
JF-STOLL

Drum Mower

CM 305



Instruction Manual

“Original instructions”
Edition 4 | April 2010

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
według 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 Nöns,

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EN declare under our sole responsibility, that the product:
DE erklären in alleiniger Verantwortung, dass das Produkt:
IT Dichiaro 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 responsabilidad propia que el producto:
PT declaramos com responsabilidade própria 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 :

CM 305

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 exigências 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 mainittuja perusturvallisuus- ja terveysvaatimuksia (soveltuvien osien) sekä muita siihen kuuluvia EY direktiivejä: 2006/42/EC



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.

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1. INTRODUCTION

INTENDED USE

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

The drum 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 drum 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 an effort on your part. However, damage can occur as a consequence of misuse and insufficient instruction.

A drum mower cannot be constructed so that it guarantees 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 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.

1. INTRODUCTION

GENERAL SAFETY INSTRUCTIONS

The following is a brief description of the measures, which should be observed by the operator.

Transport

- 1 Always lower the cutting unit to the ground or activate the transport safety device when parking the machine.
- 2 Never stand between the tractor and the mower during connection and disconnection.
- 3 Always drive with the statutory lights and safety marking during transport on public road and at night.
- 4 Always use transport safety devices and stop valves for hydraulic cylinders.
- 5 Limit the transport speed to maximum 30 km/h if the machine has not been marked with another maximum speed limit.

WORKING

- 6 During work never wear loose clothes which can be pulled in by the moving parts of the machine.
- 7 Use hearing protectors if the tractor has not been silenced sufficiently.
- 8 Make sure that all guards are intact and have been mounted correctly.
- 9 When connecting the PTO drive shaft, check for 540/1000 rpm.
- 10 Never start the tractor until all persons are safely away from the machine.
- 11 Do not stand near the machine while it is working.
- 12 Stop the machine if children are near.
- 13 Never use the machine for other purposes than what it has been constructed for.
- 14 Do not stand near – or try to lift a guard – until all revolving parts have stopped moving. This also applies when adjusting the machine!
- 15 Always disengage the PTO drive shaft, activate the parking brake and stop the tractor engine before you adjust the machine.

MAINTENANCE

- 16 Never work under the machine unless it is secured by means of stop blocks or other mechanical securing device.
- 17 Always block the tractor wheels before working under the machine.
- 18 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.
- 19 Remember to remove all tools before starting the tractor again.

SAFETY - JF-STOLL MOWERS

CHOICE OF TRACTOR

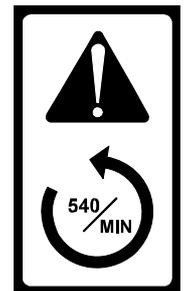
Always follow the recommendations specified in the instruction manual of the tractor. If this is not possible, technical assistance must be sought.

Choose a tractor with a suitable power on the PTO. To obtain full capacity under all conditions, we recommend you to choose a tractor which has 15 kW more than the informed minimum.

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

If you have chosen a machine which is constructed for 540 rpm, you should make sure not to use the wrong PTO by mistake. It is **highly dangerous** to connect a machine intended for 540 rpm, to a PTO delivering 1000 rpm.

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.

To maintain full control of the tractor under all conditions, minimum 20 % of the own weight of the tractor should be on the front axle. It may be necessary to use front weights to fulfil this requirement.

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

The hydraulic system of the tractor should deliver a pressure of maximum **210 bar**.

1. INTRODUCTION

CONNECTION AND DISCONNECTION

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

An unintentional manoeuvre with the tractor may cause serious injury.



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

The guard must be intact. If the guard is defective it must be replaced immediately.

Check that all hydraulic couplings are correctly mounted and tight and that all hoses and fittings are undamaged before activating the hydraulic system.

When the 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 the skin and the eyes against oil splashes. If, by accident, hydraulic oil under pressure hits you, consult a doctor immediately.



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.

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.

TRANSPORT

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

It is important to block hydraulic transport adjustments. An unintentional operation of the cylinders may cause the machine to move and at worst hit cyclists or pedestrians. This may also happen if there is air in the hydraulic cylinders or if there is a sudden loss of oil from the hydraulic hoses.

Therefore, always check that mechanical transport safety devices are activated before transport.

WORKING

Before working check blades and discs for cracks and other damage. Replace damaged blades and discs.

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

Loose stones and foreign matter in the field might get in contact with the revolving discs 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.

In stony fields the stubble height should be adjusted to maximum.

1. INTRODUCTION

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.

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

When working with a side-mounted mower, never drive too fast along slopes and hillsides as you should be able to avoid large stones, ditches and other obstacles which may cause the tractor to overturn.

Also remember to adjust the speed for sharp turns on hillsides and for lifting the machine in the three-point linkage.

The side-mounted mowers have a spring-loaded safety release which secures the directional stability of the tractor and reduces damage in case of collision.

Check that the safety release can be released and that it is not blocked.

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.

MAINTENANCE

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 mounted.

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

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

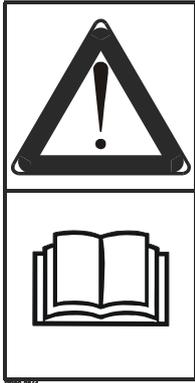
During the season check daily that no blades, carriers or bolts are missing. If any of these are missing, mount new parts immediately.

Clean caps (if mounted) and flow intensifiers of earth and grass regularly.

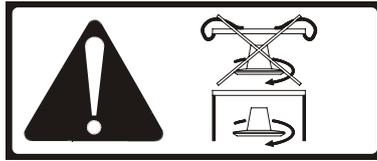
Friction clutches must be "aired" regularly to ensure that they do not get rusty.

1. INTRODUCTION

1



2



3



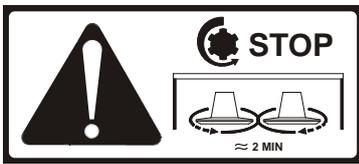
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5



6



7



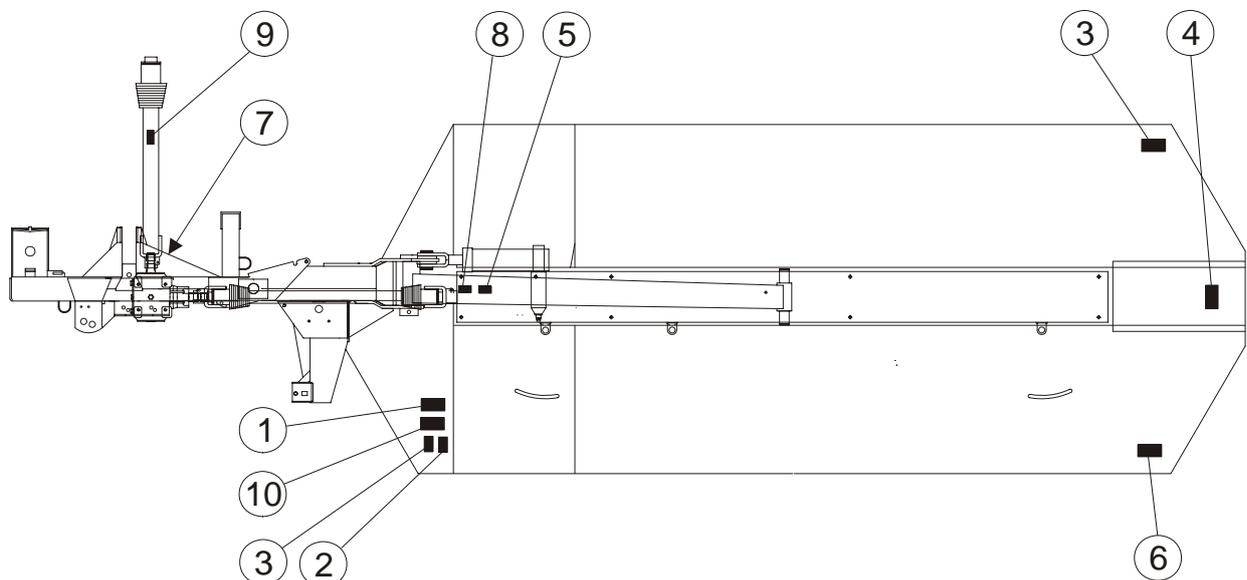
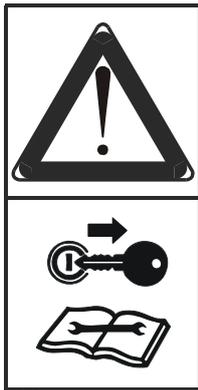
8



9



10



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 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.
- 3 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.
- 4 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.
- 5 Children**
Never let children stand near the machine during operation. Especially not small children as they have a tendency to do unforeseen things.
- 6 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.
- 7 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 eventually damage the machine with the risk of personal injury as a result.
- 8 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.
- 9 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.
- 10 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.

