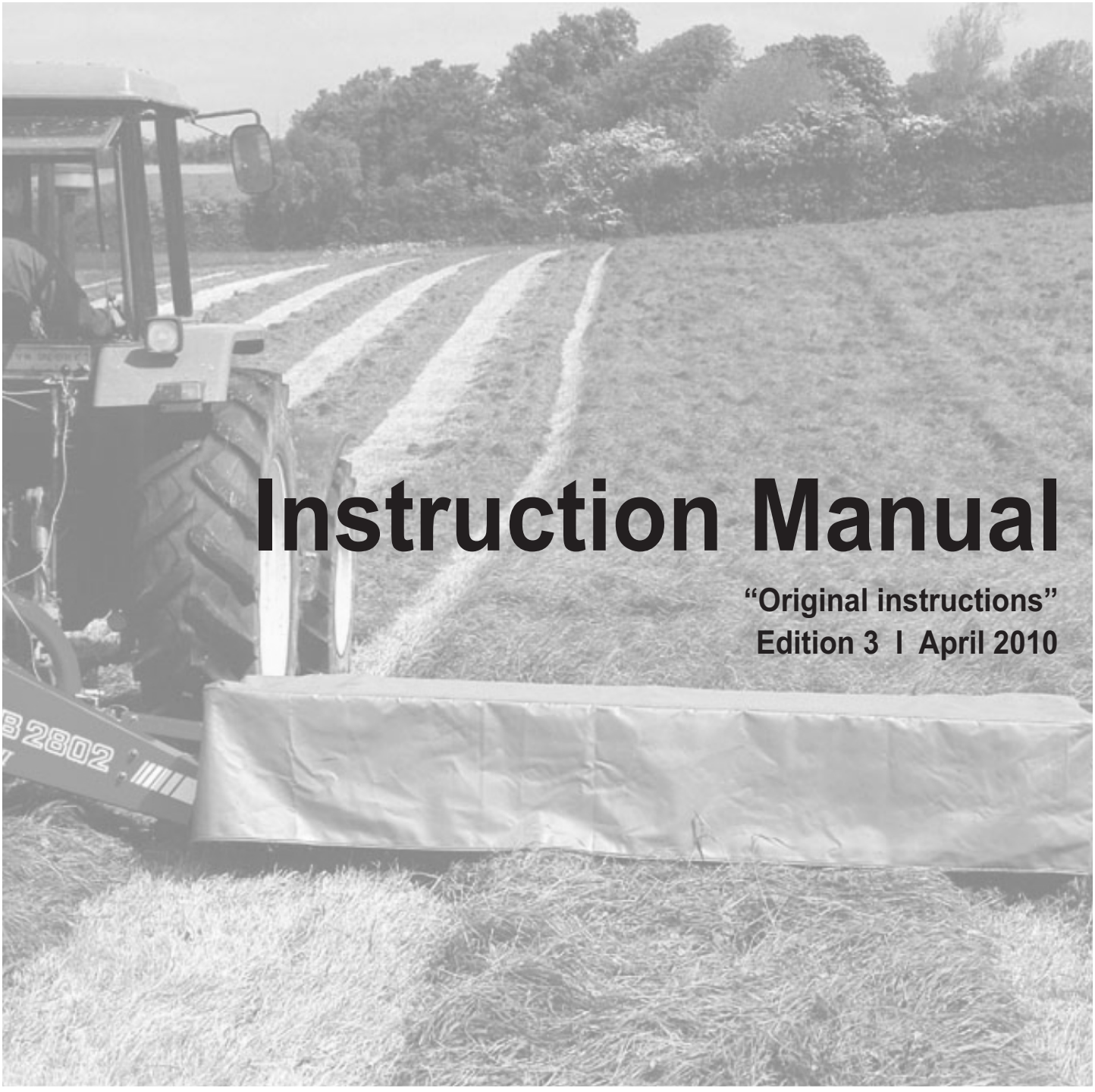
JF-STOLL

Disc Mower

SB 2402 I SB 2802



Instruction Manual

"Original instructions"
Edition 3 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,

JF-Fabriken - J. Freudendahl A/S
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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 :

SB 2402
SB 2802

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-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 the 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" is 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-Fabriken 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.

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1. INTRODUCTION

INTENDED USE

The disc mower **SB 2402 / 2802** should solely be used for the work in agriculture which it is intended for, i.e.: usual work in fields or meadows where you want to cut growing or planted grass and green crops which are to be used in the production of forage. The material is placed in a swath which allows subsequent picking-up.

The machine should only be connected to a tractor which is accordance with the specifications of the product and is legal to use.

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

The performance of the machine will depend on the material, i.e. the crop, the condition of the field, the ground, and finally the weather.

The machine is supplied with either round discs, which ensure limited re-cutting of the material, or oval discs, which ensure that the discs are not broken in case a blade gets bent upwards.

It is assumed that the work is performed under reasonable conditions, i.e. thorough agricultural knowledge and authorised operation.

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

The disc mower SB should only be operated, maintained or repaired by persons who are confident with the use of the product and are aware of the risks.

In the following there is a number of general and special safety instructions which **must** be observed altogether.

If changes are made on the machine and its construction without permission from JF-Fabriken A/S, JF-Fabriken A/S cannot be held responsible for any injuries or damage resulting from this.

SAFETY

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

A disc 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 this instruction manual carefully before connecting the machine to the tractor.** Even if you have had a similar machine before, you should read the manual – this is a matter of your own safety.

Your should never leave the machine to others before you have made sure that they have the necessary knowledge.

DEFINITIONS

The safety decals in the instruction manual of the machine contains a number 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 the 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 of how to protect himself or others against injuries.

WARNING: The word WARNING is used to warn against visible or hidden risks which may 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

Before using the machine, the operator must make sure that tractor and machine observe the general work-related rules and road safety rules.

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

1. Always disengage the PTO drive shaft, activate the parking brake and stop the tractor engine before you:

    - lubricate the machine,
    - clean the machine,
    - disassemble any part of the machine,
    - adjust the machine.

2. Always lower the machine to the ground and use correct support or transport safety device when the machine is parked.

3. Always activate the transport safety device of the cutting unit and the stop valves of the hydraulic cylinders when transporting the machine.

4. Never work under a raised machine unless the lift suspension of the tractor has been secured by means of a support chain or other securing.

5. Always block the wheels before you work 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.

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 corresponds to 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 machine in the lift suspension of the tractor, 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 machine during connection and disconnection.

SPECIAL SAFETY INSTRUCTIONS

When working with mowers the following special measures should be observed.

1. Use a tractor with a cabin provided with safety glass. Furthermore it is advisable to protect the glass of the cabin with polycarbonate plates inside or with a close-meshed net outside. The cabin should be closed when working in the field.

2. Always keep away from the cutting unit when the parts of the machine rotate.

3. When replacing blades it is important to observe the rules in the instruction manual to fulfil the safety requirements. Always use original spare parts.

4. Before use, check the revolving parts (blades, blade bolts, discs and flow caps). If parts are damaged (bent or cracked), worn or missing, they should be replaced immediately.

5. Damaged, worn or missing blades should be replaced in sets in order not to create an unbalance in the machine.

6. Check canvases and guards regularly. Replace worn or damaged canvases.

7. Canvases and guards secure against ejection of stones and other foreign bodies. Before use canvases and guards must be placed correctly.

8. Lower the cutting unit to working position before starting the power transmission.

9. The field should be kept clear of stones and foreign bodies, if possible.

10. Even if the machine is adjusted and operated correctly, stones and foreign bodies in the field can be ejected from the cutting unit. Therefore no persons should stand near the cutting unit where the conditions are unknown. Be particularly careful when working along public roads or facilities (schools, parks etc.)

11. Though it is possible, never reverse with the cutting unit in working position. The correct movement for the cutting unit only works when driving forwards, and there is a risk of damage if driving backwards with the machine in working position.

12. Even though the power transmission has stopped, the revolving parts keep rotating for a while. Therefore always wait until the parts have come to a complete stop before getting near the cutting unit.

13. If in doubt always contact the nearest dealer.

CHOICE OF TRACTOR

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

Choose a tractor with a suitable power on the PTO.
If the power of the tractor is considerably larger than prescribed, care should be taken to avoid long-term overload.

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

However, the tractor specifications are different within the individual tractor brands. Therefore, at worst, it can be necessary to adjust the weight distribution with a couple of front weights on the tractor.

The machine is intended for 540 rpm. Therefore, make sure not to use a wrong number of revolutions on the PTO by mistake.

To be able to use the hydraulic function of the machine it is necessary that the tractor has a single-acting hydraulic outlet with possibility of floating position.

Likewise, make sure that the hydraulic system of the tractor has a pressure of max 210 bar.

Always choose a tractor with a closed cabin if you are going to work with a disc mower.

CONNECTION AND DISCONNECTION

Always make sure that no persons are standing between the tractor and the machine during connection and disconnection. An unintentional manoeuvre with the tractor may cause serious injury (see fig. 1-1)

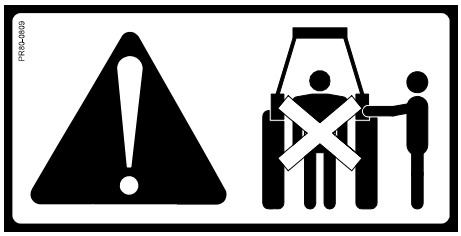

Fig. 1-1

Check that the machine is intended for the number and the direction of rotation of the tractor (see fig 1-2). A wrongly chosen RPM for a considerable period of time may damage the machine and at worst lead to parts being thrown out.

Make sure that the PTO drive shaft has been mounted correctly, i.e. that the locking pin is in mesh and that the support chains have been fastened at both ends.

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

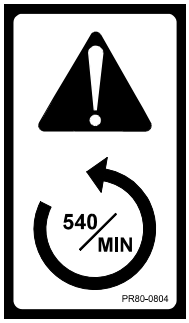

Fig. 1-2

Check that all hydraulic couplings are correctly mounted and fastened and that all hoses and fittings are undamaged before activating the hydraulic system. When the tractor engine has stopped make sure that there is **no** pressure in the hydraulic hoses by activating the tractor hydraulic spool valves.

Hydraulic oil under pressure can penetrate the skin and cause serious infections. You should always protect your skin and your eyes against oil splashes. If hydraulic oil under pressure hits you, consult a doctor immediately (see fig. 1-3).

Fig. 1-3

Check that the drawbar and the cutting unit can move freely before you activate the hydraulic cylinder on the machine. 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 machine while the PTO is engaged. Disconnect the PTO and turn off the tractor engine before adjusting the machine. Do not lift the guard until all revolving parts have stopped moving.

Before working check if all blades are mounted and if they are undamaged and can be turned freely. Also check blade bolts are loose or damaged. Damaged blades and blade bolts must be replaced. (See section 5: MAINTENANCE)

Check periodically if blades and blade bolts are worn according to the rules in the instruction manual. (See section 5: MAINTENANCE)

TRANSPORT

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

It is important to block the cutting unit in raised position with the mechanical transport lock. An unintentional operation of the control handle for the cylinder, a sudden leak from hoses or fittings, or air in the system might cause the cutting unit to be lowered and perhaps touch the ground.
Always make sure that the transport lock is correctly mounted before transporting the machine. (See section 3: ADJUSTMENTS AND DRIVING)

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. Otherwise there is a risk of a sudden downward movement of the cutting unit after you have dismounted the transport lock.

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.

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

On stony ground adjust the stubble height to maximum, reduce the cutting angle as much as possible and limit the driving speed.

The side-mounted mowers have a spring-loaded safety release which functions in the direction of travel and ensures the directional stability of the tractor and limits damage in case of collision.
However, there is no securing against shocks if you reverse with a lowered cutter bar and you **risk damaging the machine**. Check that the safety release can be released and is not blocked.

If the cutting unit is blocked due to a foreign body, stop the PTO of the tractor immediately, activate the parking brake and wait until all revolving parts have come to a complete stop. Then try to remove the foreign body.

Change into a lower tractor gear if you want to work with the machine on hilly ground. When working with a side-mounted mower along steep slopes and hillsides, you should maintain a speed that allows you to drive around large stones, ditches and other obstacles which may cause the tractor to overturn.
Also adjust the speed of the tractor to sharp turns when driving on hillsides or when lifting the machine in the three-point suspension.

GREASING

When greasing or maintaining the machine make sure that the cutting unit is in contact with the ground or that the lifting cylinders are blocked by means of stop valves.

Also make sure that the PTO is disengaged, the tractor engine stopped and the parking brake activated before cleaning, greasing or adjusting the machine.

MAINTENANCE

It is important that the cutting unit is correctly relieved to ensure a perfect operation and to reduce the risk that the cutter bar is damaged.

If a compression spring is damaged and you are not able to release the spring as per instructions, you should visit a workshop to have the damage repaired as a compressed spring can result in serious personal injury if it is released uncontrolled.

Always make sure that spare parts are tightened to the correct torque and that parts on the machine are re-tightened regularly. (See the section on maintenance)

Never use other spare parts than those prescribed by the manufacturer.

When replacing parts in the hydraulic system, make sure that the cutting unit is in contact with the ground.

