ORIGINAL INSTRUCTIONS - *according to Directive 2006/42/EC, Annex I 1.7.4.1*

OPERATOR'S MANUAL

FC 860

Harvester

Part number 81PIGB-204x
1st edition English
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KONGSKILDE

FOREWORD

DEAR CUSTOMER!

We appreciate the confidence you have shown to our company by investing in a KONGSKILDE product and congratulate you on your new purchase. Of course, it is our wish that you will experience complete satisfaction with the purchase 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 doesn't 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. There are illustrations to support the instructions.

"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 at the time of publication.

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

CONTENTS

1. INTRODUCTION

INTENDED USE

The precision chop forage harvester **FC 860 is solely constructed and manufactured for the usual work in agriculture, i.e.:** Usual work in fields where you want to gather and chop green crops such as maize, grass or whole crop which are to be used for silage production intended for coarse fodder for cattle.

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

Any use beyond this is outside the intended use. Kongskilde Industries A/S is not responsible for any damage or injury resulting from such use; the user bears that risk.

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

Intended use also means that the instructions given by Kongskilde Industries A/S in the instruction manual and the spare parts book are observed and that thorough agricultural knowledge and technically correct use is a matter of course.

The precision chop forage harvester FC 860 should only be used, maintained and repaired by persons who, through relevant instructions and after reading the instruction manual, are familiar with the machine and, in particular, are informed of possible dangers.

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

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

PERFORMANCE

The FC 860 is capable of working alone or parallel with other machines.

FC 860 has a high capacity compared with other corresponding products as it uses the “UPPER CUT” system. “UPPER CUT” gives a minimum loss of power when cutting the material and thus ensures maximum utilisation of the accessible tractor power.
Capacity, however, is difficult to define and compare as, for a forage harvester, it will depend not just on which crop is being cut but also how the crop has been treated before it is picked up or cut by the machine and finally which cutting length adjustment the machine is working with.

If we take a forage harvester which, in fresh, not pre-dried grass, can work 100 tons per hour, it is possible to calculate the capacity at different per cents of dry matter depending on the pre-treatment before cutting, as shown in the following table.

	Dry matter	Capacity
Dry matter	100%	18 ton/h
Wet new grass	15%	120 ton/h
Not pre-dried grass	18%	100 ton/h
Pre-dried grass – no outflow of sap from clamp silo	25%	72 ton/h
Pre-dried grass – no outflow of sap from high tower silo	33%	55 ton/h
Very pre-dried grass	50%	36 ton/h
Straw, very dry	90%	20 ton/h

It will probably surprise most people that the capacity can vary between 20 and 120 ton/h, as a result of varying water content.

In practice you want to drive the forage harvester in the highest possible tractor gear without causing frequent blockage. However, the amount of grass in the field will always vary, for instance where the mower conditioner has had to turn, change forward speed or change direction of travel. Therefore it is often appropriate either to drive with a power reserve so that the machine will not block, or to continuously adapt the driving of the forage harvester to the conditions.

The pick-up unit and the feed rollers are both secured against overloading resulting from a blockage by means of a friction clutch. The forage harvester also has a reverse function which makes it possible to remove a blockage without having to leave the tractor seat.

The intention is that the inexperienced user increases the forward speed gradually in the beginning until the pick-up is blocked; releases the blockage again by reversing and chooses a tractor gear at a suitable lower level to reduce the risk of blockage.

However, it is not the intention that the clutch function of the feed rollers releases. If this happens, the clutch adjustment of the pick-up must be reduced. The same will apply if the main friction clutch between the tractor and the machine releases during normal working. If it is not the pick-up unit which is blocked, the adjustment of the machine is incorrect.

Unfortunately it has been seen that the torque adjustment of the friction clutch of the pick-up unit has been increased to the point where it is the friction clutch between the machine and the tractor which releases frequently. The main friction clutch is not intended to release frequently but only for starting shock or when foreign matter gets into the machine. The same applies to the friction clutch for the feed intake rollers. The main clutch simply cannot absorb the heat which is generated during these long releases. The power transmitted at the main clutch will be at least 10 times higher than the power needed to drive the pick-up unit.

Only the pick-up unit can be seen from the tractor and therefore it should be released first when there is a blockage. The experienced user will be able to adapt the driving of the tractor to the amount of grass and thus work with less capacity reserve and, generally, have a greater output.

The cutting length of the forage harvester can be adjusted and adapted to the crop in question. The cutting length is usually reduced when cutting whole crops to ensure greater damage of the grains. The shorter cutting length will of course require more power for which reason there will be a lower output when cutting whole crop than when cutting grass, though it is difficult to compare.

The power requirements are also increased when the blades are worn and the shear-bar clearance is increased. It is necessary to sharpen the blades and adjust the shearbar during the season.

SAFETY

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

A forage harvester cannot be constructed in such a way that it guarantees the full safety of persons and at the same time performs efficiently. 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.

As described above the machine is only intended for one purpose, namely:

Chopping grass and similar green crops, for 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 foreign matter and debris.

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 manuals - 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.

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 the operator 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 the driver and others against serious injuries.

GENERAL SAFETY INSTRUCTIONS

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

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

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

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

3. Never start the tractor until all persons are at a safe distance away from the machine.

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

5. Make sure that all guards have been mounted correctly and locked where appropriate.

6. During work never wear loose clothes or have your hair hang down as it may be pulled in by the moving parts of the machine.

7. Always wear suitable shoes to avoid falling.

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

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

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

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

12. When mounting the PTO drive shaft, check that the number of rpm and the direction of rotation of the tractor match those of the machine.

13. 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.

14. Never allow anybody to be on the machine during work or transport.

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

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

17. Never stand between the tractor and the machine during connection and disconnection.

18. Do not feed material into the cutting unit, using hands or feet, while it is working.

19. Do not try to remove material from the cutting unit while it is working.

20. If material must be removed from the forage harvester, the PTO shaft must be disconnected completely. Stop the tractor engine before removing any material from the forage harvester.

LOCKING OF GUARDS

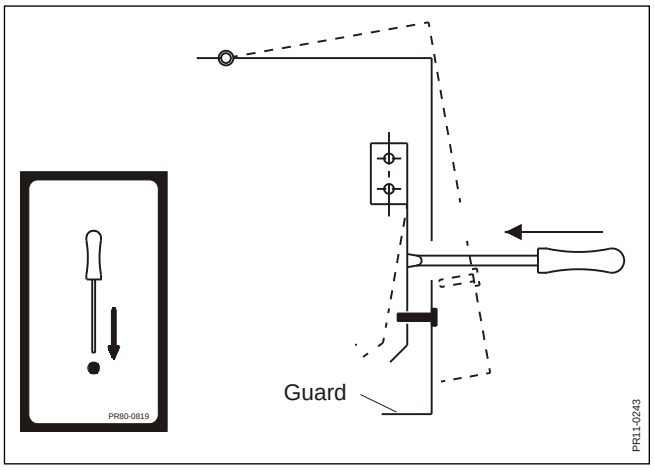


Fig. 1-1

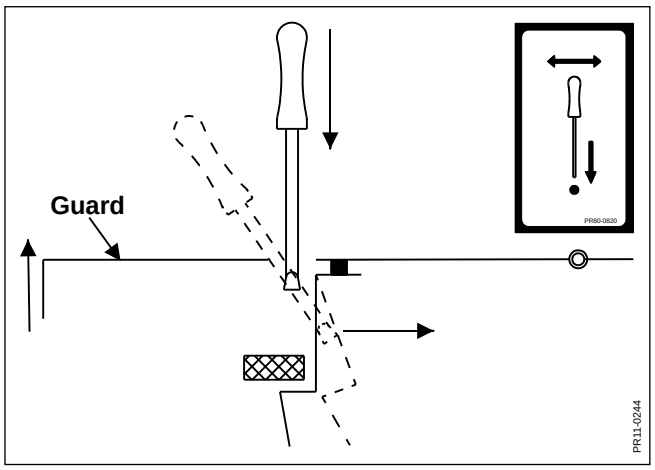


Fig. 1-2

All hinged guards on the machine are equipped with a lock. The lock ensures that the guard cannot be opened without tools. There are two different types of lock. Fig. 1.1 and 1.2 show the two locking principles and the corresponding transfers which indicate and illustrate the locks on the machine.

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 which has minimum 55 KW/75 HP at the power take-off but cannot deliver more than 92 KW/125 HP.

The machine is as standard constructed for 540 RPM or 1000 RPM, and is delivered from the factory with 1 3/8" PTO drive shaft with 21 splines yoke. As an alternative 1 3/8'' yoke with 6 splines can be supplied for the PTO drive shaft of the machine

A suitable tractor will have a good range of gears for driving speeds between 5 and 8 km/h.

The tractor hydraulic system should deliver at least 170 bar and the adjustable relief valve should not allow more than 210 bar.

The following hydraulic outlets are necessary depending on the equipment used:

1	Single-acting	Pick-up lifting
1	Double-acting	Adjustable hitch

It is important that there is direct access to the 12-volt battery of the tractor and that it is in a good condition.

Always choose a tractor with a closed cabin when working with a precision chopper.

CONNECTION AND DISCONNECTION

Always make sure that nobody is standing between the tractor and the machine during connection and disconnection. An unintentional manoeuvre with the tractor may cause serious injury (see fig. 1-3). When disconnecting it is important that the ground is even and stable so that the machine does not move and injure persons or cause damage to other equipment.

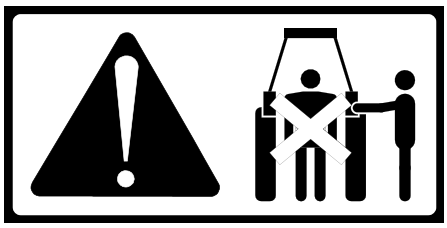


Fig. 1-3

The same precautions must be taken when connecting/disconnecting trailers by means of the hitch hook at the rear of the forage harvester.