1. INTRODUCTION

TECHNICAL DATA

			CM 305
Working width	[m]		3.05
Capacity	[Ha/h]		2.7 – 3.1
Power requirement on PTO	[kW/HP]		Minimum 54/73
PTO	[rpm]		1000
Suspension (Standard)			Cat. II
Hydraulic outlets			1 double-acting
Weight	[kg]		900
Ground pressure	[kg]		70 - 80
Driving speed	[km/h]		8 – 15
Number of discs	[pcs.]		4
Number of blades	[pcs.]		12
Variable stubble height	[mm]		35 - 50
Transport width	[m]		< 3
Stone release, mechanical			Standard
Freewheel			Standard
Friction clutch			Standard
Setting on friction clutch	[Nm]		1200
Noise level in the tractor cabin	Machine connected	Window closed	76.2 dB (A)
		Window open	89.2 dB (A)
	Machine disconnected	Window closed	75.9 dB(A)
		Window open	83 dB(A)

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

2. CONNECTION AND TEST DRIVING

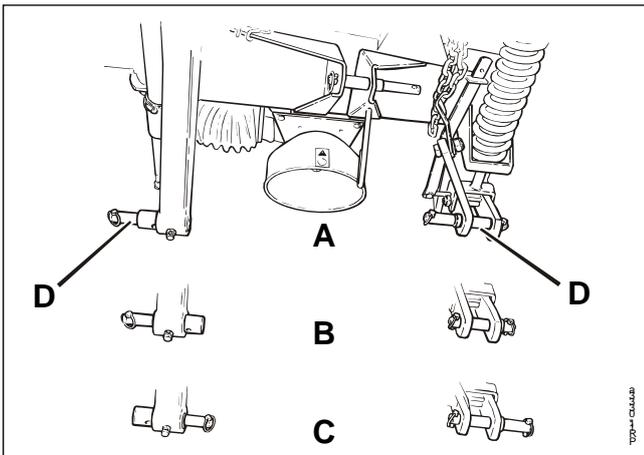


Fig. 2-1

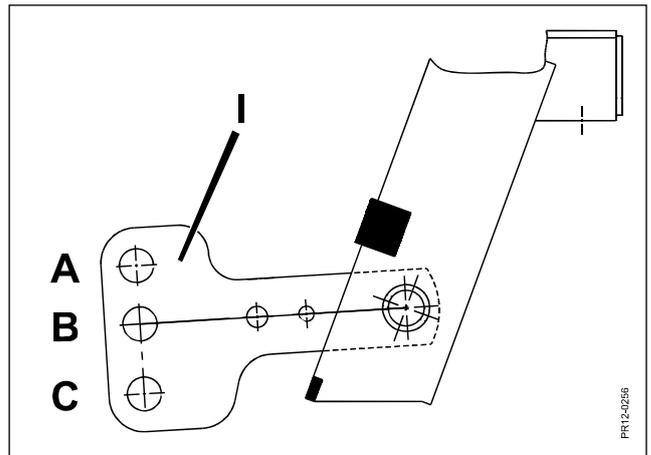


Fig. 2-2

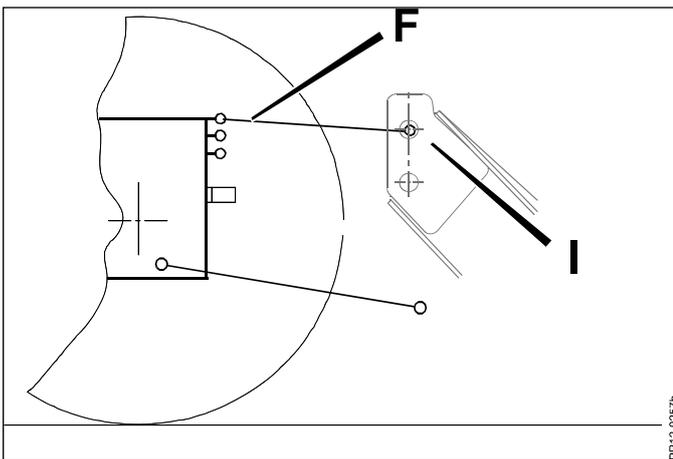


Fig. 2-3

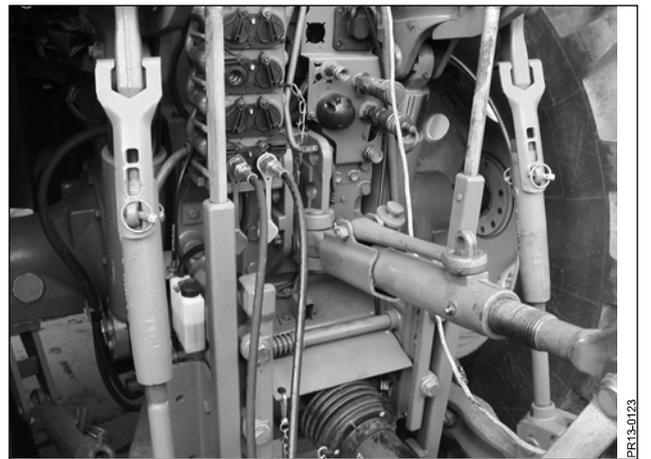


Fig. 2-4

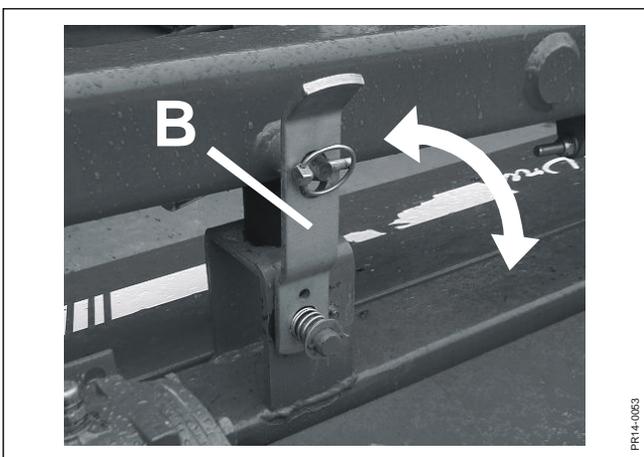


Fig. 2-5

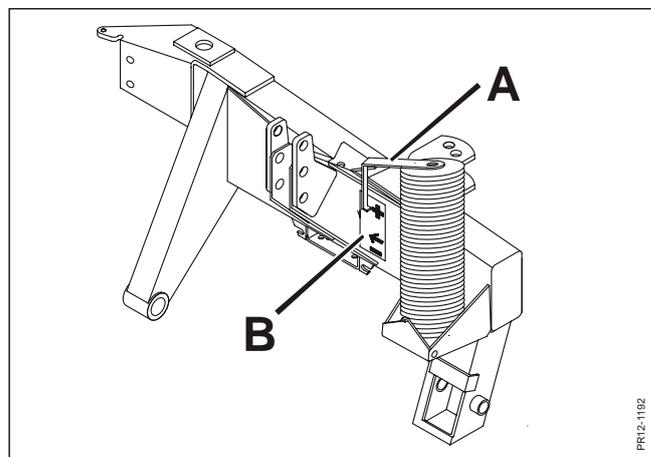


Fig. 2-6

2. CONNECTION AND TEST DRIVING

CONNECTION TO THE TRACTOR

First, the machine should be adjusted to the track width of the tractor.