MACHINE SAFETY

All revolving parts are checked 100% and balanced by the factory by means of special machines with electronic sensors.

As the discs work at up to 3000 rpm, even a minor unbalance will cause unusual vibrations which may lead to fatigue fractures.
If the vibrations or the noise of the machine increase gradually during a period you should stop working and check whether the revolving parts have been damaged. Do not continue the work until the fault has been corrected.

During the season check daily if blades, carriers or bolts are missing on the machine. If any of these are missing, mount the parts immediately.

When replacing blades, you should replace both blades on the disc in question in order not to create an unbalance.

Clean discs and flow intensifiers of earth and grass frequently and check at the same time if all parts are intact.

Check regularly if all parts at mortise connections (pins, ball and socket heads, pins and split pins) are intact and sufficiently greased.

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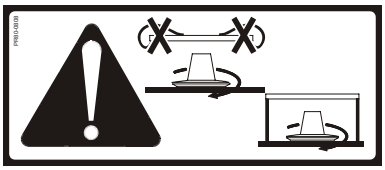

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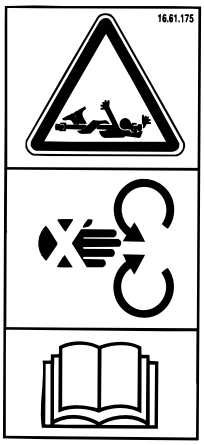

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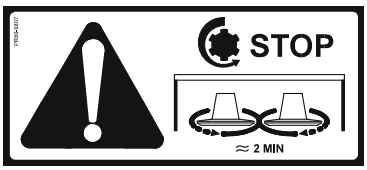

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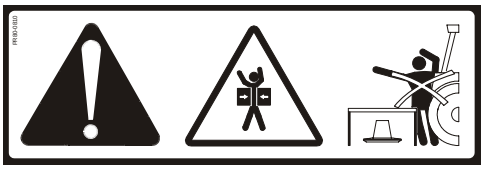
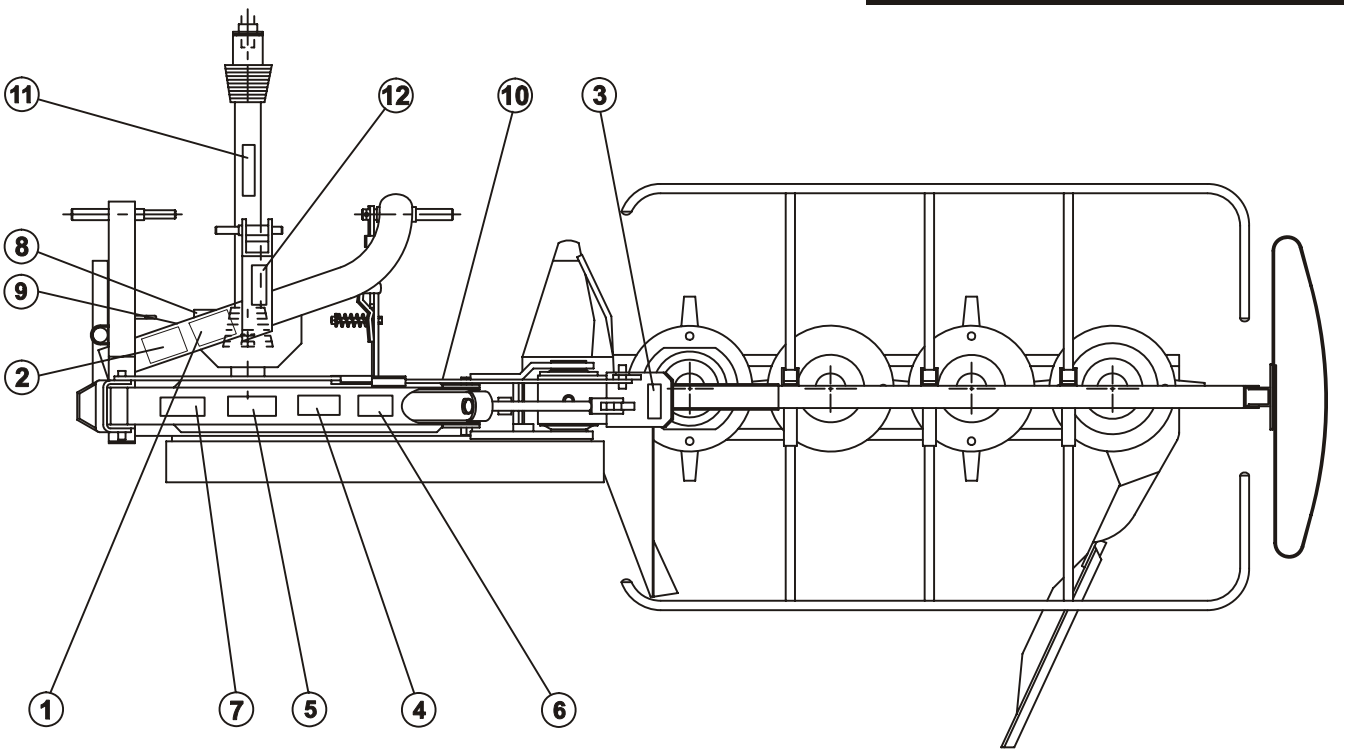




SAFETY DECALS

The safety decals shown on the previous page are positioned as shown on the drawing at the bottom of the page. Before using the machine check that all the 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.

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

4 **Rotating blades.**
Do not under any circumstances let anybody 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.

5 **Risk of stones being thrown.**
Almost the same as decal no. 3. But even though all canvases and guards are in the right place there is still a risk of stones being thrown out. Nobody should therefore be allowed to stand near the machine during the operation.

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

7 **Rotating blades.**
After the PTO drive shaft of the tractor has stopped the blades 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.

8 **The number and the direction of rotation.**
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.

9 **Max. 210 bar.**
Make sure that all the hydraulic components are not exposed to more pressure than 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.

10 **Remember the transport lock.**
Always remember to activate the transport lock before transporting the machine on public road. Defects in the hydraulic system and unintentional manoeuvres can make the machine swivel into working position during transport and thereby cause serious machine damage and personal injury.

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

12 **Risk of injury.**
Never let anybody stand between the machine and the tractor when the machine is connected to the tractor. Unintentional manoeuvres and misuse may result in serious personal injury.

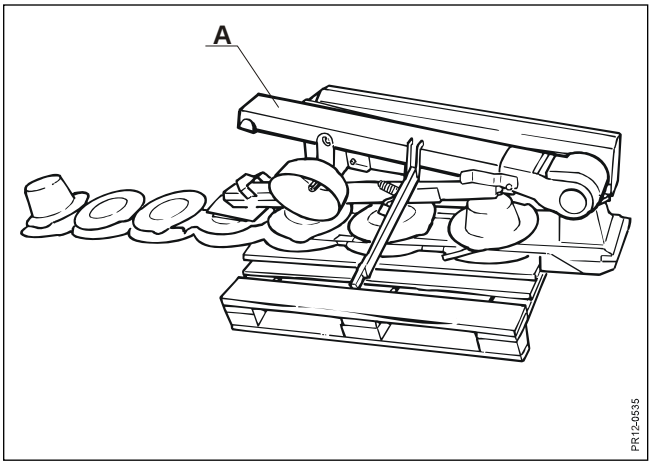


Fig. 1-1

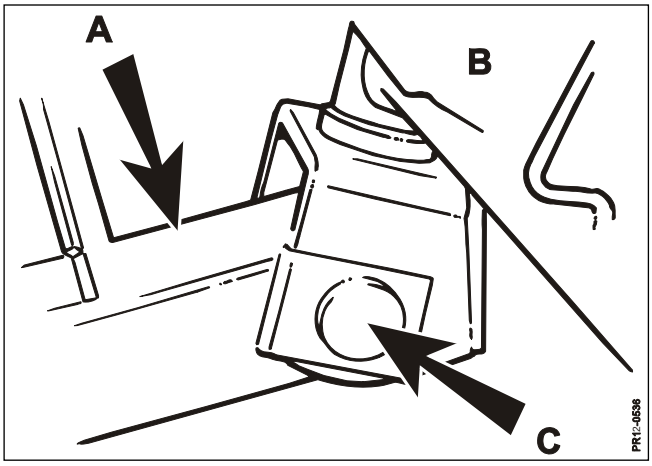


Fig. 1-2

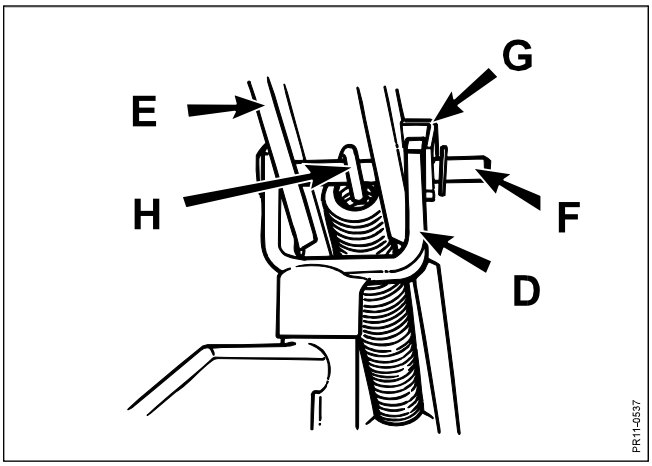


Fig. 1-3

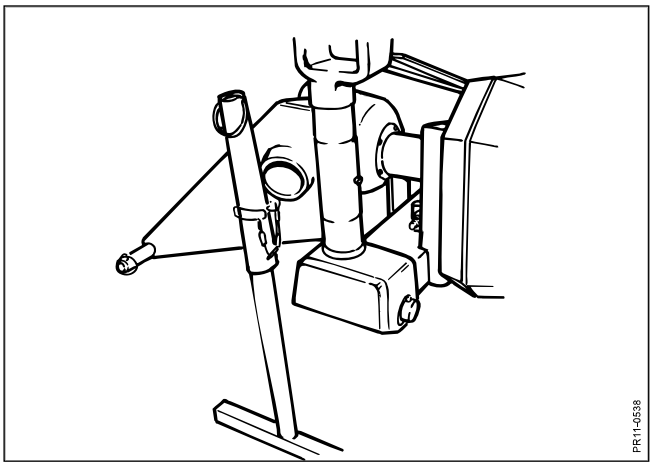


Fig. 1-4

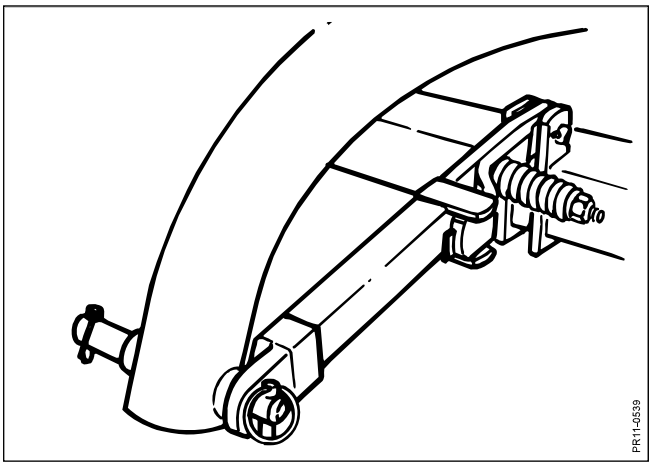


Fig. 1-5

TECHNICAL DATA

Type			**SB 2402**	**SB2802**
Working width			2,4 m	2,8 m
Number of discs			6	7
Power requirement at 540 rpm			35kW /50HP	40kW /54HP
Performance			2.5 ha/h	3.0 ha/h
PTO, number of revolutions			540 rpm	540 rpm
Discs, number of revolutions			3100 rpm	3100 rpm
Swath width, standard			1.8 m	2.2 m
Swath width with extra swath board			1.5 m	1.9 m
Lifting the cutting unit			Hydraulic	Hydraulic
Own weight			460 kg	520 kg
Transport width			Tractor width + 0.25 m	Tractor width + 0.25 m
Noise level in the tractor cabin	Machine connected	Window closed	76.5 dB(A)	
		Window open	90 dB(A)	
	Machine dis-connected	Window closed	76.5 dB(A)	
		Window open	78 dB(A)	

We reserve the right to change the construction and specification details without notice.

MOUNTING INSTRUCTIONS

To make it easier and less expensive to dispatch the machine, we deliver it partially assembled to some markets. Follow the mounting instructions below:

Fig. 1-1: Release all loose parts from the transport package.
The cutter bar must temporarily remain fastened to the transport pallet.
Move the boom A into working position.

Fig. 1-2: Fasten the headstock B to the boom A with the pin C.

Fig. 1-3: Connect the clevis D of the headstock to the relief device E by means of the pin F. Also remember to mount the parking lock G and the relief spring H.

Fig. 1-4: Mount the jack on the headstock.

Fig. 1-5: Mount the stone release mechanism on the headstock.

