



MULCHING MOWER MASTER SERIES USER MANUAL



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TRANSLATION OF THE ORIGINAL MANUAL

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1. GENERAL INFORMATION

1.1 Introduction

MASTER mulchers are primarily designed to mow grass, weeds, and light undergrowth.

The mulchers are only suitable for tractors with a power take-off speed of 540 rpm.

The mulcher is designed for attachment to Category I tractor three-point mounts, but can also be operated on Cat. II by means of adapter sleeves.

1.2 Symbols

This brochure contains three graphical safety symbols highlighting the level of danger or important information:



WARNING

Draws the attention of the operator to situations where the safety of people may be at risk.



CAUTION

Draws attention to situations where the efficiency of the machine may be compromised but not the safety of people.




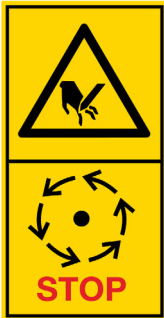







NOTE






Highlights general information that does not endanger the safety of people or the efficiency of parts of the machine.



2. SAFETY LABELS

The safety labels and information on the machine, listed below, must be read and followed. Failure to do so may result in death or serious injury. Make sure that the sticky labels are always present and legible. If this is not the case, contact your dealer to replace the missing or illegible labels immediately.

	<p>WARNING Control and servicing may only be carried out after the operating and servicing manual has been carefully read, with the prime mover switched off and the ignition key removed.</p>
	<p>WARNING - HAZARD from liquids under pressure. Read the manual before commencing work and contact a doctor if you are injured.</p>
	<p>WARNING Make sure that the direction of rotation and the speed (540 RPM) at the tractor's PTO are correct before connecting the universal shaft.</p>
	<p>WARNING - HAZARD Make sure that the flail shaft is absolutely still before you approach it.</p>

	<p>WARNING - HAZARD Hands and feet can be seriously injured. Keep your distance.</p>
	<p>WARNING Machine can throw off metal parts or other objects. Do not stand next to the machine, do not climb over or approach the machine.</p>
	<p>Keep a safety distance of at least 70 m to the machine.</p>
	<p>WARNING Do not approach the machine under any circumstances when it is operating. WARNING Do not stand between the tractor and the machine.</p>
	<p>WARNING The machine can pull you in and drag you along. Keep your hands away from the drive shaft while it is moving.</p>

	<p>HAZARD Crushing/Cutting.</p>
	<p>WARNING Hot surface. Keep an appropriate distance.</p>
	<p>WARNING Only remove or open protection devices once the belts no longer move.</p>
	<p>WARNING - HAZARD to the upper and lower extremities. Keep an appropriate distance.</p>
	<p>WARNING Only hook to the displayed load points to lift the machine.</p>

	<p>Wear protective clothing.</p>
	<p>Grease nipple.</p>

3. SAFETY

3.1 Intended use

MASTER mulching mowers were specially designed, as described in these operating instructions, to mow grass, weeds, and light undergrowth. Any other use can threaten the safety of the operator and the machine as a whole.

3.2 Improper use

The mulching mower was developed for mowing grass, weeds, and light undergrowth only. Use this mulching mower only on a properly equipped tractor of the size recommended by the manufacturer for this equipment. When using MASTER mulching mowers the following, in particular, is **PROHIBITED**:

- to connect the machine to tractors with unsuitable capacity or weight
- to use a different speed than 540 RPM for the PTO
- to use the machine on very stony soil
- to use the machine on a very steep slope
- to approach the machine wearing unsuitable working clothes
- to climb on the machine while it is in use or being transported



WARNING

Using this mulching mower for any application other than it is intended for, or using it with a tractor of unsuitable size may result in damage to the machine and equipment, as well as in serious injury or even death.

3.3 Safety at the workplace

Many accidents that occur during operation of the machine or equipment or during servicing and repair work are caused by failure to adhere to basic safety precautions. Accordingly, it is important to be aware of the potential risks of an activity and to always be aware of the effects.

If potentially hazardous situations are known, accidents can be prevented!

3.4 Demands on the operator

- **Physical:** good eyesight, coordination and the ability to execute all functions necessary to operate the machine.
- **Mental:** The ability to understand and apply the applicable rules and safety regulations. Users must exercise care, for their own safety and that of other people.
- **Familiarization:** Users must have read and studied these operating instructions, any accompanying graphics and schematics and their identification, and danger signs. Users must be briefed and trained in use or servicing.

3.5 Work clothes

The following items of clothing and safety accessories must be worn at work, and especially during repair and servicing work:

- One-piece or other comfortable clothing that is not too loose, so that no parts of it can get caught in the machine.
- Protective gloves.
- Safety goggles or mask to protect eyes and face.
- Safety helmet.
- Safety shoes.

Only wear personal safety equipment in a good condition, complying with the respective legal regulations.

3.6 General safety instructions

ALWAYS PAY ATTENTION TO THE PROPERTIES OF THE AREA YOU ARE WORKING ON

When the machine is running, it is not permitted to remain in the radius of action of the machine or other accessories.

3.7 Preparation

- Do not drink alcohol or take any drugs or other substances that may impair your ability to work with machines before and during work.
- Make absolutely sure you have enough fuel to prevent the machine stopping abruptly, possibly during a critical process.
- Only use the equipment in safe conditions. For example, it is prohibited to use makeshift solutions to start the machine. Similarly, it is prohibited to work at night in an insufficiently illuminated area.
- NEVER work if not all protective shields are correctly installed or in perfect condition. The operator must be familiar with the mower unit, tractor, and any associated safety applications before using the mower unit or tractor.

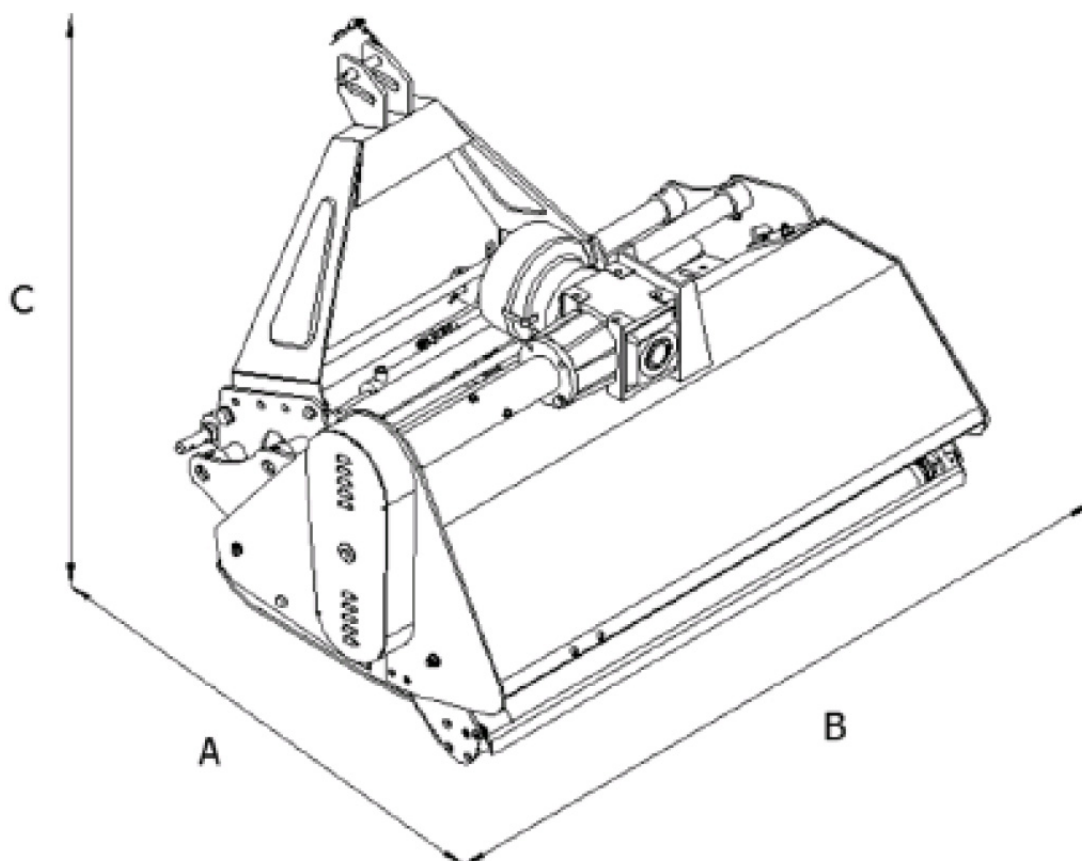
IT IS IMPORTANT TO REMEMBER THE FOLLOWING POINTS AT WORK OR DURING SERVICING

- The instruction and hazard labels may not be removed, hidden or illegible.
- Do not remove safety signs, protective covers or deflectors on the machine unless you do so during servicing. If you do remove them, turn off the engine. Be careful and refit them correctly before restarting the engine and before using the unit. The mower unit is equipped with protective deflectors to prevent objects being thrown out by the blades. Be aware that this shielding cannot be 100% effective. All safety signs, protective covers and deflectors must be kept in good condition.
- Greasing, cleaning or adjusting moving parts during operation is prohibited.
- It is prohibited to use your hands for activities for which specific equipment is available when servicing or adjusting the machine.
- Do not use equipment inappropriately or if they are in poor condition. For example, do not use pipe wrenches instead of wrenches.
- Once you have completed any servicing or repair work, ensure that no equipment, wipes, or other material is left in voids or guides with moving parts.
- When using the machine, never give more than one person instructions and signals. Instructions and signals relating to lifting loads may only be given by one person.
- Do not call the operator unnecessarily while he or she is working with the machine. It is also prohibited to frighten the operator or throw objects at him or her, not even in fun.
- Pay attention to people present, in particular children! Do not allow people to climb on the machine.
- When the machine is no longer needed, stop the engine and park on a flat surface. Then pull the handbrake and switch off the PTO shaft.
- When the engine is running and the machine is lifted, it may not be cleaned, greased, repaired or adjusted.
- Never use the machine on steep slopes. This could endanger the stability of the device.

