GMS 280 I GMS 320

Disc Mower

Directions for use

"Original instructions"

GB

FOREWORD

DEAR CUSTOMER!

We appreciate the confidence you have shown our company by investing in a JF product and congratulate you with your new machine. Of course, it is our wish that you will experience complete satisfaction with the investment.

This instruction manual contains information about correct and safe use of the machine.

When buying the machine you will receive information about use, adjustment and maintenance.

However, this first introduction cannot replace a more thorough knowledge of the different tasks, functions and correct technical use of the machine.

Therefore you should read this instruction manual very carefully before using the machine. Pay special attention to the safety instructions.

This instruction manual is made so that the information is mentioned in the order you will need it, i.e. from the necessary operation conditions to use and maintenance. Besides this there are illustrations with text.

"Right" and "Left" are defined from a position behind the machine facing the direction of travel.

All the information, illustrations and technical specifications in this instruction manual describe the latest version on the time of publication.

JF reserves the right to make changes or improvements in the design or construction of any part without incurring the obligations to install such changes on any unit previously delivered.

CONTENTS

1. INTRODUCTION

INTENDED USE

The disc mower types GMS 280 and GMS 320 are **solely constructed for** usual work in agriculture. They are **solely intended for cutting growing grass and straw crops on the ground. They should only be connected to tractors and driven by the PTO of the tractor.**

Any use beyond this is outside the intended use. JF is not responsible for any damage resulting from such use, the user bears that risk.

It is assumed that the work is performed under reasonable conditions, i.e. that the fields are cultivated normally and to a reasonable extent kept clear of foreign matter and the like.

Intended use, of course, implies that the prescriptions concerning adjustment, operation and maintenance in the instruction manual and the spare parts book are observed.

The JF disc mowers type GMS 280 and GMS 320 **should only be used, maintained and repaired by persons who, through relevant instructions and after reading the instruction manual, are familiar with the machine in question and, in particular, are informed of possible dangers.**

The following safety instructions as well as common rules concerning technical safety, working practices and road safety **must** be observed altogether.

If changes are made on the machine and its construction without permission from Kongskilde Industries A/S, Kongskilde Industries A/S cannot be held responsible for any damage resulting from this.

SAFETY

Within agriculture there are generally many working-related injuries due to operation errors and insufficient instruction. The safety of persons and machines is an integral part of JF's development work. **We wish to ensure the safety of you and your family in the best possible way**, but this also requires an effort on your part.

A mower cannot be constructed in such a way that it guarantees the full safety of persons and at the same time performs an efficient piece of work. This means that it is very important that you as user of the machine pay attention and use the machine correctly and thereby avoid exposing yourself and others to unnecessary danger.

The machine demands a skilled operation, which means that ***you should read the instruction manual before you connect the machine to the tractor***. Even though you have been driving a similar machine before, you should read the manual - this is a matter of your own safety!

You should **never** leave the machine to others before you have made sure that they have the necessary knowledge to operate the machine safely.

DEFINITIONS

The safety decals and the instruction manual of the machine contain a line of safety notes. The safety notes mention certain measures, which we recommend you and your colleagues to follow as to increase the personal safety as much as possible.

We recommend that you take the necessary time to read the safety instructions and inform your staff to do the same.

In this instruction manual this symbol is used with reference to personal safety directly or indirectly through maintenance of the machine.

CAUTION: The word CAUTION is used to ensure that the operator follows the general safety instructions or the measures mentioned in the instruction manual to protect himself and others against injuries.

WARNING: The word WARNING is used to warn against visible or hidden risks, which might lead to serious personal injuries.

DANGER: The word DANGER is used to indicate measures which, according to legislation, must be followed to protect oneself and others against serious injuries.

GENERAL SAFETY INSTRUCTIONS

The following is a brief description of the measures, which should be a matter of common knowledge to the operator.

1. Always disengage the PTO drive shaft, activate the parking brake and stop the tractor engine before you
   - lubricate the machine,
   - clean the machine,
   - disassemble any part of the machine,
   - adjust the machine.

2. Always lower the cutting unit to the ground or activate the transport safety device when parking the machine.

3. Always use the transport safety device of the cutting unit and the stop valves of the hydraulic cylinders during transport.

4. Never work under a raised cutting unit unless it is secured by means of stop blocks or other mechanical securing device.

5. Always block the wheels before working under the machine.

6. Never start the tractor until all persons are safely away from the machine.

7. Make sure that all tools have been removed from the machine before starting the tractor.

8. Make sure that all guards have been mounted correctly.

9. During work never wear loose clothes which can be pulled in by the moving parts of the machine.

10. Do not change the guards or work with the machine when a guard is missing or defective.

11. Always drive with the statutory lights and safety marking during transport on public road and at night.

12. Limit the transport speed to maximum 30 km/h if the machine has not been marked with another maximum speed limit.

13. Do not stand near the machine while it is working.

14. When mounting the PTO drive shaft check that the number of RPM of the tractor matches those of the machine.

15. Always use hearing protectors if the noise from the machine is annoying or if you are working with the machine for a considerable period in a tractor cabin, which has not been silenced sufficiently.

16. Before raising or lowering the cutting unit, check that no persons are near the machine or touching it.

17. Do not stand near the guards of the cutting unit and do not lift the guards before all revolving parts have stopped moving.

18. Never use the machine for other purposes than what it has been constructed for.

19. Do not allow any children to be near when you are working with the machine.

20. Never stand between the tractor and the mower during connection and disconnection.

CHOICE OF TRACTOR

Always follow the recommendations specified in the instruction manual of the tractor. If this is not possible, technical assistance must be sought.

Choose a tractor with a suitable power on the PTO. If the power of the tractor is considerably larger than the usual requirement of the machine, the machine should be secured against overload with a suitable clutch on the PTO.

Long-term overload may damage the machine and at worst result in ejection of parts.

Choose a tractor with a suitable own weight and track width so that it can drive steadily on the ground. Also make sure that the link arms of the tractor are intended to carry machines with the weight in question.

Always choose a tractor with a closed cabin when working with a disc mower.

CONNECTION AND DISCONNECTION

Always make sure that nobody is standing between the tractor and the machine during connection and disconnection. An unintentional manoeuvre with the tractor may cause serious injury. (See figure 1-1)

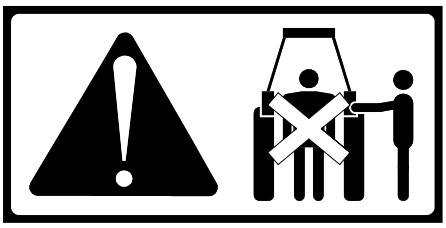
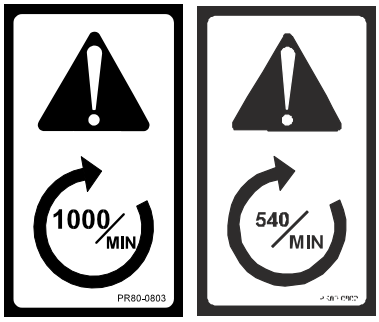


Fig. 1-1

Check that the machine is intended for the number and the direction of rotation of the tractor PTO. The number and direction of rotation of the tractor must be as in figure 1-2, seen from a position standing behind the tractor facing the direction of travel. A wrong number of rotations may result in reduced cutting and over a long period may damage the machine and at worst result in ejection of parts.

Make sure that the PTO drive shaft has been mounted correctly. The lock pin must be in mesh and the support chain must be fastened at both ends.



GMS 320 GMS 280

Fig. 1-2

The PTO drive shaft must be correctly protected. If a guard is defective, it must be replaced immediately.

Check that all hydraulic couplings are correctly mounted and tight and that all hoses and fittings are undamaged before activating the hydraulic system.
When the engine of the tractor has stopped also make sure that there is *no* pressure in the hydraulic hoses by activating the hydraulic tractor valve.
Hydraulic oil under pressure can penetrate the skin and cause serious infections. You should always protect the skin and the eyes against oil splashes. If, by accident, hydraulic oil under pressure hits you, consult a doctor immediately. (See figure 1-3)

Fig. 1-3

Check that the drawbar and the cutting unit can move freely before you activate the hydraulic cylinders. Make sure that no persons are near the machine when starting as there might be air in the hydraulic system which might lead to sudden movements.

ADJUSTMENT

Never adjust the mower while the PTO drive shaft is engaged. Disengage the PTO drive shaft and stop the tractor engine before you adjust the machine. It is important not to remove the guards until all revolving parts have stopped.

Before working check blades and discs for cracks and other damage. Replace damaged blades and discs. (See section on maintenance).

Check periodically if blades and blade bolts are worn according to the rules in the instruction manual. (See section on maintenance).

TRANSPORT

Never drive faster than the conditions allow, and maximum 30 km/h.

It is important to block the hydraulic transport adjustment. An unintentional operation of the drawbar cylinder may cause the machine to move to the opposite lane, the bicycle track or the sidewalk. Always check that mechanical transport safety devices are activated before transport.

This may also happen if there is air in the hydraulic cylinders or if there is a sudden loss of oil from the hydraulic hoses.

To ensure all the air has been expelled from the oil in the hydraulic cylinders, test all the functions after the hydraulic connections are connected to the tractor. Especially before driving on public road.

WORKING

During the daily work it should be considered that loose stones and foreign matter on the ground might get in contact with the revolving parts and get thrown out again at a very high speed.

Therefore, all guards must always be correctly mounted and intact when you are working with the machine.

Worn and damaged canvases should be replaced.

In stony fields, the stubble height should be adjusted to maximum and the cutting angle to minimum.

If the cutting unit or the conditioner is blocked, stop the tractor engine, activate the parking brake and wait until the revolving parts have stopped before removing the foreign matter.

Never allow anybody to stand near the mower during work, especially not children.

Change into a lower tractor gear if working on hillsides.

When working with a trailed mower keep a safe distance from steep slopes and similar ground conditions, as the ground may be slippery and pull the mower and the tractor sideways. Also remember to adjust the speed for sharp turns when driving on hillsides.

PARKING

Never leave the tractor before the cutting unit is resting on the ground, the engine of the tractor has stopped, and the parking brake has been activated. This is the only way to perform a safe operation.

Make sure that the jack on the drawbar of the machine is correctly fastened and locked when parking the machine.

GREASING

When lubricating or maintaining the machine, make sure that the cutting unit is resting on the ground or that the lifting cylinders are blocked by means of stop valves.

Never try to clean, grease or adjust the machine before the PTO has been disengaged, the tractor engine has stopped and the parking brake been activated.

MAINTENANCE

It is important that the cutting unit is correctly relieved to ensure perfect operation in the field and to reduce the risk of damaging the cutter bar.

Always make sure that the used spare parts are tightened to the correct torque.

When replacing parts in the hydraulic system always make sure that the cutting unit rests on the ground or the lifting cylinders are blocked.

MACHINE SAFETY

All revolving parts are balanced by JF by means of a special machine with electronic sensors. If it turns out that a part still has an unbalance, small counterweights should be fastened.

As the discs run at up to 3000 RPM, even the slightest unbalance will cause vibrations which may lead to fatigue fractures.

If the vibrations or the noise of the machine increase considerably during the operation, stop working immediately. Do not continue the work until the fault has been corrected.

When replacing blades, both blades on the disc in question must be replaced as not to create an unbalance.

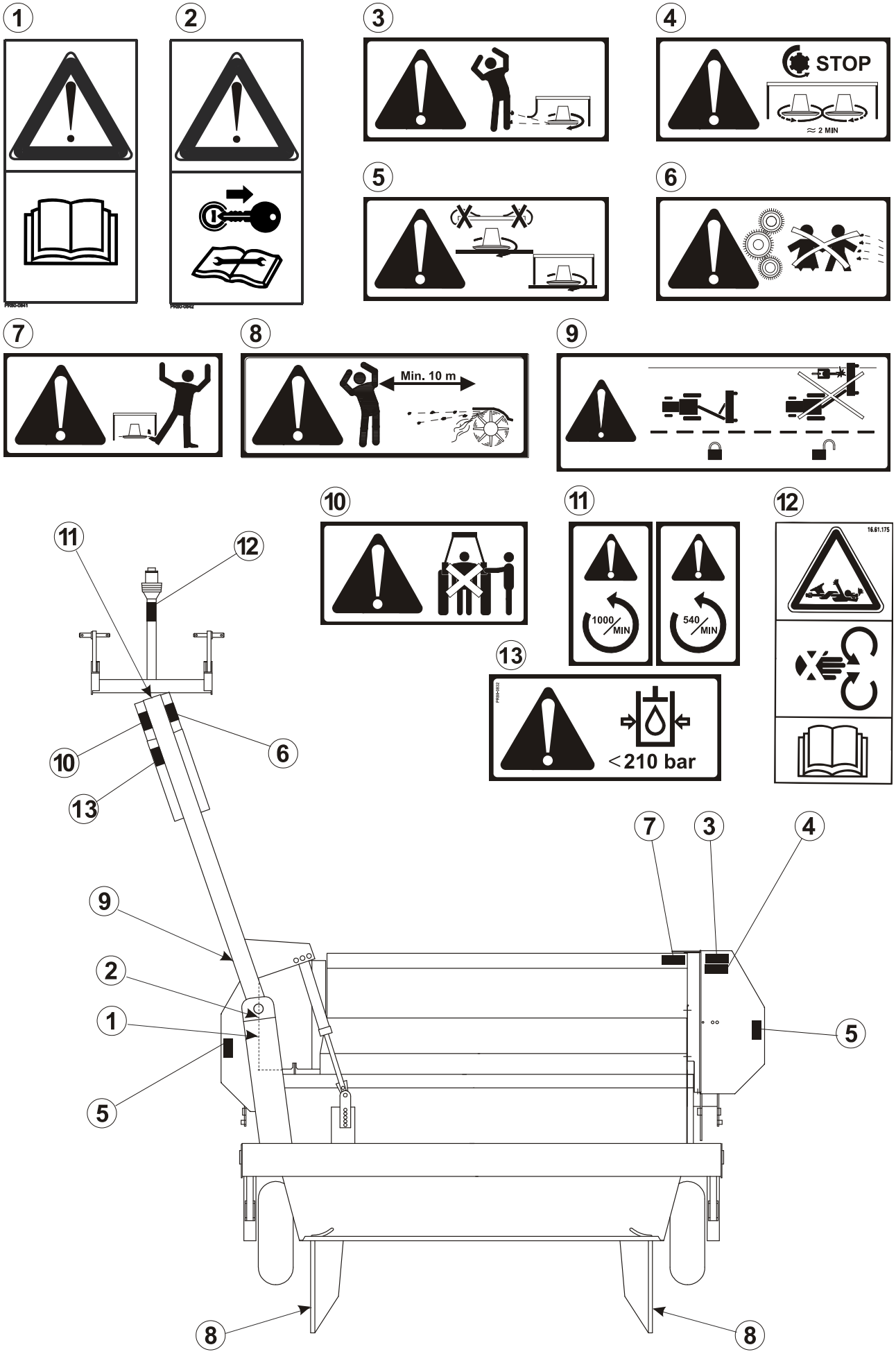
During the season check daily that no blades, carriers or bolts are missing. If any of these are missing, mount new parts immediately.

