

User manual

STENSBALLE / NESBO sweepers

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GMR maskiner a/s

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NESBO A/S

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www.nesbo.dk



STENSBALLE/NESBO manufactures quality machines for professional users.

The warranty period on our machines is 12 months from the purchase date, and covers any material or manufacturing defects.

Any parts that have suffered damage as a result of material and production faults will be replaced by GMR maskiner a/s at no extra charge.

Consequential damage and wearing parts will not be replaced.

PLEASE NOTE!

To maintain warranty, the Dealer is obliged to fill in and return the "Registration for use" below to GMR maskiner a/s, not later than one month after delivery to the end user.

A condition for any processing of claims is that this "Registration for use" is submitted timely.

This can be done via our website www.gmr.dk

or by completing and scanning/submitting the coupon below to:

GMR maskiner a/s
Saturnvej 17
8700 Horsens, Denmark
stensballe@gmr.dk

Registration of use:

Machine number	<input type="text"/>
Model	<input type="text"/>
Delivery date	<input type="text"/>
End user	<input type="text"/>
Address	<input type="text"/>
Dealer	<input type="text"/>

EC declaration of conformity

Manufacturer: GMR maskiner a/s
Saturnvej 17, 8700 Horsens, Denmark
Tel.: +45 7564 3611

hereby declares that

machine: STENSBALLE / NESBO
machine no.: _____
date: _____

is in conformity with the applicable requirements of:

Order of 10 June 2013 implementing Directive 2006/42/EC of the European Parliament and of the Council as amended, as well as the EMC Directive 2014/30EU as amended.

Standards applied:

DS/EN ISO 12100:2 011 Safety of machinery - General principles for design
- Risk assessment and risk reduction.

Signature:



Niels Kirkegaard
CEO

Introduction

For safety reasons and to take full advantage of the sweeper, you should read the user manual before starting to use the machine. You can find detailed technical information about each type and spare parts on www.gmr.dk.

Contact your dealer if in doubt.

Use only original STENSBALLE / NESBO spare parts in your sweeper. To order original parts, contact your dealer or GMR maskiner a/s directly.

Safety warnings



WARNING

Risk of personal injury or death

A technical procedure or similar which may be hazardous and result in personal injury or death.



CAUTION

Damage to machinery or accessories

A technical procedure or similar which may result in damage to the machinery or accessories.



NOTE

Important information

A very important technical procedure or similar.

Never allow

- Unauthorized persons to use the machine unattended.
- A PTO shaft to be used without a CE mark.
- The machine to be used without factory installed safety guards.
- People to stand close to the machine while it is in use.
- Repair or maintenance work to be carried out while the tractor is in operation.

Always make sure

- To maintain the machine in accordance with the manufacturer's instructions.
- To check that nuts and bolts are tightened. To perform a check after 15 hours of operation.
- That the user is familiar with the tractor.
- That assistants and others do not approach the machine during operation.
- To stop the tractor and disconnect the tractor's PTO before carrying out maintenance or repairs.
- That the user is familiar with the machine's hydraulic functions.
- That the tractor PTO never runs at less than 90% of the sweeper's rated PTO speed.
- When welding is needed on the sweeper (e.g. repair or add-ons on the metal parts on the sweeper) always disconnect the electrical, hydraulic, and mechanical connection to the tractor. When not performed in this manner, it can cause significant damage to the electrical components of both the tractor and the sweeper.

Type: FF/LA, FF/LSA,
FF/MA, FF/MSA, FF/MSFA,
FF/PA, FF/SP, FF/SPS

Mechanical sweepers can be front mounted on most tractors with a 3-point hitch or A-frame front mounting system.

Type: HF/LF, HF/MF, HF/MA,
HF/PA, HF/SP

Hydraulic sweepers can be front mounted on most tractors with a 3-point hitch or A-frame front mounting system.

Type: EF/PN

Electric sweepers can be front mounted on most tractors with 3-point hitch or A-frame front mounting system.
For all types, the tractor is required to have a front-mounted ePTO (Electric Power Take Off) socket to operate the sweeper.

Light weight tractors

Type: FF/LA, FF/LSA and
HF/LF

Designed for lightweight tractors with a min. output of 10 kW on a mechanical/hydraulic PTO shaft.



**CAUTION
Risk of overloading**

Please note that tractors with higher power than 25 kW can overload sweeper types FF/LA, FF/LSA and HF/LF.

Light/medium weight tractors

Type: FF/MA, FF/MSA,
FF/MSFA and HF/MF

Designed for tractors with a min. output of 15 kW on a mechanical/hydraulic PTO shaft.



**CAUTION
Risk of overloading**

Please note that tractors with higher power than 35 kW can overload sweeper types FF/MA, FF/MSA, HF/MA and HF/MF.

Medium weight tractors

Type: FF/PA and HF/PA

Designed for tractors with a min. output of 20 kW on a mechanical/hydraulic PTO shaft.

Heavy weight tractors

Type: FF/SP, FF/SPS
and HF/SP

Designed for tractors with a min. output of 25 kW on a mechanical/hydraulic PTO shaft.



**CAUTION
Risk of overloading**

Please note that tractors with higher power than 55 kW can overload sweeper types FF/SP, FF/SPS and HF/SP.

kW	FF/ LA	FF/ LSA	HF/ LF	FF/ MA	FF/ MSA	FF/ MSFA	HF/ MA	HF/ MF	FF/ SP	FF/ SPS	HF/ SP
Min. 10 Max. 25	x	x	x								
Min. 15 Max. 35				x	x	x	x	x			
Min. 20 Max. 55									x	x	x

All sweeper types require that the tractor is equipped with twin hydraulic connections on the front to power the sweeper's swing function.

Sweeper types HF/LF, HF/MA, HF/MF, HF/PA and HF/SP require that the tractor has front mounted hydraulic operating connections. The operating lever must be able to be locked in the operating position.

Output:

- 10 kW for HR/LF
- 15 kW for HF/MA and HF/MF
- 20 kW for HF/PA
- 25 kW for HF/SP

If using a tractor with higher power than indicated above, extra caution should be exercised.

See section "Using the sweeper", page 21.

Mounting additional equipment could increase the technical demands on the tractor.

Noise

Sweepers produced by GMR maskiner are extremely quiet. The noise level depends on the type of tractor and is typically between 74 and 85 dB (A). The noise level is indicated in the tractor's user manual.

