JF-STOLL

Disc Mower

GMS 4802 In Line

Instruction Manual

“Original instructions”
Edition 2 I April 2010

JF-STOLL

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

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

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

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

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

ES CEE Declaración de Conformidad
según la normativa de la 2006/42/EC

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

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

PL Deklaracja Zgodności CE
wedlug Dyrektywy Maszynowej 2006/42/EC

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

EN We,
DE Wir,
IT Noi,
NL Wij,
FR Nous,
ES Vi,
PT Me,
DA Vi,
PL Nosotros,
FI Nós,

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EN declare under our sole responsibility, that the product:
DE erklären in alleiniger Verantwortung, dass das Produkt:
IT Dichiara sotto la propria responsabilità che il prodotto:
NL verklaren als enig verantwoordelijken,dat het product:
FR déclarons sous notre seule responsabilité que le produit:
ES declaramos bajo resposibilidad propia que el producto:
PT declaramos com responsabilidade próqria que o produto:
DA erklærer på eget ansvar, at produktet:
PL deklarujemy z pełną odpowiedzialnością, iż produkt:
FI ilmoitamme yksin vastaavamme, että tuote:

EN Model:
DE Typ :
IT Tipo :
NL Type :
FR Modèle :
ES modelo :
PT Marca :
DA Typ :
PL Model :
FI Merkki :

GMS 4802

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
2006/42/EC

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

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/EC

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/EC

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/EC

PT a que se refere esta declaração corresponde às exigencias fundamentais respectivas à segurança e à saúde de norma da
2006/42/EC

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

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

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

CE

Konstruktion (Design) + Produktion (Production)
Sønderborg, 15.12.2009 Jørn Freudendahl

FOREWORD

DEAR CUSTOMER!

We appreciate the confidence you have shown our company by investing in a JF-STOLL 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-STOLL 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

JF-STOLL disc mowers are developed for agricultural work. They should only be connected to tractors and driven by the PTO of the tractor.

The disc mowers are solely intended for:

> *Cutting on the ground of natural or planted grass and stem crops for animal feeding purposes*
>
> *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 stones and foreign matter.*

Any use beyond this is outside the intended use. JF-STOLL is not responsible for any damage resulting from such use, the user bears that risk.
If changes are made on the machine and its construction without permission from JF-STOLL, JF-STOLL cannot be held responsible for any damage resulting from this.

Intended use, of course, implies that you observe the prescriptions in the instruction manual and the spare parts book, use original spare parts and contact an authorised workshop, in so far as it is necessary.
The following safety instructions as well as common rules concerning technical safety, working practices and road safety **must** be observed altogether.

The disc mowers 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.

SAFETY

The safety of persons and machines is an integral part of JF-STOLL's development work. **We wish to ensure the safety of you and your family in the best possible way**, but this also requires and effort on your part. However, damage can occur as a consequence of misuse and insufficient instruction.

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 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 and other persons' 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 park the machine in working position with the cutting unit lowered to the ground in order to relieve the pressure on the machine's hydraulic system as much as possible.

3. When the machine is transported the electronic operation of the hydraulic functions must be turned off. In this way no person may accidentally activate any of the hydraulic functions and thus risk injuring other road-users. Also cut off the oil flow to the machine's hydraulic system by closing the ball valve, which is mounted in the end of the pressure hose (P-hose) that is connected to the tractor.

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.

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 and towing hook of the tractor are intended to carry machines with the own 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)

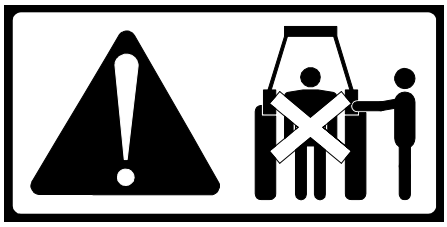


Fig. 1-1

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.

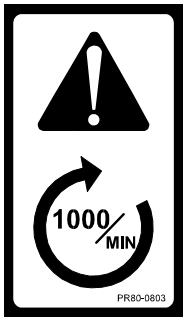


Fig. 1-2

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.

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.

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.

When the machine is transported the electronic operation of the hydraulic functions must be turned off and the oil flow to the machine's hydraulic system must be cut off. In this way no person may accidentally activate any of the hydraulic functions and thus risk injuring oncoming road-users, cyclists or pedestrians.

This might also happen if there is air in the hydraulic cylinders. 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. This results in less wear of blades and stone guards and reduces the risk of loose stones being thrown out from the rotating parts of the machine.

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 PTO number of rotations decreases distinctively. The machine and clutch are intended for 1000 rpm.

When working with a trailed mower keep a safe distance from steep slopes and similar conditions of the ground, as the ground may be slippery and pull the mower and the tractor sidewards. 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.

Hydraulic hoses must be checked by an expert before use, and after that minimum once a year. If necessary, they must be replaced. The working life of hydraulic hoses should not exceed 6 years, including maximum 2 years of storage.
When replacing, always use hoses which comply with the requirements stated by the manufacturer.
All hoses are marked with date of production.

MACHINE SAFETY

All revolving parts are balanced by JF-STOLL 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.

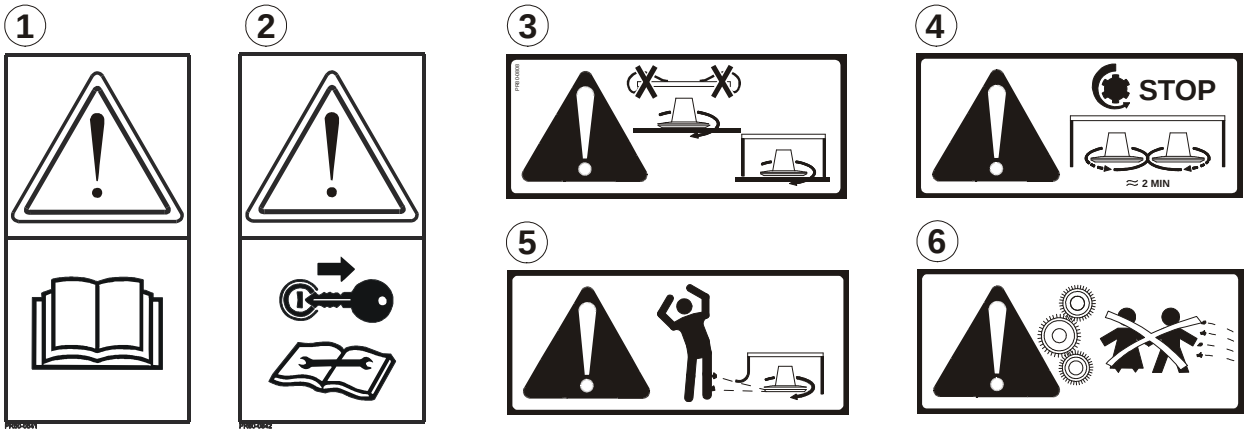
If the vibrations or the noise of the machine increase considerably during the operation, stop working immediately. Do not continue the work until the fault has been corrected.

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.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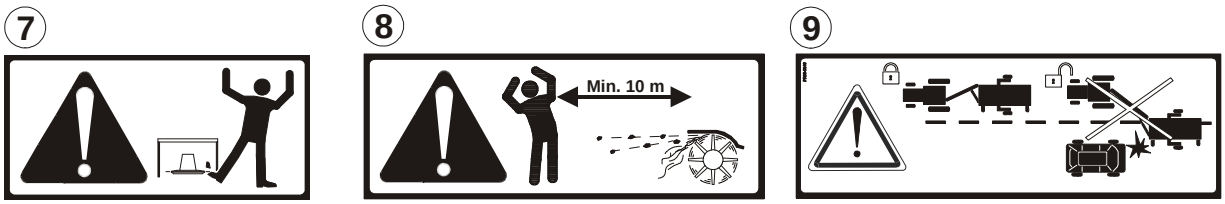
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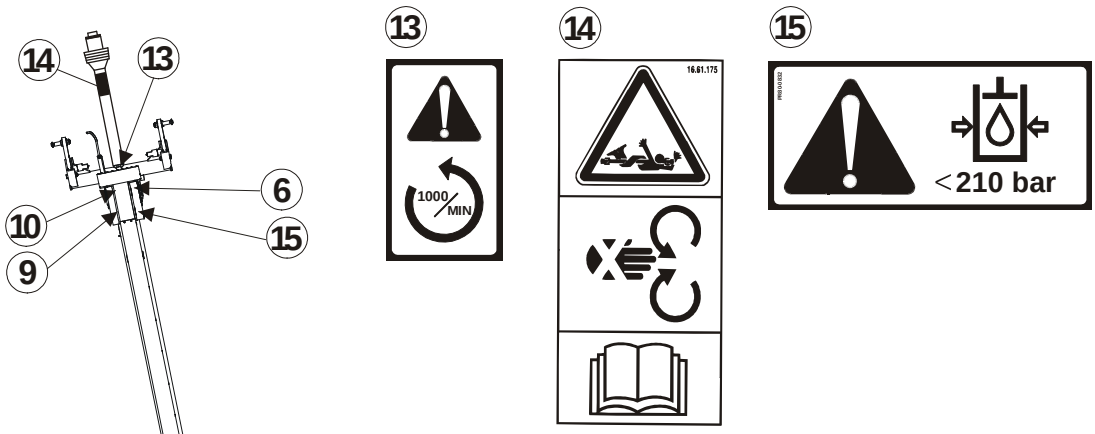
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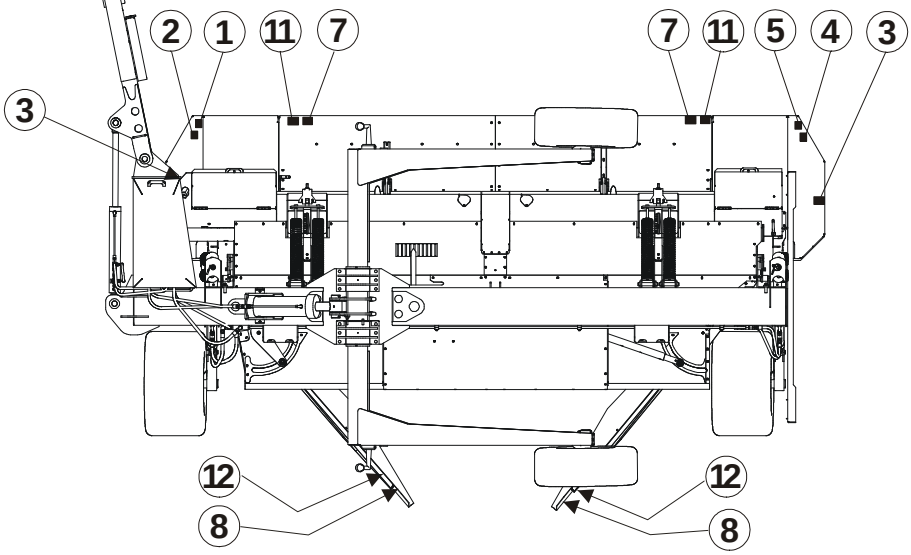
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SAFETY DECALS

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 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.

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 Risk of stones being thrown.
Almost the same meaning as decal No. 3. 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.

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 turn off the electronic operation box and cut off the oil flow to the machine’s hydraulic system before the machine is transported on public roads. 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 Risk of injury during activation of front guard.

Never let anybody stand close to the front guard when it is activated hydraulically. An unintentional manoeuvre may cause serious injury.

12 Risk of injury during activation of swath guards.

Never let anybody stand close to the swath guards when these are activated hydraulically. An unintentional manoeuvre may cause serious injury.

13 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.

14 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.

15 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.

TECHNICAL DATA

Type		**GMS 4802 In Line**
Working width		4.6 m
Capacity at 10 km/h, effective		4.6 ha/h
Power requirement	Minimum, PTO	95 kW/130 HP
	Maximum, PTO	147 kW/200 HP
Power take-off		1000 rpm
Oil outlet	Closed and open center	1 single-acting + 1 free return to tank
	Load sensing	1 pressure + 1 free return to tank + LS-signal
Electric outlets		1 two-pole for control and 1 seven-pole for lights
Number of discs		12
Disc system		Round HD discs
Blades, number and type		24 profile
Top Dry equipment for wide swath		Open guards
Conditioner	System	PE-fingers Y-shape
	Fingers	200
	Rotor width	3.7 metres
	Central adjustment	Standard
	Speed	1060 rpm
Swath width	Single swath	1.1-1.7 m
	Top Dry (Open guards)	2.8 m
Transport width		3.0 m
Tyres	Working wheels	480/45-17 10 PR
	Transport wheels	11.5/80– 15.3 14 PR
Axle load, transport position		2995 kg
Weight transferred to tractor		600 kg
Weight, guards (In Line)		375 kg

2. CONNECTION TO TRACTOR

GMS 4802 is so wide that under normal conditions it cannot be transported from field to field or on public roads in normal working position. Therefore the machine is equipped with a set of transport wheels that can be folded down for transport thus ensuring that the transport width does not exceed 3 m. The conversion from working position to transport position and vice versa is operated with the enclosed electronic operation. The machine can in principle be connected and disconnected to the tractor in both working and transport position. However, we **always** recommend parking the machine in working position with the cutting unit lowered to the ground in case of a long period of standstill in order to relieve the machine's hydraulic cylinders as much as possible.

CONNECTION TO THE TRACTOR

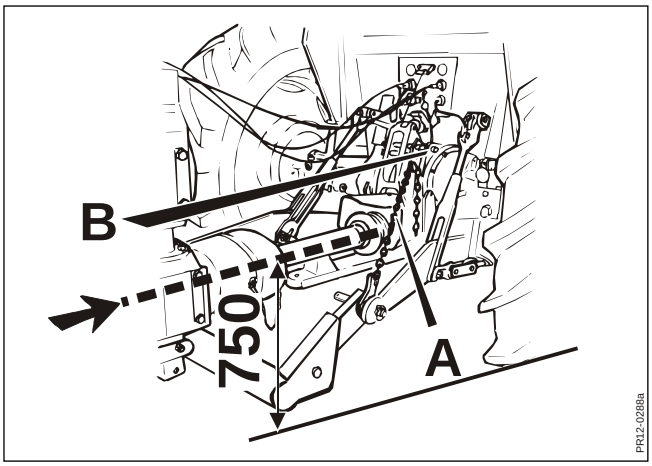


Fig. 2-1

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 from your tractor dealer for category III.
This machine has a drawbar with a swivel gearbox up front so that you are not dependent on the angle of the transmission between tractor and machine.

Connection step by step:

1) Adjust the lower link arms to the same height. Fasten the limiting chains **A** to the lift dowels at the wanted category as shown on the figure.

2) 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 750 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.

3) 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.

4) Attach the upper end of the limiting chains at the top link fix point **B** on the tractor.
The limiting chains are <u>not</u> intended to carry the weight of the machine drawbar but to prevent unintentional lowering of the lower link arms which will pull the PTO drive shaft halves away from each other.

ADJUSTMENT OF THE FRONT PTO DRIVE SHAFT

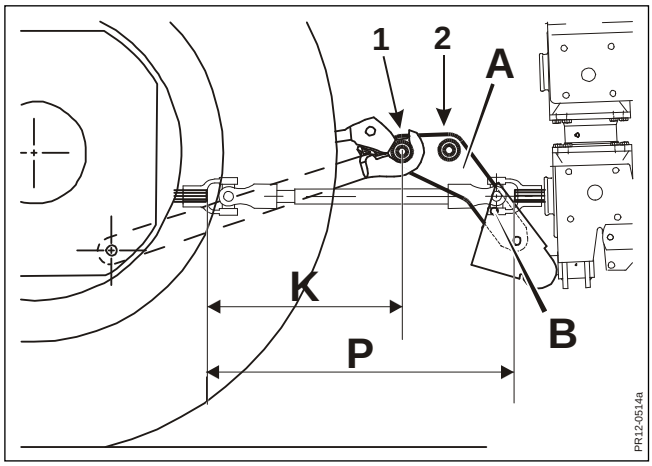


Fig. 2-2

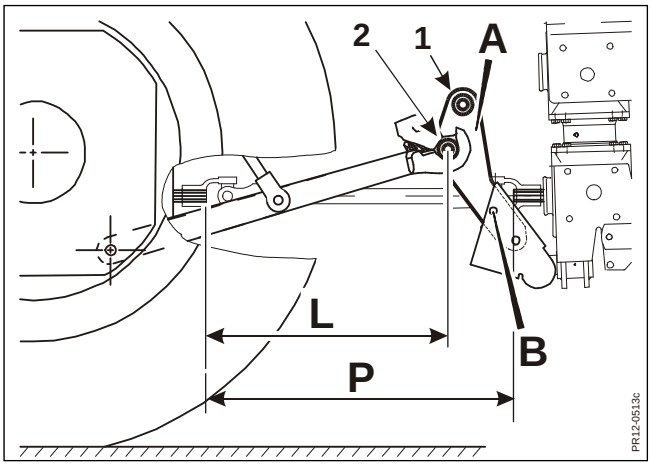


Fig. 2-3

Fig. 2-2 The extension links **A** are shock absorbers in the Top Safe system, which is standard
Fig. 2-3 on the machine. On the extension links there are two possibilities for placing the draw pins, depending on whether the lower link arms on the tractor are short or long.

WARNING: **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 P from PTO to PIC which is standard on most tractor brands.**

However, the following should be observed:

Fig. 2-2 SHORT LOWER LINK ARMS:
On tractors where the distance **K** between PTO on the tractor and the coupling eyes of the lower link arms is **short**, the draw pins are to be assembled at position **1**.

Fig. 2-3 LONG LOWER LINK ARMS:
On tractors where the distance **L** between PTO on the tractor and the coupling eyes of the lower link arms is **long**, placing of the draw pins at position **2** would be preferable.

Fig. 2-3 When mounting the draw pins at position **2** remember to exchange and turn around the right and left extension arms **A**.

CAUTION: **The minimum measures for overlapping of the profile tubes of the PTO shaft as shown on figure 2-4 must be observed.**

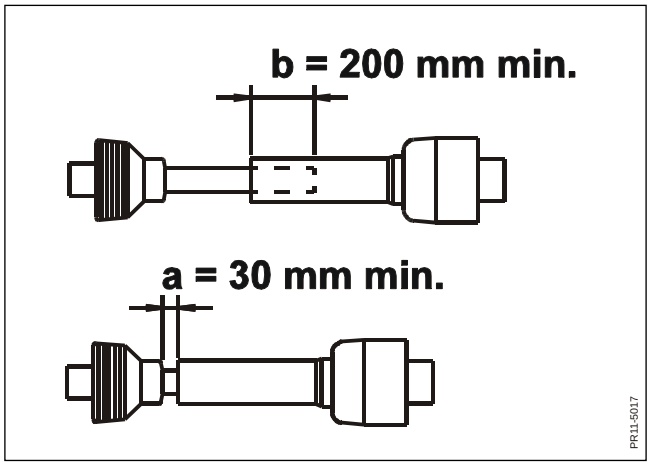


Fig. 2-4

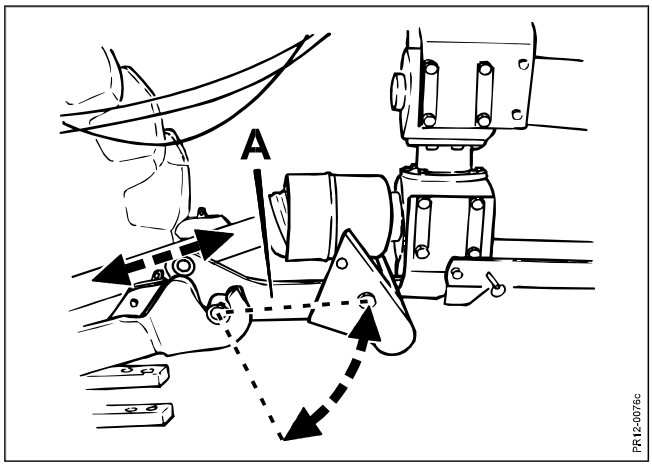


Fig. 2-5

POSSIBLE SHORTENING OF THE PTO DRIVE SHAFT:

When the machine is connected to the extension links of the machine it may be necessary to shorten the PTO drive shaft to ensure correct function.

Fig. 2-4 Adjust the length of the PTO shaft so that it:

- has as much overlapping as possible

Fig. 2-5

- in no position has less overlapping than 200 mm. This refers to situations where the extension links **A** of the Top Safe system will be released, e.g. in case of collision with stones or the like.
- is not compressed more than the prescribed 30 mm in order not to bottom the shaft.

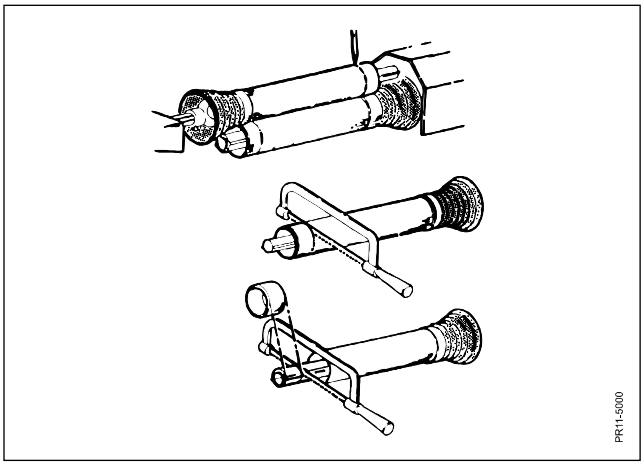


Fig. 2-6

Fig. 2-6 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). Hold the shaft ends parallel to each other and mark the 30 mm (minimum).

