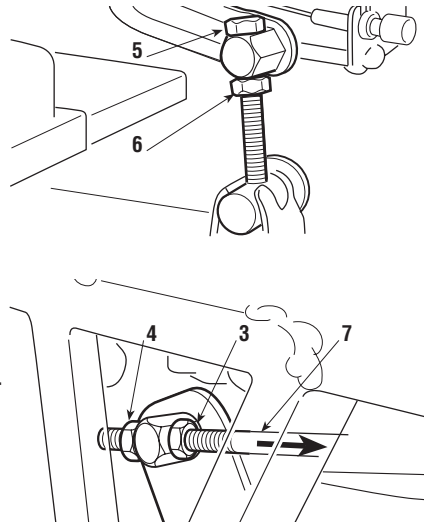
- Completely loosen the two nuts (3), the nuts (4 - 6 - 8) and the locknuts (5 - 7 - 9) of the three trace rods until the deck is resting on the blocks.
- turn the two right-hand upper nuts (6 - 8) and the left-hand lower nut (4) to the point where the deck begins to lift. Tighten the three locknuts (5 - 7 - 9) and turn the nuts (3) until the slightest movement of the lifting lever brings about a similar movement of all the lifting rods.
- Any difference in height from the ground between the left and right sides of the deck can be compensated by turning the two nuts (4 - 8) and locknuts (5 - 9) of just the back rods.



- Put the control lever in 2 or 3 different positions and check that the deck rises evenly and that at each position it constantly maintains the difference in height from the ground between the front and back edges.
- If the front part tends to rise faster or slower it can be adjusted by turning the nuts (10) on the link rod (11).
- Turning the nuts clockwise will lift the front part and make it rise faster, and turning anti-clockwise will give the opposite effect.

▶ HF24♦♦♦ HF26♦♦♦

- – Loosen the nuts (3), the screws (5) and the locknuts (4 – 6) on both the right and left side, so that the deck is resting firmly on the blocks;
- – push the two connecting rods (7) to the back and screw down the two nuts (3) on each rod until the front part of the deck just begins to rise both at the right and the left, and then tighten the relevant locknuts (4);
- – turn both the rear screws (5) until the rear of the deck begins to rise both at the right and the left, and then tighten the relative locknuts (6).



If you are unable to adjust the cutting deck properly, contact your Dealer.

6.3.3 ADJUSTING BLADE ENGAGEMENT AND BLADE BRAKE

When the lever to disengage the blades is operated, this also brings the blade brake into operation for stopping the blades within few seconds.

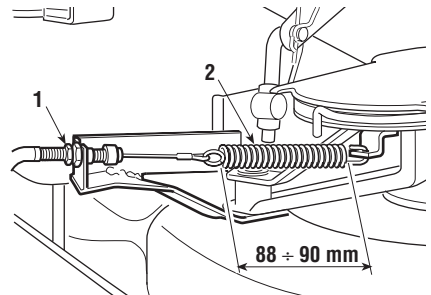
A stretched cable and changes in the length of the belt can impair the blades' engagement or rotation.

In this case, you have to work on the adjuster according to the different methods provided for each model.

In any event, if the engagement is unable to normally drive the belt or the blades do not stop within a few seconds after adjustment, immediately contact your Dealer.

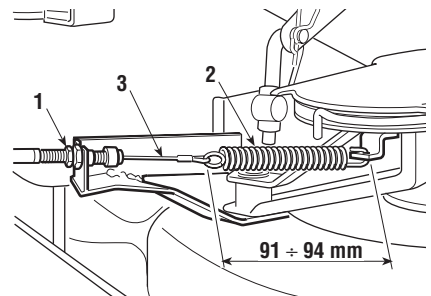
▶ HF2315SBE

-
- Turn the adjusting nut (1) until the correct spring length (2) is achieved (measured with the blade engaged).



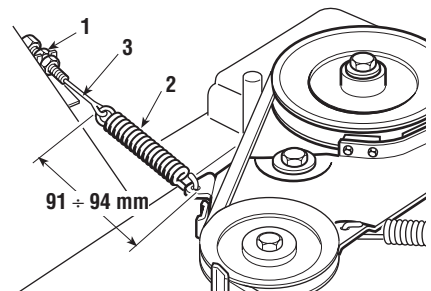
▶ HF2315HME

-
- With the engine running, engage the blades and then switch off the engine without disengaging the blades. Turn the adjusting nut (1) until the correct spring length (2) is achieved. Disengage the blades with the engine off.
- After regulation, the cable (3) should be slack when the blades are disengaged, to keep the blade brake efficient.



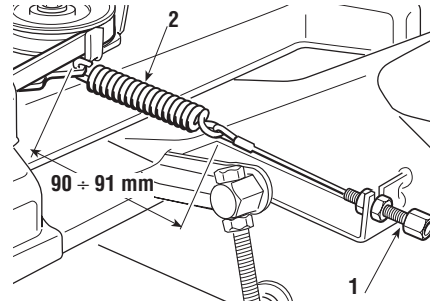
▶ HF2417◇●●

-
- With the engine running, engage the blades and then switch off the engine without disengaging the blades.
- Turn the adjusting nut (1) until the correct spring length (2) is achieved.
- Disengage the blades with the engine off.
- After regulation, the cable (3) should be slack when the blades are disengaged, to keep the blade brake efficient.