Fig. 2-1 You can choose between 3 settings (**A**, **B** and **C**) of the pins on the headstock corresponding to the following track width sizes.

Track width [mm]	Pin position
< 1650	A
1650 – 1850	B
> 1850	C

The adjustment of the pins is made by loosening and adjusting the fixed pin and adjusting the loose pin according to fig. 2-2.

Fig. 2-2 Choose middle hole **B** in the lever arm **I** at the left coupling point.



WARNING: Cat III link arms may in hole **A** damage the spring tightener.

Fig. 2-1 Connect the link arms of the tractor to the coupling points **D** of the machine.

Fig. 2-3 Mount the top link **F** so that it is approximately parallel with the link arms of the tractor.

Thereby a suitable movement is achieved when lifting the machine with the link arms and optimal conditions for later connection and disconnection of the machine.

Fig. 2-4 Connect the hydraulic hoses to a double-acting hydraulic outlet. Place the machine in working position by first raising the link arms, then activate the double-acting outlet, and at the same time actuate the valve by pulling the cord.

Fig. 2-5 Release the transport lock **B**.

Fig. 2-6 Adjust the relief of the machine as follows:

- 1) Place the handle for the double-acting hydraulic outlet in floating position.
- 2) Raise/lower the link arms of the tractor until the indicator **A** is on level with the arrow on the transfer **B**.
- 3) Lock the link arms in this position.

A lighter machine (lower ground pressure) is obtained by raising the link arms so the indicator **A** moves approximately 1 cm down towards - on the transfer **B**.

A heavier machine (higher ground pressure) is obtained by lowering the link arms so the indicator **A** moves approximately 1 cm up towards + on the transfer **B**.

2. CONNECTION AND TEST DRIVING

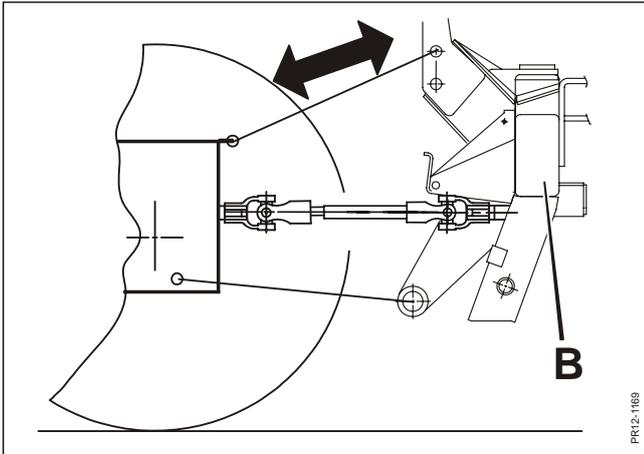


Fig. 2-7

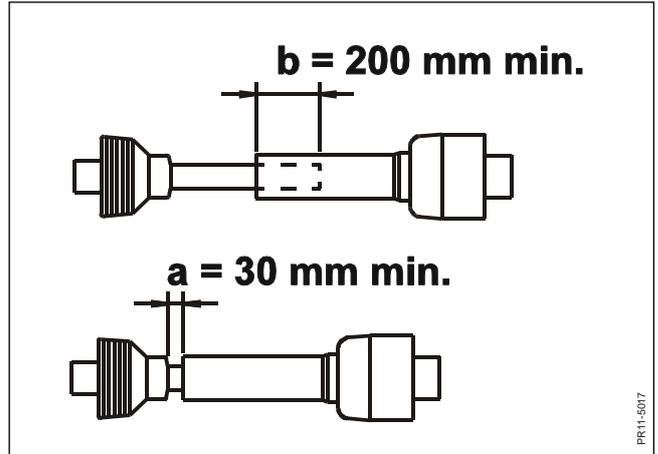


Fig. 2-8

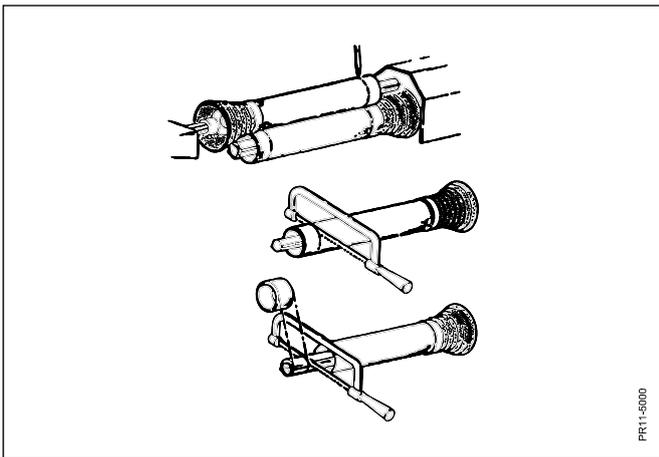


Fig. 2-9

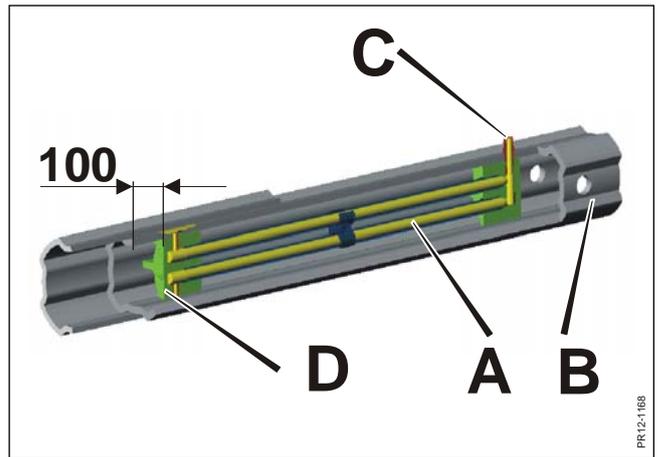


Fig. 2-10

2. CONNECTION AND TEST DRIVING

Fig. 2-7 Adjust the length of the top link so the headstock **B** is vertical.

Fig. 2-8 Adjust the length of the PTO drive shaft so that it in working position has minimum 200 mm overlapping on the profile tubes, in no position is compressed more than the prescribed 30 mm in order not to bottom the shaft, and in the longest position has minimum 100 mm overlap.

Fig. 2-9 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 outside and inside. 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. 2-10 The PTO shaft has an internal greasing system **A** which makes it possible to grease the profile tubes **B** at **C** without disassembling the shaft. Due to this greasing system you can shorten the shaft 100 mm maximum, which is the distance to the grease bush **D**. In extreme cases where further shortening is necessary, you have to shorten at the other side of the bush, and the greasing system must be dismantled. After this the tubes are greased by disassembling the 2 half parts.



IMPORTANT: For the warranty of the PTO shaft to be valid, and to retain the durability, the following rules must be observed.

- Always start the machine with the engine running at low speed.
- Always start the machine with the PTO shaft in a position of maximum 10° from horizontal.
- A sudden increase in the number of rpm of the machine, e.g. when driving into the crop after turning in the field, must only take place with the PTO shaft in a position of maximum 10° from horizontal.
- Last, but not least: Grease the PTO shaft and especially its profile tubes every 8 working hours, minimum.

FRICION CLUTCH

On some models the PTO shaft has an integral friction clutch. Its purpose is to secure the transmission against overload when working in the field and when starting the machine (connection of the power take-off (PTO)). The friction clutch must be “aired” before starting a new machine. See section 5. MAINTENANCE – FRICTION CLUTCH, and do this during test driving.

TEST DRIVING

When all guards are in place and the machine is in working position, a test drive can be made.

Before connecting the PTO, check if all tools have been removed from the machine and that no persons are near. Connect the PTO shaft carefully and let the engine run at low number of rpm for some minutes. If there is no unintended noise or unusual vibrations, the speed can be increased to normal number of RPM.

Apart from the tractor driver nobody should stand near the machine.