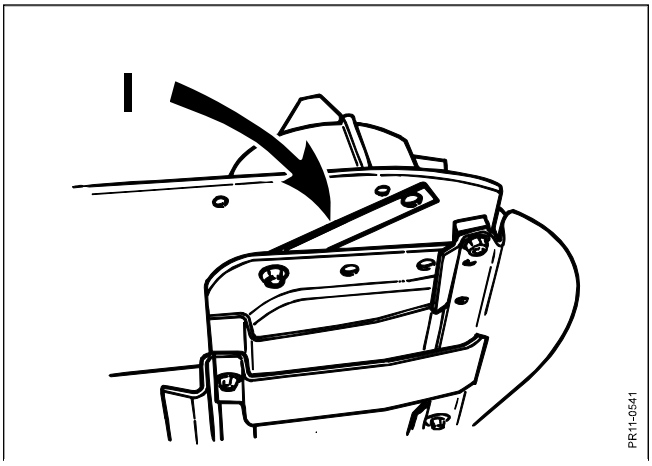


Fig. 1-7

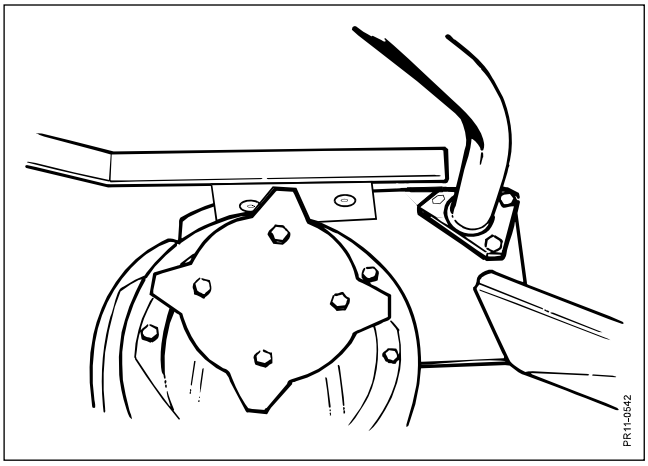


Fig. 1-8

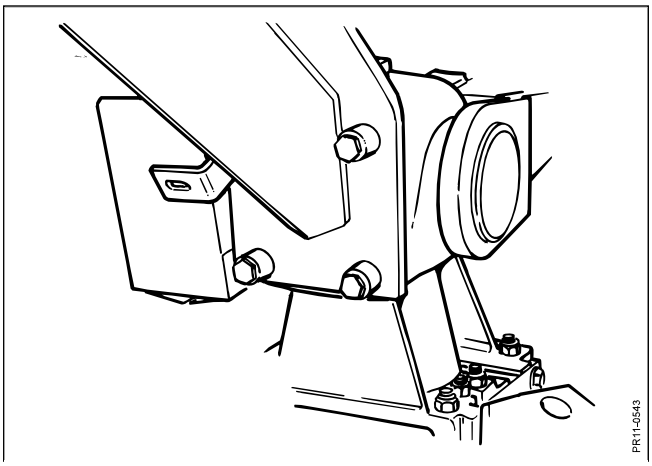


Fig. 1-9

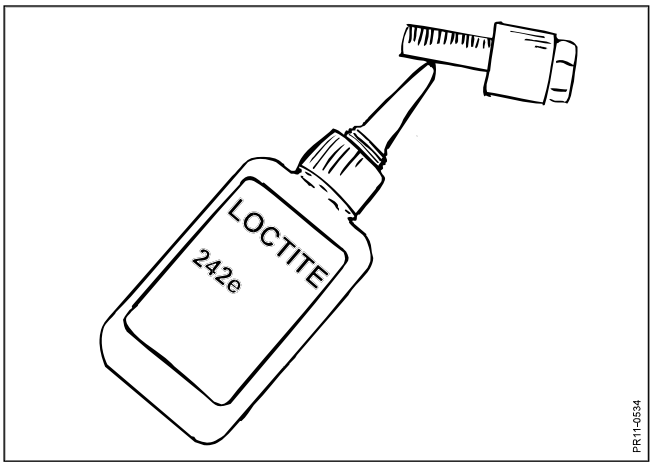


Fig. 1-10

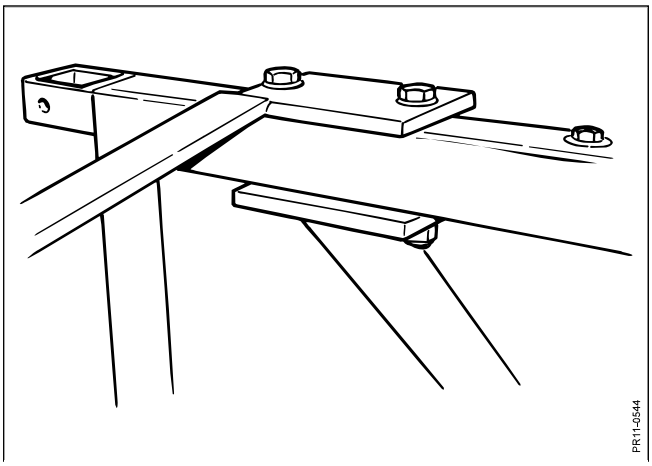


Fig. 1-11

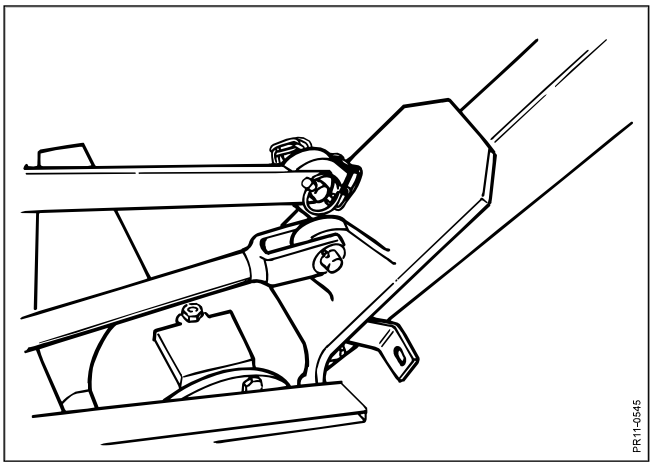


Fig. 1-12

Fig. 1-7: Mount the anchor plate for the right swath board at the outer end of the cutter bar if it has been dismounted. Remember to place the shim (I).

Fig. 1-8: (only SB 2802) Mount the brace and the straw divider.

Fig. 1-9: Mount the boom for protective canvas on the bevel gearbox. Apply a drop of Loctite
Fig. 1-10: 242 to ensure that the bolts do not get loose. Tighten the bolts to 120 Nm.

Fig. 1-11: (only 2802) Mount the brace and the straw divider on the cutting unit.

Fig. 1-12: Mount the lifting cylinder on the cutting unit. The easiest way to do this is to pull out the piston rod. In order to do this, the oil in the cylinder has to be pressed out through the quick coupling of the hydraulic hose into an empty oil can.

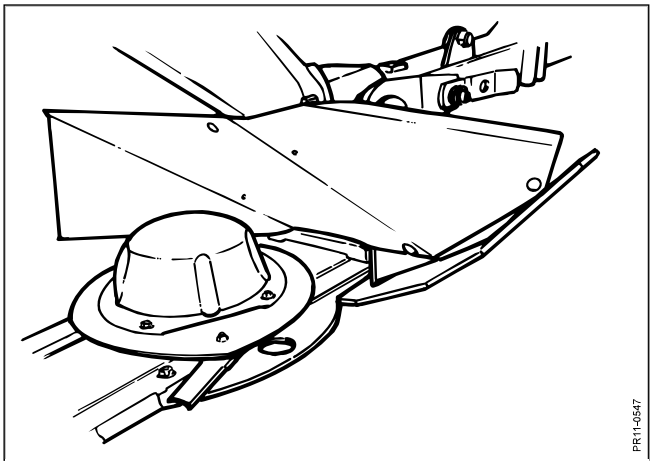
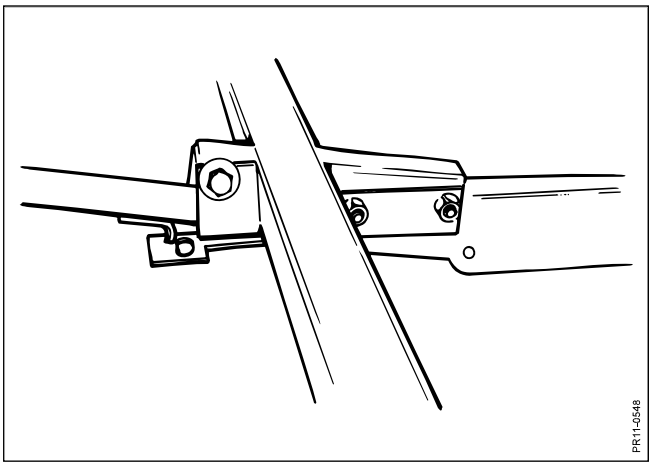


Fig. 1-14



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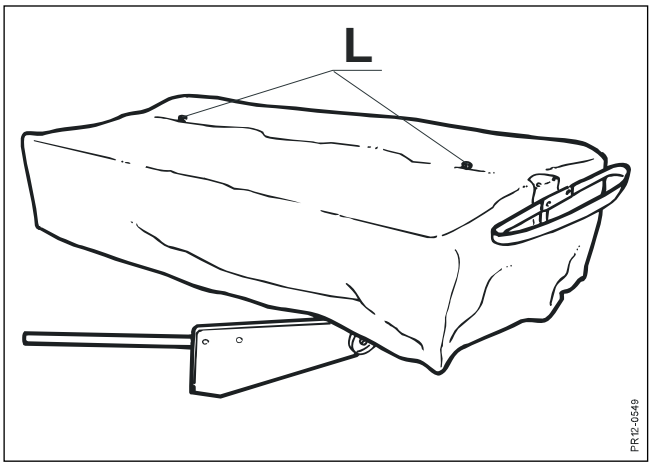


Fig. 1-16

Fig. 1-14: Mount the fixed swath board at the right side of the bevel gearbox.

Fig. 1-15: Mount the rear protection hoop with the long, bent end out towards the end of the cutter bar. Remember to mount the retaining spring together with the centre brace.

Fig. 1-16: Mount the right swath board on the anchor plate.
Pull the protection canvas out over the protection hoops and fasten it to the boom with the screws (L).
Now the side protection hoop can be mounted at the end of the boom.
Mount the lever in the pocket in front of the protection canvas and fasten it with a screw.

The machine is now ready to be connected to a tractor.

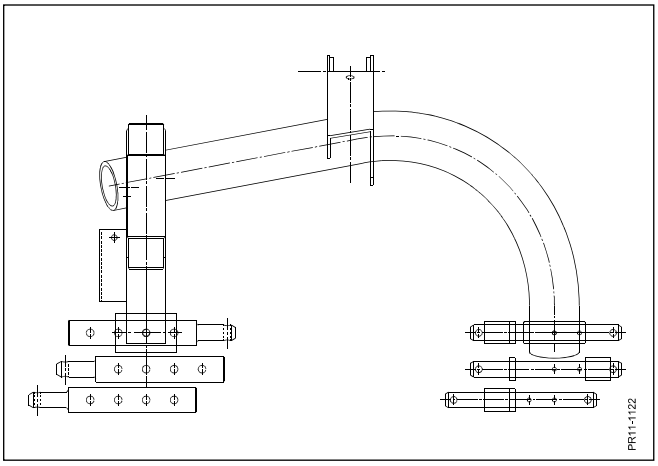


Fig. 2-1

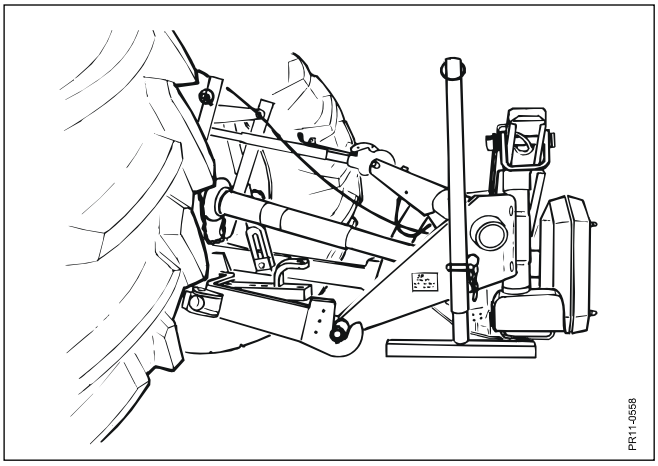


Fig. 2-2

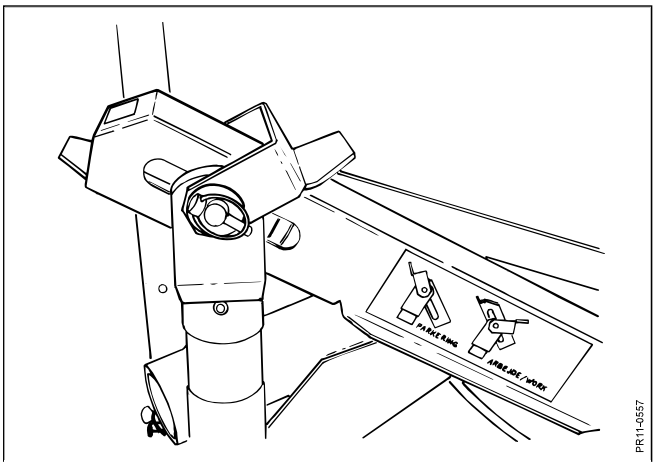


Fig. 2-3

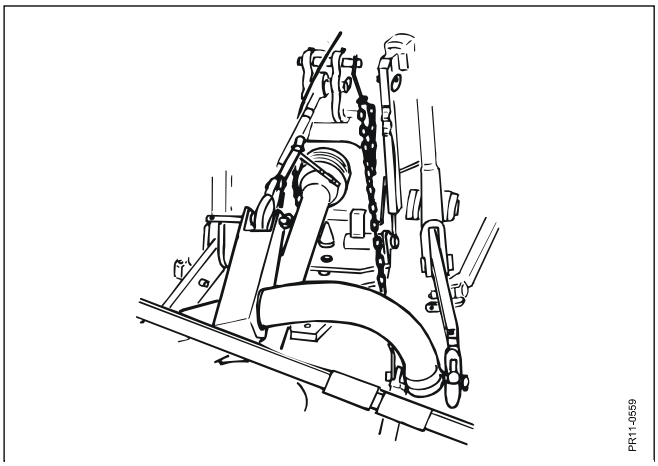


Fig. 2-4

2. CONNECTION AND TEST DRIVING

CONNECTION TO TRACTOR

PLACING SIDEWAYS

Fig. 2-1: The machine can be adjusted to the track width of the tractor in three ways.