The manufacturer accepts no responsibility if these instructions are not adhered to.

4. SPECIFICATIONS

Model	Operating width	PTO speed (rpm)	Recommended power (HP)	Category	Weight (kg)	Blades
MASTER 155	155	540	30–65	CAT. I	367	24
MASTER 175	175	540	35–65	CAT. I	412	28
MASTER 200	200	540	55–70	CAT. I/II	460	32
MASTER 220	220	540	75–90	CAT. I/II	500	36



Model	A	B	C
MASTER 155	950	1670	950
MASTER 175		1870	
MASTER 200		2120	
MASTER 220		2320	

5. INSTALLATION INSTRUCTIONS

The machine is delivered ex works in its transportation configuration. Always use tools, equipment and lifting equipment of appropriate size and capacity for installation. Always lift, move and install the equipment with 2 persons. Wear suitable protective clothing such as safety shoes and protective gloves. Observe the safety measures as described in the "Safety" section of these operating instructions. Inspect all screws and nuts for correct seating during assembly. When opening the wooden crate, pay attention to the sharp edges on the closing mechanisms.

When you start assembling the machine, please pay attention to the following:

Clear the area of people, in particular children.

Use a forklift or similar device to move or lift the pallet/machine.

Carry the load close to the ground. Move the machine to the installation area.

Ensure there is sufficient clearance to safely assemble the machine and to access it from all sides.

1. Remove the transportation packaging as shown in figures 1 to 4.



Fig. 1 Mulcher in transportation packaging



Fig. 2 Using the lever

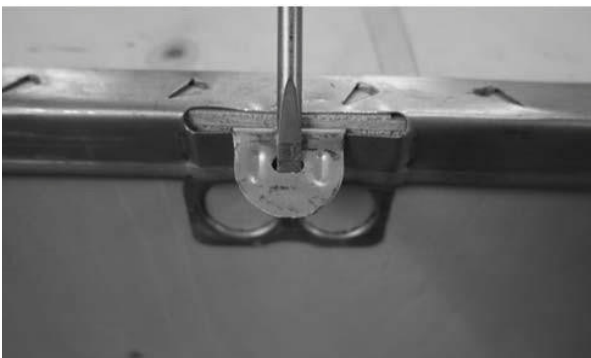


Fig. 3 Opening the fasteners



Fig. 4 Opening the fasteners

-
2. Remove the complete wooden packaging and protective sheeting. Remove any loose parts and set to one side for later use. Check the delivery for completeness, see figures 5 to 8.

Note: There may be more screws, nuts, washers, etc., in the transportation crate than are needed for initial installation. This is intended and is not a quality flaw.



Fig. 5 Scope of delivery



Fig. 6 Scope of delivery

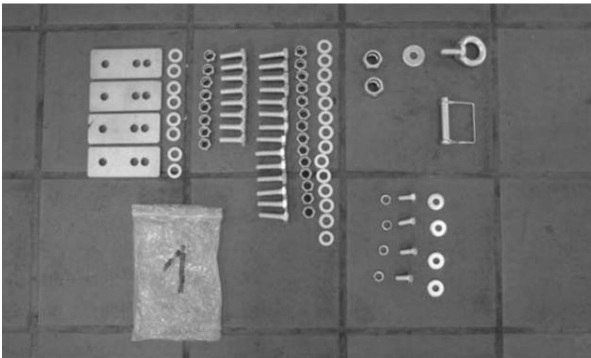


Fig. 7 Scope of delivery

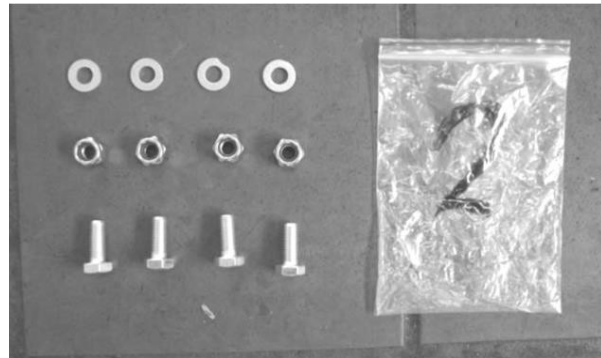


Fig. 8 Scope of delivery

3. Attach mounting bracket for 3-point mounting to hydraulic lateral shifter:

- Due to the size and weight, please only attach the bracket with 2 persons!
- The flail mulcher must stand on an absolutely solid ground (concrete, asphalt, tiles), in particular if you intend to jack up the machine on square timbers.
- The bracket is attached to the hydraulic lateral shifter using 8 screws, 8 nuts and 8 washers (Figure 9).
- Be careful not to crush or damage the hydraulic lines.
- Before attaching the 3-point bracket, check the position of the 4 grease nipples on the underside of the hydraulic lateral shifter.
- The grease nipples must point to the outside, because otherwise the grease gun cannot be used later.
- The arrows in Figure 11 show the correct alignment of the grease nipples. If a grease nipple is not aligned correctly, this can be corrected using a small washer (not included in scope of delivery).

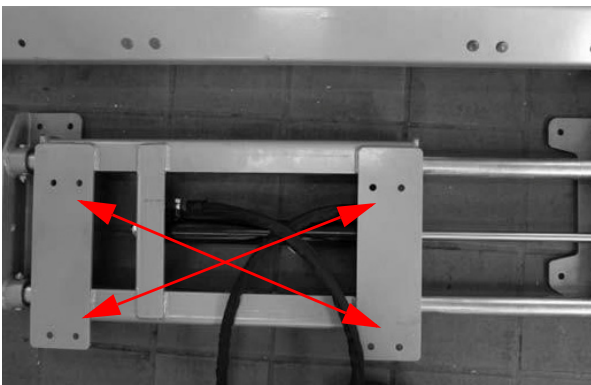


Fig. 9 Bore for 3-point bracket (4 x 2)



Fig. 10 Jacking up the mulcher

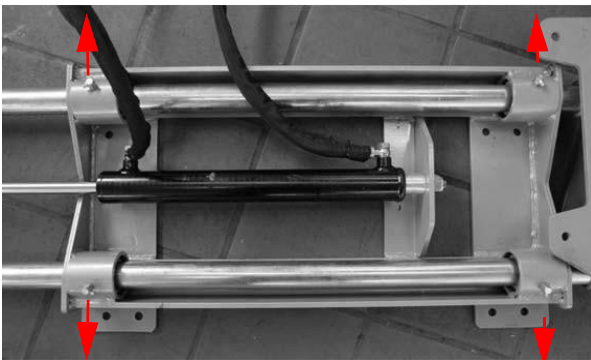


Fig. 11 Underside with correct grease nipple alignment

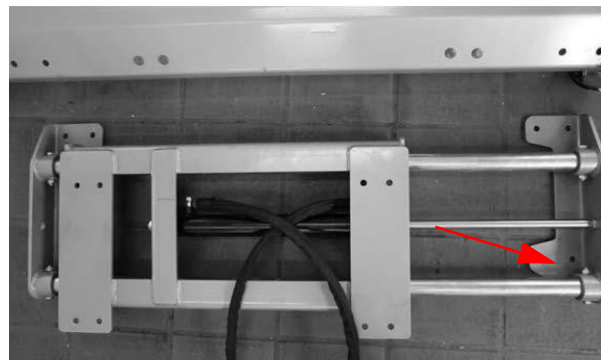


Fig. 12 Alignment of lateral shifter

- Align the mulcher with the hydraulic lateral shifter as shown in Figure 12. Ensure that the beveled side is at the bottom right (see red arrow in Figure 12).

- Attach the 3-point mounting bracket as shown in Figure 13 using the 8 screws, nuts and washers.

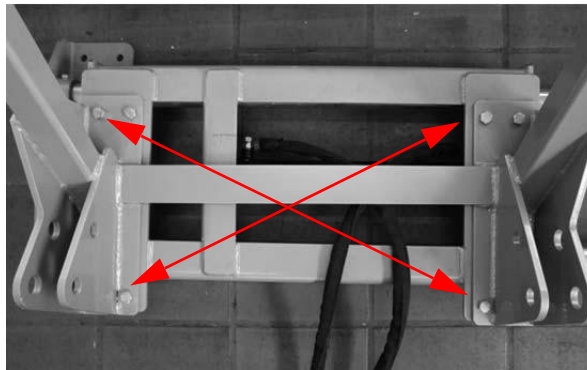


Fig.13 Mounting bracket attached to hydraulic lateral shifter using 8 screws, nuts and washers.

