

# FR 13

# FRM 13 A

## Operator's Manual



Please read these instructions carefully and make sure you understand them before using the machine.



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# CONTENTS

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## Operator's Manual for FR 13 and FRM 13 A

<b>Introduction</b> .....	2	<b>Maintenance</b> .....	19
Driving and transport on public roads .....	2	Maintenance schedule .....	19
Towing .....	2	Dismantling of the machine hoods .....	20
Use .....	2	Checking and adjusting the steering wires ....	22
Serial number .....	3	Checking and adjusting the brakes .....	23
<b>Explanation of symbols</b> .....	4	Checking and adjustment of throttle wire .....	24
<b>Safety instructions</b> .....	5	Replacement of fuel filter .....	24
General use .....	5	Replacement of air filter .....	25
Driving on slopes .....	6	Checking the fuel pump's air filter .....	26
Children .....	7	Checking the battery acid level .....	26
Maintenance .....	7	Checking the safety system .....	27
<b>Presentation</b> .....	9	Checking the tyre pressure .....	28
Location of the controls .....	9	Checking the engine's cooling air intake .....	28
Throttle/Choke lever .....	10	Checking and adjusting the cutting unit	
Drive disengagement lever .....	10	ground pressure .....	29
Parking brake .....	10	Checking the parallelism of the cutting unit ...	29
Throttle pedal .....	11	Adjusting the parallelism of the cutting unit ....	30
Cutting unit .....	12	Service position for BioClip 90 .....	31
Lift lever for cutting unit .....	12	Checking the blades .....	34
Lever for adjustment of cutting height .....	13	Replacing the break-pin .....	34
Seat .....	13	Changing the oil .....	35
Fuelling .....	13	<b>Lubrication</b> .....	35
<b>Driving</b> .....	14	Checking the engine's oil level .....	35
Before starting .....	14	Checking the transmission's oil level .....	36
Starting the engine .....	14	Lubricating the belt adjuster .....	36
Driving the machine .....	14	General lubrication .....	36
Cutting tips .....	17	Lubrication of front wheel bearings .....	37
Stopping the engine .....	18	<b>Trouble shooting schedule</b> .....	38
Drive disengagement lever .....	18	<b>Storage</b> .....	39
		Winter storage .....	39
		Service .....	39
		<b>Technical data</b> .....	40

### IMPORTANT INFORMATION

Read through these instructions carefully so that you know how to use and maintain the machine before using it.

For servicing other than described in this manual contact an authorised dealer for parts and service.

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# INSTRUCTION

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## Dear customer

Thank you for choosing a Front Rider. Front Riders are built to a unique design with a front-mounted cutting unit and a patented rear-wheel steering system. Riders are designed for maximum efficiency even in small or confined areas. The closely grouped controls and pedal-operated hydrostatic transmission (certain models) also contribute to the performance of this machine.

We hope you will find this operator's manual very useful. By following its instructions (on operation, service, maintenance, etc.) you will significantly extend the life of the machine and even its second-hand value.

When you sell your Rider, make sure you pass on the operator's manual to the new owner.

## Travel and transport on public roads

Check the relevant road traffic regulations before driving the machine on a public road. If transporting the machine on another vehicle always use approved securing devices and make sure that the machine is securely held.

## Towing

When your machine is equipped with a hydrostatic transmission you should, if necessary, only tow the machine over short distances and at a low speed, otherwise there is a risk of damaging the transmission.

## Intended use

This machine is designed solely for cutting grass on conventional lawns and other cleared and leveled ground without obstacles, as rocks, stumps etc., and, in conjunction with accessories supplied by the manufacturer even for other special tasks for which instructions are delivered with the accessory. Use in any other way is considered as contrary to the intended use. Compliance with and strict adherence to the conditions of operation, service and repair as specified by the manufacturer also constitute essential elements of the intended use.

This machine should be operated, serviced and repaired only by persons who are familiar with its particular characteristics and who are acquainted with the relevant safety procedures.

Accident prevention regulations, all other generally recognised regulations on safety and occupational medicine, and all road traffic regulations must be observed at all times.

Any arbitrary modifications carried out to this machine may relieve the manufacturer of liability for any resulting damage or injury

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# SAFETY INSTRUCTIONS

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## Good service

Jonserved products are sold all over the world and only through servicing dealers. This is to ensure that you, the customer, get the best support and service. Before the machine is delivered it undergoes inspection and is adjusted by your dealer.

When you need spare parts or advice on service issues, warranty terms, etc., contact:

This Operator's Manual belongs to machine with serial number:	<b>Engine</b>	<b>Transmission</b>

## Serial number

The serial number can be found on the printed plate attached to the front, left-hand side under the seat. Stated on the plate, from the top are:

- The machines type designation.
- The manufacturer's type number.
- The machine's serial number.

State the type designation and serial number when ordering spare parts.

The engine number is punched on a plate that is riveted to the fan cover. The plate states:

- Model.
- Type.
- Code.

Please state these when ordering spare parts.

The transmission's serial number is stated on the barcode decal located on the front of the housing on the left-hand drive axle:

- Type designation is stated above the barcode and starts with the letter "K".
- The serial number is stated above the barcode and has the prefix "s/n".
- The manufacturer's type number is stated under the barcode and has the prefix "p/n".

State the type designation and serial number when ordering spare parts.

# EXPLANATION OF SYMBOLS

These symbols are on the machine and in the operator's manual.  
Study them carefully so that you know what they mean.



Read the operator's manual

**R**

Reverse

**N**

Neutral



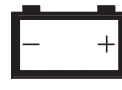
Fast



Slow



Engine off



Battery



Choke



Fuel



Oil pressure



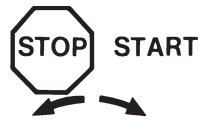
Cutting height



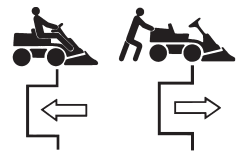
Backwards



Forwards



Ignition



Hydrostatic free wheel



Use eye and  
hearing protection



Clutch in



Clutch out



Parking brake



Brake



Clutch



Warning



Soundlevel



Warning!  
Rotating blades.



Warning!  
Risk that the machine can tip over



Never drive across a slope



European standard for  
machine safety



Never use the machine if persons,  
especially children, or animals,  
are in the vicinity.



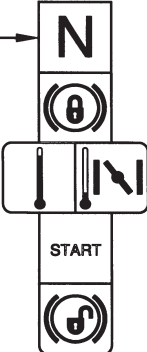
Never carry passengers on the  
machine or equipment.



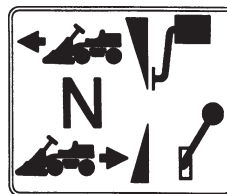
Keep hands and feet away  
from under the hood when  
the engine is running.



Drive very slowly  
without the cutting unit.



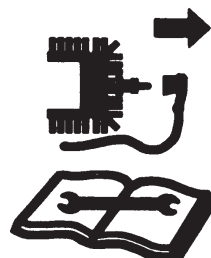
Starting instructions  
Read the instructions  
Check the engine's oil level  
Check the hydrostat's oil level  
Lift up the cutting unit  
Put the gear shift/hydrostat pedal in  
neutral  
Brake  
If the engine is cold use the choke  
Start the engine  
Release the parking brake before  
driving



Speed limiter pedal forwards

Neutral

Speed limiter pedal reverse



Switch off the engine and take  
off the ignition cable before  
repairs or maintenance

# SAFETY INSTRUCTIONS

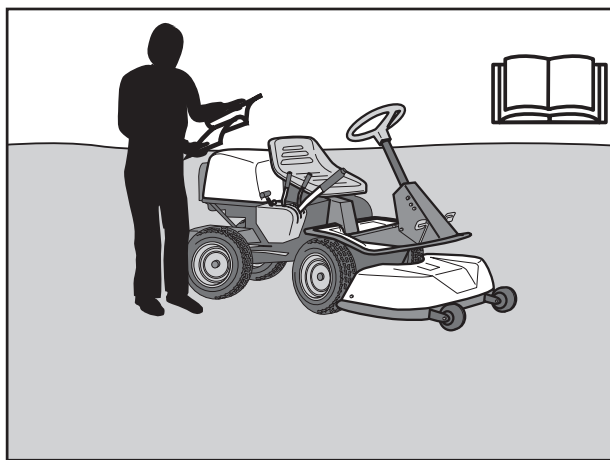
These instructions are for your safety. Read them carefully.



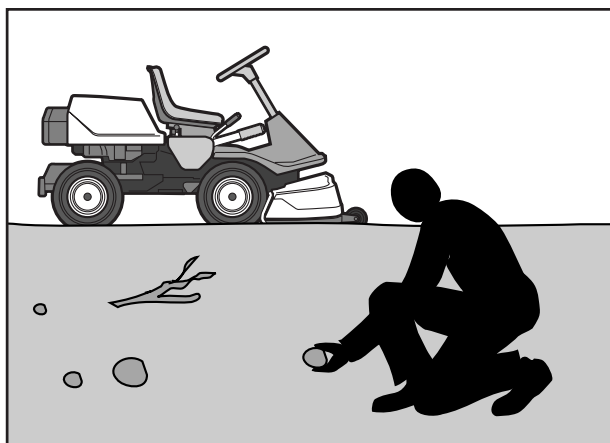
**This symbol implies that important safety rules are applicable.  
This is for your safety and the operating reliability of the machine.**

## General use:

- Make yourself familiar with the controls and how to stop quickly.
- Read all the instructions in Operator's Manual and on the machine before starting it. Make sure you understand them, and then follow them.
- Only allow adults who are familiar with the machine to use it.
- Wear approved protective glasses or a visor during assembly and driving.
- Never use the machine barefoot. Always wear heavy-duty shoes, preferably toe-capped.
- Never wear loose fitting clothes which can fasten in moving parts.
- Clear the area of objects such as stones, toys, and wires, etc. which can be caught up by the blades and thrown out.
- Check that there are no other persons in the area before starting to cut.
- Stop the machine if anyone comes into the work area.
- Never carry passengers.
- Do not cut backwards unless absolutely necessary.
- Always look down and behind before and during reversing.
- Keep an eye on the ejected grass and do not direct it towards anyone.
- Slow down before turning.
- Never leave the machine unattended when the engine is running. Always switch off the blades, pull on the parking brake, stop the engine and take out the keys before leaving the machine.
- Switch off the blades when you are not cutting.
- Only cut in daylight or good artificial lighting.
- Never use the machine when you have consumed alcohol, drugs, or certain medicines.



*Read the instructions before starting the machine.*



*Clear the area from stones etc. before cutting.*



*Never carry passengers.*



**WARNING!**  
**This machine can cut off hands and feet, and eject objects.**  
**Failure to follow the safety instructions can lead to severe injury.**

# SAFETY INSTRUCTIONS

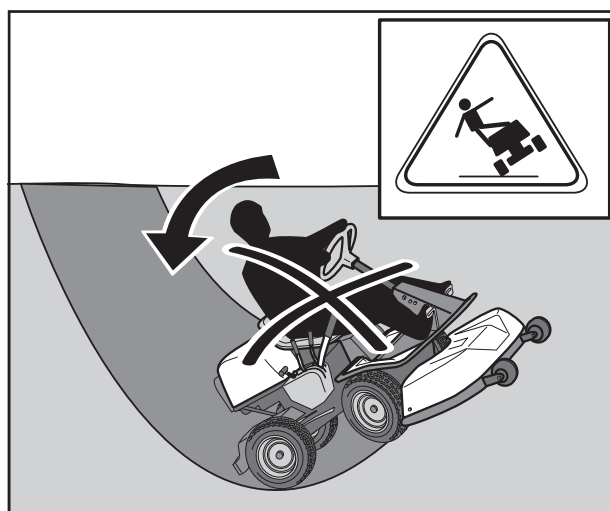
- Watch out for traffic when working close to a road, or crossing one.
- Be careful when rounding a fixed object so that the blades do not hit it. Never drive intentionally over a foreign object.
- The machine is heavy and can cause very severe crush injuries. Be extra careful when loading it on a trailer or truck.
- Be careful when pulling a load or using heavy equipment.
  - a. Only use approved tow hooks.
  - b. Limit the load to what you can manage safely.
  - c. Do not make sharp turns. Be careful when reversing.
  - d. Use counterweights or wheel weights when indicated in the instructions.

## Driving on slopes

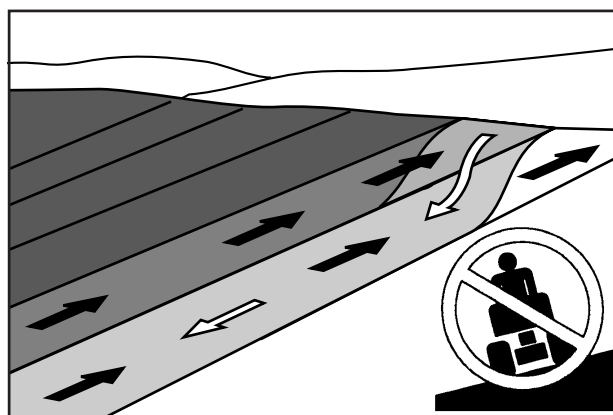
Driving on slopes is one of the situations where there is the most serious risk that the driver can lose control or that the machine tips over, which can cause severe injuries or be fatal. All slopes require extra care. If you cannot reverse up the slope or if you feel uncertain avoid cutting it.

### Do as follows:

- Remove obstacles such as stones and branches etc.
- Cut upwards and downwards, not sideways.
- Look out for and avoid driving over furrows, holes or mounds. On uneven surfaces it is easier for the machine to tip over. High grass can conceal obstacles.
- Drive slowly. FR 13: Select a low gear to avoid having to stop and changing gear. It is also easier to use the gear to brake in a low gear.
- Follow the manufacturer's recommendations on wheelweights or counterweights to increase stability.
- Take special care with accessories that can alter the stability of the rider mower.
- Always drive smoothly and slowly on slopes. Avoid sudden changes of speed or direction.
- Avoid starting or stopping on a slope. If the tyres begin to skid switch the blades and drive slowly down the slope.
- Avoid unnecessary turns on slopes, and if turning is necessary turn slowly and gradually, downwards if possible.



*Be extra careful when driving on slopes.*



*Cut slopes upwards and downwards, not sideways.*



# SAFETY INSTRUCTIONS

- Do not cut close to edges, ditches or banks. The machine can suddenly tip over if a wheel goes over the edge of a drop or a ditch, or if a bank gives way.
- Do not cut wet grass. It is slippery and the tyres can lose their grip so that the machine slides.
- Do not try to stabilise the machine by placing one foot on the ground.

## Children

Tragic accidents can occur if the driver does not pay attention to children in the vicinity. Children are often attracted to the machine and the work of mowing. Never assume that children stay where you last saw them.

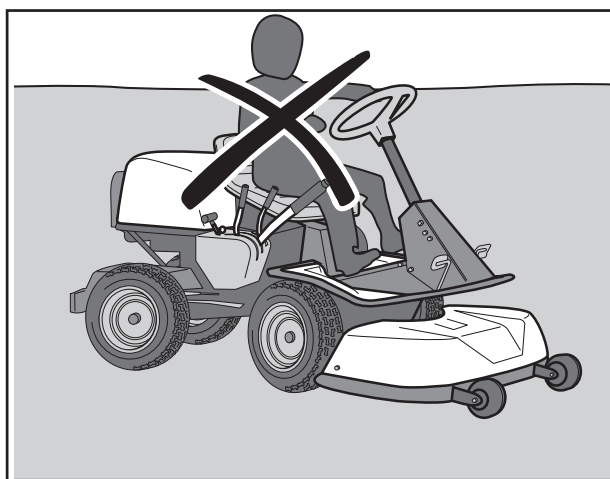
- Keep children away from the mowing area and under the close supervision of another adult.
- Be on your guard and switch off the machine if children come into the work area.
- Before and during reversing look behind and down for small children.
- Never allow children to ride on the machine. They can fall off and become seriously injured or obstruct a risky manoeuvre of the machine.
- Never allow children to drive the machine.
- Be extra careful close to corners, bushes, trees or other objects which obstruct your view.

## Maintenance

- Petrol/gasoline and petrol/gasoline fumes are toxic and highly inflammable. Be extra careful when handling petrol/gasoline.
  - a. Store the fuel in containers approved for this purpose.
  - b. Never fill up the machine with fuel when the engine is running. Let the engine cool before filling up with fuel. Do not smoke, or fill up with fuel in the vicinity of naked flames or sparks. Do not smoke. Do not fill fuel in the vicinity of sparks or naked flames.
  - c. Never fill up with fuel indoors.
  - d. If leakage has occurred in the fuel system the engine must not be started until this is rectified.
  - e. Never store the machine or fuel containers indoors if there are naked flames, such as in a boiler room or where there is electrical equipment which can emit sparks.
- Check the fuel level each time before using the machine, and leave space for the fuel to expand since the heat from the engine and hot sun can cause the fuel to run over.