▶ **HF2620**

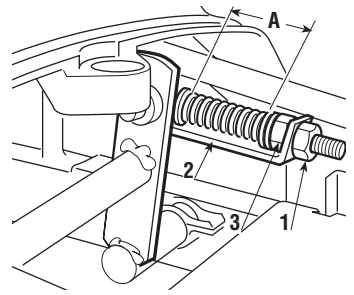
-
- Turn the adjusting nut (1) until the correct spring length (2) is achieved.
-



6.3.4 BRAKE ADJUSTMENT

If the braking distance becomes longer than the amount indicated (☛ 5.3.6), the brake spring will need to be adjusted.

The adjustment will need to be made while the parking brake is engaged. Access for making this adjustment is by taking off the inspection hatch on the tunnel beneath the seat. Loosen the nut (1) which holds the bracket (2) and turn the nut (3) until the length of the spring is:



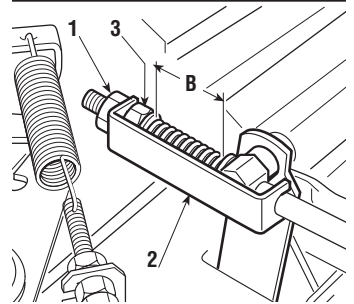
▶ **HF2...SBE**

A = 47,5 - 49,5 mm

▶ **HF2...HME** **HF2...HTE**

B = 45 - 47 mm

measured inside the washers. When the adjustment has been made, tighten the nut (1).



IMPORTANT Do not screw below these levels to avoid overloading the brake unit.

⚠ WARNING! If the brake still does not work properly even after this adjustment, immediately contact your Dealer. **DO NOT ATTEMPT OTHER WORK ON THE BRAKE THAN DESCRIBED HERE.**

6.3.5 ADJUSTING THE TENSION OF THE DRIVE BELT

If you should notice that forward drive power has dropped, it will be necessary to adjust the tension of stretcher's spring to return to top operational conditions.

Access for making this adjustment is by taking off the inspection hatch on the tunnel beneath the seat.

Loosen the locking nuts (2) and tighten or loosen the screw (1) as much as necessary for a length «A» of the spring (3) of:

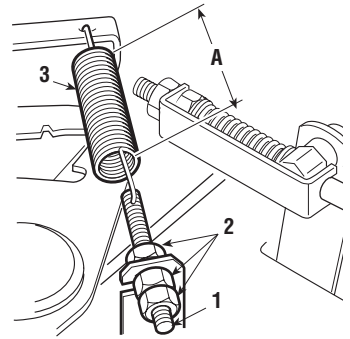
▶ **HF2...SBE**

A = 129 - 131 mm

▶ **HF2...HME** **HF2...HTE**

A = 109 - 111 mm

measured to the outside of the end of the spring.
When the adjustment has been made, tighten the nuts (2).



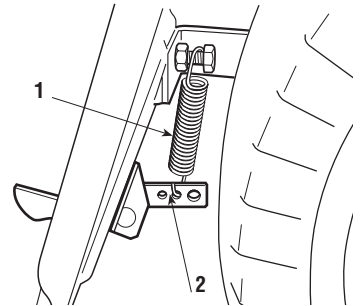
NOTE

When replacing the belt, take great care when using for the first few times as engagement may be sudden until the belt is sufficiently run in.

6.3.6 ADJUSTMENT OF THE SPRING OF THE PAWL FOR HOOKING THE GRASS-CATCHER

If the grass-catcher tends to jump about and to open up when going over rough ground, or if it is difficult to hook back on after being emptied, the tension of the spring will need to be adjusted(1).

Change the hooking point by using one of the holes (2) until the required result is achieved.



6.4 DISMANTLING AND REPLACEMENT

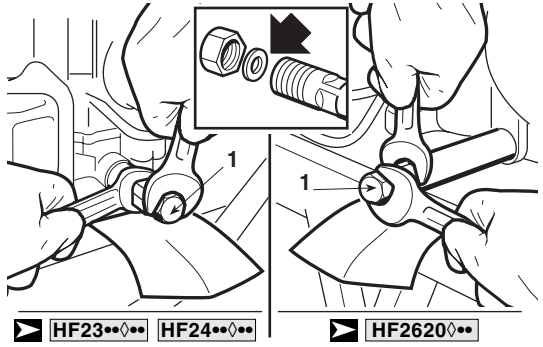
6.4.1 OIL ENGINE

Drain the oil while the engine is still hot to ensure quick, complete draining.
Remove the filler cap with the dipstick and place a sheet of cardboard or some-

thing similar under the drain tube to prevent the oil from dripping onto the machine's chassis.