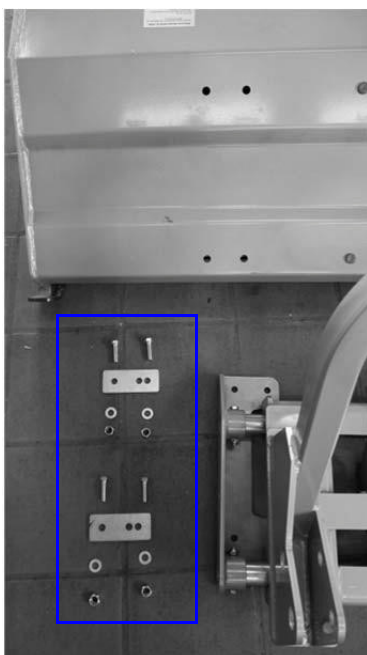


Fig. 14 Mounting material for hydraulic lateral shifter, left side



Fig. 15 Mounted hydraulic lateral shifter (right side)

4. Attach the 3-point bracket and the hydraulic lateral shifter to the mulcher housing:
 - Figure 14 shows the material for two of four shims that secure the hydraulic lateral shifter to the mulcher housing. The image shows the left side as an example. It is important to mount the reinforcing shims from the inside of the housing. For convenience, the flail mower can be jacked up for easier installation (Figure 10). Here, please also note the safety instructions.
 - Tighten the screws and nuts!

5. Attach the hydraulic lines:

- Attach the hydraulic lines as shown in Figure 16 and 17. Align them parallel to the lateral shifter, ensuring the lines cannot be pinched.
- Before attaching the flail mulcher to a tractor, align the hydraulic lines in such a way that they cannot be damaged.
- Check the hydraulic lateral shifter for clearance (no hydraulic lines, etc., in the way) before using the flail mulcher for the first time.
- Remove the protective caps from the hydraulic hoses only when using the machine.

6. Attach hydraulic ram:

- Tighten the nut on the left side (Figure 18).
- Tighten the nut and locknut (Figure 19) on the right side.
- If the hydraulic connections move excessively around the ram axis, readjust the hydraulic ram and re-tighten the ram nuts.



Fig. 16 Hydraulic line left



Fig. 17 Hydraulic line right

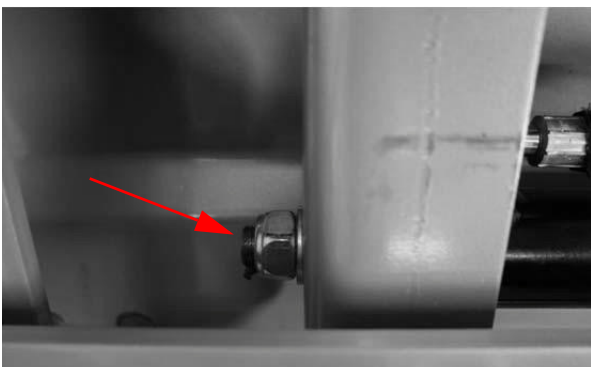


Fig. 18 Nut for hydraulic ram left

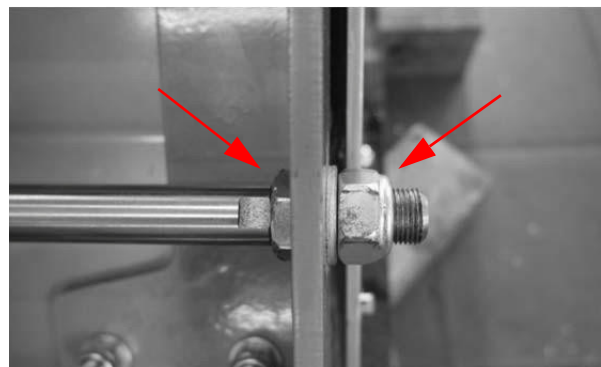


Fig. 19 Mounting for hydraulic ram right

7. Pulleys and drive belts:

- Please check the correct seating of the 3 belts and two pulleys before operating the mulcher and before attaching the pulley guard.
- The alignment of the upper and lower pulley must be absolutely vertical to avoid wear and malfunctioning. Figure 23 below shows the correct pulley alignment. The pulleys must be vertically aligned, i.e. they must be vertically parallel above each other.
- The correct pulley alignment is adjusted via the:
 - Shaft guide (Figure 20)
 - Tensioning device (Figure 21)
 - Transmission mounting (Figure 22)



Fig. 20 Shaft guide

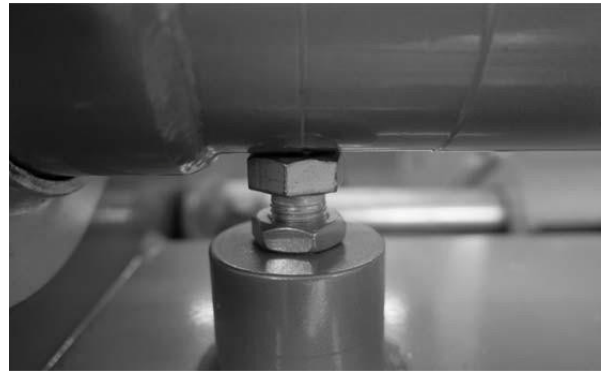


Fig. 21 Belt tensioning device



Fig. 22 Transmission mounting



Fig. 23 Pulley alignment

For details on adjusting the pulley alignment, please refer to the "Commissioning" section of these operating instructions.

The drive belt tension is also adjusted via the shaft guide, tensioning device and transmission mounting.

8. Correctly adjusted drivetrain:

- Figure 24 shows the correct pulley alignment. Vertical and parallel!
- Figure 25 shows the correct drive shaft position. It is important that the shaft has sufficient distance to the housing and does not drag on the housing.
- Figure 26 shows the correct drive belt tension. The deflection depth of the belt may not exceed 10 mm, because otherwise the tension is insufficient and the forces are not transferred correctly. (Adjustment via tensioning device, see Figure 15)

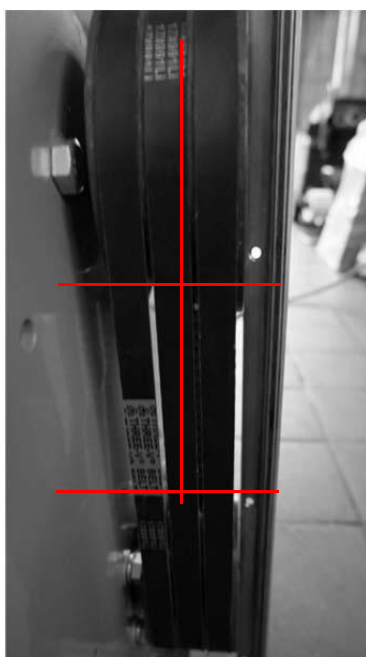


Fig. 24 Correct pulley alignment



Fig. 25 Correct drive shaft distance



Fig. 26 Correct drive belt tension

9. Inspect pulleys for secure seating

Please ensure that the eight Allen screws on the pulleys are tightened and correctly connected to the drive shaft (Figure 27) and the flail shaft (Figure 28).

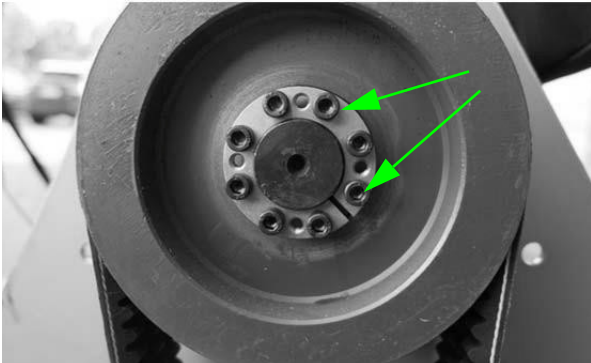


Fig. 27 Upper pulley mounting

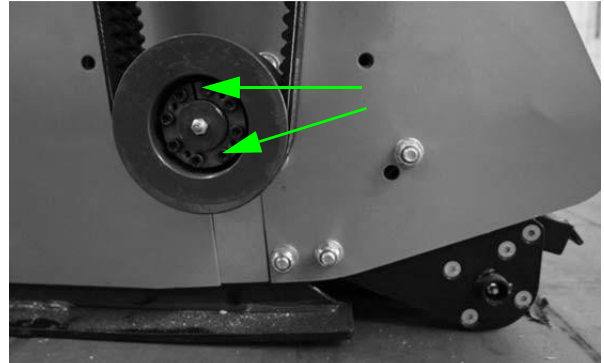


Fig. 28 Lower pulley mounting

10. Fill operating resources:

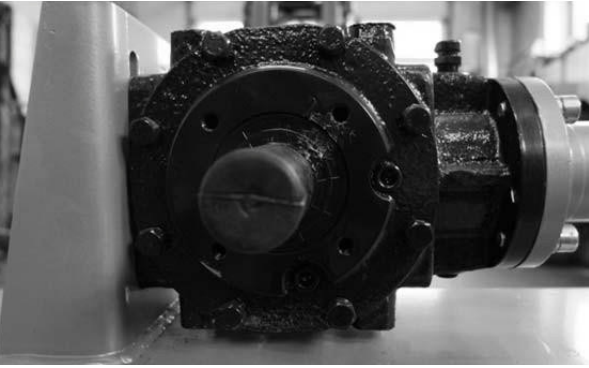


Fig. 29 Transmission



Fig. 30 Drive shaft with inspection port and filling port

The transmission (Fig. 29) and drive shaft (Fig.30) must be supplied with sufficient transmission oil. Unscrew the filler plug and inspection plug and remove them. Then fill the transmission and drivetrain with oil until the oil can be seen at the inspection port.

We recommend SAE 80W90 transmission oil.

Attention: The mulcher must be horizontal to guarantee optimal filling.

11. Greasing the machine:

To ensure smooth functioning, it is necessary to lubricate the machine with grease. Figures 31 and 32 show the grease nipples where the grease gun must be attached to the machine.