Clean caps and flow intensifiers of earth and grass regularly.

You should also check and “air” the friction clutch regularly to ensure it does not rust.

TECHNICAL DATA

Type	GMS 280	GMS 320
Conditioner system	PE-fingers	
Working width	2.8 m	3.15 m
Transport width	2.92 m	3.2 m
Power requirement, minimum on PTO	50 kW/68 hp	60 kW/82 hp
PTO-type, RPM	6 splines/540 rpm	6 splines/1000 rpm
Friction clutch and freewheeling	Standard	
Oil outlets	1 double acting + 1 single acting	
Swivel gear on drawbar	Standard	
Transport conversion	Hydraulic	
Number of HD discs	7	8
Number of HD blades	14	16
Floating suspended cutter bar	Standard	
Number of guide shoes, standard	2	2
Number of guide shoes, maximum	7	8
Flow intensifiers	Option	
Conditioner width	2.37 m	2.70 m
Conditioner elements	120 PE-fingers	152 PE-fingers
TopDry	Option	
Swath width without TopDry	0.8-1.8 m	1.0-2.2 m
Swath width with TopDry	2.2 m	2.5 m
Tyres, standard	10.0/75-15.3	
Tyres, alternative	13/55-16	
Weight, approx.	1540 kg	1760 kg
Weight transferred to tractor	390 kg	400 kg
Lighting kit	Option	


1
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8

SAFETY DECALS

The safety decals shown on the previous page are positioned as shown on the drawings at the bottom of the page. Before using the machine, check that all decals are present: if not, require those missing. The decals have the following meaning:

1 Read the instruction manual and the safety instructions.
This is to remind you to read the delivered documents to ensure the machine is operated correctly and to avoid unnecessary accidents and machine damage.

2 Stop the tractor engine and remove the ignition key before touching the machine.
Always remember to stop the tractor engine before lubricating, adjusting, maintaining or repairing. Also remember to remove the ignition key to ensure that nobody starts the engine, until you have finished.

3 Risk of stones being thrown.
Almost the same meaning as decal No. 5. Even though all canvases and guards are in the right place, there is still a risk of stones etc. being thrown out. Therefore, nobody should be allowed to stand near the machine during operation.

4 Rotating parts.
After the PTO drive shaft has stopped, the blades will have a momentum where they keep rotating for up to 2 minutes. Wait until the blades have come to a complete stop before you remove the canvas and the guards for inspection and maintenance.

5 Operation without canvas.
Do not start the machine unless canvases and guards are intact and in their right place. The machine can throw out stones and other foreign matter during operation. The purpose of the canvases and the guards is to reduce such danger.

6 Children.
Never let children stand near the machine during operation. Especially not small children as they have a tendency to do unforeseen things.

7 Rotating blades.
Do not under any circumstances let anyone get near or stand near the machine during operation. The rotating blades of the machine can without difficulty cause serious injury to any part of the body if hit by such a blade.

8 Stones being thrown from the conditioner.
The conditioner rotor runs with a high number of RPM and stones on the ground can be thrown up to 10 m backwards at a very high speed. Therefore, always make sure that nobody is standing near the machine when it is working.

9 Remember the transport lock.
Always remember to activate the transport lock before transporting the machine on public road. Errors in the hydraulic system and unintended manoeuvres may cause the machine to move to working position during transport which may result in serious machine damage or personal injury.

10 Risk of injury during the connection.
Never let anybody stand between the tractor and the machine during connection to the tractor. An unintentional manoeuvre may cause serious injury.

11 The number and the direction of rotations.
Check that the PTO drive shaft runs with the right RPM and in the right direction. A wrong number of rotations and/or direction of rotation can damage the machine with the risk of personal injury as a result.

12 The PTO drive shaft.
This decal has the purpose to remind you how dangerous the PTO drive shaft can be if it is not correctly mounted or protected.

13 Maximum 210 bar.
Make sure that the hydraulic components are not exposed to more pressure than maximum 210 bar as there could be a risk of explosive damage of parts. Hereby you expose yourself and others to serious danger of getting hit by metal parts with high speed or oil under high pressure.

2. CONNECTION AND TEST DRIVING

CONNECTION TO THE TRACTOR

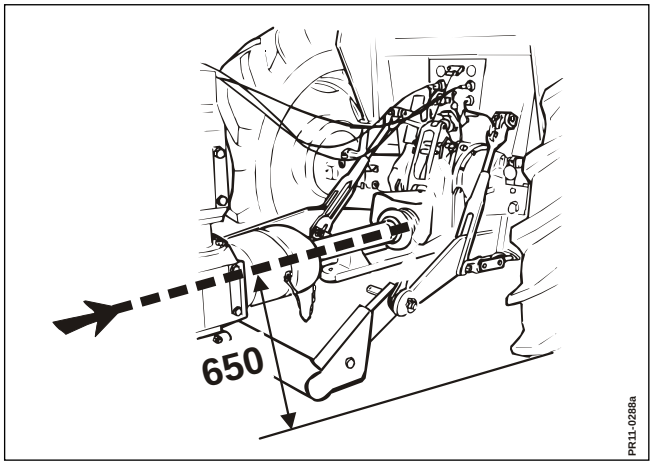


Fig. 2-1

Fig. 2-1 The GMS machine is connected to the lower link arms of the tractor. The dowels are intended for category II. Bushings can be supplied for category III.
Adjust the lower link arms to the same height.
The lower link arms of the tractor can now be connected to the machine and then **raised to a height where the input shaft of the machine (PIC) is 650 mm above the ground.** In this position the machine is horizontal. In case the PTO drive shaft of the tractor deviates more than 60 mm in height, the machine must be lifted / lowered in order for the deviation to get below 60 mm.
The lower link arms must be **locked** in this position to prevent a sideways travel so that the **PTO shaft and the PIC shaft are in line seen from above**. A straight PTO drive shaft absolutely gives the longest life on axle universal joint and the other rotating parts of the machine.

ADJUSTMENT OF PTO DRIVE SHAFT

IMPORTANT: Do not shorten your new PTO shaft until you are certain that it is necessary. From the factory the PTO shaft is adjusted to the distance from PTO to PIC which is standard on most tractor brands.

If it is still necessary to shorten the PTO shaft, please note the following:

IMPORTANT: The profile tubes of the PTO shaft must fully comply with the overlapping measures shown in Fig. 2-2.

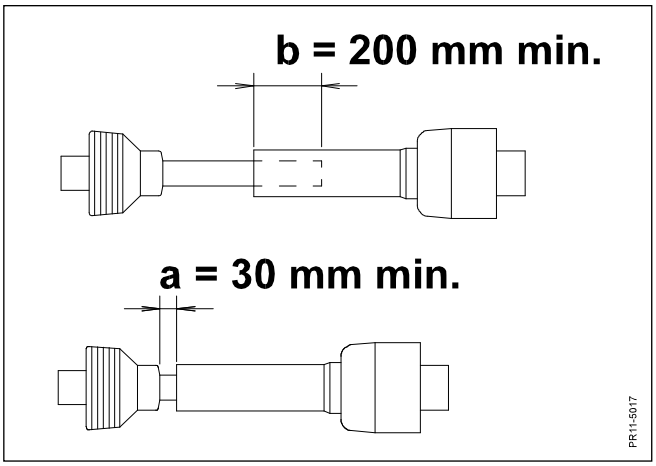


Fig. 2-2

IN CASE OF SHORTENING:

Fig. 2-2 Adjust the PTO shaft so that it:

- has the biggest possible overlapping
- in no position has less overlapping than 200 mm.
- is not compressed more than the prescribed 30 mm in order not to bottom the shaft.

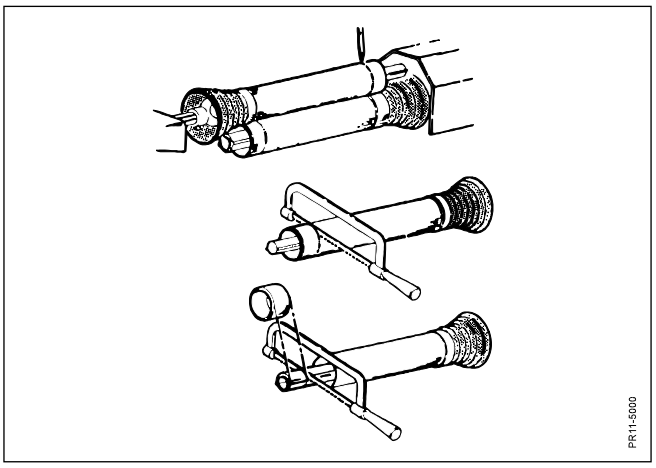


Fig. 2-3

Fig. 2-3 Fasten the PTO drive shaft half parts to PTO and PIC, respectively, when these are at the same horizontal level and opposite each other (the shortest distance on this machine).
Keep the shaft ends parallel to each other and mark the 30 mm (minimum).
Shorten all 4 tubes equally. The ends of the profile tubes must be rounded off and burrs must be removed carefully.

WARNING: **Grease the tube carefully before it is reassembled as it will otherwise be exposed to big friction forces.**

JACK

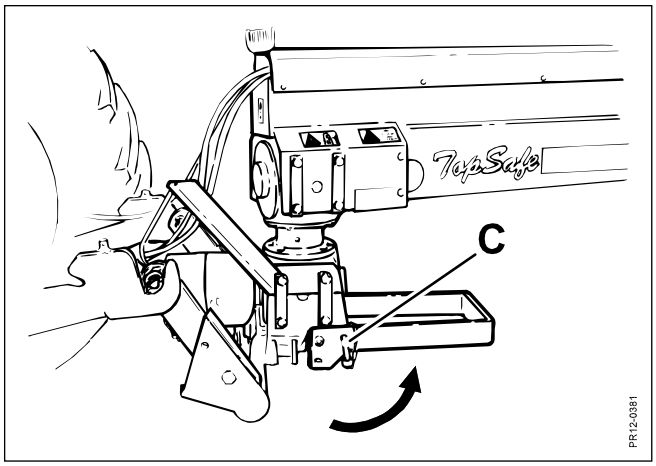


Fig. 2-4

Fig. 2-4 The jack under the swivel gear is swung backwards and locked with pin **C** and spring pin.

THE PTO SPEED OF THE MACHINE

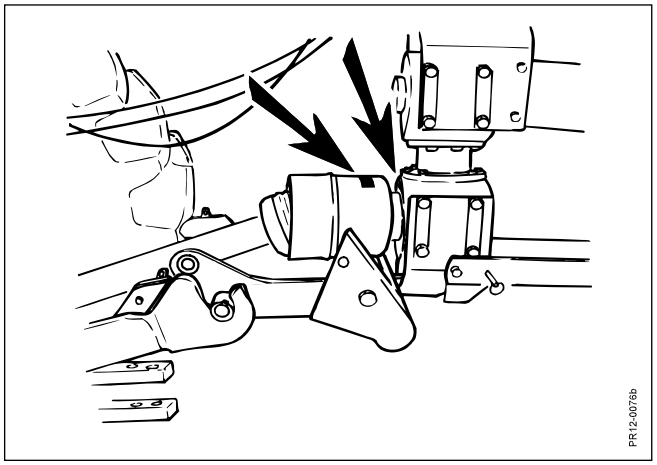


Fig. 2-5

Fig. 2-5 The machine is built for 1000/540 rpm Therefore, before starting the machine, please check that the PTO shaft runs with 1000/540 rpm.

FRICTION CLUTCH

See section **5. MAINTENANCE – friction clutch** before you start up.

FREEWHEEL

The machine is equipped with freewheel on the secondary PTO shaft in **front** of the input gear to the cutting unit. If the PTO shaft is turned upside down it has **no** effect on the freewheel.

HYDRAULIC CONNECTION

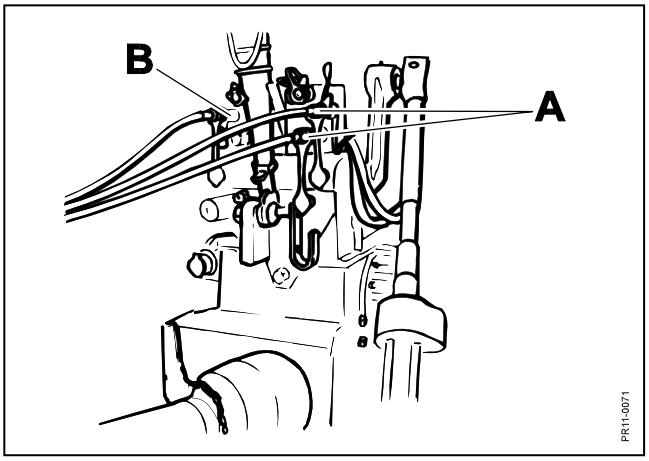


Fig. 2-6

Fig. 2-6 The hydraulic hoses for the drawbar shift cylinder are connected to the double-acting oil outlet **A** and the hydraulic hose for the wheel cylinders is connected to a single-acting outlet **B** on the tractor. See **HYDRAULIC DIAGRAM** on page 53.

DANGER: **The hydraulic components must not be exposed to a higher pressure than 210 bar as a higher pressure may cause parts to be damaged. Hereby a serious risk of personal injury occurs.**

TRANSPORT ON PUBLIC ROAD!

The machine is only built to be trailed behind a tractor in the tractor lift arms, cf. section **CONNECTION TO THE TRACTOR** page **16**. The transport speed **should not exceed 30 km/h**.

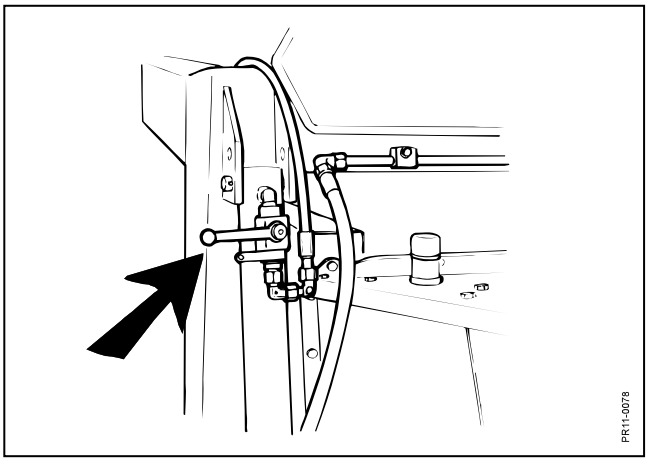


Fig. 2-7

Fig. 2-7 Lifting and lowering of the machine is carried out with the single acting oil outlet of the tractor.

The machine is lifted from the ground until the cylinders are fully stretched out.

Possible air in the cylinders is removed by moving the pistons in and out a few times. If there is air in the system, the machine cannot stay in lifted position.

DANGER – ALWAYS REMEMBER:

HEREAFTER THE SAFETY TAP IS CLOSED which is placed by the cylinder for the left wheel. The tap is closed when it is placed in the shown position.