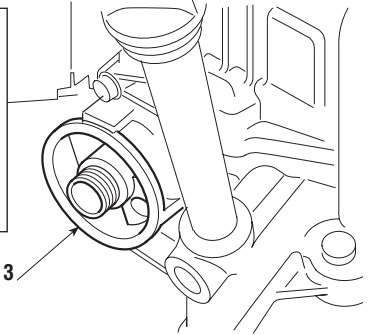
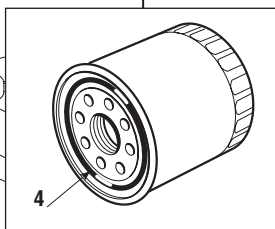
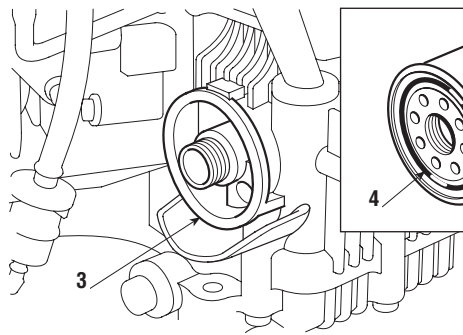
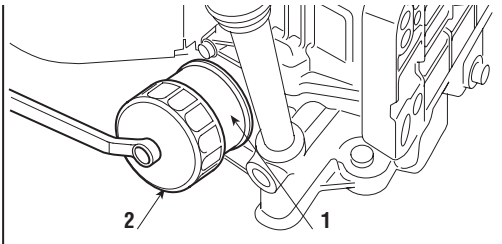
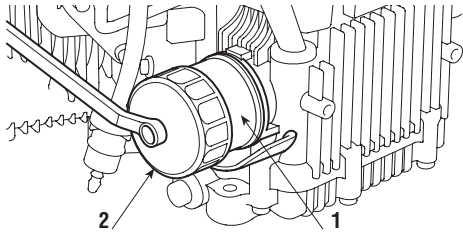
Unscrew plug (1); when refitting the plug take care over the position of the inner basket.

Fill with the recommended oil until the upper limit of the dipstick is reached (☛ 5.3.3). Screw the dipstick cap back on.



6.4.2. OIL FILTER CHANGE

1. Drain the engine oil (☛ 6.4.1).
2. Remove the oil filter (1) with a filter wrench (2) and let the remaining oil drain out. Discard the oil filter.
3. Clean the filter base (3).
4. Coat the new O-ring (4) on the new filter with clean engine oil.



5. Install the new oil filter on the filter base and tighten it by hand until the O-ring seats against the filter base.
6. Tighten the oil filter to the specified torque (12 Nm - 1.20 kgm).

IMPORTANT

Use only a Honda genuine oil filter or a filter of equivalent quality specified for your model. Using the wrong Honda filter or a non-Honda filter which is not of equivalent quality may cause engine damage.

7. Pour the specified amount of recommended oil into the engine. Start the engine and check the filter for leaks.
8. Stop the engine and recheck the oil level. If necessary, add oil to bring it up to the proper level.

NOTE

Ask your authorized Honda dealer for advice on the filter wrench (special tool).

6.4.3 AIR CLEANER SERVICE**⚠ WARNING!**

Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

IMPORTANT

Never run the engine without the air cleaner. Rapid engine wear will result from contaminants, such as dust and dirt being drawn into the engine.

1.

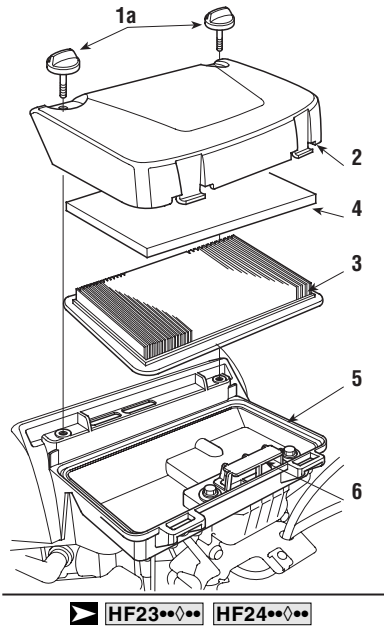
▶ HF23♦♦♦ HF24♦♦♦: Release the four latch tabs (1b) from the air cleaner cover (2), and remove the cover.

▶ HF2620♦♦♦: Remove the two air cleaner cover bolts (1a) from the air cleaner cover, and remove the cover.

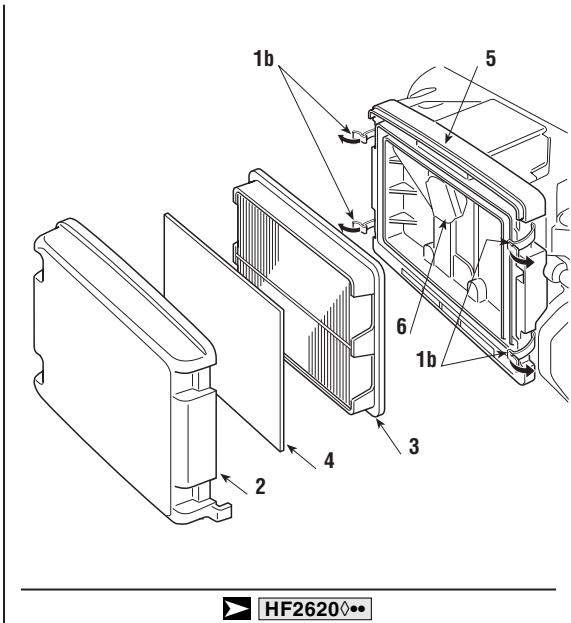
2. Remove the paper element (3) from the air cleaner case. Remove the foam element (4) from the air cleaner cover.
3. Clean the air filter elements if they are to be reused.