Fig. 31 Grease nipple in travel direction left



Fig. 32 Grease nipple in travel direction right

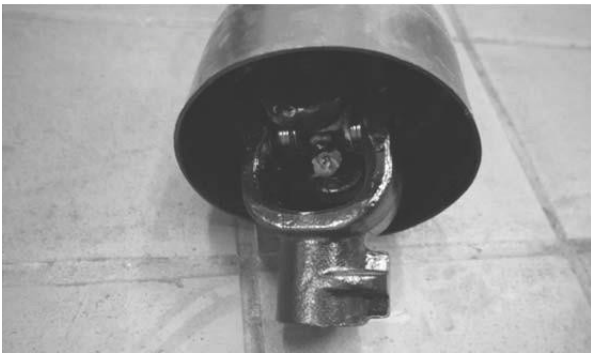


Fig. 33 Grease nipple on the power take-off

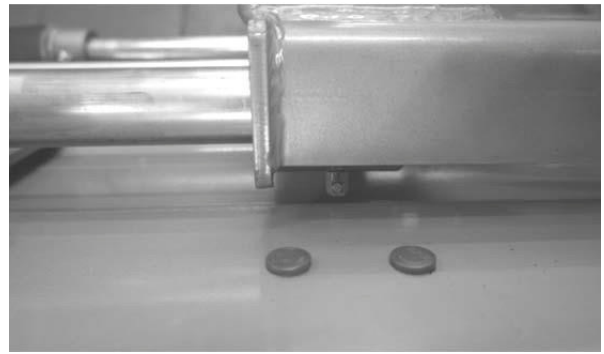


Fig. 34 Grease nipple on the hydraulic lateral shifter
(one of four)

Figure 33 shows one side of the power take-off with grease nipple. Please correctly lubricate both sides of the power take-off.

Figure 34 shows one of the four grease nipples on the hydraulic lateral shifter. Here it can be seen why the grease nipples must be aligned correctly (also see Figure 11). Lubricate all 4 grease nipples using the grease gun.

12. Attach the belt cover:

Attach the belt cover as shown in figures 35 to 37. The screws are inserted on the outside and the nuts and washers on the inside. Please note that the nuts do not have to be screwed to the lower flail shaft, because they are generally welded on from the inside. Finally, insert the rubber cap cover for the flail shaft grease nipple into the cover.

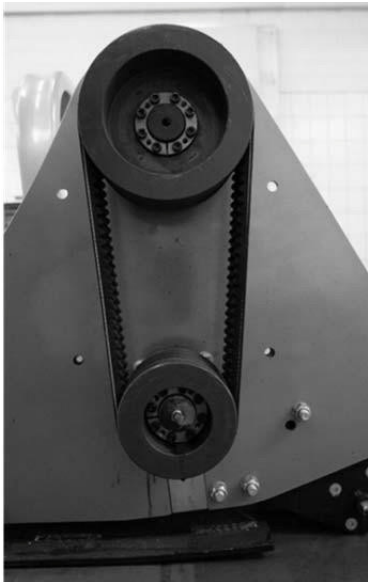


Fig. 35 Bores for the cover



Fig. 36 Cover with mounting material



Fig. 37 Cover screwed in place

13. Fit power take-off guard:

Attach the guard to the transmission as shown in Figure 38 using the 4 screws, 4 spring washers and 4 washers.



Fig. 38 Power take-off guard



Fig. 39 Reversible bolt with retaining pin



Fig. 40 Fitted reversible bolt with retaining pin

14. Fit reversible bolt:

Depending on requirements, insert the reversible bolts in positions 1 or 2 and secure them using the retaining pin.

15. PTO chains:

When operating the flail mulcher, ensure that the PTO guard is properly connected to the PTO safety chains to prevent the guard from spinning.



Fig.41 Power take-off with guard and chains

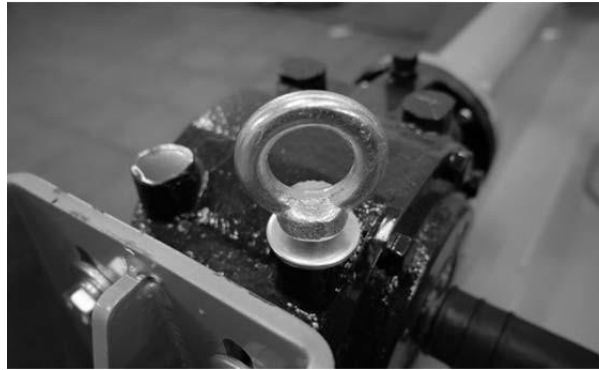


Fig. 42 Transmission lifting eye



Fig. 43 Opening flap

16. Transmission lifting eye:

To lift the transmission, a lifting eye can be screwed to the transmission (Figure 42)

The lifting eye is used exclusively for lifting the transmission. Please ensure you completely disconnect the transmission first.

17. Opening flap:

The mulcher is equipped with an opening flap, which facilitates cleaning and servicing works. For taller grass, we recommend setting the opening flap to the middle position during operation. (Figure 43)

6. IMPORTANT NOTES PRIOR TO COMMISSIONING

Fill angular transmission with oil! For reasons of freight forwarding, the transmissions are dry and must be filled with oil prior to operation. Please use a 80W90 transmission oil for filling. Please refer to the figures for where the oil is filled and the fill volume. If necessary, seal the filler plugs/inspection plugs with Teflon sealing tape.

The angular transmission is half filled with oil. The fill volume should be inspected visually or by inserting a dipstick that can be easily made from a piece of wire.

The transmission has a capacity of 1000 ml when empty.

The universal shaft must be filled with 300 ml of oil. If there is no filler plug on the universal shaft, a closed bearing has been installed. In this case, no oil fill is necessary.

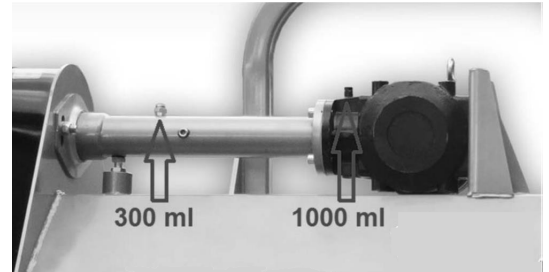
Examine all screws for tightness and retighten if necessary.

Adjust the black universal shaft guard on the transmission.

The mower units are delivered with sufficiently long universal shafts to allow them to be attached to all tractors. Different PTO shaft lengths may be necessary for different tractor models. If necessary, the PTO shaft must be shortened to the appropriate size. Please proceed as follows: With the mower unit attached, the PTO shaft should still have at least approximately 5 cm movement, i.e. be able to be pushed inwards 5 cm. To shorten it, disconnect the two universal shaft halves by them pulling apart. The PTO shaft can then be shortened to the correct length using an angle grinder or a saw.

Lubricate all lubrication points via the grease nipples.

The universal shaft speed should be set to 540 rpm. Only intended for right-rotating PTOs, i.e. for rear attachment to the tractor.



7. COMMISSIONING

7.1 Fitting to the tractor

Read these operating instructions carefully before commissioning the mower unit. Make absolutely sure that you have completely understood the safety instructions. Also ensure you know how the tractor and power take-off stub work by carefully reading the tractor and power take-off stub manufacturer's manuals.

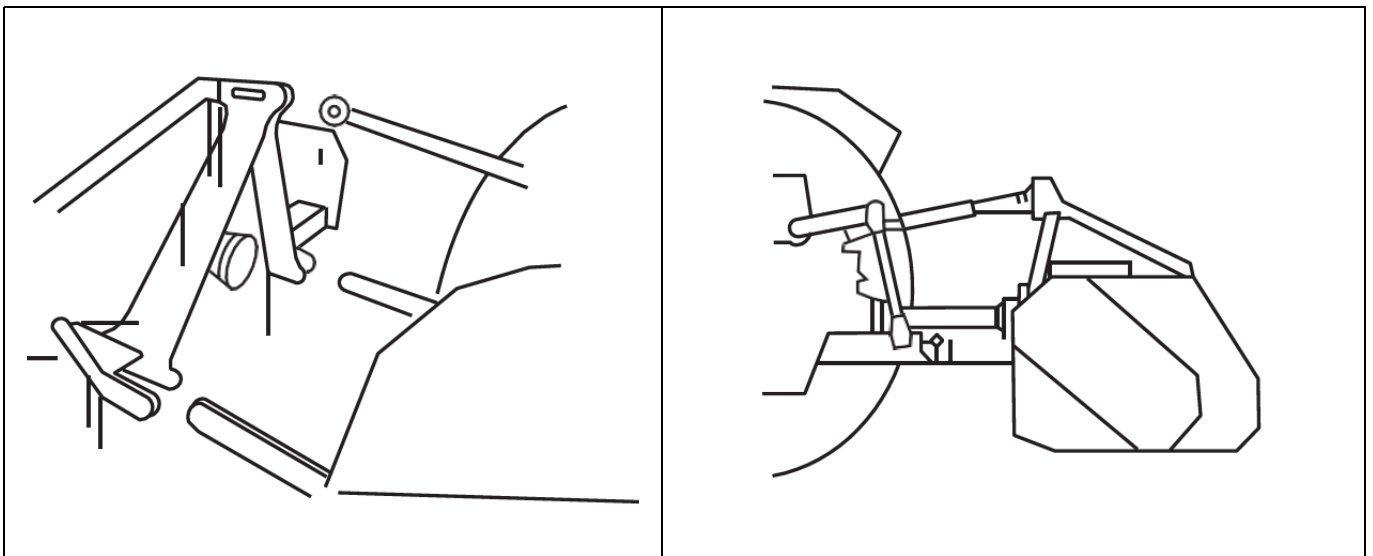
All MASTER mulching mower units are manufactured to be connected to a tractor that has a hydraulic and universal three-point mounting.