The double acting oil outlet of the tractor is used to swing the machine to a position **centred behind** the tractor.

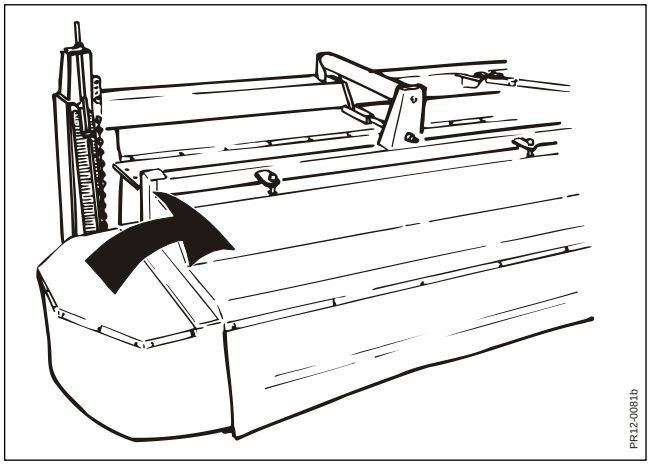


Fig. 2-8

Fig. 2-8 Fold up the safety canvases to reduce the transport width as much as possible.

DANGER – TRAFFIC MARKING:

The owner is always obliged to ensure that the machine is equipped with correct lighting system and other traffic marking in accordance with the country's current rules.

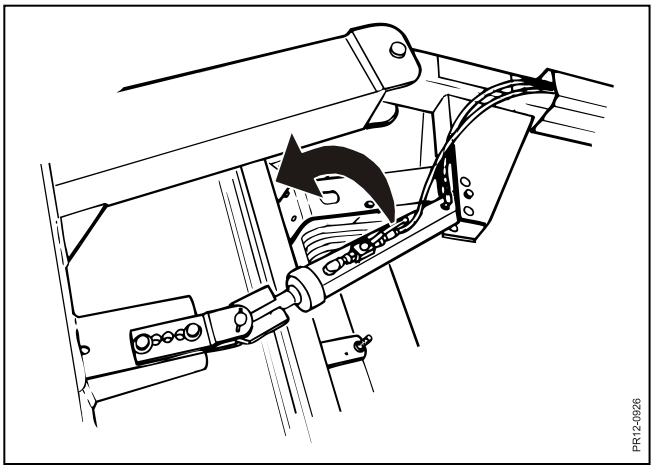


Fig. 2-9

Fig. 2-9 After the machine has been turned in transport position the ball valve by the cylinder for the drawbar must be closed. This must be done in case of leaking hoses or unintended use of the hydraulic outlet during transport to prevent the machine from swinging into working position during transport. Move the handle on the ball valve in direction of the arrow, as shown in the figure, in order to turn off the oil supply.

CHECK BEFORE USE

Before you use your new disc mower, please do as follows:

1. Read this instruction manual carefully!

2. Check that the machine has been assembled correctly and is undamaged.

3. Check that the PTO speed of the machine (and of the tractor) is correct. Too high PTO speed can be dangerous. Too low PTO speed causes bad cutting, blocking of the disc mower and high torque on the drive shafts Help to find the correct speed can be found in the section **”THE PTO SPEED OF THE MACHINE”** on page **18**.

4. Check the movements of the PTO drive shaft. If the PTO shafts are too short or too long it may damage the tractor as well as the machine considerably.
   Check that the protection tubes do not get jammed or damaged in any position.
   Check that the safety chains of the protection tubes have been secured properly and that they do not in any position get too tight or damaged.

5. Make sure that the hydraulic hoses have been mounted in such a way that they are long enough for the movements of the cylinders.

6. Re-tighten the wheel bolts.

7. Check the tyre pressure. See section **”5. MAINTENANCE”.**

8. Check that the machine has been greased sufficiently and check that the oil level in the gearbox and the cutter bar is correct. See section **”4. GREASING”.**

9. Air the friction clutch as described in chapter **"5 MAINTENANCE".**

From the factory the revolving parts of the machine have been tested and declared error-free. However, you should do as follows:

10. Start the machine at a low number of RPM. With open rear window and without hearing protector you should check that there are no unusual scratching or knocking sounds. Then the number of RPM can be increased. At the correct number of RPM, check if there are any noticeable vibrations. (Check the guards for unusual vibrations).

If there is any doubt, stop the tractor and the machine according to the procedure described in the section ”**SAFETY”.**
Turn the revolving parts with manual power to check if the machine can turn freely.
Check the machine visually to find possible errors. (Such as burnt or scraped paint).
Then seek authorised assistance.

NB: Note that because of the smaller centrifugal force at a low number of RPM, the blades can touch the guard plates on the beam. This sound must disappear at the normal number of RPM during work.

Also note that the cutter bar under the discs will get very warm. The colour of the cutter bar gets darker after some hours of operation.

CAUTION: **If you wish to test the machine for a long time, close the rear window or wear hearing protector!**

3. ADJUSTMENTS AND DRIVING

CONSTRUCTION AND FUNCTION

The cutterbar cuts and throws the crop against the conditioner fingers, which lift and throw the crop backwards to the swath guards, which gather the crop in a 0.9-2.2 m wide swath.

The degree of conditioning can be varied by changing the distance between the conditioner plate and the rotor.

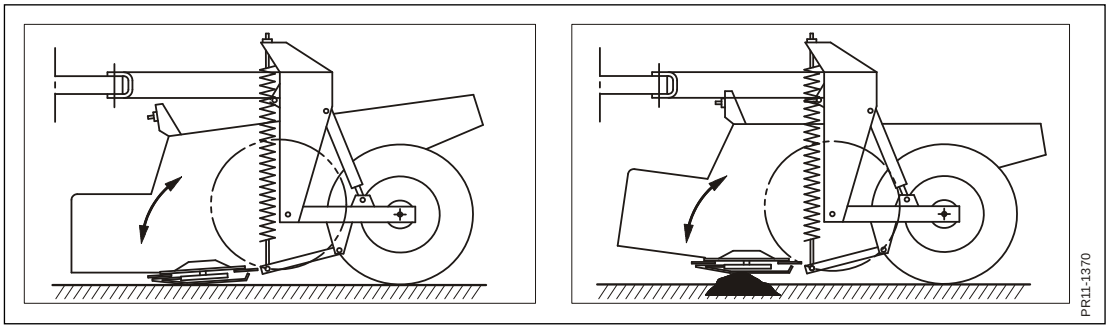


Fig. 3-1

Fig. 3-1 The cutting unit of the machine with the cutterbar is floating suspended in two strong springs for vertical movement. Furthermore, the cutting unit can tip backwards. This provides the cutterbar with an easy swivelling movement when hitting stones or the like.

The stubble height is continuously adjustable by adjusting the inclination of the cutter bar as well as adjustable guide shoes.

The machine can without problems be manoeuvred around obstacles by means of the hydraulic shift cylinder.

WORKING IN THE FIELD

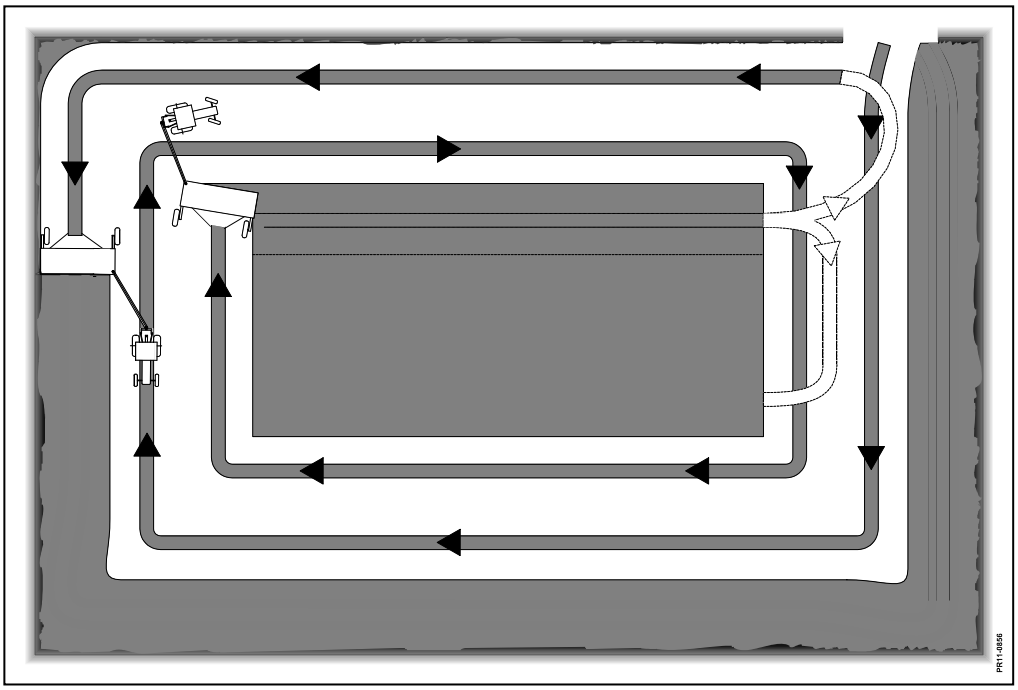


Fig. 3-2

Fig. 3-2 Place the machine in working position. In this position drive clock-wise for some rounds so that there is space to turn at the ends of the field. The preparation of the headland is ended by mowing the outermost round, driving counter clock-wise. Then the field is ready to be harvested in one piece, or divided into sections, as required. The speed varies from 6-19 km/h depending on the crop and the working conditions.

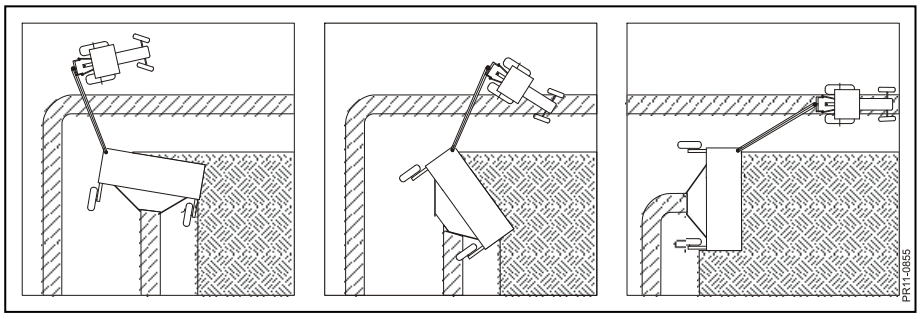


Fig. 3-3

Fig. 3-3 The swivel gearbox allows a turn of 90° - or more - without vibrations in the transmission. Turning in the corners of the field is reduced from the usual approx. 12 sec. to only approx. 3 sec. because the machine practically turns around its own centre line.

Connect the power take-out carefully and increase to the correct number of rpm, (standard 1000/540 rpm) **before driving into the crop.** When mowing, the single-acting hydraulic outlet of the tractor for raising/lowering the machine must be in **floating position**.

ADJUSTMENT OF THE SWING OF THE DRAWBAR

An adjustment of the swing of the drawbar must be made, so that it is possible to use the two outer positions of the cylinder for transport position and working position respectively.
In transport position the tractor must be within the transport width of the machine.
In working position a position must be found where the previous swath lies between the wheels of the tractor, and the cutterbar at the same time has full working width in the uncut crop.

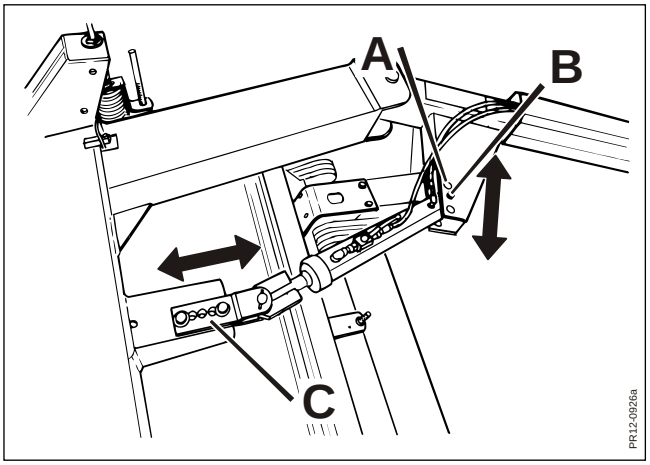


Fig. 3-4

Fig. 3-4 From the factory bracket **C** is placed in a basic setting, which meets above conditions in work and transport, respectively. In order to obtain the correct positions of the drawbar the swivel cylinder must be placed in hole **A** for GMS 320 and hole **B** for GMS 280. Check that the bracket is always fixed with 2 bolts in pos. **C**.

IMPORTANT: Check the bolts at C and tighten the bolts after each 50 operation hours, if necessary.

STUBBLE HEIGHT AND RELIEF OF THE CUTTER BAR

Relieve the cutterbar in the <u>right</u> order:

1) The machine is swivelled into **working position.**

   The machine must be correctly mounted in the link arms of the tractor, cf. the section **Engagement**. The cutter bar **must be lowered to rest on an even surface**.

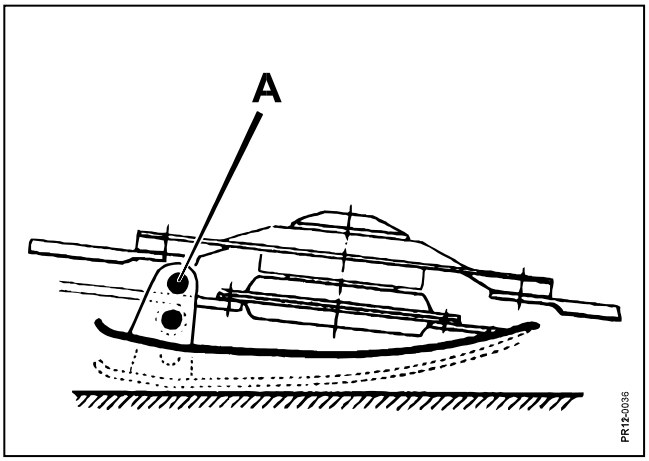


Fig. 3-5

Fig. 3-5 2) Adjust **the stubble height** by means of guide shoes and by adjusting the inclination of the cutter bar.

Theoretical cutting height:

Upper hole 55 mm => corresponding to a stubble height of 110 mm.
Lower hole 30 mm => corresponding to a stubble height of 60 mm.
(Usually the stubble height is 2 x theoretical cutting height).