CAUTION: **Shorten all 4 tubes equally. The ends of the profile tubes MUST be rounded off and burrs MUST be removed carefully.**
Grease the tube carefully before reassembling. If the shafts are not greased, they are exposed to big friction forces if e.g. the shock absorbing system is activated during the transmission of heavy load.

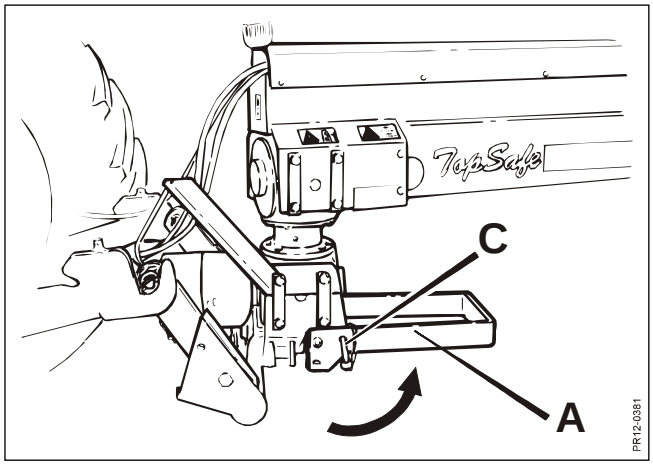


Fig. 2-7

JACK

Fig. 2-7 After connection the jack **A** is swivelled to the rear and up under the swivel gearbox and locked with pin and spring pin **C**.

FRICTION CLUTCH

On the PTO drive shaft between tractor and machine there is a friction clutch which ensures that the machine is not overloaded during operation.

IMPORTANT: **Before starting a new machine, the clutch must be "aired". See section concerning the friction clutch in chapter 5 "MAINTENANCE".**

FREEWHEEL

The machine is also equipped with an overrun clutch on the front PTO drive shaft. This overrun clutch is integrated in the friction clutch and ensures that the rotating parts of the machine keep rotating a while when the power take-off of the tractor is disconnected. This prevents unnecessary overload of the rotating parts of the machine.

HYDRAULIC CONNECTION

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

CAUTION: **It is important that the quick-release couplings are always carefully cleaned before mounting to avoid that impurities get into the hydraulic system and damage important valve functions. When the hydraulic hoses are not connected to the tractor they should be parked in the housing at the end of the drawbar, see figure 2-8.**

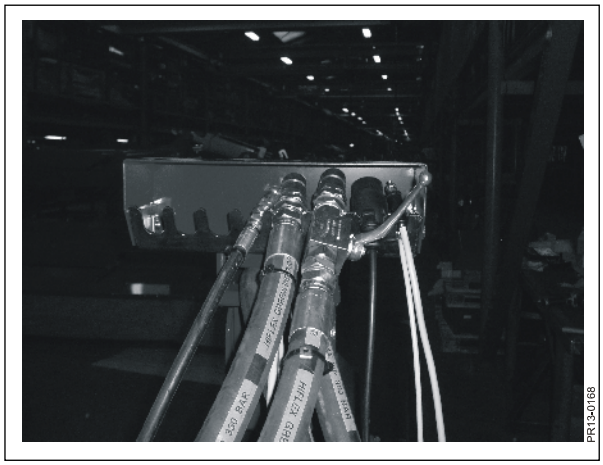


Fig. 2-8

Fig. 2-8 The machine is equipped with its own hydraulic system, which must be supplied with oil from the tractor. The machine's hydraulic system is built to run together with a tractor which is equipped with an external Load Sensing hydraulic system (variable pump with load sensor, CCLS).
There are several advantages of this type of coupling between the tractor's and the machine's hydraulic systems. For example: The oil flow from the tractor to the machine is taken directly from the hydraulic pump of the tractor like oil is returned directly to the tractor's rear-axle assembly or hydraulic tank. Thus pressure loss through the tractor's own double acting outlets is avoided. Simultaneously, the pump of the tractor is receiving feed-back via the signal hose from the machine's hydraulic system how much oil and pressure is needed. Thereby the tractor pump only supplies the machine with exactly the amount of oil and the pressure the machine needs. All this results in minimal heat generation and power loss, which in the end means low fuel consumption.
In case of doubt, please contact your authorised tractor dealer and he will inform you whether your tractor is equipped with Load Sensing hydraulic system. Please note, that your tractor may be equipped with Load Sensing hydraulic system without the possibility of an external connection. If necessary, contact the authorised dealer of your tractor for further information regarding this topic.

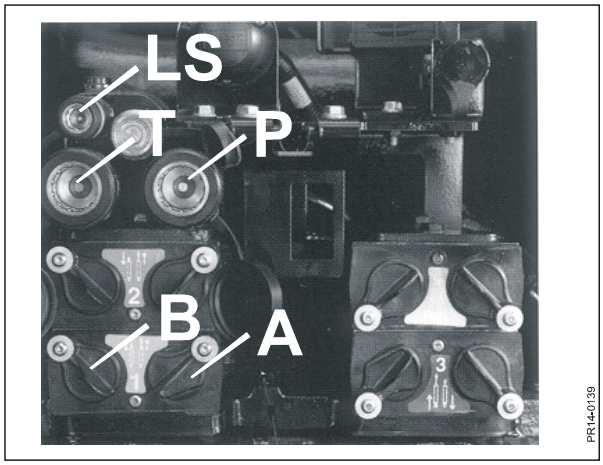


Fig. 2-9

Fig. 2-9 When driving with **external Load Sensing hydraulic system** following hoses must be mounted:

- Pressure hose (marked ”P”) to the tractor pump.
- Return hose (marked ”T”) directly to the rear-axle assembly or tank for hydraulic oil. The ¾” quick-release coupling of the return hose must be used.
- The hose which gives the tractor pump the signal regarding the load of the hydraulic system (marked ”LS”).

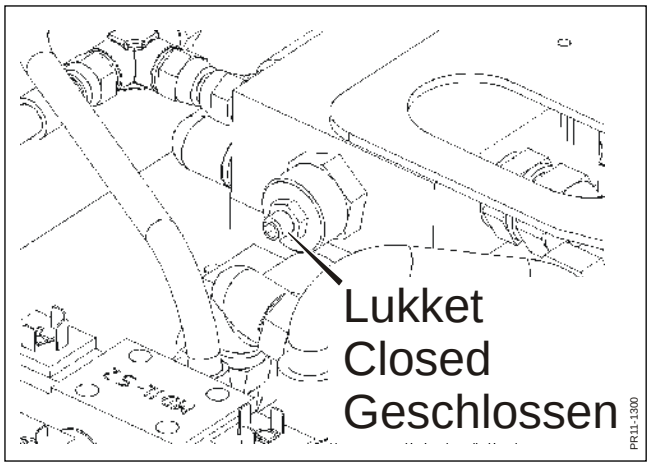


Fig. 2-10

Fig. 2-10 In addition, you have to make sure that the **by-pass valve on the machine’s hydraulic system is turned off / screwed in**, see figure 2-10. If it isn’t, you must screw it in by loosening the counter nut after which the screw can be screwed in by using a small allen screw or pipe wrench. Remember to tighten the counter nut again. NOTE: In order to gain access to the machine’s hydraulic system it is necessary to dismount the shield placed over the machines drawbar.

If the tractor is not equipped with external Load Sensing hydraulic system it is still possible to operate the machine’s hydraulic system from the tractor. In that case we distinguish between two types of tractor hydraulic systems: “open center hydraulic” (also called “fixed pump”) and “closed center hydraulic” (also called “variable pump”).

Fig. 2-9 If the tractor has a **closed center hydraulic system** following hoses must be mounted.

- The pressure hose (marked ”P”) to the A-port in one of the double acting outlets, see figure 2-9. If the tractor is equipped with a prioritize port it should be chosen. NOTE: If the double acting outlet’s A-port is used, the ¾” quick-release coupling of the pressure hose must be replaced by a ½” quick-release coupling. Your dealer may provide you with such a coupling.
- Return hose (marked ”T”) directly to the rear-axle assembly or tank for hydraulic oil. The ¾” quick-release coupling of the return hose must be used. If your tractor is not equipped with a free return device it must be established with hoses/pipes with minimum 18 mm opening and ¾” quick-release coupling female. The double acting outlet’s B-port must not be used for the return hose.

The hose, which gives the tractor pump the signal regarding the load of the hydraulic system (marked ”LS”) must not be used for this type of coupling.

Fig. 2-10 In addition, you have to make sure that the **by-pass valve on the machine’s hydraulic system is turned off / screwed in**, see figure 2-10. If it isn’t, you must screw it in by loosening the counter nut after which the screw can be screwed in by using a small allen screw or pipe wrench. Remember to tighten the counter nut again. NOTE: In order to gain access to the machine’s hydraulic system it is necessary to dismount the shield placed over the machine’s drawbar.

IMPORTANT: The hydraulic outlet of the chosen A-port must be locked in pressure position to ensure continuous oil flow in the machine’s hydraulic system.

Fig. 2-9 If the tractor has an **open center hydraulic system** following hoses must be mounted.

- The pressure hose (marked ”P”) to the A-port in one of the double acting outlets, see figure 2-9. If the tractor is equipped with a prioritize port it should be chosen. NOTE: If the double acting outlet’s A-port is used, the ¾” quick-release coupling of the pressure hose must be replaced by a ½” quick-release coupling. Your dealer may provide you with such a coupling.
- Return hose (marked ”T”) directly to the rear-axle assembly or tank for hydraulic oil. The ¾” quick-release coupling of the return hose must be used. If your tractor is not equipped with a free return device it must be established with hoses/pipes with minimum 18 mm opening and ¾” quick-release coupling female. The double acting outlet’s B-port must not be used for the return hose.

The hose, which gives the tractor pump the signal regarding the load of the hydraulic system (marked ”LS”) must not be used for this type of coupling.

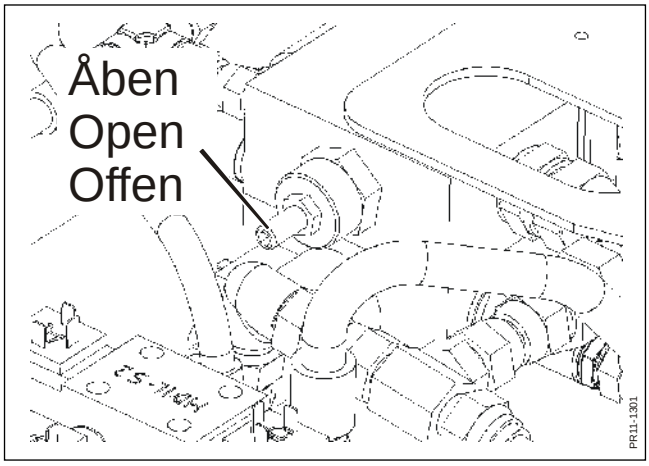


Fig. 2-11

Fig. 2-11 In addition, you have to make sure that the **by-pass valve on the machine's hydraulic system is open / screwed out**, see figure 2-11. If it isn't, you must screw it out by loosening the counter nut after which the screw can be screwed out by using a small allen screw or pipe wrench. Remember to tighten the counter nut again.

NOTE: In order to gain access to the machine's hydraulic system it is necessary to dismount the shield placed over the machine's drawbar.

IMPORTANT: The hydraulic outlet of the chosen A-port must be locked in pressure position to ensure continuous oil flow in the machine's hydraulic system.

When driving with open and closed center hydraulics please note the following:

IMPORTANT: In order for all the machine's hydraulic functions to work optimally, the oil flow in the tractor's double acting valve must be approx. 50 litre/min. Less oil flow will delay the implementation of certain hydraulic functions. Too much oil flow will cause unnecessary oil flow, which may result in superheating of the hydraulic oil. The tractor must be able to give minimum 35 litre/min. to make sure that the hydraulic functions work acceptably.

On many new tractors it is possible to directly type in how much oil flow a double acting valve should give. However, this is not possible with old tractor models. If it is not possible to see on your tractor how big the oil flow is, you may insert a flow meter between the machine's pressure hose ("P") and the tractor's A-port. Many dealers have such a flow meter. Please note that the oil must have reached normal working temperature before measuring.
In case you do not have access to a flow meter, following method can be used:

1. Set the tractor's double acting valve to give an oil flow in the middle of the possible area. Let the tractor engine run with the number of revolutions corresponding to 1000 rpm on the PTO outlet.
2. With the machine in working position and the cutting unit lowered to the ground, the machine is now lifted by activating the working wheels (for operation of the hydraulic functions of the machine, see the relevant section).

Use a stop watch to measure how long time it takes to lift the machine completely. Repeat a few times to obtain several time measurements.

3. Now turn the oil flow of the double acting valve a little up and repeat point 2. If the lifting time drops, the oil flow should be increased. If the lifting time doesn't change the oil flow is sufficient and should not be turned further up.

CONNECTION OF ELECTRIC SYSTEM

The machine is equipped with lighting equipment as standard. The lighting equipment is coupled to the tractor by means of the 7-pole plug.

Fig. 2-12 The machine is equipped with full electronic operation of all the machine's hydraulic functions. The electronic operation consists of three units:

- A decentralized unit mounted on the machine together with the hydraulic system. From this unit the input-signals from the sensors of the machine are controlled, thus ensuring that the activation of the hydraulic functions is carried out in the right order.
- A monitor, which is mounted in the tractor cabin, see figure 2-12. From here a number of the hydraulic functions are operated via buttons. Furthermore there is a display which shows the machines status etc.
- A joystick for operation of the frequently used hydraulic functions. This is typically placed on the right arm rest in the tractor cabin allowing the driver easy access to the joystick while driving in the field, see figure 2-13.

Both monitor and joystick are equipped with detachable mounting fittings that can be bolted to the tractor cabin. Monitor and joystick can thus subsequently be dismounted without the use of tools.

Fig. 2-12

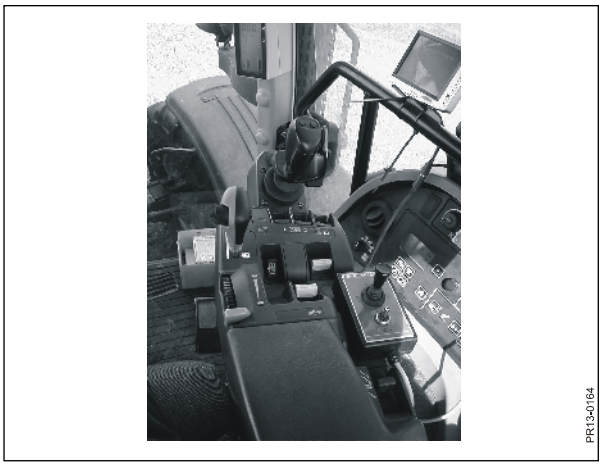


Fig. 2-13

Fig. 2-12 The electronic operation is supplied with current from a 2-pin coupling male, **A**, see figure 2-12. The **plug** must be connected to a 12 V power supply and must be secured with 10 A. The decentralized unit is equipped with its own group of fuses of also 10 A. In case the power supply of the tractor is secured with more than 10 A, it will be the control's own fuses that blow, if the control is overloaded.

Please note that the power supply goes from the tractor directly to the decentralized unit on the machine. From here the monitor is supplied with current via a 4-pin cable that also contains the CAN-bus cable. The last-mentioned controls the communication between the monitor and the decentralized unit. The 4-pin cable, **B**, see figure 2-12, is screwed into the side of the monitor.

The cable from the joystick to the monitor, **C**, see figure 2-12, is also mounted into the side of the monitor.

IMPORTANT: If the electric equipment has been dismounted and is not going to be used for some time, it must be kept in a dry place and the plugs on the machine must be wrapped up or placed in the housing at the end of the drawbar.

CHECK BEFORE USE

When machine has been connected to the tractor, please follow these instructions before using your new disc mower:

1. Read this instruction manual carefully.

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

3. Check that the PTO speed for the tractor is correct. Too high PTO speed can be dangerous. Too low PTO speed will cause reduced cutting capacity of the machine, reduced flow through the machine and increased load on the transmission elements.

4. Check the movements of the PTO drive shafts. 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 connected to the tractor in such a way that they are long enough for the movements of the machine in relation to the tractor.

6. Re-tighten the wheel bolts. After a few hours of operation with your new machine all bolts must be tightened up. This is especially important on fast revolving parts. See the torque settings in chapter 6 "MAINTENANCE".
   Also re-tighten after servicing the machine.

7. Check the tyre pressure. See chapter 6 "MAINTENANCE".

8. Check that the machine has been greased sufficiently and check the oil level in the gearbox and the cutter bar. See chapter 5 "GREASING".

9. Check the friction clutch as described in chapter 6 "MAINTENANCE".

From the factory the revolving parts of the machine have been tested and found correct. However, you should do as follows before using the machine:

10. The following should be done with open rear window and without hearing protector:

    Start the machine at a low number of RPM. If there are no unusual scratching or knocking sounds 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).

CAUTION: **If you are in doubt whether the machine runs correctly, stop the tractor and the machine immediately**.

Turn the revolving parts with manual power to check if all parts can turn freely.
Check the machine visually to find possible errors. Check if any paint has been burnt or scratched off.
In case you cannot find any errors, or deviations, contact your JF-STOLL dealer or the Service Department at JF-STOLL.

IMPORTANT: **Note that because of the smaller centrifugal force at a low number of RPM, the blades can touch the upper edge of the cutter bar suspension, which can be heard by a "ticking" sound from the blades. 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 the machine has been checked and you wish to test it for a long time, close the rear window or wear hearing protector!**

3. ADJUSTMENTS AND DRIVING

CONSTRUCTION AND FUNCTION

The cutter bar cuts and throws the crop against the conditioner rotor. This rotor is equipped with PE-fingers which lift and throw the crop to the rear to the swath guards which gather the crop in an even swath.
The degree of conditioning can be regulated by changing the distance between the conditioner plate and the rotor.

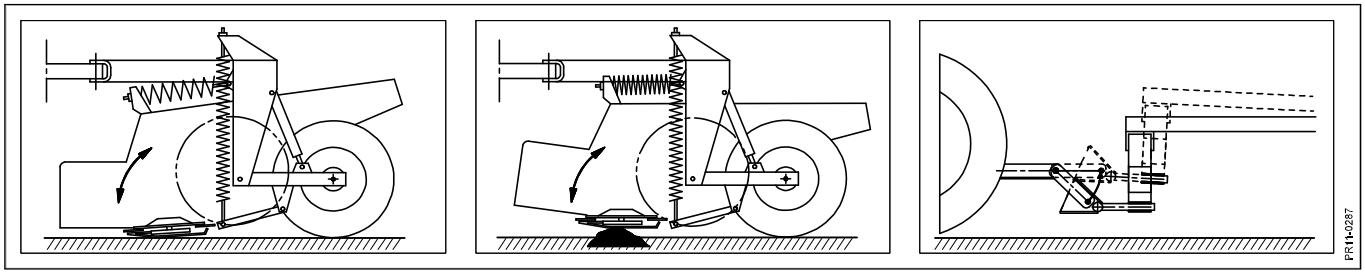


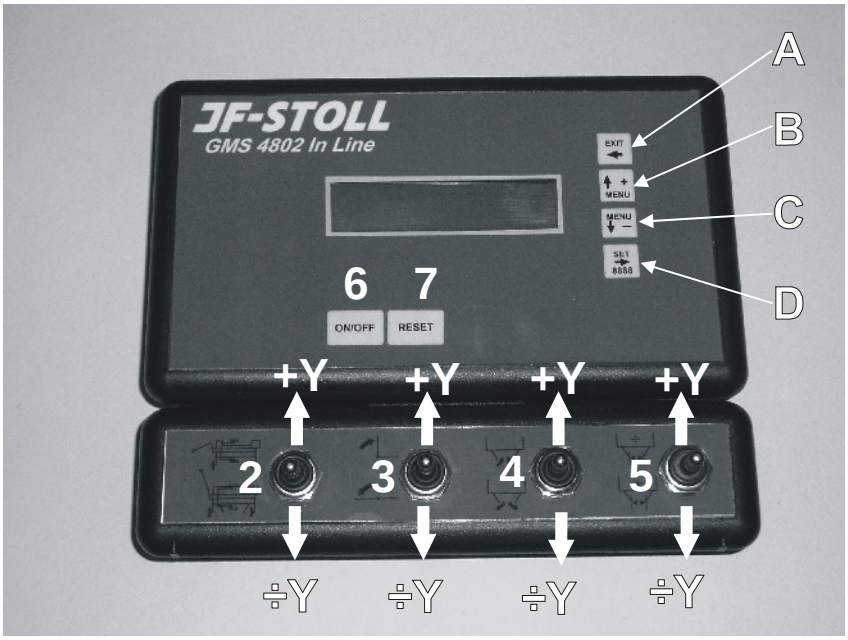
Fig. 3-1

Fig. 3-1 The machine is equipped with the Top Safe anti-crash system.
The cutting unit with the cutter bar is floating suspended in four strong springs for vertical movement and four horizontal placed springs. These provide the cutter bar with an easy swivelling movement when meeting stones or the like. At the same time, the drawbar has an integral shock absorber which is released in case of suddenly increased resistance on the machine. If the resistance is increased, the extension links swivel to the rear and upwards, thereby reducing the impact significantly.
Besides, the drawbar's swing cylinder is equipped with a pressure valve, C, see figure 3-3. This will release if the machine hits a protruding obstacle with the right uttermost end. After passing the obstacle the swing cylinder must be readjusted manually to the position it had before hitting the obstacle.

The stubble height is continuously adjustable by adjusting the inclination of the cutter bar. Furthermore, the stubble height can be changed adjusting the height of the guide shoes in steps.

The machine can without problems manoeuvre round obstacles by means of the hydraulic shift cylinder.