Check that the machine is intended for the number of rpm of the tractor PTO. A wrong number of rotations over a long period may damage the machine and at worst result in ejection of parts through the delivery chute.

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

IMPORTANT: Before connecting the trailer to the hydraulic hitch, always:
- Disengage the PTO.
- Wait until all moving parts have stopped.

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

Make sure that there is no pressure in the hydraulic hoses when these are disconnected from the tractor.

Hydraulic oil under pressure can penetrate the skin and cause serious infections. You should always protect the skin and the eyes against oil splashes (see fig. 1-4). If, by accident, hydraulic oil under pressure hits you, consult a doctor immediately.

Fig. 1-4

ADJUSTMENT

IMPORTANT: Before adjusting the machine, always:
- Disengage the PTO from the tractor.
- Stop the tractor engine
- Wait until all moving parts have stopped.

It is important not to remove the guards until all revolving parts have stopped. This especially applies to the delivery chute above the chopping cylinder.

If the cutting parts in the blade cylinder must be adjusted or replaced, it is important to block the blade cylinder as the sharp blades can easily cause injury.

Before working, check that the feed rollers and the blade cylinder can move freely. Also check that the blades are intact and without cracks. Damaged blades must be replaced to prevent them from blocking or damaging the machine and to avoid metal parts being thrown out from the delivery chute.

Check periodically if blades and blade bolts are worn according to the rules in the instruction manual.

IMPORTANT: The first time you use the machine the blades and blade bolts may "bed in". For this reason you must check and tighten the blade bolts after the first working hour.

When lifting the delivery chute above the blade cylinder make sure that nobody is in danger of being hit by the guard. When lifting the guard, hold on to the hoop which is fastened to the intermediate guard with both hands.

TRANSPORT

Limit the transport speed to maximum 30 km/h if the machine has not been marked with another maximum speed limit.
Always check that mechanical transport safety devices are activated before transport with trailed implements.

DANGER: Never let anyone stand or sit on the machine, especially not when you are driving.

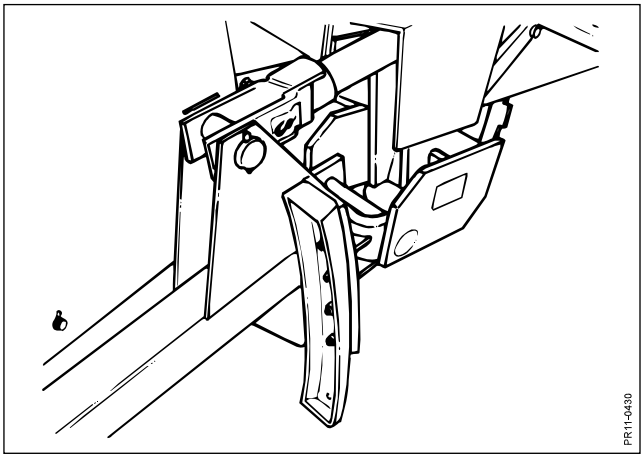


Fig. 1-5

Fig. 1-5 The pick-up of the forage harvester must be secured mechanically before transport.

The statutory lighting and traffic markings must be placed correctly, on the forage harvester as well as the trailer.
Reflectors and lighting must be cleaned regularly.

WORKING

Before you start working make sure that no persons are behind the forage harvester due to the danger of being hit by metal parts from damaged blades.

Also make sure that there are no persons in the trailer used for picking up. There is danger of suffocating in the flow of material or getting hit by metal parts.

If the feed rollers or the blade cylinder are blocked, disengage the clutches and stop the tractor engine immediately. Activate the parking brake and wait until the revolving parts have stopped before removing the material or the foreign matter.

This cannot be said often enough: Never remove material blocked in the machine while the machine is running and never feed material into the pick-up with your hands or feet as there is a serious danger of getting caught and pulled into the harvester which would cause dismemberment or death.

Therefore, never allow anyone to stand near the forage harvester while it is working, especially not children who do not know the danger and do unforeseen things.

PARKING

Remember to block the wheels if there is a risk that the machine will move after parking.

Remember to remove hydraulic hoses and electric cables before driving away with the tractor.

GREASING

When greasing or maintaining the machine never let more than one person work at the machine at a time. This reduces the risk of getting fingers caught because another person by accident turns the revolving parts while you are still working with them.

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

GRINDING

When grinding always follow this procedure:

- Stop the tractor engine
- Activate the parking brake.
- Wait until all moving parts have stopped.

It is necessary to remove some of the guards to change the direction of rotation of the rotor when grinding the blades. As there are chain and belt transmissions your hands may be injured if the revolving parts have not stopped before the guards are removed.

Grinding is performed according to the following procedure:

1. Check if the grindstone is undamaged and if the device is able to move back and forth easily.

2. Lower the guard behind the grinding device to give access to the blade cylinder.

3. Adjust the stone and place the guard of the grinding device again.

4. Remove the guard above the blade cylinder transmission and change the direction of rotation of the rotor.

5. Fasten the guard again and check that there are no persons near the machine.

6. Start the tractor again and keep the rpm close to idling.

7. Perform the grinding carefully.

Always use safety glasses when grinding as small particles from the grindstone might hit you.

When grinding has finished, stop the tractor engine, change the direction of rotation and fasten all guards.

REMEMBER: Only grind with all guards closed!

MAINTENANCE

After approx. 2 days of operation, all bolts should be re-tightened.

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

Hydraulic hoses must be checked by an expert before use, and after that, a minimum of 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.

REPLACEMENT OF WEARING PARTS

Blades, blade bolts and shear-bar are made of high-alloyed, heat-treated materials. This heat treatment provides especially hard and ductile material which is able to withstand extreme stress. Damaged blades, blade bolts or shear-bars must be replaced by original KONGSKILDE spare parts only to ensure safe operation.

Blades and blade bolts must be checked every day during the season.

The special blade bolts must be tightened with a torque wrench to 40 kgm.

When the blades have been worn max. 8 mm or approx. 12 mm above the straight piece, they must be replaced (see fig. 1-6).

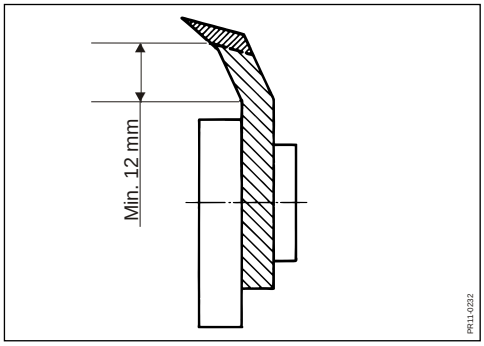


Fig. 1-6

After replacement of blades, blade bolts and the like, check that no tools have been left in the machine.

SAFETY DECALS

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

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

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

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

4. Chain drive
One or more chain drives are placed under this guard. Make sure that the tractor engine has stopped before opening the guard.

5. Risk of cutting.
There is a risk of getting fingers etc. caught several places on the machine. Be careful when the machine is connected to the tractor and ready to work. The machine can easily crush or cut off any part of the body that might get caught in the machine.

6. Remember the guards when grinding.
Remember to close ALL guards before grinding.

7. 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 removing guards for inspection or maintenance.

8. Risk of getting pulled into the machine.
Do not stand near the attachments or the feed rollers while the machine is running. Make sure that the tractor engine has stopped first.

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

10. Maximum 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.

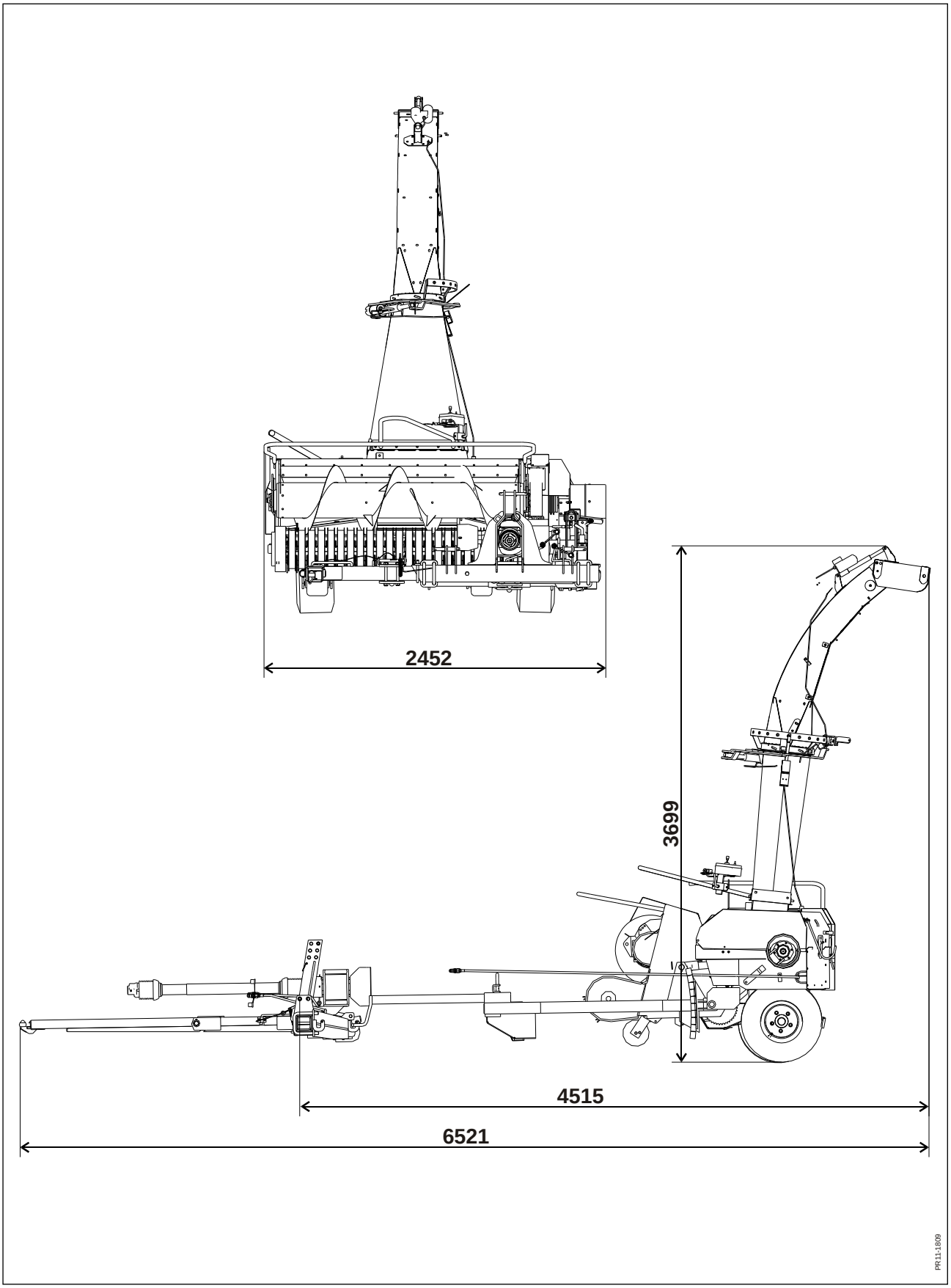
11. PTO drive shaft for rotor.
There is an alternative pin for the PTO drive shaft for the rotor. It is used when the rotor is disconnected during reverse and when the rotor rotates in the opposite direction during grinding. Make sure that you place the PTO drive shaft correctly on the pin when performing these operations.