3. ADJUSTMENTS AND DRIVING

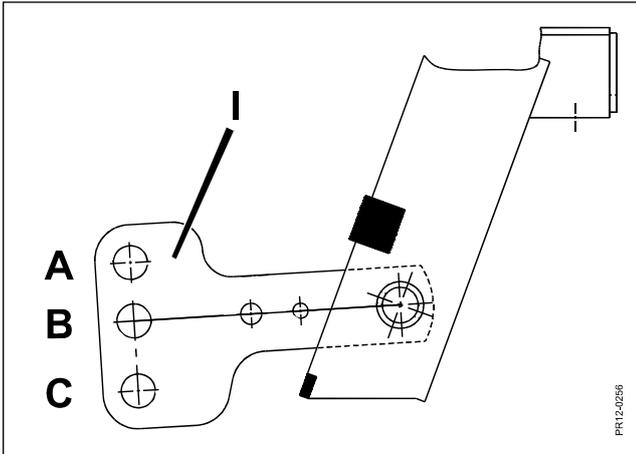


Fig. 3-1

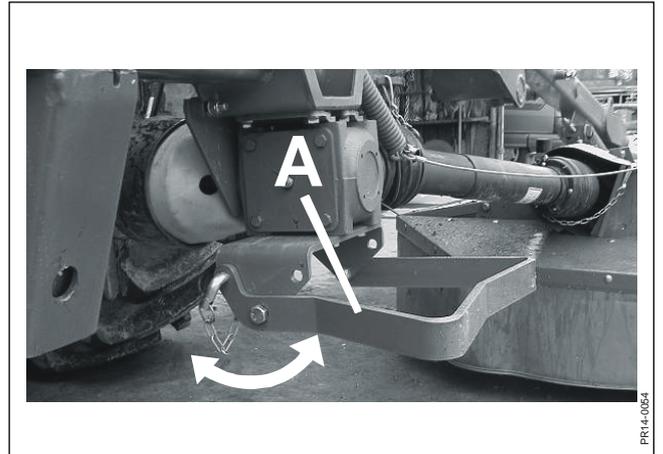


Fig. 3-2

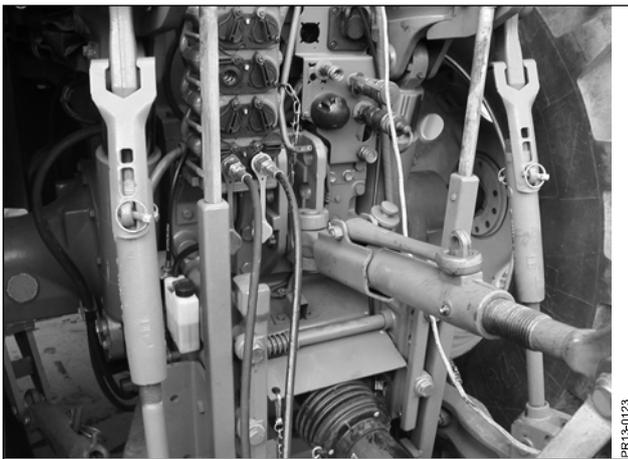


Fig. 3-3

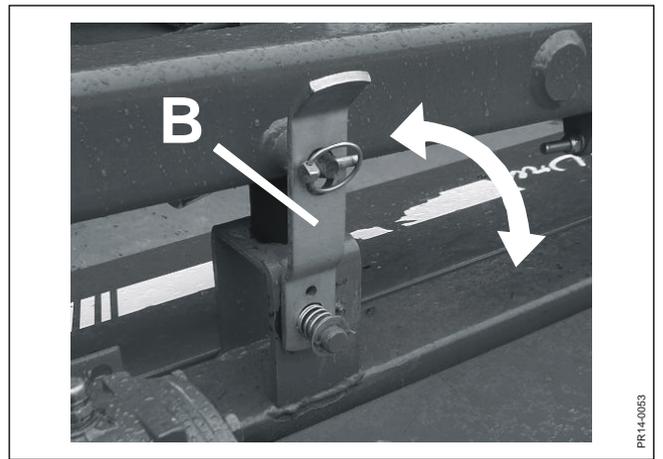


Fig. 3-4



Fig. 3-5



Fig. 3-6

3. ADJUSTMENTS AND DRIVING

CONNECTION

Note:

The following instructions imply that the machine has been prepared, adjusted to the tractor and tested according to section 2. CONNECTION AND TEST DRIVING.

Instruction for normal connection:

- 1) Place the tractor right in front of the three-point linkage of the machine.
- 2) Check if the link arms of the tractor are at the same height.
- 3) Connect the machine to the link arms of the tractor. Choose middle hole **B** in the lever arm **I** at the left coupling point.

Fig. 3-1



WARNING: Cat III link arms may in hole **A** damage the spring tightener.

- 4) Mount the top link. It should be approximately parallel with the link arms.

Fig. 3-2

- 5) Raise the link arms so that the jack **A** can be lifted.

Fig. 3-3

- 6) Connect the hydraulic hoses to a double-acting hydraulic outlet.

SWITCHING BETWEEN WORKING AND TRANSPORT POSITION

Fig. 3-4 The transport lock **B** is released for working position and locked for transport position.



WARNING: Conversion to transport position should not take place with revolving PTO shafts.
The PTO shafts cannot rotate in transport position.

Fig. 3-4 The pendulum suspension must be locked with the transport lock **B** during transport to avoid traffic damage, but also to prevent that the PTO shaft bottoms during transport.



DANGER TRAFFIC MARKING: Before transporting the machine on public road, make sure that the traffic rules can be observed. This, of course, implies that the machine does not cover the lights and signals on the tractor.

Fig. 3-5 The machine is equipped with a valve that only allows switching between transport and working position when it is actuated.

Fig. 3-6 Switching: With the machine raised activate the hydraulic outlet and at the same time actuate the valve by pulling the cord.