Hearing protectors

If the tractor operator is disturbed by noise, we recommend the use of hearing protectors or similar.

Handling

All sweepers are equipped with 2 support legs. When the support legs are fitted, the sweeper remains in a stable position when disconnected. Use a crane to move, transport or carry out maintenance.

If the sweeper is transported with a truck, it must be on a pallet and securely fastened, either with shrink wrap or straps.

The crane must always lift in the center of the main beam.

See Fig. 1.



Fig. 1



CAUTION

Risk of damage to brushes/brush rolls

Make sure that the support legs are fitted when the machine is being lifted with the crane.



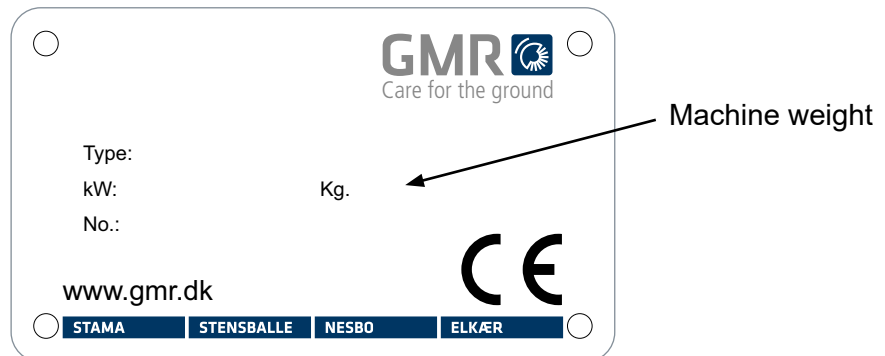
WARNING

Safety zone

When lifting the machine, everyone must keep a distance of min. 3 metres from the machine as there may be unintended movements.

If the machine is lifted by crane for maintenance, the sweeper must be safely supported before work is carried out under the machine.

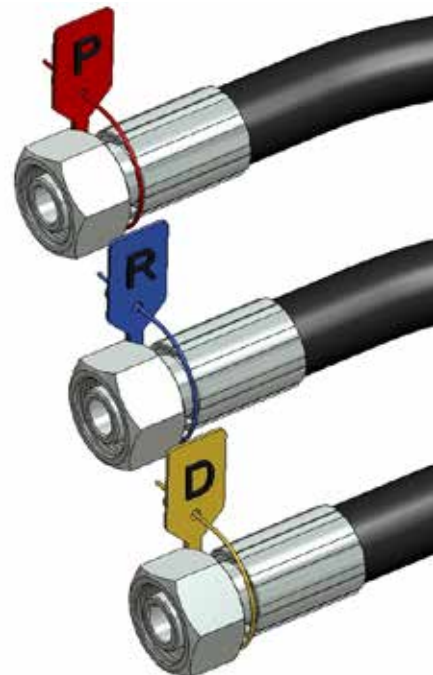
Type plate



Labelling of hoses

Hydraulic hoses on STENSBALLE/NESBO brushes are labelled at the factory with colours and letter designations.

- Red = P (Pressure)
- Blue = T (Tank)
- Yellow = D (Drain)



Before mounting

The machine is delivered assembled and tested from the factory. Before mounting the machine, proceed as follows:

- Ensure that the sweeper is standing on a firm and level surface.
- Remove the plastic protection. Remove the PTO shaft on mechanical models.
- Check that the rpm and direction stated on the main frame is correct for the tractor in question. If not, you must contact your dealer!
- The machine is filled with oil at the factory. Check the oil level, which must be in the middle of the gears. If the oil level is too low, top up with 80W-90 gear oil.
- For electric sweepers, check that the machine's ePTO plug matches the tractor's socket.

To fit the sweeper on the tractor, manoeuvre the tractor so that it is at right angles to the machine.

NOTE: Remember to ensure that the sweeper uses the same coupling system as your tractor.

A-frame system

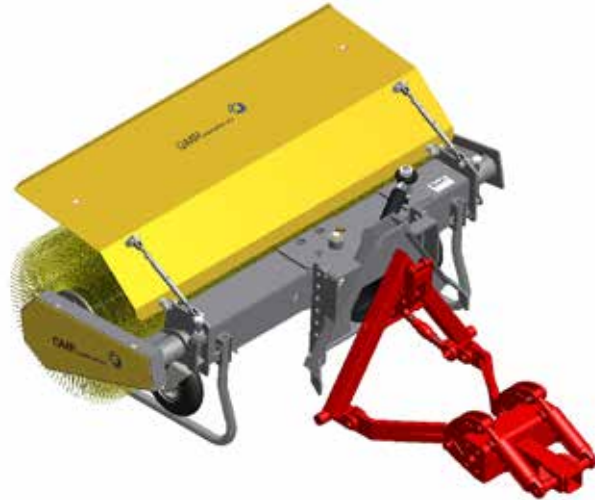
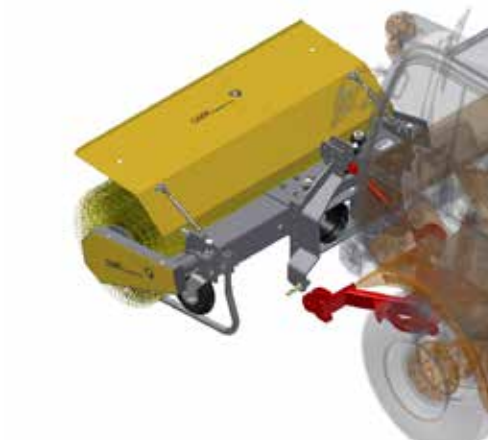


Fig. 2

- Lower the male section of the tractor and drive it under the female section. See Fig. 2.
- Lift the male section and click the locking system in place.
- Lift the machine slightly.
- Shut off the tractor engine.
- Remove the support legs or turn them so they are located over the brush guard.
- Fit the PTO shaft. Both forks must click into place. Attach the safety chains (mechanical machines only).
- Connect the hydraulic hoses, which drive the sweeper, to the tractor using the snap couplings (hydraulic machines only). Check the snap couplings for impurities. Clean if necessary.
- Connect the ePTO connector. Remember to make sure the connector is pushed all the way to the bottom.
- Connect the hydraulic hoses, which drive the sweeper's swing function, to the tractor using the snap couplings.
- Check the snap couplings for impurities. Clean if necessary.