12. Remember the transport lock.
Always remember to check the transport lock is engaged before transporting the machine on public roads and before adjusting the pick-up height.

13. Hydraulic oil under pressure.
Warning against hydraulic oil under pressure.

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

DIMENSIONS



TECHNICAL DATA

TECHNICAL DATA	FC 860
Pick-up width	1.8 m
Power requirement, recommended minimum	55 kW / 75 HP
Power requirement, maximum	92 kW / 125 HP
Capacity (*)	20-50 t/hour
Blade rotor width	0.72 m
Rpm for rotor	1600 rpm.
Number of blades, standard	24
HD blades	Standard
Grinding device	Grindstone
Reverse grinding	Standard
Theoretical cutting length, standard	15 - 30
Reversible shear-bar, tungsten-coated	Standard
Number of feed rollers	4
Reverse of feed intake	Standard
Electrical functions	Chute swivelling, deflector and reverse
Hydraulic functions	Pick-up lifting
Turning angle for chute	175 degrees
Pick-up, pre-lubricated	Standard
Weight with pick-up	1600 kg
Length	4.5 m
Width with pick-up	2.5 m
Height	3.7 m
Tyre dimension standard	23 - 10.5 x 12
Freewheeling clutch in PTO shaft	Standard
Friction clutch in PTO shaft	Standard, 1050 Nm
Steel wheels on pick-up	Standard
Rubber wheels on pick-up	Option
Hitch, adjustable	Option
Hitch for trailer: Maximum drawbar load	2000kg

(*) Depends on dry matter content, cutting length, the conditions and the amount of crop.

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

2. CONNECTION TO TRACTOR

THE HYDRAULIC SYSTEM

HYDRAULIC CONNECTION

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

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

The machine requires 1 single-acting hydraulic outlet for the pick-up and 1 double-acting outlet for the hydraulic adjustable hitch, if mounted. Therefore the tractor should have 1 double-acting and 1 single-acting outlets to be able to drive with a fully equipped FC 860.

CONNECTION OF ELECTRIC SYSTEM

Fig. 2-2

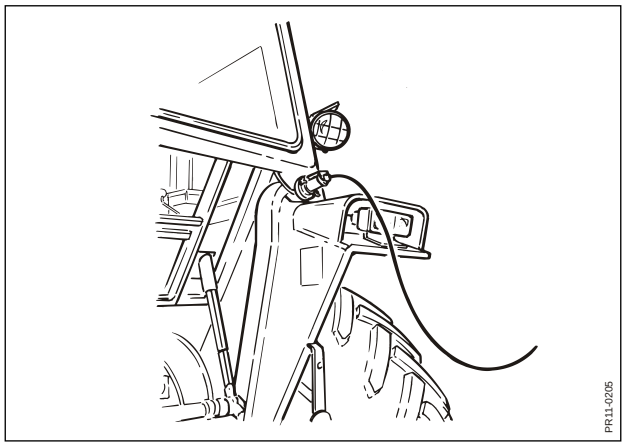


Fig. 2-3

Fig. 2-2 The machine is equipped with electric operation of chute swivelling, deflector and reverse.

The control box can be placed on the right arm rest in the tractor cabin, allowing the driver easy access to it while driving in the field, see figure 2-2.

The control box is equipped with detachable fittings which can be fastened in the tractor cabin with screws, and it can subsequently be dismounted without tools.

The plug for the power supply is connected to a socket in the tractor cabin. This should supply 12 V and allow a current of minimum 25 A. If the tractor does not have the same plug you should contact your dealer and get an adaptor.
If there is no socket in the tractor or if the existing socket in the tractor cannot supply sufficient current, the supplied socket must be mounted.
Connect the cable directly to the tractor battery, connecting the cable with the fuse box to **+** (positive) on the battery (remember that the fuse must be placed near the battery).

It is very important for the functioning of the electric system that there is a good connection to **-**(negative/earth) and **+**(positive) on the battery.
We advise you not to connect to for instance the wiring of the lights as the wire thickness for these systems is usually not sufficient to transfer the necessary power.

Fig. 2-3 Mount the 7-pole socket (mounted on the cable from the control box) at the rear of the tractor just outside the cabin.
Here the 7-pole plug from the machine must be connected.

Important: When the machine is parked the 7-pole plug should be placed in the holder on the left-hand, rear guard.

ELECTRIC CONTROL

Fig. 2-4

Fig. 2-4 The machine is operated from the control box which controls the electric functions.

FUNCTIONS

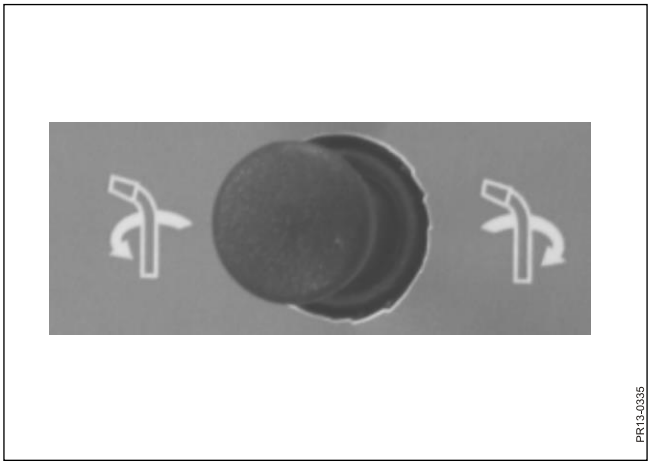


Fig. 2-5

Fig. 2-5 **On the joystick:**
Chute: Push to the left: The chute turns anti-clockwise. Push to the right: The chute turns clockwise.

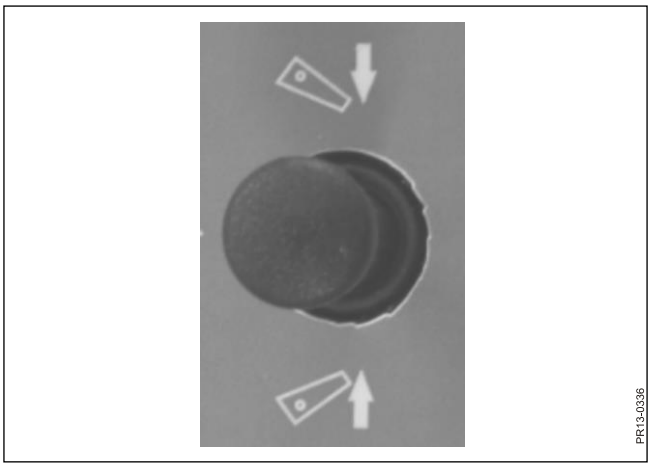


Fig. 2-6

Fig. 2-6 On the joystick:
Chute: Push forward: The deflector points downward. Push to the rear: The deflector points upward.

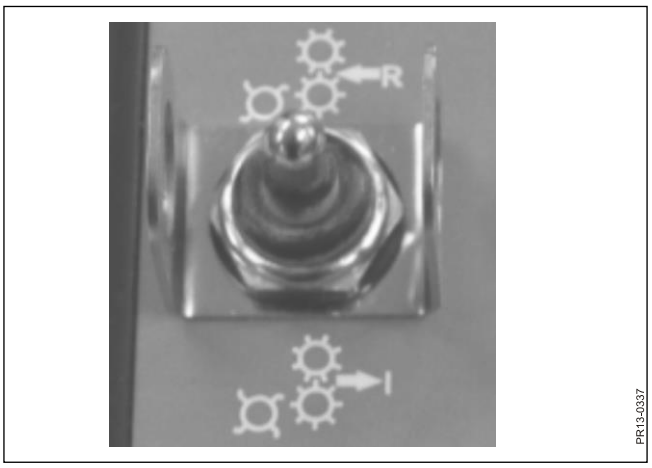


Fig. 2-7

Fig. 2-7 Reverse function. Applies to feed rollers and pick-up.

Feed in: Move the toggle switch to the rear. When feed rollers and pick-up are running, the switch must be released. This may take about 5 seconds.