3. ADJUSTMENTS AND DRIVING

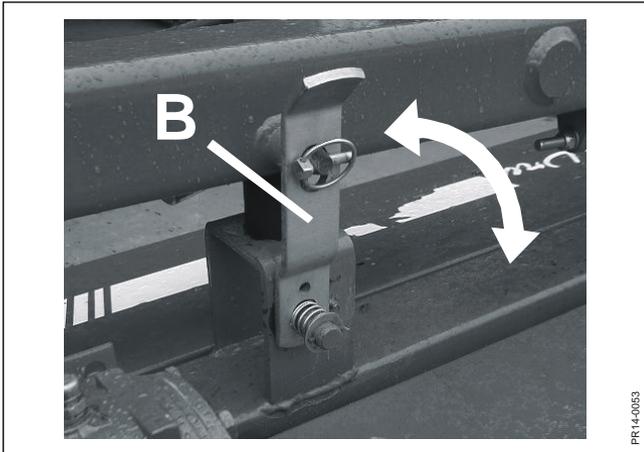


Fig. 3-7

PR14-0053

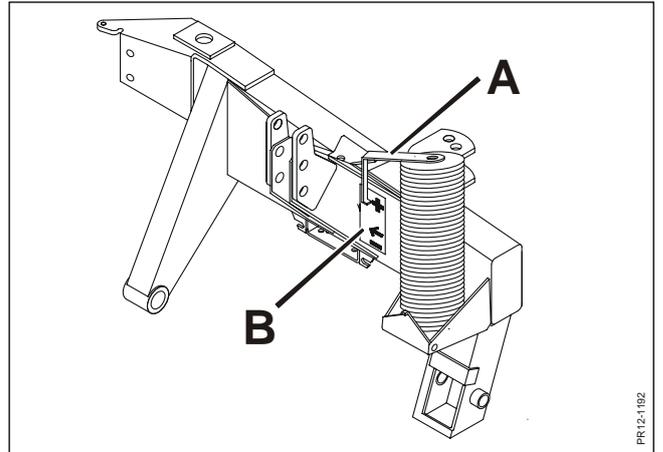


Fig. 3-8

PR12-1192

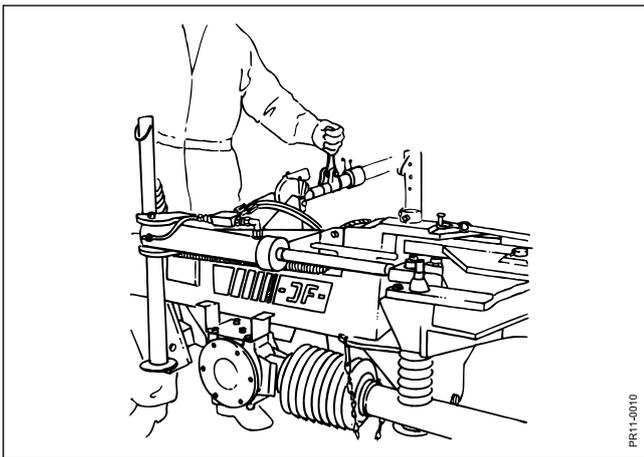


Fig. 3-9

PR11-0010

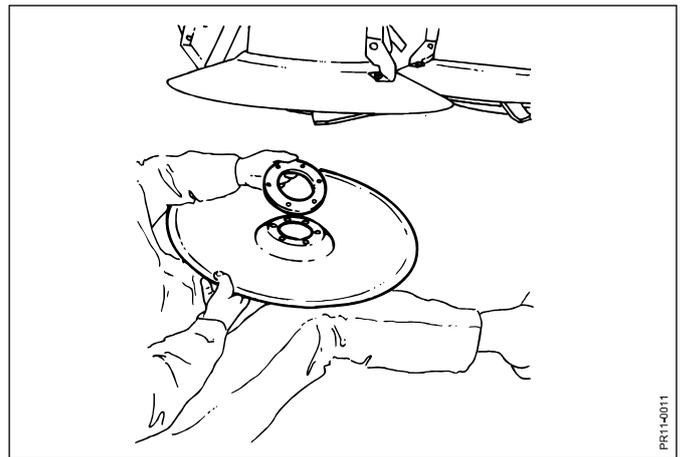


Fig. 3-10

PR11-0011

PARKING

- Fig. 3-7**
- 1) Release the transport lock **B**.
 - 2) Lower the link arms so that the top link can be disconnected from the headstock.
 - 3) Lower the jack of the machine.
 - 4) Disconnect hydraulic hoses and the PTO shaft from the tractor.
 - 5) Lower the link arms until the machine rests on the ground, release the link arms and drive the tractor away.

WORKING IN THE FIELD

BASIC ADJUSTMENTS

- Fig. 3-7** Raise the machine.
The machine must be in working position with the transport lock **B** released.
Actuate the valve by pulling the cord and move the machine to working position beside the tractor.
Lower the machine.

- Fig. 3-8** Adjust the double-acting hydraulic outlet to floating position. Raise/ lower the link arms until the machine is at the correct working height. This is obtained when the indicator **A** is at level with the arrow on the transfer **B** as described in chapter 2.



CAUTION: Stop the tractor engine, remove the ignition key and activate the parking brakes before changing the adjustments of the machine.

CUTTING HEIGHT

- Fig 3-9** The cutting height can be adjusted with the length of the top link. A short top link gives a low cutting height.
N.B. Avoid backward inclination as the machine will then recut.

- Fig. 3-10** A higher cut is obtained by mounting the supplied spacers at the guide shoes (the tool packet).

STARTING



CAUTION Before starting check that the guards are intact and that no persons are near.

Before driving into the crop, increase the PTO to 1000 rpm.
Always make sure that the number of revolutions is not reduced considerably during the operation as this might result in an unsatisfactory cut.

Always adjust the driving speed to the conditions of the ground.

3. ADJUSTMENTS AND DRIVING

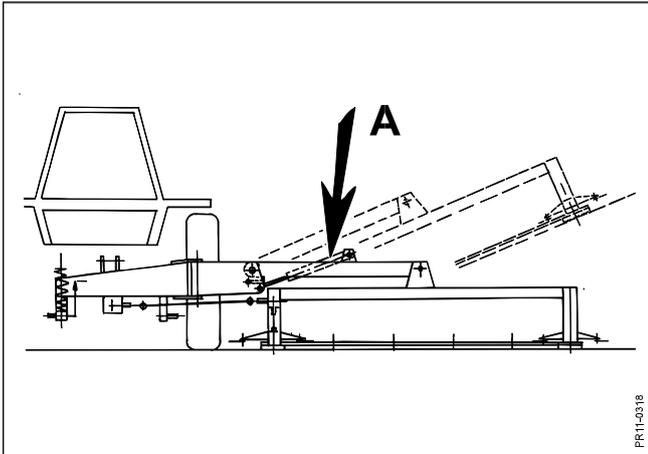


Fig. 3-11

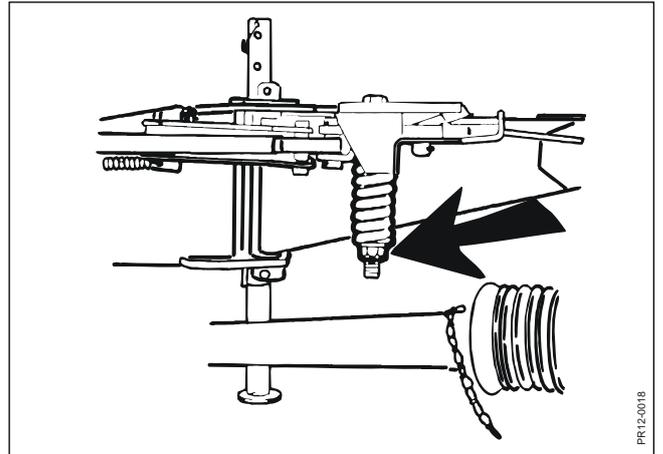


Fig. 3-12

TURNING

Fig. 3-11 When turning in the field, use the lifting cylinder **A** to raise the boom to max. (Easy Lift).

THE BREAK-AWAY MECHANISM

A mechanical stone release enables the cutting unit to swivel backwards in case of collision with foreign matter.

When the stone release is activated, disengage the power take-off and stop driving immediately.

Disengagement is important as the PTO shafts will otherwise be exposed to a large angle due to the backwards movement of the cutter bar.

The stone release can be reactivated by reversing the tractor with lowered cutting unit.

The factory setting of the stone release is adjusted to most conditions.

Fig. 3-12 Tighten the spring to 145 mm (5 mm = 3 turns of the nut).

If the break-away mechanism is activated too often, it is of course possible to increase the initial tension of the spring. Never tighten the spring so much that it blocks the mechanism due to insufficient spring travel.

SECURING AGAINST OVERLOAD



IMPORTANT: The tractor driver can secure the transmission against overload!

When using the machine, the following should be considered:

- 1) Always start the machine with the engine running at low speed. 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 RPM of the machine, e.g. when driving into the field or after turning in the field should also happen with the machine lowered to working position.
- 4) Listen to the RPM of the tractor when working in the field. If the 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 case, the friction clutch will slip and you should disconnect the PTO immediately and let the machine "rest".

3. ADJUSTMENTS AND DRIVING

WORKING IN THE FIELD

There are several important conditions to be aware of when mowing with the machine.

Theoretically, it is possible to work with a speed of 15 km/h. However, always adjust the driving speed to the conditions, i.e. the amount of crop and the conditions of the ground.

The tractor driver should constantly be in full control of the tractor and be able to avoid unevenness on the ground and foreign matter in front of the tractor and the machine.

Reduce the driving speed if:

- the ground is uneven or hilly
- the crop is lodged
- the crop is unusually high and thick

Increase the driving speed if:

- the crop is low and thin
- the crop contains for instance peas etc.

As mentioned earlier, it is important that you pay special attention when working on hilly ground. Reduce the driving speed and be aware of the movement of the machine on the ground.

On hilly ground there is a greater risk that the machine hits a bank of earth or foreign matter and you, as tractor driver, should minimise the risk of damage to the equipment.

3. ADJUSTMENTS AND DRIVING

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

IMPORTANT: The construction of the machine does not allow you to reverse when the machine is in working position. Therefore, **always** lift the cutting unit from the ground when turning.

Be especially aware of sudden movements and bumps against the cutting unit and reduce the driving speed considerably. If necessary, declutch, stop and examine the obstacle. (The above especially applies in stony areas).



IMPORTANT: After heavy collisions with obstacles, always check the machine for any possible damage. Especially the bearing parts and the cutting parts.