Monitor



Joy stick

PR14-0167

Fig. 3-2

OPERATION OF THE MACHINE'S ELECTRONIC OPERATION

Fig. 3-2 The machine's hydraulic functions are controlled from the monitor and joystick of the electronic control, see figure 3-2. The machine is equipped with a number of sensors that register the various positions of the hydraulic cylinders. Furthermore, a PTO-guard has been installed which monitors the rpm on the machine's input shaft. The information from the machine's sensors and PTO-guard is gathered in the decentralized unit of the electronic control and subsequently form the basis of which functions should be carried out from the monitor and the joystick. In order to be able to operate the machine the control must be switched on. This is done as follows:
Connect the current to the 2-pin plug, A, figure 2-12. On some tractor models the ignition must be turned off, in order for the current to be connected. As soon as the decentralized unit has been supplied with current, the message "no connection" appears in the display on the monitor as well as a bleep. This means that the decentralized unit has not yet established connection to the monitor. After a few seconds the message "no connection" disappears from the display along with a double bleep, and the monitor can now be turned on by pressing button 6 (On/Off) until text appears in the display.
First the version number of the program and then the machine status is shown in the display.

Work	Trip: 0.0

In the top left corner is shown whether the machine is in working position as shown above or in transport position (indicated with the text "Transport").
In the top right corner is indicated how many hours the machine has been operating (closer description follows).
Now the control is ready for operation.

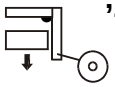
The joystick and the buttons 1-5 can be activated in several directions. This is shown by means of arrows and symbols: The symbols are as follows:

- '+X' = activation to the right
- '-X' = activation to the left
- '+Y' = activation forwards/up
- '-Y' = activation backwards/down

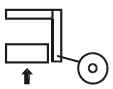
The above explanation to the symbols is only valid when the monitor and joystick turn as shown on the figure.

FUNCTIONS ON THE JOYSTICK BOX

Joystick:

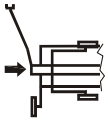


'+Y': Lowering the machine into working position by means of the working wheels.
Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
"Machine not in operation"
"Front guard not down"



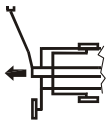
- **'-Y': Lifting the machine into working position** by means of the working wheels.

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
“Machine not in operation”
“Front guard not down”



- **’+X’: Swinging movements of drawbar in both working position and transport position.** In working position the machine swings away from the tractor until the drawbar reaches the centre position. Hereafter it stops automatically. At the same time the message “Drawbar in centre” appears in the display together with an acoustic signal.

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
“Machine in conversion”



- **’-X’: Swinging movements of drawbar in both working position and transport position.** In working position the machine moves towards the tractor. In transport position the drawbar swings until it reaches the centre position. Hereafter it stops automatically. At the same time the message “Drawbar in centre” appears in the display together with an acoustic signal.

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
“Machine in conversion”

Button 1 and joystick: Adjustment of swath guards (swath width), also when driving.

- **’+X’ and ’-X’: Change of joystick function in X-direction.**

Button functions: Single-operated with spring return without time delay. i.e. the function of the joystick’s X-direction is changed, no matter in which direction the button is activated once. When the function of the joystick changes there will be an acoustic signal and a message in the display.

After such a single operation, the **joystick** has the following function:

- **’+X’: The swath guards open, which normally increases the swath width.**

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
“Machine not in operation”

- **’-X’: The swath guards close, which normally reduces the swath width.**

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
“Machine not in operation”

NOTE: Adjustment of swath guards and thus swath width can be carried out while the PTO is running, i.e. it is possible to adjust the swath width continuously while mowing.

NOTE: Button 1 and joystick is SOLELY intended for adjustment of swath guards and thus swath width and must NOT be used for conversion of the machine from working to transport position and vice versa. This is described more detailed in connection with button 4.

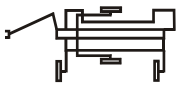
NOTE: The joystick can be reset to normal function in X-direction, i.e. swing of drawbar, by activating button 1 once again. There will be an acoustic signal and a message in the display. If the joystick is not

used for adjustment of the swath guards for 20 sec., the function automatically changes back to swing of drawbar When this happens, there will be an acoustic signal and a message in the display.

MONITOR FUNCTIONS

Button 2:

- **'+Y': Automatic conversion of machine from working to transport.**



Button functions: Hold to run with spring return with 3 seconds time delay, i. e. conversion starts when the button has been activated for three seconds. If the button is released the conversion stops immediately. This is to avoid unintentional activation.

The top line in the display shows "ARB POS -> TRANSPORT" while the bottom line shows which conversion function is carried out.

When the conversion is finished the message "Machine in transport" appears along with a bleep.

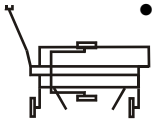
Error message shown in the display, if the function should not be carried out:
"PTO must not rotate".

NOTE: If the drawbar is not placed in the centre before the button is activated the message "PLACE DRAWBAR IN CENTRE" appears in the display along with an acoustic signal. Release the button and swing the drawbar towards the centre by means of the joystick's '+X'-direction until it automatically stops in the centre. Hereafter activate button 2 in '+Y'-direction again. After the three seconds the conversion will begin as described above.

NOTE: If the conversion is interrupted (for example due to loss of current) it can be reassumed by activating button 2 in '+Y'-direction.

NOTE: If the front guard or swath guards cannot be folded up/in due to accumulation of grass or similar, the conversion stops automatically and a message appears in the display with information regarding the type of function that cannot be finished. Interrupt the conversion process and check if grass or similar is stuck and thus preventing the hydraulic cylinder from bottoming. In case nothing is stuck, the reason may be that the control doesn't receive any signal from the sensor in question. This will be described later.

- **'-Y': Automatic conversion of machine from transport to work.**



Button functions: Hold to run with spring return with 3 seconds time delay, i. e. conversion starts when the button has been activated for three seconds. If the button is released the conversion stops immediately. This is to avoid unintentional activation.

The top line in the display shows "TRANSPORT -> ARB POS " while the bottom line shows which conversion function is carried out.

When the conversion is finished the message "Machine in work" appears along with a bleep.

Error message shown in the display, if the function should not be carried out:
"PTO must not rotate".

NOTE: If the drawbar is not completely in transport position (for example due to manoeuvring around a corner) before the button is activated the message "PLACE DRAWBAR IN CENTRE" appears in the display along with an acoustic signal. Release the button and swing the drawbar towards the centre by means of the joystick's '-X'-direction until it automatically stops in the centre. Hereafter activate button 2 in

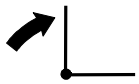
'-Y'-direction again. After the three seconds the conversion will begin as described above.

NOTE: If the conversion is interrupted (for example due to loss of current) it can be reassumed by activating button 2 in '-Y'-direction.

NOTE: In general it can be said about button 2 that if the conversion in one direction is interrupted and you subsequently try to start it **in the opposite direction** the control will estimate whether this is possible. If it is possible the conversion will start up in the opposite direction after the three seconds. If it is not possible either the message "Work->Trans not finished" or "Trans->Work not finished" will appear in the display and the mentioned conversion direction must be finished in order to be able to change function.

NOTE: When button 2 is activated i.e. when the machine is in automatic conversion, the other buttons are locked. If the conversion is interrupted it will subsequently be possible - according to the machine's actual position – to activate certain manual functions. In that case, where the machine's transport frame is between working position and transport position, **all** the manual functions will be locked if the conversion is interrupted. In that case the conversion has to be reassumed and finished before the manual functions will be active again.

Button 3:



- **'+Y': Folding the front screen up manually.**

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
"Machine not in operation"
"Working wheel not up" (i.e. machine must be lowered to the ground)
"PTO must not rotate".

- **'-Y': Folding the front screen down manually.**

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
"Machine not in operation"
"Working wheel not up" (i.e. machine must be lowered to the ground)
"PTO must not rotate".

Button 4:

NOTE: The swath guards are equipped with a so-called memory cylinder. This cylinder ensures that the selected adjustment of the swath guards is remembered although the machine is converted from work to transport and back to work again, i.e. in case of automatic conversion the guards always move to the position they had the last time the machine was in working position. Button 4 is a manual alternative to the automatic folding of the swath guards. Therefore, button 4 must **NOT** be used for fine adjustment of the position of the guards before driving in the field. Button 4 should only be used if you wish to fold the swath guards fully in or out to the position they have been set to with button 1 and joystick (see above and description of button 5). Please also note that button 4 can only be operated when

PTO is not running as it is not intended for adjustment of the guards during operation.

- **'+Y': Folding the swath guards in manually.**

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
"Machine not in operation"
"PTO must not rotate".

- **'-Y': Folding the swath guards out manually.**

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
"Machine not in operation"
"PTO must not rotate".

Button 5:
Adjustment of swath guards (swath width), also when driving (same function as button 1 and joystick). See button 1 and joystick for a more detailed description.

- **'+Y': The swath guards close, which normally reduces the swath width.**

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
"Machine not in operation"

- **'-Y': The swath guards open, which normally increases the swath width.**

Button functions: Hold to run with spring return and without time delay.
Error message shown in the display, if the function should not be carried out:
"Machine not in operation"

Button 6:
As earlier mentioned the control monitor is turned on and off with this button. Note, that only the current to the monitor is interrupted. The decentralized unit is still switched on as long as there is current on plug **A**, see figure 2-11.
NOTE: When the monitor is turned off all buttons are inactive, also the buttons on the joystick box.

Button 7:
This button is used to reset the trip control.

Buttons A, B, C, and D are buttons to control the menu and are used as follows:
Buttons B and C are used to leaf through the control's main menus and sub menus. Button A is used when you wish to leave the menu you are standing in. When activating button A repeatedly you will get back to the main menu, which shows the actual status of the machine.
Button D is used to confirm a menu choice. This can typically be seen in the display as follows: the menu point has stopped flashing and is now constantly on.

OTHER MONITOR FUNCTIONS

Choice of language
Language can be chosen via a menu. Press button C three times. Press button D once if you want another language than the one shown. The chosen language is now flashing. Now use button B or C to leaf through the languages until the desired language flashes. Now press button D once to confirm the choice and the chosen

language has now stopped flashing and is constantly on. Subsequently, press button A until the main menu appears again.

Language: English

Trip control:
The machine is equipped with a trip control that counts the hours when the PTO rotates with more than 800 rpm. When the trip control is active the colon behind ”Trip” in the main menu flashes (se picture of display below). Press button 7 on the main menu for 5 seconds to reset the trip control. A general trip control is also available, which also counts when the PTO rotates with more than 800 rpm, but cannot be reset by the user. The actual values of both trip controls can be read in a submenu that appears when you press button C twice. Return to main menu by pressing button A or B twice.

Work Trip: 0.0

PTO guard:
The machine is equipped with a rotation guard on the input shaft of the transmission line. This controls the automatic start/stop of the belt as well as the trip control. However, it is also possible to read the actual number of revolutions in a submenu which appears by pressing button C once (see picture of display below). This information is useful in cases where there is doubt about the tractor’s PTO rpm or if the tractor cannot show the number of revolutions.

Actual PTO RPM: 0

TRANSPORT ON PUBLIC ROAD

The machine is intended for suspension in the lower link arms of the tractor, as mentioned in the section CONNECTION TO TRACTOR in chapter 2. The machine must be converted to transport position before driving on public roads. The transport speed should not exceed 30 km/h. The machine is equipped with lighting equipment as standard. The lighting equipment should be activated if required by the laws of the country in question.

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.

CYLINDER FOR DRAWBAR

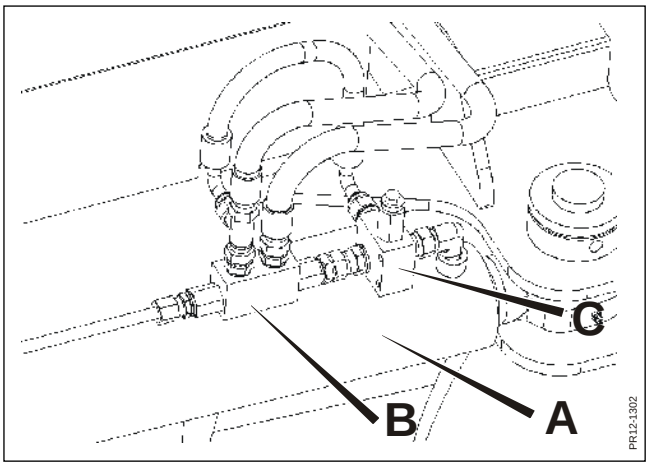


Fig. 3-3

Fig. 3-3 The hydraulic cylinder **A** for turning the drawbar is equipped with a double pilot operated check valve **B** which secures the cylinder and thus also the machine in a given position when the hydraulic handle for the drawbar is not operated.

This prevents the machine from making unintended or sudden movements due to e.g. leaky valves or clutches on the tractor or hoses that burst or come off.

WARNING: **Hose couplings must be kept clean and filters on the tractor must be kept in a proper condition as impurities may in some cases prevent the valve from working correctly.**

SECURING THE MACHINE IN TRANSPORT POSITION

When the machine has been put into transport position behind the tractor, the ball valve on the pressure hose, P, must be closed.
The valve is open when the handle is parallel with the hose and closed when the handle is turned 90 degrees.

DANGER: **Always remember to turn off the electronic operation box and cut off the oil flow to the machine's hydraulic system before the machine is transported on public roads. 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.**

SETTING OF THE MACHINE'S CUTTING UNIT

Before driving in the field it is important to carry out a basic adjustment of the machine's cutting unit. If at a later time there is a need for fine tuning of for example the stubble height this can be carried out continuously.
The two most important adjustments that have to be made are adjustment of the stubble height and relief i.e. how much pressure the cutting unit exerts to the ground. Besides, the setting of the Top Safe springs must be controlled and adjusted if necessary.

Before these adjustments are carried out, the machine must be:

1. **in working position.**
2. **mounted correctly in the lower link arms of the tractor, see the section CONNECTION TO THE TRACTOR in chapter 2 "CONNECTION TO TRACTOR".**
3. **standing on even ground and the cutting unit must be lowered to the ground. TIP:** If relief adjustments are made on a hard surface (concrete) it may be necessary to re-adjust the machine in the field due to the fact that the machine sinks when driving on soft ground.

ADJUSTMENT OF TOP SAFE SPRINGS

The function of the Top Safe springs is to help the cutting unit tipping backwards when hitting a protruding obstacle. If the Top Safe springs are too tight the cutting unit will tip backwards too easily which may result in waved stubble.

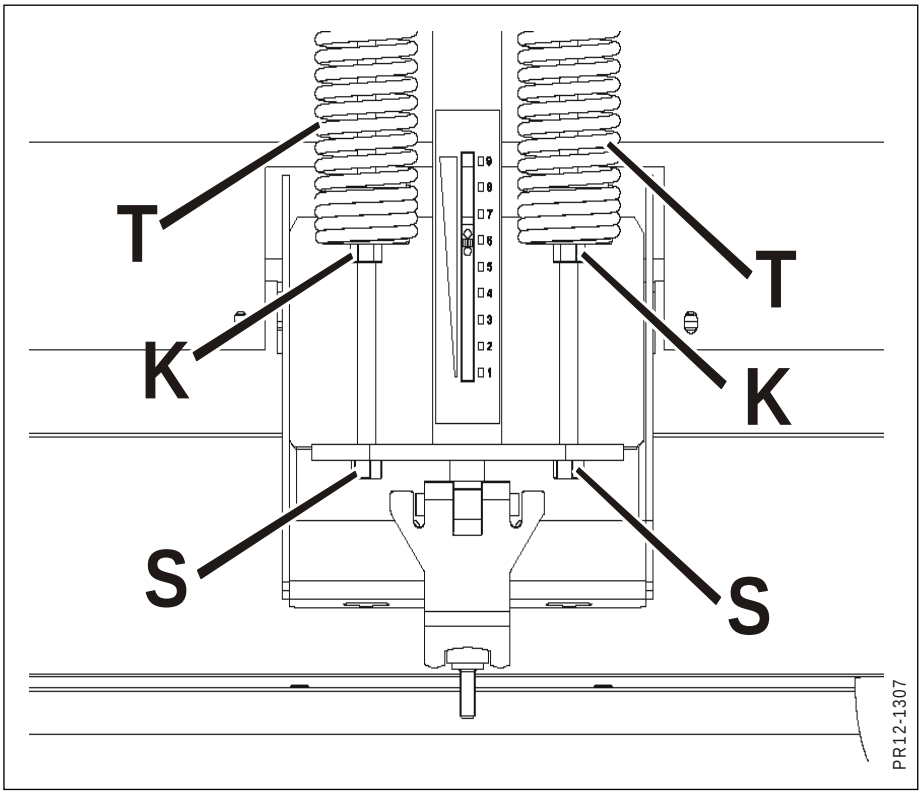


Fig. 3-4

Fig. 3-4 Therefore, JF-STOLL recommends that the Top Safe springs, **T**, are adjusted in such a manner that the ends of the springs are on level with level 6 on the stubble height indicator. All springs must be set to the same level.
Adjustments in the settings of the Top Safe springs are carried out by loosening the lock nuts, **K**, see fig 3-4. This is easily done with the end of the enclosed all-purpose handle. The easiest way to turn the spindles, **S**, is to put a socket spanner with extension through the holes in the brackets. When the adjustment is finished the counter nuts, K, must be tightened against the springs.

NOTE: The adjustment of the Top Safe springs is **independent** of both stubble height and relief. When the stubble height and relief is subsequently adjusted it will not affect the setting of the Top Safe springs.

SETTING OF STUBBLE HEIGHT

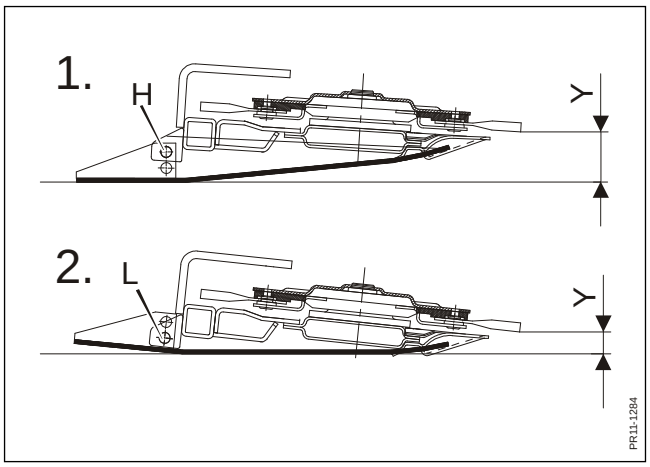


Fig. 3-5

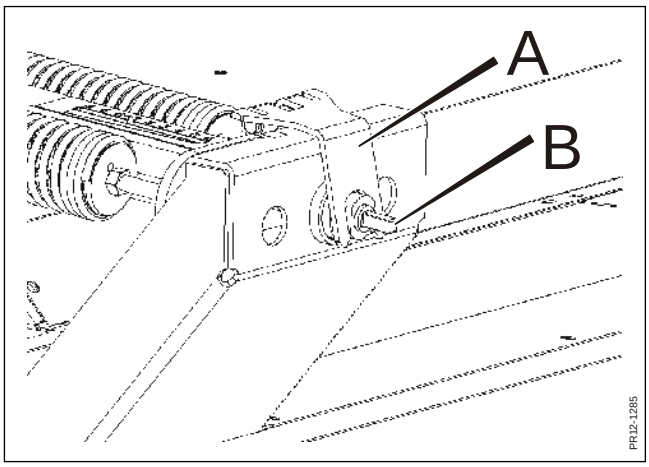


Fig. 3-6

Fig. 3-5 The stubble height is roughly adjusted with the guide shoes, see fig. 3-5. High position is shown at **1** and low position at **2**.

Fig. 3-6 Fine-tuning of the stubble height is subsequently carried out with the spindle, B, see fig. 3-6. Note, that there are two spindles on the cutting unit. Before the spindle is turned with the enclosed all-purpose handle, the stubble height lock, **A**, must be tipped backwards. The stubble height can continuously be read on the scale between the Top Safe springs, see fig. 3-4. 3-4. When the stubble height is set in the desired position the all-purpose handle is dismounted and the stubble height lock, A, is engaged. Then the second spindle is set to the same position as the first.

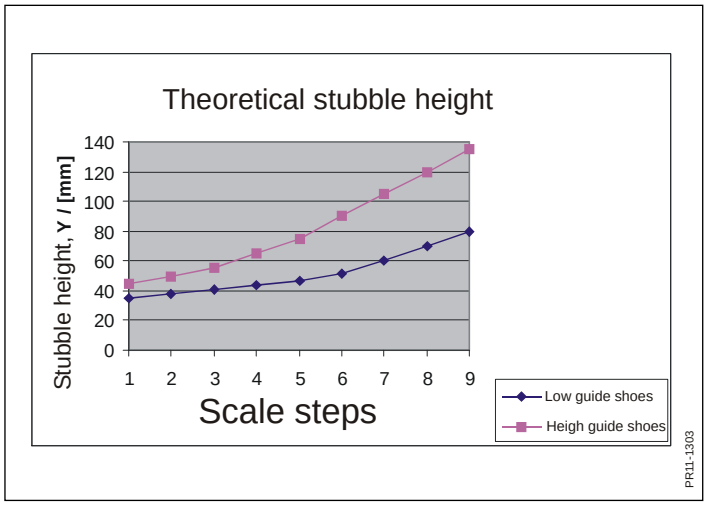


Fig. 3-7

Fig. 3-7 The stubble height scale is divided into steps between 1 and 9 where 1 is the lowest stubble and 9 the highest stubble. In fig. 3-7 the theoretical stubble height, **Y** (also shown in fig. 3-5) is shown for each scale setting and for low and high setting of guide shoes.