*Keep children away from the mowing area.*



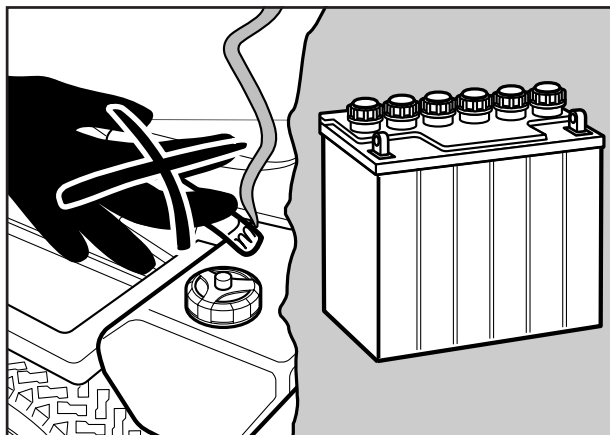
*Never allow children to drive the machine.*



*Never fill up with fuel indoors.*

# SAFETY INSTRUCTIONS

- Avoid overfilling. If fuel has been spilt on the Rider wipe it up and wait until it has evaporated before starting the engine. If fuel is spilt on clothes, change them.
- Be extra careful when handling battery acid. Spilling acid on the skin can cause severe burn injuries. Rinse immediately with water. If acid gets into the eyes this can cause blindness. Contact a doctor.
- Be careful with the maintenance of the battery. Explosive gas is formed in the battery. Never handle the battery when smoking or in the vicinity of naked flames or sparks. Otherwise the battery can explode and cause severe injuries.
- Never drive the machine in an enclosed space. The exhaust fumes contain carbon monoxide, an odourless, non coloured, toxic and fatal gas.
- Make sure that bolts and nuts, especially attachment bolts for the blade units are properly tightened and that the equipment is in good order.
- Never alter the safety devices. Check regularly that they function. The machine must not be driven with defective or unmounted safety devices.
- Do not alter the setting of the governor and do not race the engine.
- Reduce the fire risk. Keep the machine clean from grass, leaves and other refuse which fastens in it. Allow the machine to cool before placing it in the storage area.
- Stop and inspect the equipment if you drive over an object. If necessary repair the machine before starting.
- Never make adjustments with the engine running.
- The machine is tested for safety and approved only for equipment supplied or recommended by the manufacturer.
- The blades are sharp and can cause cutting injuries. Wrap over the blades or use protective gloves when handling them.
- Check the functioning of the brakes regularly. Adjust and maintain them as necessary.



*Never smoke in the vicinity of the battery or the fuel.*



*Never drive the machine in an enclosed space.*



*Clean the machine regularly from grass, leaves and other waste.*

# PRESENTATION

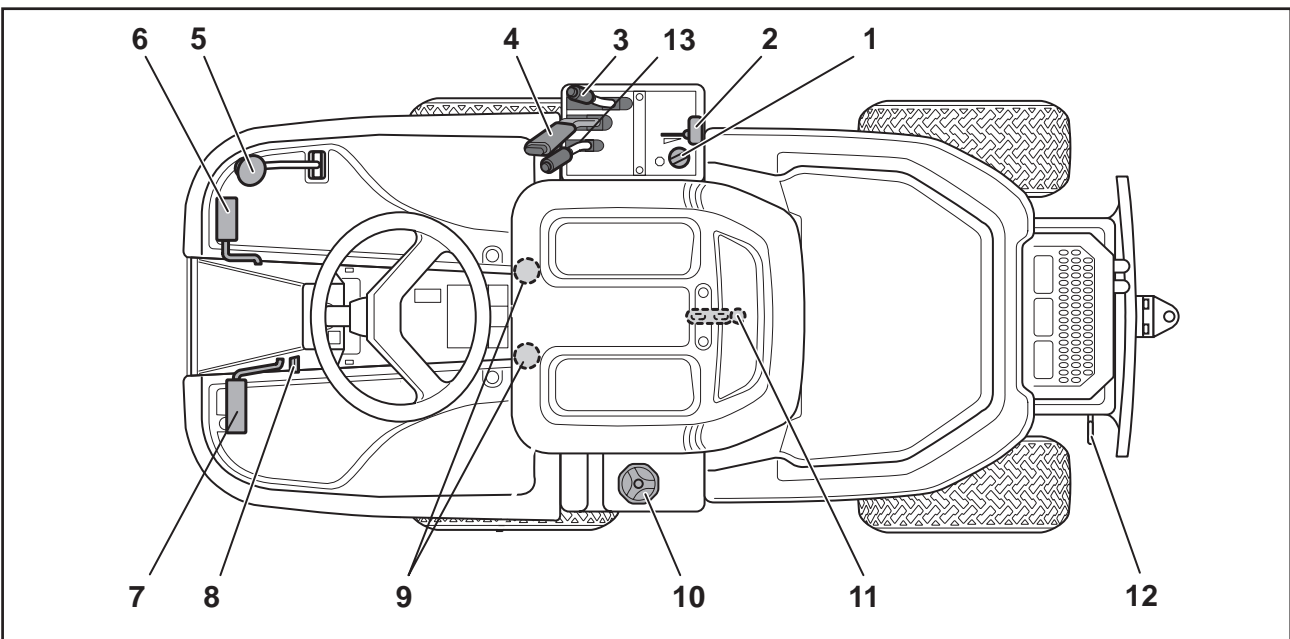
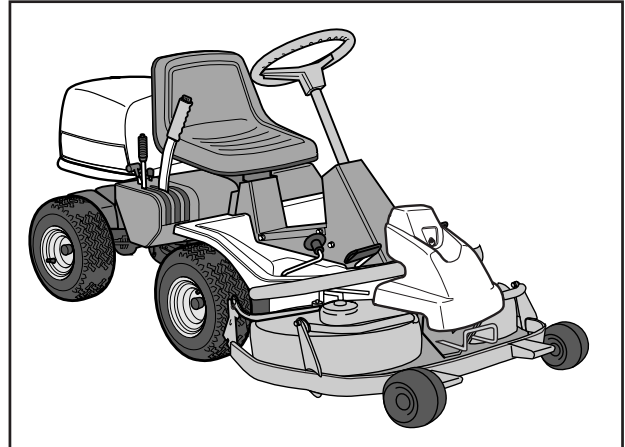
## Presentation

Congratulation on your choice of a first-class quality product.

This manual describes two models that are fitted with engines from Briggs & Stratton of 12.5 horsepower.

FR 13 has an in-line gearbox with five forward gears and one reverse gear.

On the FRM 13 A the power transmission from the engine is handled by a hydrostatic gearbox which enables stepless variation of the speed.



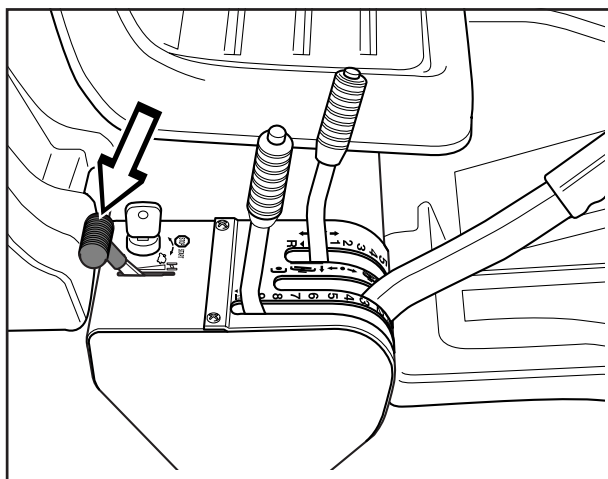
## Location of the controls

1. Ignition lock
2. Throttle/Choke lever
3. Adjustment of cutting height
4. Lifting lever, cutting unit
5. Speed control for reversing (only on FRM 13 A)
6. Speed limiter for driving forwards on FRM 13 A  
Parking brake on FR 13
7. Parking brake on FRM 13 A  
Clutch pedal on FR 13
8. Lock button for parking brake (left side on FRM 13 A, right side on FR 13)
9. Seat adjustment
10. Fuel tank cap
11. Main lock (under seat)
12. Lever for disengagement of drive (only on FRM 13 A)
13. Gear lever on FR 13

## Throttle and Choke lever

The engine speed is adjusted with the throttle control, and thereby also the rotation speed of the blades.

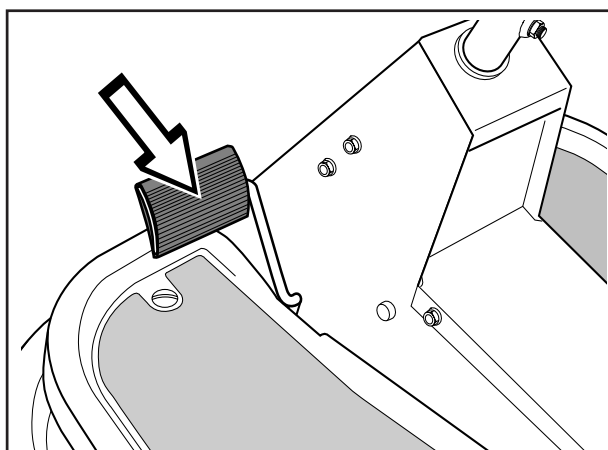
The control is also used to activate the choke function. When the choke is used the engine receives a richer mixture of fuel and air, which simplifies cold start.



## Clutch pedal

The clutch pedal disengages the engine and stops forward movement.

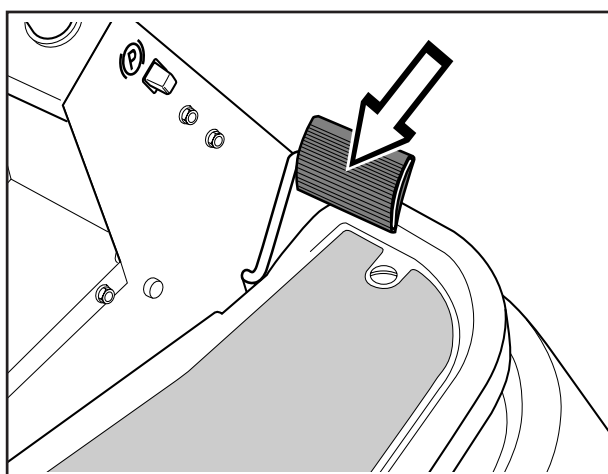
The blades are *not* affected by the clutch pedal.



## Brake pedal / Parking brake

The brake pedal activates a disc brake which is placed on the gearbox and brakes the drive wheels. When braking the clutch pedal should also be pushed down to achieve best braking power.

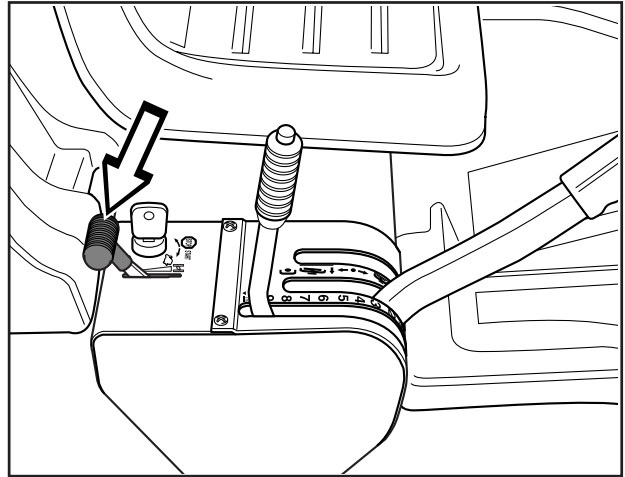
The brake pedal also operates as a parking brake if the lock button is pressed in when the pedal is pressed.



## Throttle and Choke lever

The engine speed is adjusted with the throttle control, and thereby also the rotation speed of the blades.

The control is also used to activate the choke function. When the choke is used the engine receives a richer mixture of fuel and air, which simplifies cold start.

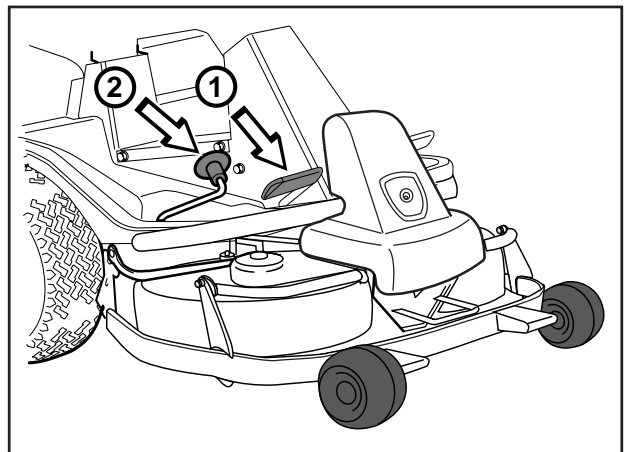


## Speed limiter

The speed of the machine is steplessly regulated with two pedals. Pedal (1) is used to drive forwards and pedal (2) for reversing.



**WARNING!**  
Make sure that branches do not obstruct the pedals when mowing under bushes, otherwise you may lose control.

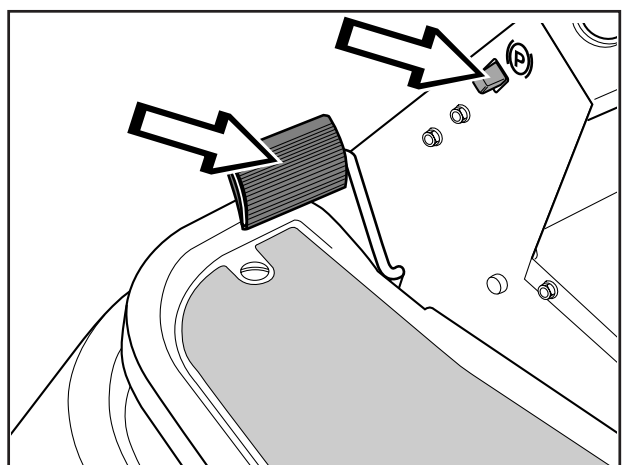


## Parking brake

The parking brake is applied as follows:

1. Press down the brake pedal.
2. Press in the lock button on the steering column.
3. Release up the brake pedal while holding the button pressed.

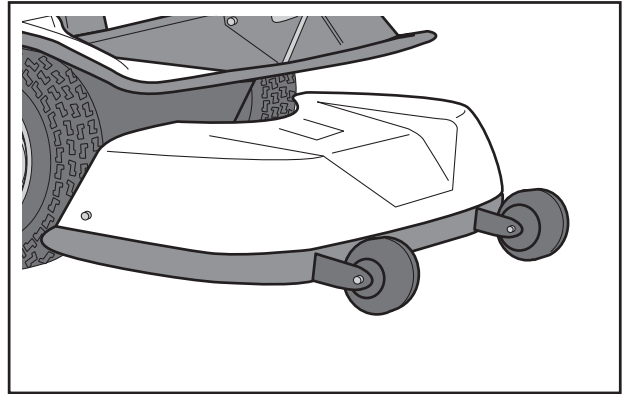
The lock on the parking brake automatically disconnects when the brake pedal is pressed.



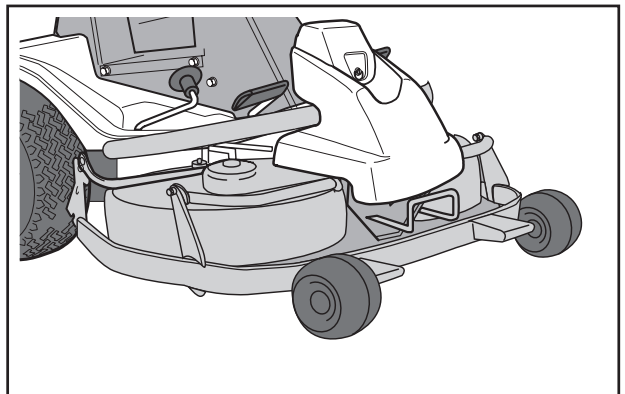
# PRESENTATION

## Cutting unit

**FR 13** have a cutting unit with rear ejection, i.e. the grass cuttings are thrown out behind the cutting unit.



**FRM 13 A** have a twin-blade BioClip cutting unit.



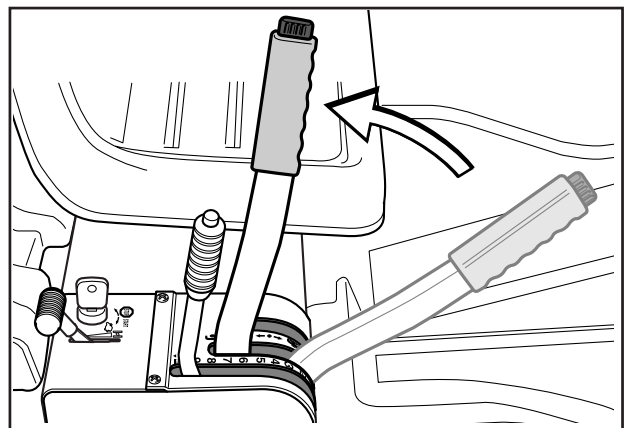
## Lift lever for cutting unit

The lift lever is used to set the cutting unit in transport or cutting position.