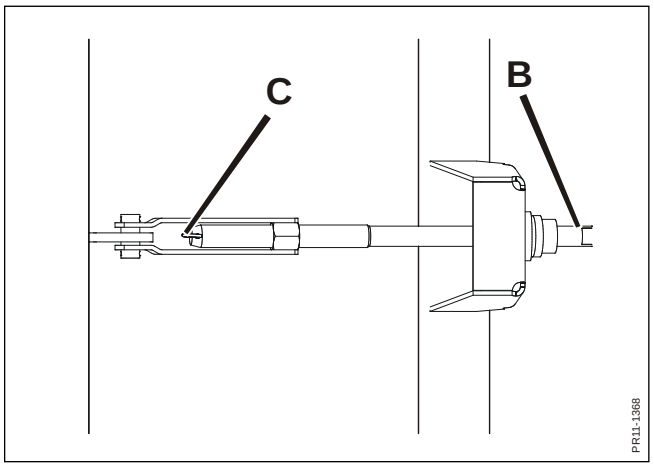


Fig. 3-6

Fig. 3-6 Fine adjustment of the stubble height can be made by adjusting the inclination of the cutterbar on the spindle at **B**. A spring pin **C** holds the setting.

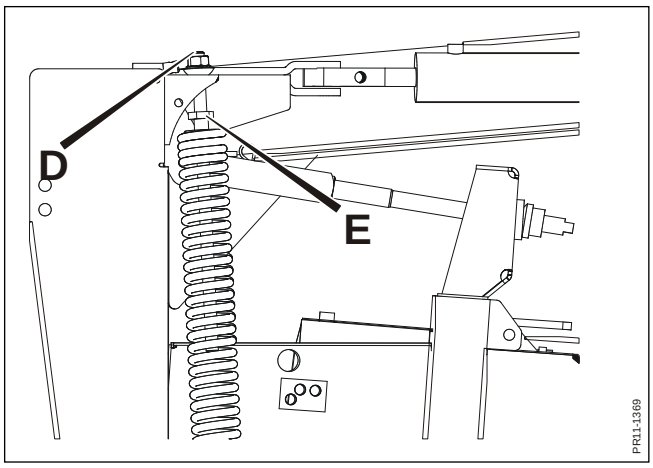


Fig. 3-7

Fig. 3-7 3) **The relief springs** are adjusted by means of the spindle **D**, until the cutterbar **extends suitable pressure on the ground**.

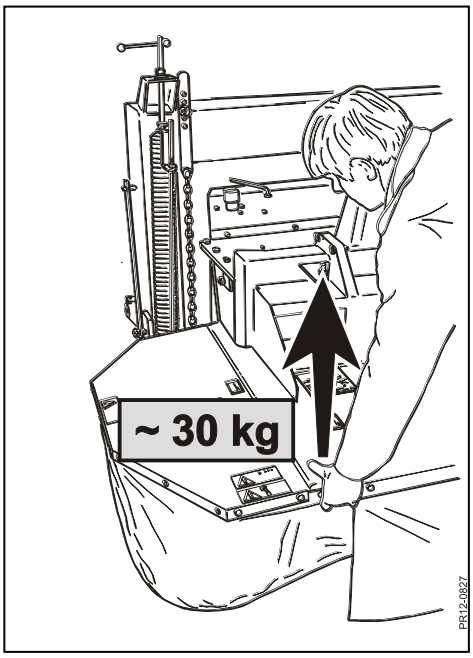


Fig. 3-8

Fig. 3-8 We recommend that the springs are tightened so much that the lifting capacity over the cutterbar is **approx. 30-50 kg in each side**.

Fig. 3-7 A counter nut **E** holds the adjustment.

Note: The height-relief-springs must rarely be tightened equally.

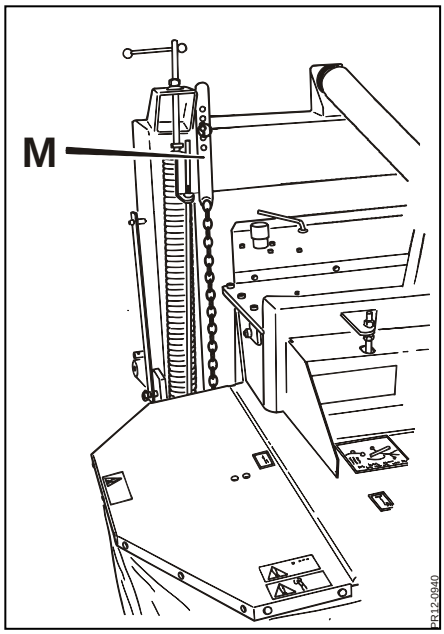


Fig. 3-9

Fig. 3-9 5) **Adjust the safety chains, M,** to allow a vertical movement corresponding to **1½** chain links.

The safety chains must not carry the machine in working position, but ensure that the cutterbar has a stable suspension during transport and when driving on the headland and they also ensure a maximum bottom position / depth.

6) **Any modification** of the stubble height requires a readjustment of the relief. (Fig. 3-5).

7) **Operating in the field** – aim for the lowest possible weight on the cutterbar. If the stubble is uneven the springs have been tightened too much.

The size of the relief is only a guide and must be adjusted to the individual needs and situation.

Note:

At intervals it must be checked that the machine is working with the correct relief. Earth and grass on the cutterbar and in the swath plates of the machine may change the relief considerably!

Too little relief can cause **excessive wear** on the guide shoes and **damage the grass roots**. Besides, there is increased risk that the machine **"picks up stones"** which means increased risk of damage to materials and injury to persons.

NB! THE CONNECTION BETWEEN CUTTERBAR AND RELIEF SPRINGS

It is essential to pay attention to the important connection between the following elements:

a) The distance from the PIC shaft to the ground and the inclination of the cutterbar.

b) The tension of the height-relief springs.

If one thing is changed under **a**, the other things under **b** must be checked/adjusted to obtain optimum working conditions.

WARNING: **Remember! After the adjustment it must be checked that all counter nuts have been tightened and any tools must be removed from the machine.**

FLOW HATS (ADDITIONAL EQUIPMENT)

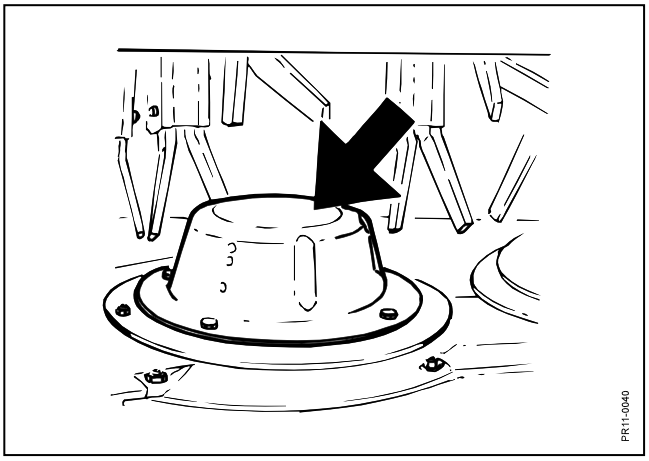


Fig. 3-10

Fig. 3-10 The discs can be equipped with low flow hats to ensure that the crop is lifted away from the blades faster. This reduces risk of stripes and recutting.

If the power requirement seems to be too high, the flow hats can be dismounted. The amount of crop and the driving technique determine the need of flow hats.

CONDITIONER

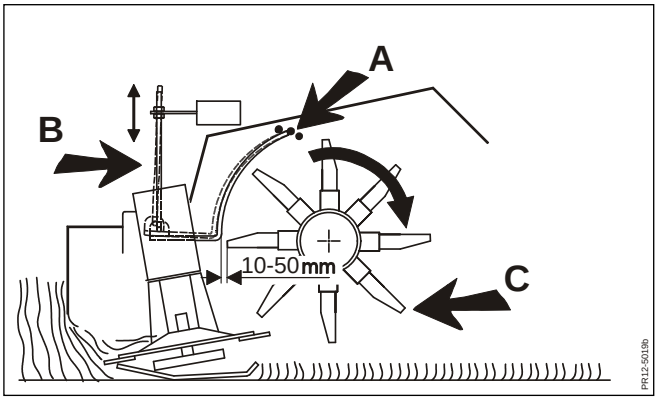


Fig. 3-12

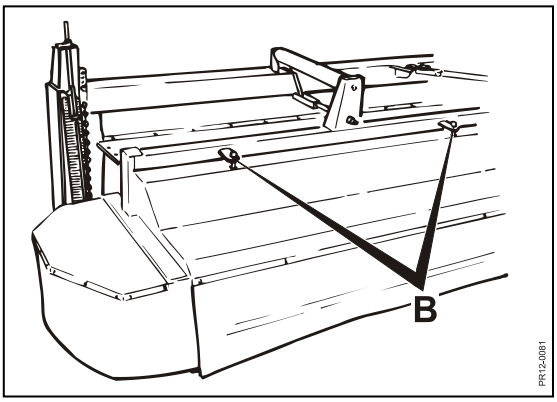


Fig. 3-11

The conditioner rotor rotates with **900 rpm**.

Fig. 3-11 The degree of conditioning can be varied by changing the distance between the conditioner plate and the rotor.

and 3-12 Adjustment is made by adjusting the conditioner plate in the holes **A**, (right and left side.are adjusted an equal amount) as well as adjusting the screws at **B**, (right and left side are adjusted an equal amount).

In general: **Short distance – Strong conditioning**

Large distance – weak conditioning

The adjustment should be adapted to the working speed and the state of the crop.
As basic adjustment we recommend to start up with a small distance in front (15-20 mm) and a larger distance at the back.

Finally the PE-fingers at **C** can be turned for a more aggressive conditioning of the crop.

4. GREASING

GREASE

Always ensure that the machine has been properly greased before it starts operating.

Go through the greasing chart.

TYPE OF GREASE: Universal grease of good quality.

Rotating mechanical connections are greased with grease or oil as required.

CAREFUL - REMEMBER:

PTO DRIVE SHAFTS MUST BE GREASED EVERY 10 HOURS OF OPERATION

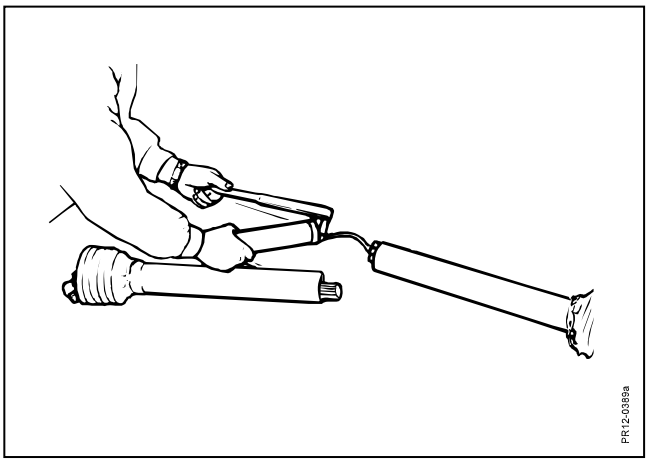


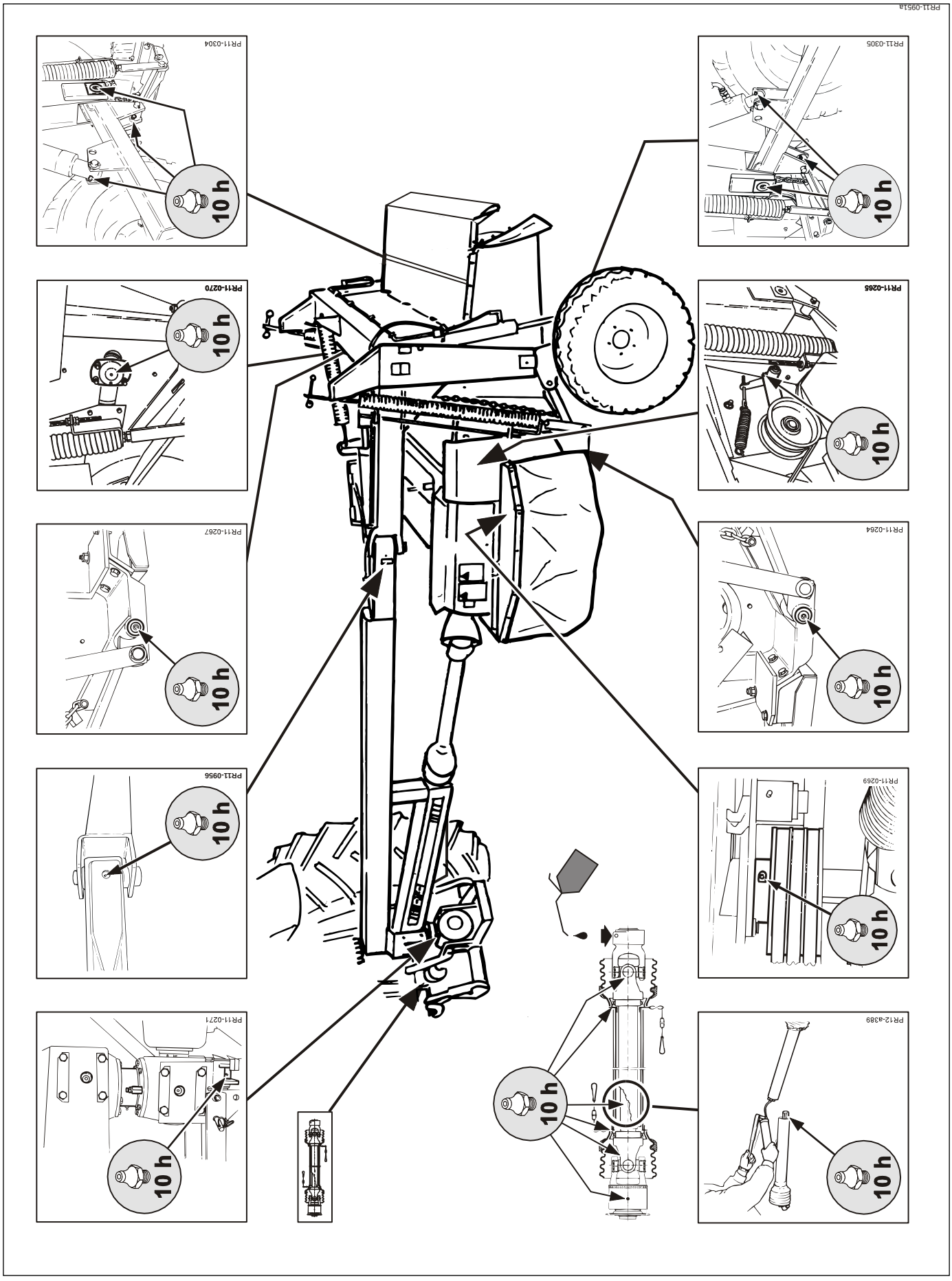
Fig. 4-1

Fig. 4-1

Pay special attention to the **sliding PROFILE TUBES** of the PTO shafts. They must be able to slide back and forth when the torque is heavy. **If you neglect to grease the profile tubes sufficiently it will result in high axial forces** (seizing) **in the profile tubes, which will damage the profile tubes and in time also connecting shafts and gear boxes.**

Greasing chart for disc mowers type <u>GMS 280 and GMS 320</u>

The below grease spots **must** be greased according to the working hour intervals indicated.