NOTE: Practical stubble height is approx. 1.5 – 2 times higher than theoretical stubble height.

We recommend – as far as possible – that you try to obtain the desired stubble height with low setting of the guide shoes, as it gives the best cutting result. An example: A theoretical stubble height of 60 mm is desired. This can both be obtained

by placing the guide shoes high in step 3.5 and placing the guide shoes low in step 7. The last-mentioned setting should thus be chosen.

SETTING OF RELIEF

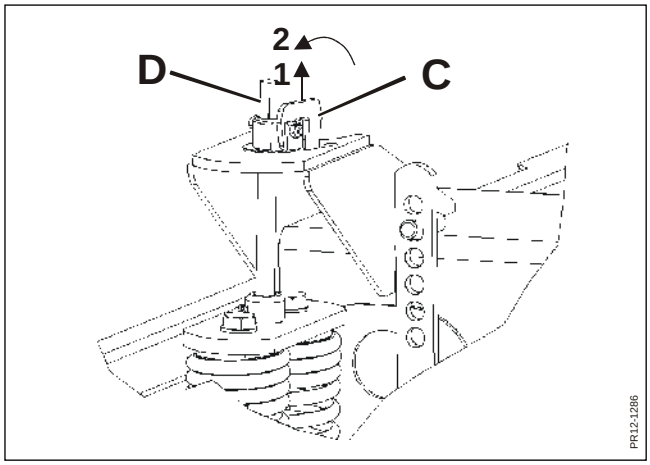


Fig. 3-8

Fig. 3-8 The cutting unit of the machine is relieved by means of 4 vertical springs, 2 in each side. The springs are adjusted as follows:

- Place the all-purpose handle over the spindle, **D**, and turn the spindle until the lock, **C**, gets loose.
- Release the lock, **C**, by lifting it vertically up **(1)** and subsequently turning it backwards **(2)** so that it disengages with the flange.
- The spindle can now be turned so that the springs will be tightened or slackened.

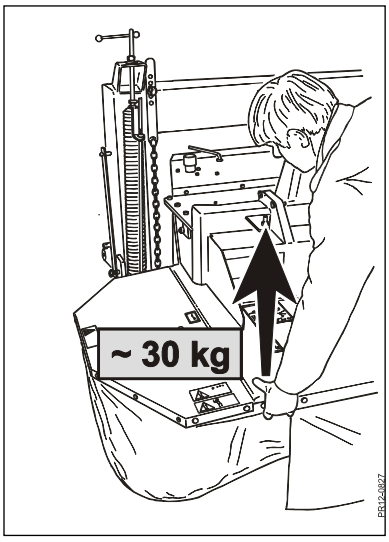


Fig. 3-9

Fig. 3-9 The springs must be adjusted so that the weight of the cutting unit on the ground is approx. 30 kg in each side.

When the adjustment of the vertical springs is finished, the lock, C, (fig. 3-8) must be brought in mesh with the flange again to make sure that the setting is secured.

IMPORTANT: Even though the springs have been mounted at the factory with the fact in mind that the weight of the cutting unit is not the

same in both sides, the tightening of the vertical springs does NOT necessarily have to be completely the same in both sides.

IMPORTANT: The size of the relief is only a guide and must be adjusted to the ground and the way of driving.
At intervals it must be checked that the machine is working with the correct relief. Earth and grass on the cutter bar and the rest of the cutting unit may change the relief considerably!

IMPORTANT: Large changes in the stubble height will affect the setting of the relief. This especially applies when changing between high and low setting of the guide shoes. Therefore, always check the relief when changing the stubble height and, if necessary, readjust the horizontal springs. Change of the setting of the Top Safe springs does as earlier mentioned NOT affect the relief of the cutting unit.

Carry out a first test drive and check the stubble height and whether the stubble is even. When the stubble height is as desired it may be necessary to re-adjust the relief. Normally, an **increase in stubble height will lead to increased relief** (lower ground pressure) while a **decrease in stubble height will lead to decrease in relief** (more ground pressure).

RE-ADJUSTING THE RELIEF OF THE CUTTING UNIT

Too much relief (cutting unit is very light):
- The stubble will be uneven (wavy)

The vertical relief springs must be slackened.

Too little relief (cutting unit is very heavy):
- The machine damages the grass roots, which reduces re-growth, and wear on the guide shoes is increased.
- Increased risk that the machine "picks up stones" which means increased risk of damage to materials and injury to persons.

The vertical relief springs must be tightened.

THE CONDITIONER

The machine is equipped with two conditioner rotors that are operated from each side of the machine by way of belt drive. The belts are self-tightening with a spring-loaded tension pulley that has been adjusted from the factory. The number of revolutions of the conditioner rotors is 1060 rpm.

ADJUSTING THE DEGREE OF CONDITIONING

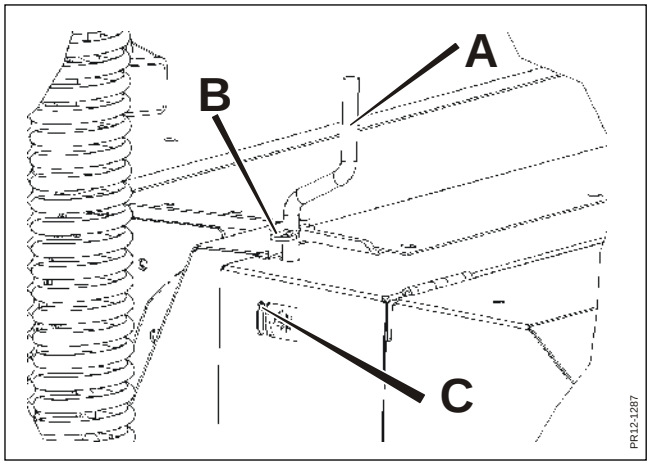


Fig. 3-10

Fig. 3-10 The degree of conditioning can be varied by changing the distance between the conditioner plate and the rotor. The adjustment happens continuously by turning the handle, **A**. Pull out the spring pin, **B**, before turning the handle, **A**. On the side of the guard is the indicator, **C**, that shows the actual conditioning distance.
When the **indicator, C, is down** the conditioner plate is **as open as possible** corresponding to 45 mm.
When the **indicator, C, is up** the conditioner plate is **as closed as possible** corresponding to 10 mm.
After ended adjustment the split, **B**, is put back in order to lock the conditioner plate in the adjusted position.

Conditioning in relation to the distance to the rotor in general:

Small distance Þ Strong conditioning
Large distance Þ Moderate conditioning

JF-STOLL recommends that the conditioner plate as a basis is set with the indicator, **C**, in the middle of the area in question. In this position a suitable degree of conditioning will be obtained under normal driving conditions and crop conditions.

NOTE: The optimal setting of the conditioner plate both depends on working speed and the volume of the crop.

NOTE: Large distance between conditioner plate and conditioner rotor may result in reduced throwing ability and thus reduced ability to form the swaths satisfactorily with the swath guards.

Finally the PE-fingers on the rotor can be turned for a more aggressive attack on the crop. However, this may reduce the throwing of the crop out of the machine to the rear.

SWATH GUARDS

FUNCTION AND CONSTRUCTION

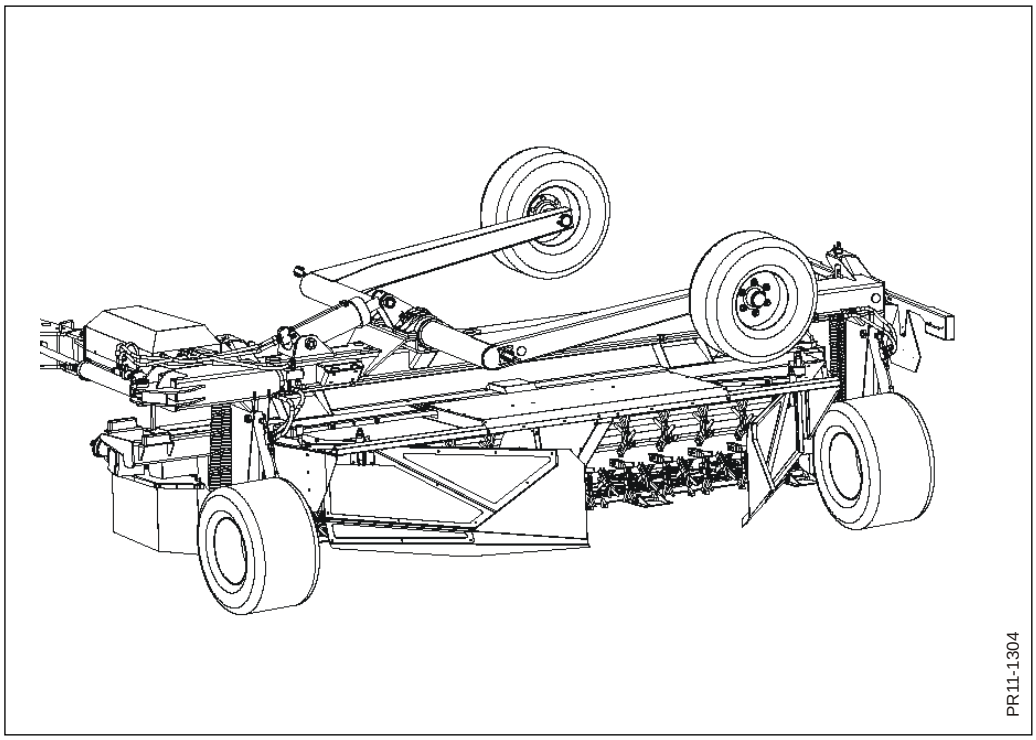


Fig. 3-11

Fig. 3-11 The machine is equipped with swath guards which place the crop from the **whole** working width of the machine in a single swath centred behind the machine. As described in the section on operation of the electric system, the position of the guards can be adjusted, also during mowing, by means of the joystick or button 5 on the monitor. The guards are connected to each other with a mechanism which ensures both guards move synchronously when they are opened and closed.

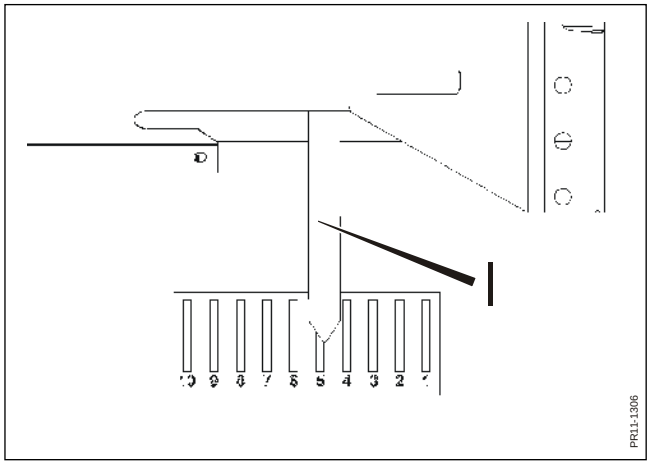


Fig. 3-12

Fig. 3-12 The position of the guards is shown by the indicator, I, which is placed on the board of the cutting unit, facing forwards. The indicator is divided into steps from 1-10, 1 corresponding to fully closed guards and 10 corresponding to fully open guards.

NOTE: The numbers on the indicator can be difficult to read from the tractor seat. Besides, they will be seen from an oblique angle. **When this instruction manual refers to numbers on the indicator scale for adjustment of the swath guards, they must be seen from a position standing at the cutting unit of the machine, looking straight down on the indicator.**

ADJUSTMENT

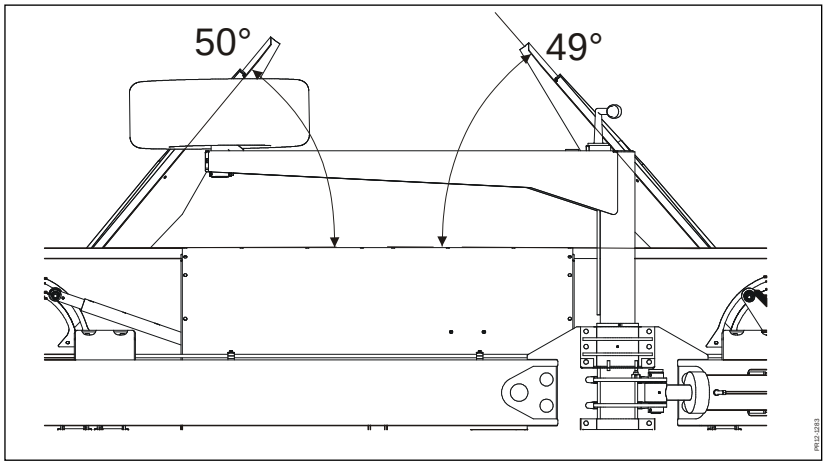


Fig. 3-13

Fig. 3-13 The basic adjustment of the swath guards is step 5. Here the guards are approximately half open, corresponding to an angle of about 50 degrees. With this adjustment, the guards will typically form a swath with a width of 1.5-1.6 m. The actual width of the swath depends on the forward speed, the amount of crop and, partly, the opening of the conditioner plate in relation to the conditioner rotor.

JF-STOLL recommends **a forward speed of minimum 8 km/h and preferably 10-12 km/h for normal to large crop amount**, usually corresponding to 1st and 2nd cut. In case of lower forward speed there is a risk of waste from the guards, which will increase the swath width.

When working in thin crops (3rd and 4th cut) it may be necessary to increase the speed to approximately 15 km/h to obtain sufficient crop flow through the outlet system of the machine so that a swath of the desired width can be formed.

Under normal conditions the above-mentioned swath widths can be obtained with the conditioner plate in middle position. However, under special conditions it may be necessary to close the conditioner plate further to optimize the swath formation.

Under favourable conditions it is possible to reduce the swath with to approximately 1.1 m, also with the swath guards in standard position, i.e. step 5. Favourable conditions mean optimal coordination of forward speed, adjustment of conditioner plate in relation to conditioner rotor and a normal to heavy crop.

As previously mentioned the swath guards can be adjusted continuously during working. It is recommended to carry out adjustments of the swath guards in small steps since the position of the guards is very sensitive as regards the swath width. This is easily done by carrying out a single activation of the joystick or button 5 and then observe the result.

Usually, closing the guards significantly in relation to the standard adjustment will not produce a narrower swath as the crop flow will then be reduced too much on the guards and the crop will fall down as waste.

If larger swath widths than the above-mentioned are desired, these can be obtained by opening the guards further. When the guards are fully open, the swath will be approximately 2.8 m wide.

NOTE: No matter which position the swath guards are set to by means of the joystick or button 5, the guards will automatically be fully closed if automatic conversion from work to transport is performed and opened to the previous position again if automatic conversion from transport to work is performed See also the description under operation of the electric system.

FINE ADJUSTMENT OF THE MUTUAL POSITION OF THE SWATH GUARDS

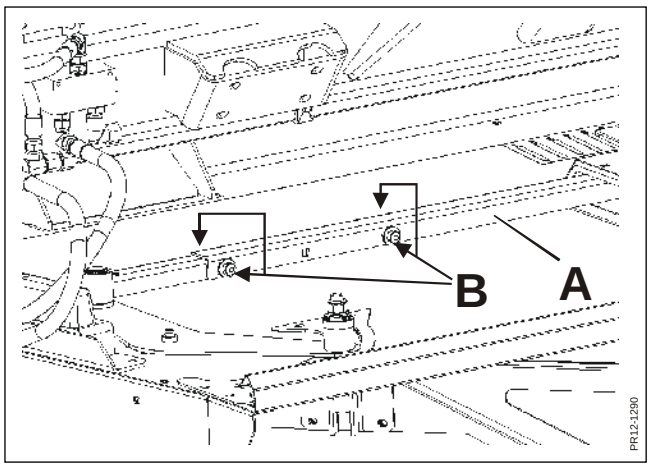


Fig. 3-14

Fig. 3-14 The swath guards are connected with each other by means of connecting rods, A, one at each swath guard. These can telescope a little in each other if the 4 bolts, B, which keep the connection together, are loosened. The figure shows the left connecting rod.
It may become necessary to adjust these connecting rods if you wish to change the mutual position of the swath guards. This requirement may occur if the swath, at a certain setting on the scale, is not symmetric, i.e. there is more crop in one side of the swath. In most cases the problem can be solved by opening both guards a little by means of the joystick or button 5, without affecting the total swath width. In some cases it may however be necessary to open the guard separately in the side where the crop amount is higher. This is done by extending the connecting rod in this side.
After adjustment of the connecting rods, the 4 bolts must be retightened to secure the new setting.

WORKING IN THE FIELD

When the tractor and the machine have entered the field the machine is converted from transport position to working position. With the machine in working position the power take-off is carefully connected and the tractor engine is increased to the number of revolutions that corresponds to 1000 rpm on the PTO. Now you are ready

to drive into the crop. The speed varies from 8-20 km/h depending on the crop and the working conditions.

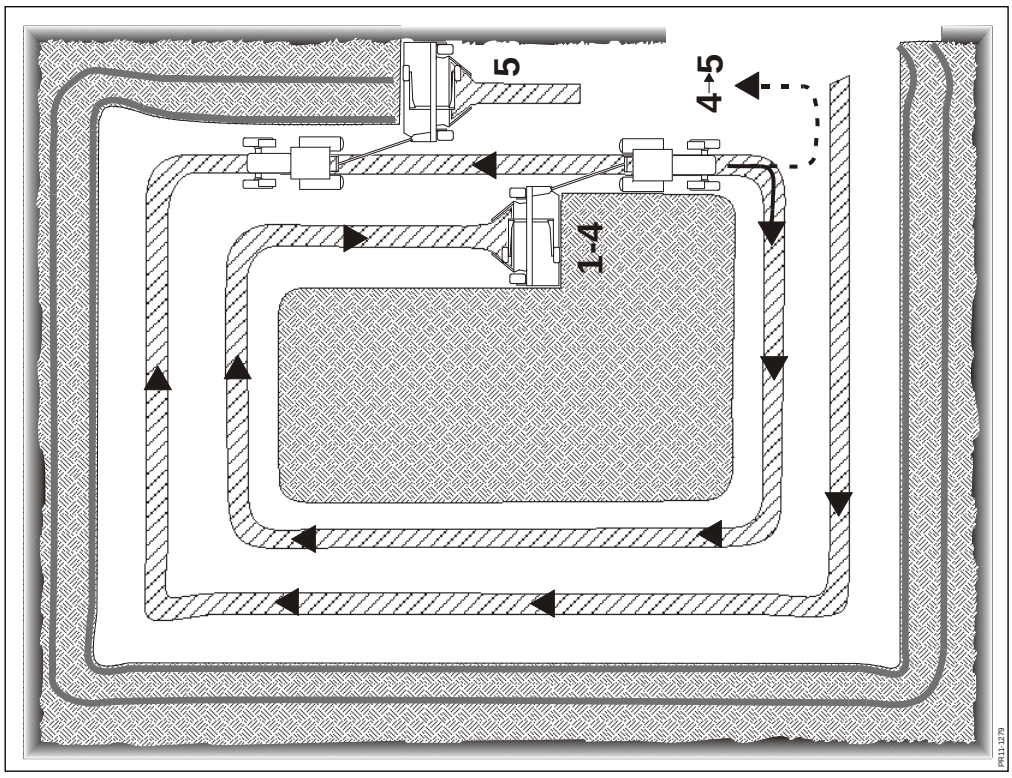


Fig. 3-15

MOWING THE HEADLAND

Fig. 3-15 When mowing the headland we recommend a total of 5 rounds. The first 4 rounds are driven with the tractor closest to the edge of the field. When mowing the first round you must leave a full working width of un-cut crop next to the field boundary. In the beginning it can be difficult to estimate this distance, but you can always leave less than a full working width without experiencing problems later.
When the first round has been mowed the drawbar of the machine must be positioned so that the tractor drives straight over the previously laid swath. This applies to the rest of the field.
When the first four rounds have been mowed there is enough room in the corner where the mowing started to turn and mow the outermost round (5) with the machine closest to the edge of the field.

NOTE: It is important that there is plenty of room on the headland when the rest of the field is mown. The reason is as follows: In order to ensure sufficient crop flow through the machine and thus obtain the desired swath width, it is necessary to drive at normal speed (minimum 8 km/h) until the machine is out of the field. This also applies when driving into the field. You should preferably drive into the field at normal speed. Otherwise the swath width will be larger until normal speed is obtained.

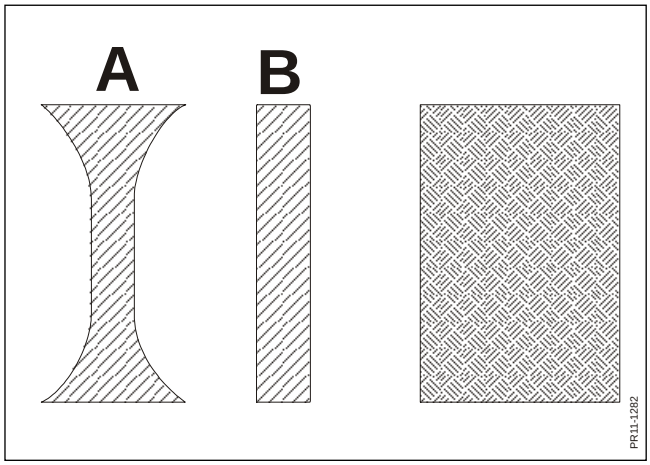


Fig. 3-16

Fig. 3-16 Swath A is an example of a swath which is wider at the ends because the driver has been driving too slowly in and out of the field.
Swath B is an example of a swath which has the same width in the whole length because the driver has been driving with normal speed in and out of the field.