3-point tractor hitch



- Lower the hitch arms.
- Drive at right angles up to the machine.
- Shut off the tractor engine.
- Connect the hitch arms to the machine.
- Connect the top bar to the sweeper.
- Connect the PTO to the tractor. Check that the locking pin in both forks clicks into place and fit the safety chains (mechanical machines only).
- Connect the ePTO connector to the tractor. Remember to make sure the plug is pushed all the way down. (Electric machines only)
- Connect the hydraulic hoses, which drive the sweeper, to the tractor using the snap couplings (hydraulic machines only).



CAUTION

Risk of engine explosion

Check that the hydraulic couplings are of the correct type and that they are correctly engaged. Incorrect connection can cause the engine to explode.

- Connect the hydraulic hoses, which drive the sweeper's swing function, to the tractor using the snap couplings.



WARNING

Safety zone

Never manoeuvre the tractor hitch if there are people in the vicinity.

Mounting on the tractor

GB



CAUTION

Damage to machinery or attachments

Follow the instructions in the PTO shaft user manual.
If you are in any doubt, contact the dealer.



CAUTION

Hydraulic hoses

Take care to connect the hydraulic hoses to the tractor so that they cannot come into contact with moving parts.



CAUTION

Damage to machinery or components

Always remember to turn off the tractor before connecting or disconnecting the ePTO plug from the tractor socket. Follow the ePTO plug's user manual.
In case of doubt, contact your dealer.



NOTE

Shortening the hoses

The hydraulic hoses are supplied in standard lengths.
If the hoses need to be shortened, this should be done by the dealer.

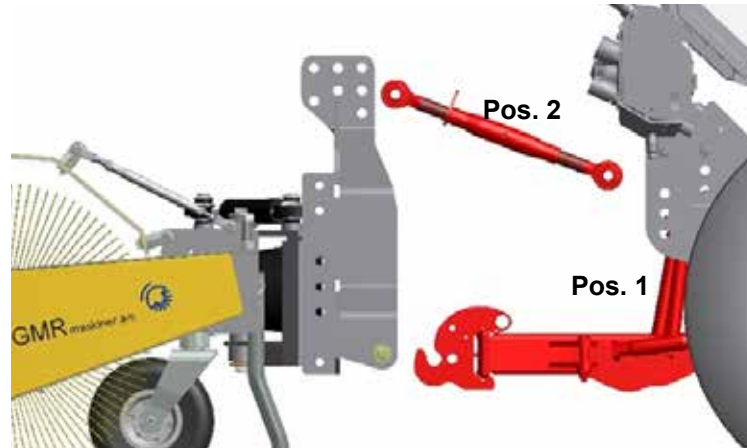
Other hitch systems

If the hitch system on your tractor is different to that described in the user manual, follow the tractor user manual to mount the sweeper.

If the sweeper is not compatible with your tractor, please contact the dealer.

Setting up the machine

Top bar position



In order to lift the machine properly, the top bar must be fitted so that the top bar eye on the tractor (pos. 1) is mounted lower than the top bar eye on the sweeper (pos. 2).

If this is not possible, you can order a special bracket to raise the top point of the sweeper. The bracket can be ordered from your dealer.



NOTE

Risk of unnecessary wear

If the top bar is mounted differently than described, the sweeper will tip forward when raised/lowered, resulting in unnecessary wear on the PTO shaft.

Adjusting the top bar

Adjust the top bar to achieve best sweeping results and minimum wear on the brushes. The pivot joint between the mounting frame and main beam must be positioned vertically in the working position. The pivot joint moves when the sweeper is swung from one side to the other.

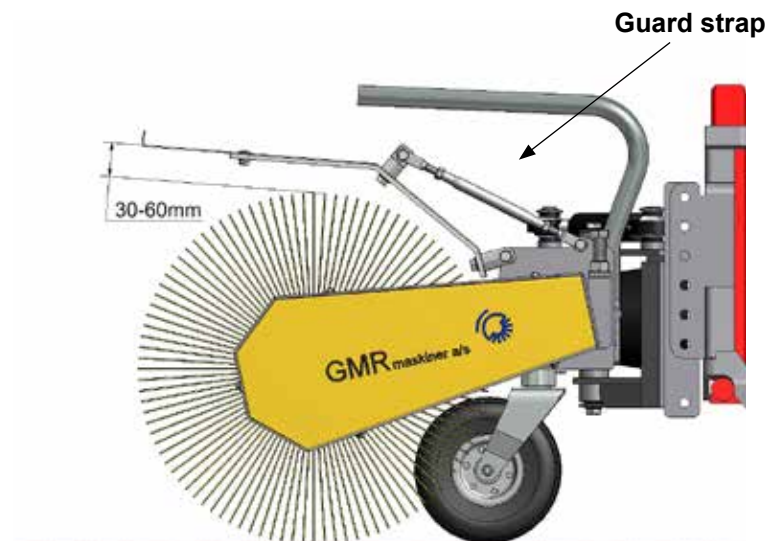


Controlling the swing function

- Start the tractor.
- Swing the sweeper from side to side. If this is the first time that the sweeper has been fitted, swing the machine 4-6 times to empty any air pockets from the cylinder and hoses.
- Make sure that the machine swings freely and unhindered.

Adjusting the brush guard

The brush guard is set at the factory to a distance of 30-60 mm between the brush and guard. If the brushes begin to wear, adjust the guard straps to maintain this distance.

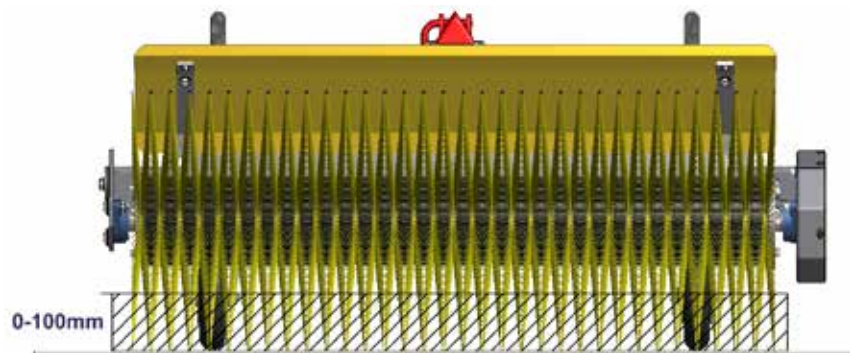


Adjusting brush pressure

The brush pressure determines how much force the machine uses to sweep.