CONNECTION

1. Place the tractor right in front of the three-point suspension of the machine.
2. Adjust the link arms of the tractor so that they are at the same height.
3. Carefully reverse the tractor while lifting the link arms until the draw pins of the machine can be connected to the tractor. Connect the pins.
4. Mount the top link of the tractor and place it as parallel to the link arms of the tractor as possible.
5. Connect the lifting cylinder to the single-acting hydraulic outlet of the tractor.
6. Lock the link arms of the tractor to prevent them from moving sideways.

HYDRAULIC CONNECTION

The machine is equipped with two lifting cylinders for transport and turning in the field.

DANGER: The hydraulic components should not be exposed to a pressure larger than 210 bar as a higher pressure might damage parts and cause serious personal injury.
Make sure that no persons are near when activating the hydraulics for the first time.

NB: Remember to disconnect the hydraulic hose from the coupling when disconnecting the machine.

JACK

Fig. 2-2: When the machine is going to be parked disengaged, the jack must be lowered to rest on the ground and be secured with the special pin.
When the machine is connected to the tractor, the jack must be raised so that the machine can move freely within the operation area. Secure the jack with the special pin.

ADJUSTMENT OF DEPTH STOP ON THE LINK ARMS

Fig. 2-3: The depth stop on the link arms must be adjusted so that there is a 2 cm oblong hole above the pin in the relief device.

SUPPORT CHAIN

Fig. 2-4: A support chain can be supplied to stabilise the depth stop, -JF- No.: see spare parts list.

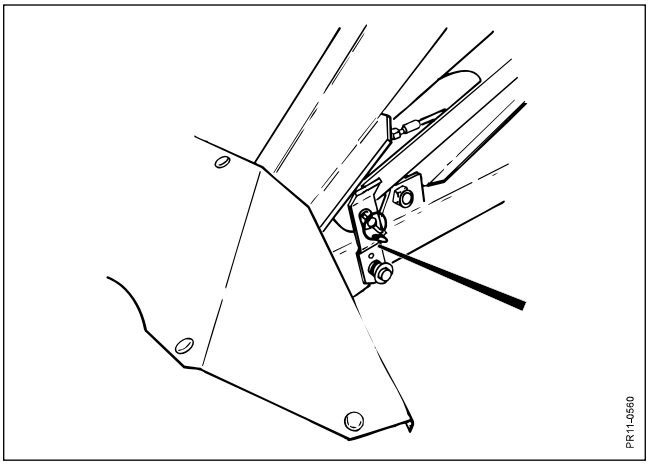


Fig. 2-5

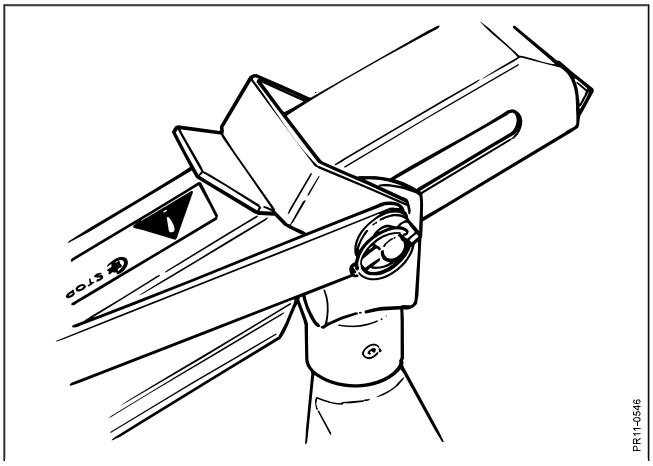


Fig. 2-6

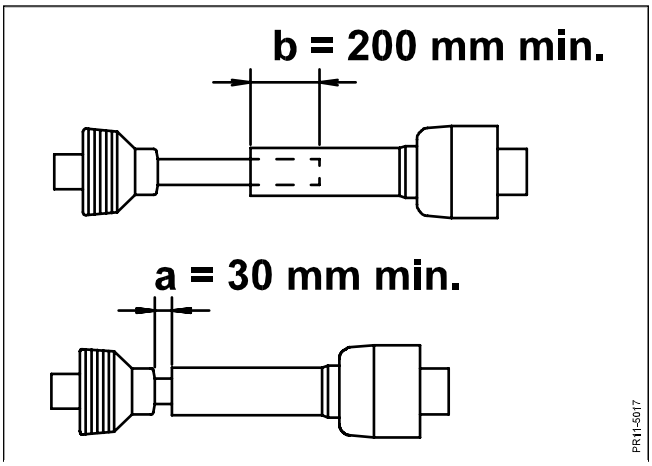


Fig. 2-7

TRANSPORT LOCK

The machine has a mechanical transport lock. When the machine is connected and the cutting unit is lifted with the hydraulic lifting cylinder, it must be secured before transporting the machine. The transport lock ensures that the cutting unit is fixed in the top position and cannot fall down if the hydraulics is misused or if a hose is damaged.

Fig. 2-5: Before transporting the machine, release the spring transport lock from the support pin and turn it 90º upwards over the pin and secure it by means of the cotter pin.

IMPORTANT: The lock must always be in the position shown on fig. 2-5 when transporting the machine.

After transport, when the machine is to be prepared for work, remove the cotter pin from the pin, tip the transport lock and turn it 90º over the support pin until the pin is released.

Fig. 2-6: The machine is also equipped with a parking lock (yellow), which must be tipped back before driving in the field.

ADJUSTMENT OF THE PTO DRIVE SHAFT

The PTO drive shaft between tractor and machine must now be mounted in order to complete the transmission line.

Dimensions and movements of the link arms of individual tractor brands are not standardised. Therefore, the distance from the power take-out (PTO) to the input shaft (PIC) on the machine will be different depending on the tractor.
Therefore, it may be necessary to shorten the PTO shaft before use to ensure that it works correctly.

IMPORTANT: Do not shorten your new PTO drive shaft before you are sure that it is necessary. The PTO drive shaft is, from factory, adjusted to fit the distance from PTO to PIC which is standard on most tractors.

<u>If it is necessary to shorten the PTO shaft on your machine, the following must be observed:</u>

Fig. 2-7: Adjust the PTO drive shaft so that it:

- **has the biggest possible overlapping**
- **in working position has minimum 200 mm overlapping.** (As the distance from PTO to PIC varies when the machine moves up and down within the normal working area, it is important to ensure that the overlapping is sufficient in both extreme positions).
- **is not compressed more than the prescribed 30 mm in order not to bottom the shaft.**

IMPORTANT: The profile tubes of the PTO drive shaft must observe the minimum overlap dimensions as shown on fig. 2-7.

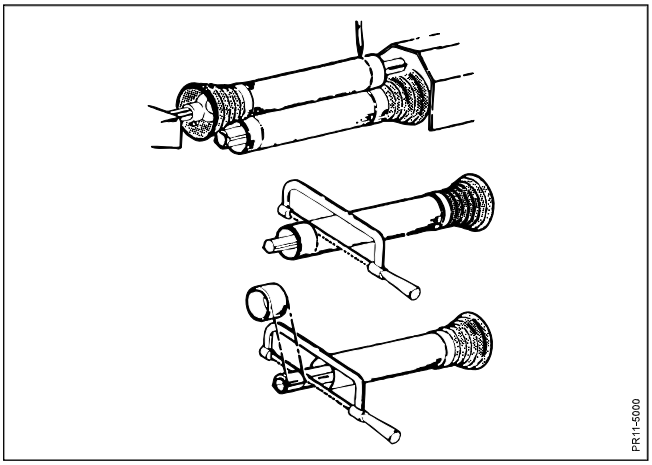


Fig. 2-8

Fig. 2-8: Shortening procedure:

1) Separate the PTO drive shaft in two half parts. Fasten the halves to PTO and PIC, respectively, when these are at the same horizontal level. This is the shortest distance of the shaft on this machine and usually corresponds to the working position when the machine rests on even ground.

2) Hold the shaft ends parallel to each other and mark the 30 mm (minimum) on the tubes. See also fig. 2-8.

3) Shorten all 4 tubes equally.

4) Round off the ends of the profile tubes and remove burrs carefully with a file until the tubes are smooth. It is important **to deburr the inside of the outer tube and the outside of the inner tube.** Thereby the surface of the profile tubes is secured against damage by sharp edges and impurities.

5) Clean the ends of the profile tubes of dirt and loose burrs.

WARNING: Grease the profile tubes carefully before reassembling. Insufficient greasing may result in high frictional forces during operation, which may cause the transmission to be overloaded.

Check that the PTO has sufficient overlapping in all positions by raising and lowering the machine with the hydraulics.

Finally, check that the number of revolutions of the tractor PTO is 540 rpm as the machine is intended for.
A too high number of rpm on the PTO may be highly dangerous. A too low number of rpm may result in bad cutting and an unnecessarily high load of the transmission.

TEST DRIVING

CHECK BEFORE TEST DRIVING

The following should be checked before test driving:

1) That the hydraulic components are correctly connected and tightened.

2) That the PTO drive shaft of the tractor has the correct number of revolutions (540 rpm).

3) That the oil level in the cutter bar and the bevel gearbox is correct. See section 4: GREASING.

4) That all grease spots have been greased. See section 4: GREASING.

5) That all blades on the discs are intact and tightened correctly.

6) That the cutting unit is lowered to the ground and the machine is in working position when the PTO shaft of the tractor is connected.

7) That the engine is running at a low number of revolutions when connecting the PTO shaft of the tractor.

8) That the PTO drive shaft between the PTO of the tractor and the PIC of the machine is not squeezed when the link arms of the tractor are carefully raised and lowered.

9) That the safety guards of the PTO shaft do not rotate with the shaft, that the safety chains are fastened properly.

10) That the protections (guards and canvases) on the machine are complete, intact and correctly fastened.

11) That all tools have been removed from the machine.

12) That no persons are near the machine during operation.

THE TEST DRIVE

Carefully connect the PTO drive shaft and let the engine run at a low number of revolutions for some minutes.
If there are no unusual vibrations or noises, gradually increase the speed to normal number of revolutions (PTO = 540 rpm).
Except from the tractor driver, nobody should stand near the machine.

NB: All machines are tested for vibrations before they leave the factory. This is an essential part of the company's quality assurance.

It is, however, necessary to check regularly whether the machine has unnatural vibrations, especially during test driving.

WARNING: When discs and blades rotate with more than 3000 rpm, even slightly damaged rotating parts (blades, discs and caps) may result in vibrations which in the long run may lead to secondary damage such as cracks or fractures.

Even though the machine has been secured against vibration damage, there will always be a certain risk, though limited.

During the season check daily if blades, discs and caps are damaged and replace parts if necessary.

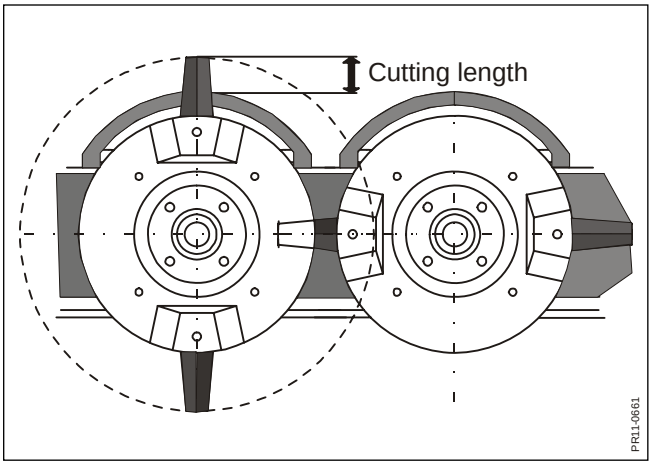


Fig. 3-1

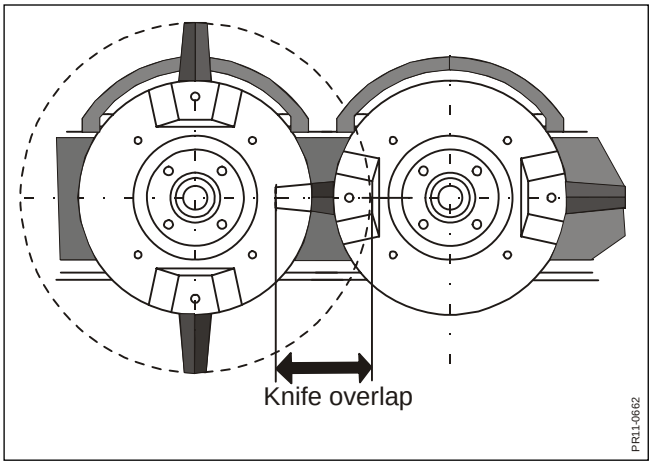


Fig. 3-2

3. ADJUSTMENTS AND DRIVING

CONSTRUCTION AND FUNCTION

SB 2402 / 2802 is a disc mower designed to be mounted at the rear of the tractor and places a swath at the right side of the wheels of the tractor.