REMEMBER: As long as the stubble remains uniform and the machine moves evenly and smoothly on the ground, the driving speed is at the correct level.



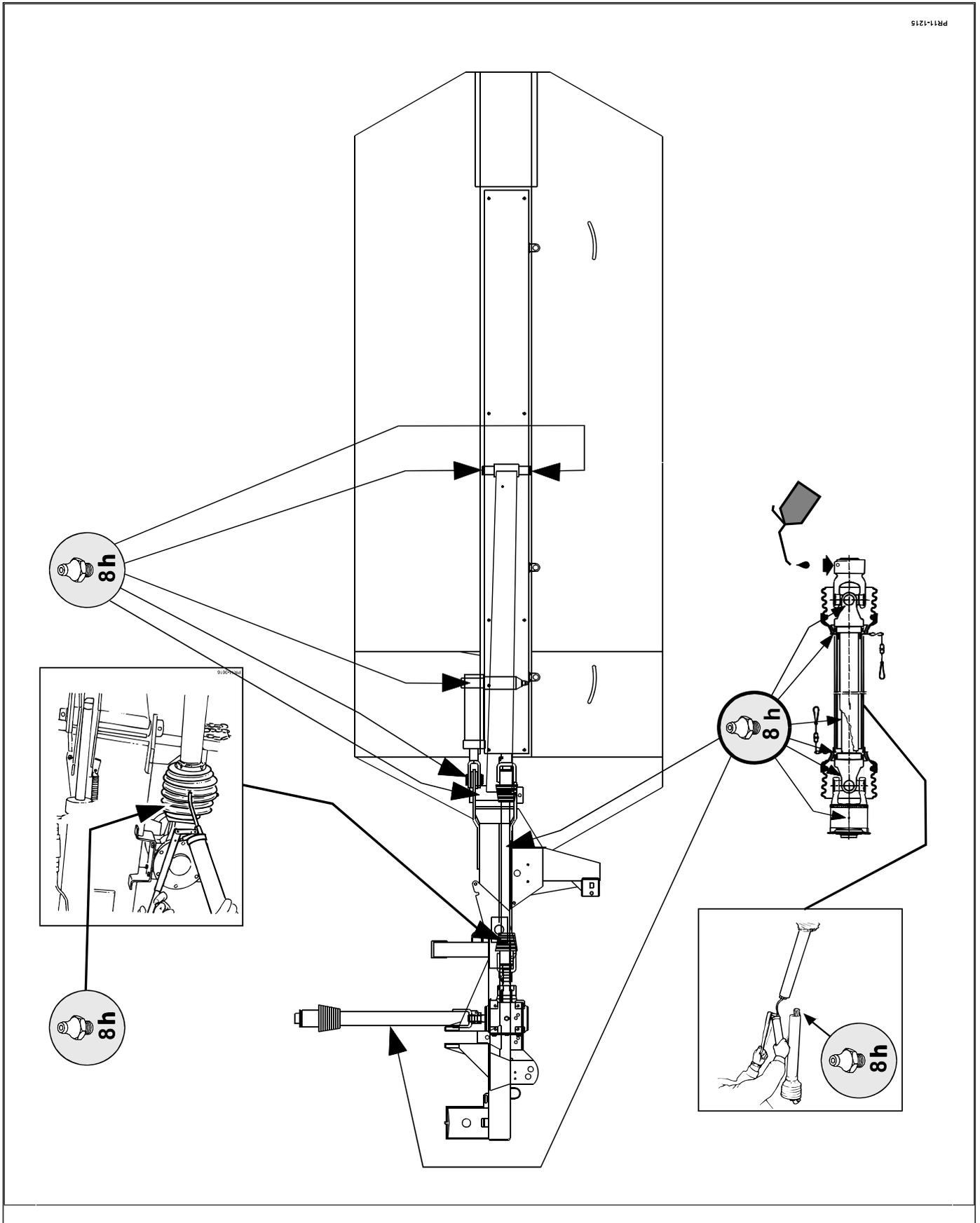
DANGER: When driving along field boundaries and steep slopes, always be careful and never drive too fast, as there is a risk of foreign matter on the boundary and often varying ground conditions along steep slopes and boundaries.

During mowing make sure to keep a constant and correct number of rotations on the PTO shaft (see page 17) to ensure that the cutting parts work optimally.

4. GREASING

Lubrication chart for drum mower type CM 305

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



4. GREASING

GREASE

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

Go through the greasing chart on the opposite page.

TYPE OF GREASE: Universal grease of good quality.

The rotor gearbox is pre-lubricated with special grease type:

SHELL ALVANIA RO

Check and refill is unnecessary. When repairing only use this type of grease.

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



CAREFUL - REMEMBER:

Lubricate the PTO shafts after every 8 working hours.

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.

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.

4. GREASING

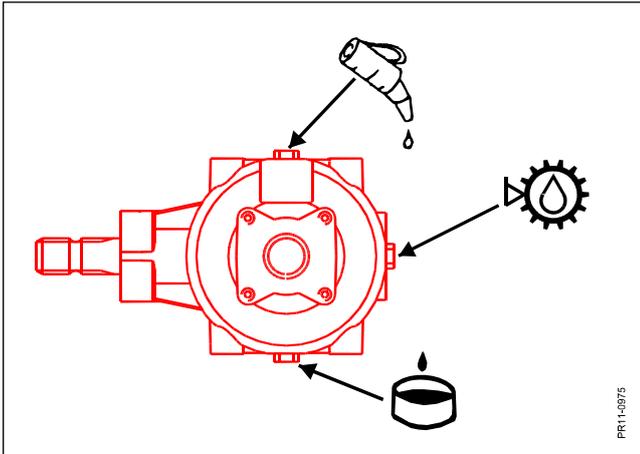


Fig. 4-1

4. GREASING

BEVEL GEARBOX ON THE HEADSTOCK

- Fig. 4-1 Oil content:**  **1000 rpm = 1.2 l**
- Oil type:** API GL4 or GL5 SAE 80W -90
- Oil level:**  **Check the oil level after every 80 hours of operation.**
- Oil change:**  First oil change after 50 working hours and then after every 500 working hours or at least once a year.

5. MAINTENANCE

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

Fig. 5-1

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 RULES** 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.

Fig. 5-1 Torque moment M_A (if nothing else has been stated)

5. MAINTENANCE

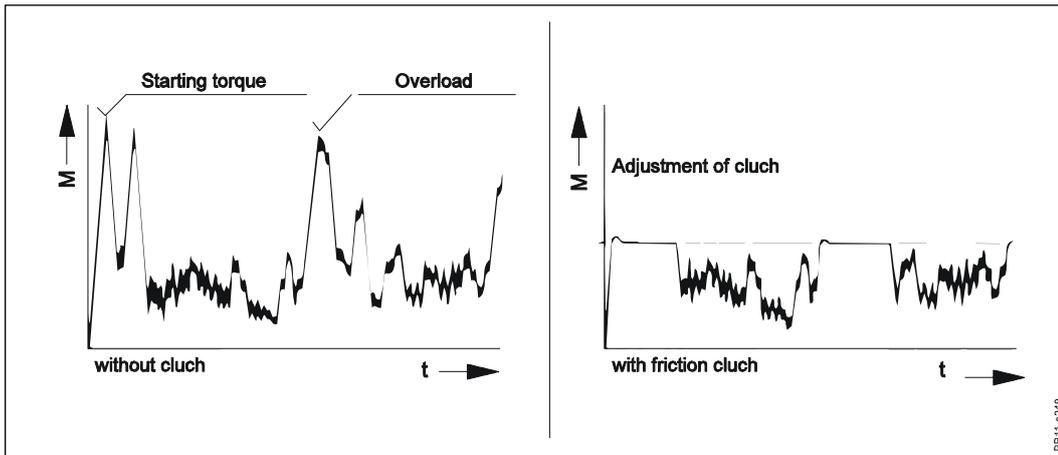


Fig. 5-2

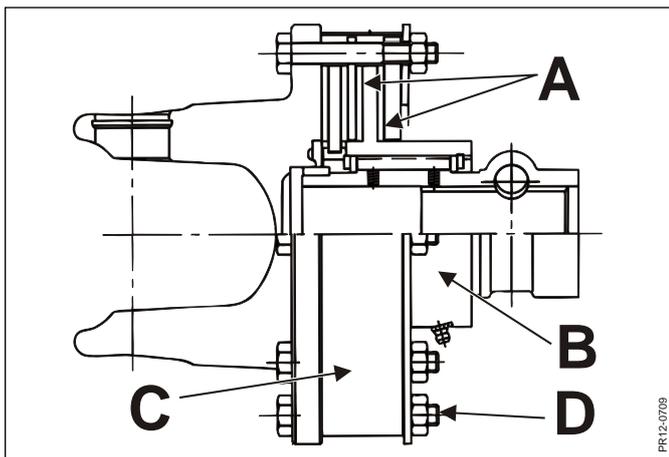


Fig. 5-3

FRICTION CLUTCH

In order to protect your tractor and machine, CM 305 is equipped with a PTO shaft with friction clutch.