In the following section, the term “brush line” is used. This is the line which is visible when the brushes are rotating. The brush line is located 0-100 mm above the ground and can be seen across the entire brush width.

The brush line marks the point at which the brushes have contact with the ground. The brushes bend backwards and then swing back into place as they lose contact with the ground.



Front view of brush roll

Adjusting brush pressure (Point 1):

Type: FF/LA, FF/LSA,
FF/MA, HF/MA, FF/PA, HF/
PA, FF/SP, FF/SPS and
HF/SP

Type: HF/LF, HF/MF, FF/
MSFA and EF/PN

Adjust brush pressure via the two bolts mounted on the right and left side panel respectively (see Figure “Bolt used to adjust brush pressure“ on page 19).

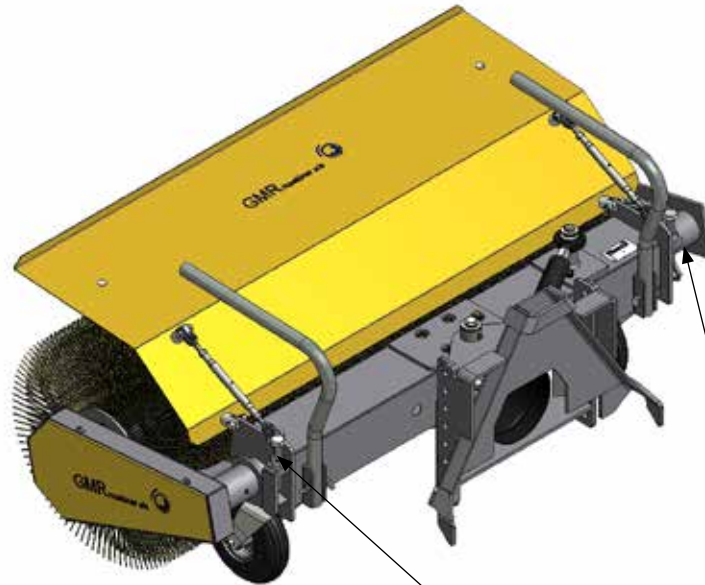
To adjust brush pressure, adjust the spindle handles on the support wheels.
Set the brush pressure so that the brushes almost lose contact with the ground.



CAUTION

Damage to brushes, wheel and wheel fork

Never use the top bar to adjust brush pressure. If you do, the turning point will no longer be vertical, causing damage to the brushes, wheel and wheel fork due to incorrect loading.



Bolt used to adjust brush pressure

**Adjusting brush pressure
(Point 2):**

When the brush pressure is set, start the tractor.

- Activate the handbrake.
- Connect the PTO connection.
- Increase the engine speed to nominal rpm (machine is still in the middle position).

**Adjusting brush pressure
(Point 3):**

The operator stays in the tractor and an assistant moves in front of the machine. Maintain a distance of at least 5 metres from the machine.



**WARNING
Brushes**

Avoid all physical contact with the sweeper brushes.

**Adjusting brush pressure
(Point 4):**

- Lower the brush line (see “Indstilling af børstetryk”, page 18).
 - Check that the brush line is the same across the machine width. If this is not the case, the two bolts (Point 1) are not aligned.
- Repeat points 1 to 4.

**Adjusting brush pressure
(Point 5):**

The tractor operator swings the sweeper to one side. Check the brush line again. If it is not the same across the entire machine width, the pivot joint is not vertical. The top bar should be adjusted.

Repeat points 1-5.

The closer the brush line is to the ground, the lower the brush pressure.



CAUTION

Damage to brush and machine parts

Brush pressure must not be set so hard that the brush line is more than 100 mm above the ground.



WARNING

Safety zone

When releasing brush pressure once the machine is operating, always maintain a safe distance of min. 5 m from the machine.

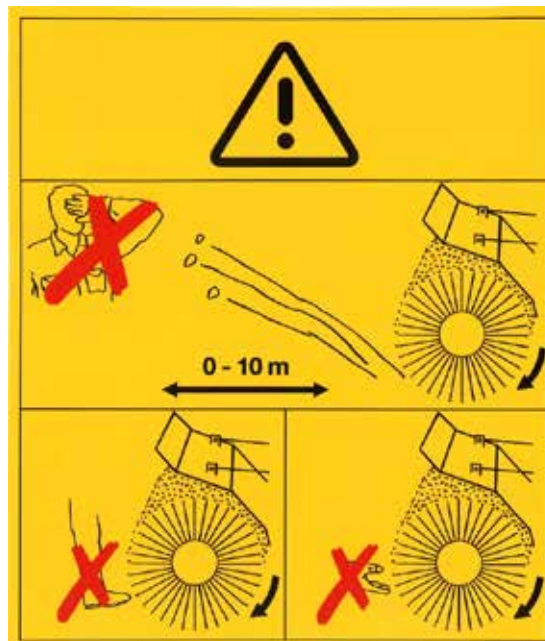
Use

STENSBALLE/NESBO sweepers are used on asphalted roads, paths, pavements and other firm surfaces. The machine can remove everything from dust particles to small stones and snow.



WARNING
Safety zone

Never step in front of the sweeper when it is operating in a forward direction. Keep a safe distance of min. 10 m, as indicated on the warning sign.



NOTE
Safety zone

Stop the sweeper immediately if a person moves into the danger area. The safety zone of min. 10 m must be maintained.

Start-up

- Run the tractor at idle speed.
- Carefully lower the sweeper to the ground. Make sure that the tractor's front hitch is engaged in the hold position.
- Engage the PTO lever.
- Increase the PTO speed to the nominal rpm.



CAUTION

Damage to machinery or attachments

Never allow the machine to drop heavily to the ground. In the long term, this will damage the machine.

If the tractor does not have a hold position/function, or if the operator fails to engage hold position/function when operating the machine, the machine may be damaged due to incorrect transfer of weight from the tractor.

If the PTO rpm drops below 90% of the nominal speed, the machine could overload.

Operating speed

The operating speed is determined by the quantity and type of material that is to be swept. As a rule, the operator must drive at a speed which ensures that the machine sweeps effectively.