IMPORTANT ELEMENTS OF THE MACHINE

Blades

At each side of the machine there is a set of blades. These blades are made of 4 mm hardened high-strength steel.

REMEMBER: Before working with the machine, check:

- that no blades are missing and that all blades are correctly mounted
- that no blades are bent or cracked
- that all blades can turn freely around the blade bolt.

A special characteristic of the machine and the cutter bar is the large effective cutting length of the blades.

Fig. 3-1: The cutting length of a blade is defined as the distance from the front edge of the stone protector to the blade end/point.
The larger the cutting length per blade, the larger the maximum driving speed with the machine without risking unclean cutting.

The following example will illustrate this:

The cutting length of the blade	0.05 m
Number of blades per discs	2
Rpm of the blade.	3040 rpm
Minutes per hour	60
Metres per kilometre	1000
Maximum driving speed	18.24 km/h

This result shows that the large effective cutting length gives a high reserve capacity in this respect.

Fig. 3-2: At the same time, the cutter bar has a large blade overlapping between the discs. This will reduce the formation of stripes between the discs.
The blade overlapping helps keeping the bar clean and reduces the risk that the crop will be wrapped round the hubs under the discs.

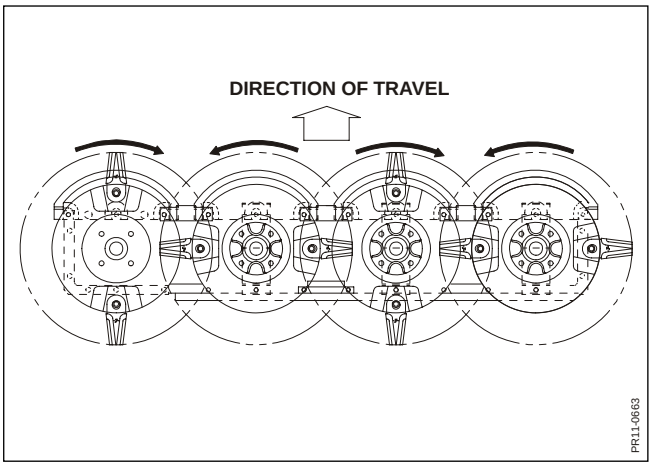


Fig. 3-3

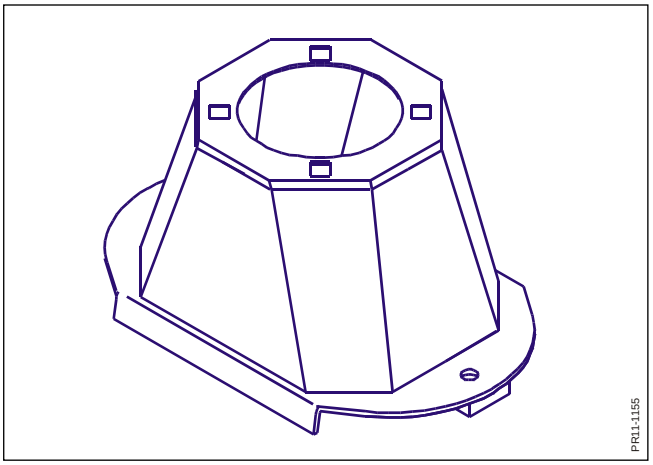


Fig. 3-5

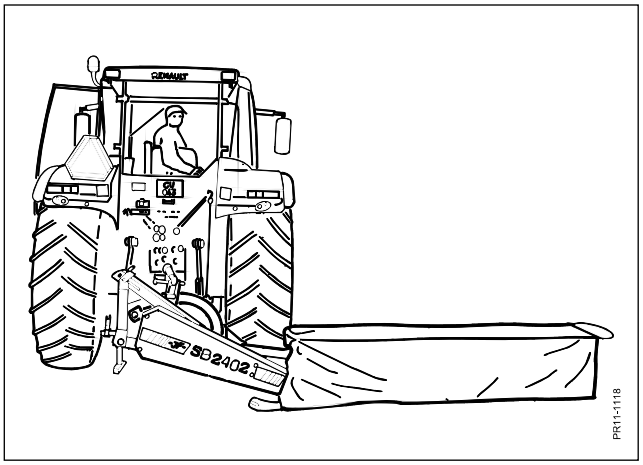


Fig. 3-6

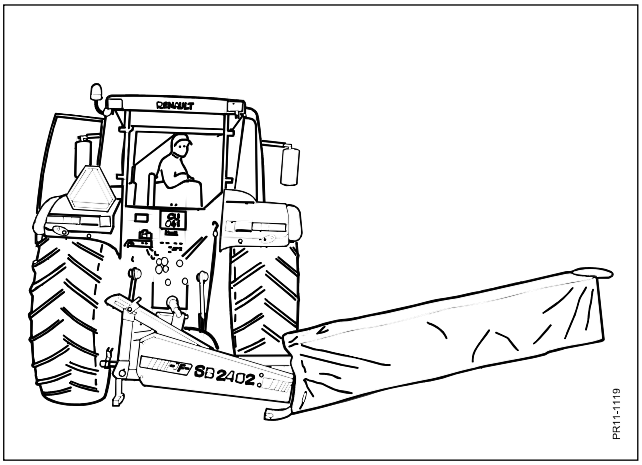


Fig. 3-7

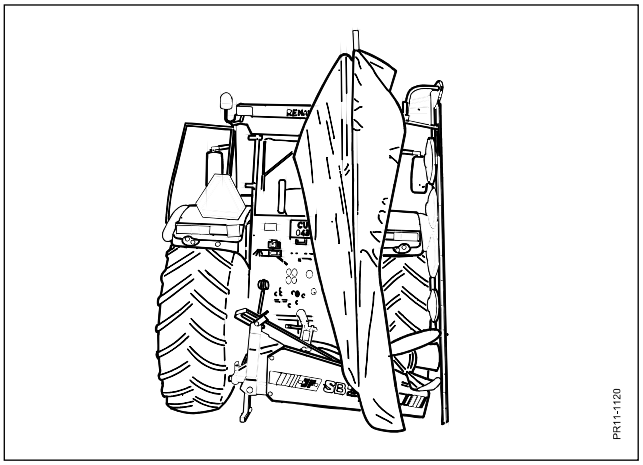


Fig. 3-8

Discs

Fig. 3-3: The discs turn towards each other two and two in order to ensure the crop has the shortest passage across the cutter bar and thereby optimise the crop flow.
This construction ensures that the cutting is not blocked by the crop already cut off and that the grass is not left on the bar with the risk of re-cutting.

NB : It is not possible to change the direction of rotation of the individual discs.

Regularly, the discs should be dismounted and dust and other impurities which may accumulate between the discs and hubs on the cutter bar should be removed.

Flow intensifiers

Fig. 3-5: To ensure that the machine forms a compact swath behind the machine, a flow intensifier, a so-called cap, has been welded on the end discs to optimise the crop flow across the cutter bar.
The caps are there to ensure that the crop is transported the right way around the disc (towards the middle) and across the cutter bar.

WORKING ADJUSTMENTS

In order to optimise the functions of SB 2402 / 2802 there are several elements which must be adjusted correctly.

EASY LIFT

This version of SB 2402 / 2802 is equipped with Easy Lift system.
It allows the link arms of the tractor and thus the headstock of the machine to be adjusted to a fixed height. The cutter bar is raised and lowered simply by means of one of the control handles of the tractor, i.e. the one which controls the remote outlet.

Fig. 3-6: Working position
Lower the cutter bar until it rests on even ground and the control handle is in floating position. Lower the link arms of the tractor / the headstock of the machine until there is 2 cm slot above the pin (see Fig. 2-3). During working, the control handle must be in floating position.

Fig. 3-7: Turning in the field
Raise the cutter bar with the control handle until the cylinder reaches the stop. Then you can turn with the machine.

Fig. 3-8: Transport
Pull the cord for the stop and then raise the cutter bar to vertical by means of the control handle. Engage the spring transport lock with the dowel and secure it with the spring pin (see Fig. 2-5).

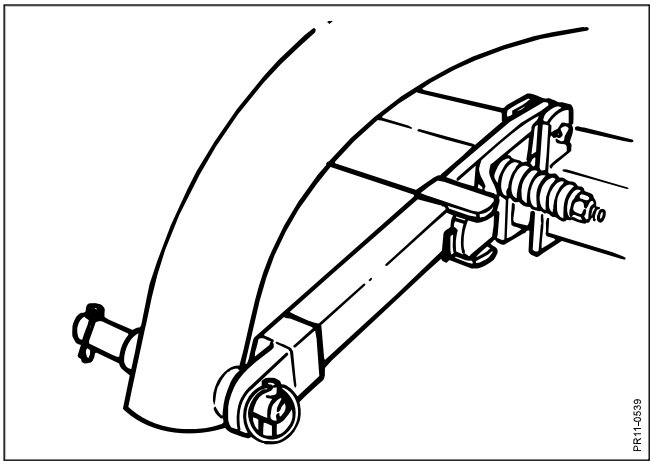


Fig. 3-10

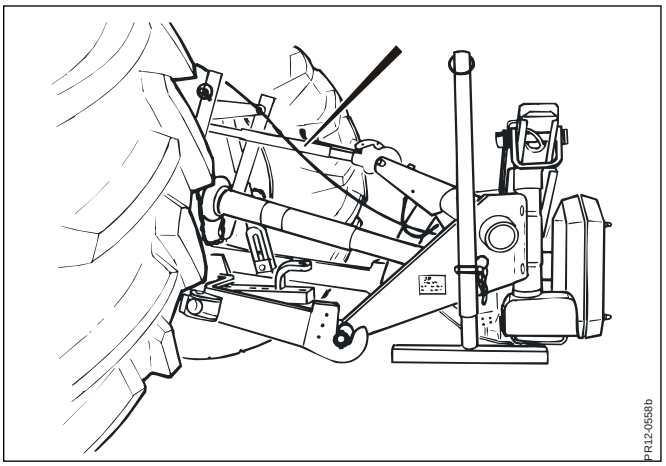


Fig. 3-11

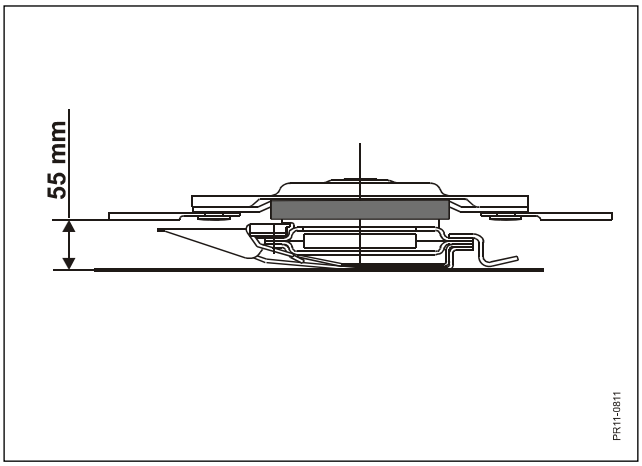


Fig. 3-12

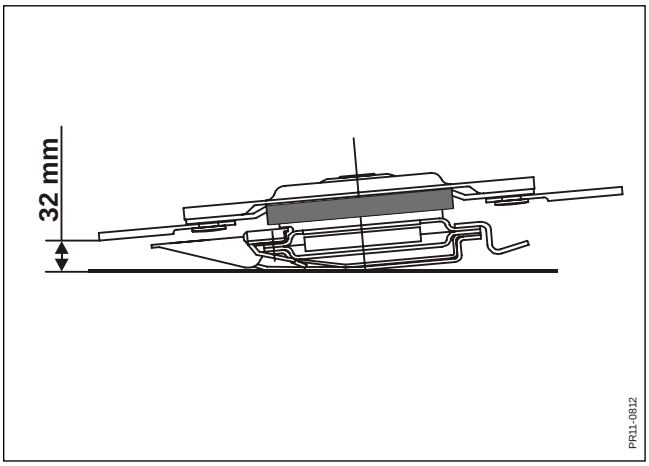


Fig. 3-13

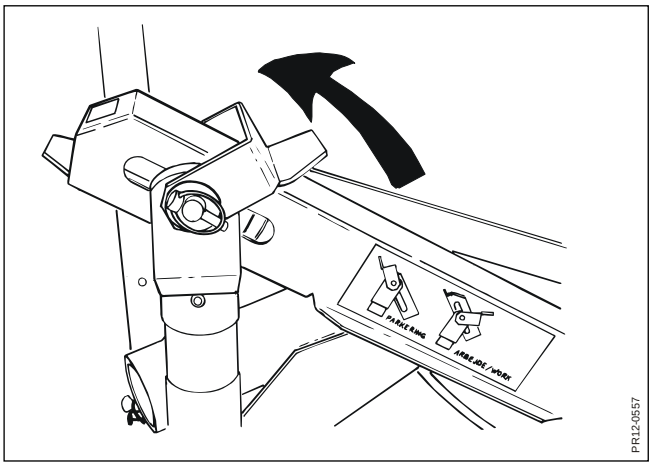


Fig. 3-14

RELIEF

In order to spare the stubble during work, reduce the wear on the guide shoes of the machine and ensure optimal ground following, the machine is relieved by means of a strong tension spring.