Foam element (4): Clean in warm soapy water, rinse and dry thoroughly. Or clean in non-flammable solvent and dry.

Paper element (3): Tap the element lightly several times on a hard surface to remove excess dirt, or blow compressed air (not exceeding 2.1 kg/cm² (30



▶ HF23♦♦♦ HF24♦♦♦



▶ HF2620♦♦♦

- psi)) through the filter from the air cleaner case side. Never try to brush the dirt off; brushing will force dirt into the fibers. Replace the paper element if it is excessively dirty.
4. Wipe dirt from the inside of the air cleaner case (5) and cover, using a moist rag. Be careful to prevent dirt from entering the clean chamber (6) that leads to the carburetor.
 5. Reinstall the air cleaner elements and the cover.

▶ **HF23♦♦♦** **HF24♦♦♦**: Tighten the two air cleaner cover bolts (1a) securely.

▶ **HF2620♦♦♦**: Hook the latch tabs (1b) securely.

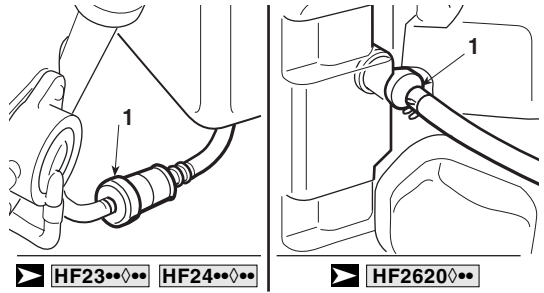
NOTE Do not allow dust, dirt, and debris to enter the clean chamber (air cleaner case) when servicing the air cleaner.

6.4.4 FUEL FILTER MAINTENANCE

⚠ WARNING! Gasoline is extremely flammable and is explosive under

certain conditions. Do not smoke or allow flames or sparks in the area.

Check the fuel filter for water accumulation or sediment. If the fuel filter contains water accumulation or sediment, take the engine to your authorized Honda engine dealer.



6.4.5 SPARK PLUG SERVICE

Recommended spark plugs:

▶ **HF23♦♦♦♦♦♦♦♦** **HF24♦♦♦♦♦♦♦♦**: BPR5ES (NGK) - W16EPR-U (DENSO).

▶ **HF2620♦♦♦♦♦♦♦♦**: ZGR5A (NGK) - J16CR-U (DENSO)

IMPORTANT

Never use a spark plugs of incorrect heat range.

To ensure proper engine operation, the spark plugs must be properly gapped and free of deposits.

1. Remove the spark plug caps and use a spark plug wrench (1) to remove each spark plug.

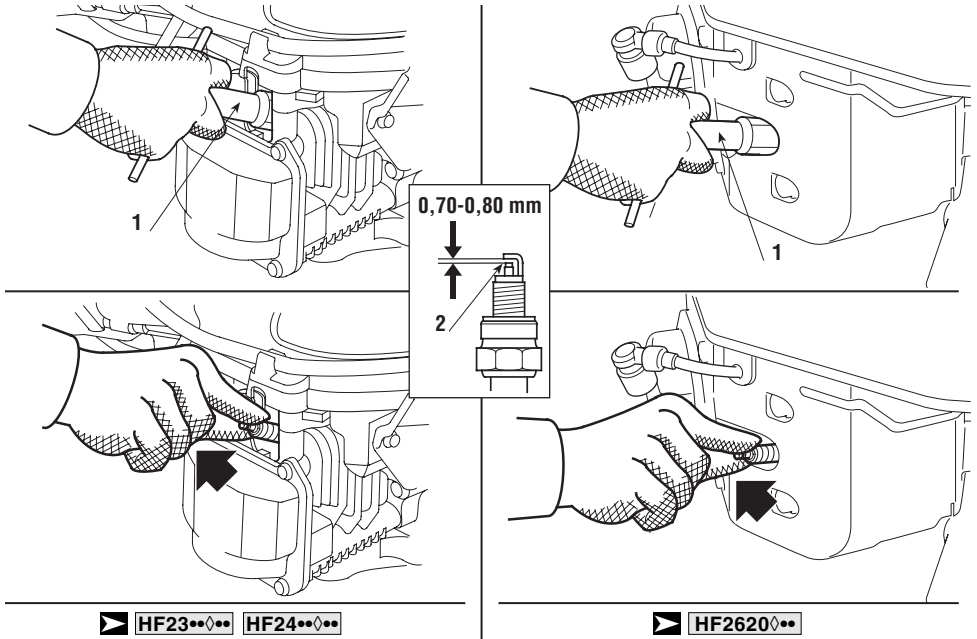
⚠ WARNING!