NOTE

Operating speed

Determined by gear selection – and not by increasing/ decreasing the rpm of the engine.

Vibration

Mechanical sweepers are equipped with a PTO shaft.

Depending on the type of tractor and front hitch system used, the distance between the PTO connection and the ground may vary. Please make sure that the tractor is suitable for the sweeper.

Please be aware that there may be situations where the two universal joints on the PTO shaft are not at the same angle. This will typically occur when the sweeper is swung to one side.

If the brushes rotate very unevenly and the sweeper makes a lot of noise during operation, this indicates that the PTO axle is overloaded due to the lack of alignment between the 2 universal joints and/or too sharp turns.

Contact your dealer for more information.



NOTE

Unnecessary wear on the PTO shaft

If the PTO axle instructions are not observed, the machine may vibrate causing unnecessary wear on the PTO axle and other parts.

Ejecting material

When using the hydraulic swing function, material may be ejected to the right or left.

Please make sure that the indicated rpm is maintained and that the operating speed is always controlled so that the machine sweeps the ground cleanly.



CAUTION

Damage to machinery or attachments

When sweeping snow or large quantities of heavy material, you must regulate operating speed so that the machine sweeps the material to one side – rather than pushes it ahead of the brush roll. If material accumulates ahead of the machine, the gears will overload, causing serious damage to the machine.

If rope, steel wire, etc. becomes entangled in the brushes, stop the machine immediately and remove the items.

**Troubleshooting
hydraulic and mechanical
breakdowns**

In the even of a functional breakdown, stop the machine immediately. Disconnect the mechanical or hydraulic PTO/ePTO connection and bring all hydraulic control handles to the neutral position. Stop the tractor before leaving the cabin.

**The potential results of
overloading could be:**

Type: FF/LA, FF/LSA, FF/MA, FF/MSA, FF/MSFA, FF/PA, FF/SP and FF/SPS

Chain rupture and destruction of the chain wheel, gear, PTO shaft or the parallel key connection between these components.

Type: HF/MA, HF/PA and HF/SP

Chain rupture, destruction of the chain wheel, hydraulic hoses, hydraulic motor or the parallel key connection between these components.

Type: HF/LF and HF/MF

Hydraulic motor failure. Faulty hoses or a broken parallel key connection between the motor and brush roll carrier.

Type: EF/PN

Destruction of gear, electrical motor, steering or broken key connection between gear and brush roller carrier.

On hydraulic machines, the snap coupling connections may have become loose.

A failure of the swing function may be caused by leakage in the hydraulic cylinder and hoses, mechanical blocking of the swing or by the snap coupling connections becoming loose.

Finally, the tractor's mechanical, hydraulic or electrical functions may be defective. In such situations, the dealer should be contacted immediately



WARNING

Stop the tractor before leaving it

During repair and maintenance work, disengage the PTO connection, set the hydraulic control handle into neutral, and stop the tractor before leaving the cabin.

If the sweeper is removed, place it on a flat and firm surface.

- Swing the sweeper to the centre position and stop the tractor.
Note: The sweeper must be lifted off the ground.
- Turn the supporting legs so that the feet are positioned under the brushes.
- Carefully lower the sweeper to the ground.
- Detach the PTO axle and safety chain (mechanical machines only).



CAUTION
Chain attachment

When not in use, the PTO axle chain must be attached to the sweeper (the detached end only).



CAUTION
Disconnecting the ePTO plug

The tractor must always be switched off before disconnecting the ePTO plug, as this can damage the electrical system in the machine and tractor.

- Remove the hydraulic hoses used to pull the sweeper.
- Fit the dust caps.
- Lay the hoses over the sweeper (Hydraulic machines only).
- Disconnect the ePTO plug and insert it into the holder on the machine (Electrical machines only).
- Detach the hydraulic hoses, which drive the sweeper's swing function, from the tractor.
- Fit the dust caps.
- Lay the hoses across the sweeper.

A-frame system

- Open the locking system to release the male section from the female section.
- Start the tractor and lower the hitch to release the male section.
- Reverse the tractor free of the machine.

3-point hitch

- Disconnect the top bar.
- Remove the pins from the eyes on the hitch arms so they can be disconnected from the machine.
- Start the tractor and reverse it free of the machine.



WARNING
Safety zone

Never use the tractor hitch if there are people in the vicinity. This may result in fatal injury.



Support legs turned under the brushes.



WARNING
Fit the support legs

To ensure that the machine remains stable after being disconnected from the tractor, fit the support legs with the feet turned under the brushes.
If the sweeper is unstable, there is a risk of injury.

If the sweeper is taken out of operation for a long period, it should be cleaned to remove dirt and other debris.

Mechanical sweeper models

Check gear oil level and top up if necessary (see the following section “Maintenance”).

Hydraulic sweeper models

Clean hydraulic hose snap couplings very carefully. Make sure that these couplings are protected from moisture. Store the sweeper where the humidity is low and the machine will not be exposed to rain and snow.

Electric sweeper models

Clean dirt and debris. Do not use a high-pressure cleaner as it can damage electrical components. Store the sweeper where humidity is low, and the machine is not exposed to rain and snow.

Maintenance

Introduction

Before carrying out any maintenance, it is important that the operator knows precisely what to lubricate, where and how often to check the machine, and which parts to replace and when.

Using the sweeper will throw up dirt and dust which will form a layer on the machine. Always observe the specified maintenance instructions.

Mechanical sweeper models

Type: FF/LA, FF/LSA, FF/MA, FF/MSA, FF/MSFA, FF/PA, FF/SP and FF/SPS

The PTO shaft must be lubricated according to the PTO shaft user manual.



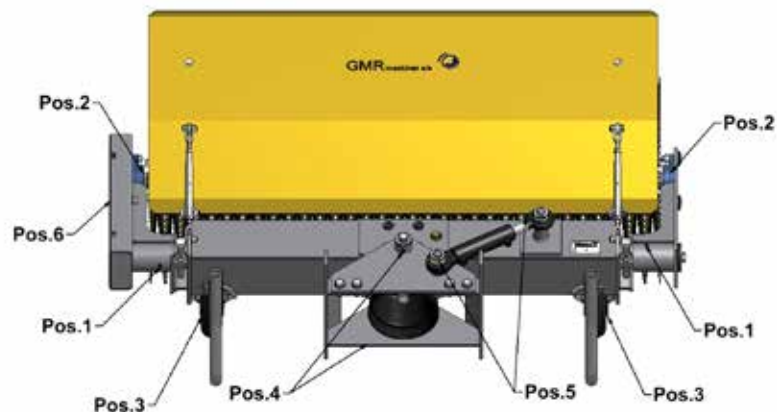
**NOTE
 Lubrication**

It is the experience of GMR maskiner that the PTO shaft and therefore the machine itself will have a longer service life if it is lubricated after every 8 hours of operation.