The tractor employed for the job must have the power, capacity and equipment required to operate the mower unit safely. Using the mower unit on an improperly equipped tractor or tractor of the wrong size can cause damage to the tractor and/or mower unit, and endanger the operator and bystanders.

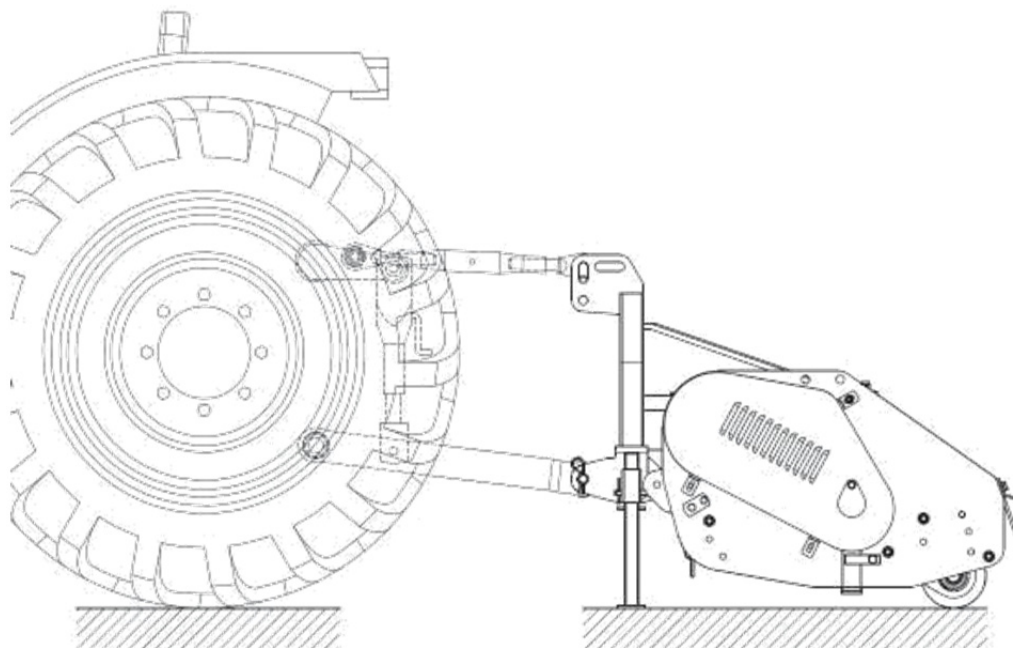
Before attaching the machine to the tractor, place both on a flat, soft surface and make absolutely sure that nobody is standing between the two machines.

Slowly move the tractor toward the mower unit by directing the hydraulic lifting arms of the tractor onto the two side mounts of the mower unit mounting. Stop the engine and apply the handbrake.

Connect the lower links on the tractor to the two lower sections of the 3 point attachment of the mower unit. To do this, use the bolts and secure them with the hinged cotter pin. Then connect the top link on the tractor with the upper point of the 3-point mounting, then secure the bolt with a hinged cotter pin.



Adjust the third point so that the upper part of the frame is parallel to the ground. Block all connectors with special link chains or tie rods.



We recommend that you ensure that the middle gear axle is parallel to the ground. This reduces the pressure on the drive and extends the machine life.



WARNING

Pay attention to the position of the tractor's front wheels when the unit assembled and raised. If the front wheels do not have sufficient ground contact, add additional counterweights.



CAUTION

In accordance with the above, we recommend that you check that all of the mower unit's nuts and bolts are properly tightened (refer to the tightening instructions in this manual).

7.2 Fitting the drive train

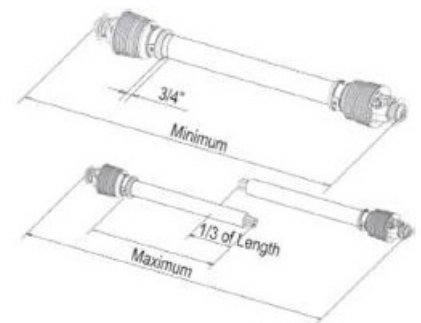
Before installing the universal shaft, check that the direction of rotation and the speed of the universal shaft correspond to those of the tractor. In addition, carefully read the power take-off stub and tractor manufacturers' operating instructions. Before going ahead with commissioning, please make absolutely sure that all safety shields are fitted in the correct location. In particular, check that the safety guard completely covers the PTO stub. When connecting the mower unit's universal shaft to the tractor PTO stub, make sure that the universal shaft locks securely into the groove on the tractor PTO stub shaft. A drive train not properly connected to the tractor's PTO stub could loosen and endanger people, as well as damaging the machine.



CAUTION

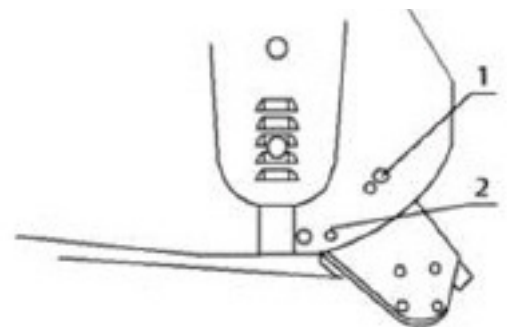
Make absolutely sure that the two parts of the universal shaft cannot separate from each other with the three-point hydraulics in any position. When the universal shaft is fully pushed together, there should be at least 20 mm clearance between each profiled end and the opposing profiled universal joint. For safe operation, both halves of the universal shaft should mesh with each other at least 1/3 of the total length of the universal shaft in every three-point hydraulics position.

In case of problems, contact a qualified workshop or the seller of the drive shaft. Secure the PTO guard after installation on the tractor by hooking the safety chain either to the tractor or to the drive unit.



7.3 Adjusting the working height

The working height of the machine is determined by the position of the rear roller and the adjustment of the lateral skids. When the roller is raised, the knives approach the ground. When the roller is lowered, the knives move away from the ground. After adjusting the working height, ensure that the blades pass above the ground. Direct contact with the ground will cause faster wear or lead to damage to the machine. Incorrect height adjustment also allows objects to be ejected from the mower unit.



7.4 Adjusting the mulcher mower unit

Attach the mower unit to the tractor on a flat, level surface. Use an adjustable top link.

Lower the three-point mounting to its lowest position.

Adjust the length of the top link with the rear roller in contact with the ground, such that the lower edge on the side of the mower unit is parallel to the ground.

The skids, the rear roller and the three-point mounting should be adjusted such that the distance between the cutting tools and the ground is at least 50 mm.

Adjust the height of the roller to increase or decrease the blade clearance as required.

Operate the mower unit at a maximum PTO speed of 540 rpm.

7.5 Adjusting the drive belts

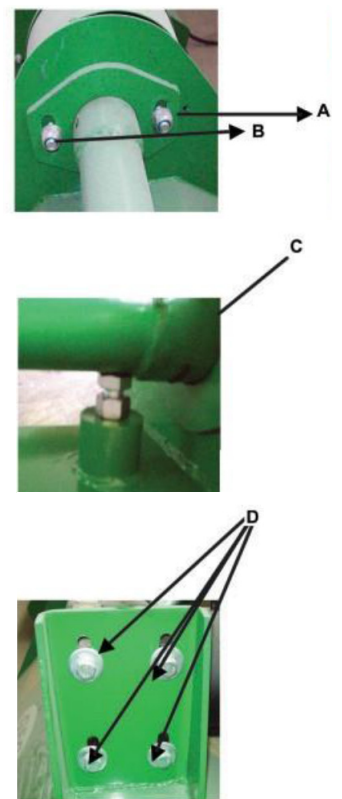
The correct drive belt tension is achieved by adjusting the belt pulleys. The pulleys can be adjusted via the drive train height adjustment.

To do this, loosen screws A and B and loosen the height adjustment lock nut C and the screws D holding the PTO transmission.

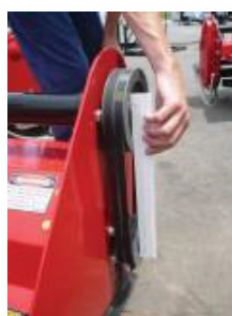
Adjust the drive belt tension. The correct belt tension is reached when the belt can be deflected 10 mm max. in the center.

Align the transmission and drive shaft such that the drive shaft is parallel to the body.

Use a spirit level or other tool to check that the pulleys are perfectly vertically aligned, i.e. they must be vertically parallel above each other. If they have moved, contact the seller for technical support. The pulleys are secured by an expander cone on the respective shaft and can be moved horizontally after loosening the expander cone.



10 mm deflection max.



Check the vertical alignment of the pulleys using a spirit level. The pulleys must be absolutely parallel.



CAUTION

If the belts are incorrectly aligned, the belts will be destroyed within a very short time! This damage and the consequences of this damage are not covered by the statutory warranty but represent a commissioning error!

8. TRANSPORTATION AND STORAGE

WORKING SPEED

The working speed depends on the type of vegetation, and the height and density of the material to be cut. Under normal conditions, 5 kph is the ideal speed. The speed of the power take-off may not exceed 540 rpm. Operate the mower unit at a maximum power take-off speed of 540 rpm to achieve a consistent result.