Fig. 3-9: If the machine has a tendency to be lifted from the ground at the end which is closest to the tractor, the relief spring is tightened too much. This can be corrected by loosening the nut by turning it a couple of times.

SAFETY RELEASE

Fig. 3-10: The machine is equipped with a safety release which allows the cutting unit to swivel to the rear when the pressure from the front gets too high, for instance if driving against firm obstacles such as a tree, a pole, stones or the like.
If the safety release has been activated, the easiest way to reengage it in working position is to reverse the tractor with a jerk.
If the safety release releases too easily, the spring should be tightened.
There is no protection against shocks if reversing with a lowered cutter bar and you **risk damaging the machine.**

WARNING: Do not tighten the spring so much that the safety release is blocked as the machine may be damage unnecessarily in case of collision.

ADJUSTMENT OF THE CUTTING HEIGHT

Fig. 3-11: The cutting height can be adjusted with the top link.
Fig. 3-12: A machine in horizontal position has a theoretical cutting height of 55 mm.
Fig. 3-13: If the machine is inclined approximately 5º to the front, the cutting height will be 32 mm.
Do not incline the machine further as the PTO drive shaft may be damaged.
Guide shoes, discs and blades will be worn too quickly and the feed will be soiled.

If you want an extra high stubble, e.g. when topping fallow fields, it is possible to raise the position of the cutter bar by mounting high guide shoes on the machine. These are available as optional equipment. See section 6: MISCELLANEOUS.

PARKING

Park the machine with the cutting unit resting on the ground.

Always park the machine on even, stable ground. If this is not possible, support blocks or plates must be used.

Fig. 3-14: Activate the parking lock.
- Lower the jack.
- Disengage the hydraulic connection.
- Lower the link arms until the machine rests on the jack.
- Disconnect the link arms and the top link. Remember to place the PTO on the support hoop to avoid dirt.

WORKING WITH THE MACHINE

STARTING

When arriving to the field, follow this procedure:

1) Lower the cutter bar to the ground before driving into the crop.
2) Connect the PTO of the tractor with the engine running at idle speed.
3) Gradually increase the rpm of the engine to 540 rpm on the PTO.
4) Start driving and lead the cutting unit into the crop.

NB: It is normal that the cutting parts (cutter bar, discs and blades) make noises when starting due to the high number of revolutions of the discs (3000 rpm). The noise will be reduced when you start working in the crop.

IMPORTANT: During working, the single-acting control handle must be in floating position so that the cutting unit can move freely.

WORKING IN THE FIELD

During the daily use of the machine, the following conditions should be taken into consideration:

1) Always start the machine with the engine running at a low number of revolutions. This especially applies to tractors with electro-hydraulic connection of the PTO-shaft.

2) The machine must be in working position when starting.

3) A sudden increase in the number of revolutions of the machine, e.g. when driving into the field or after turning in the field, should also take place with the machine close to working position.

4) Listen to the number of revolution when working in the field. If the number of rpm falls slowly or is suddenly reduced, it may be a sign of overload of the transmission due to too high driving speed or foreign matter in the cutting unit. In this situation, disconnect the PTO immediately and let the machine "rest".

Several important conditions must be taken into consideration when swathing with the machine.

Theoretically, it is possible to work at a driving speed of 18 km/h. However, you should always adjust the speed to the conditions, i.e. the amount of crop and the conditions in the field.

The operator should always have the full control of the tractor and be able to avoid irregularities of the ground and foreign matter in front of the tractor and the machine.

Choose a lower driving speed than usual if:

- the ground is uneven or hilly
- the crop is lying down
- the crop is unusually high and dense

Choose a higher driving speed if:

- the crop is low and thin
- the crop is mixed with peas or the like.

As previously mentioned it is important that you are very careful when working on hilly ground. The driving speed must be reduced and you must pay attention to the movements of the machine.
On hilly ground the risk that the machine hits a bank of earth or foreign matter is higher and you as the operator should be careful and minimise the risk of damaging the machine.

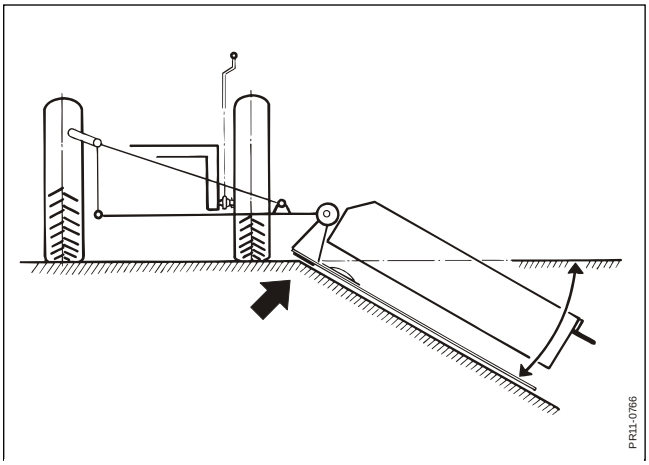


Fig. 3-15

REMEMBER: As long as the stubble remains regular and the machine moves regularly across the ground, the driving speed is correct.

DANGER: When driving along field boundaries and slopes, always be careful and do not drive too fast as there may be foreign matter in the boundary and often varying ground conditions along slopes and boundaries.

When swathing make sure to keep the rpm of the PTO-shaft constant (540 rpm), so that the cutting parts of the machine can work optimally.

DANGER: After having worked with the machine for a long time, the cutter bar will have a temperature of about 80 degrees and you must be aware of the risk of getting burnt if you want to replace blades or other parts.

MOWING A SLOPE

Fig. 3-15: When mowing edges of ditches, move the cutter bar out over the ditch so that the left guide shoe rests on the edge and the cutter bar is hanging freely out over the ditch.
Lower the link arms of the tractor (past the depth stop). The cutter bar will now go down to the slope.
The lifting cylinder must still be in floating position.

TURNING

When turning in the field the cutter bar must be lifted from the ground (See Fig. 3-7), and the number of rpm must be reduced.

Before increasing the number of rpm again, the cutter bar must be lowered to working position.

When turning on hilly ground or steep slopes, try to turn with the machine up against the hill/slope to ensure sufficient stability of the tractor.
Always reduce the driving speed when turning in the field.

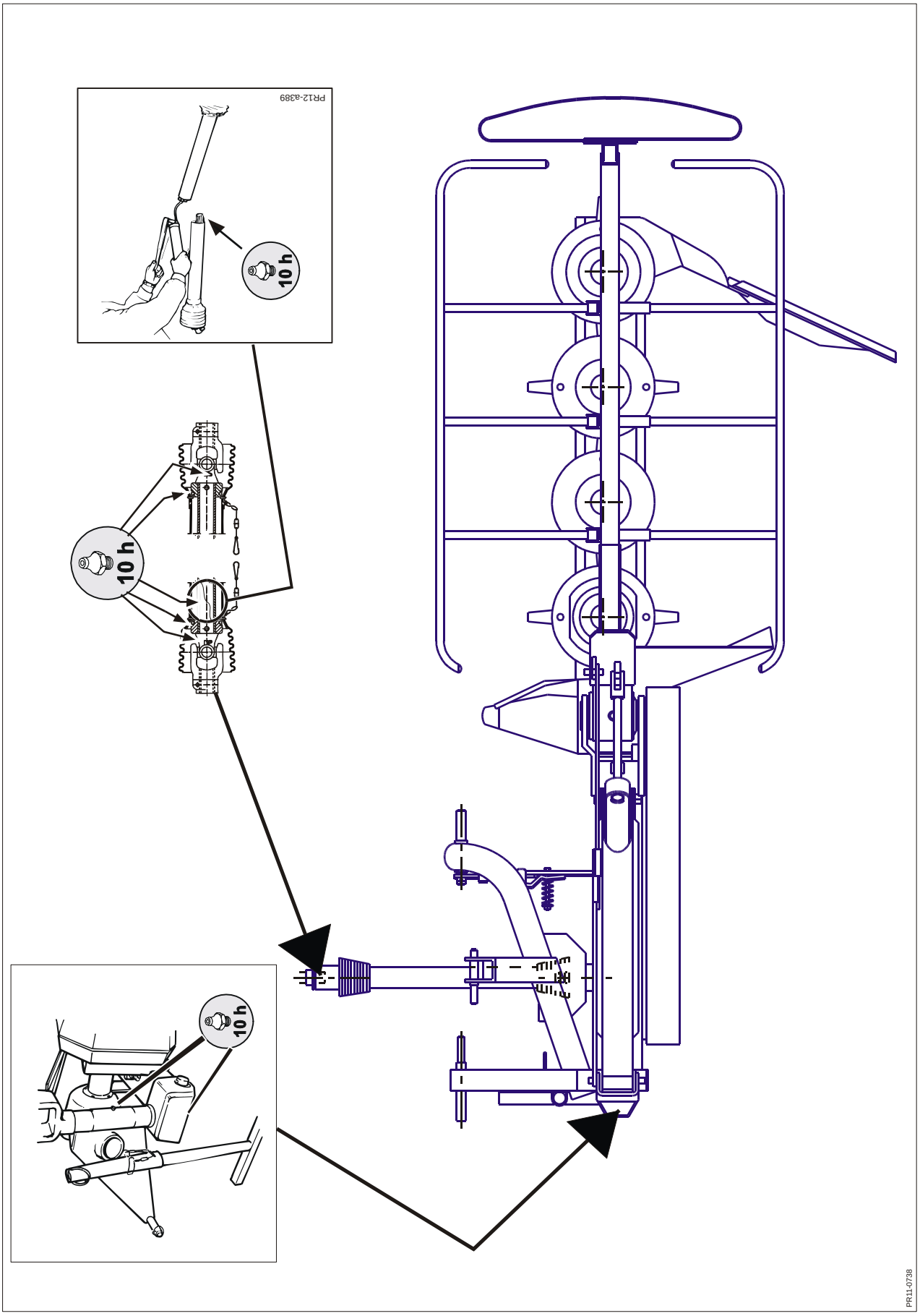
IMPORTANT: The machine is not designed to be able to reverse in working position. Therefore, **always** lift the cutting unit from the ground when turning.

IMPORTANT: After collision, always check the machine for damage. Especially the bearing parts and the cutting parts.

TRANSPORT

When driving on public roads or outside fields, the machine must be raised with the lifting cylinder, and **the transport lock must be correctly fastened (fig. 2-5)**.

Greasing chart for disc mower type <u>SB 2402 /2802</u>
Below grease spots must be greased according to the working hour intervals indicated.



4. GREASING

GREASE

Always make sure that the machine has been properly greased before working.

Go through the greasing chart.

Type of grease: Universal grease of good quality.

Grease rotating mechanical connections with grease or oil as required.

IMPORTANT – REMEMBER: ***PTO drive shafts must be greased every 10 hours of operation***. Pay special attention to the **sliding profile** tubes of the PTO shafts.
They must be able to slide back and forth even when the torque is heavy.

If you neglect to grease the profile tubes sufficiently it will result in high axial forces (seizing) which will damage the profile tubes and in time also connecting shafts and gearboxes.