Fig. 5-2 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.

Maintaining the friction clutch:

- Fig. 5-3**
- 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.



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

CONTROL OF BALANCE



WARNING: When driving in the field you must always pay attention if the machine starts vibrating more than usually or if it has jarring sounds. The drum rotates with approx. 2000 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 blades are intact. In the long run unbalance will cause fatigue fractures and serious damage.

All machines manufactured by JF-Fabriken are tested and checked for vibrations with special tools.

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

5. MAINTENANCE

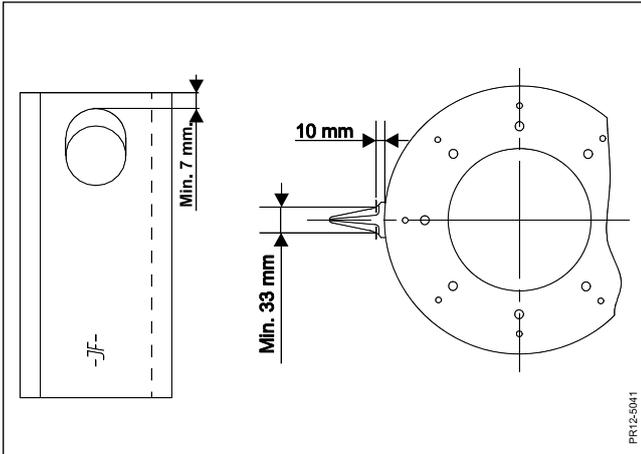


Fig. 5-4

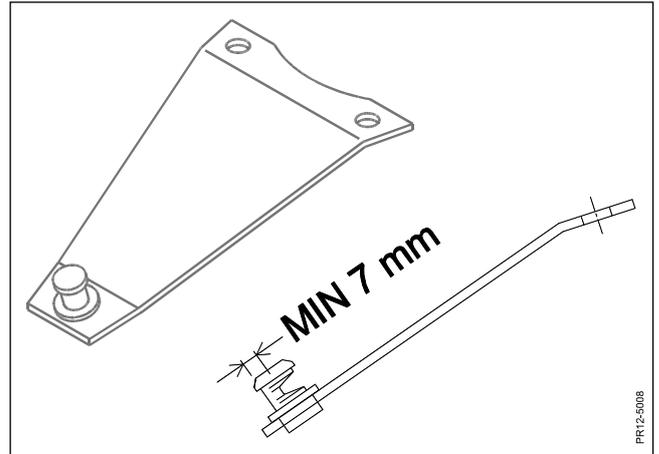


Fig. 5-5

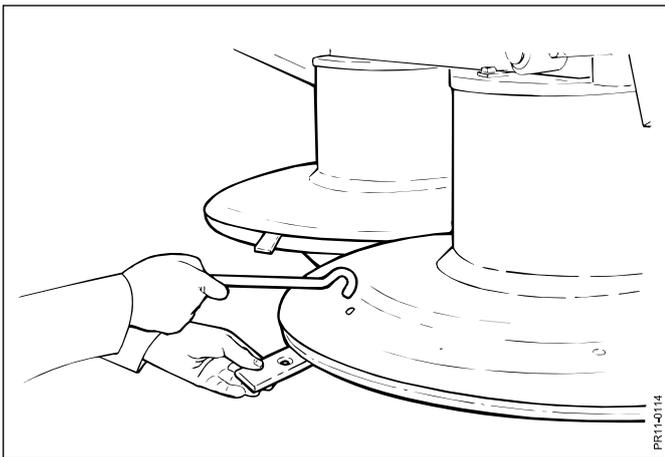


Fig. 5-6

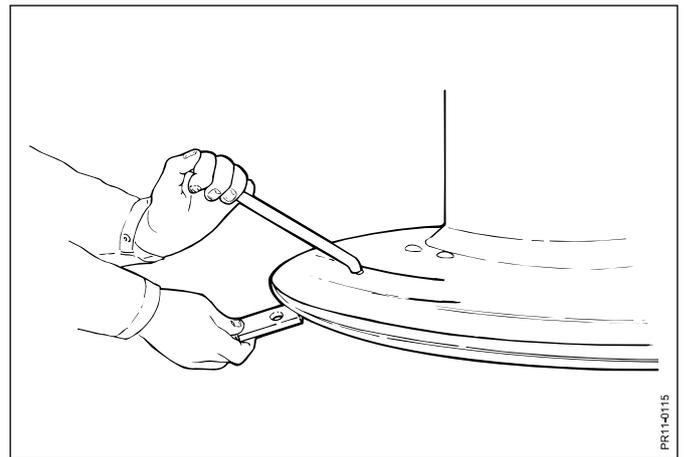


Fig. 5-7

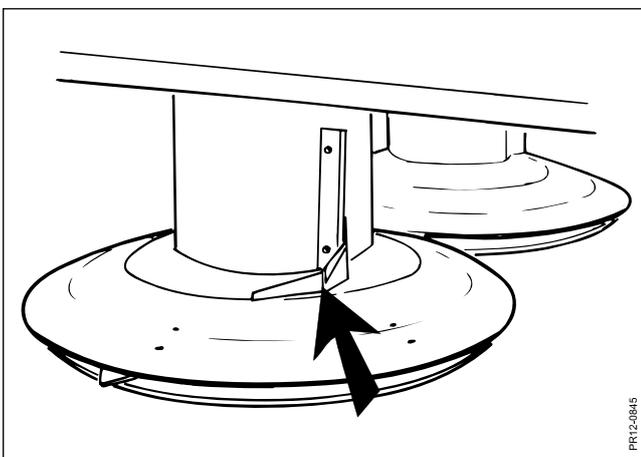


Fig. 5-8

5. MAINTENANCE

BLADES

When replacing blades, the cutting unit must be secured by means of a stop block or other mechanical securing device.

To obtain satisfactory cutting it is important that blades are intact and sharp. If the blades are not sharp the power requirement will increase unnecessarily and the cut will be unclear resulting in slow re-growth of the grass.

The blades have two cutting edges and can thus be worn on two sides.

- Remove straight blades to the neighbouring rotor.
- Turn twisted blades.

Fig. 5-4 Blades must be replaced if:

- 1) they are bent or cracked,
- 2) the blade width is less than 33 mm measured 10 mm from the edge of the rotor skirt.
- 3) the metal thickness around the blade hole is less than 7 mm.

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

BLADE HOLDERS

Fig. 5-5 Replace blade holders if:

- 1) they are deformed
- 2) the diameter of the blade pin is less than 7 mm.

REPLACEMENT OF BLADES

Fig. 5-6 Place the tool for replacement of blades in the hole on the rotor skirt
Fig. 5-7 turn it halfway around and release the blade by pulling towards yourself.
Remove the old blade and mount the new one by moving the tool away from you.



WARNING: After replacing blades, blade bolts, rotors etc., check that no tools have been left on the machine.

CONDITION OF THE ROTOR SKIRTS

If the edges in front of the blades are deformed/worn, the blade holders can be moved to a new position. **All** blade holders must be removed.