Reverse: Move the toggle switch forward. **Caution: Only reverse briefly and at reduced number of rpm.**

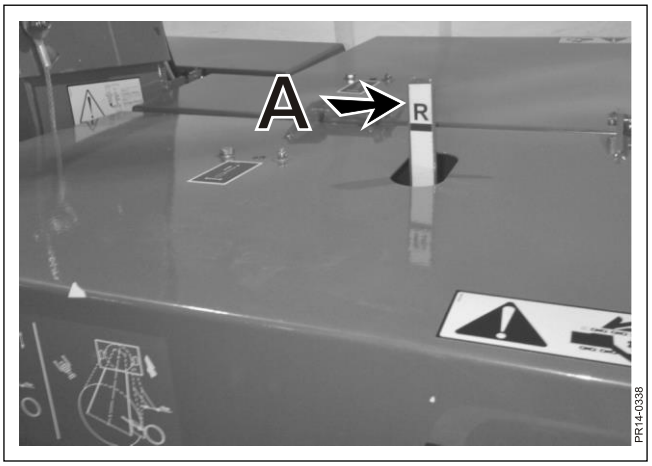


Fig. 2-8

Fig. 2-8 The position of the reverse can be checked on the indicator **A**.

MOUNTING OF LIFT SUSPENSION

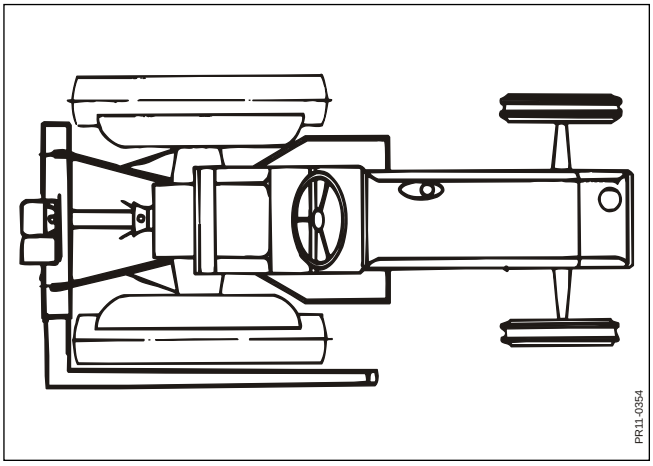


Fig. 2-9

Fig. 2-9 The suspension is mounted in the 3-point linkage of the tractor and is mounted so that it is as close to the rear wheels of the tractor as possible. This gives the most stable driving and the load on the link arms is reduced.

Both link arms must have the same oblique position in relation to the middle position in order to keep the suspension parallel with the tractor. After correct mounting of the suspension the PTO shaft is mounted.

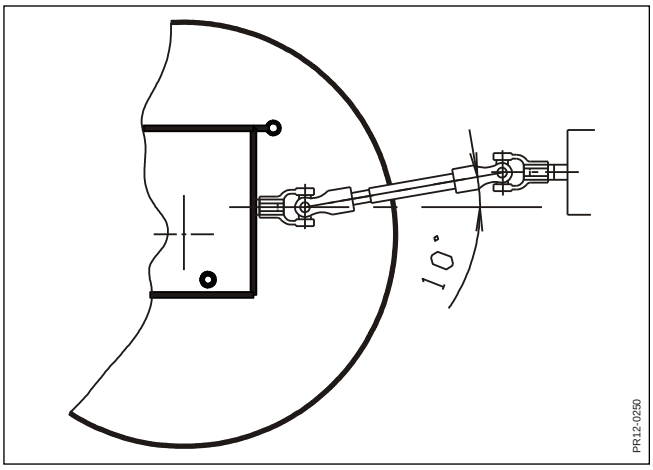


Fig. 2-10

Fig. 2-10 The PTO of the tractor and the PIC (Power Intake Connection) of the machine must be parallel, i.e. the angle between them must be as close to 0º as possible. The suspension is adjusted so that the PTO shaft in working position is maximum 10° higher or lower than horizontal. This corresponds to the PIC (input shaft of the gearbox), being maximum 100 mm higher or lower than the tractor's PTO.

The lift suspension is fitted with hitch hook as standard. For connection of trailers with clevis drawbar the drawbar is placed with the hitch hook facing forwards and the hole for clevis drawbar facing backwards.

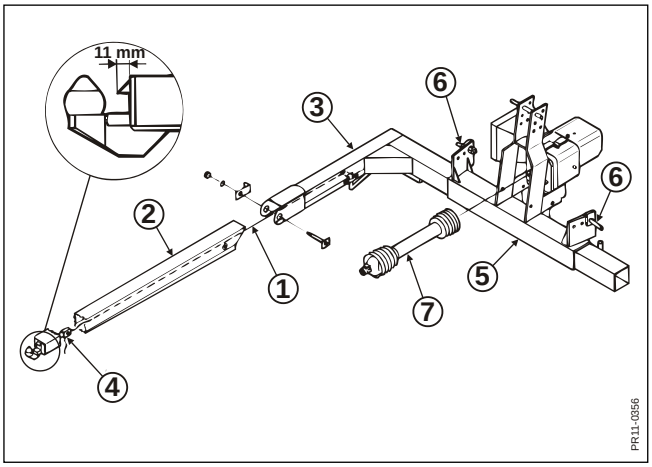


Fig. 2-11

Fig. 2-11 A. The wire 1 is led through the front arm.

B. The front arm 2 is mounted on the L-frame hoop 3.

C. The wire is fastened in pawl 4 and adjusted to correct length - 11 mm. The wire must be so tight that the lower pawl 4 can be fully pulled in.

D. The suspension pins 6 are placed so that the precision chopper gets as close to the tractor as possible. The rear hole for long link arms. The front hole for short link arms.

Fig. 2-12 E The PTO shaft 7 is adjusted in length and mounted.

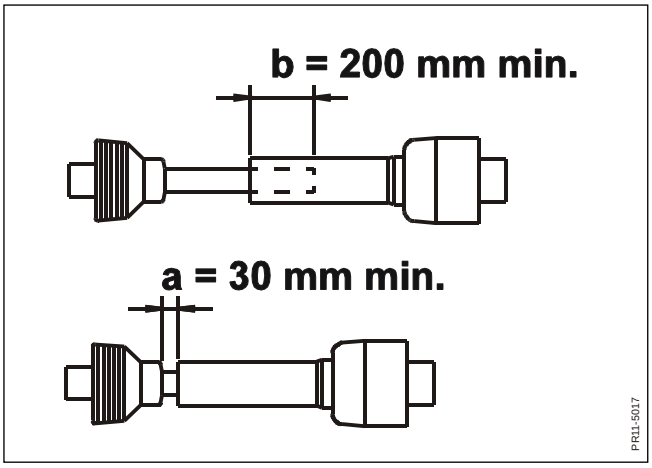


Fig. 2-12

Fig. 2-12 The length of the PTO shaft is adjusted so that it: in working position has minimum 200 mm overlap. In no position is compressed more than the prescribed 30 mm in order not to bottom the shaft. In the outmost position has minimum 200 mm overlap.

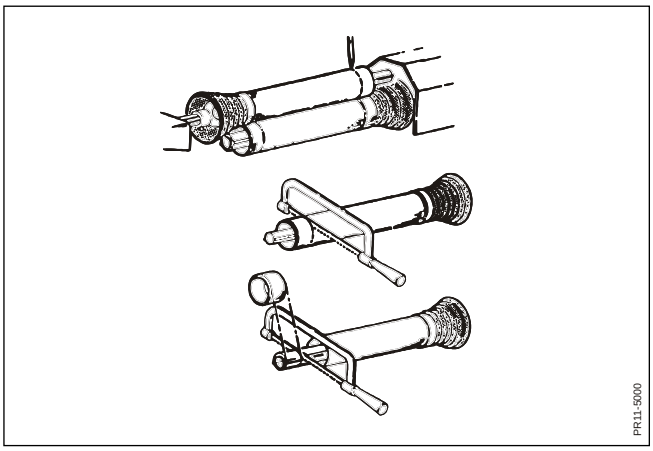


Fig. 2-13

Fig. 2-13 F: Shorten all 4 tubes equally. The shortened ends of the profile tubes must be deburred and cleaned of dirt and swarfs and the profile tubes must be lubricated before the PTO shaft is reassembled.

G: The 3-point linkage frame is mounted in the link arms of the tractor. The L-frame hoop 3 is pushed onto the 3-point linkage frame 5.

You should read and observe the instructions in the instruction manual for your tractor as regards connection of implements in the tractor hydraulics. You should be especially aware of the fact that if the tractor hydraulics are using weight transfer that is activated by the top link fix point, the weight transfer must be put out of action or the top link must be connected to a firm top point on the tractor. If the weight transfer is not put out of action, the link arms may begin to lift even if the control handle is not activated. The weight transfer may also cause the link arms to move heavily up and down.

On the PTO drive shaft between the 3-point suspension and the machine there is a friction clutch which ensures that the machine is not overloaded during operation. Before starting a new machine, the clutch must be "aired". See section concerning the friction clutch in chapter 6 "MAINTENANCE".

CONNECTION AND DISCONNECTION OF PRECISION CHOPPER

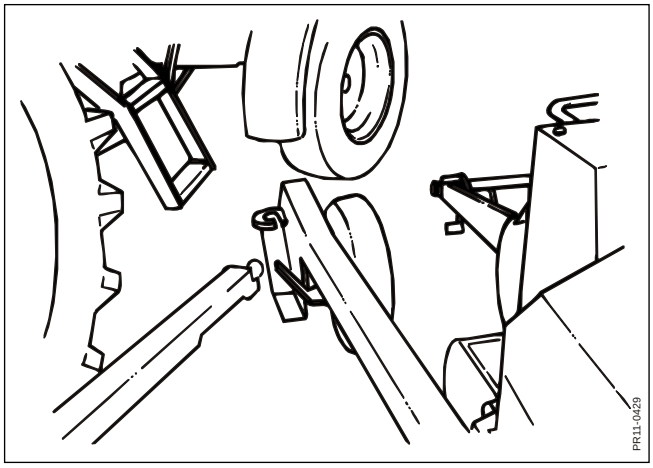


Fig. 2-14

Fig. 2-14 The 3-point linkage frame is lowered and you drive towards the machine until the ball joint on the L-frame hits the edge of the catch. Thereby the suspension is lifted and the machine is connected in the front point.