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

2. Visually inspect the spark plugs. Discard the spark plug if there is apparent wear, or if the insulator is cracked or chipped. Clean the spark plugs with a wire brush if they are to be reused.
3. Measure the plug gap (2) with a feeler gauge. Correct as necessary by bending the side electrode. The gap should be: 0.70 0.80 mm (0.028 0.031 in)
4. Check that the spark plug washer is in good condition and thread the spark plug in by hand to prevent cross-threading.
5. After the spark plug is seated, tighten with a spark plug wrench (1) to compress the washer.

NOTE

When installing a new spark plug, tighten 1/2 turn after the



▶ HF23... HF24...

▶ HF2620...

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

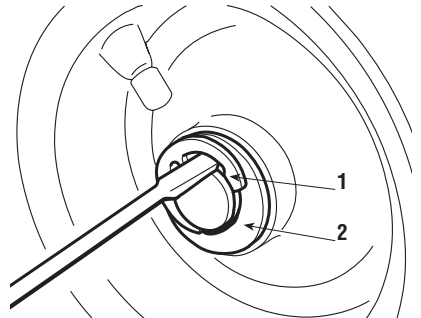
IMPORTANT

The spark plugs must be securely tightened. Improperly tightened spark plugs can become very hot and may damage the engine.

6.4.6 REPLACING WHEELS

Stop the machine on a flat surface and put a block under a load-bearing part of the frame on the side that the wheel is to be changed.

The wheels are held by a snap ring (1) which can be eased off with a screwdriver. The rear wheels are directly coupled to the axle shaft and fastened by a key that forms part of the wheel's hub.



NOTE

Should you substitute one or both rear wheels, ensure that they are of

the same diameter, and check that the cutting deck is horizontal to prevent an uneven cut.

IMPORTANT

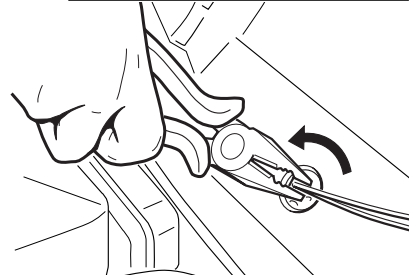
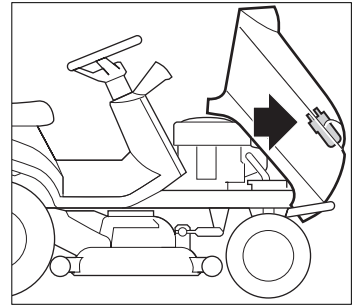
Before re-fitting a wheel, smear some grease on the axle and carefully re-fit the snap ring (1) and washer (2).

6.4.7 REPLACING OR REPAIRING TYRES

The tyres are of the «Tubeless» type and therefore all replacement or repairs will have to be carried out by a tyre-repair expert in accordance with the methods for this kind of tyre.

6.4.8 REPLACING BULBS (IN MODELS WITH LIGHTS)

The bulbs (18W) have a bayonet fitting and are installed in the bulb holder which can be taken out by turning it anti-clockwise, using pliers.



6.4.9 REPLACING A FUSE

A few fuses of various capacities are envisaged on the machine. Their functions and features are given in the following table:

1 - 10 Amps - (Red)

protection of the main circuits and power circuits of the electronic card;

HF23 **HF24**

- 2 - 15 Amps - (Blue)

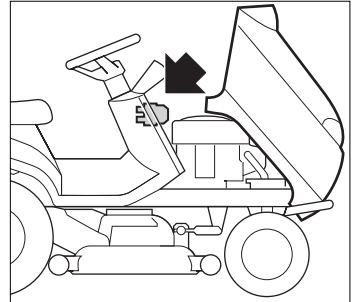
protection of the recharge circuit;

HF2620H

- 2 - 25 Amps - (White)
- 3 - 10 Amps - (Red)

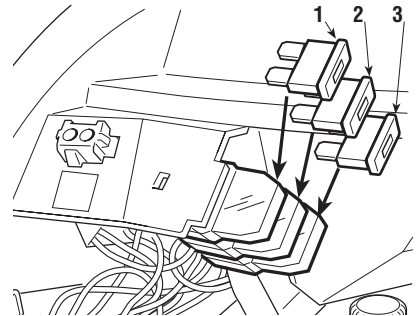
protection of the recharge circuit;
protection of the grass-catcher tipping control circuit.

- When the fuse blows (1) the machine stops and all the lights on the dashboard go out.
- The battery pilot lamp turns on in models provided with it (☛ 4.10.f) when the fuse (2) trips.
- Tripping of the fuse (3) prevents the control motor of the grass-catcher's tipping to operate.



IMPORTANT *A blown fuse must always be replaced by one of the same type and rating, and never with one of another rating.*

If you cannot find eliminate the causes of the tripping, consult your Dealer.



6.4.10 REPLACING BELTS

Replacing belts is quite a complicated process of dismantling and subsequent adjustment and must only be carried out by your Dealer.