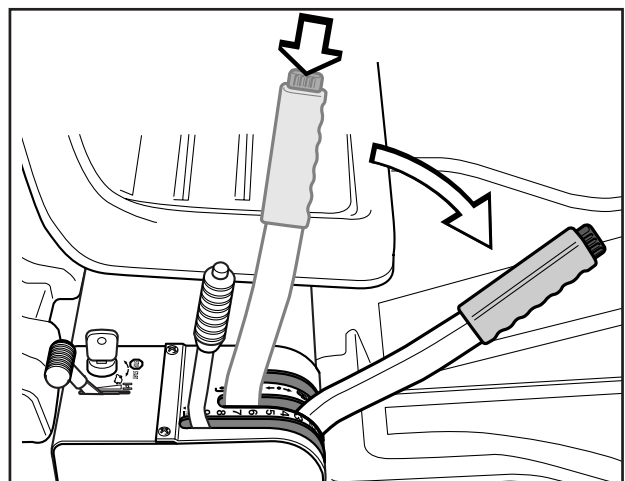
If the lever is pulled back the unit will lift up and the blades will automatically stop rotating (transport position).

If the lock button is pressed and the lever is moved forward the unit will be lowered and the blades will automatically start rotating (cutting position).

The lever can also be used to temporarily regulate the cutting height, e.g. for a small mound in the lawn.



*Lifting of the cutting unit (transport position)*



*Lowering of the cutting unit (cutting position)*

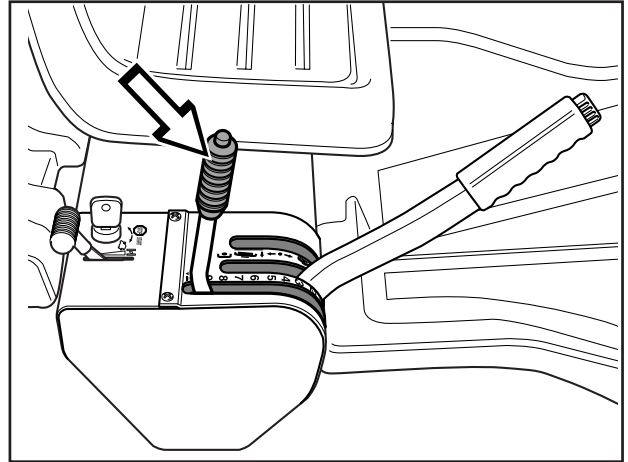


# PRESENTATION

## Lever for adjustment of cutting height

With this lever the cutting height can be adjusted to 9 different positions.

Cutting unit with rear ejection, 40-90 mm.  
BioClip cutting unit, 45-95 mm.



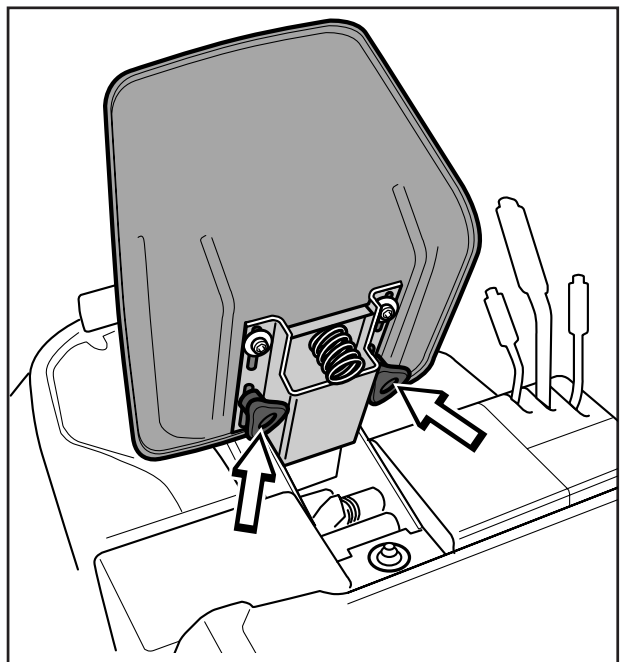
## Seat

The seat has a jointed attachment on the front edge and can be tipped forward.

The seat can also be adjusted lengthways.

Release the knobs under the seat and adjust it forwards or backwards to the required position.

Lock the adjustment with the wheels.

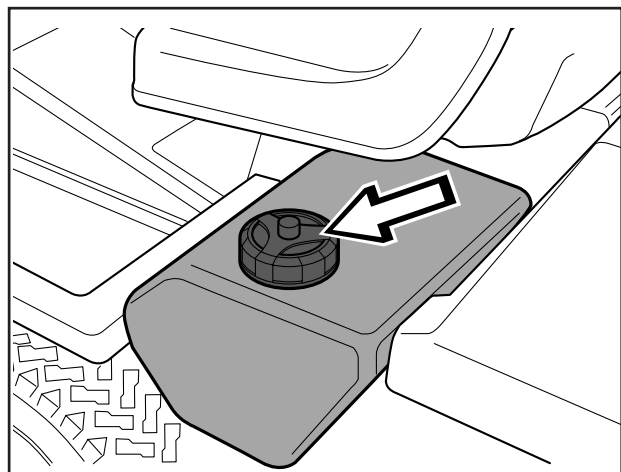


## Fuelling

The engine should be run on 85 octane (or higher) unleaded petrol/gasoline (no added oil). Environmentally adapted alkylate fuel, such as Aspen, is also recommended.



**WARNING!**  
Petrol/gasoline is highly inflammable.  
Observe care and fill up with fuel  
outdoors (see safety instructions).



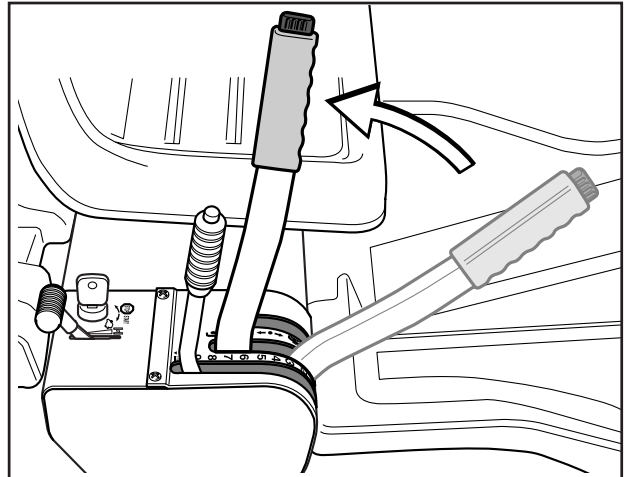
# DRIVING

## Before starting

- Read the safety instructions and information on the location and function of the controls before starting (see pages 5–13).
- Conduct daily maintenance before starting (see maintenance schedule on page 19).  
Adjust the seat to the required position.

## Starting the engine

1. Lift up the cutting unit by pulling the lever backwards to locked position (transport position).

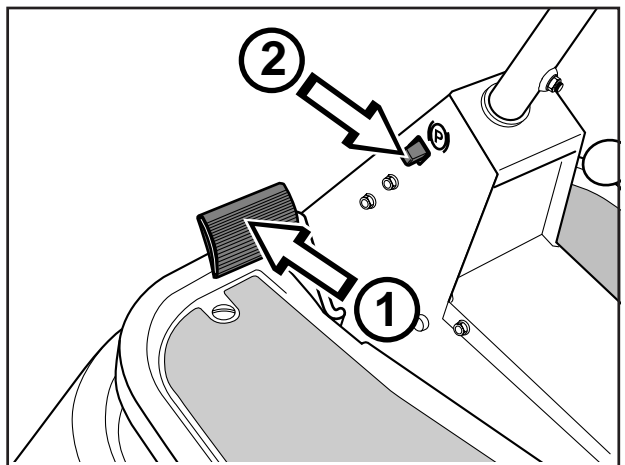


2. Apply the parking brake. This is done as follows:

- Press down the brake pedal (1).
- Press in the lock button on the steering column (2).
- Release the brake pedal while the button is held pressed.

The parking brake lock disconnects automatically when the brake pedal is pressed down.

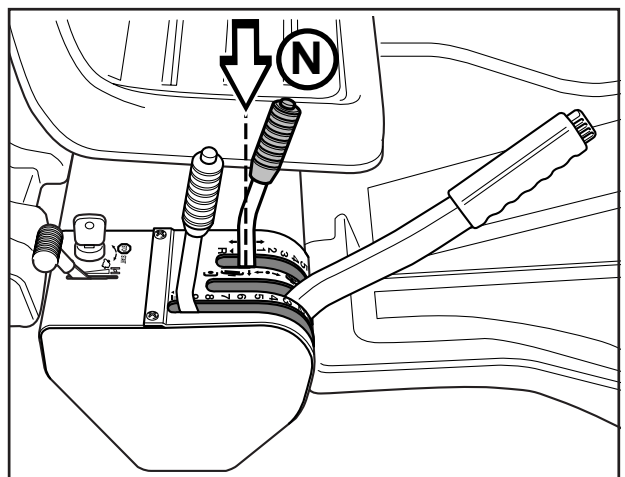
On the FR 13 the brake pedal and lock button are on the right side.



3. **For FR 13:** Set the gear lever to position “N” (neutral).

### IMPORTANT INFORMATION

**Do not press the reverse lock button on the lever when you select neutral. If you do, it could trigger the start lock.**

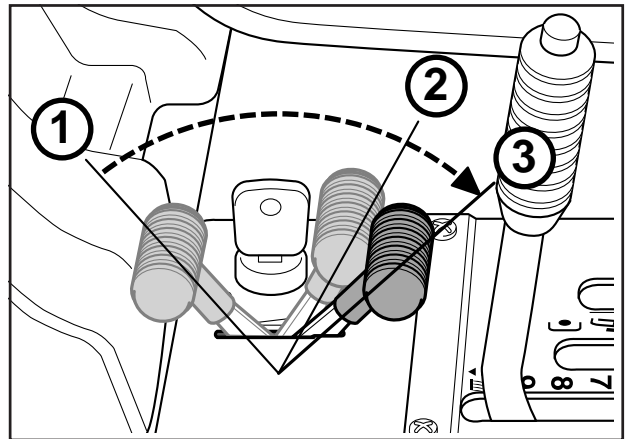




## DRIVING

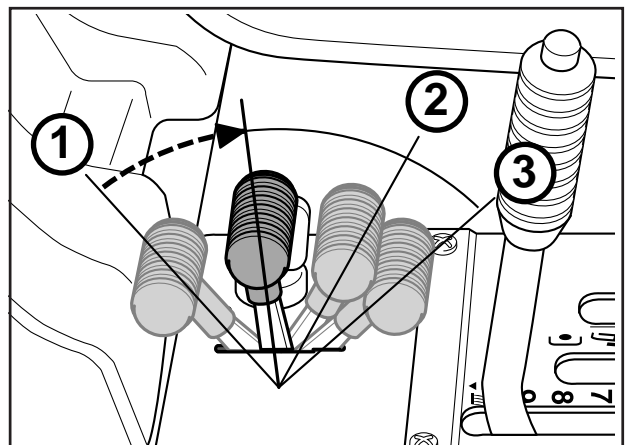
### Cold engine:

4. Push the throttle control to position 3 (choke position). In this position the engine receives a richer mixture so that the engine starts more easily.



### Warm engine:

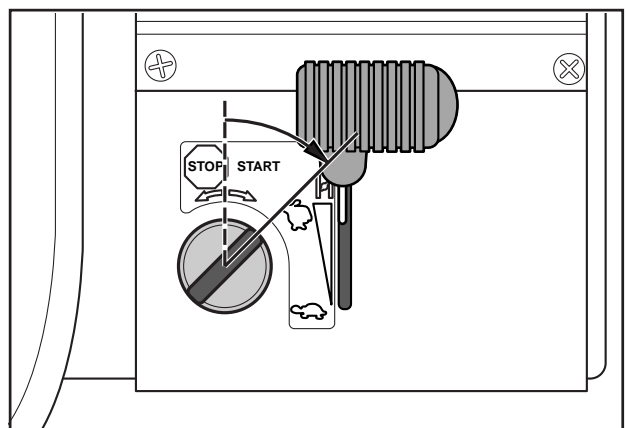
5. Set the throttle control midway between position 1 and 2.



6. Turn the ignition key to start position.

### IMPORTANT INFORMATION

Do not run the starter for more than about 5 seconds at a time. If the engine does not start, wait about 10 seconds before trying again.



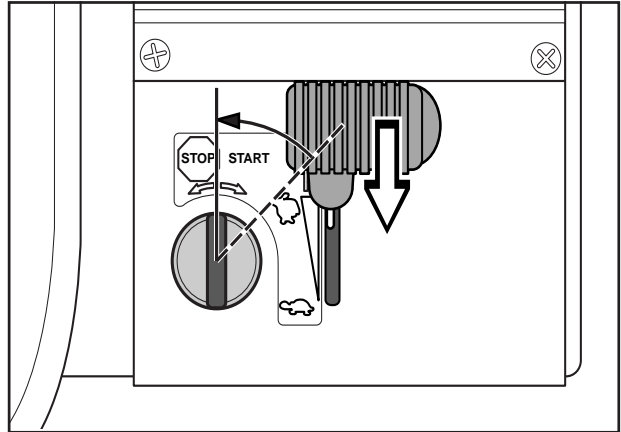
# DRIVING

7. When the engine has started release the ignition key to neutral position.

Push the throttle control to the required speed.  
For cutting 3/4 to full throttle.

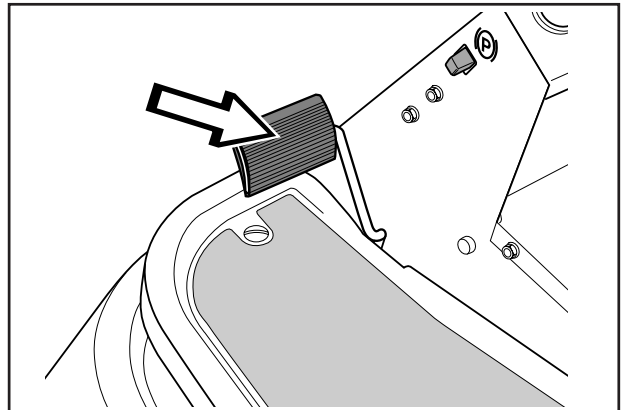


**WARNING!**  
Never run the engine indoors, in enclosed or poorly ventilated areas. The exhaust fumes contain toxic carbon monoxide.



## Driving the machine

1. Release the parking brake by pressing down the brake pedal.



### 2. For FRM 13 A

Carefully press down one of the pedals until the correct speed is reached.

To drive forwards: press down pedal (1).

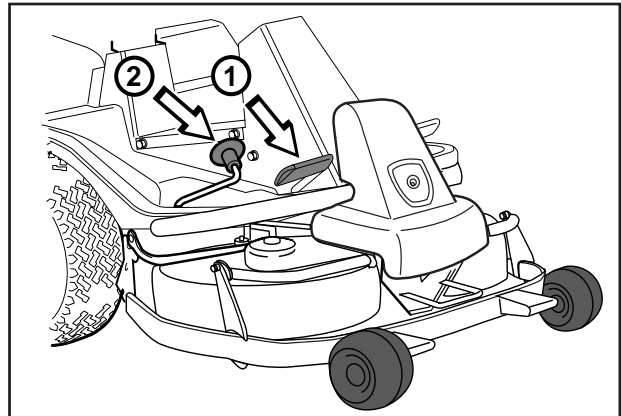
To reverse: press down pedal (2).

### For FR 13

Press the clutch and engage the required gear.  
To engage reverse gear the lock button must be pressed down.

- Gears 1–4 are used for mowing.
- Gears 4–5 are used for transport.

Starting is possible irrespective of which gear is engaged.



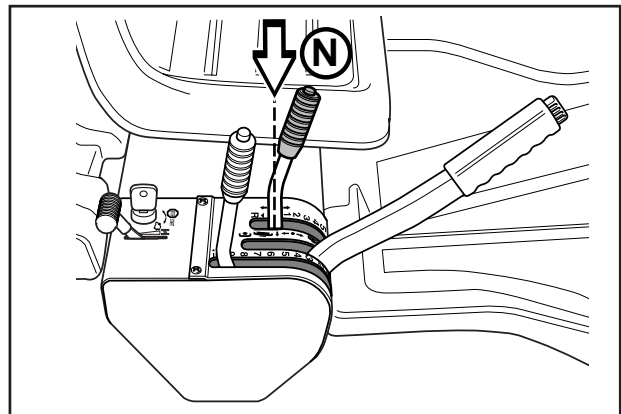
## IMPORTANT INFORMATION

**Do not change gear from forward drive to reverse while the machine is moving.**

**The clutch must be used for each gear change.**

**Stop the machine before changing for forward drive to reverse, otherwise the gearbox can be damaged.**

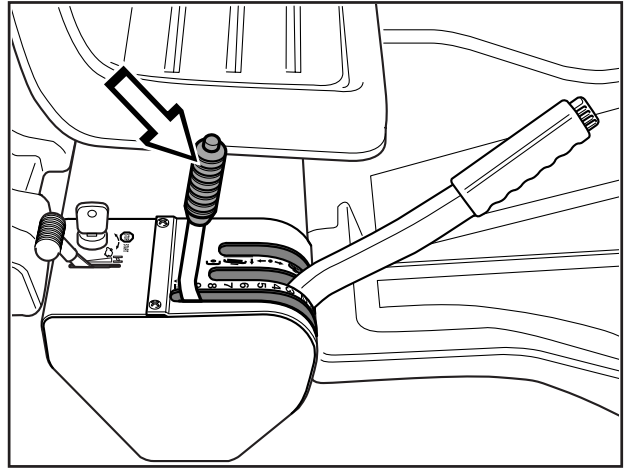
**Never use force to engage a gear. If a gear will not engage directly release and push down the clutch again, and then try to engage the gear again.**



## DRIVING

3. Select the required cutting height (1-9) with the cutting height lever.

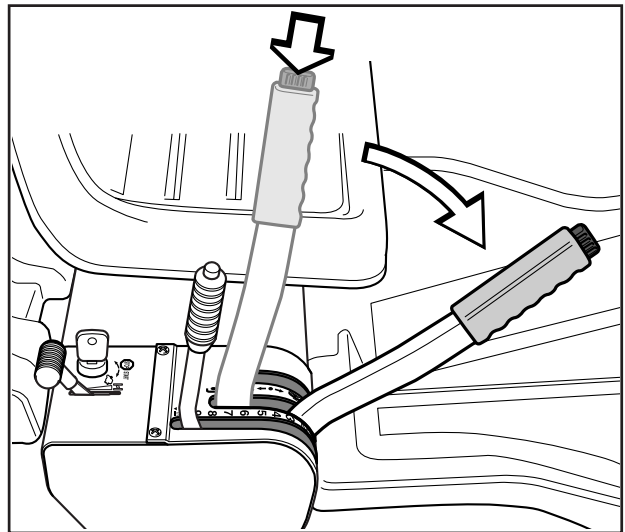
To obtain a uniform cutting height it is important that the tyre pressures are equal on both front wheels (60 kPa).