OIL IN THE CUTTER BAR

THE CUTTER BAR

The cutter bar is available in two versions. They are easy to distinguish since on one version the discs are mounted with 4 bolts and on the other version with 6 bolts. Therefore they are called **4-bolt** and **6-bolt** cutter bar, respectively. There are other differences between the two types of cutter bar. Some parts such as guide shoes, shearbars etc. are different, whereas e.g. the blades are the same.
In the following there will be separate sections marked with the headings **4-bolt** and **6-bolt** cutter bar. If there are not any separate sections, the description applies to both types of cutter bar.

4-BOLT CUTTER BAR

Oil content:	**GMS 280**	**2.00 l**
	GMS 320	**2.25 l**

2 filling plugs are placed on top of the cutter bar:

GMS 280
The filling plugs are placed between 1st and 2nd disc in the **right-hand side** and between 2nd and 3rd disc in the **left-hand side**.

GMS 320
The filling plugs are placed between 1st and 2nd disc in the right **and** left-hand side.

Oil type: Only the quality: API GL4 SAE 80W

(In certain countries API GL4 SAE 80W oil is not available). In these cases API GL4 or GL5 SAE 80W-90 oil can be used as an acceptable alternative. Never use pure SAE 90W oil in the cutter bar).

6-BOLT CUTTER BAR

Oil content:	**GMS 280**	**2.65 l**
	GMS 320	**3.00 l**

2 filling plugs are placed on top of the cutter bar:

GMS 280
They are placed at each side of the middle disc.

GMS 320
They are placed between the 3rd and 4th disc from the left and between the 3rd and 4th disc from the right.

When changing the oil, be sure to use a correct oil type.

Correct oil type: **Only the quality: API GL-4 SAE 80W**
In some countries, this oil is not available. In these cases API GL-4 or API GL-5 SAE 80W-90 multi grade oil can be used as an acceptable alternative. Never use pure SAE 90W oil in the cutter bar.

WARNING: Never fill with more or less oil than prescribed.
Too much oil as well as too little oil in the cutter bar may cause unintentional overheating which in the long term will damage the bearings.

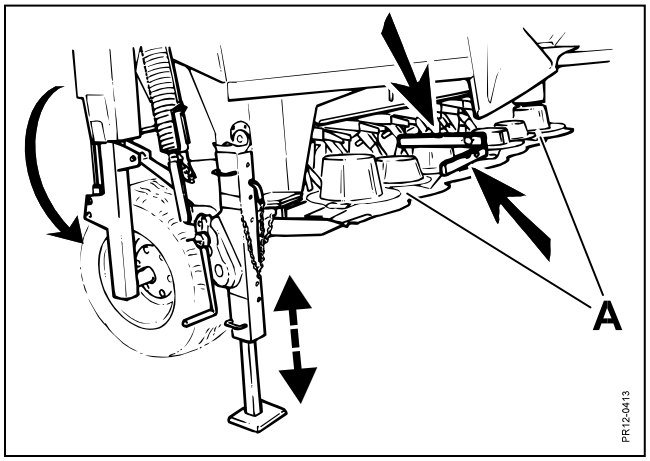


Fig. 4-2

Fig. 4-2 The oil level must be checked every day during the harvesting season.

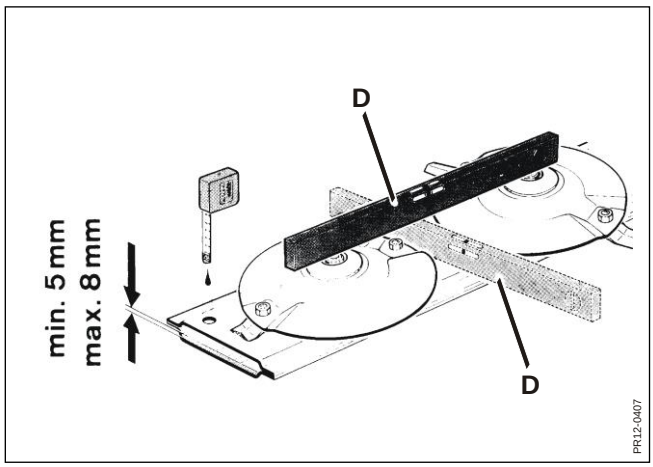


Fig. 4-3

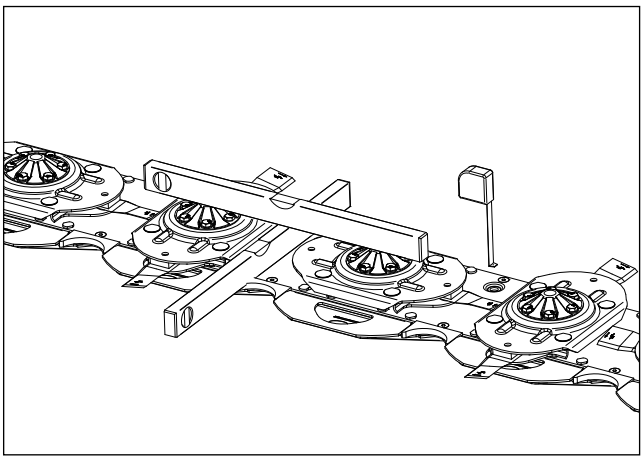
Fig. 4-3 In order to facilitate the daily oil check we recommend a permanent "oil measuring platform". This means that the check for **"horizontal cutter bar",** as shown in Fig. 4-2 and 4-3, only has to be made once.

Horizontal cutter bar:

Longitudinal direction: The machine is lifted to maximum ground clearance. Hereby the construction ensures that the cutter bar will tip backwards to almost horizontal position. Fine adjustment can for instance be made with the lower link arms of the tractor, or by ground adaptation.

Lateral direction: Fine adjustment can be made with e.g. lifting jack, as shown.

OIL LEVEL



Figur 4.4

4-bolt cutter bar

Fig. 4.4 The oil level must be between 6 and 7 mm, measured at the filling holes.

6-bolt cutter bar

Fig. 4.4 The oil level must be between 7 and 9 mm, measured at the filling holes.

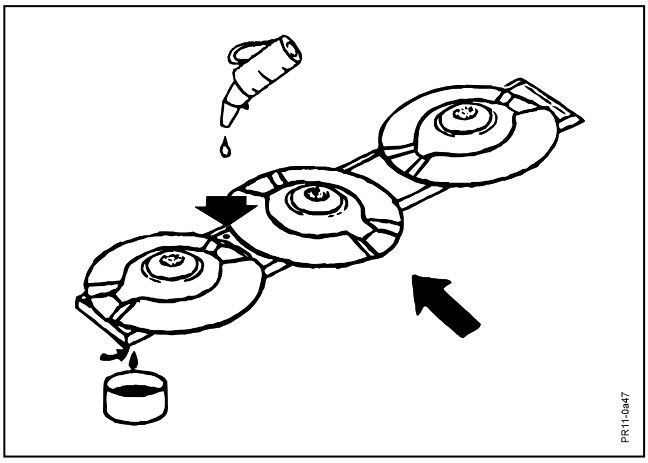


Fig. 4-5

Fig. 4-5 Oil change: First oil change after 10 working hours and then after every 200 working hours or at least once a year.

The oil is drained out at the plug in the bottom in the left-hand side.

Note: **The left** skid must be dismounted in order to reach the drain plug.

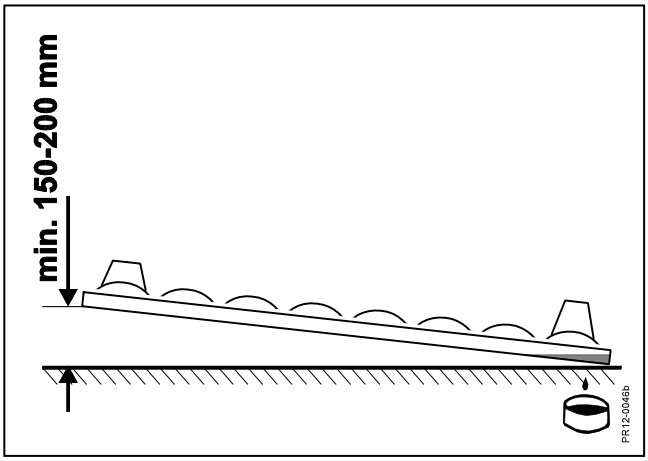


Fig. 4-6

Fig. 4-6 For oil change the cutter bar is raised minimum 150-200 mm in the right-hand side to ensure optimum emptying.

The drain plug is fitted with a magnet and should be cleaned at every oil change.

REMEMBER: **Never** fill with more oil than prescribed.
Too much oil as well as too little oil in the cutter bar causes unintended heating which in time will damage the bearings.

OIL IN THE BEVEL GEARBOX ABOVE THE CUTTER BAR

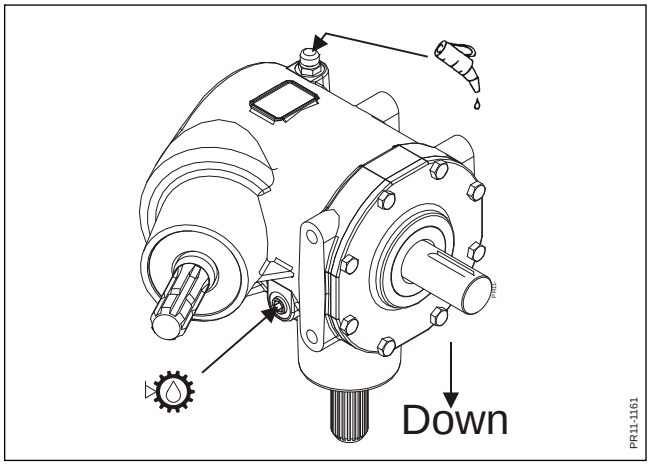


Fig. 4-7

Fig. 4-7 Oil content: **1.80 litres**

Oil type: API GL4 or GL5 SAE 80W-90

Oil level: **The oil level must be checked every day during the harvesting season.**

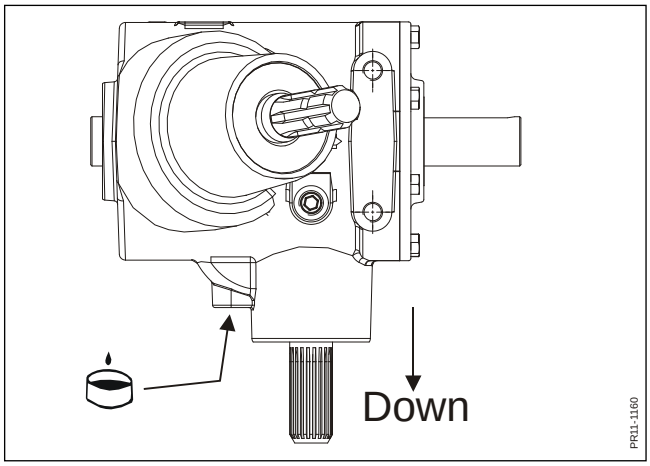


Fig. 4-8

Fig. 4-8 Oil change: First oil change after 50 working hours and then after every 500 working hours or at least once a year.

SWIVEL GEAR AT TRACTOR

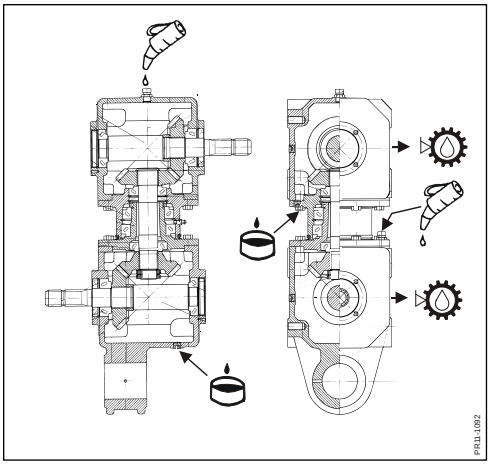


Fig. 4-9

Fig. 4-9 Oil content: Upper part: **2.3 litres**
Lower part: **2.5 litres**

Oil type: API GL4 or GL5 SAE 80W-90

Oil level: **The oil level must be checked every day during the harvesting season.**

Oil change: First oil change after 50 working hours and then after every 500 working hours or at least once a year.

5. MAINTENANCE

IN GENERAL

WARNING: **When repairing or maintaining the machine it is especially important to ensure correct personal safety. Therefore, always park the tractor (if mounted) and the machine according to the GENERAL SAFETY INSTRUCTIONS items 1-20 in the beginning of this instruction manual.**

IMPORTANT: **Screws and bolts on your new machine must be retightened after some hours of operation. This also applies if repairs have been made.**

Torque moment $\mathbf{M_A}$ (if nothing else has been stated)

A Ø	Class: **8.8** $\mathbf{M_A}$ [Nm]	Class: **10.9** $\mathbf{M_A}$ [Nm]	Class: **12.9** $\mathbf{M_A}$ [Nm]
M 8	25	33	40
M 10	48	65	80
M 12	80	120	135
M 12x1.25	90	125	146
M 14	135	180	215
M 14x1.5	145	190	230
M 16	200	280	325
M 16x1.5	215	295	350
M 18	270	380	440
M 20	400	550	650
M 24	640	900	1100
M 24x1.5	690	960	1175
M 30	1300	1800	2300

FRICTION CLUTCH

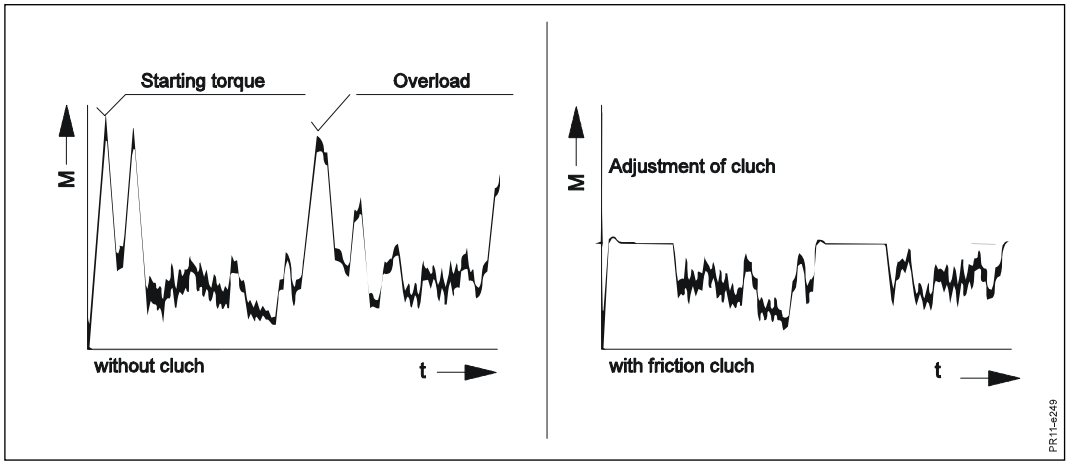


Fig. 5-1

Fig. 5-1 **In order to ensure a long life for your tractor and machine** the machine is delivered with **friction clutch** on the front PTO drive shaft. The figure illustrates how the clutch protects the transmission against high torque peaks and at the same time is capable of keeping the torque up while it slips.