OIL IN THE CUTTER BAR

CUTTER BAR

Correct oil level: depends on the size of the cutter bar:

SB 2402:	**2.0 litres**
SB 2802:	**2.0 litres**

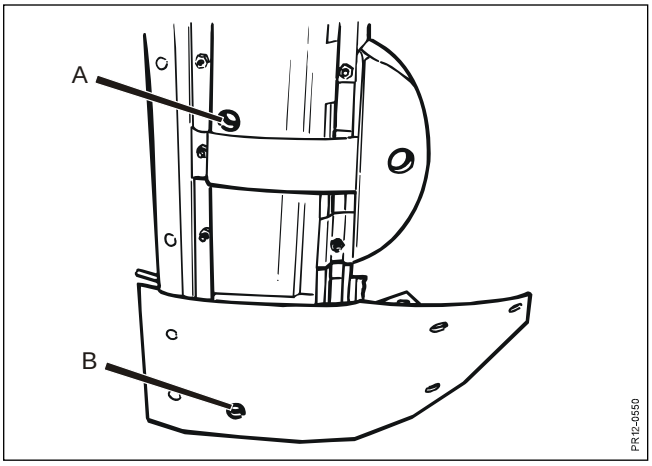


Fig. 4-1

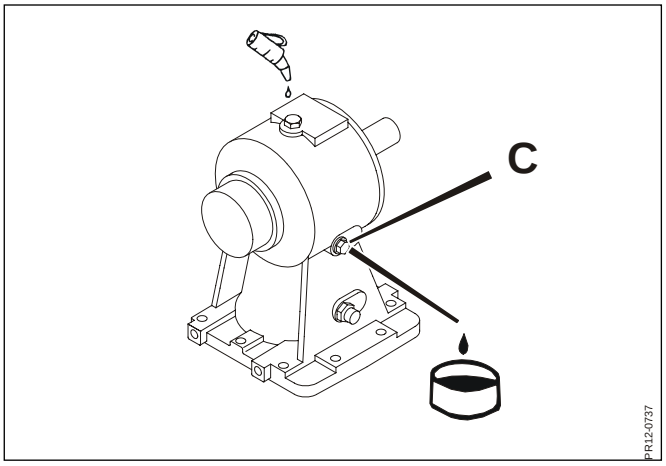


Fig. 4-2

Fig. 4-1: The oil level is correct when the oil is filled to **A** while the machine is in vertical position.

To drain the oil, lower the cutter bar to 45º, dismount the two plugs **A** and **B** and drain the oil.

Oil change: The oil in the cutter bar must be changed the first time after 10 hours of operation and then after every 200 hours of operation or at least once every season.

The easiest way to change the oil is to let the machine run a couple of minutes until the oil is hot. At the same time this will ensure that impurities are mixed with the oil and are removed when changing the oil.

REMEMBER: to mount the plug again after draining. The drain plug has a magnet to collect metallic impurities. Therefore, always clean the plug before remounting it.

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

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

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

OIL IN THE BEVEL GEARBOX

Fig. 4-2: This bevel gearbox drives the cutter bar.
Raise the cutter bar to vertical position to drain the oil.

Correct oil content: **0.7 litre**

Correct oil type: API GL4 or GL5 SAE 80W – 90

Oil change: First oil change after 50 hours of operation and then after every 500 hours of operation, however at least once every season.

Correct oil level: The oil level is correct when the oil is filled up to **C**, while the machine is in horizontal position.

5. MAINTENANCE

IN GENERAL

WARNING: **For repair or maintenance of 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.**

TIGHTENING OF BOLTS

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

Ma Ø	Class: **8.8** **M**A[Nm]	Class: **10.9** **M**A[Nm]	Class: **12.9** **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 20x1,5	430	615	720
M 24	640	900	1100
M 24x1,5	690	960	1175
M 30	1300	1800	2300

Correct torque moment M_A (if nothing else stated) for bolts on the machine.

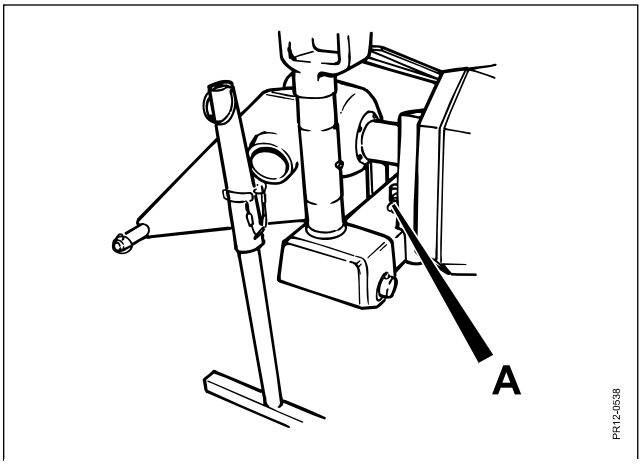


Fig. 5-1

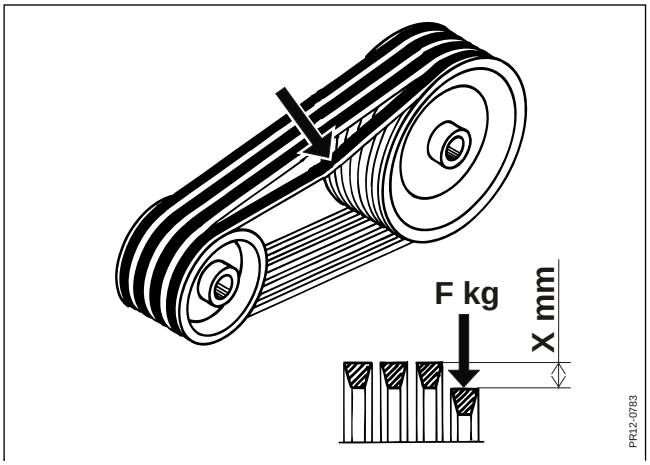


Fig. 5-2

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 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.

All machines manufactured at JF-Fabriken have been tested and checked for vibrations with special tools.

The first time you start the machine pay attention to vibrations and noise to have a basis of comparison later.

Bolts at stone protectors and shearbars at the front of the cutter bar should be checked at regular intervals.

V-BELTS

BELT DRIVE

The machine has a belt drive with 4 belts running from the PIC-shaft to the bevel gearbox above the cutting unit. Check if the tightening of the belt is correct before starting, especially when the machine is new and when the belts have been replaced.

Fig. 5-1: Adjust the tightening of the belt at nut **A**.

IMPORTANT: If one of the belts in the belt drive must be replaced, it is necessary to replace all belts to ensure operational reliability.

Fig. 5-2: Normally, the belt is tightened correctly when a force of **F**=7.5 daN (kg) gives a deflection of **X**= 30 - 35 mm, at the middle of the belt.

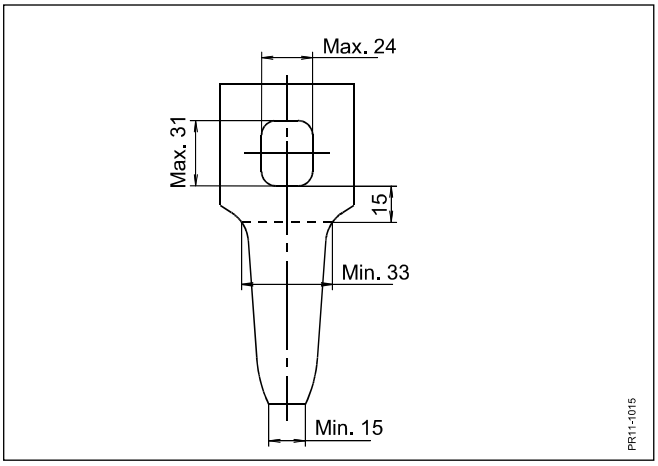


Fig. 5-3

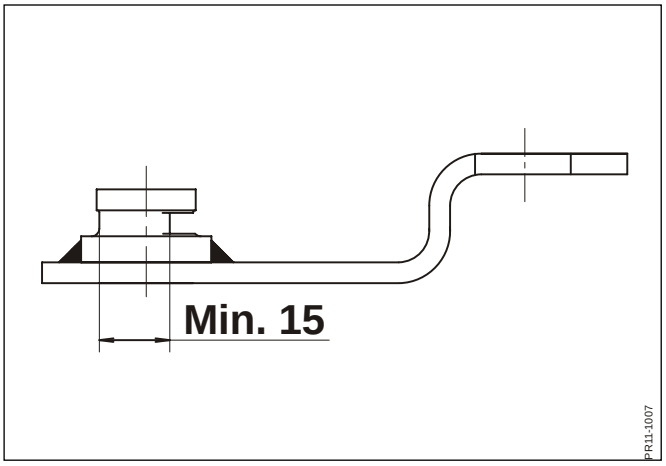


Fig. 5-4

CUTTER BAR - DISCS AND BLADES (Q + S)

Discs, blade holder and blades are made of high-alloyed hardened materials. A special heat treatment results in an especially hard and ductile material which can handle extreme stress. If a blade or disc is damaged, do not attempt to weld the parts together again as the generation of heat will damage the material properties and you will expose yourself and others to increased risk.

IMPORTANT: Damaged blades, discs and blade holders must be replaced by original -JF- spare parts to obtain safe operation.

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

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

BLADES

Fig. 5-3: Blades must be replaced if:

1) They are bent or cracked.
2) The blade width is less than 33 mm measure 15 mm from the edge of the hole.
3) The blade hole is larger than stated.

BLADE HOLDER

Fig. 5-4: The blade holder must be replaced if:

1) The blade pin is not in contact with the disc,
2) The blade pin is strongly worn on one side,
3) The diameter of the blade pin is less than 14 mm.
4) The blade holder is much easier to press down with the tool.

The blade pins must also be checked regularly.
This is especially important after collision with foreign matter, after replacement of blades and the first time you use the machine.

The blades can be used on both sides**,** simply by turning the blades.

To obtain a satisfactory performance, it is important that blades and shearbars are intact and sharp. If the blades are not sharp the power requirement will increase unnecessarily and the cut will be unclean resulting in slow regrowth of the grass.