4. Push in the lock button on the lift lever and lower down the cutting unit.

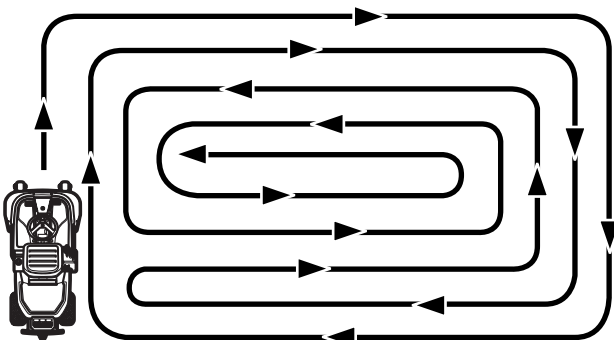
### IMPORTANT INFORMATION

The service-life of the drive belts increases considerably if the engine is run at low speed when engaging the blades. For this reason do not increase the throttle until the cutting unit has been lowered to the cutting position.



### Cutting tips

- Localise and mark stones and other fixed objects to avoid collision.
- Start with a high cutting height and reduce down until the required cutting result are obtained.
- The cutting results are best with a high engine speed (fast rotating blades) and low driving speed (slow moving machine). If the grass is not too high and thick the driving speed can be increased or the engine speed reduced without noticeably affecting the mowing results.
- The best lawns are achieved if the grass is cut often. Mowing becomes more uniform and the grass cuttings become more evenly distributed over the surface. The total time consumption is not greater since it is possible to select a higher driving speed without inferior mowing results.
- Avoid mowing a wet lawn. The mowing results are inferior since the wheels sink down into the soft lawn.
- Hose down the cutting unit with water underneath each time it is used. Put the cutting unit in the service position first.
- If you use the BioClip unit it is important to mow the grass regularly.



Mowing pattern



**WARNING!**  
Clear the lawn from stones and other object which can be thrown out by the blades.

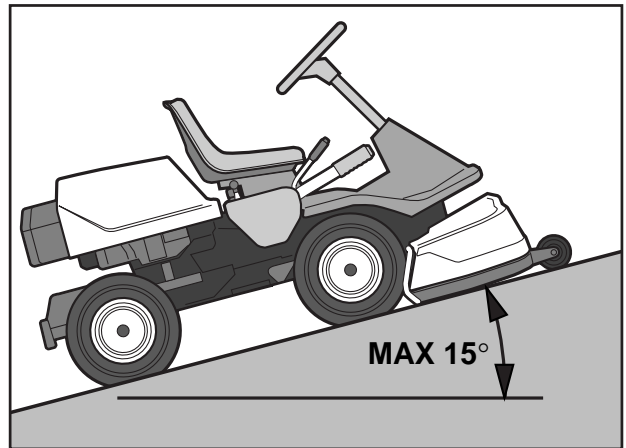
# DRIVING



**WARNING!**  
Never drive the machine on ground with a slope of more than 15°. Mow slopes upwards and downwards, never across. Avoid sudden changes in direction.

## Hill start, manual gearbox

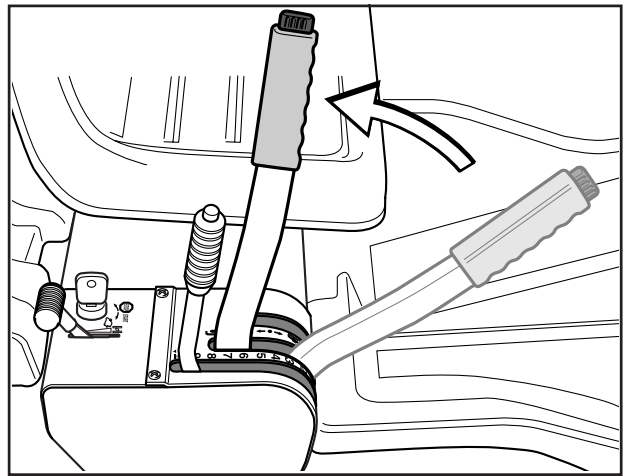
1. Press down the parking brake.
2. Push the throttle control to 3/4 position to full throttle position.
3. Push down the clutch and engage first gear.
4. Carefully release the clutch.
5. When the engine starts to pull, release the parking brake.



## Stopping the engine

Preferably allow the engine to idle for a minute to obtain normal working temperature before stopping it if it has been working hard.

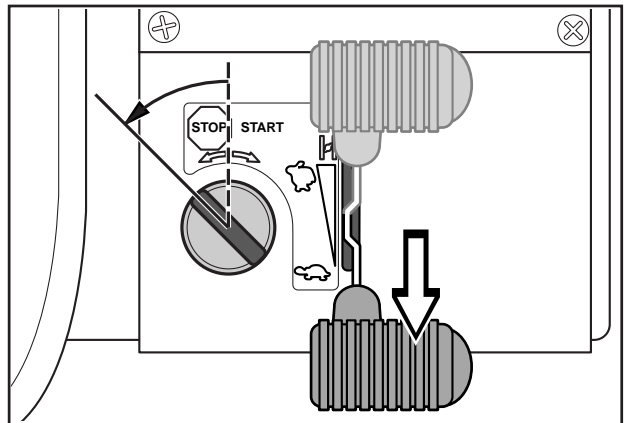
1. Lift up the cutting unit by pulling the lever back to the end position.



2. **FR 13:** Pull back the throttle control and put the gear lever into neutral "N" without pressing the reverse lock button. Turn the ignition key to the "STOP" position.

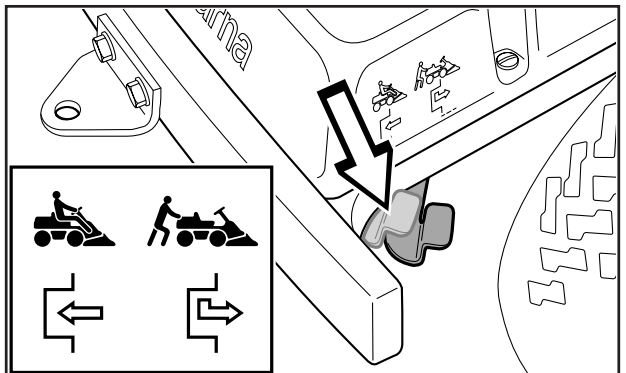
**FRM 13 A:** Pull back the throttle lever and turn the ignition key to the "STOP" position.

3. When the rider mower is stationary, hold down the parking brake and push in the lock button.



## Release lever FRM 13 A

In order to move the machine when the engine is switched off the release lever must be pressed down and forwards.



# MAINTENANCE

## Maintenance schedule

The following is a list of the maintenance which should be conducted on the machine. For the items which are not described in these instructions go to an authorised service workshop.

Maintenance	Page	Daily maintenance before start	Maintenance interval in hours		
			25	50	100
Check the engine's oil level	35	●			
Check the engine's cooling air inlet	28	●			
Check the fuel pump's air filter	26	●			
Check the steering wires	22	●			
Check the brakes	23	●			
Check the battery	26	●			
Check the safety system	27	●			
Check screws and nuts	–	○			
Check for fuel and oil leakage	–	○			
Change the engine oil <sup>1)</sup>	35	●	●		
Clean the air filter's pre-filter (foam plastic) <sup>2)</sup>	25	●	●		
Check the cutting unit	29	●	●		
Check the tyre pressures (60 kPa)	28	●	●		
Lubricating the belt adjuster <sup>3)</sup>	36	●	●		
Lubricate joints and shafts <sup>3)</sup>	37	●	●		
Adjust the brakes – FR 13	23	●	●		
Check the V-belts	–	○	○		
Check the transmission's cooling flanges – FRM 13 A	–	○	○		
Check the transmission's oil level – FRM 13 A	36			●	
Adjust the brakes – FRM 13 A	23			●	
Check and adjust the throttle wire	24			●	
Clean the cooling flanges on the engine and transmission <sup>2,4)</sup>	–			○	
Replace the air filter's pre-filter and paper filter <sup>2)</sup>	25				●
Replace the fuel filter	24				●
Replace the plug	–				○

<sup>1)</sup> First change after 5 hours. <sup>2)</sup> During dusty conditions cleaning and replacement should be more frequent. <sup>3)</sup> For daily use of the machine lubrication should be conducted twice a week. <sup>4)</sup> Conducted by authorised service workshop.

● = Described in these instructions.

○ = Not described in these instructions.



### WARNING!

No service procedures must be conducted on the engine or cutting unit unless:

- The engine is switched off.
- The ignition key is removed.
- The ignition cable is removed from the plug.
- The parking brake is applied.
- The cutting unit is disengaged.

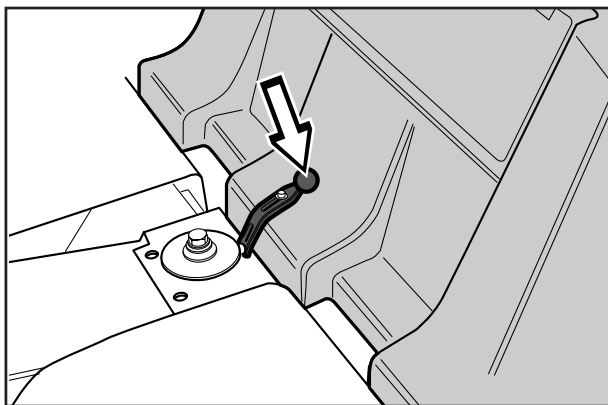
# MAINTENANCE

## Dismantling of the machine hoods

### Engine hood

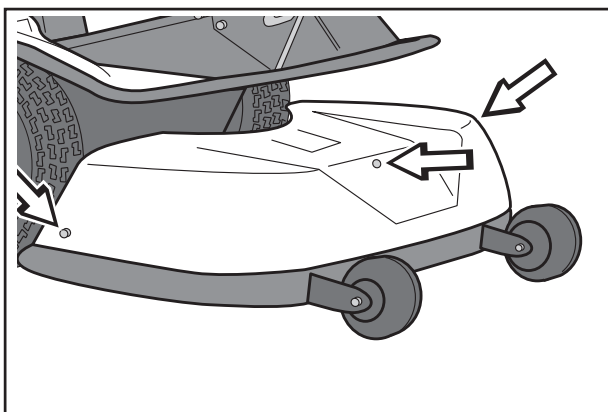
The engine is accessible for servicing when the engine hood is lifted up.

Tilt the seat forward, release the rubber strap under the seat, and tilt the hood backwards.



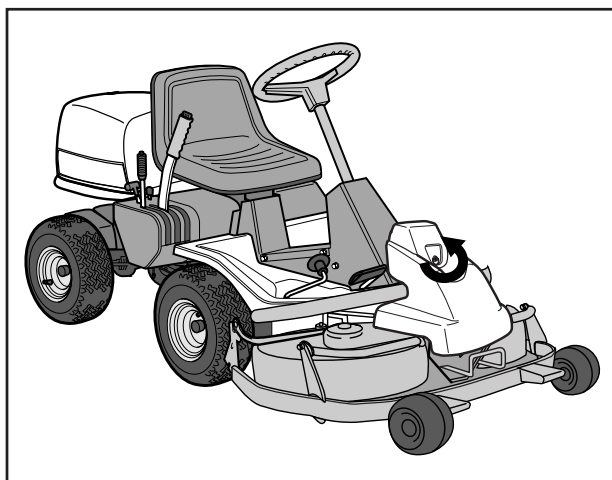
### Front hood FR 13

Release the screws in the front hood (3) and lift off the hood.



### Front hood FRM 13 A

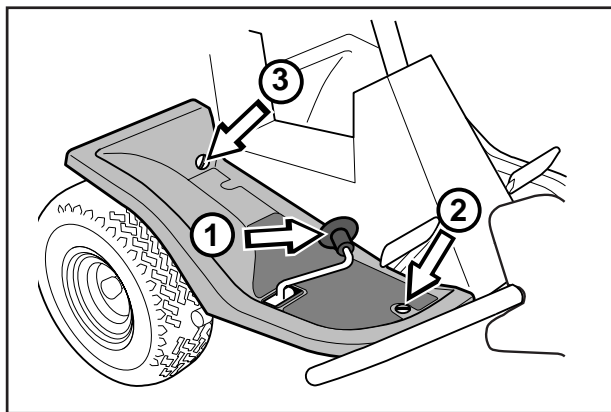
Release the catch and lift off the hood.



# MAINTENANCE

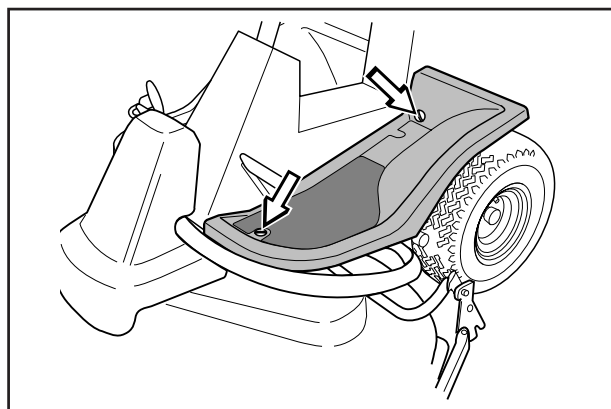
## Right-hand fender

Remove the screws (2 and 3) from the fender. On the FRM 13 A the knob (1) must also be removed.



## Left-hand fender

Release the screws in the fender and lift off the fender.



# MAINTENANCE

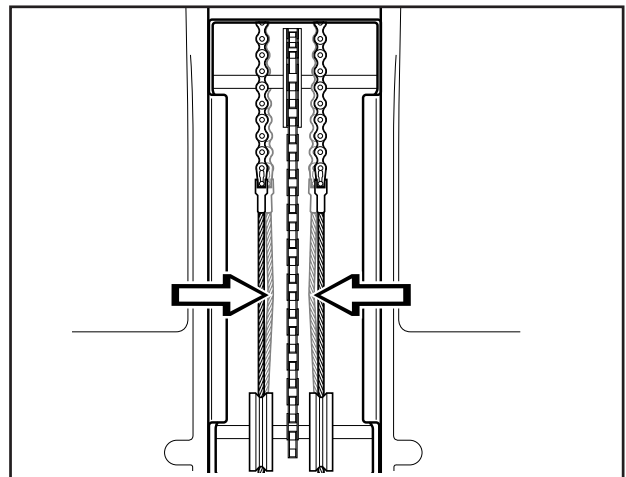
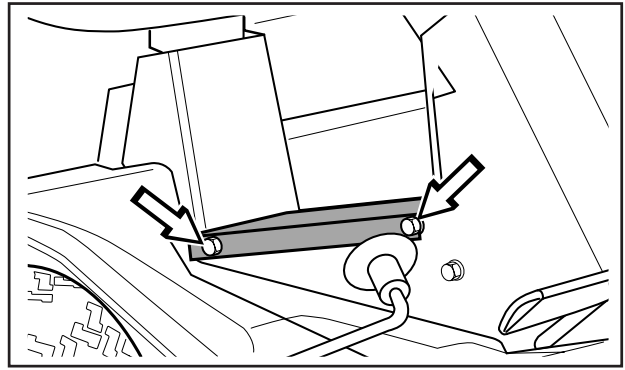
## Checking and adjustment of the steering wires

The steering is controlled by means of wires.

These can in time become slack, which implies that the adjustment of the steering becomes altered.

Check and adjust the steering as follows:

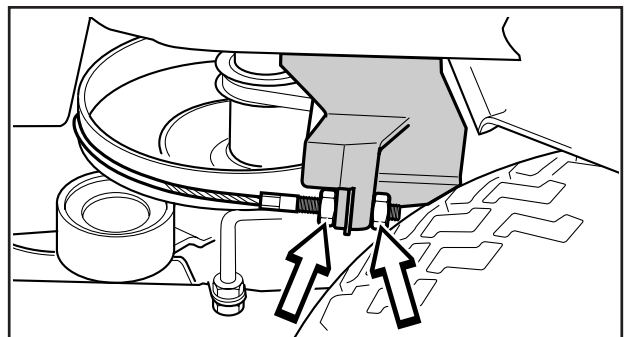
1. Dismantle the frame-plate by releasing the screws (two on each side).
2. Check the tension of the steering wires by pushing them together as shown in the diagram. It should be possible to push them together so that the distance between them is half as much, without using unnecessary force.