In order to ensure that the clutch works as intended it must be “aired” at regular intervals **as dirt and moisture may cause the clutch to get “stuck”.**

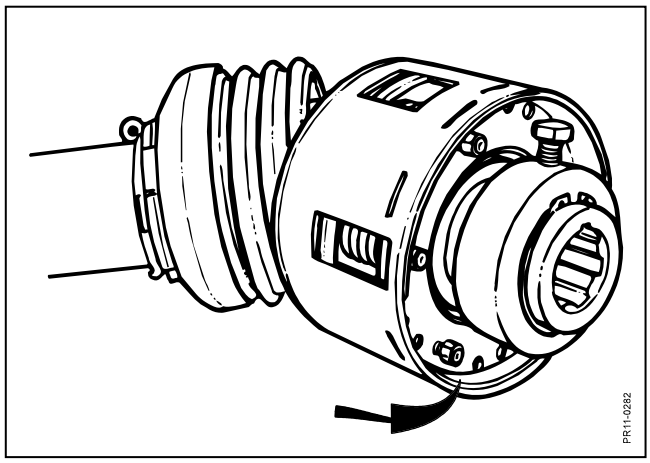
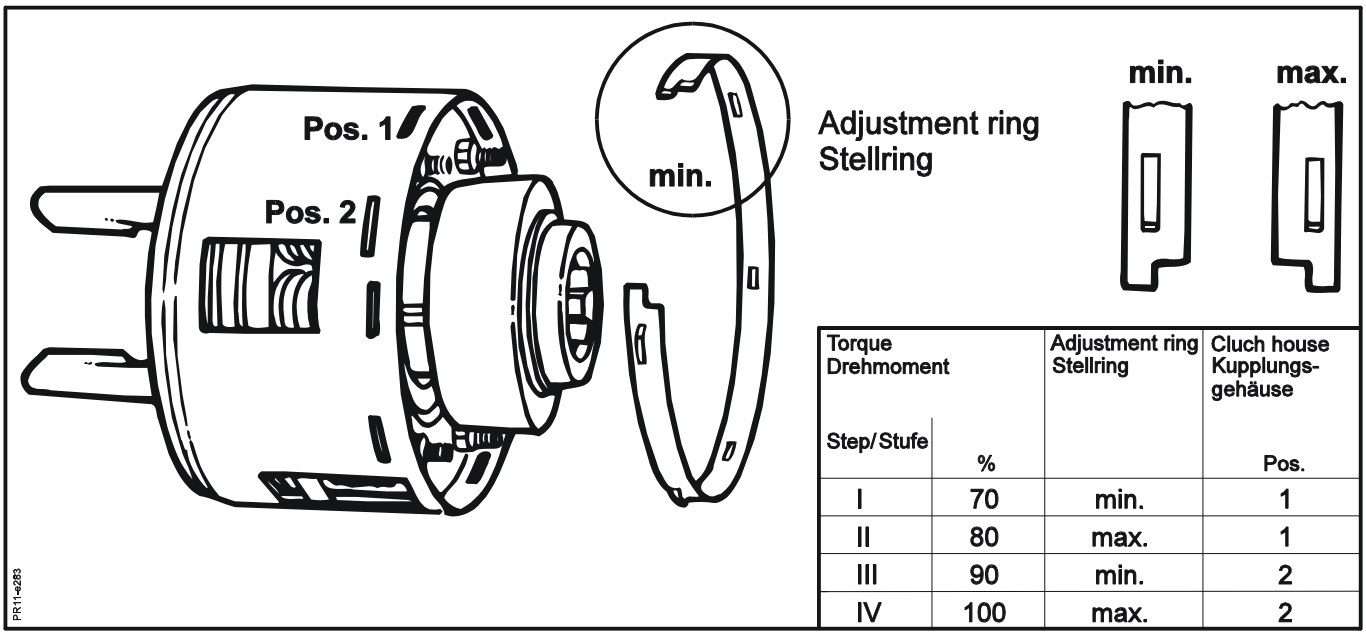


Fig. 5-2

Fig. 5-2 Before starting a new machine and after a long period of standstill, e.g. winter storage, **the clutch is "aired" in the following way:**

The six nuts on the flange are tightened. Hereby the springs are compressed so that they do not press on the clutch plates and the clutch can rotate freely. **Have the clutch rotate for half a minute** to remove dirt and possible rust on the plates. The nuts are **loosened** again until they are at level with the threads of the bolts, and the springs can press on the clutch plates.



Torque Drehmoment Step/ Stufe	%	Adjustment ring Stellring	Cluch house Kupplungs-gehäuse Pos.
I	70	min.	1
II	80	max.	1
III	90	min.	2
IV	100	max.	2

Fig. 5-3

Fig. 5-3 The torque in the friction clutch has 4 different torque adjustments, which should be adapted as required. This is done by turning the adjustment ring and by choosing between 2 different positions in the clutch housing.

1. The adjustment ring has a **minimum** and a **maximum** position.

2. The clutch housing has two different sets of slots in the height into which the adjustment ring can be mounted, **pos. 1 and pos. 2.**

TORQUE ADJUSTMENT GUIDE

PTO	Moment	Adjustment
1000/540	1200 Nm.	Step II

The adjustment can only be made when the six nuts are tightened. After the adjustment the nuts are loosened again to the end of the bolt.

WARNING: **If the clutch is overloaded it will slip and get heated, and hence be worn quickly. Overheating will damage the friction plates. If the clutch is blocked or partly put out of function in other ways, the factory guarantee will be discontinued.**

CONTROL OF BALANCE

WARNING: **When driving in the field you must always pay attention if the machine starts vibrating more than usually or if it has jarring sounds. The discs rotate with approx. 3000 RPM, and one broken blade may cause serious injury to persons or material damage resulting from unbalance.**

If working with a modern and closed cabin the symptoms may be difficult to discover, and once in a while you have to get out and check if all blades and rotor fingers are intact. In the long run unbalance will cause fatigue fractures and serious damage.

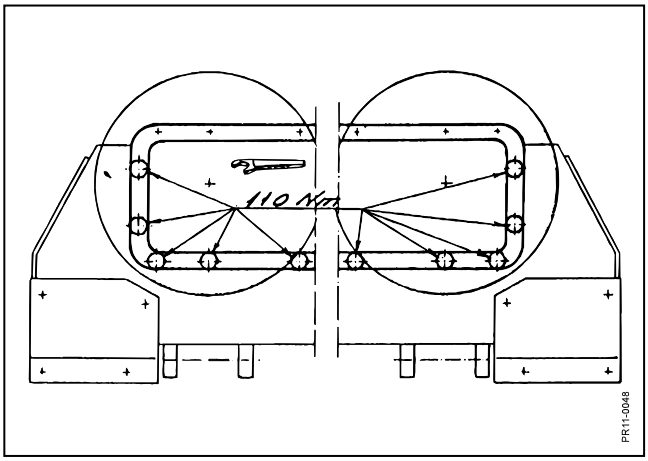


Fig. 5-4

Fig. 5-4 To avoid damage caused by vibrations the cutter bar must be tightened properly. M12 bolts:110 Nm (11 Kpm) and M10 bolts: 70 Nm (7 Kpm). Bolts at the cutterbar ends MUST be checked regularly.

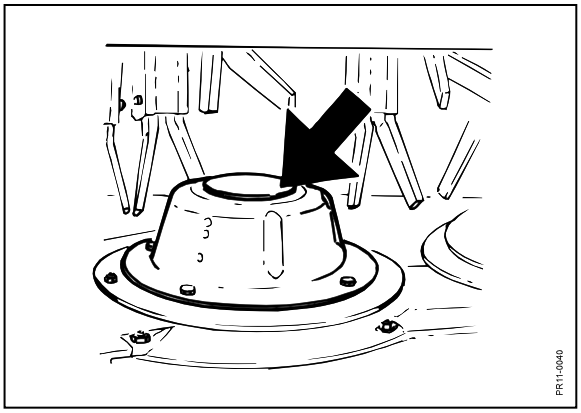


Fig. 5-6

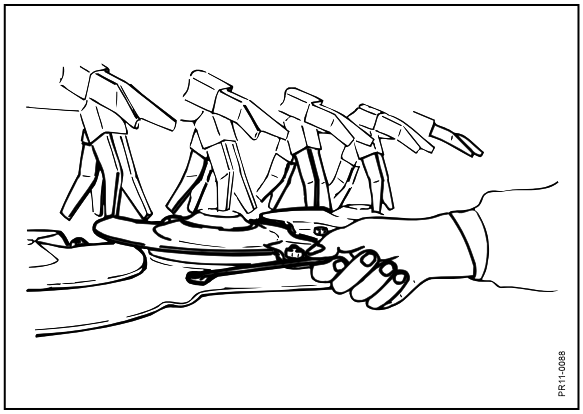


Fig. 5-5

Fig. 5-5 The bolts at stone protections and shearbar must be checked at regular intervals.

Fig. 5-6 If low flow hats have been retro-fitted, they should be straightened or replaced by new ones if they are deformed.

CUTTER BAR – DISCS AND BLADES

Discs, blade bolts and blades are made of high-alloyed, hardened materials. This heat treatment provides especially hard and ductile material which is able to withstand extreme stress. If a blade or a disc is damaged, do not attempt to weld the parts together again as the generation of heat will weaken the parts.

Damaged blades, discs, blade bolts and nuts **must be replaced by original JF spare parts to obtain a safe operation.**

WARNING: **When replacing blades, both blades on the disc in question must be replaced as not to create an unbalance.**

CAUTION: **Always lower the cutting unit to the ground before replacing blades, blade bolts, discs and the like.**

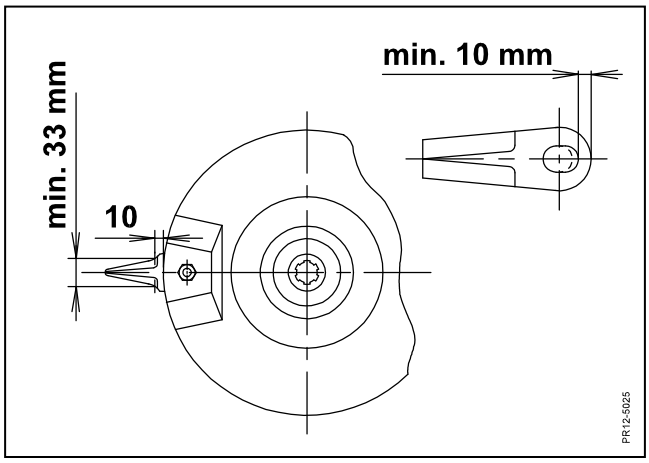


Fig. 5-7

Fig. 5-7 Blades must be replaced if:

- the blade width is less than 33 mm measured 10 mm from the edge of the disc.
- the metal thickness around the blade hole is less than 10 mm.

Bent blades must be replaced immediately.

Blade bolts and nuts must also be checked regularly, especially the tightening of the nuts. Especially after collision with foreign matter, after replacement of blades and the first time you use the machine.

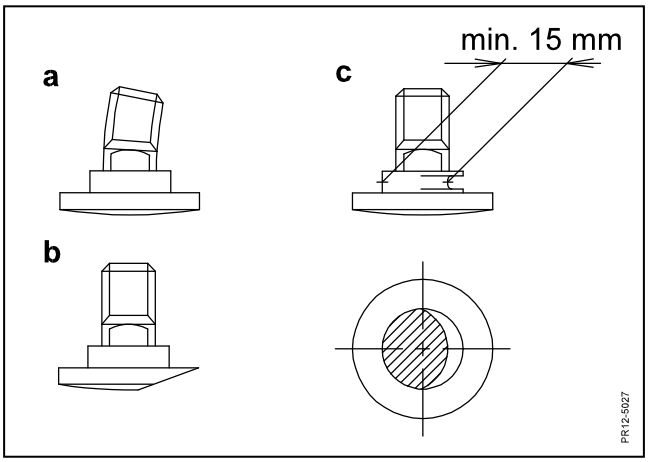


Fig. 5-8

Fig. 5-8 Blade bolts must be replaced if:

- they are deformed.
- they are strongly worn on one side.
- the diameter is less than 15 mm.

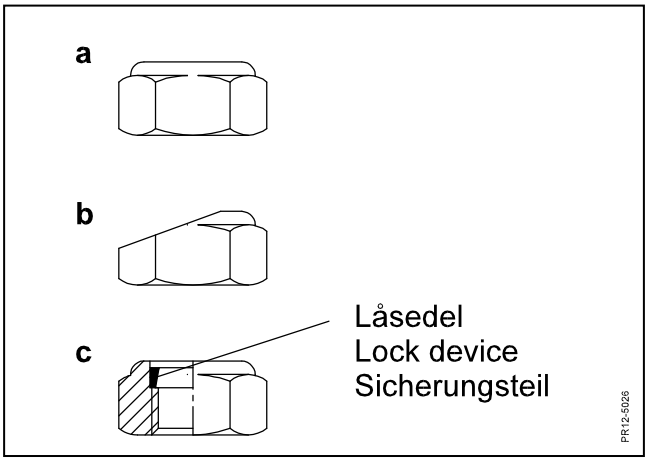


Fig. 5-9

Fig. 5-9 The special nut must be replaced if:

- it has been used more than 5 (five) times.
- the height of the hexagon is less than half of the original height.
- the lock device is worn or loose.

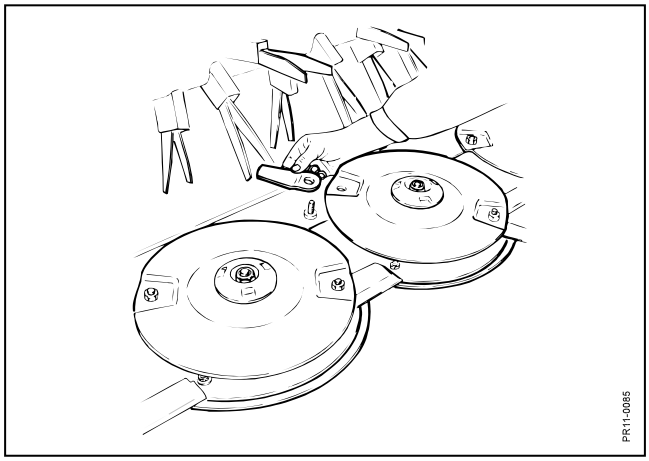


Fig. 5-10

Fig. 5-10 To obtain a satisfactory harvesting **it is important that blades and shearbar are intact and sharp**. Replacement of blades: dismount the blade bolt and pull it out from beneath the disc. This is easily done when the blade is in the front position so that the bolt can fall out through the hole in the stone protector. Remove the old blade and mount the new one together with the blade bolt.
The blades can be used on both sides by moving the blades from one disc to another with opposite direction of rotation.