WARNING

The specified maximum power take-off speed may not be exceeded. If the specified speed is exceeded, this may cause defects in the drivetrain or blades. This in turn can lead to serious injury or even death.

TRANSPORTATION BY ROAD

Be extremely careful when transporting the tractor and equipment on public roads. Ensure you comply with all regional regulations with regard to the transportation of equipment on public roads and highways. Do not exceed a speed of 25 kph. Adjust speed to suit the road conditions and reduce speed considerably on roads or tracks with potholes, as this could otherwise damage the tractor or the mower unit.

STORAGE

If your mower unit is not going to be used for an extended period, follow these recommendations: Wash the machine completely and let it dry.

Grease all bearings with sufficient grease. Refer to the section

"Installation instructions" regarding grease nipples and greasing axles.

To prevent corrosion, protect the whole machine with a tarpaulin and place it in a dry place – preferably in a shed or barn.

PRE-SEASON INSPECTION

Check the transmission oil level and grease all bearings. See "Installation instructions". Adjust the drive belt tension, see "Adjusting the drive belts".

Examine all equipment and replace damaged or worn parts. Tighten all screws and nuts.

Check the equipment for missing and/or broken knives/blades. Replace where necessary.

Run the mower unit at low PTO speed and check that all parts of the drive train are moving freely.

9. SERVICING AND COMMISSIONING

Servicing is a fundamental element of a long service life and proper functioning of every piece of agricultural machinery. By maintaining and servicing the machine, you not only guarantee a good functioning, but also a longer machine service life and optimum safety when working with the machine.

The operating times specified in this manual are for information only and refer to normal conditions of use. Depending on the application, they may differ.

Clean the grease nipples before applying the grease. This will prevent mud, dust, or other foreign materials from mixing with the grease, thereby reducing the lubrication effect.

When adding oil or replacing the oil, we recommend using the same oil in order to avoid mixing oils with different properties.

Stop the engine, switch off the power take-off, apply the tractor's handbrake and place the equipment horizontally on the ground before servicing the machine.

After a few hours of operation, check that all bolts and nuts are tight. Also periodically check all safety devices.

9.1 First inspection on commissioning

Check the correct drive belt tension and alignment. Check that all bolts and nuts are tight. Replace the transmission oil after the first 50 hours of operation.

Fill the power take-off transmission and the drivetrain if necessary as instructed for this type of mower unit.

Lubricate all bearings of the drive shaft and the rear roller thoroughly with a grease gun.

9.2 Servicing schedule

Servicing point	Frequency	Lubrication	Action*	Lubricant	Remark
PTO Universal joints (Cross joints)	Every 8 h	Yes	I	NLGI 2 grease	
PTO Profile tube	Every 8 h	Yes	I	NLGI 2 grease	
PTO Retaining pin	Every 8 h	Yes	I	Oil	
Screw inspection (Tight fit)	Initially after 2 h and then every 40 h	-	I		
Bolts and joints	Every 8 h	Yes	I	NLGI 2 grease	
Impact guard (if fitted)	Every 8 h	Yes	I	NLGI 2 grease	
Condition of hydraulics including hoses	Every 8 h	-	I		
Belt condition, alignment and tension	Every 10 h	-	I/A	-	Replace if necessary
Flail shaft and trailing roller bearing lubrication	Prior to commissioning then every 8 h	-	I		
Angular transmission and universal shaft to pulley	Initially after 20 h and then every 100 h	Replace oil	B	SAE 80W90 API GL5	Fill volume according to mower unit type
Grease nipple condition	Every 8 h	-	C/I		Replace if necessary
Condition of cutting tools and clean flail shaft and trailing roller	Initially after 2 h and then every 8 h, earlier if vibrating	-	I/C		Replace if necessary

*Action codes: A = Adjustment, I = Inspection, C = Cleaning

For lubrication use good quality NLGI 2 grease with EP properties. This grease is known as a multipurpose grease. Do not use graphite grease for ball bearings. The above intervals apply to normal operation. For frequent use, lubricate more often.

Prior to season start

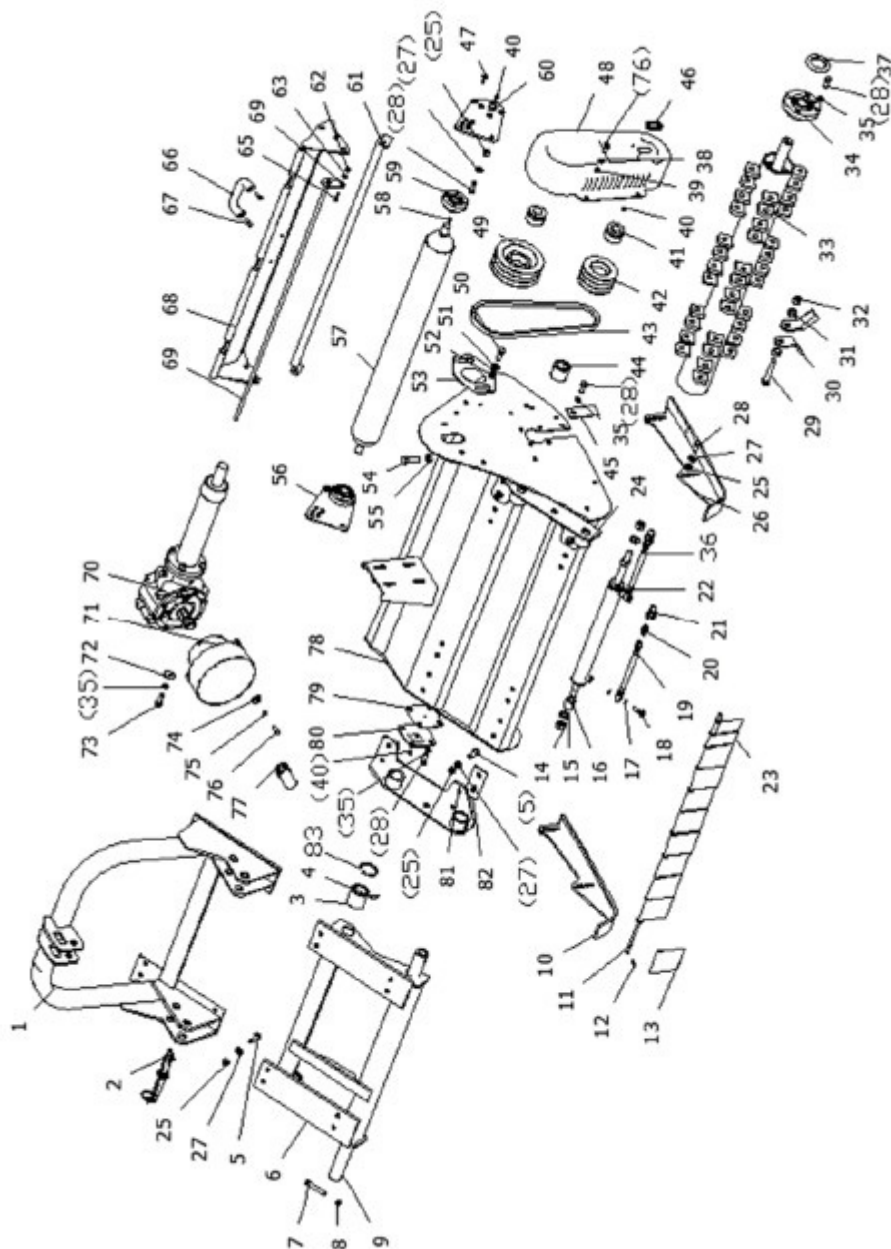
Go through all the points discussed above. The machine has a longer life and is less prone to faults if well serviced.

After season end

Thoroughly clean, lubricate and service the machine. When the machine is dry, we recommend applying a thin coat of oil to areas where paint has peeled off.

10. EXPLODED-VIEW DRAWING

10.1 Master



MASTER					
No.	Article no.	Part no.	Name	Quantity	Remark
1	801680014	EFGCM120.014B	Mount	1	
2	802480066	EFAG140.014	Lower link bolt	2	EFGCHMZ105-175
2 (1)	702480065	EFAG140.114A	Connecting sleeve	2	EFGCHMZ200-220
3	701600028	EFGCH120.103	Cover	4	
4	509010017	GB1153-M6X45°	Grease nipple	4	