Greasing

At 40-hour intervals, grease the following parts:

- brush roll support arms Pos. 1
- brush roll flange bearing Pos. 2
- wheel hubs Pos. 3
- mounting frame rotary bushings Pos. 4
- swing cylinder bearing bushings Pos. 5
- chain Pos. 6



For MSFA models grease the flange bearing from within the chain housing (Pos. 6).

For MSFA models grease the wheels as shown for hydraulic models HF/LF and HF/MF on page 29.

Angular gear

The angular gear is half filled with oil at the factory. According to the gear manufacturer, the first oil change should be performed after 50 working hours and subsequently at intervals of 500-800 hours, but at least once per year. To prevent sedimentation, we recommend that you change the oil while the motor is warm. We recommend using SAE 90 EP oil. If necessary, use an oil syphon to remove the used oil. Oil syphons can be bought from GMR maskiner.



Oil syphons

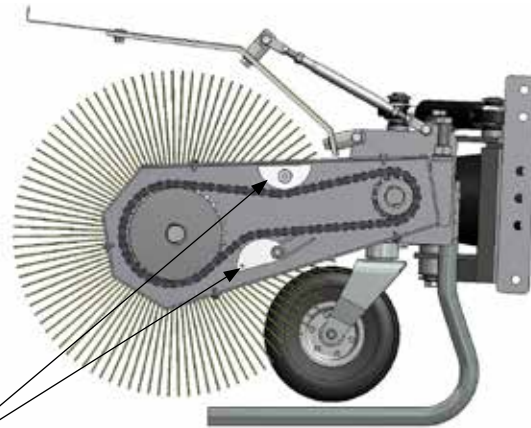


NOTE
Oil spills

At start-up and after an oil change, oil may spill from the bleed plug on the gears.

Chain

GMR's unique, self-adjusting chain tensioner system means you will never have to tighten the chain.



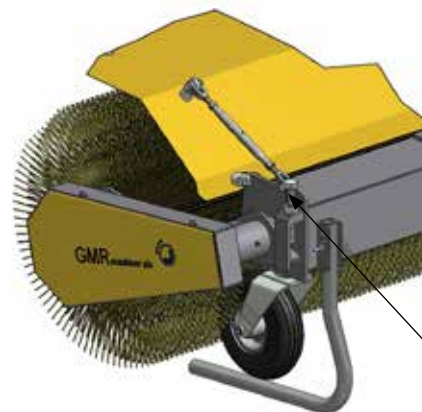
Fibre blocks

Chain tensioner

Check for wear on the fibre blocks in the chain tensioner system after every 40 hours of operation. When the fibre blocks are worn, they must be replaced.

Support arm adjusting screws

Prevent rust and corrosion by cleaning and lubricating the adjusting screws with a thin layer of grease.



Adjusting screw



WARNING

Oil and grease containers

Grease and oil can be hazardous to health. Observe the safety instructions on the oil and grease containers.

Hydraulic sweeper models

Type: HF/MA, HF/PA and HF/SP

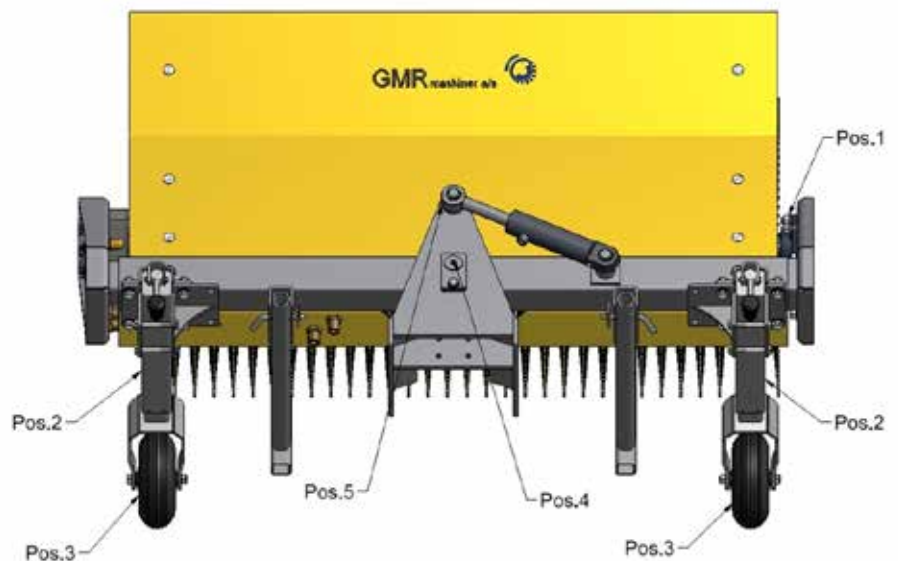
The maintenance procedure for these machines is the same as for mechanical machines, except for the fact that hydraulic machines have no PTO axle and no angular gear. A maintenance-free hydraulic motor is fitted instead.

Type: HF/LF and HF/MF

Maintenance of the following is required:

- | | |
|-----------------------------------|--------|
| • brush roll flange bearings | Pos. 1 |
| • support wheel spindles | Pos. 2 |
| • wheel hubs | Pos. 3 |
| • mounting frame rotary bushings | Pos. 4 |
| • swing cylinder bearing bushings | Pos. 5 |

Grease the above after 40 operating hours.