3. When necessary the wires can be tensioned by tightening the adjusting nuts, one on each side of the steering rim.

Do not tension the wires too tightly, they should only be *tightened* up to the steering rim.

Check the wire tension on completion of the adjustment as per item 2.



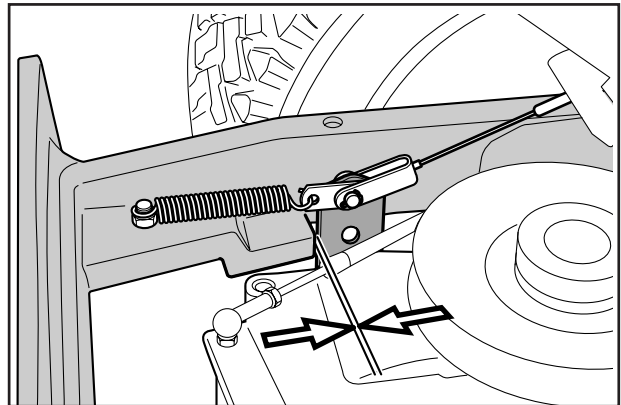


# MAINTENANCE

## Checking the brake FR 13

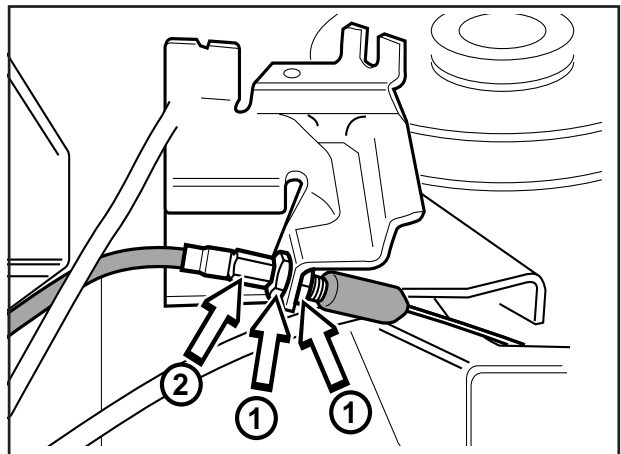
The brake is of the disc brake type and is fitted on the gearbox.

Check that the brake is correctly adjusted by measuring the distance between the brake lever and the front edge of the recess on the chassis. The distance should be 0–1 mm when the brake is not applied.



## Adjusting the brake FR 13

1. Release the lock nuts (1).
2. Tension the wire with the adjusting screw (2) so that the distance between the brake lever and the front edge of the recess on the chassis is 1 mm.
3. Tighten the lock nuts (1) after adjustment.



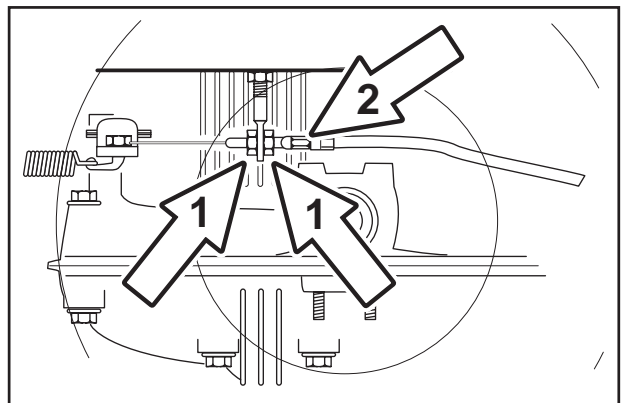
## Check and adjust the brakes on FRM 13 A

Check that the brakes are correctly adjusted by placing the rider mower on a shallow downhill slope and applying the brake.

If the rider mower begins to move then the brakes must be adjusted.

The brake is adjusted as follows:

1. Release the lock nuts (1).
2. Tension the wire with the adjusting screw (2) until all the play in the wire is taken up.
3. Tighten the lock nuts (1).
4. On completion of the adjustment the brake should be re-checked.



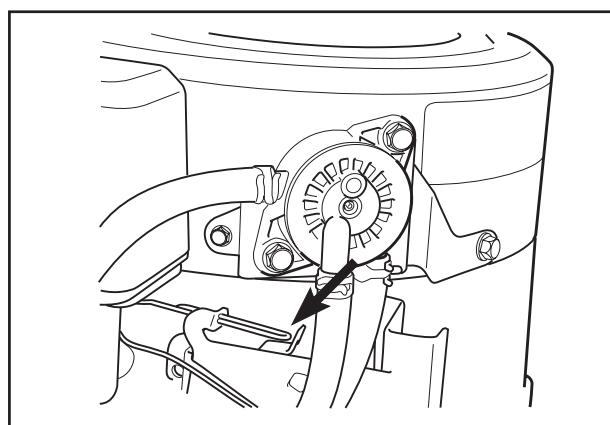
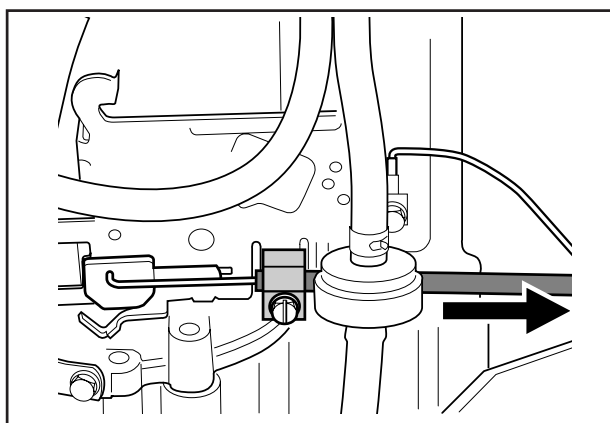
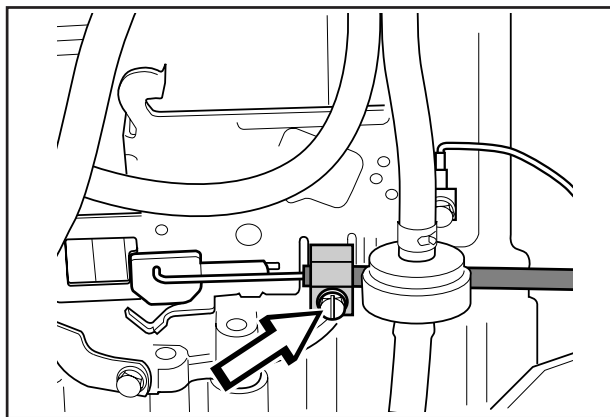
**WARNING!**  
Poorly adjusted brakes can result  
in reduced braking power.

# MAINTENANCE

## Checking and adjustment of the throttle wire

If the engine does not respond as it should when the throttle lever is moved, or if it produces black smoke or does not reach top speed, the throttle wire may need adjusting.

1. Release the clamping screw (see arrow) and push the throttle control to the choke position.
2. Pull the throttle wire's outer casing to the far right and check that the choke is fully activated.
3. Tighten the clamping screw.
4. Pull the throttle control back to the full throttle position and check that the choke is no longer activated.

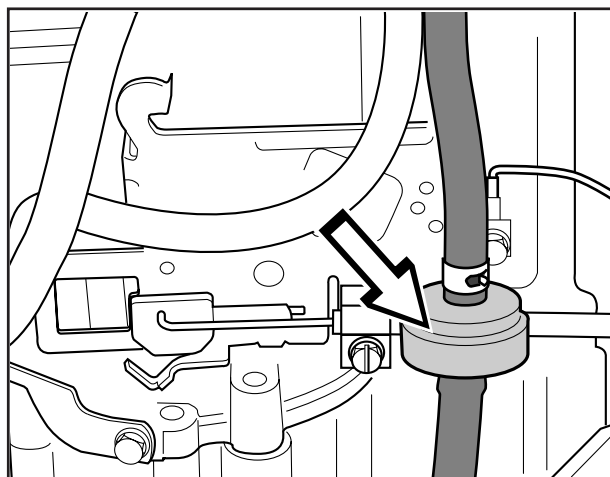


## Replacement of the fuel filter

Replace the pipe fitted fuel filter every 100 running hours (once per season) or more frequently if it is clogged.

Replace the filter as follows:

1. Raise the engine cover as described on page 20.
2. Move the hose clips away from the filter. Use a pair of flat pliers.
3. Pull off the filter from the hose ends.
4. Press in the new filter on the hose ends. If necessary soap solution can be applied on the filter ends to simplify fitting.
5. Push the hose clips back on the filter.



# MAINTENANCE

## Replacing the air filter

If the engine seems to lack power or goes irregularly the reason may be that the air filter is clogged.

It is therefore important to replace the air filter at regular intervals (see maintenance schedule on page 19 for correct service interval).

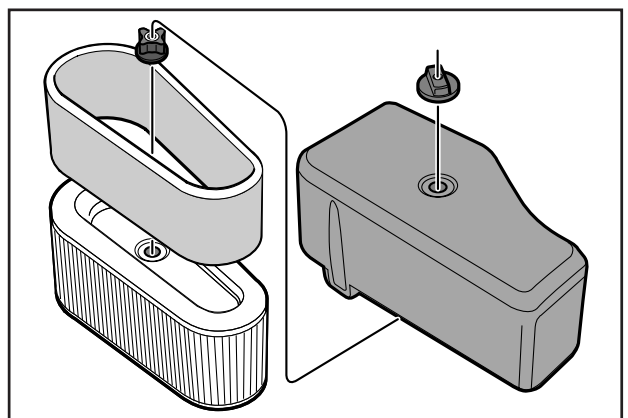
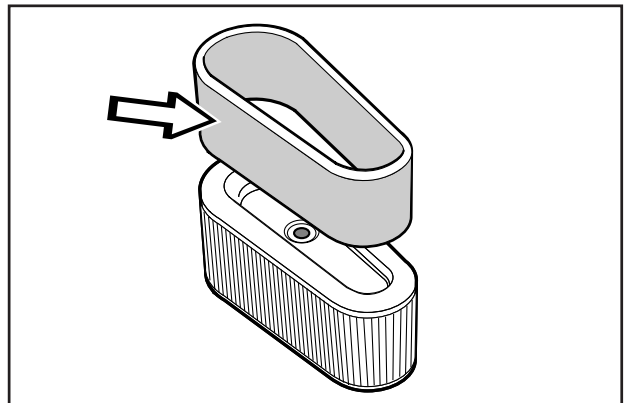
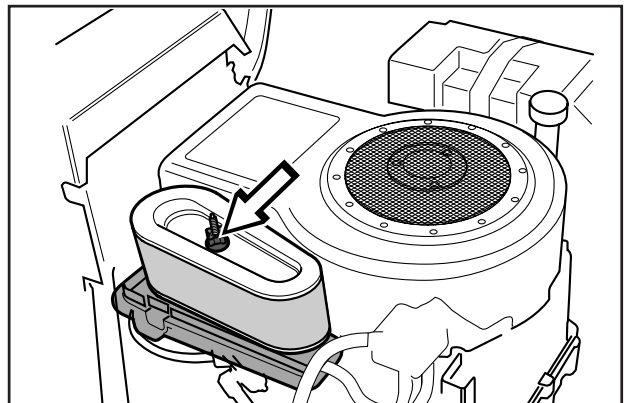
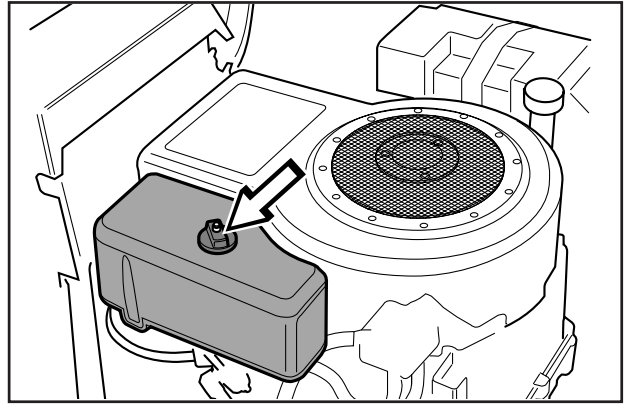
The air filter is replaced as follows:

1. Raise the engine cover as described on page 20.
2. Remove the air filter housing's plastic cover by releasing the wing-nut.
3. Remove the wing-nut on the air filter and lift off the paper filter with pre-filter.
4. Pull off the foam plastic pre-filter from the paper filter and wash clean in mild detergent.  
Squeeze it dry in a clean cloth.  
Drench it with new engine oil. Wrap the filter in an absorbent cloth and squeeze out excess oil.  
Replace the paper filter if it is clogged with dirt.

### IMPORTANT INFORMATION

**Do not use compressed air to clean the paper filter.**

5. Fit the air filter as follows:  
Push the pre-filter over the paper filter.  
Fit the paper filter with pre-filter in the air filter housing and tighten the wing-nut.  
Replace the plastic cover over the air filter housing and tighten the wing-nut.

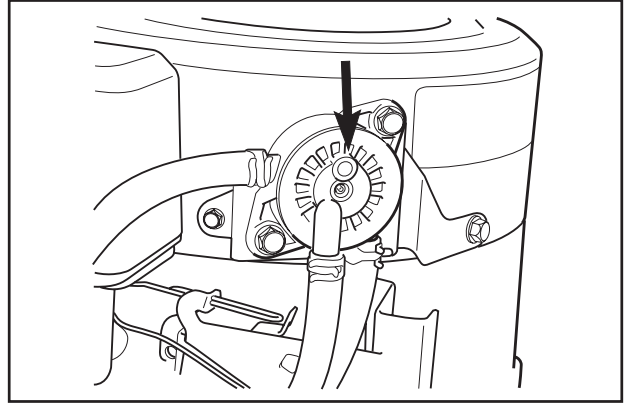


# MAINTENANCE

## Checking of the fuel pump's air filter

Check regularly that the fuel pump's air filter is free from dirt.

The filter can when necessary be cleaned with a brush.



## Check the level of the battery acid

Check that the level of the battery acid lies between the markings. Top up the cells with *only* distilled water.



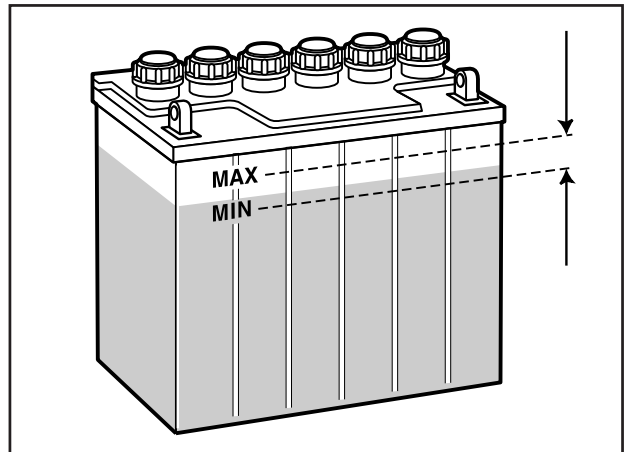
**WARNING!**  
**Procedures on contact with acid**

**External:** Rinse well with plenty of water.

**Internal:** Drink large quantities of water or milk. Contact a doctor as soon as possible.

**Eyes:** Rinse well with plenty of water.  
Contact a doctor as soon as possible.

**Batteries emit explosive gas. Sparks, flames and cigarettes must absolutely not be brought into the vicinity of the battery.**



# MAINTENANCE

## Inspecting the safety system

The Rider is equipped with a safety system that prevents starting or driving under the following conditions:

The engine should only be possible to start when the cutting unit is in its raised position and the hydrostat pedals are in the neutral position.

The driver does not need to be seated in the driver's seat.

Make daily inspections to ensure that the safety system works by attempting to start the engine when one of the conditions is not met. Change the conditions and try again.

Check that the engine stops if you temporarily move out off the driver's seat while the cutting unit is lowered or the hydrostat pedals are not in the neutral position.