Then you drive a little forward and put the tractor wheels straight until the pawl at the outside of the suspension is engaged with the machine.

The PTO shaft is released from the holder and attached to the bevel gear shaft, the hydraulic hose is mounted and the plug for the control unit is connected. The machine is now ready for use.

Disconnection takes place as follows: First remove the plug for the control unit and the hydraulic hose from the tractor. Then move the PTO shaft from the bevel gear shaft to the holder. After that the 3-point linkage frame is lowered until the machine rests on the ground. Now the locking pawl in the front attachment point is released by pulling the cord. When the 3-point linkage frame is raised again while pulling the cord, the machine is released from the frame and you can drive away from the machine. If the pawl cannot be released, the length of the wire must be checked. When driving away make sure the trailer comes clear of the precision chopper.

Please note! The machine must be lowered to the ground before the locking pawl can be released.

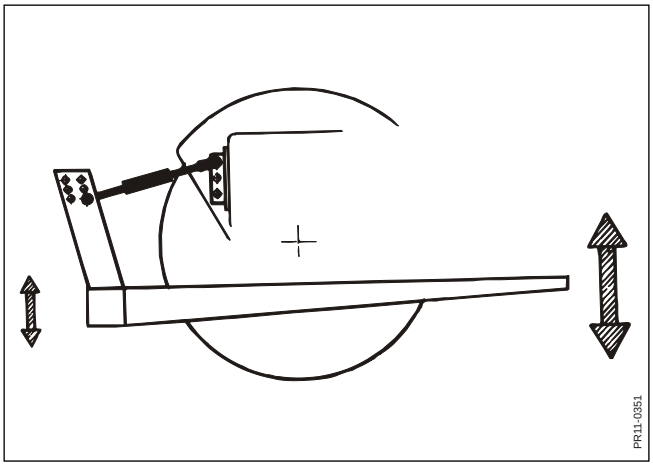


Fig. 2-15

Fig. 2-15 If you are driving with one trailer so that the precision chopper must be connected and disconnected for every load, it is an advantage if the suspension gives a big movement up and down at the front and a smaller movement at the rear. Thereby it becomes easier to “pick up” the precision chopper from the ground without the trailer touching the ground. The big movement at the front is obtained by mounting the top link high on the tractor and low on the suspension.

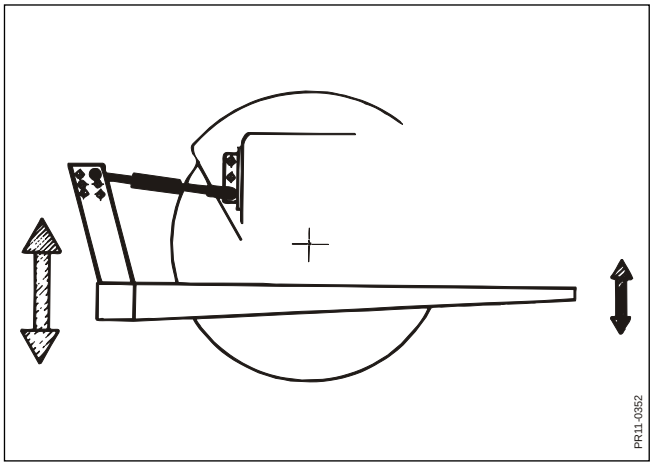


Fig. 2-16

Fig. 2-16 If you are driving with more trailers that must be connected and disconnected for every load, it is an advantage if the suspension gives a big movement up and down at the rear. Thereby it becomes easier to “pick up” the trailer from the ground without the precision chopper touching the ground. The big movement at the rear is obtained by mounting the top link low on the tractor and high on the suspension.

3. MOUNTING OF EQUIPMENT

Mounting should take place in a workshop on even ground. However, the basic machine should always be mounted correctly to the tractor according to section 2 "CONNECTION TO TRACTOR" before equipment and accessories are mounted.

HITCH FOR TRAILER

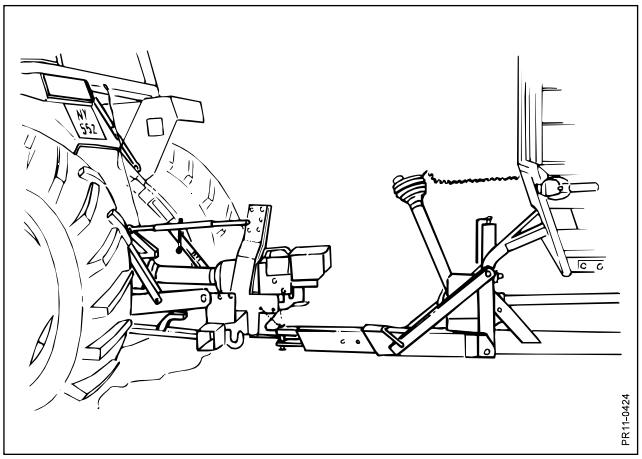


Fig. 3-1

Fig. 3-1 The trailer is connected with hitch or hitch eye.

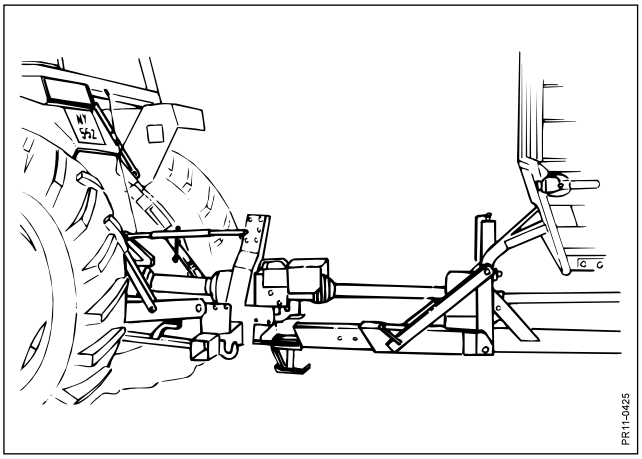


Fig. 3-2

Fig. 3-2 For connection with hitch the 3-point linkage frame is lowered so that the hitch hook can get in under the hitch eye of the trailer. The tractor is reversed towards the trailer and the 3-point linkage frame is raised. When the hook is in mesh with the hitch eye, the trailer is connected.

For disconnection the cord for the hitch lock is pulled and the 3-point linkage frame is lowered until the support of the hitch is resting on the ground.
Drive forward with the tractor and the precision chopper.

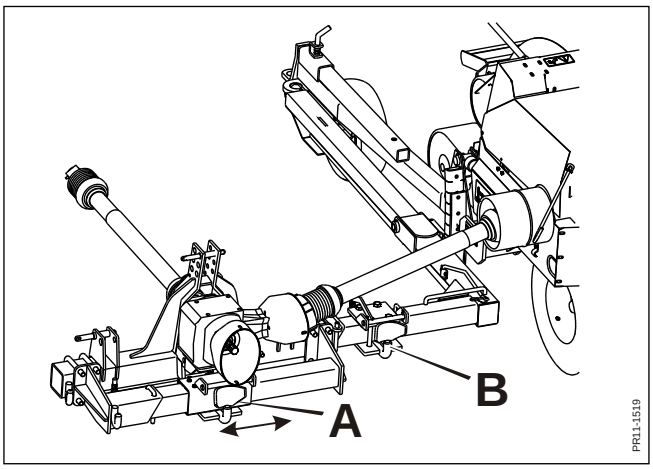


Fig. 3-3

Fig. 3-3 Available as optional equipment is a sideways adjustable hitch which is mounted on the suspension **A** or a firm hitch which is mounted on the 3-point suspension frame **B**.

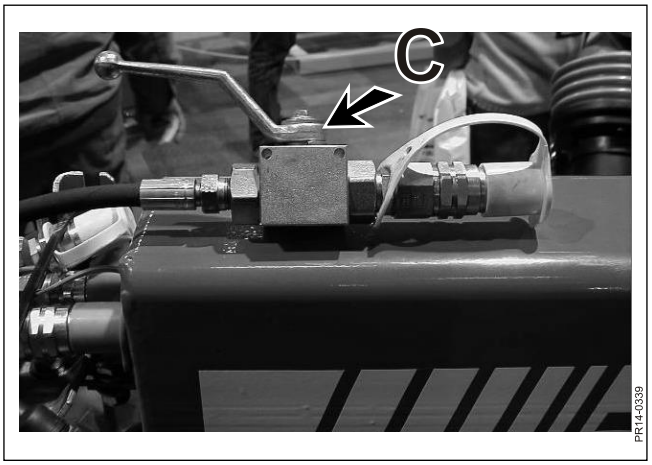


Fig. 3-4

Fig. 3-4 During transport on the public roads the stop valve C on the hydraulic hose for the cylinder must be closed. This prevents faulty operation during transport.

PICK-UP

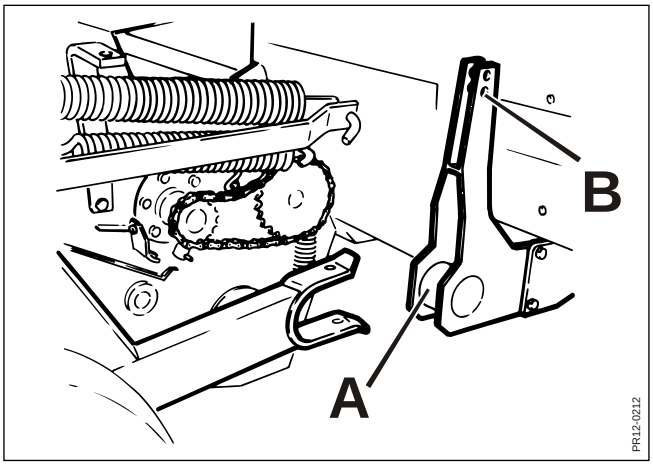


Fig. 3-5

Fig. 3-5 Wheel the pick-up on the rollers to the machine so that the catch **A** is engaged. Mount the 2 pins in order to fix the pick-up to the base machine.