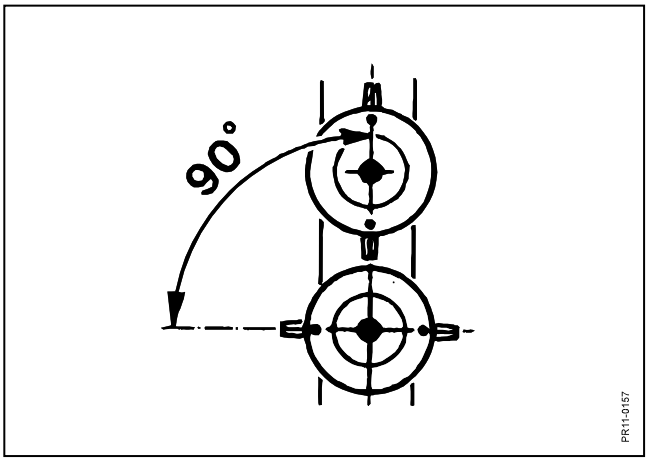


Fig. 5-11

Fig. 5-11 If discs have been dismounted they must be mounted again **staggered 90° in relation to each other**.

4-bolt cutter bar

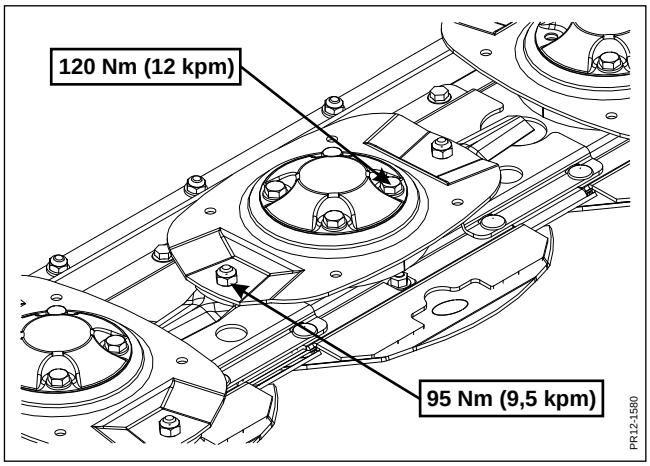


Fig. 5-12

Fig. 5-12 The discs are fastened with 4 bolts which must be tightened to 120 Nm (12 kpm). Blade bolts must be tightened to 95 Nm (9.5 kpm).

6-bolt cutter bar

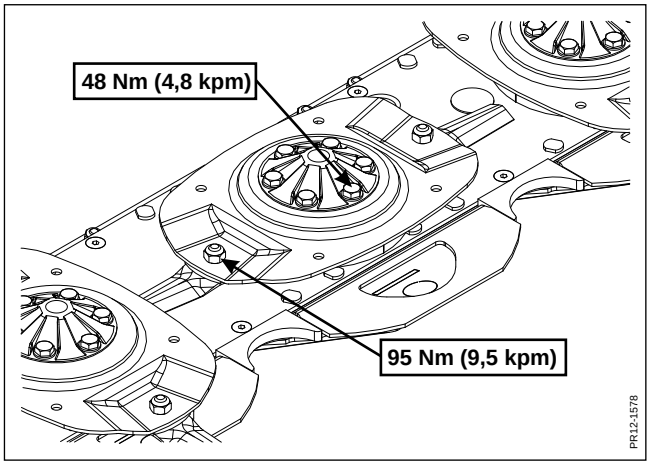


Fig. 5-13

Fig. 5-13 The discs are fastened with 6 bolts which must be tightened to 48 Nm (4.8 kpm). Blade bolts must be tightened to 95 Nm (9.5 kpm).

IMPORTANT: After replacement of blades and blade bolts it must be checked that the blades can be turned freely from side to side and that all discs have the correct number of blades.

CAUTION: When mounting is finished, the discs must be turned minimum once by hand in order to check that no parts are colliding.

WARNING: After replacement of blades, blade bolts, discs and the like check that no tools have been left on the machine and that the guards have been placed correctly.

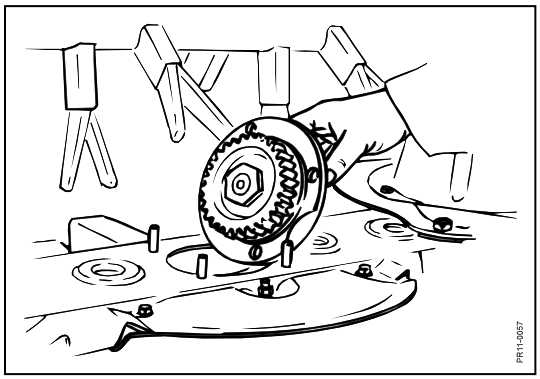


Fig. 5-14

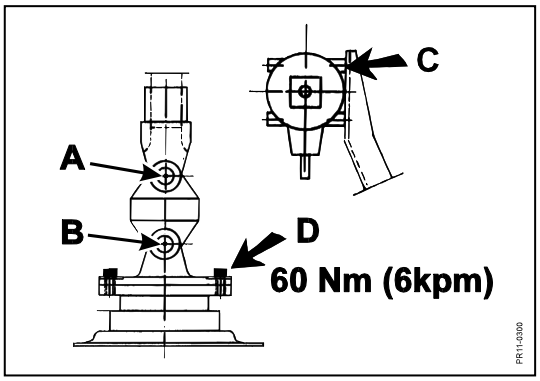


Fig. 5-15

Fig. 5-14 WHEN REPAIRING:

The GMS machines have a cutterbar where the complete disc bearing housing can be dismounted.

Fig. 5-15 The PTO for the cutter bar should run with minimum angular deviation. Therefore a special tool is available which is used for placing the bevel gearbox precisely in relation to the cutter bar.

JF part number for the special tool:

4-bolt cutter bar: 6000-783x
6-bolt cutter bar: 6000-836x

If you do not have this special tool, check that the deviation from the vertical line at **A** and **B** is small as possible and maximum +/- 3 mm. This can be tested by placing a right angle on the flange at **D**.

Bolts **D** must be tightened to 48 Nm (4.8 Kpm) and must be locked with LocTite 243.

4-BOLT CUTTER BAR

When the hub is mounted the surface of the cutter bar and the underside of the hub must be clean and greased with a thin layer of grease. The O-ring must be placed correctly. The 4 nuts must be tightened to 85 Nm (8.5 kpm).

Input disc

The driving disc where the transmission is connected to the cutter bar is called the input disc. The 4-bolt cutter bar is driven by a special input disc which is constructed and mounted differently from the other discs on the cutter bar.

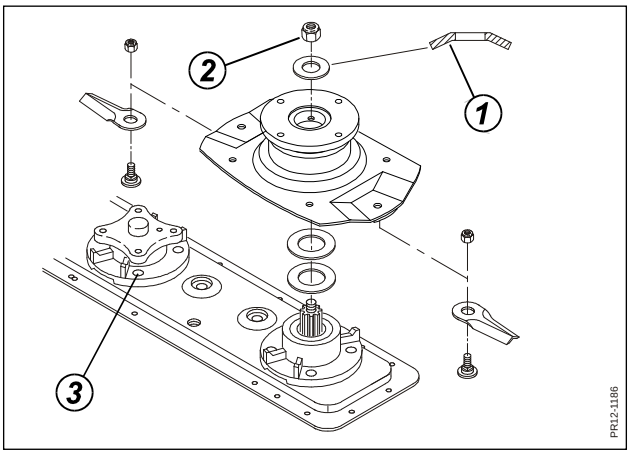


Fig. 5-16

Fig. 5-16 The spring washer **(1)** above the input disc is placed as shown with the curved side upwards.
The nut **(2)** is tightened to **190 Nm** (19 Kpm).
The bolts **(3)** which hold the disc bearing housing to the bar are tightened to **85 Nm** (8.5 Kpm).

6-BOLT CUTTER BAR

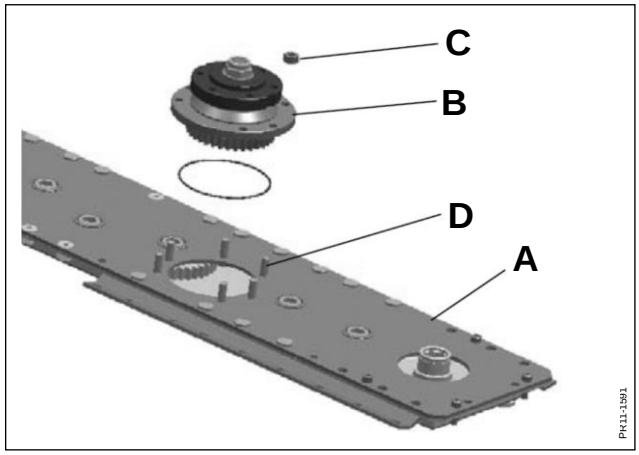


Fig. 5-17

Fig. 5-17 When the hub is mounted the surface of the cutter bar **32** and the underside of the hub **36** must be clean and greased with a thin layer of grease. The nuts **30** must be locked with Loctite 243 on the threaded pins **22** and tightened to **92 Nm** (9.2 Kpm).
On the 6-bolt cutter bar all discs are the same. There is no special input disc.

CONDITIONER

Replace defect fingers to avoid crop waste. Furthermore, the conditioner rotor will be out of balance resulting in a reduction of the life of the bearings, among other things.

TIGHTENING OF V-BELTS

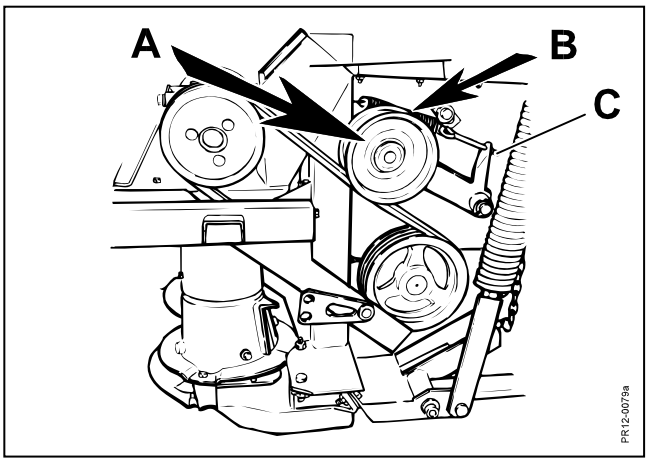


Fig. 5-18

Fig. 5-18 The V-belts are tightened with the tension pulley **A**.
The tension pulley is tightened automatically by a spring **B**. The spring should be adjusted so that there is always at least 1-2 mm “air” between the spring coils. Adjustment is made by means of a nut at **C**.

TYRES

Check in the diagram below which tyre pressure is current for your disc mower:

	GMS 280	GMS 320
Tyre dimension	10.0/75-15.3	10.0/75-15.3
Recommended tyre pressure bar/PSI	2.2 / 31	2.4 / 34
Minimum tyre pressure bar/PSI	1.4 / 20	1.6 / 22
Tyre dimension (option)	13.0/55-16	13.0/55-16
Recommended tyre pressure bar/PSI	1.6 / 22	1.8 / 25
Minimum tyre pressure bar/PSI	0.8 / 11	1.0 / 14

Minimum tyre pressure can be used when driving in areas where extra large carrying capacity is required (meadows, sandy areas or the like).

At regular intervals you should check the tyre pressure and make sure that the wheel bolts have been tightened properly.

6. INTERRUPTIONS

PROBLEM	POSSIBLE CAUSE	REMEDY	SEE PAGE
Stubble uneven or bad cutting.	Wrong relief.	Relief springs must be rechecked.	25
	Number of rpm on the tractor PTO too low.	Check if the tractor PTO runs with 1000/540 rpm.	18
	Blades are dull or missing.	Turn or replace the blades.	42
	Discs, stone protectors and flow hats are deformed.	Replace deformed parts.	42
*) Stripes in stubble.	The inclination of the cutter bar is not ideal for the crop in question.	Reduce the inclination of the cutter bar.	26
	Guide shoe under the cutter bar adjusted to high stubble.	Adjust the guide shoes to low stubble (there should be no stones in the field).	26
	Accumulation of material on the cutter bar.	Increase the driving speed.	
		Mount flow hats on the discs	29
	Earth and grass in the space in front of the cutter bar where the blades enter.	Mount special shearbars/replace worn shearbars. Mount only where the blades touch the cutter bar.	
Uneven flow through the machine.	Check if conditioner fingers are worn or missing.	Replace worn conditioner fingers.	
		Turn fingers with the straight edge in the direction of rotation.	30
	Distance between conditioner plate and rotor too big.	Adjust the conditioner plate so the distance at the front is 10-15 mm.	30
		Increase the driving speed.	
The machine vibrates / uneven operation	Check if blades are damaged or missing.	Mount missing blades.	42
	Defective PTO drive shaft	Check that the PTO drive shafts are in order.	31
	Defective bearings.	Check if bearings are loose or damaged.	
	Defective flow hats and intensifiers	Replace flow hats and intensifiers	41

PROBLEM	POSSIBLE CAUSE	REMEDY	SEE PAGE
The machine swivels too fast.	Oil flow too high	Check if the oil flow of the tractor to the swivel cylinder has been adjusted to a minimum.	
Power requirement seems too high		Remove flow hats on the discs	29
Gearbox heats	Wrong oil level	Check oil level in gearbox (maximum temperature approx. 80° C.).	36
Cutter bar heats	Wrong oil level	Check oil level in cutter bar (maximum temperature, 90-100° C.).	33

*) Especially short, strong spring crops harvested under unfavourable weather conditions.

7. STORAGE (WINTER STORAGE)

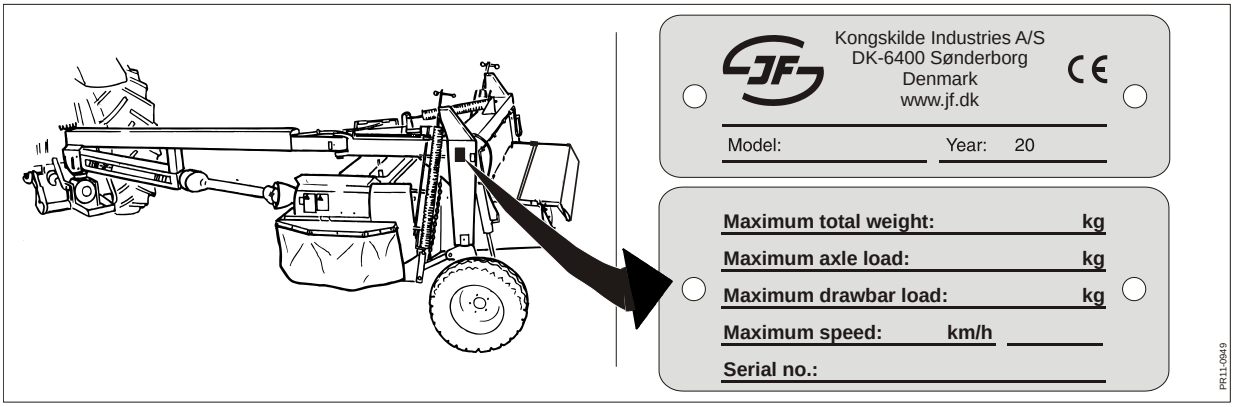
When the season is over, the preparation for winter storage should be made immediately after. First, clean the machine thoroughly. Dust and dirt absorb moisture and moisture increases the formation of rust. **Be careful when cleaning with a high pressure cleaner. Never** spray directly on the bearings and grease all grease points carefully after cleaning so that possible water is pressed out of the bearings.