Electrical sweeper models

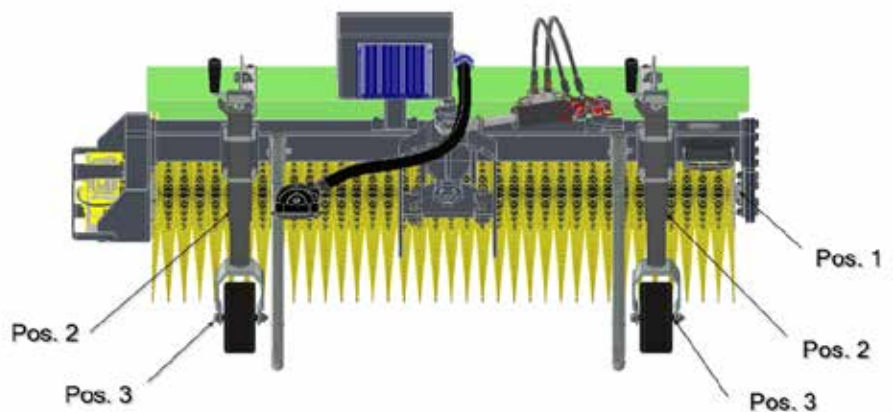
Type: EF/PN

The maintenance of these types is the same as described for mechanically driven machines – only there is no PTO shaft and bevel gear. Instead, a maintenance-free electrical motor is fitted. Clean with water after operating in salt conditions. After cleaning store in a dry environment.

Maintenance of the following is required:

- brush roll flange bearings Pos. 1
- support wheel spindles Pos. 2
- wheel hubs Pos. 3

Grease the above after 40 operating hours.



Support arm adjusting screws

Prevent rust and corrosion by cleaning and lubricating the adjusting screws with a thin layer of grease.

Type: HF/LF, HF/MF, HF/MA, HF/MP and HF/SP

Hydraulic hoses must be replaced when there are signs of:

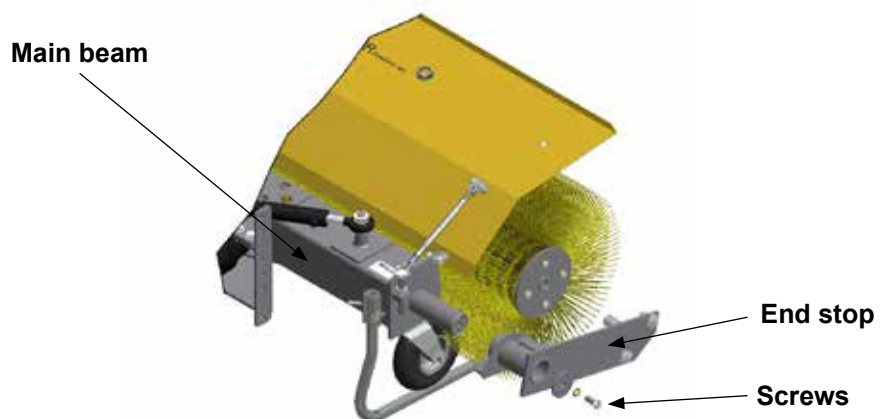
- leaks in hose and rubber material
- cracks in rubber material

Snap couplings must be cleaned regularly to remove dust, sand, soil and other debris. Fit the dust caps.

Before storage, the couplings must be lubricated with a thin film of oil. Always store the machine (and therefore its snap couplings) in a dry place, where air humidity is low.

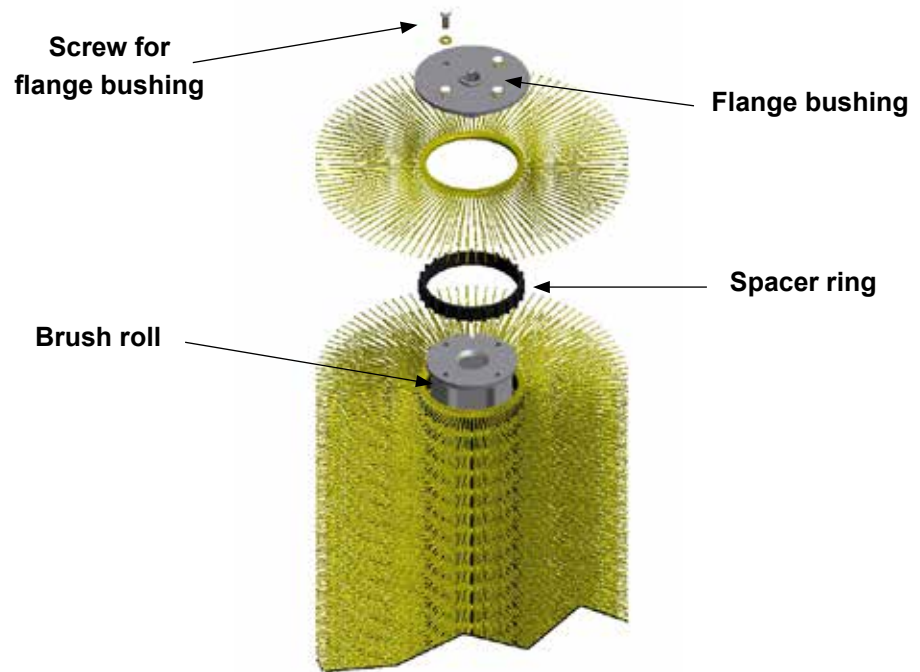
Replacing brushes

As the brush roll is suspended on two spline shafts, replacing the brushes is very easy.



- Remove the retaining screw(s) that secures the end stop for the right side panel. For HR/LF, HF/MF and EF/PN type sweepers, remove the bolt that secures the right side panel to the main beam then pull the side panel away from the main beam.
- Pull the side panel away from the main beam and the brush roll and place it to one side.

The brush roll can now be removed from the axle pin on the left side panel.



- Up-end the brush roll and remove the screws which attach the flange bushing to the brush roll.
- Remove the flange bushing.
- Remove the worn brushes and spacer rings.
NOTE: The spacer rings can usually be reused.
- Install the new brushes with spacer rings. Start with one brush. The brushes are equipped with a carrier pin on the inner ring. This must be moved a 1/4 turn on the brush roll for each attached brush section. Otherwise there will be an imbalance in the brush roll, the machine will “jump”, and the brushes will wear on one side.

Fit the flange bushing and tighten it diagonally. Check that the carrier pin on the last brush section is not jammed between the brush roll and the flange bushing but engages with the notch on the brush roll.

Before mounting the brush roll, clean the spline shafts and spline bushings and lubricate with grease.

The safety guards must protect the user against contact with moving parts and ejected material. Safety guards must not be removed under any circumstance. In the event of a fault, the safety guards must be replaced/repared.