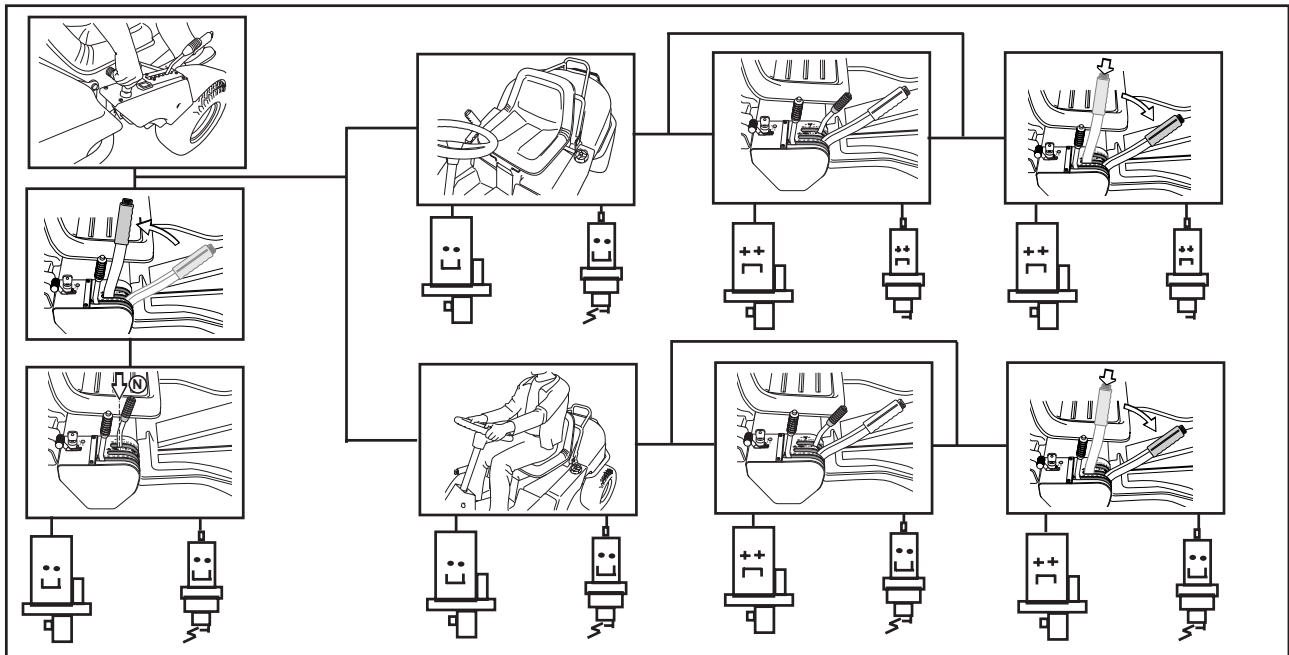
Startmotor

☐ Works

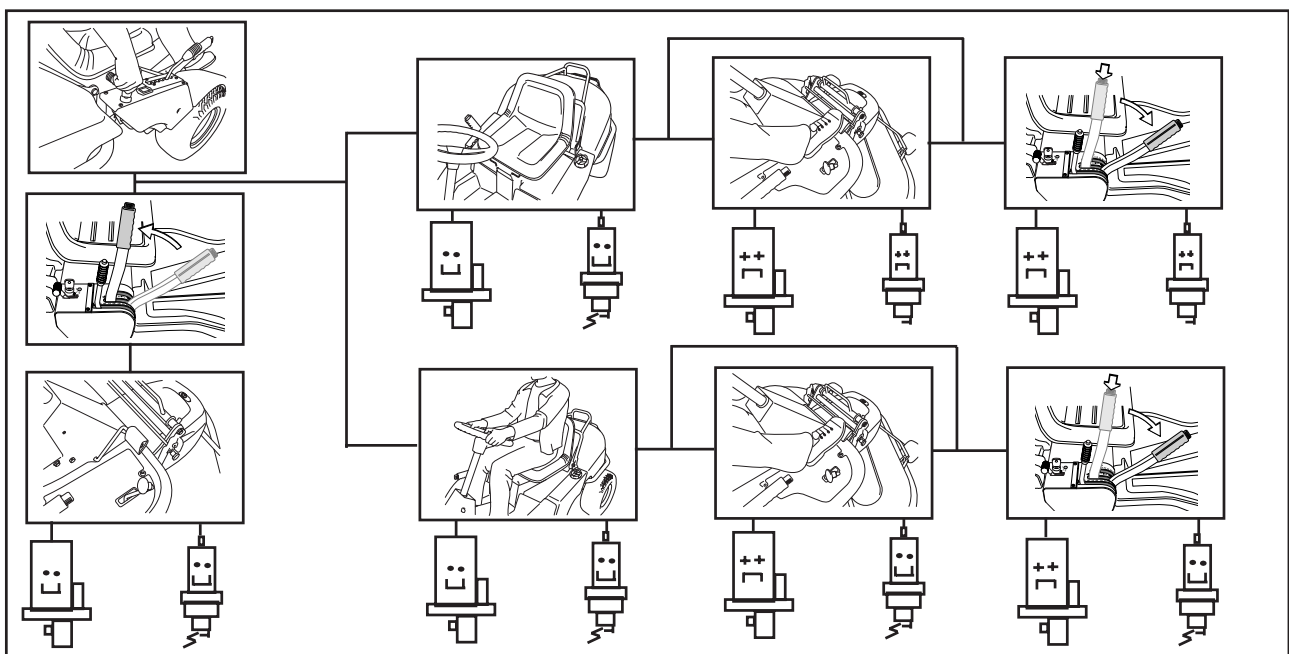


Ignition system

☐++ Does not work



FR 13



FRM 13 A

# MAINTENANCE

## Checking the tyre pressure

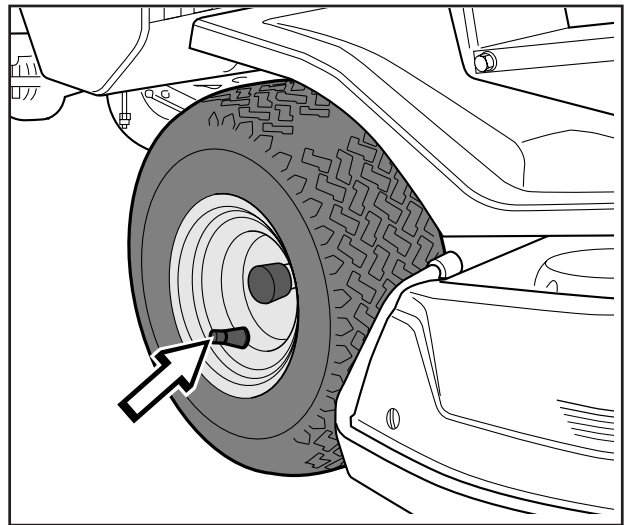
The tyre pressure should be 60 kPa (0.6 kp/cm<sup>2</sup>) all round.

To improve driving the pressure on the rear tyres can be reduced to 40 kPa (0.4 kp/cm<sup>2</sup>).

The maximum tyre pressure is 100 kPa (1.0 kp/cm<sup>2</sup>).

### IMPORTANT INFORMATION

**Different tyre pressures on the front tyres will result in the blades cutting the grass at different heights.**

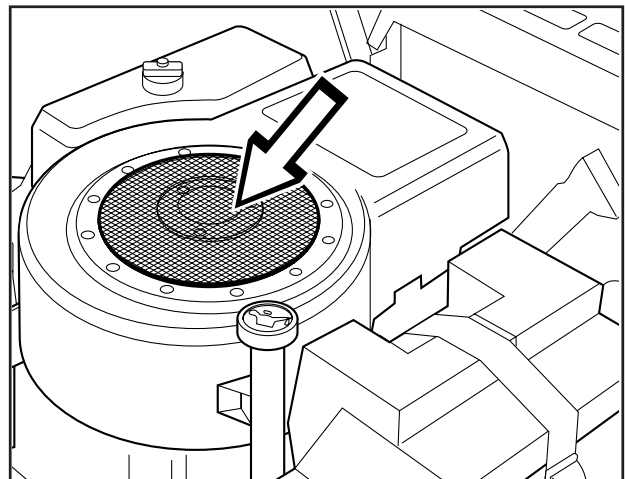


## Check the engine's cooling air intake

Raise the engine cover as described on page 18.

Check that the cooling intake is free from leaves, grass and dirt.

If the cooling intake is blocked this will interfere with the cooling of the engine, which can damage the engine.



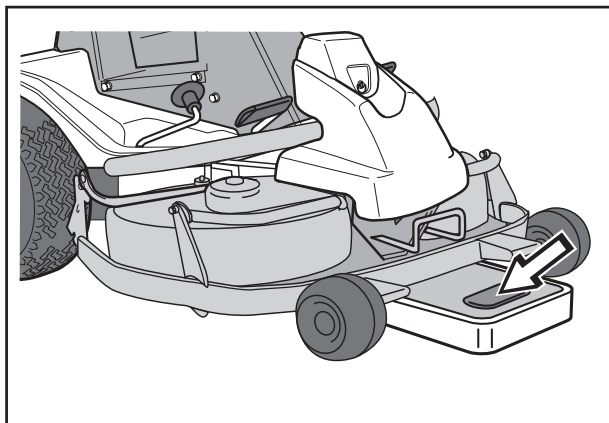
# MAINTENANCE

## Checking and adjustment of the cutting unit's ground pressure on FRM 13 A

To achieve the best cutting results the cutting unit should follow the underlying surface without pressing too hard against it.

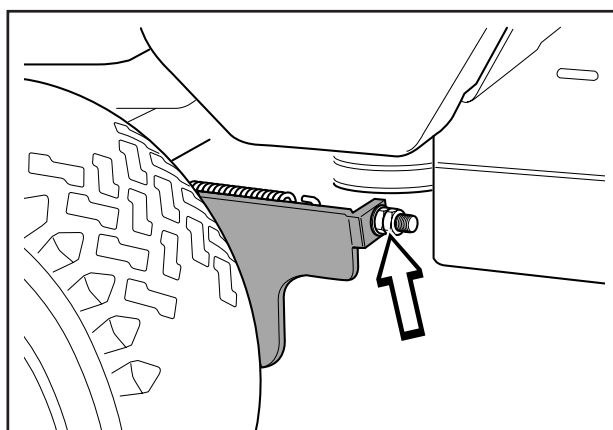
The pressure is adjusted with a screw on each side of the machine.

1. Check the tyre air pressure. It should be 60 kPa (0,6 kp/cm<sup>2</sup>).
2. Place a set of bathroom scales under the cutting unit's frame (front edge) so that it rests on the scales. If necessary a block can be placed between the frame and scales so that the support wheels do not bear any weight.



3. Adjust the unit's ground pressure by screwing in or out the adjusting screws located behind the front wheels on both sides.

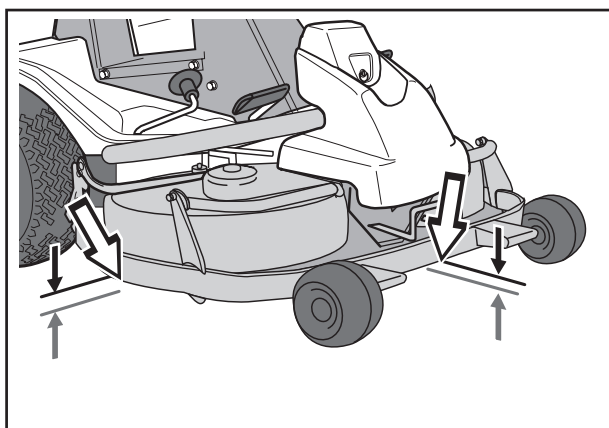
The ground pressure should be between 12 and 15 kg.



## Checking the cutting unit's parallelism

Check the parallelism of the cutting unit as follows:

1. Check the tyre air pressure. It should be 60 kPa (0,6 kp/cm<sup>2</sup>).
2. Place the machine on a level surface.
3. Measure the distance between the ground and the front and rear edges of the cutting unit hood. The cutting unit should slope forwards slightly so that the rear edge is 2-4 mm higher than the front edge.

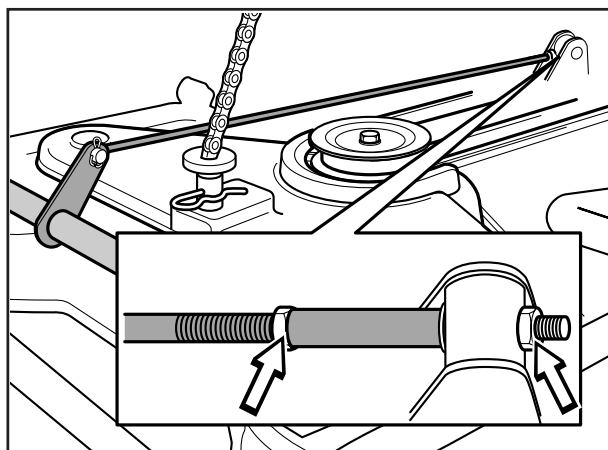




# MAINTENANCE

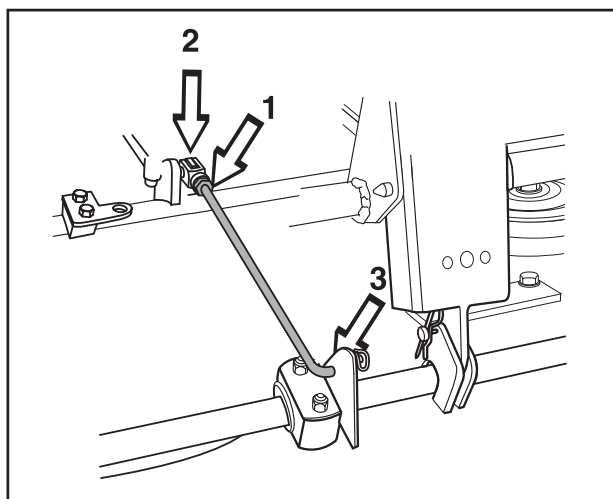
## Adjustment of the cutting unit's parallelism for the FR 13

1. Check the tyre air pressure. It should be 60 kPa (0,6 kp/cm<sup>2</sup>).
2. Dismantle the front hood and right-hand fender as described on page 20-21.
3. Vertical adjustment of the cutting unit is made with the adjusting nuts on the back edge of the lift-strut.
4. Raise the cutting unit at the front edge by shortening the lift-strut. Lower the cutting unit at the front edge by lengthening the lift-strut.
5. Tighten the nuts against each other after the adjustment.
6. On completion of the adjustment the unit's parallelism should be re-checked. Fit the right-hand fender and the front hood.



## Adjusting the alignment of the cutting unit for the FRM 13 A

1. Check the tyre air pressure. It should be 60 kPa (0,6 kp/cm<sup>2</sup>).
2. Remove the front hood and right-hand fender as described on page 20-21.
3. Unscrew the nut (1) from the parallel strut. Remove the clip (2) and the parallel strut.
4. Turn the fork anti-clockwise to lower the rear edge of the hood, or clockwise to raise the rear edge of the hood.
5. Once adjustment is complete, refit the parallel strut and clip and tighten the nut.
6. Recheck the alignment of the cutting unit after adjustment.
7. Refit the right-hand fender and hood.



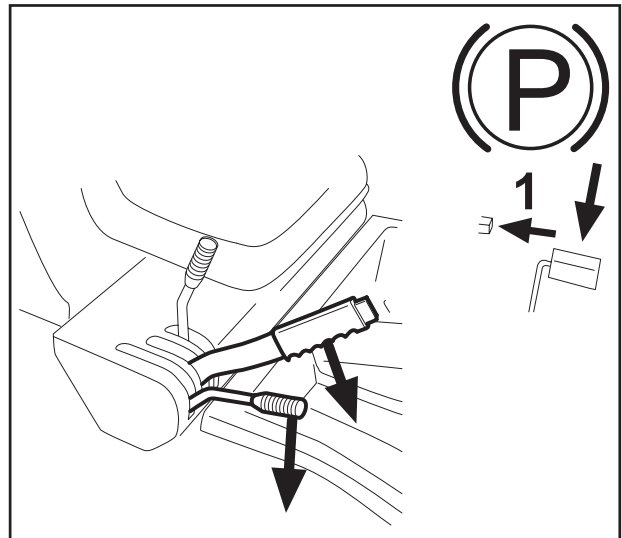


## Service position for BioClip 90

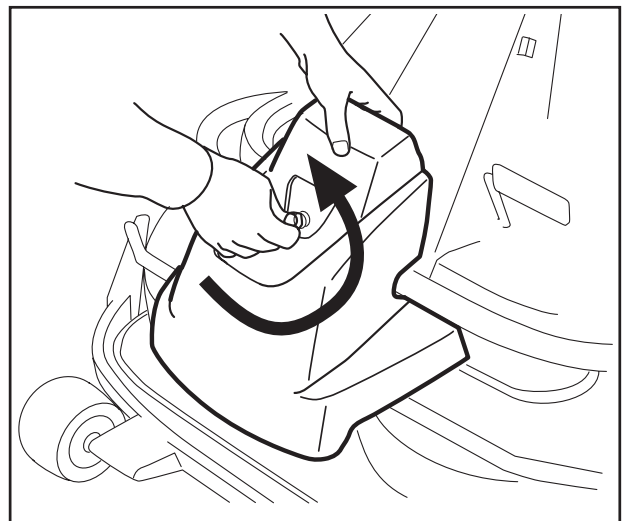
The cutting head can be placed in the service position to provide easy access for cleaning, repairs and servicing. In the service position the cutting unit is raised and locked in the vertical position.

### Placing in service position

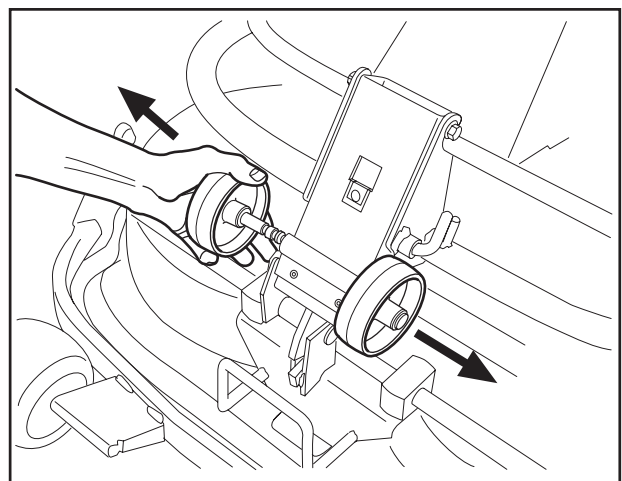
1. Position the machine on flat ground. Apply the parking brake (1), see page 10. Adjust the cutting unit to the lowest cutting height and lower the cutting unit.