The following points are instructions how to prepare for winter storage.

- Check the machine for wear and other defects – note down the necessary parts you will need before the next season and order the spare parts.
- Dismount the PTO drive shafts, lubricate the profile tubes and keep them in a dry place.
- Spray the machine with a coat of rust-preventing oil. This is especially important on the parts polished with use.
- Change the oil in the hydraulic system, the cutterbar and the gear boxes.
- Store the machine in a ventilated engine house. Lay up the machine to unload the tyres.

8. SPARE PARTS ORDER

When ordering spare parts please state machine type, serial number and manufacturing year. This information is printed on the machine plate. We request you to write this information on the first page in the spare parts book supplied with the machine as soon as possible so that you have the information at hand when ordering spare parts.



9. MACHINE DISPOSAL

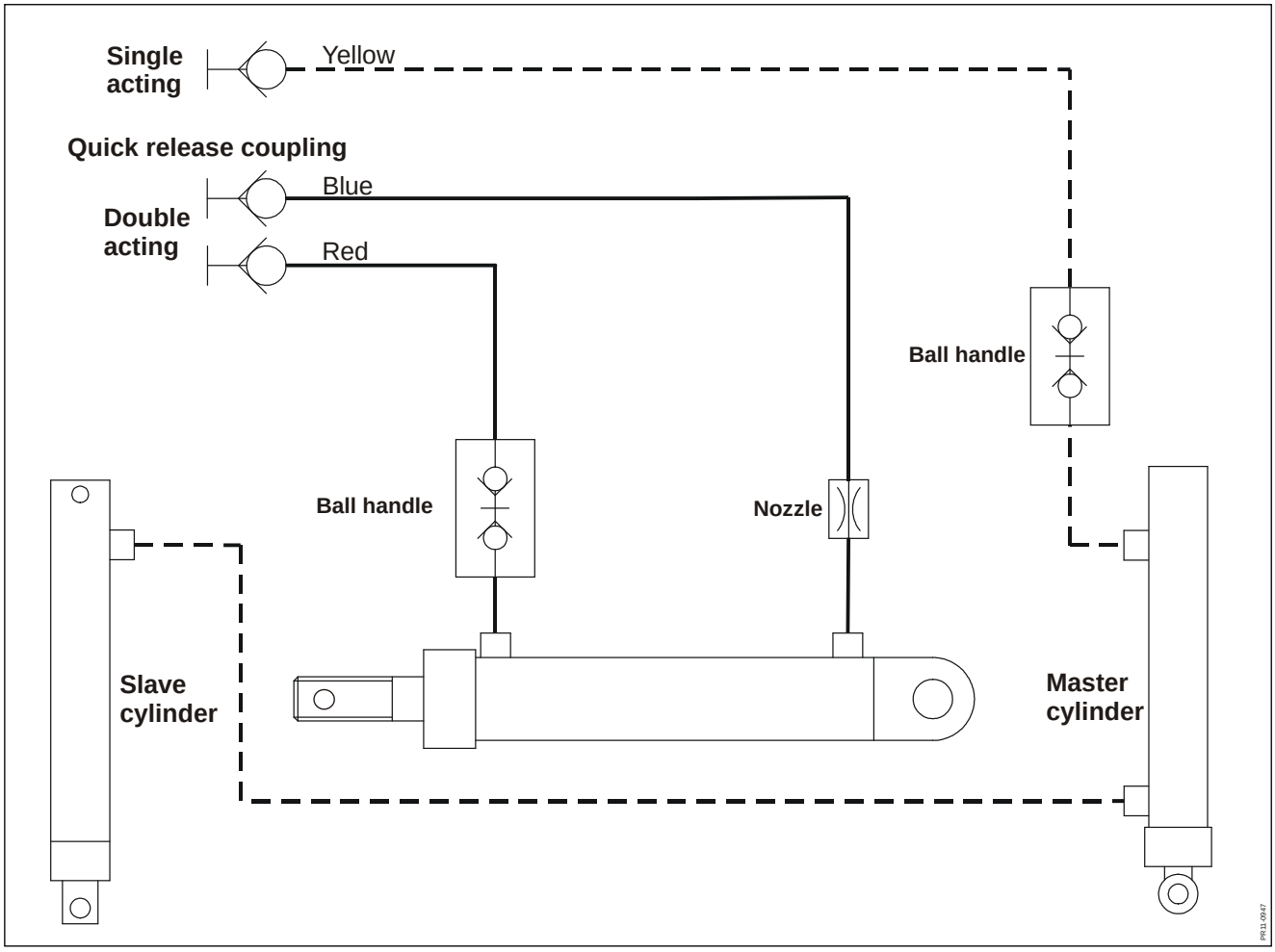
When the machine is worn-out it must be disposed of in a proper way. Observe the following:

- The machine must **not** be placed somewhere outside, - it must be emptied of oil (gearboxes and hydraulic system). These oils must be handed over to a destruction company.

- Disassemble the machine and separate the individual parts, e.g. tyres, hydraulic hoses, hydraulic valves etc.

- Hand over the usable parts to an authorised recycling centre. The large scrapping parts are handed over to an authorised breaker's yard.

HYDRAULIC DIAGRAM



WARRANTY

Kongskilde Industries A/S, 6400 Sønderborg, Denmark, hereafter called **"Kongskilde"**, grants warranty to any buyer of new JF machines from authorized JF-dealers.

The warranty covers remedy of material and production faults. This warranty is valid within a year after date of sale to end-user.

The warranty is invalidated in the following cases:

1. **The machine has been used for other purposes than those described in the instruction manual.**
2. **Improper use.**
3. **Damage caused by external sources, e.g. lightning or falling objects.**
4. **Insufficient maintenance.**
5. **Transport damage.**
6. **The construction of the machine has been modified without Kongskildes written permission.**
7. **Unskilled repair of the machine.**
8. **Unoriginal spare parts have been used.**

Kongskilde cannot be held responsible for loss of income or legal claim as a result of faults either of the owner or of a third party. Nor is Kongskilde responsible for wages beyond current agreements in connection with replacement of warranty parts.

Kongskilde is not responsible for the following costs:

1. **Normal maintenance such as expenses for oil, grease and minor adjustments.**
2. **Transport of machine to and from workshop.**
3. **The dealer's travelling expenses or freight charges to and from the user.**

Warranty is not granted on wearing parts unless it can clearly be proved that Kongskilde has committed a fault.

The following is regarded as wearing parts:

Protective canvases, blades, blade suspensions, shearbars, guide shoes, stone protections, discs, rotor skirts, crimper parts, tyres, tubes, brake shoes, chain tightener parts, guards, hydraulic hoses, conveyors, vertical auger and tub, wheel-fixing bolts and nuts, snap rings, sockets, PTO-shafts, clutches, gaskets and seals, tooth belts, V-belts, chains, sprocket wheels, carriers, conveyor chain slats, rake- and pick-up tines, rubber seals, rubber paddles, cutter blades, wearing plates and lining for spreading platform, shredding blades incl. bolts and nuts, spreading rotors and vanes for farmyard manure spreaders.

In addition, the user must note the following:

1. **The warranty is only valid if the dealer has undertaken a pre-delivery check and has given instruction to the end user in the use of the machine.**
2. **The warranty cannot be transferred to others without Kongskildes written permission.**
3. **The warranty can be nullified if repair is not undertaken immediately.**

EN EC-Declaration of Conformity
according to Directive 2006/42/EC

DE EG-Konformitätserklärung
entsprechend der EG-Richtlinie 2006/42/EG

IT Dichiarazione CE di Conformità
ai sensi della direttiva 2006/42/CE

NL EG-Verklaring van conformiteit
overeenstemming met Machinerichtlijn 2006/42/EG

FR Déclaration de conformité pour la CE
conforme à la directive de la 2006/42/CE

NO EF-samsvarserklæring
i henhold til 2006/42/EF

CZ ES prohlášení o shodě
podle 2006/42/ES

ES CE Declaración de Conformidad
según la normativa de la 2006/42/CE

PT Declaração de conformidade
conforme a norma da C.E.E. 2006/42/CE

DA EF-overensstemmelseserklæring
i henhold til EF-direktiv 2006/42/EF

PL Deklaracja Zgodności WE
wedlug Dyrektywy Maszynowej 2006/42/WE

FI EY : N Vaatimustenmukaisuusilmoitus
täyttää EY direktiivin 2006/42/EY

SV EG-försäkran om överensstämmelse
enligt 2006/42/EG

ET EÜ vastavusdeklaratsioon
vastavalt 2006/42/EÜ

Kongskilde Industries A/S
Linde Allé 7
DK 6400 Sønderborg
Dänemark / Denmark
Tel. +45-74125252

EN We declare under our sole responsibility, that the product:
DE Wir erklären in alleiniger Verantwortung, dass das Produkt:
IT Noi Dichiara sotto la propria responsabilità che il prodotto:
NL Wij verklaren als enig verantwoordelijken,dat het product:
FR Nous déclarons sous notre seule responsabilité que le produit:
NO Herved erklærer vi, at:
CZ Prohlašujeme tímto, že:
ES Vi declaramos bajo resposibilidad propia que el producto:
PT Me declaramos com responsabilidade próqria que o produto:
DA Vi erklærer på eget ansvar, at produktet:
PL Nosotros deklarujemy z pełną odpowiedzialnością, iż produkt:
FI Nós ilmoitamme yksin vastaavamme, että tuote:
SV Härmed förklarar vi att:
ET Käesolevaga kinnitame, et:

GMS 280
GMS 320

EN to which this declaration relates corresponds to the relevant basic safety and health requirements of the Directive: 2006/42/EC

DE auf das sich diese Erklärung bezieht, den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie entspricht: 2006/42/EG

IT E' Conforme ai Requisiti Essenziali di Sicurezza a di tutela della Salute di cui alla Direttiva e sue successive modificazioni: 2006/42/CE

NL waarop deze verklaring betrekking heeft voldoet aan de van toepassing zijnde fundamentele eisen inzake veiligheid en gezondheid van de EG-machinerichtlijn no: 2006/42/EG

FR faisant l'objet de la déclaration est conforme aux prescriptions fondamentales en matière de sécurité et de santé stipulées dans la Directive de la: 2006/42/CE

NO er i overensstemmelse med alle relevante bestemmelser i Maskindirektivet 2006/42/EF.

CZ odpovidá všem příslušným ustanovením ES směrnice o strojích 2006/42/ES.

ES al cual se refiere la presente declaración corresponde a las exigencias básicas de la normativa de la y referentes a la seguridad y a la sanidad: 2006/42/CE

PT a que se refere esta declaração corresponde às exigencias fundamentais respectivas à segurança e à saúde de norma da C.E.E.: 2006/42/CE

DA som er omfattet af denne erklæring, overholder de relevante grundlæggende sikkerheds- og sundhedskrav i EF-direktiv: 2006/42/EF

PL dla którego się ta deklaracja odnosi, odpowiada właściwym podstawowym wymogom bezpieczeństwa i ochrony zdrowia Dyrektywy Maszynowej: 2006/42/WE

FI johon tämä ilmoitus liittyy, vastaa EY direktiivissä mainituja perusturvallisuus- ja terveysvaatimuksia (soveltuvin osin) sekä muita siihen kuuluvia EY direktiivejä: 2006/42/EY

SV överensstämmelse med alla hithörende bestämmelser i EG:s maskindirektiv 2006/42/EG

ET vastab kõigile EÜ masinadirektiivi 2006/42/EÜ asjakohastele sätetele.

CE

Konstruktion (Design)
Sønderborg, 26.09.2011
Klaus Springer

Produktion (Production)
Sønderborg, 26.09.2011
Ole Lykke Hansen

EN EC-Declaration of Conformity
according to Directive 2006/42/EC

BG ЕО-декларация за съответствие
съгласно директива 2006/42/ЕО,

RO Declarația de conformitate CE
în conformitate cu 2006/42/CE

SK ES prehlásenie o zhode
Podľa 2006/42/ES

SL ES-izjavo o skladnosti
na podlagi Direktive 2006/42/ES

HU EK-megfelelőségi nyilatkozatra
a 2006/42/EK

MT Dikjarazzjoni tal-Konformità tal-KE
skont 2006/42/KE

LT EB atitikties deklaracijos
pagal 2006/42/EB

TR AT Uygunluk Beyani
2006/42/AT göre

EL ΕΚ-Δήλωση συμμόρφωσης
σύμφωνα με την οδηγία 2006/42/ΕΚ,

LV EK atbilstības deklarācijas
sastādīšanai saskaņā ar Direktīvas 2006/42/EK

Kongskilde Industries A/S
Linde Allé 7
DK 6400 Sønderborg
Dänemark / Denmark
Tel. +45-74125252

EN We declare under our sole responsibility, that the product:
BG С настоящото декларираме, че:
RO Prin prezenta declarăm faptul că:
SK Prehlasujeme týmto, že:
SL Izjavljamo, da je
HU Kijelentjük, hogy a/az:
MT Għalhekk aħna niddikjaraw li l-
LT Šiuo mes deklaruojame, kad
TR Iş bu beyanla, aşağida tanımlı makinenin:
EL Με την παρούσα δηλώνουμε, ότι
LV Ar šo mēs apliecinām, ka:

GMS 280
GMS 320

EN to which this declaration relates corresponds to the relevant basic safety and health requirements of the Directive: 2006/42/EC

BG съответства на всички релевантни разпоредби на директива: 2006/42/ЕО

RO este în conformitate cu toate dispozițiile relevante ale Directivei 2006/42/CE privind echipamentele tehnice

SK zodpovedá všetkým príslušným ustanoveniam ES smernice o strojoch 2006/42/ES

SL skladen z vsemi ustreznimi določbami Direktive o strojih 2006/42/ES

HU a 2006/42/EK gépekre vonatkozó irányelv valamennyi vonatkozó rendelkezésével megegyezik.

MT Jissodisfa d-dispożizzjonijiet kollha rilevanti tad-Direttiva: 2006/42/KE

LT atitinka visas atitinkamas EB Mašinų direktyvos 2006/42/EB nuostatas.

TR 2006/42/AT sayılı AT Makine direktifinin tüm ilgili hükümlerine uygun olduğunu teyit ederiz.

EL Συμφωνεί με όλους τους σχετικούς κανόνες της ΕΚ- οδηγίας μηχανημάτων 2006/42/ΕΚ.

LV atbilst visiem attiecīgajiem EK Mašīnu direktīvas 2006/42/EK noteikumiem.

CE

Konstruktion (Design)
Sønderborg, 26.09.2011
Klaus Springer

Produktion (Production)
Sønderborg, 26.09.2011
Ole Lykke Hansen

Edition: I Ausgabe:
Edition: I Udgave:
04

PIGB-109x 04 GMS 280/320 - 09.2013