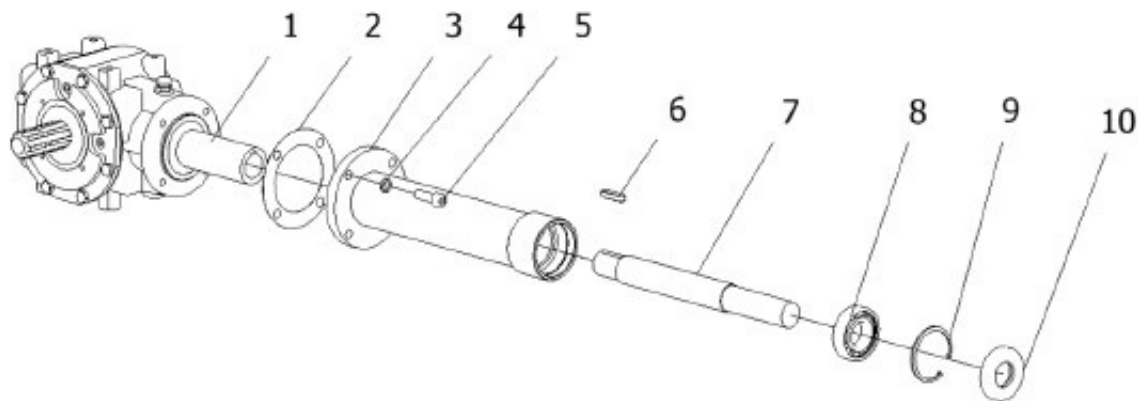
MASTER					
No.	Article no.	Part no.	Name	Quantity	Remark
5	501011128	GB5783-M12x40	Screw	16	
6	801680009	EFGCHM120.013	Lateral shifter frame	1	
7	501011121	GB5783-M10x70	Screw	4	
8	503010046	GB6170-M10	Nut	4	
9	701600030	EFGCH120.104	(1200-1700)(L=1218) Guide rail	2	EFGCHM105-175
9 (1)	701600031	EFGCH120.104A	(L=1342) Guide rail	2	EFGCHM200-220
10	801240019	EFGC120.013	Left skid	1	
11	700940005	EF100.00.123	Protective plate bar	1	EFGCHMZ105
11 (1)	700950005	EF110.00.123	Protective plate bar (115)	1	EFGCHMZ115
11 (2)	700960009	EF120.00.123	Protective plate bar (125)	1	EFGCHMZ125
11 (3)	700970005	EF130.00.123	Protective plate bar (135)	1	EFGCHMZ135
11 (4)	700980005	EF140.00.123	Protective plate bar (145)	1	EFGCHMZ145
11 (5)	700990019	EF150.00.123	Protective plate bar (155)	1	EFGCHMZ155
11 (6)	701000005	EF160.00.123	Protective plate bar (165)	1	EFGCHMZ165
11 (7)	701010005	EF170.00.123	Protective plate bar (175)	1	EFGCHMZ175
11 (8)	701010006	EF200.00.123	Protective plate bar (200)	1	EFGCHMZ200
11 (9)	701010007	EF220.00.123	Protective plate bar (220)	1	EFGCHMZ220
12	508011473	GB879.1-4x25	Cylindrical pin	2	
13	700920108	EF100.00.122	Protective plate	9	
14	503010314	GB6184-M18	Lock nut	3	
15	506010060	GB97.1-18	Washer	2	
16	701600026	EFGCH120.101	Distance sleeve	1	
17	516010004	TDQ-12	Washer	4	
18	501014706	GB3541-M12X1.25	Flat head anchor bolt	2	
19	701600001	EFGCH120.011	(1500) Hydraulic line	1	
20	705380114	RK120.401	Adapter	2	
21	703820055	QUICK-COUPLING G1/2-G	G1/2 quick coupling	2	
22	701600002	EFGCH120.012	Lateral shifter ram	1	EFGCHMZ105-175
22 (1)	701600004	EFGCH120.012B	Lateral shifter ram	1	EFGCHMZ200-220
23	700920107	EF100.00.121	Narrow protective plate	2	
24	801680007	EFGCHM120.012	Right flat bar	1	
25	503010311	GB6184-M12	Lock nut	24	
26	801240022	EFGC120.014	Right skid	1	
27	506010057	GB97.1-12	Washer	24	
28	501011126	GB5783-M12x30	Screw M12x30	17	
29	501011565	GB5785-M16x1.5x90	Screw M16x1.5x90	24	
30	701240009	EFGC120.104	Flail	48	
31	701240008	EFGC120.103	Distance sleeve	48	
32	503010313	GB6184-M16	Lock nut	24	

MASTER					
No.	Article no.	Part no.	Name	Quantity	Remark
33	801140010	EFG100.013A	Flail shaft (105)	1	EFGCHMZ105
33 (1)	801150010	EFG110.013A	Flail shaft (115)	1	EFGCHMZ115
33 (2)	801160038	EFG120.013A	Flail shaft (125)	1	EFGCHMZ125
33 (3)	801170010	EFG130.013A	Flail shaft (135)	1	EFGCHMZ135
33 (4)	801180010	EFG140.013A	Flail shaft (145)	1	EFGCHMZ145
33 (5)	801190010	EFG150.013A	Flail shaft (155)	1	EFGCHMZ155
33 (6)	801200010	EFG160.013A	Flail shaft (165)	1	EFGCHMZ165
33 (7)	801210010	EFG170.013A	Flail shaft (175)	1	EFGCHMZ175
33 (8)	801130019	EFG200.013A-G2	Flail shaft (200)	1	EFGCHMZ200
33 (9)	802080085	EFG220.013A-G2	Flail shaft (220)	1	EFGCHMZ220
34	511040033	UC207-Z	Bearing UC207	2	
35	506030037	GB93-12	Spring washer	13	
36	701600005	EFGCH120.011A	Hydraulic hose (1900)	1	
37	510020417	GB13871-FB-55x80x8	FB sealing ring	1	EFGCHMZ105-175
37 (1)	510020397	CFW-60X85X8	FB sealing ring	1	EFGCHMZ200-220
38	506010056	GB97.1-10	Washer	15	
39	503010310	GB6184-M10	Lock nut	4	
40	509010008	GB1152-M8x1	Grease nipple	4	
41	515010001	REACH04-35X60	Cover lock	2	
42	701160006	EFG120.105A	Small pulley (three-track)	1	EFGCHM105-175
42 (1)	701160034	EFG120.105B	Small pulley		EFGCHM200-220
43	514010001	17X991	V-belt	3	
44	705380014	RK120.109A	(EFG135-175)(L=48) Cover	1	EFGCHMZ105-175
44 (1)	702080005	G2-150.105	Cover	1	EFGCHMZ200-220
45	701160033	EFG120.103	Small plate	1	
46	701240046	EFGC120.138	Lower cover	1	
47	501030185	GB70.3-M8x25	Allen screw	10	
48	701250006	EFGC120.111	Large belt cover (three-track)	1	EFGCHMZ105-175
48 (1)	706160004	EFGC200.111	Large belt cover	1	EFGCHMZ200-220
49	701160007	EFG120.106A	Large pulley (three-track)	1	EFGCHMZ105-220
49 (1)	701160040	EFG120.106B	Large pulley		EFGCHMZ200-220
50	501011141	GB5783-M14x35	Screw M14x35	2	
51	506010058	GB97.1-14	Washer	2	
52	503010312	GB6184-M14	Lock nut	2	
53	701240007	EFGC120.102A	Pressure plate	1	
54	501011905	GB5786-M16x1.5x50	Screw M16x1.5x50	1	
55	503010137	GB6173-M16x1.5	Nut M16x1.5	1	
56	801160001	EFG120.017	Right mounting, trailing roller	1	
57	801140004	EFG100.012	Trailing roller (105)	1	EFGCHMZ105

MASTER					
No.	Article no.	Part no.	Name	Quantity	Remark
57 (1)	801150004	EFG110.012	Trailing roller (115)	1	EFGCHMZ115
57 (2)	801160017	EFG120.012	Trailing roller (125)	1	EFGCHMZ125
57 (3)	801170004	EFG130.012	Trailing roller (135)	1	EFGCHMZ135
57 (4)	801180004	EFG140.012	Trailing roller (145)	1	EFGCHMZ145
57 (5)	801190004	EFG150.012	Trailing roller (155)	1	EFGCHMZ155
57 (6)	801200004	EFG160.012	Trailing roller (165)	1	EFGCHMZ165
57 (7)	801210004	EFG170.012	Trailing roller (175)	1	EFGCHMZ175
57 (8)	801160036	EFG200.012	Trailing roller (200)	1	EFGCHMZ200
57 (9)	801160041	EFG220.012	Trailing roller (220)	1	EFGCHMZ220
58	509010007	GB1152-M6	Grease nipple	2	
59	511040007	EF100.00.012	UC205 Bearing	2	
60	801160004	EFG120.018	Left mounting, trailing roller	1	
61	801140008	EFG100.024	Scraper (105)	1	EFGCHMZ105
61 (1)	801150008	EFG110.024	Scraper (115)	1	EFGCHMZ115
61 (2)	801160030	EFG120.024	Scraper (125)	1	EFGCHMZ125
61 (3)	801170008	EFG130.024	Scraper (135)	1	EFGCHMZ135
61 (4)	801180008	EFG140.024	Scraper (145)	1	EFGCHMZ145
61 (5)	801190008	EFG150.024	Scraper (155)	1	EFGCHMZ155
61 (6)	801200008	EFG160.024	Scraper (165)	1	EFGCHMZ165
61 (7)	801210008	EFG170.024	Scraper (175)	1	EFGCHMZ175
61 (8)	801130012	EFG200.024	Scraper (200)	1	EFGCHMZ200
61 (9)	801130013	EFG220.024	Scraper (220)	1	EFGCHMZ220
62	503010309	GB6184-M8	Lock nut	3	
63	506010055	GB97.1-8	Washer	3	
65	501011100	GB5783-M8x25	Screw	1	
66	705290212	RKH120-BS	Handle	1	
67	505011415	GB70.1-M8x20	Cylinder head screw	2	
68	802000005	EFGCHMZ100.017	Opening flap (105)	1	EFGCHMZ105
68 (1)	802010005	EFGCHMZ110.017	Opening flap (115)	1	EFGCHMZ115
68 (2)	802020005	EFGCHMZ120.017	Opening flap (125)	1	EFGCHMZ125
68 (3)	802030005	EFGCHMZ130.017	Opening flap (135)	1	EFGCHMZ135
68 (4)	802040005	EFGCHMZ140.017	Opening flap (145)	1	EFGCHMZ145
68 (5)	802050005	EFGCHMZ150.017	Opening flap (155)	1	EFGCHMZ155
68 (6)	802060005	EFGCHMZ160.017	Opening flap (165)	1	EFGCHMZ165
68 (7)	802070005	EFGCHMZ170.017	Opening flap (175)	1	EFGCHMZ175
68 (8)	810020005	EFGCHMZ200.017	Opening flap (200)	1	EFGCHMZ200
68 (9)	810100003	EFGCHMZ220.017	Opening flap (220)	1	EFGCHMZ220
69	802550026	AGZ-100,017	Bar (100)	1	EFGCHMZ105
69 (1)	802550027	AGZ-110,017	Bar (110)	1	EFGCHMZ115
69 (2)	802550028	AGZ-120,017	Bar (120)	1	EFGCHMZ125