2. Remove the front hood by removing the pin. (There are complete instructions on using the service position inside the front hood).



3. Remove the two support wheels from under the front hood.



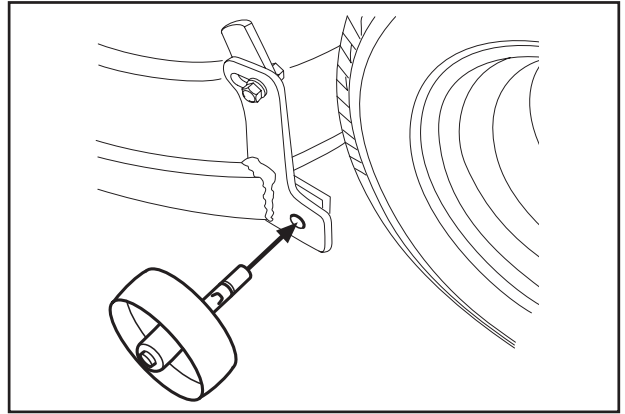
## MAINTENANCE FRM 13 A

4. Fit the support wheels on either side of the rear of the cutting unit.

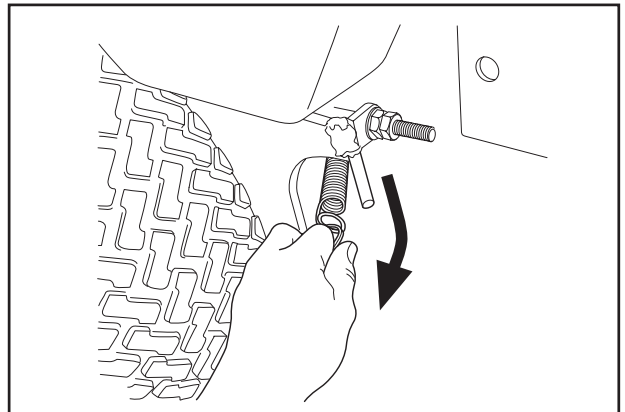


### WARNING!

Wear protective glasses when dismantling the cutting unit. The spring which tensions up the belt can go off and cause personal injury.

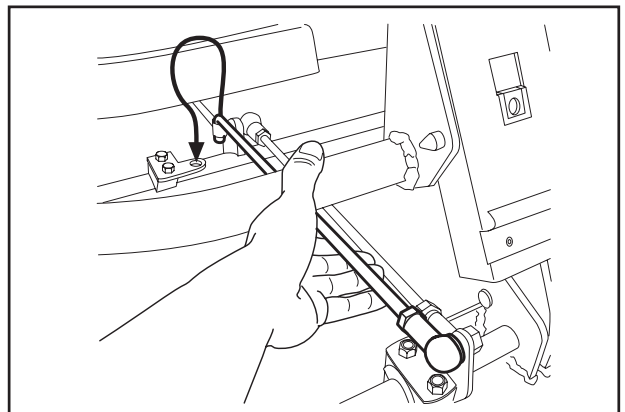
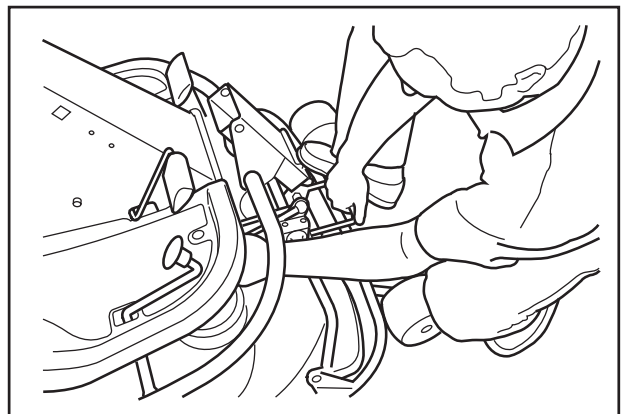


5. Disengage the spring from the drive belt tensioning wheel.



6. Move the cutting height lever to the lower position.

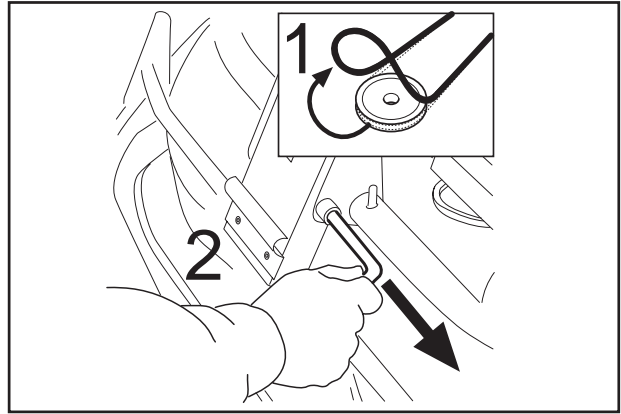
7. Place a foot on the front edge of the cutting unit near the wheel and raise the front edge of the unit to make it easier to remove the lift strut. Engage the strut in the holder.



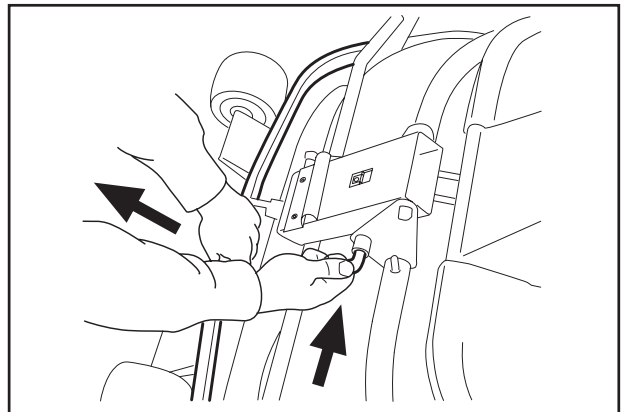
## MAINTENANCE FRM 13 A

8. Lift off the drive belt (1). Then pull out the pin (2).

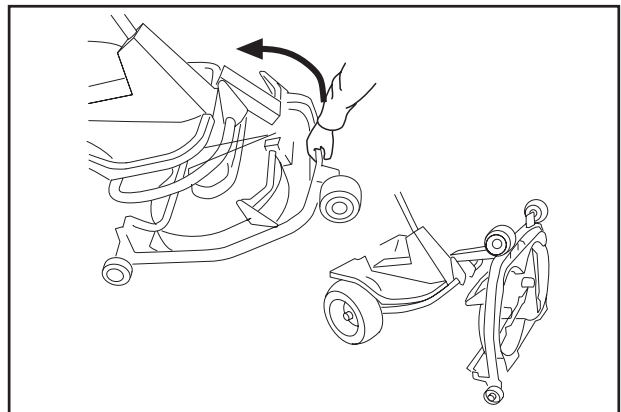
Take care not to get your hand trapped.



9. Pull the frame forwards and refit the pin.



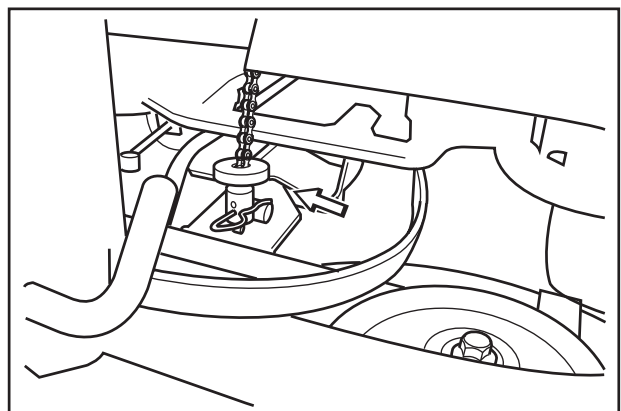
10. Grasp the front edge of the cutting unit, pull out and raise into the service position.



If the cylindrical bolt, which is now holding the cutting unit is removed, the cutting unit can be lifted off.

### Restoring from service position

To leave the service position, reverse the procedures set out in "Placing in the service position". Make sure that the cutting unit's "lug" enters the loop correctly on the underside of the machine, see diagram.



# MAINTENANCE

## Checking the blades

To achieve the best mowing results it is important that the blades are undamaged and well-sharpened.

Check that the blades' attachment screws are tight.

### IMPORTANT INFORMATION

**Replacing or sharpening the blades should be conducted by an authorised service workshop.**

The blades should be balanced after sharpening.

Damaged blades should be replaced when hitting obstacles that result in a breakdown. Let the servicing dealer judge whether the blade can be repaired/ground or must be discarded.

### IMPORTANT INFORMATION

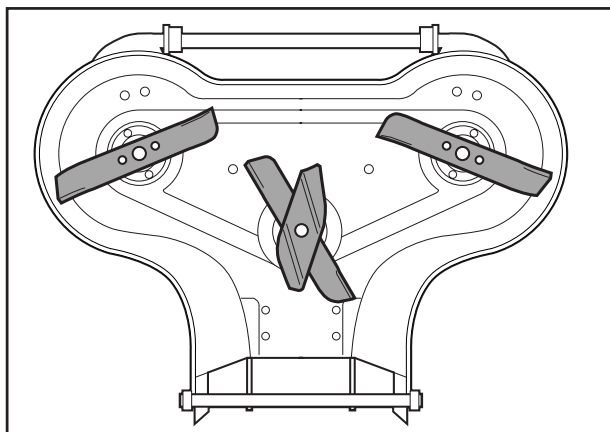
**The blades of the BioClip unit should always be spaced as shown in the diagram at 90° intervals. If not, the blades may collide and cause damage to the cutting unit.**

## Replacing the break-pin (BioClip)

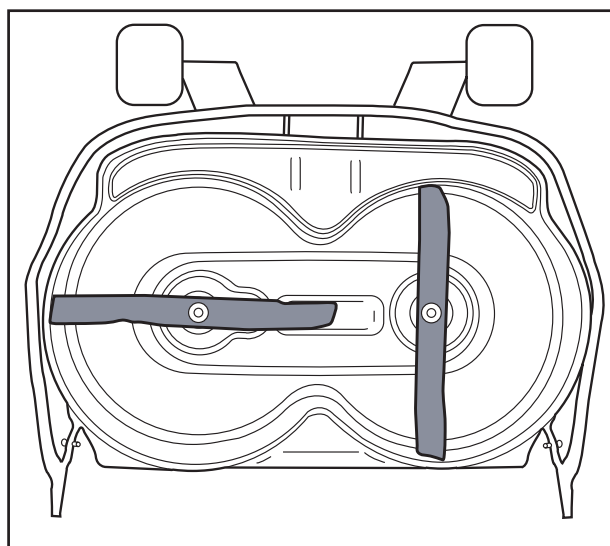
The blades are fitted with a break-pin to protect the BioClip unit and its drive when colliding with obstacles. A domed, spring friction washer is fitted to each blade bolt. The washer must always be replaced with a new washer if the blade bolt is loosened. Otherwise the break-pin can break causing the blades to collide.

Only use original spare parts. A set containing a blade, break-pin and friction washer can be purchased from your dealer.

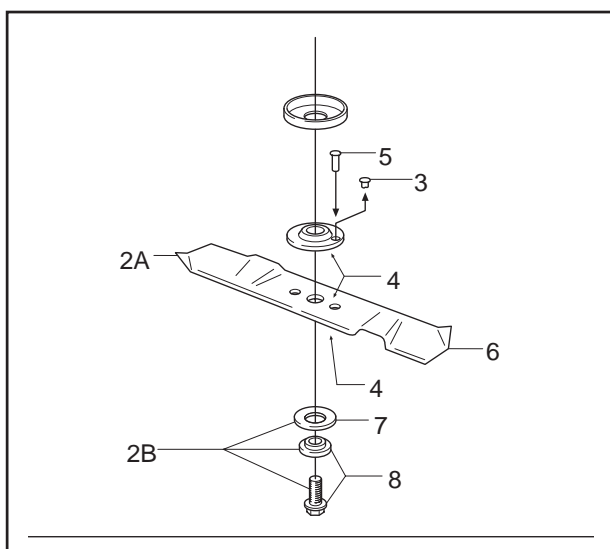
1. Put the unit in the service position, see "Placing in the service position".
2. Remove the blade (2A) by removing the blade bolt with washer and friction washer (2B).
3. Remove the remains of the broken break-pin (3).
4. Make sure the contact surfaces (4) on the blade and the blade mounting are free from metal. Clean if necessary.
5. Fit **one** new break-pin (5) in the blade mounting.
6. Fit the blade (6), make sure it is fitted as illustrated.
7. Fit a **new** friction washer (7) with the concave face turned towards the blade.
8. Fit the blade bolt with washer (8). Tightening torque 45-50 Nm (4,5-5 kpm)



*Cutting unit (rear ejection)*



*Bio 90*



# LUBRICATION

## Check the engine's oil level

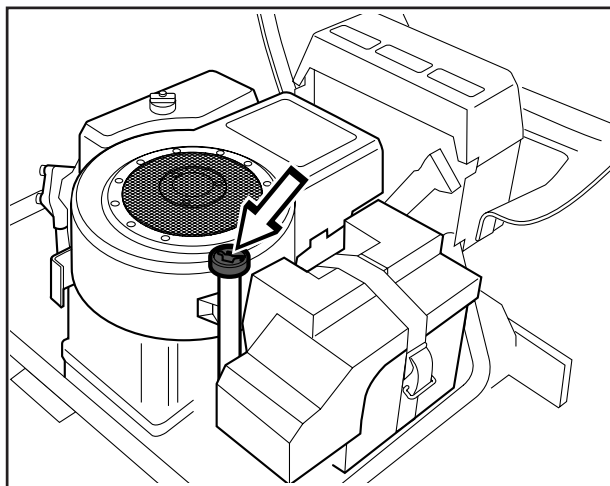
Check the oil level in the engine when the machine is horizontal.

Raise the engine cover as described on page 18.

Release the dip stick and pull out. Wipe off the oil and insert again.

The dip stick must be fully screwed down.

Now release the dip stick again and pull out. Check the oil level.

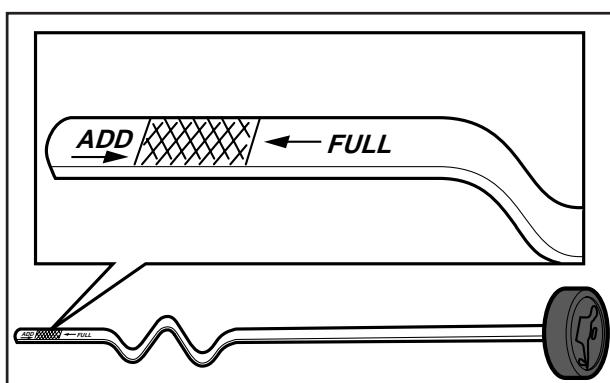


The oil level should lie between the markings on dip stick. If the level approaches the "ADD" mark, top up with oil to the "FULL" mark.

The oil is filled in the same hole for the dip stick

Use engine oil SAE 30 or SAE 10W/30, class SF-CC.

The total oil volume in the engine is 1.4 litres.



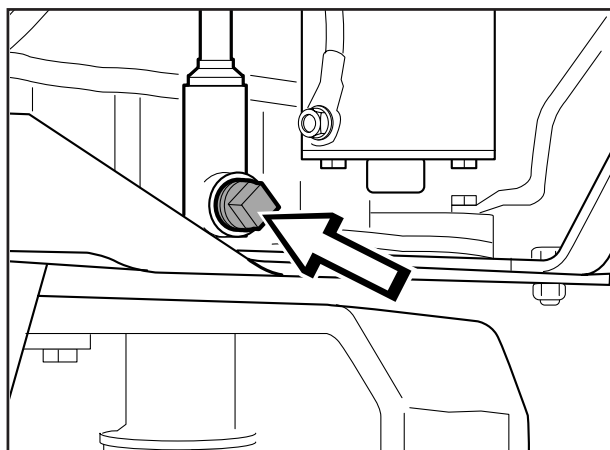
## Changing the oil

The oil should be changed for the first time after 5 hours of running time. Thereafter it should be changed every 25 hours of running time.



**WARNING!**  
Engine oil can be very hot if it is drained off directly after the engine is stopped. Therefore allow the engine to cool down first.

1. Place a receptacle under the engine's drain plug, located on the left-hand side of the engine.
2. Remove the dip stick and drain plug.
3. Let the oil run out into the receptacle.
4. Fit the drain plug and tighten.
5. Fill up with oil to the "FULL" mark on the dip stick. The oil is filled in the same hole for the dip stick.  
Use engine oil SAE 30 or SAE 10W/30, class SF-CC.  
Use engine oil with min. API SF quality and SAE 30 or SAE 10W/30 viscosity grade. The oil volume in the engine is 1.4 litres.
6. Run the engine warm and then check that there is no leakage from the drain plug.