STARTING

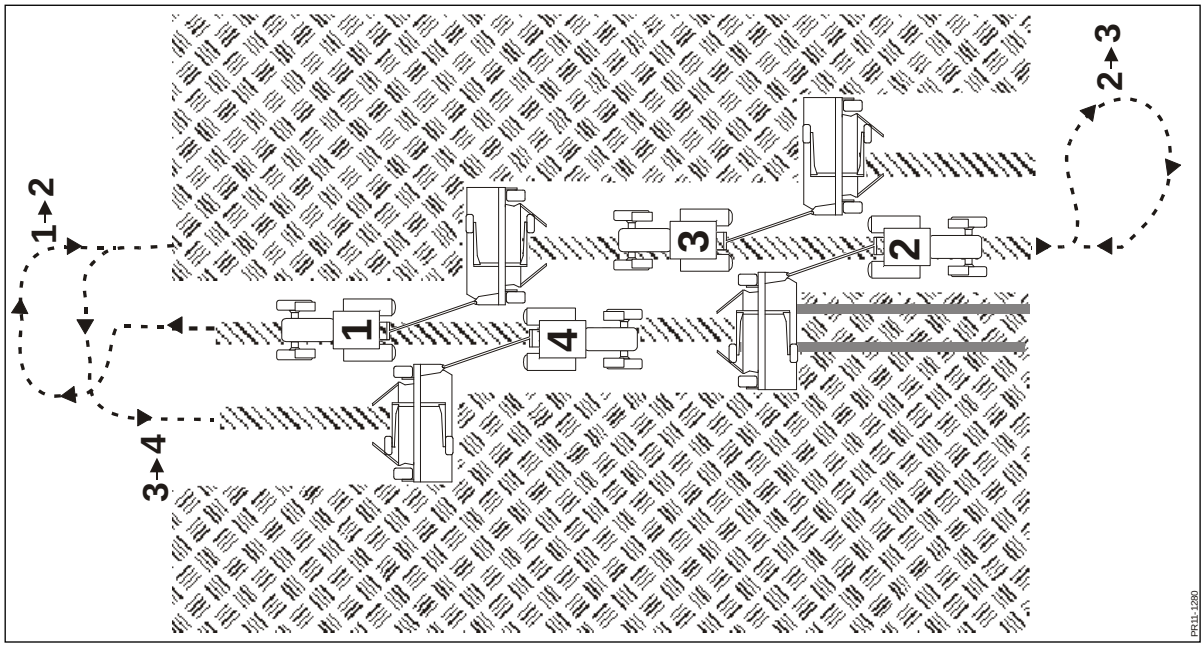


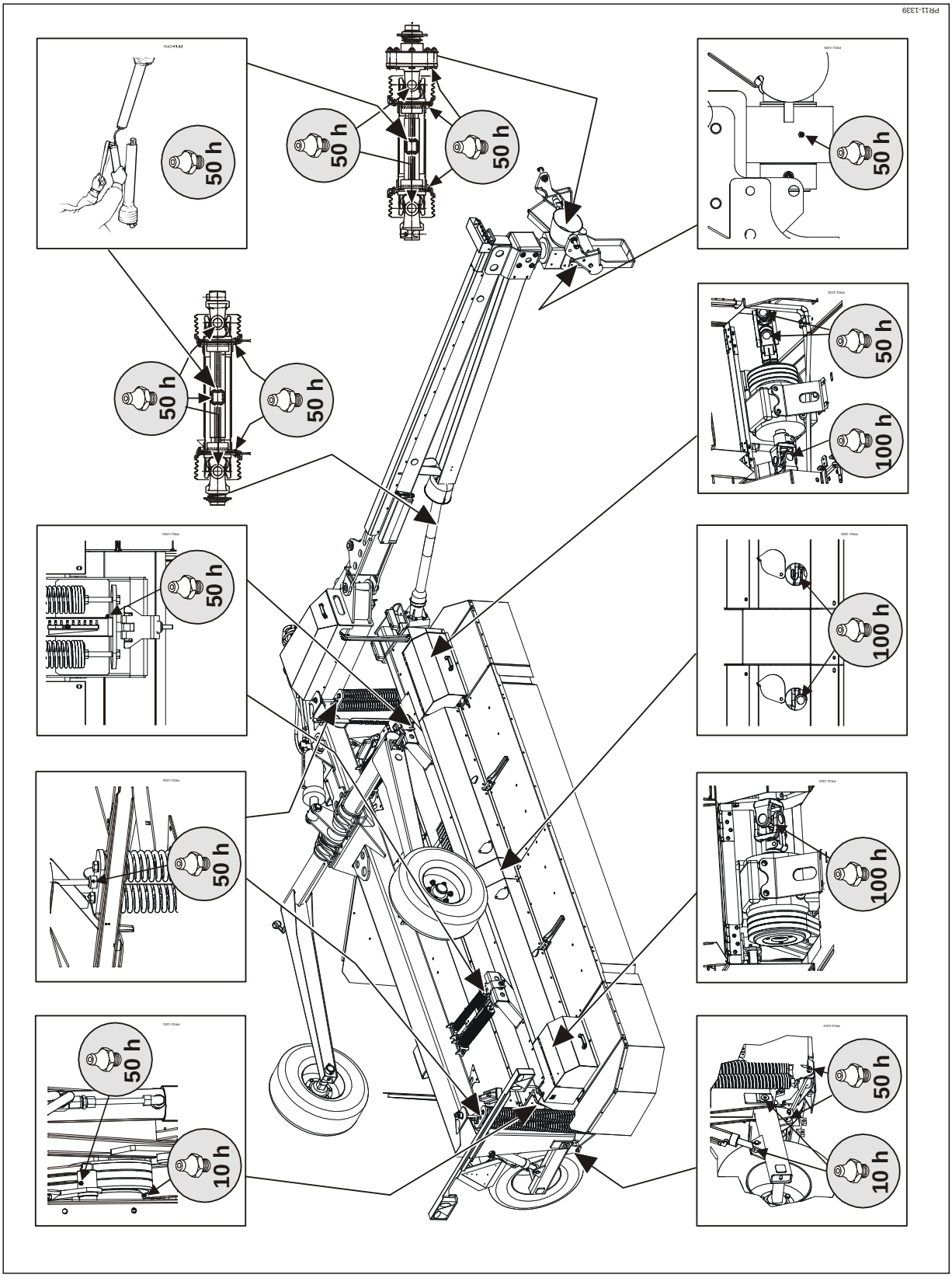
Fig. 3-17

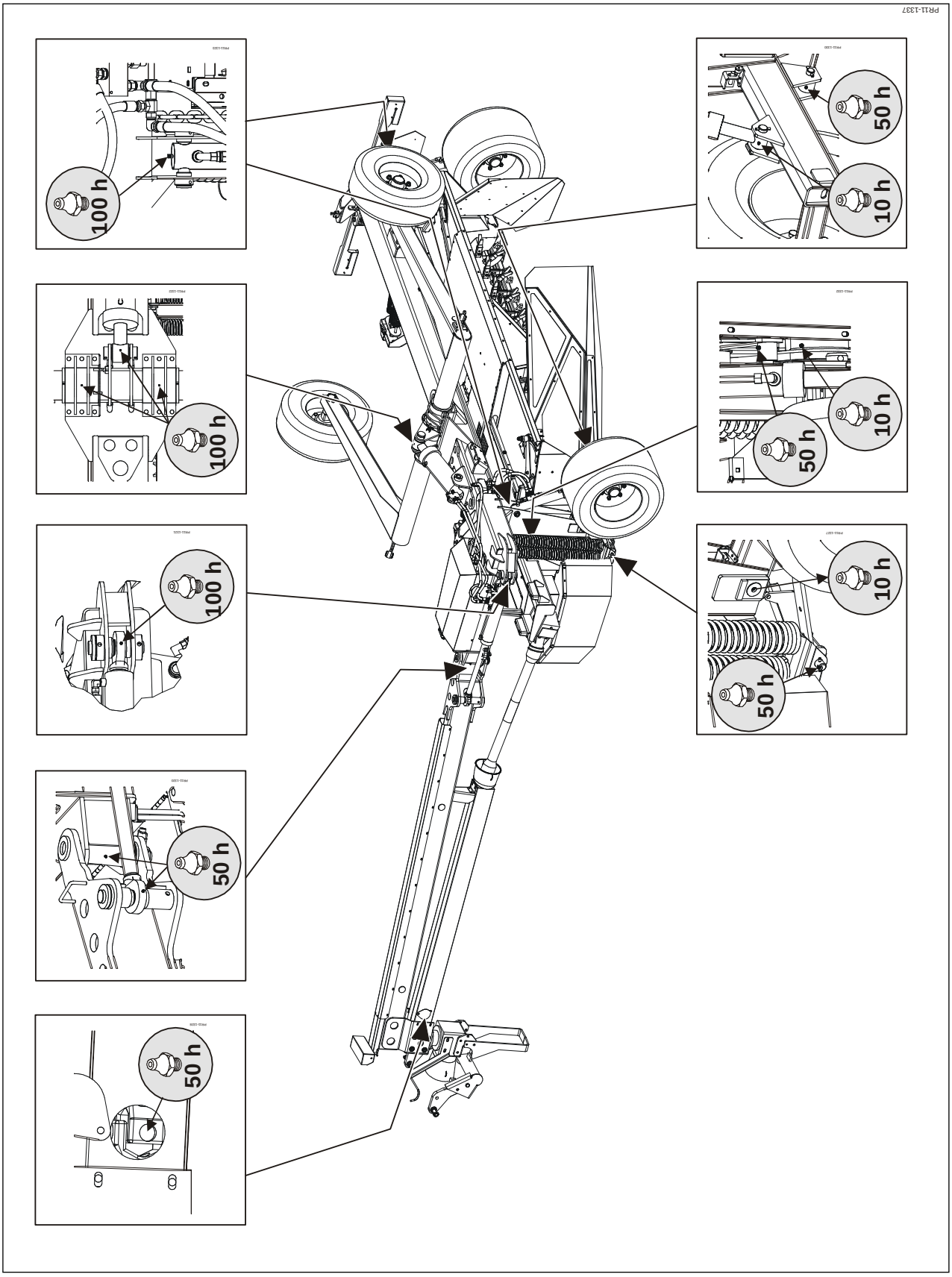
Fig. 3-17 When the headland has been mowed it may be advantageous – depending on the size of the field – to split the field up into smaller sections. The best way to do this is by following the procedure on the figure. Note that it requires some extra room on the headland when turning between 1st - 2nd and 2nd – 3rd rounds. The advantage is in return that it is not necessary to reverse the machine and that the run down crop from round 1 is picked up in the best possible way in round 2 because the cutting unit drives in the opposite direction compared to round 1. After the 4 shown rounds you can choose whether you will continue to drive inside or if you will drive outside on one of the other sections.

4. GREASING

Greasing chart for the disc mower GMS 4802

IMPORTANT: The below grease spots **must** be greased according to the operation time intervals indicated.




PR11-1337
100 h
50 h
10 h
100 h
50 h
10 h
100 h
50 h
10 h
50 h
50 h

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.

CAUTION: **Be careful when cleaning with a high pressure cleaner. Never spray directly on the bearings.**

IMPORTANT: **If the machine is cleaned with a high pressure cleaner, make sure to grease the machine carefully afterwards, in order to press any water out of the bearings.**

PTO DRIVE SHAFTS

REMEMBER: **GREASE PTO DRIVE SHAFT, UNIVERSAL JOINT, PROFILE TUBE AND GUARD TUBE EVERY 50 WORKING HOURS.**

CAUTION: **Pay special attention to the sliding profile tubes of the PTO shaft. They must be able to slide back and forth when the torque is heavy.**

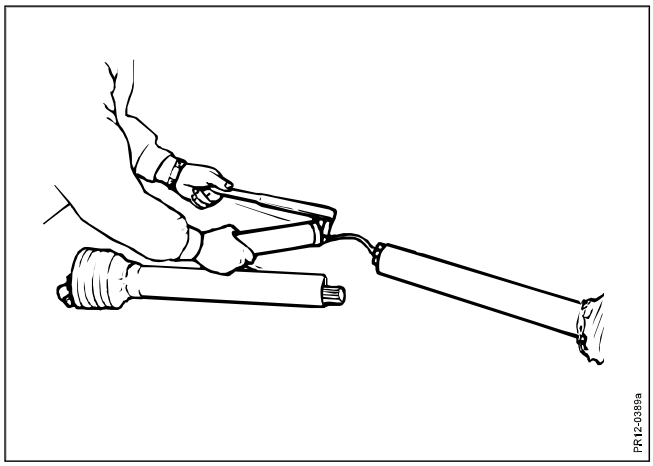


Fig. 4-1

Fig. 4-1 If you neglect to lubricate the profile tubes sufficiently, it will result in high frictional forces (seizing) which will damage the profile tubes and in time also connecting shafts and gearboxes.

OIL IN THE CUTTER BARS

Oil content: **1.7 litre per cutter bar**

2 filling plugs per bar are placed on top of the cutter bars 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 can be used as an acceptable alternative. Never use pure SAE 90W oil in the cutter bar).

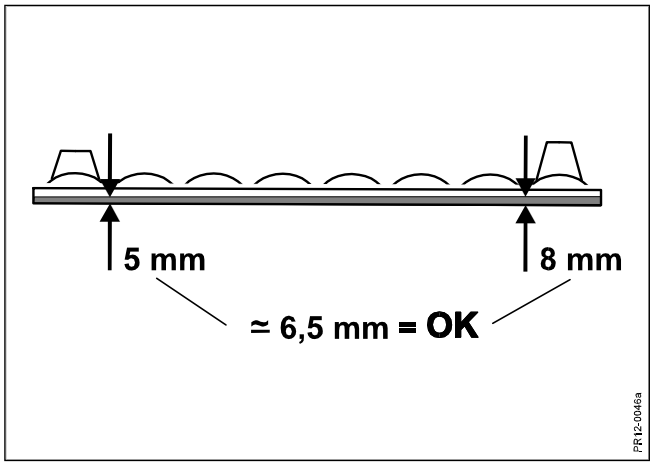


Fig. 4-2

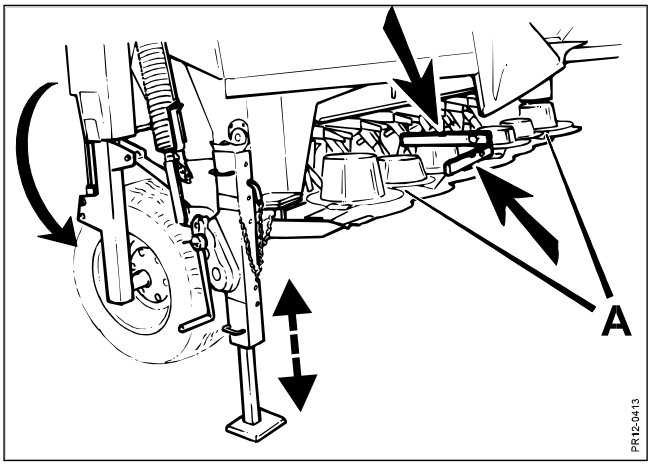


Fig. 4-3

Fig. 4-2 **Oil level:** n **6 -7 mm**

Fig. 4-3 **This oil level must be an average of the level measured at both filling holes (marked at A).**
Wait 3 min. (If the oil is cold wait 15 min.), and then check.

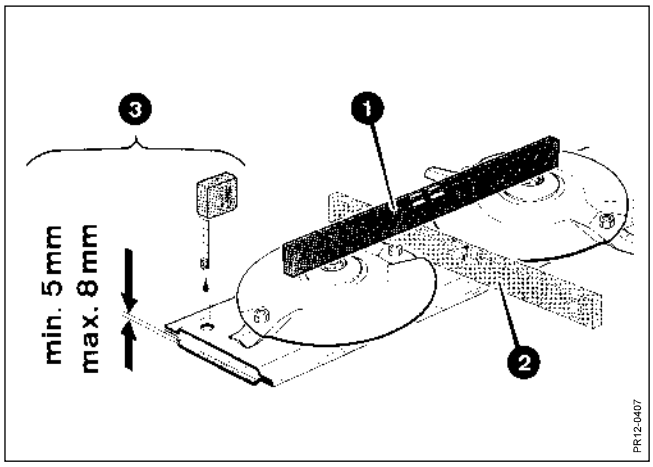


Fig. 4-4

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

Fig. 4-4 In order to facilitate the daily oil check we recommend you to have a permanent "oil measuring platform". This means that the check for **"horizontal cutter bar",** as shown in Fig. 4-3 and 4-4, 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, adjustment of stubble height or by ground adaptation.

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

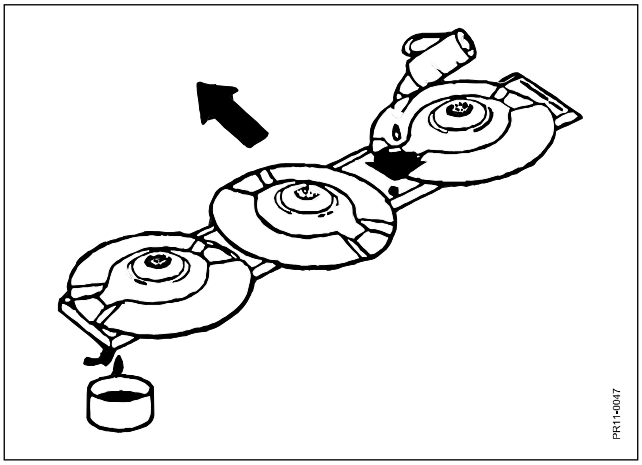


Fig. 4-5

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 of each cutter bar.

NOTE: The left guide shoe on each cutter bar must be dismounted in order

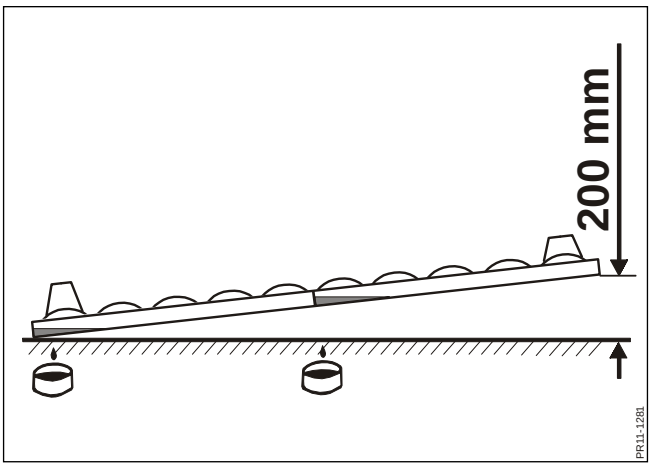


Fig. 4-6

to get to the drain plugs.

Fig. 4-6 For oil change the cutter bar is raised minimum 150-200 mm in the opposite side of the drain plugs to ensure optimum emptying.
The drain plug is fitted with a magnet and should be cleaned at every oil change.

CAUTION: **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 RIGHT ANGLE GEAR (2 PIECES) OVER CUTTER BARS

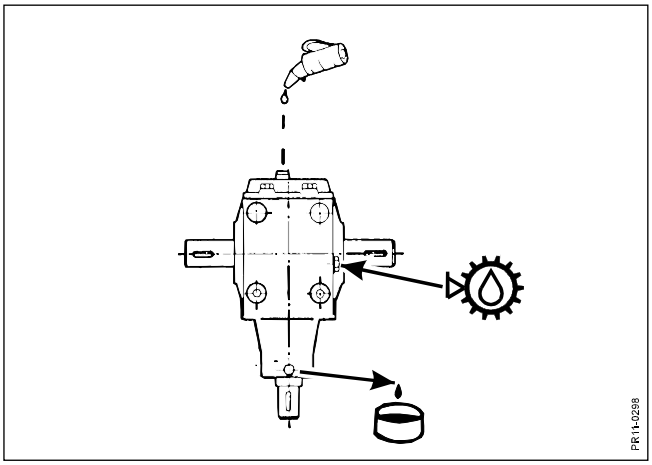


Fig. 4-7

Fig. 4-7 **Oil content:** **1.5 litre per gear**

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

Oil level: Check the oil level after every 50 hours of operation.

NOTE: **The machine's cutting unit must be horizontal in both the longitudinal direction and the transverse direction when the oil level is measured. Therefore, we recommend that this control is made at the same time as the cutter bar oil level is controlled.**

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

OIL IN 120 DEGREE GEAR ON THE CUTTING UNIT

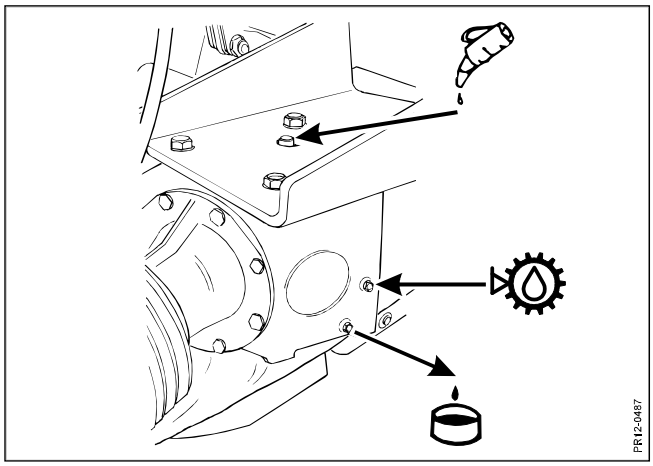


Fig. 4-8

Fig. 4-8 **Oil content:** **1.7 litres**

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

Oil level: n Check the oil level after every 50 hours of operation.

NOTE: The gear must be horizontal in both the longitudinal direction and the transverse direction when the oil level is measured.