Attach the relief device to the pick-up at **B**.

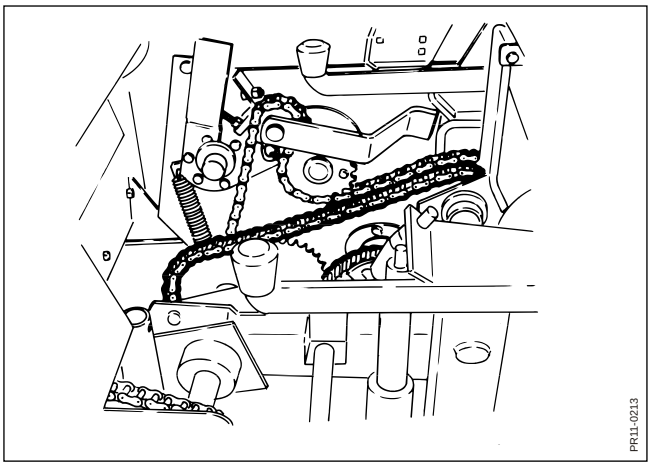


Fig. 3-6

Fig. 3-6 Mount the chain drive for the pick up and tension correctly.

CHUTE AND DEFLECTOR

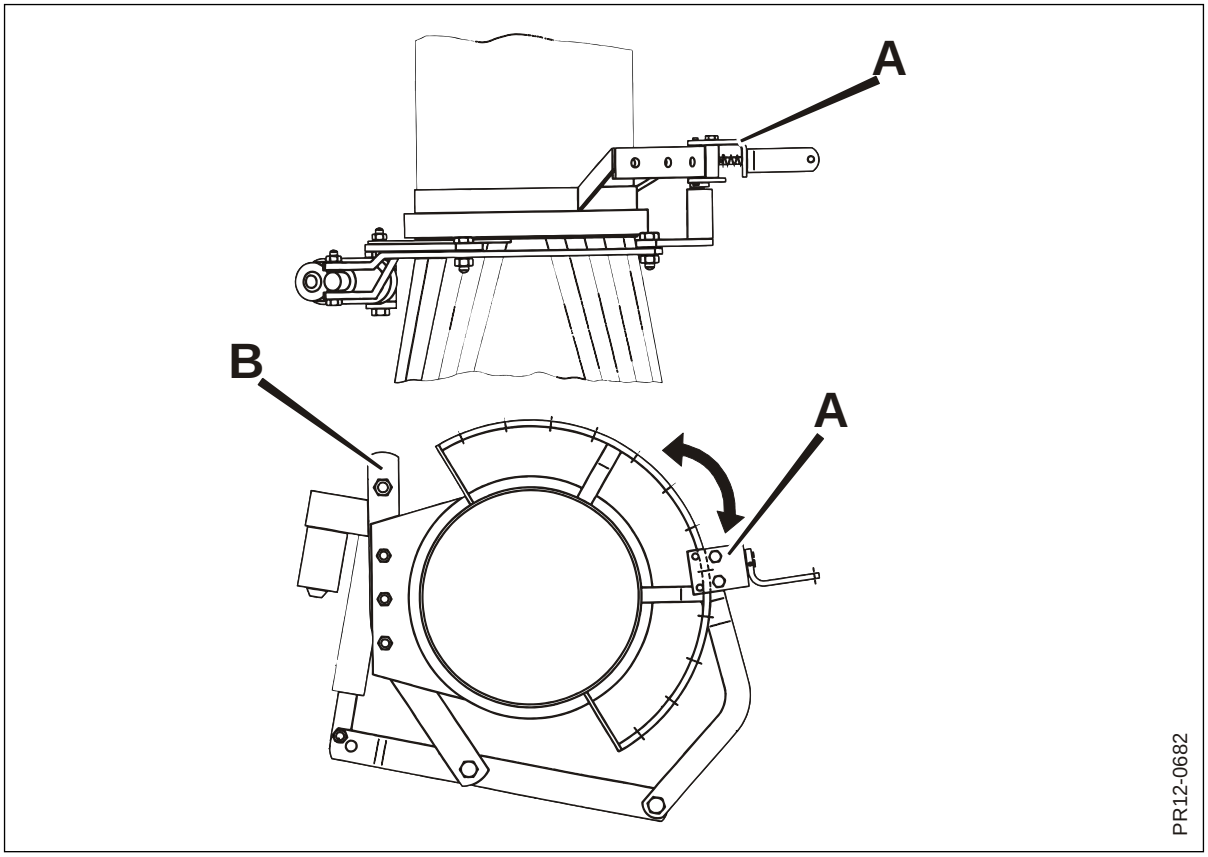


Fig. 3-7

Fig. 3-7 When the swivel chute has been mounted and adjusted, the assembled fittings are mounted as shown on the figure.

Place the bracket **A** above the adjusting bar and assemble it, then mount and fasten the bracket **B**. Grease the swivel ring and check that the delivery chute can turn freely.

IMPORTANT: Grease the swivel ring while turning the delivery chute manually to distribute the grease.

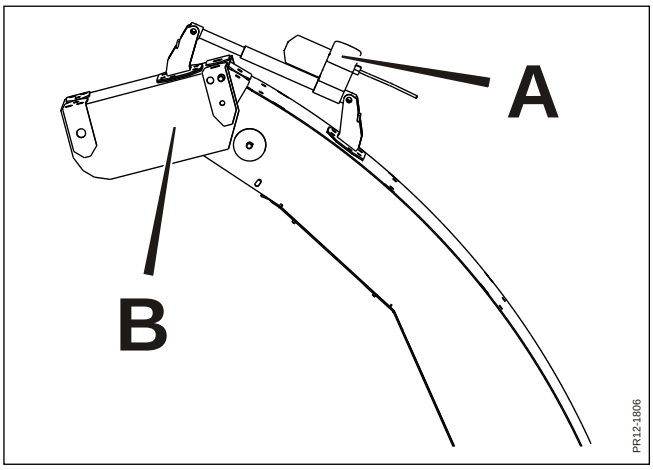


Fig. 3-8

Fig. 3-8 The electric motor **A** for the deflector **B** is mounted.

Connect the 7-pole plug from the machine to the socket at the tractor cabin according to the section “Connection of electric system” in chapter 2 "CONNECTION TO TRACTOR".

Check that right/left turn of the chute and up/down movement of the deflector correspond with the marking for the joystick on the control box in the tractor cabin.
If the movements and the marking do not correspond, the wires in the assembly box on the motor(s) in question must be exchanged to alter the direction of movement.

4. ADJUSTMENTS

PICK-UP

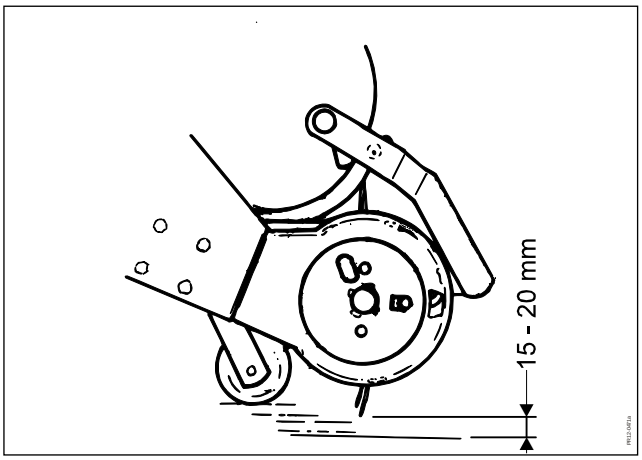


Fig. 4-1

Fig. 4-1 The pick-up is equipped with support rollers made of steel which are adjustable in height. You should keep the pick-up at such a height that the tines do not hit the ground and leave earth in the crop and can also pick up the grass without waste.

KONGSKILDE recommends a distance between the pick-up tines and the ground of 15 to 20 mm.

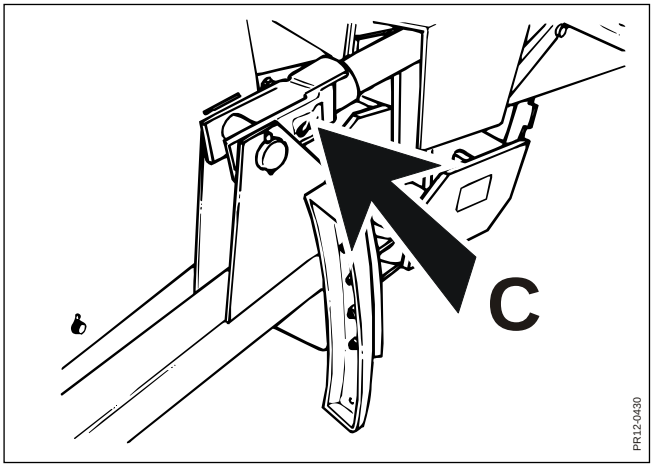


Fig. 4-2

Fig. 4-2 Before making any adjustment, the cylinder stop C must be engaged.

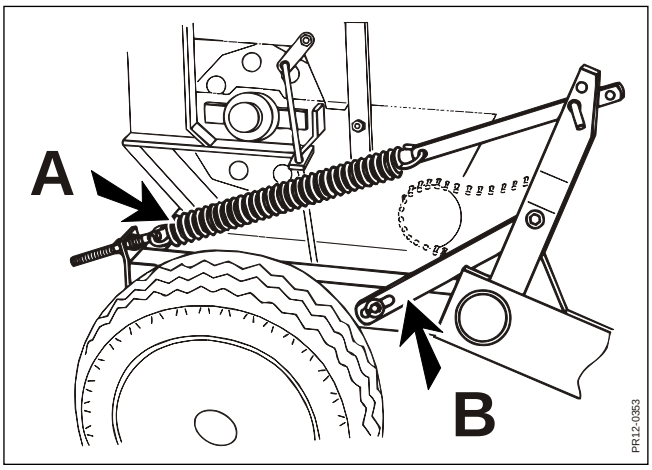


Fig. 4-3

Fig. 4-3 With the spindle A the relief springs are tightened, so that the pick-up will have a maximum pressure towards the ground of 30 kg. Check this by standing in front of the pick-up and pull the hoop upwards and estimate the ground pressure.
When the machine stands on even ground, the limiting rod B must be in the middle position so that the pick-up can move freely up and down and thereby follow the ground.