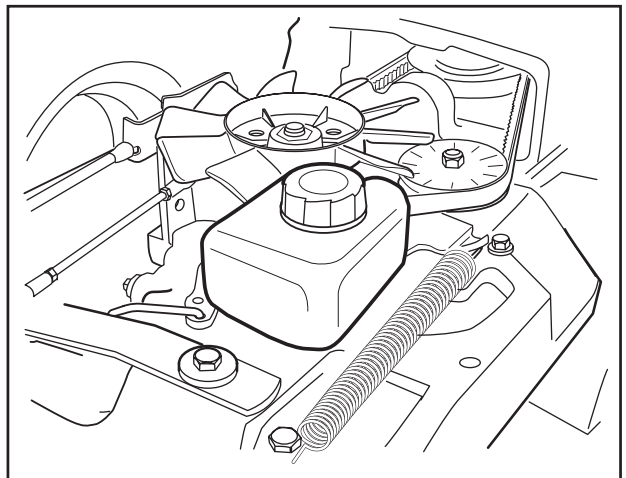
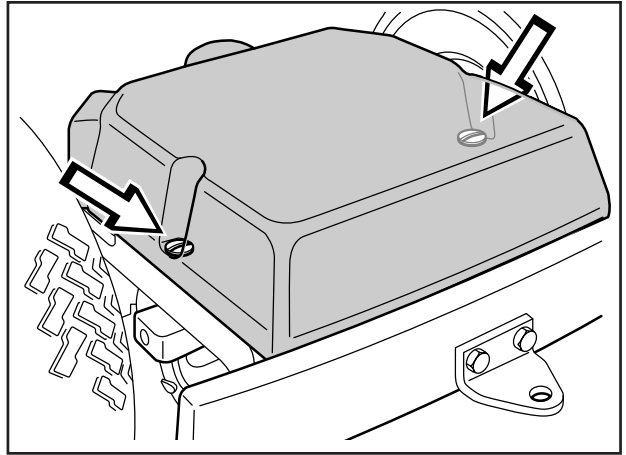
### IMPORTANT INFORMATION

Used engine oil is hazardous to health and environment and must in accordance with the law not be poured out on the ground or in the nature, and must be handed in to a workshop or other designated station for treatment. Avoid skin contact, wash with soap and water in the event of spillage.

# LUBRICATION

## Check the transmission's oil level FRM 13 A

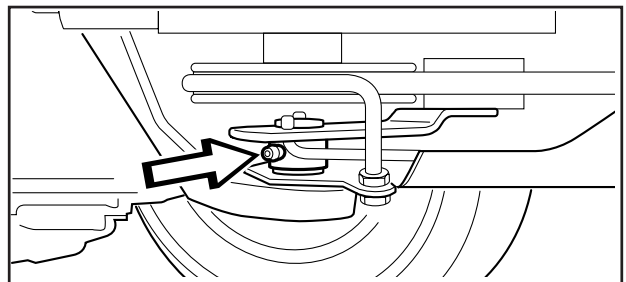
1. Lift off the transmission cover. Release the two screws (one of each side) and lift off the transmission cover.
2. Check that there is oil in the transmission oil tank. Top up if necessary with engine oil SAE 10W/30 (class SF-CC).



## Lubrication of belt tensioner

The belt tensioner must be lubricated regularly with high-quality molybdenum sulphide grease\*. Inject grease into the nipple on the right side below the engine bottom pulley until grease is forced out.

With daily use lubrication should be conducted twice a week.



## General lubrication

All joints and bearings are lubricated on manufacture with molybdenum sulphide grease. Re-grease with same type of grease\*. Lubricate the steering and control wires with engine oil.

The machine should be lubricated regularly, and twice a week when used daily.

\* Grease from well-known brand names (petrol companies, etc.) usually maintains a good quality. The most important property is that the grease provides good protection against corrosion.

# LUBRICATION

## Lubrication FR 13

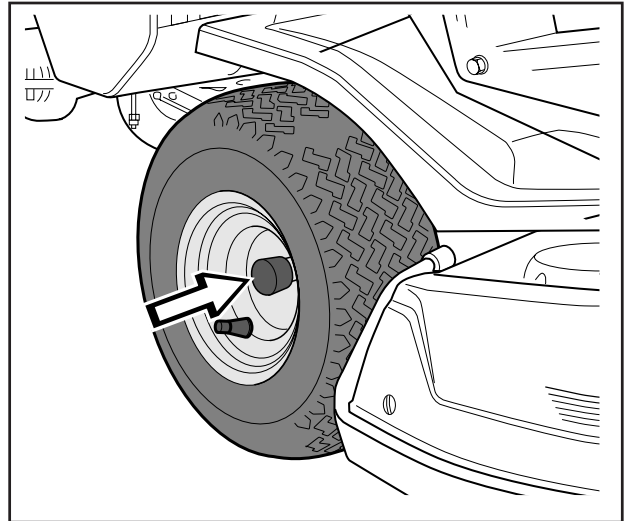
### Lubrication of front wheel bearings

On Riders with rear ejection the hood and wings must be removed so that the bar can be raised to allow removal of the wheel.

1. Remove the plastic cover on the hub.
2. Remove the lock-ring and washer on the front wheel axle.
3. Lift off the wheel.
4. Grease the axle journal with molybdenum sulphide grease\*.
5. Assemble the parts in the reverse order.

#### IMPORTANT INFORMATION

**Check that the lock-ring is correctly positioned in the slot.**



\* Grease from well-known brand names (petrol companies, etc.) usually maintains a good quality. The most important property is that the grease provides good protection against corrosion.

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# TROUBLE SHOOTING SCHEDULE

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Problem	Procedure
Engine will not start.	<ul style="list-style-type: none"><li>• Fuel tank empty.</li><li>• Plug defective.</li><li>• Plug connection defective.</li><li>• Dirt in carburettor or fuel pipe.</li></ul>
Starter does not pull round engine.	<ul style="list-style-type: none"><li>• Battery flat.</li><li>• Bad contact between cable and battery terminal.</li><li>• Lift lever for cutting unit in wrong position.</li><li>• Main fuse blown. The fuse is placed in front of the battery, under the battery cover.</li><li>• Ignition lock faulty.</li><li>• Gear shift/hydrostat pedal not in neutral.</li></ul>
Engine does not run smoothly.	<ul style="list-style-type: none"><li>• Wrong gear, too high.</li><li>• Carburettor incorrectly set.</li><li>• Air filter clogged.</li><li>• Fuel tank vent blocked.</li><li>• Ignition setting defective.</li><li>• Dirt in fuel pipe.</li><li>• Choke activated or throttle wire incorrectly adjusted</li></ul>
Engine seems to have no power.	<ul style="list-style-type: none"><li>• Air filter clogged.</li><li>• Plug defective.</li><li>• Dirt in carburettor or fuel pipe.</li><li>• Carburettor incorrectly set.</li><li>• Choke activated or throttle wire incorrectly adjusted</li></ul>
Engine overheats.	<ul style="list-style-type: none"><li>• Engine overloaded.</li><li>• Air intake or cooling flanges blocked.</li><li>• Fan damaged.</li><li>• Too little or no oil in engine.</li><li>• Ignition defective.</li><li>• Plug defective.</li></ul>
Battery does not charge.	<ul style="list-style-type: none"><li>• One or more cells faulty.</li><li>• Bad contact between battery terminals and cables.</li></ul>
Machine vibrates.	<ul style="list-style-type: none"><li>• Blades are loose.</li><li>• Engine is loose.</li><li>• Imbalance on one or more blades, resulting from damage or inferior balancing after sharpening.</li></ul>
Uneven mowing.	<ul style="list-style-type: none"><li>• Blades blunt.</li><li>• Cutting unit skew.</li><li>• Long or wet grass.</li><li>• Grass blockage under hood.</li><li>• Different tyre pressures on right and left sides.</li><li>• Over-speeding.</li><li>• Drive belts slipping.</li><li>• The blade has a broken break-pin (BioClip)</li></ul>



# STORAGE

## Winter storage

At the end of the season the machine should immediately be put in order for storage, also if it is going to stand idle for more than 30 days. Fuel which is left to stand for long periods (30 days or more) can leave tacky deposits which can block the carburettor and interfere with the engine.

Fuel stabiliser is an acceptable alternative to avoid tacky deposits during storage. If alkylate petrol (Aspen) is used stabiliser is not necessary since this fuel is stable. However, one should avoid changing from standard to alkylate petrol since sensitive rubber parts can harden. Add stabiliser to the fuel in the tank or the storage container. Always use the mixing ratios indicated by the manufacturer. Run the engine for at least 10 minutes after adding the stabiliser so that it will reach the carburettor. Do not empty the fuel tank and carburettor if stabiliser has been added.

To put the machine in order for storage follow these instructions:

1. Carefully clean the machine, especially under the cutting unit. Touch-up paint damage to avoid rust.
2. Inspect the machine for worn or damaged parts and tighten loose screws and nuts.
3. Change the oil, and take care of the waste oil.
4. Empty the fuel tank. Start the engine and run it until the carburettor is emptied of fuel.
5. Remove the spark plug and pour about a table-spoon of engine oil into the cylinder. Pull round the engine to distribute the oil and screw the plug back on.
6. Grease all grease nipples, joints and axles.
7. Remove the battery. Clean it, charge it, and store it in a cool place.
8. Store the machine in a clean and dry place and cover it over for extra protection.



### WARNING!

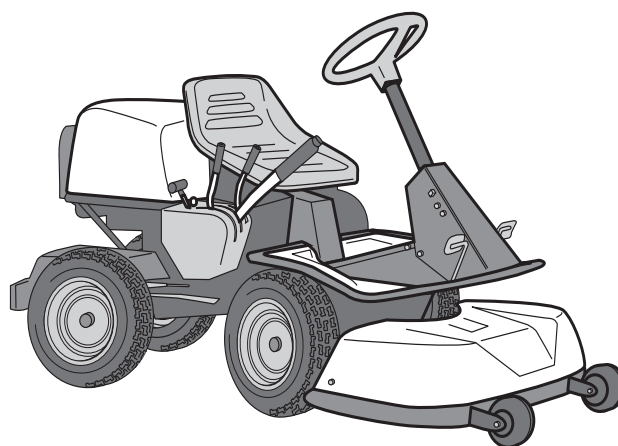
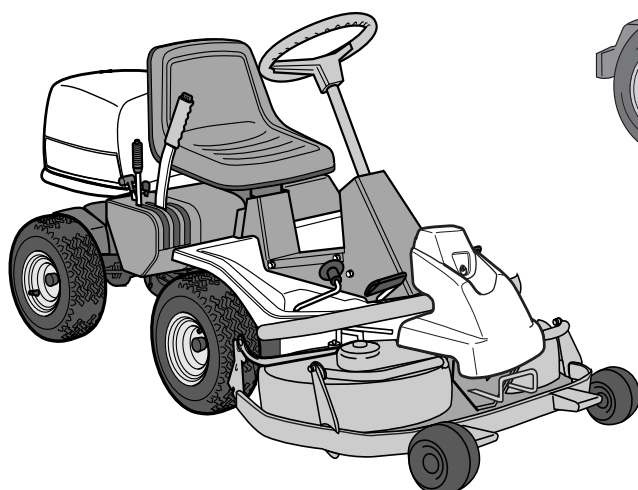
**Never place an engine with fuel in the tank indoors or in poorly ventilated areas where petrol fumes can come into contact with naked flames, sparks or pilot flames in boilers, hot water heaters, or drying cabinets, etc. It is highly inflammable and negligent usage can cause severe person injury and material damage. Drain off the fuel in an approved container outdoors and well clear of naked flames. Never use petrol for cleaning purposes. Use degreasing agents and hot water instead.**

## Service

When ordering spare parts state the purchase year, model, type, and serial number.

Always use genuine parts.

Annual inspection or trimming by an authorised service workshop is a good way of getting the best out of your machine the next season.



# TECHNICAL DATA

## Dimensions

	FR 13	FRM 13 A
Length	2000 mm	2145 mm
Width	960 mm	1050 mm
Height	1060 mm	1060 mm
Unladen weight	225 kg	245 kg including cutting unit
Wheel base	820 mm	855 mm
Track	625 mm	front 715 mm, rear 625 mm
Tyre size	16 x 6.50 x 8	16 x 6.50 x 8
Tyre pressure, front & rear	60 kPa (0.6 kp/cm <sup>2</sup> )	60 kPa (0.6 kp/cm <sup>2</sup> )
Max. gradient	15°	15°

## Engine

Manufacture	Briggs & Stratton model 28N707	Briggs & Stratton
Power	9.2/12.5 kW/h.p.	9.2/12.5 kW/h.p.
Displacement	465 cm <sup>3</sup>	465 cm <sup>3</sup>
Fuel	minimum 85 octane unleaded	minimum 85 octane unleaded
Tank volume	7 litres	7 litres
Oil	SAE 30 or SAE 10W/30 class SF-CC	SAE 30 or SAE 10W/30 class SF-CC
Oil volume	1.4 litres	1.4 litres
Start	Electric starter	Electric starter

## Electrical system

Type	12 V, negative earth	12 V, negative earth
Battery	12 V, 24 Ah	12 V, 24 Ah
Spark plug	Champion CJ8 or J8 electrode gap = 0.7–0.8 mm	Champion CJ8 or J8 electrode gap = 0.7–0.8 mm

## Transmission

Manufacture	Tuff Torq K46	Tuff Torq K46
Oil	SAE 10W/30, class SF-CC	SAE 10W/30, class SF-CC
No. of forward gears	5	-
No. of reverse gears	1	-
Speed in forward gears	0-9 km/h	0-9 km/h
Speed in reverse	0-6 km/h	0-6 km/h

## Cutting unit

Type	3-blade unit with rear ejection	2-blade unit BioClip 900 mm
Cutting width	850 mm	900 mm
Cutting height	9 pos. 40–90 mm	9 pos. 45–95 mm
Blade diameter	304 mm	410 mm

## NOISE LEVEL

100 dB(A)

100 dB(A)

We reserve the right to change technical specifications without prior notice.

Note that no legal claims are valid on the basis of information in this manual.

Use only genuine parts for repairs. The warranty is not valid if non genuine parts are used.

**When this product is worn out or no longer used it should be returned to the dealer or other appropriate body for recycling.**

## EU declaration of conformity (Only applies to Europe)

(Directive 89/392/EEC, Annex II, A)

We, **Husqvarna AB**, S-561 82 Huskvarna, Sweden, tel. +46 36-146500, declare under sole responsibility that the **rider mowers Jonsered FR 13 and FRM 13 A** from 1998's serial numbers and onwards (the year is clearly stated in plain text on the type plate with subsequent serial number), is in conformity with the following standards or other normative documents following the provisions in the COUNCIL'S DIRECTIVES:

- of June 14 1989 "relating to machinery" **89/392/EEC**, and applicable supplements.
- of March 22 1984 "relating to permitted sound power levels for lawn mowers" **84/538/EEC**, and applicable supplements.
- of May 3 1989 "relating to electromagnetic compatibility" **89/336/EEC**, and applicable supplements.

The following standards have been applied: **EN292-2, EN836.**

Huskvarna October 16, 1998



Roger Andersson, Development manager

# SERVICEJOURNAL FR 13/FRM 13 A

Work done	Date, mileage, stamp, sign
<b>Pre-delivery service</b>	
1. Top up battery with acid and recharge for four hours.	<input type="checkbox"/>
2. Fit steering wheel, seat and any optional equipment.	<input type="checkbox"/>
3. Adjust cutting unit:	<input type="checkbox"/>
Adjust the lifting springs (the "weight" of the cutting unit should be 12-15 kg). Only applies to BioClip.	<input type="checkbox"/>
Adjust cutting unit so that rear edge is about 2–4 mm higher than front edge.	<input type="checkbox"/>
Adjust cutting unit height setting so that cutting height limit is 5 mm above the frame of the unit at the lowest cutting height.	<input type="checkbox"/>
4. Check that engine has correct amount of oil.	<input type="checkbox"/>
5. Check that the right amount of oil is in the transmission.	<input type="checkbox"/>
6. Check and adjust tyre pressure (60 kPa, 0.6 bar).	<input type="checkbox"/>
7. Connect battery.	<input type="checkbox"/>
8. Fill with fuel and start engine.	<input type="checkbox"/>
9. Check that machine does not move in neutral.	<input type="checkbox"/>
10. Check:	
Forward drive.	<input type="checkbox"/>
Reverse drive.	<input type="checkbox"/>
Operation of blades.	<input type="checkbox"/>
Seat safety switch.	<input type="checkbox"/>
Lift lever safety switch.	<input type="checkbox"/>
Safety switch for hydrostatic pedals/neutral setting.	<input type="checkbox"/>
11. Check engine revs 2 950 rpm.	<input type="checkbox"/>
12. Tell customer about:	Pre-delivery service carried out.
Need and benefits of following the service schedule.	No outstanding problems.
The need and advantages of leaving the machine for regular service.	Certified:
The effects of maintenance on the machine's second hand value.	
Range of applications for BioClip.	
13. Complete proof of sale, etc.	
<b>After first 5 hours</b>	
1. Change engine oil.	<input type="checkbox"/>

## SERVICEJOURNAL

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## SERVICEJOURNAL

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**.Jonsered**

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