CARRIERS/DRUMS

Fig. 5-8 Check that carriers on the drums are in place and intact. The drums can be deformed by stones and the like. If this results in unbalance, they must be replaced.
(Unbalance can be due to accumulation of dust, seeds and the like in the drums.)

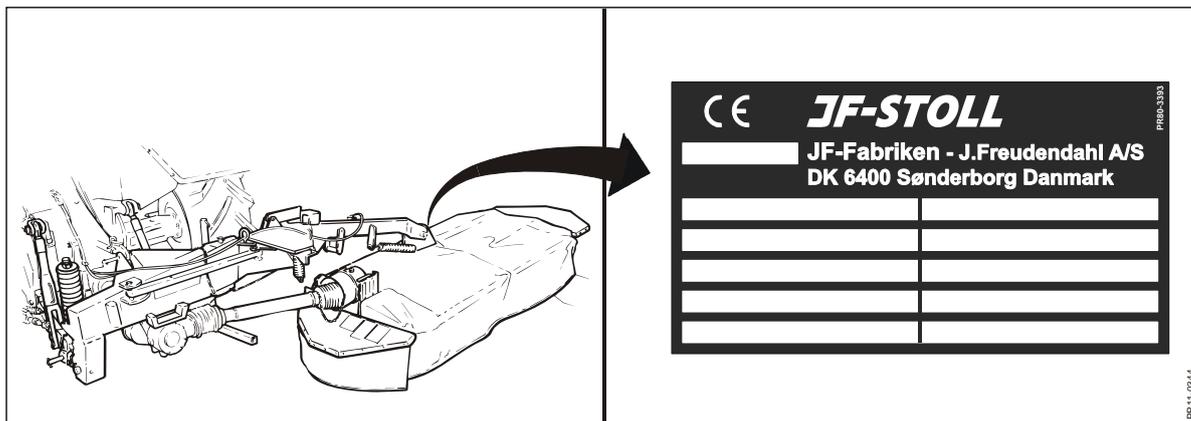
6. MISCELLANEOUS

DRIVING TIPS AND FAULT-FINDING

Problem	Possible cause	Remedy
Uneven stubble or bad cut	<p>The cutter bar is relieved too much.</p> <p>The number of rpm of the tractor is too low.</p> <p>The blades are worn</p>	<p>Check the basic adjustment of the machine and, if necessary, reduce the relief by lowering the link arms.</p> <p>Check that the number of rotations of the tractor PTO is correct. Keep a constant number of RPM</p> <p>Turn/move the blades to another rotor or replace the blades.</p>
Stripes in stubble	<p>The cutting angle is too big.</p> <p>The blades are worn</p> <p>You are working early in the morning when the grass is still very wet</p>	<p>Adjust the cutter bar more horizontal by lengthening the top link Increase the driving speed, if possible</p> <p>Turn/move the blades to another disc or replace the blades</p> <p>Increase the driving speed, if possible</p>
The machine vibrates/ uneven operation	<p>Blades may be deformed, damaged or missing</p> <p>Defective PTO drive shafts</p> <p>Rotors or drums are deformed</p> <p>Defective bearings in rotor or guide shoes</p> <p>Earth and grass in drums and rotor skirts.</p>	<p>Replace or move damaged blades and/or mount new blades</p> <p>Check if the shafts are intact. Repair, if necessary</p> <p>Replace deformed parts.</p> <p>Check if bearings are loose or damaged. Replace if necessary</p> <p>Clean drums and rotor skirts</p>

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, - 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. tyres, hydraulic hoses, hydraulic valves etc.
- Hand over the usable parts to an authorised recycling centre. The large scrapping parts are handed over to an authorised breaker's yard.

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.**

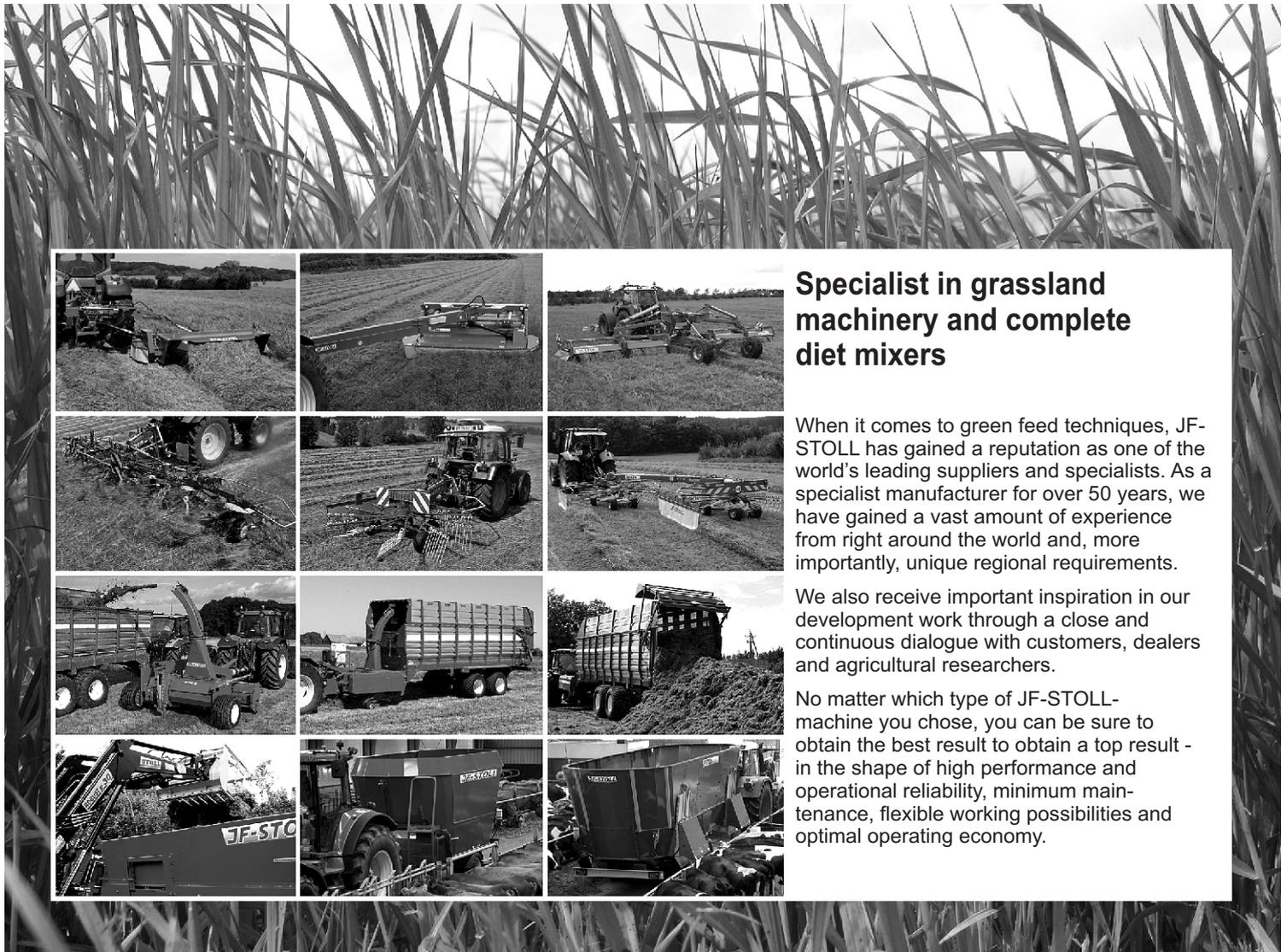
Warranty is not granted on wearing parts unless it can clearly be proved that JF has committed a fault.

The following is regarded as wearing parts:

Protective canvases, blades, blade suspensions, shearbars, guide shoes, stone protections, discs, rotor skirts, conditioner parts, tyres, tubes, brakes shoes, chain tightener parts, guards, hydraulic hoses, conveyors, wheel-fixing bolts and nuts, snap rings, sockets, PTO drive shafts, clutches, gaskets, seals, tooth belts, V-belts, chains, sprocket wheels, carriers, conveyor chain slats, rake and pick-up times, rubber seals, rubber paddles, shares, wearing plates and lining for spreading platform, shredding blades incl. bolts and nuts, beaterbars 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.**



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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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