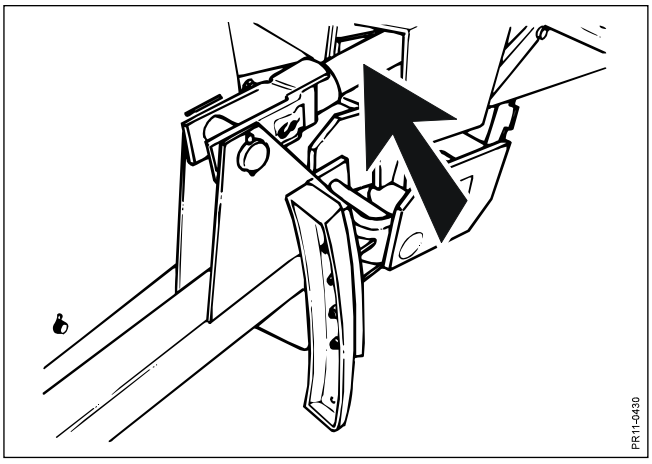


Fig. 4-4

Fig. 4-4 The adjustment is made at the opposite side at the hydraulic cylinder of the suspension.

The auger on the pick-up is equipped with a slip clutch. The slip clutch of the auger is adjusted so that it releases before the other friction clutches in the machine.
The highest capacity is obtained by working at a forward speed where you drive without blockage in the auger. If there is a blockage around the auger you stop and force the crop out of the machine by using the reverse function. See also chapter 5 "DRIVING IN THE FIELD".
A continuous and even flow through pick-up and auger is the best way to avoid blockages inside the machine, and thus avoid long operational stoppages.

The operator should always ensure spare friction discs for the slip clutch on the auger are in the tool box. If this clutch has often been in operation, the coating of the friction discs is worn and it cannot transfer sufficient transmission. It may therefore be necessary to replace the friction discs, but remember they have to be of the same number and quality.

OPENING OF ROTOR HOUSING

Fig. 4-5

Fig. 4-5 In order to open the rotor housing the chute can be folded down. The chute is relieved with a strong spring in order to make this work easier.

DANGER: First, make sure there are no other persons near the machine. Only fold down the chute when the machine is connected to a tractor.

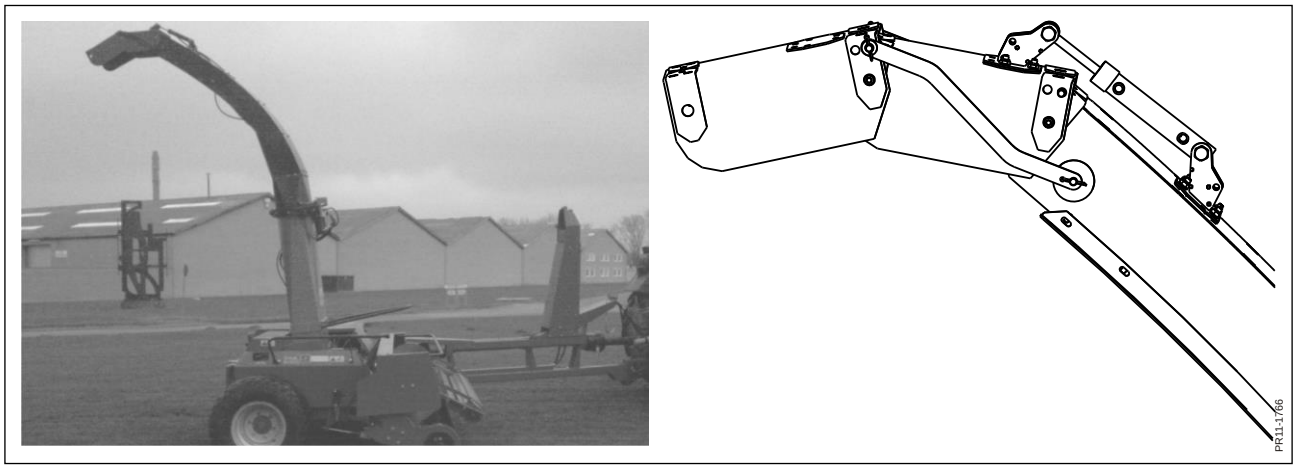


Fig. 4-5

Fig. 4-5 1) Turn the chute to the rear. Adjust the deflector to the middle of the working area.

Fig. 4-6

Fig. 4-6 2) Open the guard above the rotor housing and the right-hand guard.

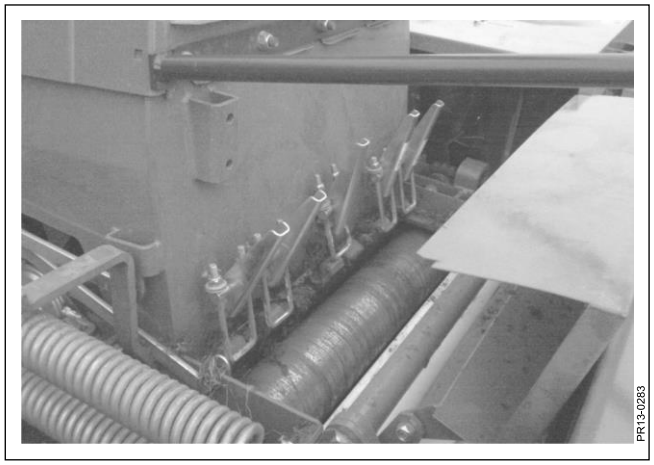


Fig. 4-7

Fig. 4-7 3) Open the lock clamps at the front of the rotor housing.

Fig. 4-8

Fig. 4-8 4) Fold the chute to the rear and down using the handle, whereby the rotor housing is opened.

5) When closing the rotor housing, follow the same procedure in reverse order.

Fig. 4-9

Fig. 4-9 When closing the rotor housing it is an advantage to lift the chute at first.

‘

ROTOR AND ROLLER SECTION

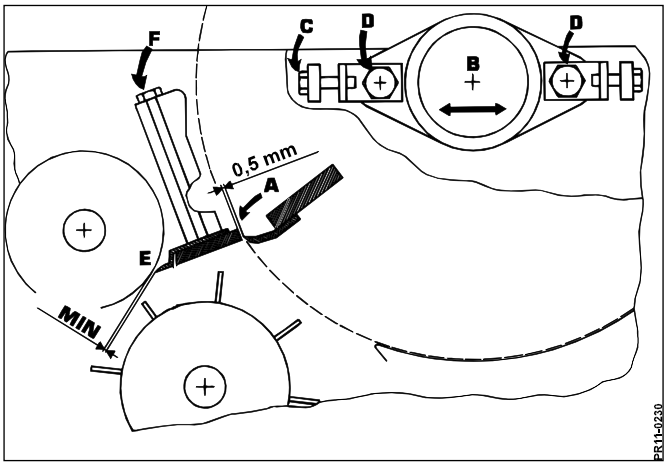


Fig. 4-10

Fig. 4-10 The distance **A** between the blades of the rotor and the shear-bar must be checked regularly with the delivered gauge (distance measuring device). You should aim at a distance of 0.5 mm. If it is necessary to adjust the distance, loosen the 2 bearing housings **B** and adjust with the screws **C**. When the distance has been checked, the bolts **D** of the bearing housings are tightened with a torque wrench to 27 kgm (270 Nm).

The machine is equipped with a scraper for the smooth roller **E**. The scraper is mounted together with the reversible shear-bar just mentioned.
The scraper is placed as close to the smooth roller **E** as possible without touching it. The distance between the scraper and the smooth roller should be maximum 0.5 mm. Tighten the bolts **F** with a torque wrench to 10-12 kgm (100-120 Nm). **Wrong adjustment of the scraper may result in overheating of the smooth roller and operational stoppage.**

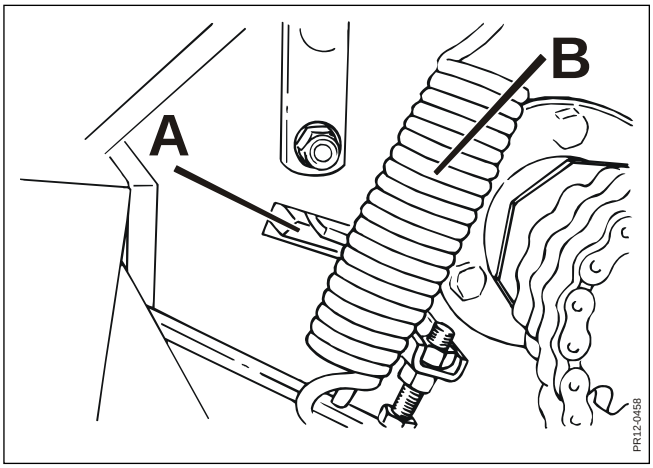


Fig. 4-11

Fig. 4-11 The scraper is dismounted by removing the screws **F** (on fig. 4-10), which also secure the shearbar, after which scraper and shearbar can be pulled out of the opening **A** in the rotor housing. The spring **B** for the serrated roller must be loosened or dismounted to get enough space.
If the shear-bar has been worn, it can be reversed for a new sharp edge.