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

SWIVEL GEARBOX AT TRACTOR

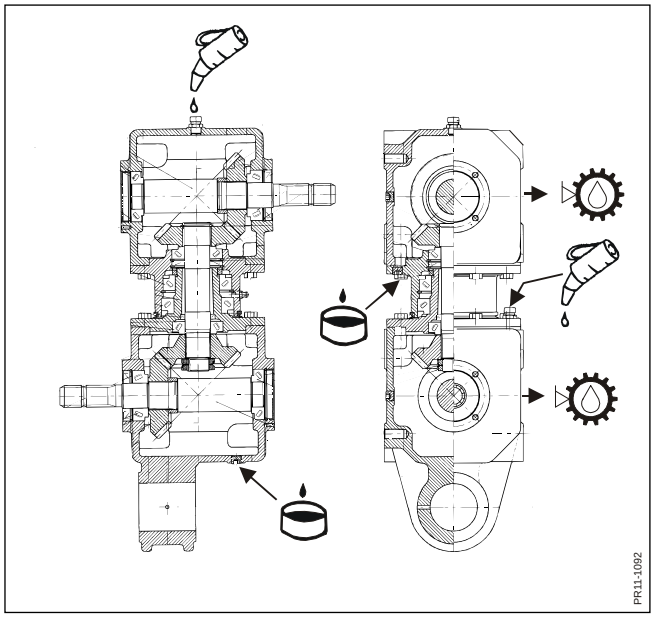


Fig. 4-9

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

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

Oil level: n Check the oil level after every 50 hours of operation.

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

SWATH GUARDS

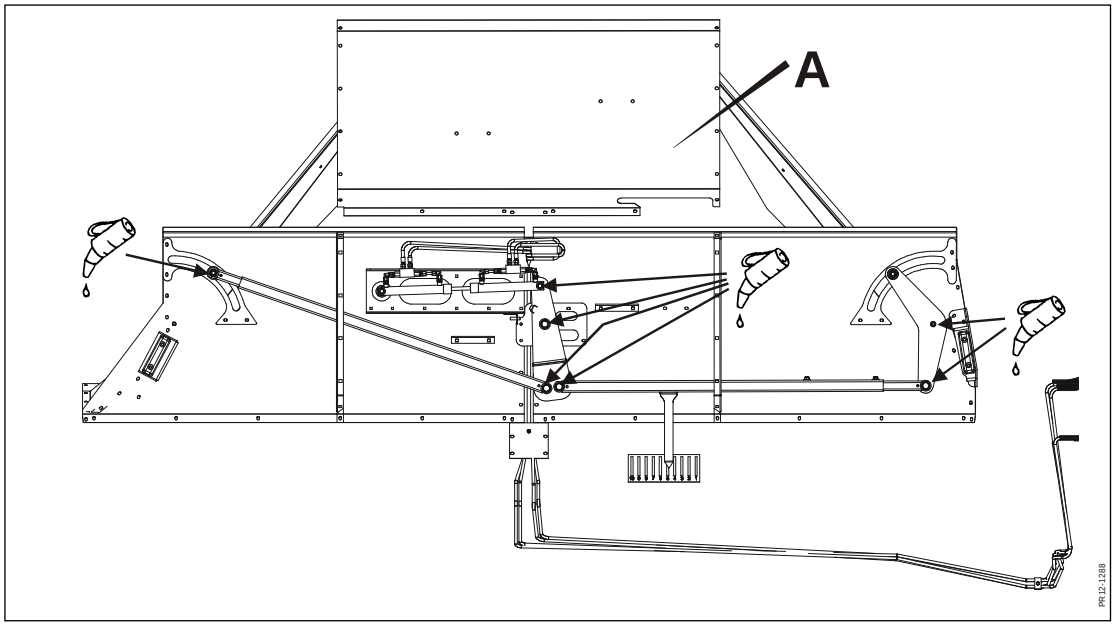


Fig. 4-10

Fig. 4-10 The mechanism ensuring the swath guards move synchronously in relation to each other contains some movable joints. Some of these movable joints are hidden under the shield **A**. We recommend you to dismount the shield minimum once a year and grease the movable parts shown on the figure with normal lubricating oil. At the same time, check that the hydraulic connections to the cylinder which regulates the position of the guards are tight.

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

GUARDS

In connection with maintenance you will often need to open or remove guards. For safety reasons all guards have been equipped with a lock. The lock ensures that the guard cannot be opened without tools.

FRICTION CLUTCH

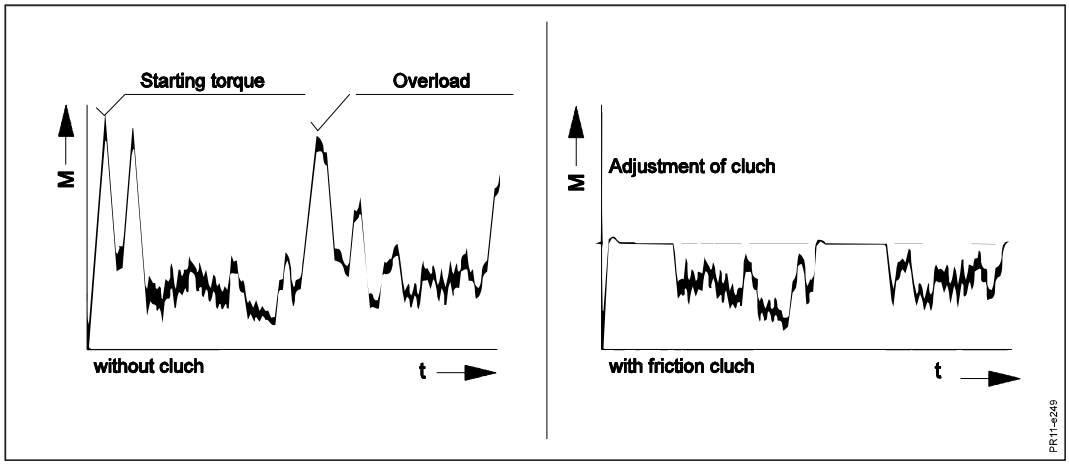


Fig. 5-1

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

The friction clutch must be maintained at regular intervals. At the same time the clutch must be checked after any long period of standstill. **This especially applies after winter storage before the machine is used for the first time in the season.**

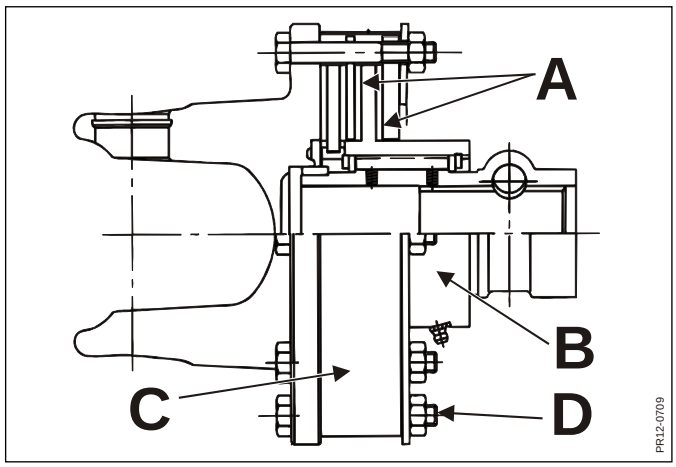


Fig. 5-2

Maintaining the friction clutch:

Fig. 5-2
1) Disassemble the clutch and clean all parts of possible rust.
2) Check the clutch discs **A** for wear and replace if required.
3) Clean and grease the freewheel clutch **B**.
4) Assemble and mount the clutch again. See also the instruction manual for the PTO drive shaft delivered by the supplier.

IMPORTANT: The outer metal band C indicates whether the tightening of the springs is correct. Tighten the bolts D just so much that the metal band C can be turned (max. 0.5 mm play).
The torque setting is not correct if the metal band is too tight or deformed due to excessive tightening of the bolts.

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-STOLL 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.

BLADES

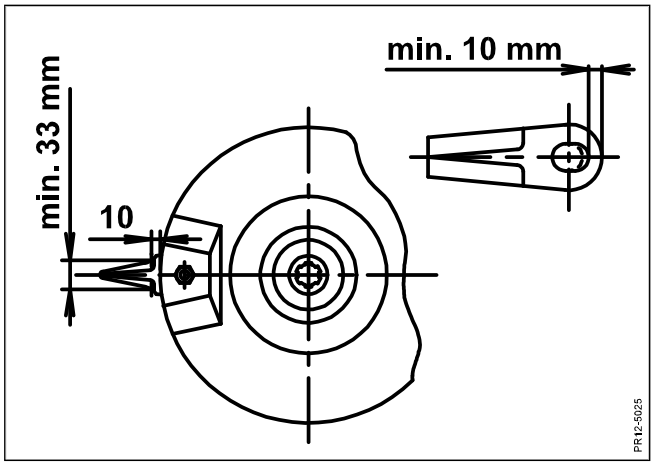


Fig. 5-3

Fig. 5-3 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.

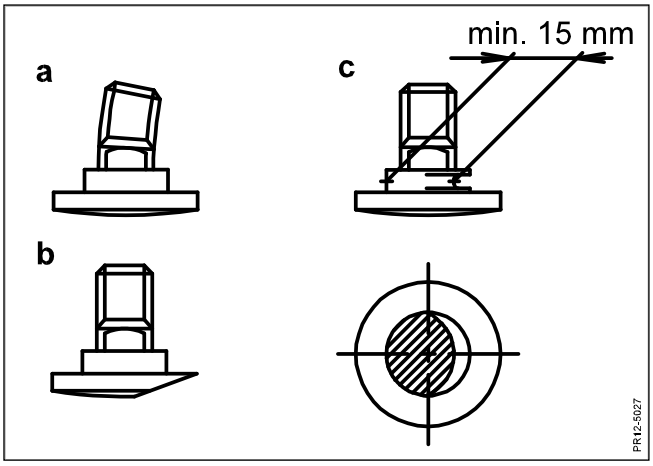


Fig. 5-4

Fig. 5-4 Blade bolts must be replaced if:

a) they are deformed
b) they are strongly worn on one side
c) the diameter is less than 15 mm (see also below at fig. 5-6).

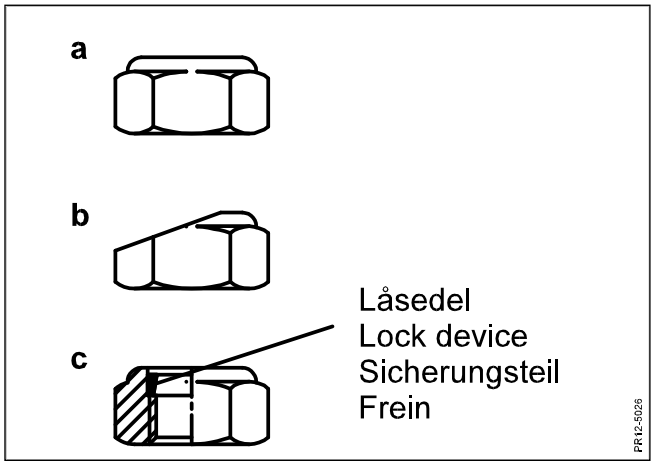


Fig. 5-5

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

a) it has been used more than 5 times
b) the height of the hexagon is less than half of the original height.
c) the lock device is worn or loose.

REPLACEMENT OF BLADES

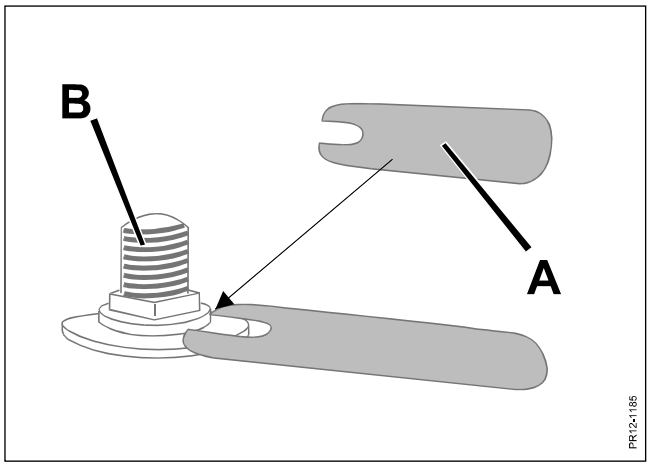


Fig. 5-6

Fig. 5-6 In connection with replacement of blades check all blade bolts **B** on the discs regularly with the gauge **A** (in the spare parts package).

IMPORTANT: When the gauge A can get over the blade bush B it must be replaced immediately.

Also check regularly if the disc assemblies, blade bolt, special nut and disc are worn or loose. If this is the case, the parts must be tightened or replaced.

DANGER: It is very important to check the disc assemblies after:

- **Collision with foreign matter, or**
- **If a blade, as an exception, is missing on the cutter bar.**

Parts can be damaged and you MUST replace parts if you have the slightest doubt whether they have been damaged to secure against loss of rotating parts.

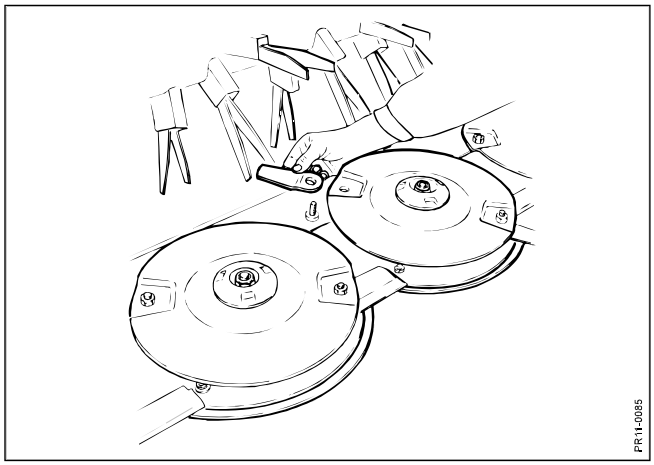


Fig. 5-7

Fig. 5-7 To obtain a satisfactory harvesting it is important that blades and shearbar are intact and sharp. Replacement of blades is made by dismounting 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.

CUTTER BAR AND DISCS

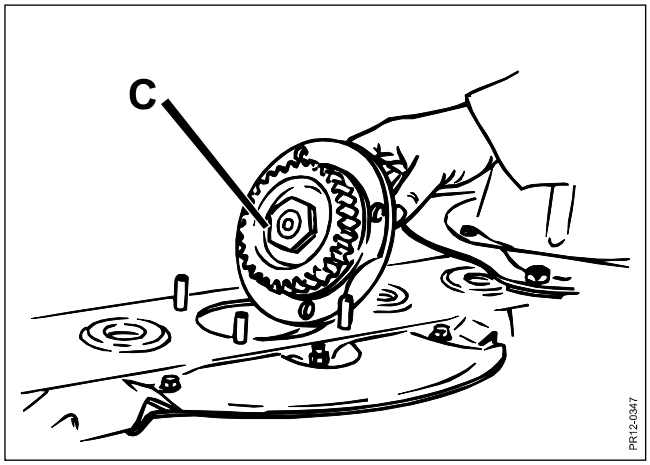


Fig. 5-8

Fig. 5-8 A cutter bar is used on which each hub **C** below the discs is easily replaced from above (Top Service cutter bar).

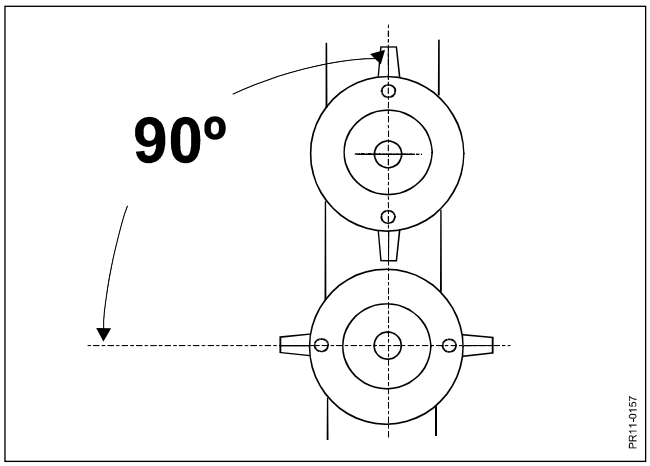


Fig. 5-9

Fig. 5-9 If discs have been dismounted they must be mounted again staggered 90° in relation to each other.

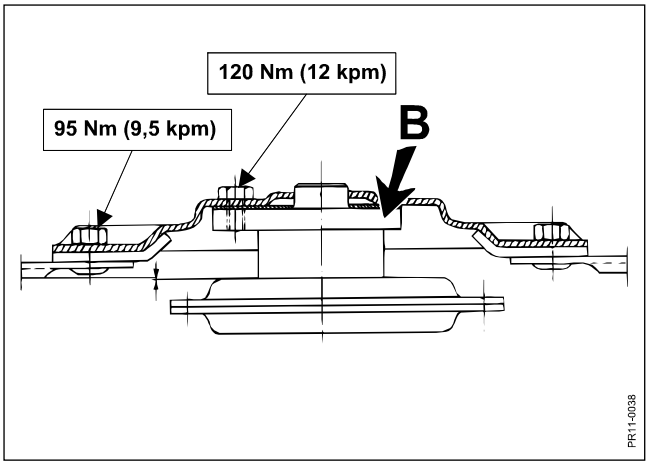


Fig. 5-10

Fig. 5-10 Make sure that the bolts have been tightened as shown.

- Discs fastened with four bolts must be tightened to **120 Nm** (12 kpm).

- Blade bolts must be tightened to **95 Nm** (9.5 kpm).

The height of the disc can be adjusted by mounting fillers under the disc at **B**. This may be necessary when replacing the discs if the blades are not at the same height.

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

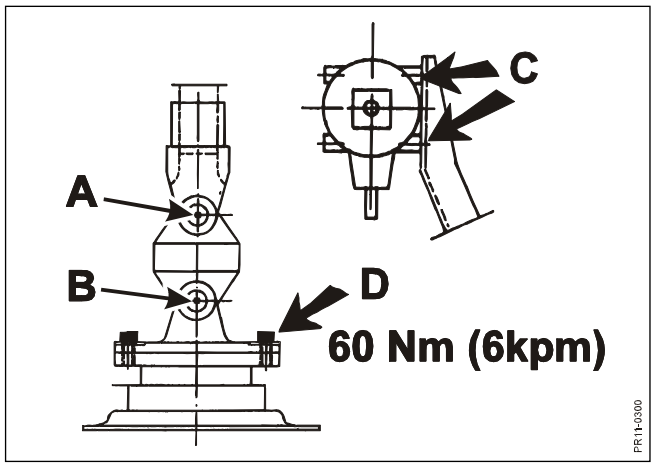


Fig. 5-11

Fig. 5-11 The PTO drive shaft for the cutter bar has been greased for life. The PTO should run with minimum angle deviation, i.e. the measure difference at **A** and **B** should maximum be 6 mm (+/- 3).

The alignment is made at the gearbox above the shaft by moving the gearbox in the oblong holes or mount fillers between the gearbox and the frame at **C**.

The bolts **D** are tightened with **60 Nm** (6 Kpm) and must be locked with LocTite.

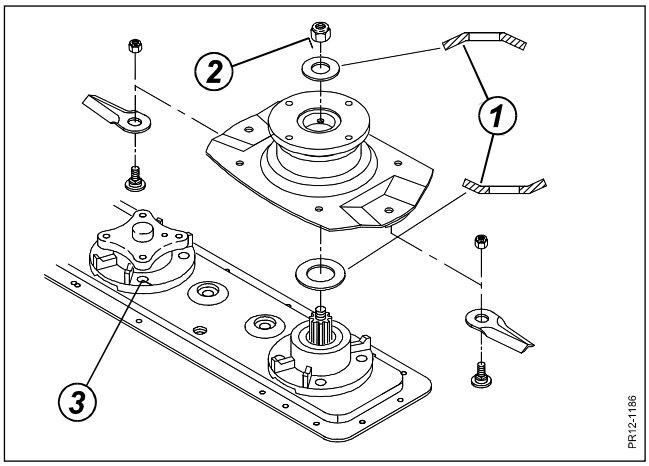


Fig. 5-12

Fig. 5-12 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).

WARNING: After replacement of blades, blade bolts, nuts or discs check that no tools have been left on the machine.

CONDITIONER

Check the conditioner rotor regularly. Replace defective or missing fingers to avoid waste of crop during operation.

IMPORTANT: If you fail to ensure that all fingers are mounted and intact, the conditioner rotor will be out of balance, which will for instance reduce the life of the bearings.

TIGHTENING OF V-BELTS

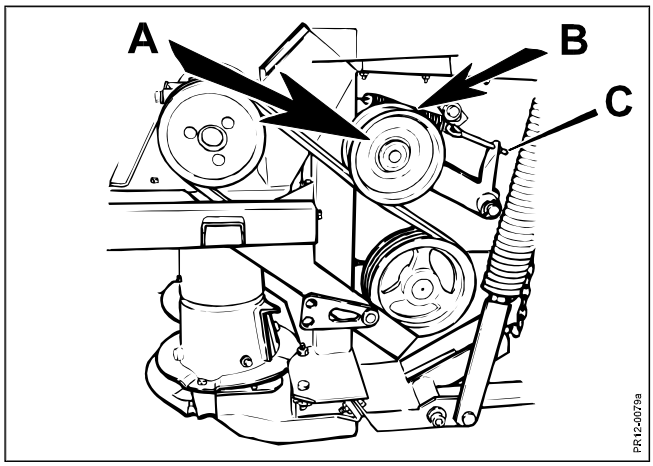


Fig. 5-13

Fig. 5-13 The V-belts driving the conditioner rotor 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 distance between the spring coils. Adjustment is made by means of a nut at **C**.