NOTA *Replace the belts as soon as they show obvious signs of wear! ALWAYS USE GENUINE REPLACEMENT BELTS!*

7. TROUBLESHOOTING

PROBLEM	LIKELY CAUSE	SOLUTION
1. With the key at «ON» the dashboard remains off with no audible signal.	<p>The protection of the electronic card has cut in due to:</p> <ul style="list-style-type: none"> – badly connected battery – battery terminals crossed – completely flat battery or eroded battery plates – fuse blown – bad earthing to the engine or the frame 	<p>Put the key in the «OFF» position and look for the cause of the problem:</p> <ul style="list-style-type: none"> – check connections (☛ 3.4) – check connections (☛ 3.4) – recharge battery (☛ 6.2.4) – replace fuse (10 A) (☛ 6.4.9) – check connections of black earth leads
2. With the key at «ON» the dashboard remains off, but there is an audible signal (continuous).	<p>The protection of the electronic card has cut in due to:</p> <ul style="list-style-type: none"> – electronic card wet 	<p>Put the key in the «OFF» position and look for the cause of the problem:</p> <ul style="list-style-type: none"> – dry using tepid air
3. With the key on «START» the dashboard comes on but the starter motor does not run.	<ul style="list-style-type: none"> – insufficiently charged battery – badly earthed starter motor – you are not ready for starting (☛ 5.2) 	<ul style="list-style-type: none"> – recharge the battery (☛ 6.2.4) – check earth connections – disengage the blades (if the problem continues, check the relevant micro-switch) – put the transmission in neutral (N)
4. With the key on «START» the starter motor runs but the engine does not start.	<ul style="list-style-type: none"> – insufficiently charged battery – faulty fuel supply – faulty ignition – no oil 	<ul style="list-style-type: none"> – recharge the battery (☛ 6.2.4) – check the level in the tank (☛ 5.3.3) – check the wiring of the fuel open command – check fuel filter (☛ 6.4.4) – check that spark plug caps are firmly fitted (☛ 6.4.5) – check that the electrodes are clean and have the correct gap (☛ 6.4.5) – check the engine oil level and top up if necessary (☛ 5.3.3).
5. Starting is difficult or the engine runs erratically.	<ul style="list-style-type: none"> – fault in carburation 	<ul style="list-style-type: none"> – clean or replace the air filter (☛ 6.4.3) – flush out the float chamber (☛ 5.4.12) – empty fuel tank and refill with fresh fuel (☛ 5.4.12) – check and, if necessary, replace fuel filter (☛ 6.4.4)

PROBLEM	LIKELY CAUSE	SOLUTION
6. Weak engine performance during cutting	– forward speed too high in relation to cutting height (➡ 5.4.5)	– reduce the forward speed and/or raise the cutting deck
7. Engine stops when blades are engaged	– you are not ready to engage the blades (➡ 5.2)	– sit firmly on the seat (if problem continues, check micro-switch) – check that the grass-catcher or stone-guard are correctly in position (if problem continues, check micro-switch)
8. The battery warning light does not turn off after a few minutes' work	– recharging of the battery insufficient	– check connections
9. The oil warning light comes on while working	– problems in lubricating the engine	Turn the key immediately to «STOP»: – top up the oil level (➡ 5.3.3) – replace the filter (if the problem continues, contact your Dealer)
10. The engine stops and an audible signal is heard	The protection of the electronic card has cut in due to: – battery contains electrolyte but is not charged – overvoltage caused by the charge regulator – badly connected battery (poor contact) – engine badly earthed	Turn the key to «STOP» and look for the cause of the problem: – recharge battery (➡ 6.2.4) – contact your Dealer – check connections i (➡ 3.4) – check engine earth connection
11. The engine stops with no audible warning	– battery disconnected – no earth contact on engine – problems in the engine	– check connections (➡ 3.4) – check the earth connection on the engine – contact your Dealer
12. The blades warning light stays lit when the blades are disengaged (📌 <i>models with lever operated engagement</i>)	– the lever does not return to the disengaged position due to accumulated grass cuttings at the end of its stroke	– free the joint of all the grass (accessed from the inspection hatch)
13. The blades do not engage (📌 <i>models with lever operated engagement</i>)	– cable lengthened or belt loosened	– turn the adjusting nut (➡ 6.3.3)

PROBLEM	LIKELY CAUSE	SOLUTION
(▶ <i>models with electromagnetic clutch</i>)	<ul style="list-style-type: none"> – belt loosened – problems in the electromagnetic clutch 	<ul style="list-style-type: none"> – turn the adjusting nut (☛ 6.3.3) – contact your Dealer
14. Uneven cut and poor grass collection	<ul style="list-style-type: none"> – cutting deck not parallel to the ground – blade cutting badly – forward speed too high compared to height of grass (☛ 5.4.5) – collector channel is blocked – cutting deck full of grass 	<ul style="list-style-type: none"> – check the tyre pressures (☛ 5.3.2) – re-align the cutting deck to the ground (☛ 6.3.2) – check that the blades are fitted properly (☛ 6.3.1) – sharpen or fit new blades (☛ 6.3.1) – check the tension of the belt and control cable of the blade engagement lever (▶ <i>models with lever engagement</i>) (☛ 6.3.3) – reduce forward speed and/or raise the cutting deck – wait for the grass to dry – remove the grass-catcher and empty the collector channel (☛ 5.4.7) – clean the cutting deck (☛ 5.4.10)
15. Unusual vibrations while working	<ul style="list-style-type: none"> – the blades are imbalanced – blades loose – fixing bolts loose 	<ul style="list-style-type: none"> – balance or replace the damaged blades (☛ 6.3.1) – check that the blades are firmly fitted (☛ 6.3.1) (remember the left-hand thread of the right hand blade) – check and tighten all the fixing bolts of the engine and frame
16. With the engine running, the machine does not move when the drive pedal is pressed. (▶ <i>for hydrostatic drive models</i>)	<ul style="list-style-type: none"> – disengage lever in position «B» (☛ 4.33) 	<ul style="list-style-type: none"> – put into position «A»

If problems continue after having carried out these operations, contact your Dealer.