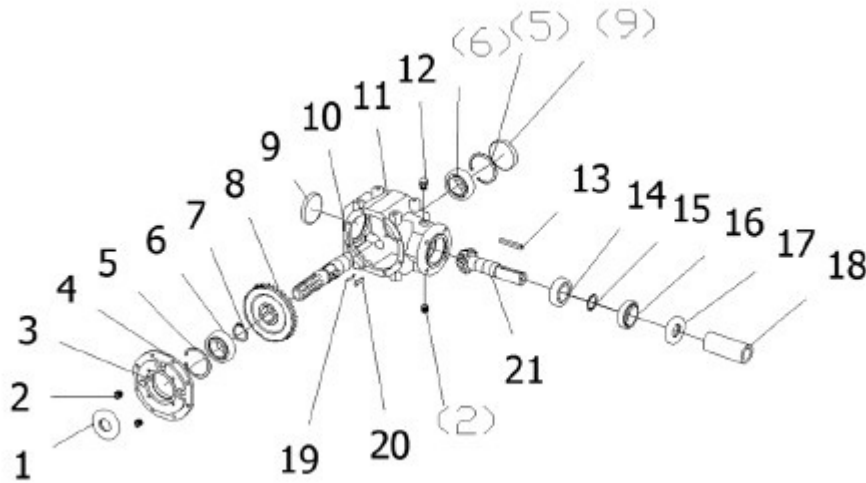
MASTER					
No.	Article no.	Part no.	Name	Quantity	Remark
69 (3)	802550029	AGZ-130,017	Bar (130)	1	EFGCHMZ135
69 (4)	802550024	AGZ-140,017	Bar (140)	1	EFGCHMZ145
69 (5)	802550030	AGZ-150,017	Bar (150)	1	EFGCHMZ155
69 (6)	802560024	AGZ-160,017	Bar (160)	1	EFGCHMZ165
69 (7)	802570026	AGZ-170,017	Bar (170)	1	EFGCHMZ175
69 (8)	802590034	AGZ-200,017	Bar (200)	1	EFGCHMZ200
69 (9)	802600034	AGZ-220,017	Bar (220)	1	EFGCHMZ220
70	801240026	EFGC100.015	Transmission	1	EFGCHM105-115
70 (1)	801240023	EFGC120.015	Transmission	1	EFGCHM125
70 (2)	801240027	EFGC130.015	Transmission	1	EFGCHM135-175
70 (3)	802520114	EFGCH200.021A-X	Transmission	1	EFGCHM200-220
71	703400008	FM120.00.199	Transmission shaft cover	1	
72	506010037	GB96.1-12	Large washer	4	
73	501011127	GB5783-M12x35	Screw M12x35	4	
74	506010036	GB96.1-10	Large washer	4	
75	506030036	GB93-10	Spring washer	4	
76	501011112	GB5783-M10x25	Screw M10x25	8	
77	702420030	EF100.00.177	Input shaft cover	1	
78	802000001	EFGCHMZ100.011	Housing (105)	1	EFGCHMZ105
78 (1)	802010001	EFGCHMZ110.011	Housing (115)	1	EFGCHMZ115
78 (2)	802020001	EFGCHMZ120.011	Housing (125)	1	EFGCHMZ125
78 (3)	802030001	EFGCHMZ130.011	Housing (135)	1	EFGCHMZ135
78 (4)	802040001	EFGCHMZ140.011	Housing (145)	1	EFGCHMZ145
78 (5)	802050001	EFGCHMZ150.011	Housing (155)	1	EFGCHMZ155
78 (6)	802060001	EFGCHMZ160.011	Housing (165)	1	EFGCHMZ165
78 (7)	802070001	EFGCHMZ170.011	Housing (175)	1	EFGCHMZ175
78 (8)	810020001	EFGCHMZ200.011	Housing (200)	1	EFGCHMZ200
78 (9)	810100001	EFGCHMZ220.011	Housing (220)	1	EFGCHMZ220
79	701520010	EFG120.169	Grease nipple cover	1	
80	701520006	EFG120.168	Grease nipple cover	1	
81	801680021	EFGCHM120.015	Left connecting plate	1	
82	701680001	EFGCHM120.101	Distance piece	4	
83	506060182	GB893.1-60	Circlip	4	

10.2 Transmission shaft



TRANSMISSION SHAFT					
No.	Article no.	Part no.	Name	Quantity	Remark
1	801240040	XH50.300Z.02W	Transmission	1	EFGCHMZ105-175
1 (2)	801380003	XH50.300Z.02-200	Transmission	1	EFGCHMZ200-220
2	701240024	EFGC120.131	Washer	1	
3	801220004	EFGC100.018A	Shaft cover (EFGC100-110)	1	EFGCHMZ105-115
3 (1)	801240004	EFGC120.018A	Shaft cover (EFGC120-170)	1	EFGCHMZ125-175
3 (2)	801600032	EFGCH200.026A	Shaft cover (EFGCHZ/M/H-200)	1	EFGCHMZ200-220
4	506030037	GB93-12	Spring washer	4	
5	505011445	GB70.1-M12x35	Screw M12x35	4	
6	507010086	GB1096-A-10x8x40	Spring washer	1	
7	701220003	EFGC100.133A	Shaft (EFGC105-115)	1	EFGCHMZ105-115
7 (1)	701250003	EFGC130.133A	Shaft (EFGC135-175)	1	EFGCHMZ125-175
7 (2)	701600034	EFGCH200.166B	Shaft (EFGCHZ/M/H-200)	1	EFGCHMZ200-220
8	511021528	GB276-6207-2RS	Grooved ball bearing	1	EFGCHMZ105-175
8 (1)	511021667	GB276-6208-2RS	Grooved ball bearing	1	EFGCHMZ200-220
9	506060188	GB893.1-72	Circlip	1	EFGCHMZ105-175
9 (1)	506060191	GB893.1-80	Circlip	1	EFGCHMZ200-220
10	510020640	GB13871-FB-35X72X12	Sealing ring	1	EFGCHMZ105-175
10 (1)	510020405	GB13871-FB-40X80X10	Sealing ring	1	EFGCHMZ200-220

10.3 Transmission



TRANSMISSION					
No.	Article no.	Part no.	Name	Quantity	Remark
1	510020638	GB13871-FB-35x80x10	FB sealing ring	1	
2	516010003	ZBT32001.3-ZG3/8-19"	Internal hexagon plug	3	
3	501011112	GB5783-M10x25	Screw M10x25	8	
4	702480003	AG14.01.C03	Cover	1	
5	506060191	GB893.1-80	Circlip	2	
6	511022654	GB276-6307	Grooved ball bearing	2	
7	506060322	GB894.1-42	Circlip	1	
8	702480005	AG14.01.C05	Gear wheel	1	EFGCHMZ105-175
8 (1)	702080002	AG14.01.C05-G2	Gear wheel	1	EFGCHMZ200-220
9	703340013	NFG-RCA-80X10	80X10 Cover	2	
10	701240041	GC175.01.C04A	Input shaft	1	
11	702480003	AG14.01.C03	Cover	1	
12	705290211	CBW-00-011B	Plug	1	
13	507010091	GB1096-A-10X8X70	Feather key	1	
14	511016440	GB297-32207	Tapered roller bearing	1	
15	506060515	JB4342-35	Circlip	1	
16	511016411	GB297-30207	Tapered roller bearing	1	
17	510020398	CFW-35X72X10	FB sealing ring	1	
18	701240025	EFGC120.132	Sleeve	1	
19	702480007	AG14.01.C07	Leaf spring	3	
20	702480006	AG14.01.C06	Feather key	3	
21	702480001	AG14.01.C01	Output shaft	1	EFGCHMZ105-175
21 (1)	702080001	AG14.01.C01-G2	Output shaft	1	EFGCHMZ200-220

11. CE CONFORMITY DECLARATION



Compliant with Machine Directive 2006/42/EC, Annex II A

P. de Heus en Zonen Greup B.V.
P.O. Box 1529
3260 BA OUD-BEIJERLAND (Netherlands)

Brand/designation: MULCHER
Types (model): MASTER 125M, MASTER 145M, MASTER 155M, MASTER 175M, MASTER 155, MASTER 175, MASTER 200, MASTER 220
Serial number:
Year of manufacture:

We hereby declare that the machine(s) described below, by virtue of their design, comply with the fundamental health and safety requirements of the relevant EC directives.

Conformance with the following EC directives: 2006/42/EC Machinery Directive

Adopted harmonized standards:

EN ISO 12100: 2010; Safety of machinery — General principles for design — Risk assessment and risk reduction
EN ISO 4254-5: 2009; Agricultural machinery - Safety - Part 5: Power-driven soil-working machines

Person authorized to compile the technical documentation:

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