Brush guard

STENSBALLE/NESBO sweepers are fitted with a protective brush guard over the brushes to protect the operator from ejected objects, to ensure operator visibility while working and to direct ejected material away from the machine.



WARNING

Never remove the guards

Safety guards must not be removed under any circumstance. Operating the machine without safety guards is irresponsible and may cause serious personal injury.

Chain guard

The purpose of the chain guard is to prevent physical contact with the chain during operation and to protect the chain itself from debris.



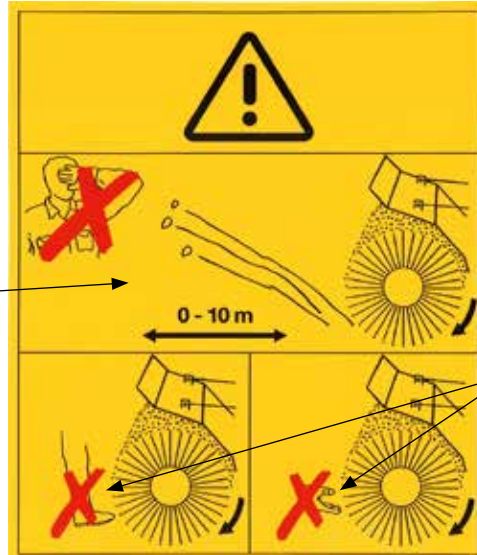
WARNING

Never remove the guards

Safety guards must not be removed under any circumstance. Operating the machine without safety guards is irresponsible and may cause serious personal injury.

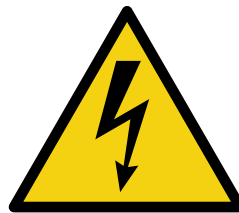
Warning signs

Danger zone of min. 10 m in front of the brushes. Within this distance there is a risk of ejected stones and other objects.

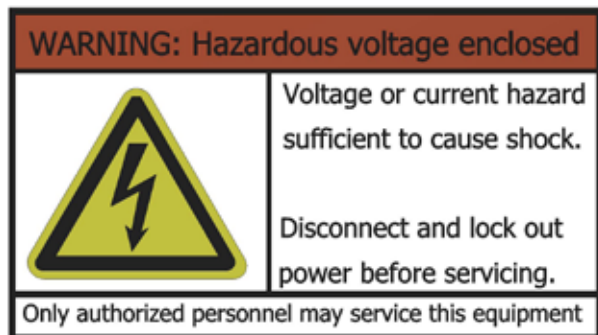


Brushes must not be touched during operation.

Hazardous voltage:
 (Placed on the motor)



Warning hazardous voltage included, disconnect before servicing.
 (Placed on the inverter-box)

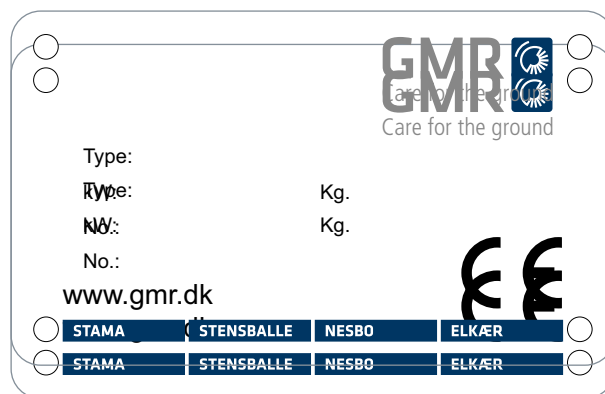


If the warning sign falls off the machine, it must be replaced. A new warning sign can be ordered from GMR or from the dealer.

Type plate

The machine is equipped with a type plate with an engraved machine number. The first two digits of the machine number indicate the year of manufacture. The machine number is unique to the particular machine, and GMR maskiner a/s will always be able to refer back to that machine if the number is quoted.

This plate also states the weight of the machine in kg and its power requirement in kW.



CE labelling

The label indicates that the machine complies with the EC Machinery Directive, the year of manufacture and the manufacturer's website.

Service

It is the dealer's responsibility to deliver the machine (and assemble if required), to start it on delivery or first use, and to instruct the operator about the use and maintenance of the machine (including tightening nuts and bolts).

The dealer is also obliged to make sure that the user manual and spare parts list is delivered to the customer and that the registration for use is completed correctly and sent to GMR maskiner a/s no later than 1 month after delivery to the user. (See page 3)

Claims

The warranty period on GMR machines is 12 months from the purchase date, and covers any material or manufacturing defects. These parts will be replaced by GMR maskiner a/s free of charge. Consequential damage and wear and tear will not be replaced.

Any components which are not manufactured by GMR maskiner a/s are included under the terms of the warranty to the extent authorised by the supplier of the parts in question.

GMR maskiner a/s reserves the right to assign a claim of this kind to the relevant supplier and not to reach a decision until the relevant supplier has responded.

The following must be observed when working on a claim:

- report the claim to GMR maskiner before the repair is started
- agree a time period with GMR maskiner for qualified technicians to carry out the repair
- any labour costs will only be approved at a fixed net price.

If GMR maskiner a/s has not authorised repair work in advance, any invoice submitted for repair work will not be approved.

At GMR maskiner a/s' request, before the claim can finally be handled, any parts that were replaced must be sent carriage paid to the factory.

GMR maskiner a/s retains the exclusive right to determine the extent to which a part shall be replaced or repaired.

The warranty does not cover:

- normal wear and tear or damage which has resulted from inadequate maintenance.
- damage caused by collision.
- non-compliance with the product's technical specifications or if the product is used for a purpose other than that described in the ser manual.

If the product is altered or if non-original spare parts are used, all rights under the warranty will be rendered void.

The purchaser does not have the right to require that design changes on future models are implemented in a pre-existing machine.

**In the event
of a complaint**

Complaints must be registered directly with GMR maskiner a/s. Complete a complaint report, stating the machine type, production number and date of its delivery to the customer, and send it to us. This is done via the dealer login on our website www.gmr.dk. If questions arise about claims on imported machines, we reserve the right to present the claim to the manufacturer before making any decision about whether the claim can be accepted.

Our machinery is subject to the EC Machinery Directive and quality assured within the European Union. We make every effort to comply with these requirements and do our utmost to supply high quality machinery.

Horsens, 01.06.2017
GMR maskiner a/s



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