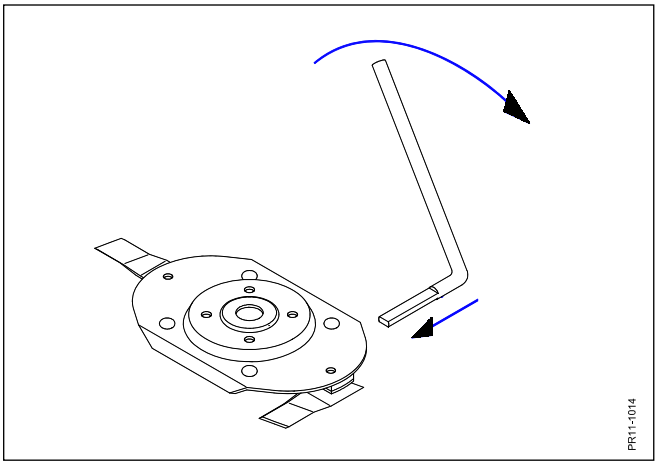


Fig. 5-5

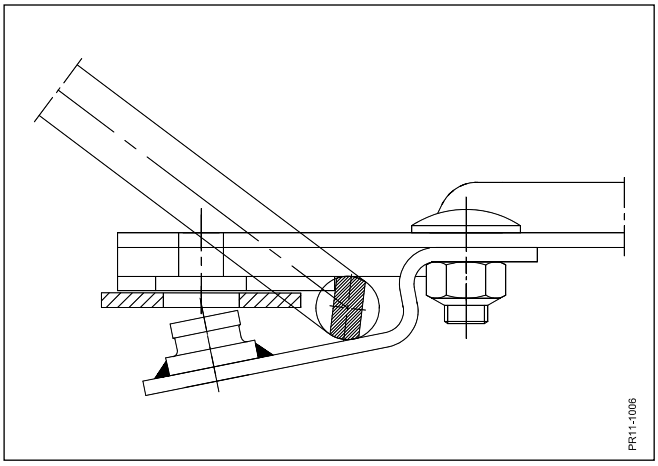


Fig. 5-6

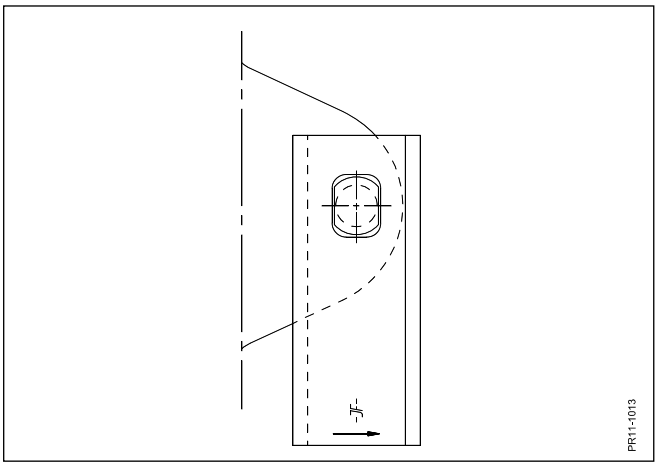


Fig. 5-7

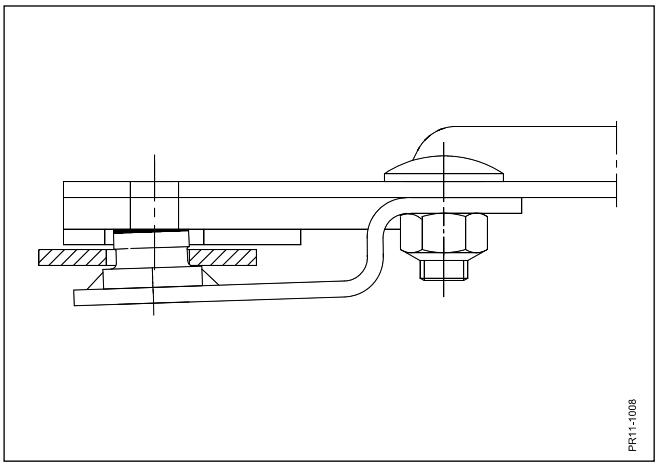


Fig. 5-8

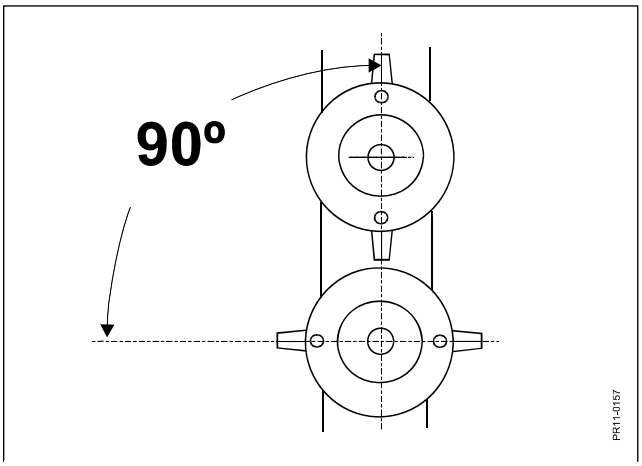


Fig. 5-9

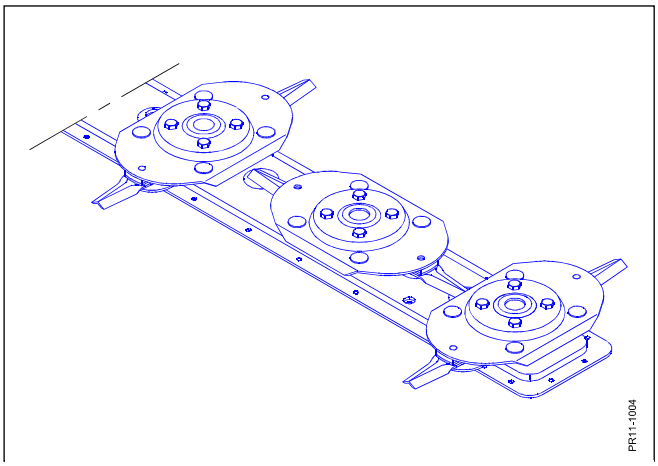


Fig. 5-10

REPLACEMENT OF BLADES

Fig. 5-5: Place the supplied tool for replacement of blades as shown with the short milled end behind the blade.

Fig. 5-6: Press the blade holder down by pulling the long end of the tool forward.

Fig. 5-7: Turn the blade 90 degrees to working position and release the blade.

When mounting blades this is done in reverse order.

Fig. 5-8: Make sure that the pin of the blade holder has correct contact with the disc.

Always make sure that:

- There are no impurities between the contact surfaces of the blade pin and the disc. See Fig.5-8.

- The blades can turn freely from side to side. (The blades will stop against the blade holder)

- If the blade pin is not in contact with the disc, the blade holder should be replaced.

After replacing, always check if:

- All discs have the required number of blades.
- Worn blades and the replacement tool have been removed from the machine.
- The guard has been placed correctly.

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

Fig. 5-10: Make sure that the 4 bolts for fastening the disc on the hub of the cutter bar are tightened to **120 Nm** (12 Kpm), and the screws which secure the blade holders are tightened to **80 Nm** (8 Kpm).

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

WARNING: After replacement of blades, blade holders, discs and the like, make sure that no tools have been left on the machine.

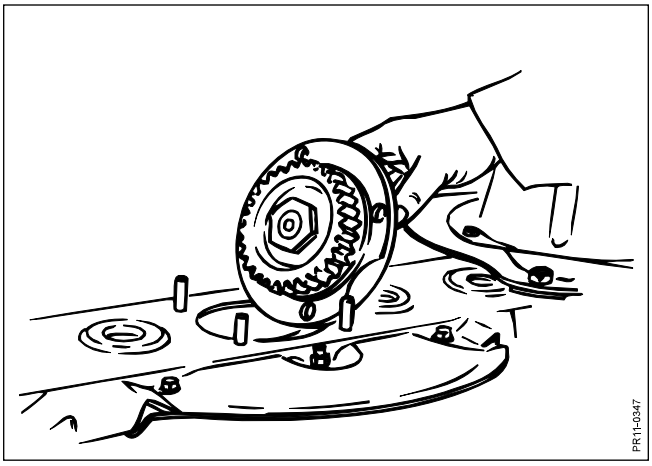


Fig. 5-11

REGULAR INSPECTION

It must be checked every day that all blades are intact in order not to cause an unbalance in the machine which might result in secondary damage.

CHECK WEARING PARTS

Though all parts in the Quick'n safe system are made of high-alloyed and hardened parts, they will be worn after some time.

Blade and blade holders must be checked regularly

If the bearing part at the blade holder pin is worn to a diameter as stated, the blade holder should be replaced completely (Fig. 5-4).

If the hole in the blade is worn and exceeds the size stated, the blade should be replaced (Fig. 5-3).
Check regularly if the blade holder is deformed or damaged due to collision with foreign matter. If this is the case, the blade holder should of course be replaced.

Also check regularly if the bolted joint between the blade holder and the disc are worn or loose. If this is the case, the bolts should be replaced. In this connection, the lock nuts should also be replaced.

A damaged disc, blade and/or blade holder should never be repaired, but must be replaced immediately.

Always use original spare parts.

REPAIRS

Fig. 5-11: SB has a cutter bar which allows the complete disc bearing housing to be dismounted at the same time, - a so-called Top Service cutter bar.

6. MISCELLANEOUS

DRIVING TIPS AND TROUBLE SHOOTING

Problem	Possible cause	Remedy
Uneven stubble or bad cut	The cutter bar is relieved too much.	Check the basic adjustment of the machine and reduce the relief if necessary by loosening the spring
	The number of rpm of the tractor is too low.	Check if the number of revolutions on the tractor PTO is 540 rpm, and not 1000. Make sure the number of rpm is constant
	The number of rpm of the machine is too low.	Check the tightening of the belt
	The blades are worn	Turn/move the blades to another disc or replace the blade
	Discs, stone protectors or flow caps are deformed.	Replace deformed parts
Stripes in stubble	The cutting angle is too large, the grass is not transported across the cutter bar	Extend the top link Increase the driving speed if possible. Mount flow caps on the discs
	Accumulation of material in front of the cutter bar	Mount special, sharp shearbars or replace worn shearbars
	Earth and grass around the cutter bar between the discs	Increase the driving speed if possible. Mount flow caps
	The machine operates early in the morning when the grass is still very wet	
The machine vibrates / Uneven operation	Blades deformed, damaged or missing	Replace or move damaged blades and/or mount new blades
	Defective PTO drive shafts	Check if the shafts are intact. Repair if necessary
	Defective bearings in cutter bar	Check if bearings are loose or damaged. Replace if necessary
	Deformed disc(s)	Replace disc(s)
	Defective flow caps and intensifiers	Replace flow caps and intensifiers
	Earth and grass in flow caps	Cleans flow caps
Gear or cutter bar overheated	Oil level not correct	Check the oil level and refill/drain if necessary NB: Maximum temperature in gearbox 80º C, in the cutter bar 90-100º C.
Power consumption unusually high	Crop and dust under the discs	Stop the tractor engine. Dismount the discs and clean cutter bar and discs. Check if the friction clutch is intact.
	String or wire is wrapped around a disc.	Remove strings or wires.

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 use a high pressure cleaner to clean the cutter bar and never spray directly on the bearings.

IMPORTANT: Grease all grease spots 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 required before the next season and order the parts.

- Slacken the V-belts.

- Dismount, clean and grease the PTO drive shaft. Remember to grease the profile tubes. Always keep the PTO shaft in a dry place.

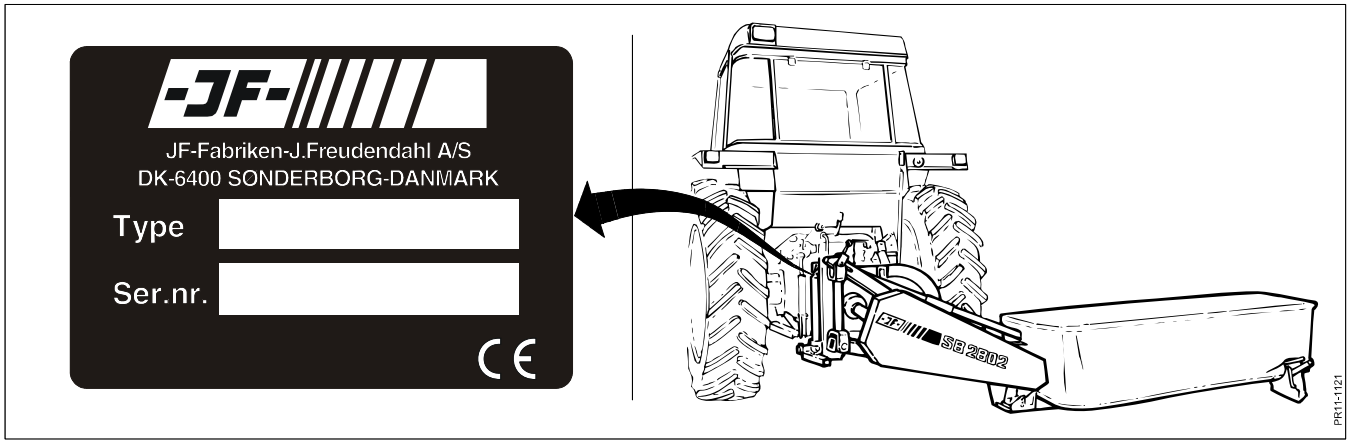
- Spray the machine with a thin coat of rust-preventing oil. This is especially important on all parts polished with use.

- Place the machine in a ventilated engine house.

SPARE PARTS ORDER

When ordering spare parts please state machine type and serial number.
This information is printed on the machine plate shown below.

We request you to write this information on the first page in the spare parts catalogue supplied with the machine as soon as possible after delivery so that you have the information at hand when ordering spare parts.



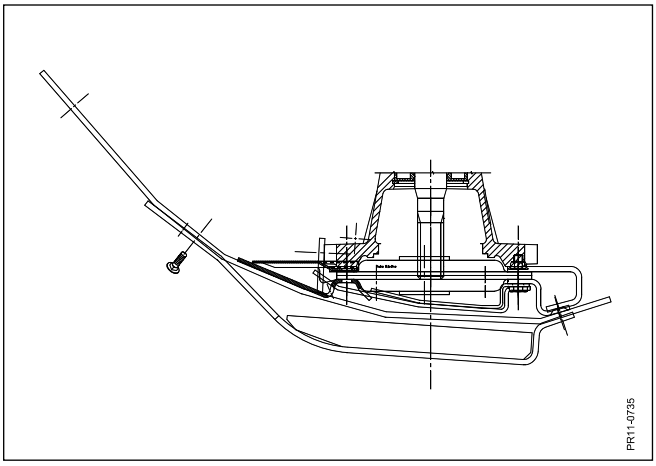


Fig. 6-1

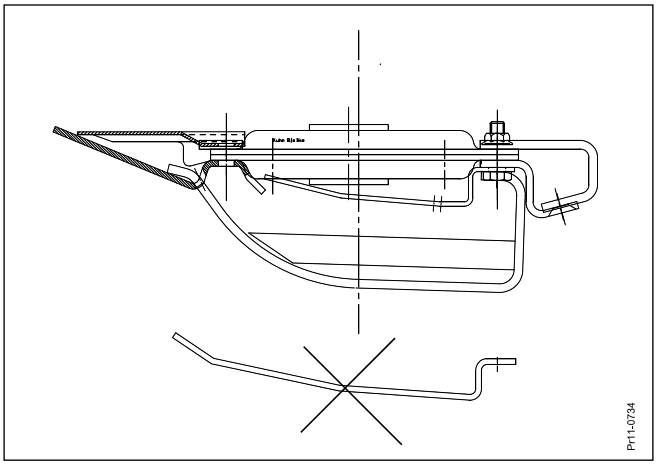


Fig. 6-2

OPTIONAL EQUIPMENT

Conc. order No: see spare parts list.

TOPPING EQUIPMENT

For topping of fallow fields, guide shoes can be mounted which will give a 7.5 cm higher stubble.
One large and one small guide shoe are used for each disc.
Fig. 6-1: Mount the large guide shoe under the existing guide shoe, under the gearbox.
Fig. 6-2: Mount the small guide shoes instead of the original ones under the discs.

FLOW INTENSIFIERS

If there is a problem transporting the crop across the cutter bar, flow caps can be mounted on all discs. Flow intensifiers are already mounted on the two outer discs. However, this only applies to machines equipped with round discs.

SUPPORT CHAIN

A special support chain can be supplied to secure and stabilise the depth stop of the lift arms.

DISPOSAL

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

Observe the following:

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

- Disassemble the machine and separate the individual recycling parts, e.g. PTO shafts, hydraulic hoses and components.

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

WARRANTY

JF-Fabriken - J. Freudendahl A/S, 6400 Sønderborg, Denmark, hereinafter 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, crimper parts, tyres, tubes, PTO drive shafts, clutches, V-belts, chains, rake and pick-up tines and beater bars for farmyard manure spreaders.

In addition, the user must note the following:

1. **The warranty is only valid if the dealer has undertaken a predelivery 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 the repair is not undertaken immediately.**

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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

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