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 closed cabin the symptoms may be difficult to discover, and once in a while you have to get out and check if all rotating parts are intact. In the long run unbalance will cause fatigue fractures and serious damage.

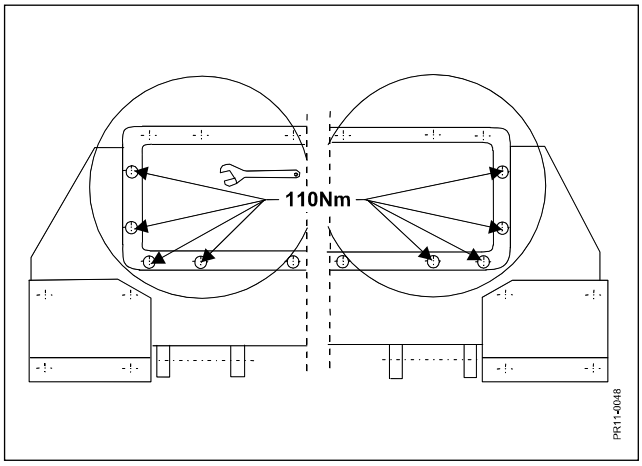


Fig. 5-14

Fig. 5-14 To avoid damage caused by vibrations the cutter bar must be tightened properly. Tighten the bolts at the cutter bar ends to **110 Nm** (11 Kpm).

WARNING: **Bolts at the cutter bar ends MUST be checked regularly to ensure the cutter bar is always correctly fastened to the frame.**

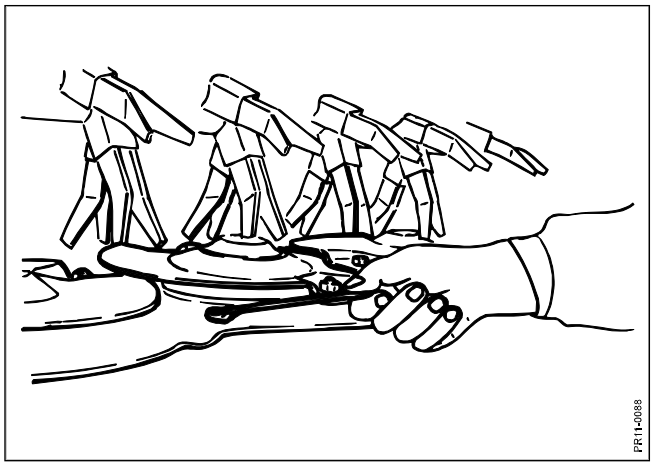


Fig. 5-15

Fig. 5-15 The bolts at stone protections and shearbar must be checked at regular intervals.

TYRES

The machine is as standard equipped with wide tyres for the working wheels which provide extra large carrying capacity and thus a low ground pressure.
The current tyre pressure for both working wheels and transport wheels for your disc mower is stated below:

GMS4802	Tyre dimension	Tyre pressure
Working wheels	480/45-17 10 PR	1.4 bar / 20 Psi
Transport wheels	11.5/80-15.3 14 PR	4.3 bar / 62 Psi

CAUTION: **At regular intervals you should check the tyre pressure and make sure that the wheel bolts have been tightened properly. Driving with too little tyre pressure will reduce the life of the tyres.**

ELECTRONIC OPERATION

FUSES

The decentralized box is equipped with 4 10-ampere fuses that protect the relays against overloading. These can be replaced after having dismounted the lid of the decentralized box. Any blown fuses MUST be replaced by fuses of same size. Mounting of larger fuses may result in potential overloading of the decentralized unit's components.
The monitor is also equipped with a fuse. It is placed on the side of the monitor below the plug outlets for currency and the communication cable for the decentralized unit.

CONTROL / REPLACEMENT OF SENSORS

The machine is equipped with nine sensors that control the order in which the hydraulic functions are carried out. In chapter 7 you find a survey of the machine's sensors and where they are placed. The sensors are activated when a magnet passes by the sensor. The function of the sensor can be controlled by way of a menu, which appears by pressing button B "Menu +" once, see figure 3-2. Below text appears in the display.

Hardware Test Press SET to open

Now press button D "SET" once and button C "Menu –" three times. Below menu now appears in the display.

Test Input Press SET to open

Press button D "SET" once and you are inside the menu that shows the machine's sensor status. The first sensor that is shown in the display is the PTO sensor, i.e. the sensor that measures rpm on the machine's input shaft.

PTO sensor 0

If the PTO sensor is not activated ”0” is shown in the bottom line. If it is activated “1” is shown.
If button C ”Menu –” is pressed repeatedly the status of the other sensors is shown. The sensor is active if “1” figures in the bottom line, and not active if “0” figures in the bottom line.
You can check the efficiency of a sensor by passing a magnet by the sensor at a distance of 5-10 mm and subsequently checking the display whether the status changes from 0 to 1. If the sensor does not change status it is either defect or a wire to the decentralized unit may be damaged or broken. If it is not possible to find out where the connection is interrupted the sensor must be replaced. The sensor is removed from the placing in the decentralized unit. The placing of each sensor can be seen in chapter 7.

6. VARIOUS

DRIVING TIPS AND FAULT FINDING

PROBLEM	POSSIBLE CAUSE	REMEDY	SEE PAGE
Stubble uneven or bad cutting.	Wrong relief.	Relief springs must be checked and adjusted.	39
	Number of rpm on the tractor PTO too low.	Check number of rpm (PTO 1000 rpm)	61
	Blades are dull or missing.	Replace blades.	
	Discs, stone protectors and flow caps are deformed.	Replace deformed parts.	
*) Stripes in stubble.	The angle of the cutter bar is not ideal for the crop in question.	Change the inclination of the cutter bar. Normally the stubble height must be reduced, i.e. the angle of the cutter bar increased.	39 39
	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).	
	Accumulation of material on the cutter bar.	Increase the driving speed.	
	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. Swath not sufficiently narrow.	Number of rpm on the tractor PTO too low.	Check number of rpm (PTO 1000 rpm)	
	Conditioner fingers are worn down or missing.	Replace worn conditioner fingers. Turn fingers with the straight edge in the direction of rotation.	
	Distance between conditioner plate and rotor too big.	Adjust the conditioner plate so the distance at the front is 10-15 mm. Increase the driving speed.	42
The machine vibrates/ uneven operation	Check if blades are damaged or missing.	Mount missing blades.	61
	Defective PTO drive shaft.	Check that the PTO drive shafts are in order.	50
	Defective flow intensifiers in the sides.	Replace flow intensifiers.	
Gear is superheated	Wrong oil level or type.	Check oil level in gearbox	53
Cutter bar is superheated	Wrong oil level or type.	Check oil level in cutter bar	51

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

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.

CAUTION: 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.

IMPORTANT: Grease all grease points after cleaning the machine.

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 cutter bar and the gearboxes.

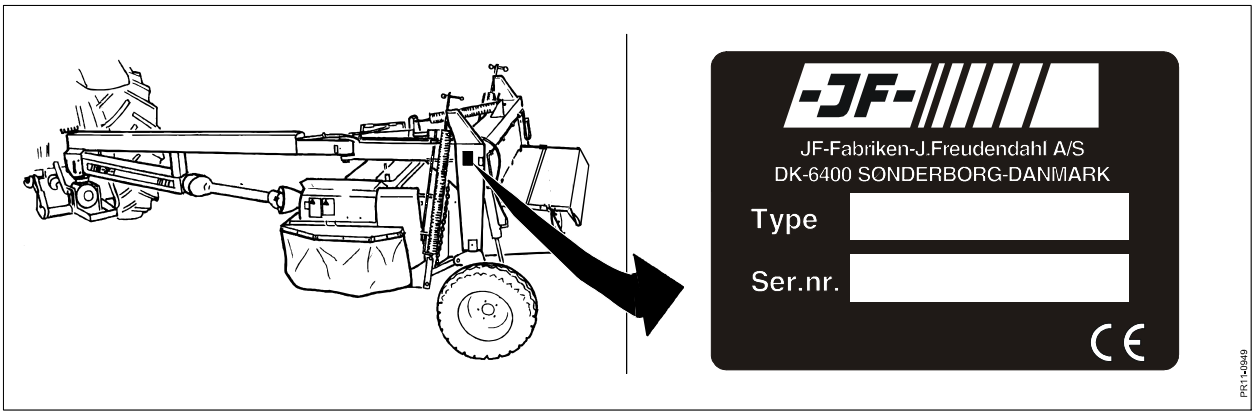
* Store the machine in a ventilated engine house.

* Lay up the machine to unload the tyres.

SPARE PARTS ORDER

When ordering spare parts please state machine type and serial number.

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.



MACHINE DISPOSAL

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

Observe the following:

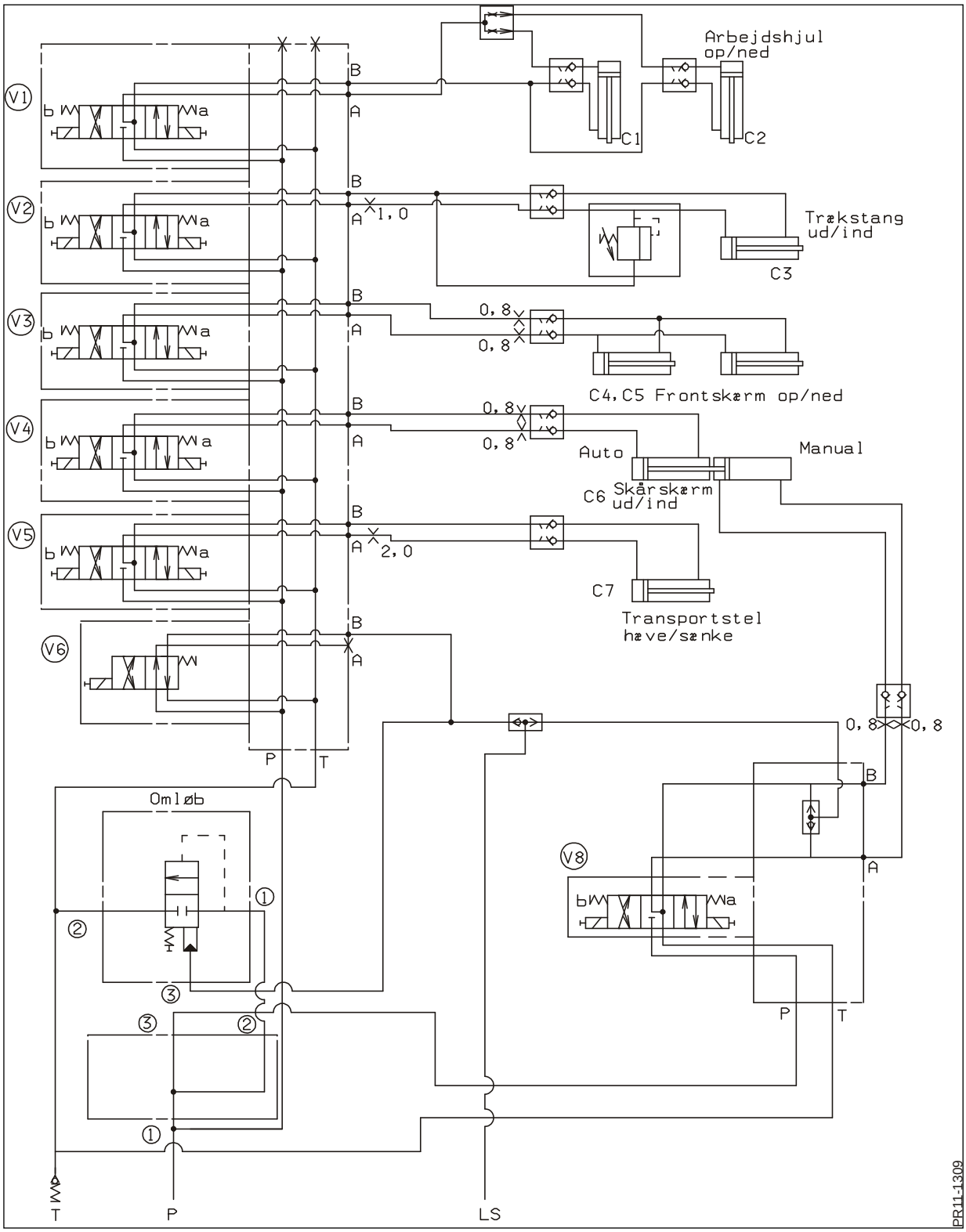
* The machine must **not** be placed somewhere outside.

* Gearboxes, cylinders, hoses and cutter bar must be emptied of oil. These oils must be handed over to a destruction company.

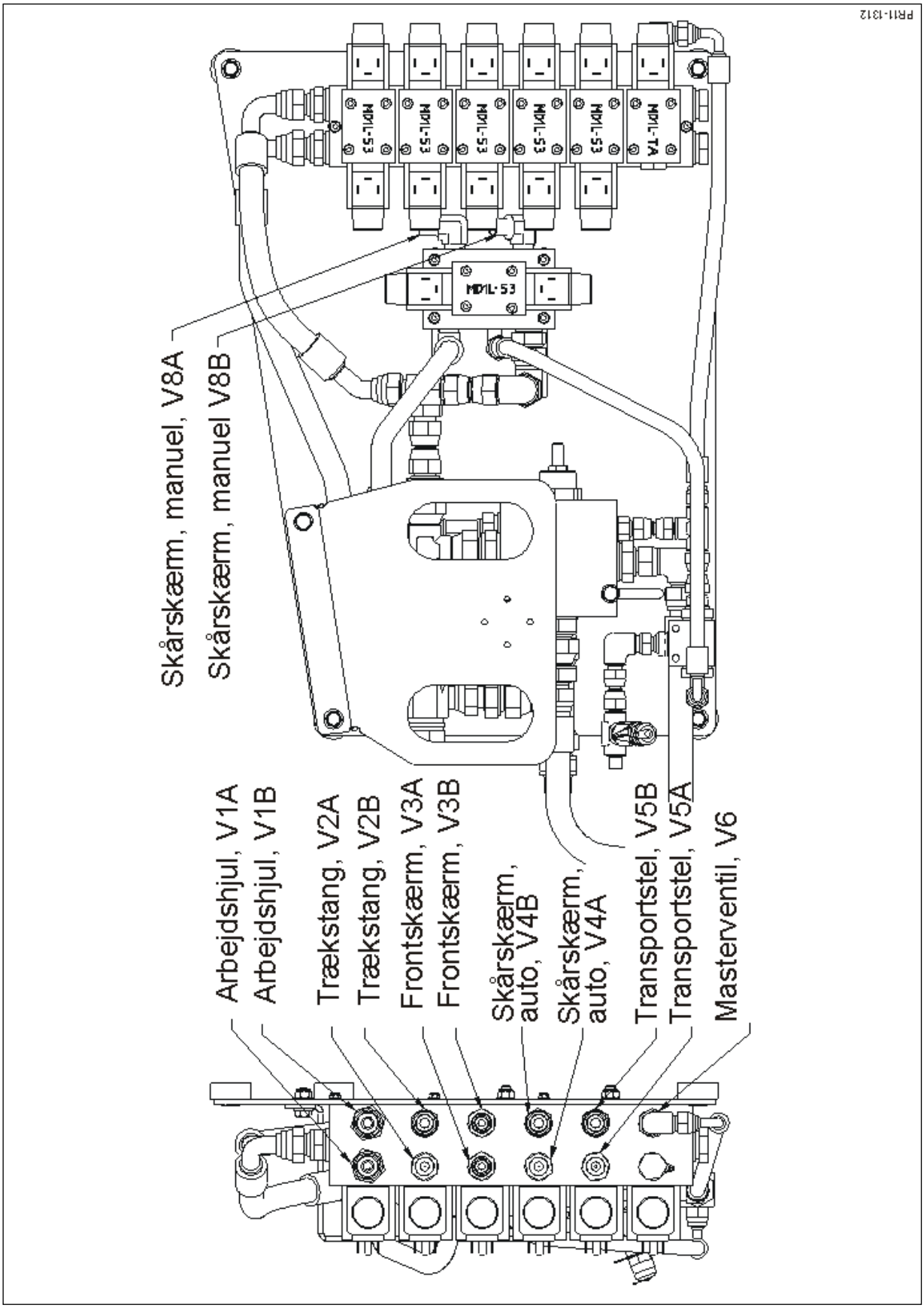
* Disassemble the machine and separate the individual parts, e.g. PTO drive shafts, tyres, hydraulic components etc.