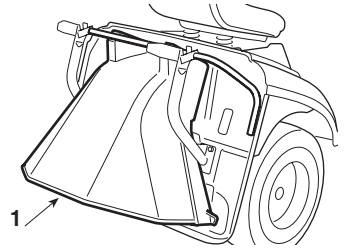
⚠ WARNING!

Do not take on complicated repair work if you don't have the necessary equipment and the technical knowledge. The guarantee is automatically revoked and the manufacturer declines all responsibility for any repairs which are badly done.

8. ACCESSORIES (OPTIONAL)

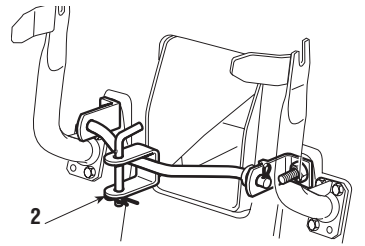
1. STONE-GUARD KIT

For use in place of the grass-catcher when the cuttings are not to be collected.



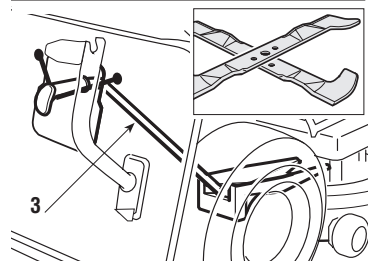
2. TOWING HITCH

For towing a small trailer.



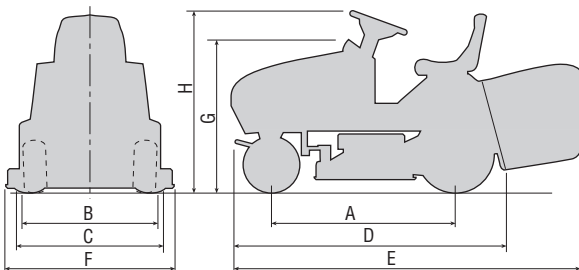
3. MULCHING PLUG (only for HF2417 and HF2620)

It finely chops the grass cuttings and leaves them on the lawn, instead of collecting them in the grass-catcher.



9. SPECIFICATIONS

MODEL	HF2315SBE	HF2315HME	HF2417HME	HF2417HTE	HF2620HME	HF2620HTE
Electric system	12 V	12V	12 V	12 V	12 V	12 V
Battery	24 Ah	24 Ah	24 Ah	24 Ah	24 Ah	24 Ah
Engine: HONDA type	GCV520	GCV520	GCV530	GCV530	GXV620	GXV620
Net Engine Power (*)	9.8 kW / 3600	9.8 kW / 3600	11.3 kW / 3600	11.3 kW / 3600	13.3 kW / 3600	13.3 kW / 3600
Nominal Engine Power	9.4 kW / 2800	9.4 kW / 2800	9.9 kW / 2800	9.9 kW / 2800	11.9 kW / 2800	11.9 kW / 2800
Operating engine speed	2800 r.p.m.	2800 r.p.m.	2800 r.p.m.	2800 r.p.m.	2800 r.p.m.	2800 r.p.m.
Front tyres	13 x 5,00-6	13 x 5,00-6	15 x 6,00-6	15 x 6,00-6	15 x 6,00-6	15 x 6,00-6
Rear tyres	18 x 8,50-8	18 x 8,50-8	18 x 8,50-8	18 x 8,50-8	18 x 8,50-8	18 x 8,50-8
Front tyres pressure	1.5 bar	1.5 bar	1.0 bar	1.0 bar	1.0 bar	1.0 bar
Rear tyres pressure	1.2 bar	1.2 bar	1.2 bar	1.2 bar	1.2 bar	1.2 bar
Fuel tank capacity	5.4 liters	5.4 liters	5.4 liters	5.4 liters	5.4 liters	5.4 liters
Weight	210 kg	213 kg	228 kg	237 kg	245 kg	254 kg
Forward speed:						
in Forward drive	-	0 - 8.2 km/h	0 - 8.2 km/h	0 - 8.2 km/h	0 - 8.2 km/h	0 - 8.2 km/h
in 1.st	2.1 km/h	-	-	-	-	-
in 2.nd	3.5 km/h	-	-	-	-	-
in 3.rd	5.4 km/h	-	-	-	-	-
in 4.th	6.0 km/h	-	-	-	-	-
in 5.th	9.0 km/h	-	-	-	-	-
in reverse	2.6 km/h	0 - 4.2 km/h	0 - 4.2 km/h	0 - 4.2 km/h	0 - 4.2 km/h	0 - 4.2 km/h
Inside turning circle						
left inside	1.8 m	1.8 m	1.8 m	1.8 m	1.6 m	1.6 m
Cutting height	30÷80 mm	30÷80 mm	30÷90 mm	30÷90 mm	30÷90 mm	30÷90 mm
Cutting width	91 cm	91 cm	101 cm	101 cm	121 cm	121 cm
Grass-catcher capacity	280 liters	280 liters	300 liters	330 liters	350 liters	350 liters
Sound pressure level at the ear						
measured according 2000/14/EC	85 dBA	85 dBA	84 dBA	84 dBA	90 dBA	90 dBA
Garanteed sound power	100 dBA	100 dBA	100 dBA	100 dBA	105 dBA	105 dBA
Real value of acceleration						
on seat, according EN 1032	0.3 m/s ²	0.3 m/s ²	0.3 m/s ²	0.3 m/s ²	0.5 m/s ²	0.5 m/s ²
Real value of acceleration on steering						
wheel, according EN 1033	2.0 m/s ²	2.0 m/s ²	2.0 m/s ²	2.0 m/s ²	7.0 m/s ²	7.0 m/s ²
Dimensions (mm)						
A	1150	1150	1150	1150	1150	1150
B	835	835	880	880	880	880
C	855	855	950	950	950	950
D	1790	1870	1870	1870	1870	1870
E	2400	2480	2480	2480	2480	2480
F	960	960	1050	1050	1260	1260
G	980	980	990	990	990	990
H	1110	1110	1120	1120	1120	1120