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

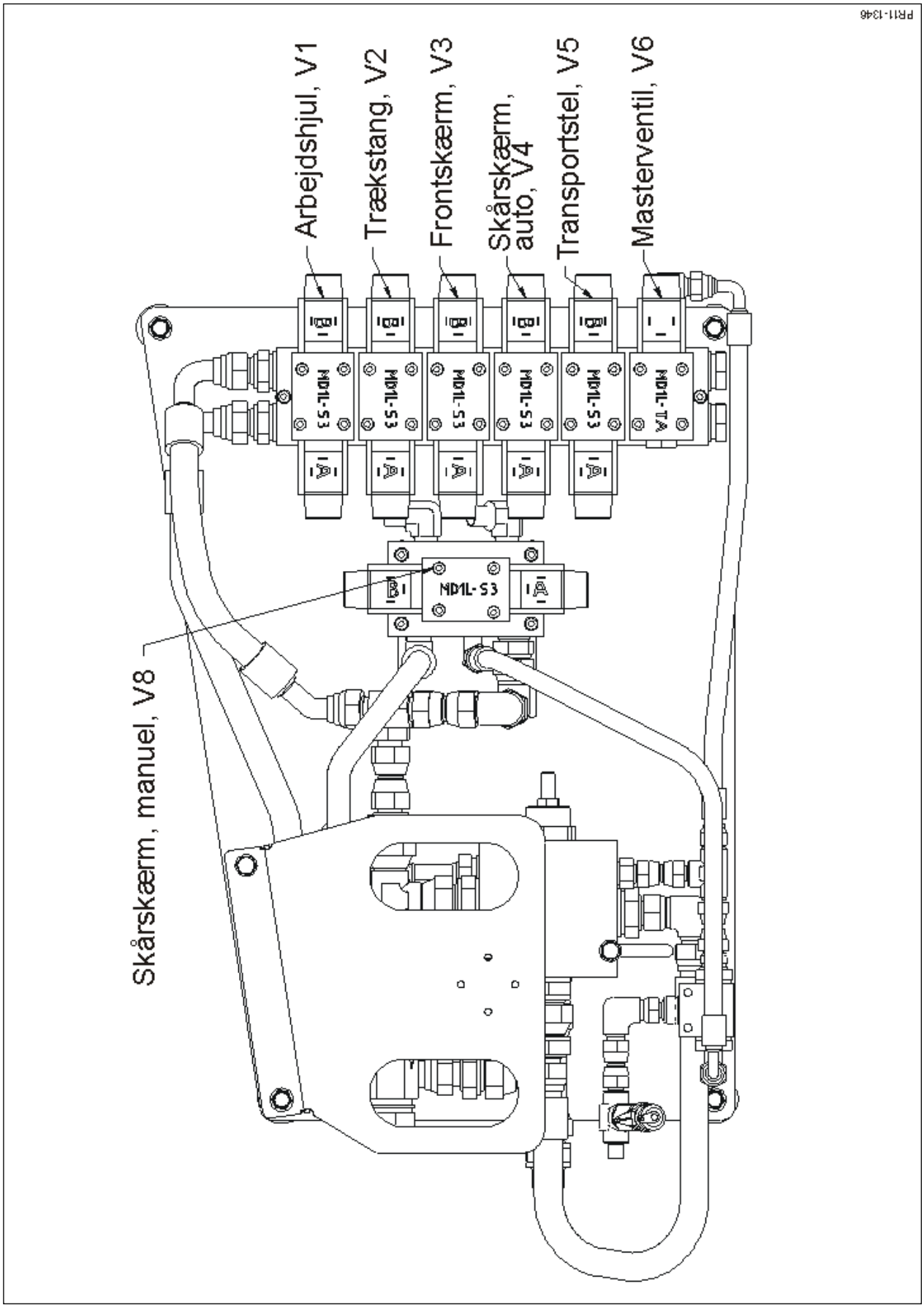
7. HYDRAULIC DIAGRAMS AND ELECTRICITY



MOUNTING OF HYDRAULIC HOSES



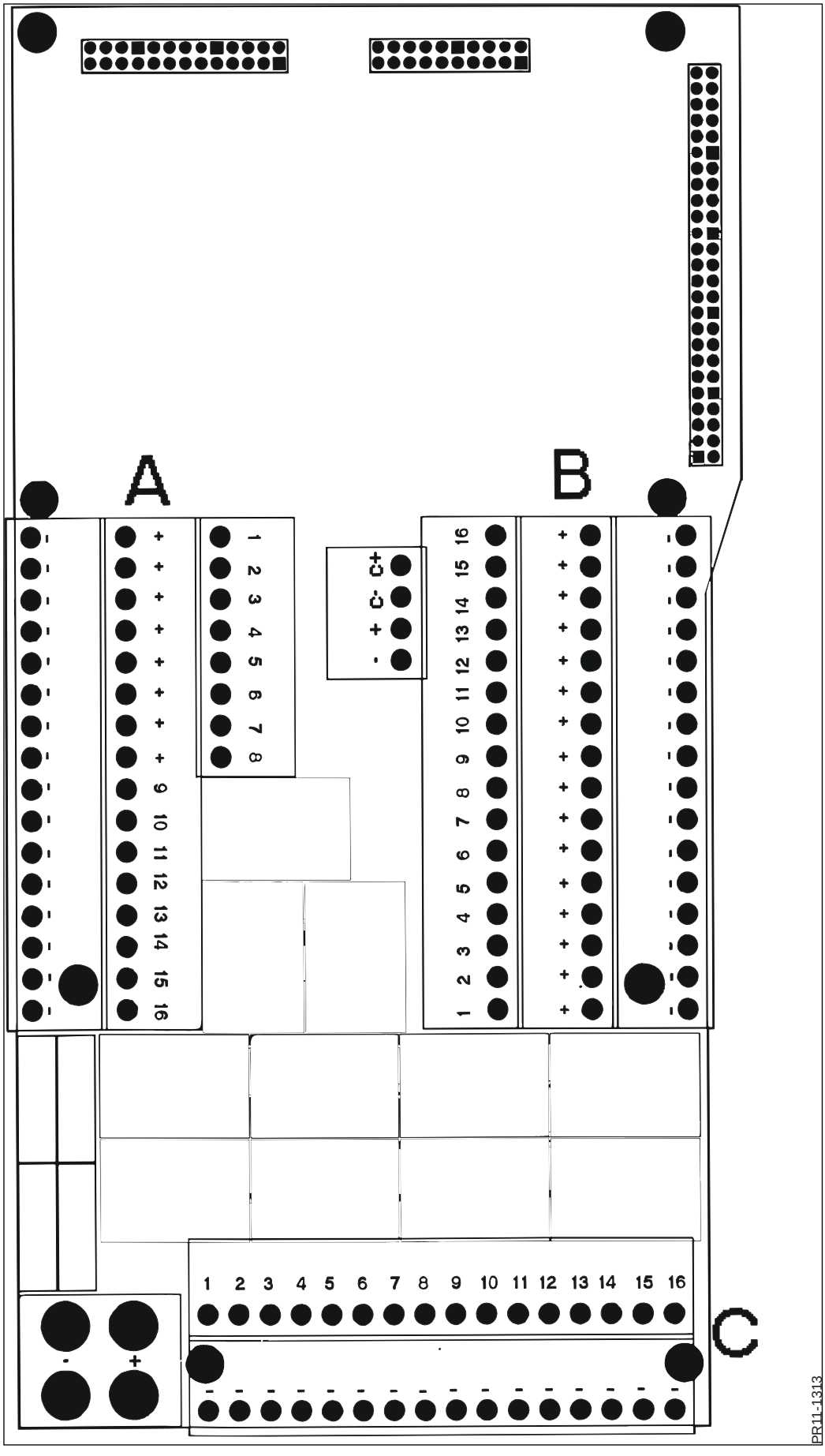
MOUNTING OF PLUG OUTLETS

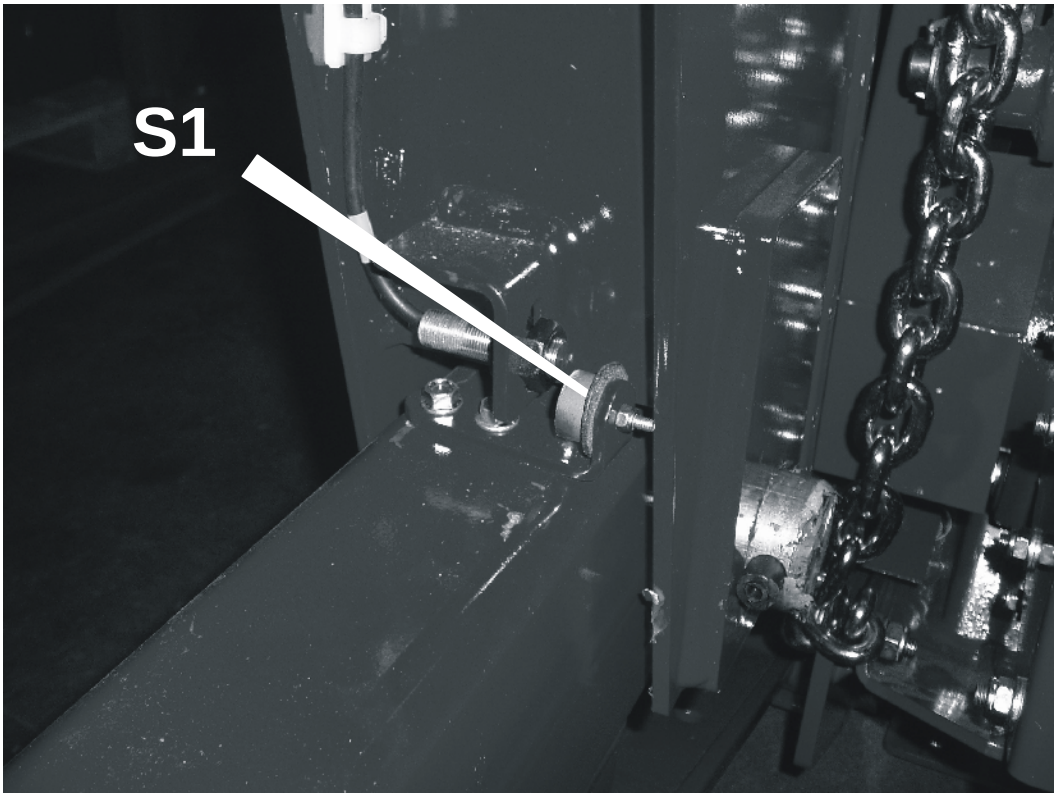


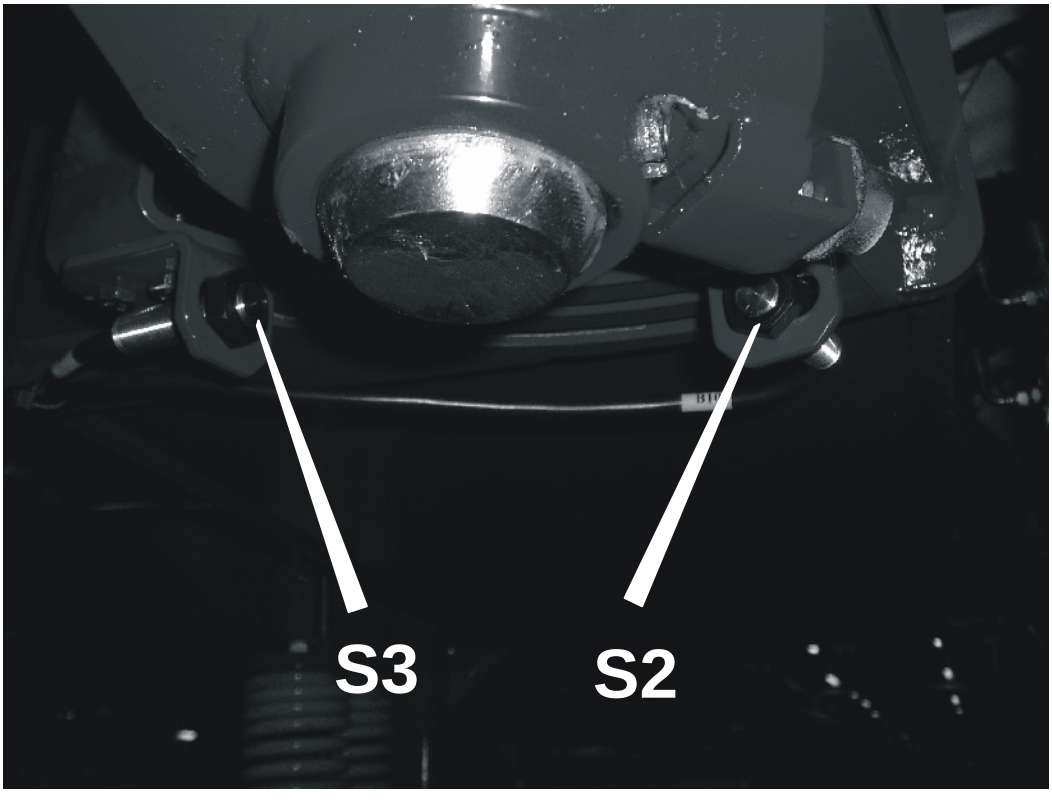
Input/sensors GMS 4802 In Line		
No	**Designation**	**Mounting decentralized unit**
S1	Working wheels up (machine lowered)	B3
S2	Drawbar in centre	B10
S3	Drawbar transport	B9
S4	Front guard up	B4
S5	Front guard down	B5
S6	Swath guards in	B6
S7	Transport frame up	B12
S8	Transport frame down	B11
S9	PTO sensor	B1

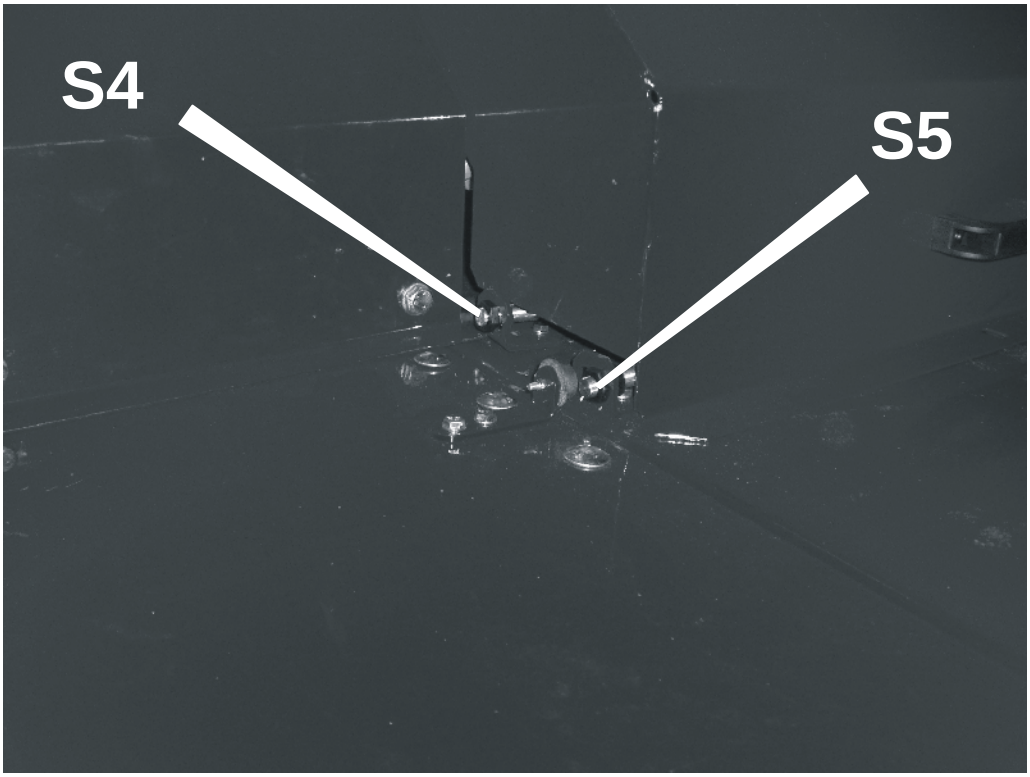
Output/hydraulics GMS 4802 In Line		
No*	**Designation**	**Mounting decentralized unit**
V1A	Working wheels down (machine is lifted)	C2
V1B	Working wheels up (machine lowered)	C3
V2A	Drawbar in	C8
V2B	Drawbar out	C9
V3A	Front guard down	C5
V3B	Front guard up	C4
V4A	Swath guard out, auto	C7
V4B	Swath guard in, auto	C6
V5A	Transport wheels down	C10
V5B	Transport wheels up	C11
V6	Master valve	C1
V7	Not used	
V8A	Swath guard out, manually	C12
V8B	Swath guard in, manually	C13

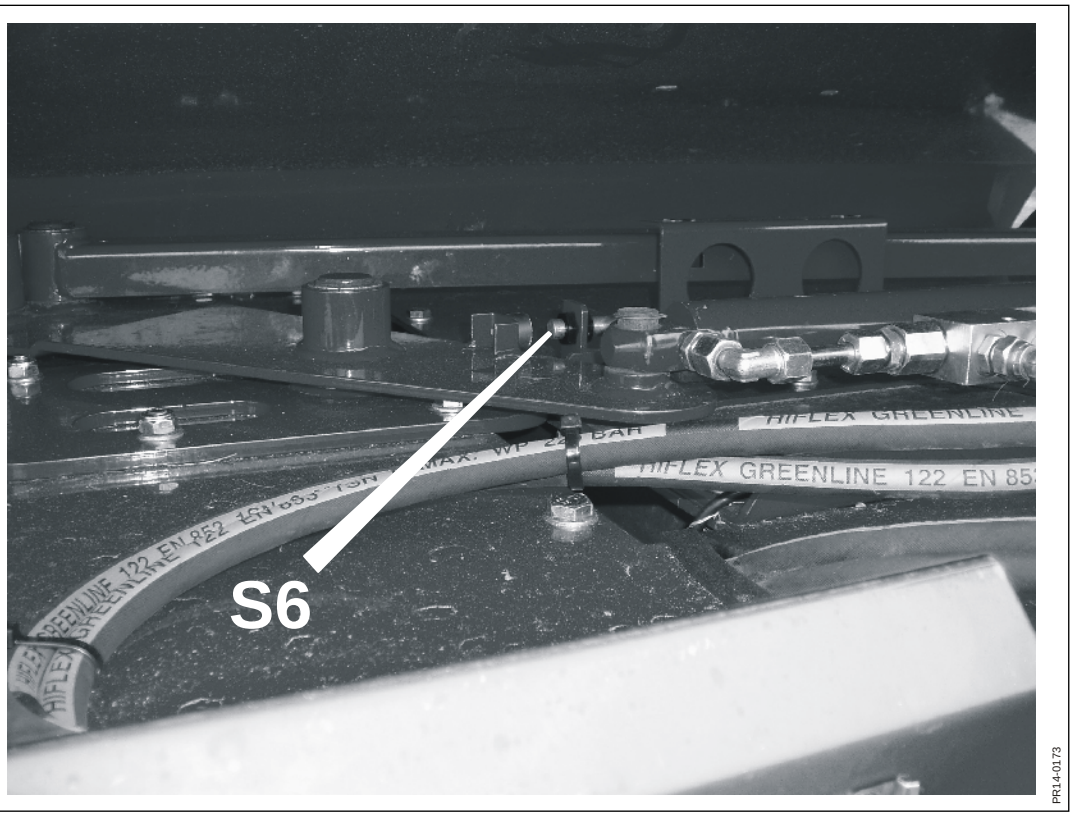
* A corresponds to push-side on cylinder. See hydraulic diagram.
* B corresponds to pull-side on cylinder. See hydraulic diagram.

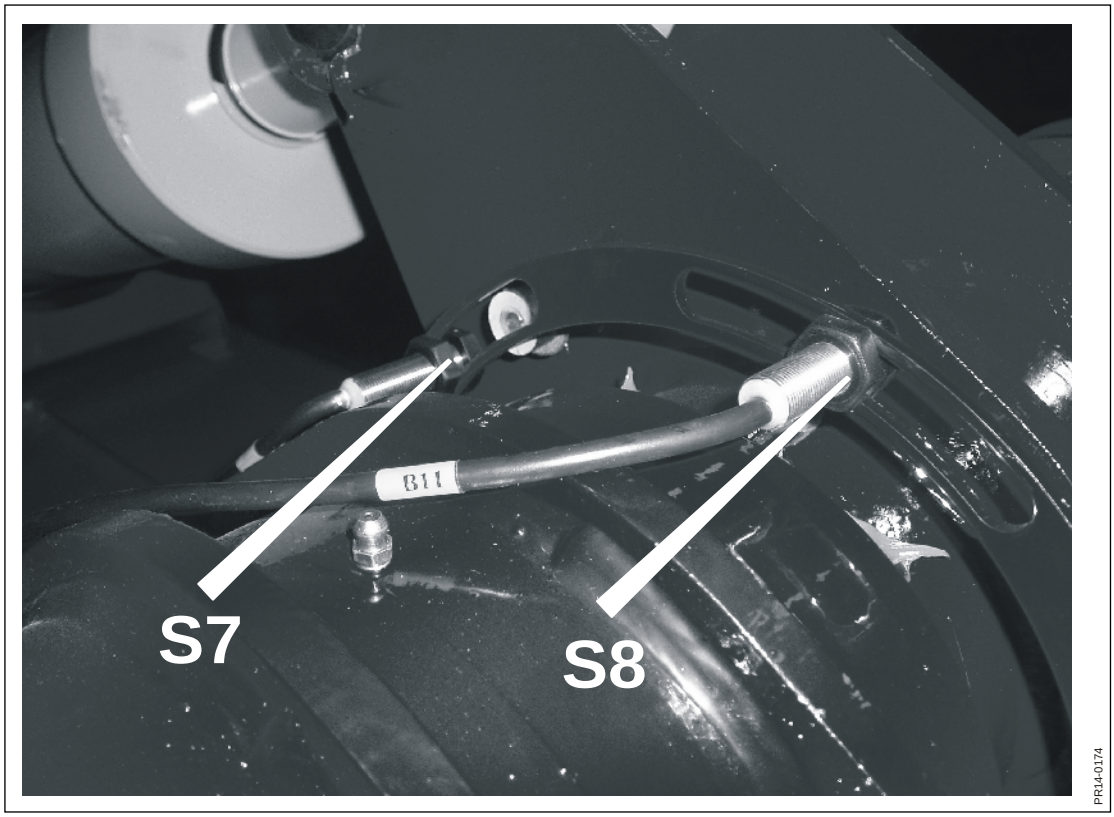

A
B
C
1 2 3 4 5 6 7 8
C+ C- + -
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
PR11-1313

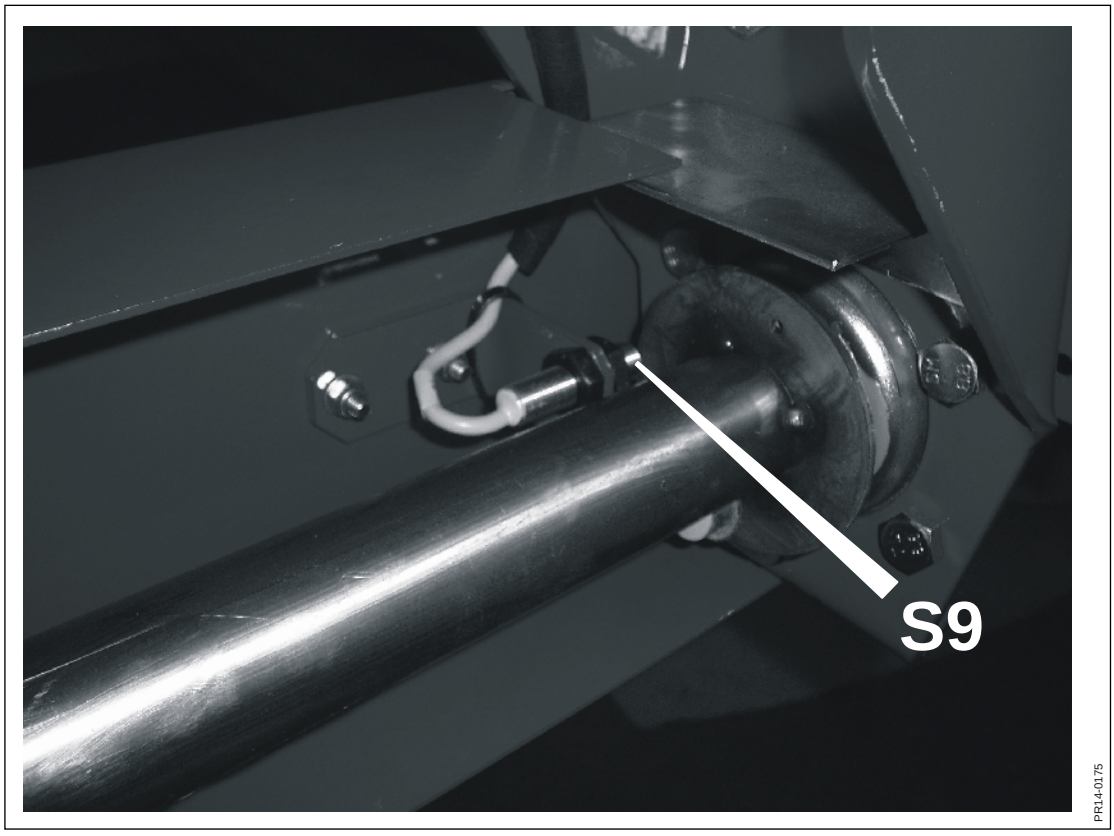

S1
PR14-0169


S3
S2
PR14-0170


S4
S5
PR14-0171


S6
HIFLEX GREENLINE 122 EN 85
PR14-0173


B11
S7
S8
PR14-0174


S9
PR14-0175

WARRANTY

JF-Fabriken - J. Freudendahl A/S, 6400 Sønderborg, Denmark, hereafter called **"JF"**, 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 JF's written permission.**
7. **Unskilled repair of the machine.**
8. **Unoriginal spare parts have been used.**

JF 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 JF responsible for wages beyond current agreements in connection with replacement of warranty parts.

JF 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 JF 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 JF's written permission.**
3. **The warranty can be nullified if repair is not undertaken immediately.**

Specialist in grassland machinery and complete diet mixers

When it comes to green feed techniques, JF-STOLL has gained a reputation as one of the world's leading suppliers and specialists. As a specialist manufacturer for over 50 years, we have gained a vast amount of experience from right around the world and, more importantly, unique regional requirements.

We also receive important inspiration in our development work through a close and continuous dialogue with customers, dealers and agricultural researchers.

No matter which type of JF-STOLL-machine you chose, you can be sure to obtain the best result to obtain a top result - in the shape of high performance and operational reliability, minimum maintenance, flexible working possibilities and optimal operating economy.

Dealer

JF-STOLL

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