(*) The power rating of the engine indicated in this document is the net power output tested on a production engine for the engine models GCV520, GCV530 and GXV620 and measured in accordance with SAE J1349 at 3600 r.p.m. (Net Power) and at 2800 r.p.m. (Net Torque). Mass production engines may vary from this value. Actual power output for the engine installed in the final machine will vary depending on numerous factors, including the operating speed of the engine in application, environmental conditions, maintenance, and other variables.

10. ALPHABETICAL INDEX

- Accelerator
 - Function and use 4.3
- Audible warning
 - Function 4.10-m
 - When it signals 5.4.6 - 5.4.12
- Battery
 - Description 2.2-7
 - Connections 3.5
 - Prolonged lack of use 5.4.12
 - Maintenance and recharge 6.2.4
- Blades
 - Description 2.2-2
 - Engagement 4.8
 - Dismantling and sharpening 6.3.1-b
 - Adjusting the engagement 6.3.3
- Brake
 - Function of the pedal 4.31
 - Checking its effectiveness 5.3.4
 - Using the brake 5.4.3
 - Adjusting 6.3.4
- Choke
 - Function and use 4.2
- Clutch / Brake
 - Function of the pedal 4.21
- Cleaning
 - How it is to be done 5.4.11
- Collector channel
 - Description 2.2-3
 - Unblocking 5.4.7
- Cutting deck
 - Description 2.2-1
 - Internal washing 5.4.11
 - Removal 6.3.1-a
 - Alignment 6.3.2
- Drive pedals
 - Function of the pedals 4.32 - 4.33
 - Forward movement 5.4.2
 - Reverse movement 5.4.4
- Drive to the wheels
 - Adjusting the belt 6.3.5
- Engine
 - Engine oil 6.4.1
 - Oil filter 6.4.2
 - Air filter 6.4.3
 - Fuel filter 6.4.4
 - Spark plug 6.4.5
- Filling with oil and fuel
 - How to do so 5.3.3
- Fuse
 - Replacement 6.4.9
- Grass-catcher
 - Description 2.2-4
 - Tipping controls 4.9
 - Assembly 3.9
 - Fitting on the machine 5.3.5
- Emptying 5.4.6
- Adjusting the hooking 6.3.6
- Key
 - Function 4.4
- Lights
 - Control 4.10-l
 - Replacing bulbs 6.4.8
- Maintenance
 - How it is to be done 6.2.1 - 6.2.2
- Mowing
 - Adjusting height 4.6
 - In reverse 4.7
 - How to cut 5.4.5
 - At the end of mowing 5.4.9
 - Advice for mowing 5.7
 - Mulching function 5.4.8
- Parking brake
 - Function of the lever 4.5
- Pilot lamps
 - Function 4.10
 - When they light 5.4.13
- Safety
 - General regulations 1.2
 - Decals with icons 1.3
 - When safety devices cut in 5.2
 - Checking efficiency 5.3.5
- Seat
 - Description 2.2-8
 - Fitting on the machine 3.3
 - Adjustment 5.3.1
- Speed change
 - Position of the lever 4.22
 - Forward movement 5.4.2
 - Reverse movement 5.4.4
- Slopes
 - Precautions when using 5.5
- Starting
 - Procedure for starting 5.4.1
- Steering wheel
 - Function 4.1
 - Fitting onto the machine 3.2
- Stone-guard
 - Description 2.2-5
 - Fitting onto the machine 5.3.5
- Towing
 - Regulations 1.4
- Transport
 - How it is to be done 5.6
- Tyres
 - Pressures 5.3.2
 - Repair and replacement 6.4.7
- Wheels
 - Replacement 6.4.1