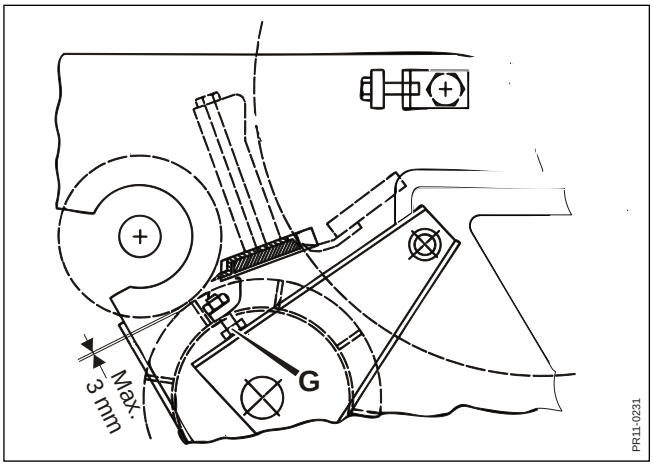


Fig. 4-12

Fig. 4-12 The distance between the smooth roller and the serrated roller should be max. 3 mm. Adjustment is made with the bolts **G** at both sides of the rotor housing.

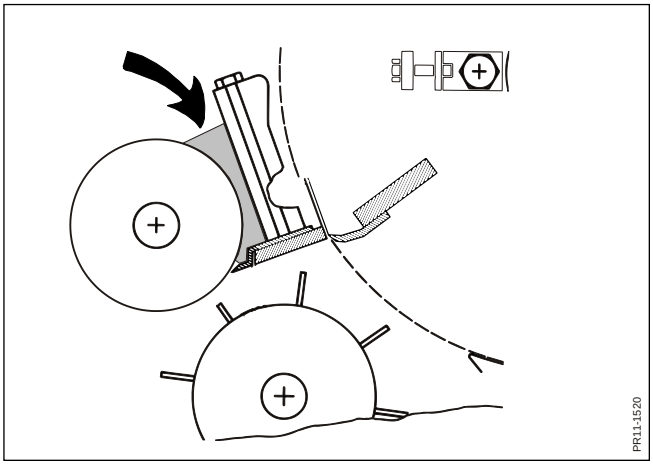


Fig. 4-13

Fig. 4-13 Under some conditions the crop substance (small particles) can accumulate in the shaded area, see arrow on fig. 4-13, this may result in an overloading of the transmission driving the rollers.

Check the area after every 8 hours of operation and remove possible crop residue. Check, and if necessary adjust, the distance between scraper and smooth roller, see fig. 4-10. The checking frequency can be reduced when the operator knows the machine under all conditions.

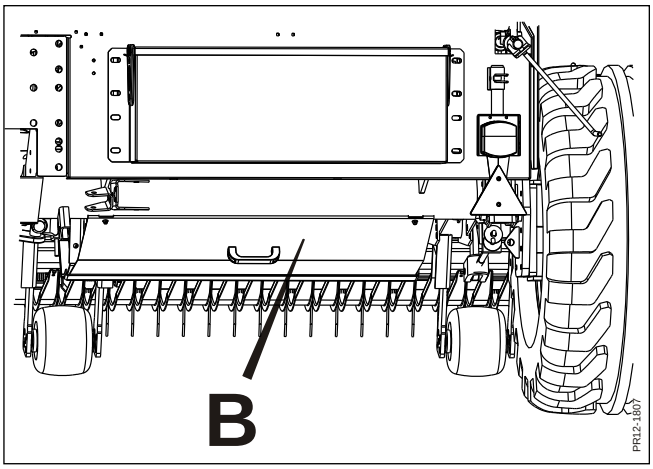


Fig. 4-14

Fig. 4-14 Under the roller section a bottom plate **B** can be mounted. This plate is mounted when working in very dry and/or short crops to avoid waste under the rollers.

IMPORTANT: When working under normal conditions we recommend you to drive without this bottom plate as, otherwise, material can accumulate under the rollers causing reduced capacity and unnecessary overload of the transmission.

However, when driving in a crop where there is an excessive waste under the rollers, the bottom plate must be mounted.

CUTTING LENGTHS

The cutting length depends on the following 2 conditions:

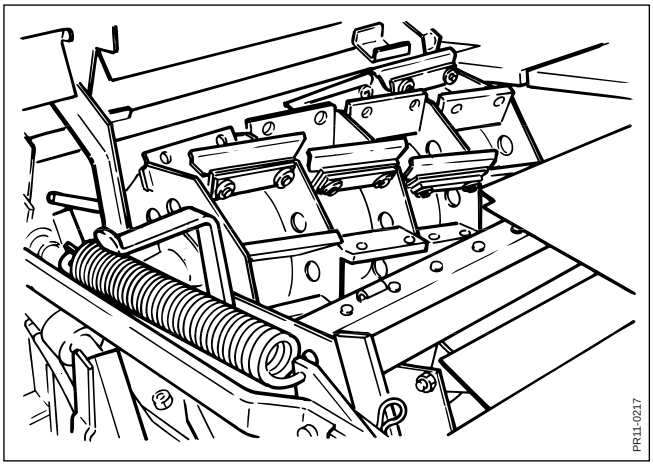


Fig. 4-15

Fig. 4-15 All cutting lengths can be doubled by removing every second row of blades.

1) Number of blades on the rotor. All cutting lengths can be doubled by removing every second row of blades.

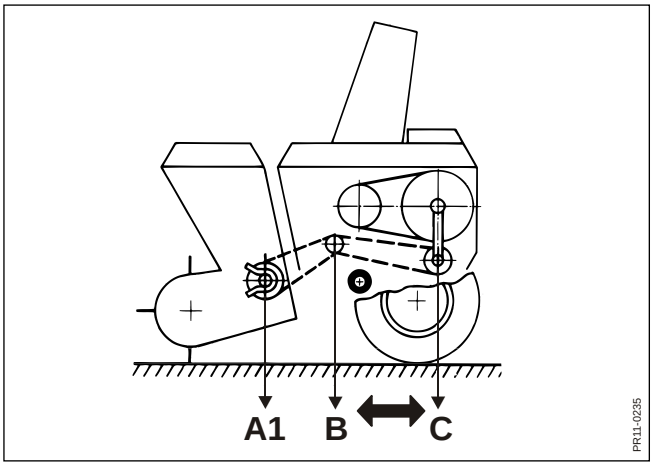


Fig. 4-16

Fig. 4-16 2) Feed intake speed, which is changed by using the following sprocket wheels:

Sprocket wheel No.	Number of teeth Z
2064-448X	14
2064-449A	18
2065-460X	21
2064-450A	25
2064-451A	30
2062-442X	36

The table below indicates the theoretical cutting length for possible combinations of the above sprocket wheels:

	Fig. 4.16 for pick-up		
24 blades	**A1**	**B**	**C**
5.7 mm.	18	30	14
7.2 mm.	18	30	18
*8.5 mm.	21	25	18
10.0 mm.	21	30	25
12.0 mm.	36	25	25
14.3 mm.	36	25	30
*16.6 mm.	36	18	25

*Standard cutting length

REPLACEMENT AND ADJUSTMENT OF BLADES

WARNING: First, block the blade cylinder with a wooden wedge as the sharp blades can easily cause injury.

When replacing a single blade the blade must be placed at the same distance from the shear-bar as the other blades. To ensure that the rotor is in balance it may be necessary to replace the opposite blade as a used blade has a different weight compared to a new blade.
Even if there is no visible damage to the blade bolts, they should always be replaced together with the blades as they might have been overloaded.

CAUTION: **Check the distance between the blade and the shearbar (0.5 mm) with the supplied gauge before and after the bolts are tightened.**

WARNING: **Only use original blade bolts when replacing. Tighten the blade bolts with a torque wrench to 400 Nm (approx. 40 kpm) or with the supplied spanner using approx. 40 kg leverage (400 Nm).**

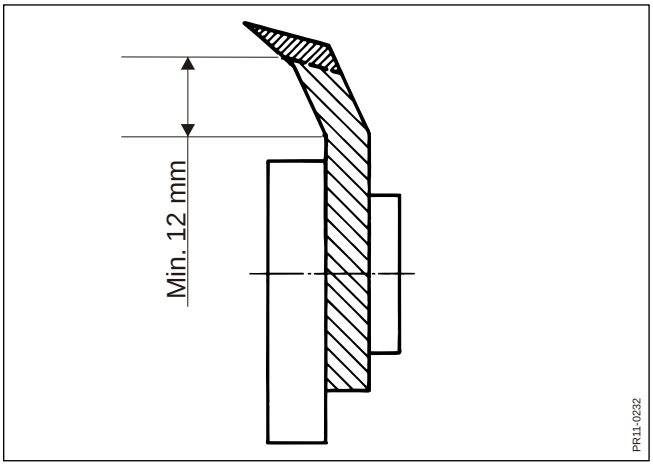


Fig. 4-17

Fig. 4-17 When the blades have been worn max. 8 mm or to the first bend, i.e. approx. 12 mm above the straight piece they must be replaced.

DANGER: **When all blades on the rotor have been worn and the rotor adjusted towards the shearbar, it MUST be adjusted back again before new blades are mounted. Otherwise there is a risk that the new blades collide with the shear-bar when the rotor is turned.**

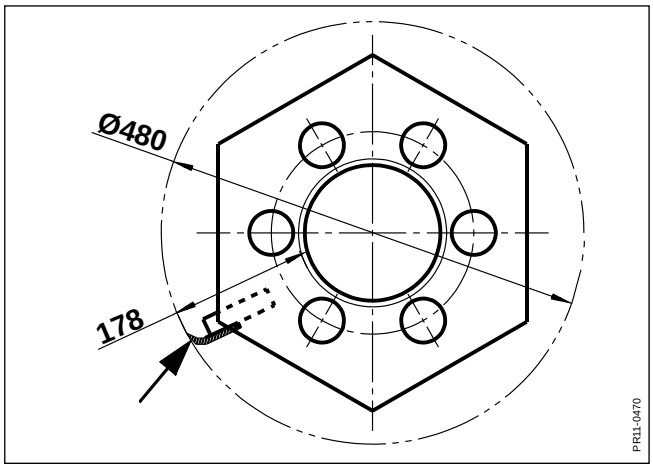


Fig. 4-18

Fig. 4-18 When mounting new blades they must be pulled out so that the outer diameter on the rotor is 480 mm (from rotor tube to blade point = 178mm).

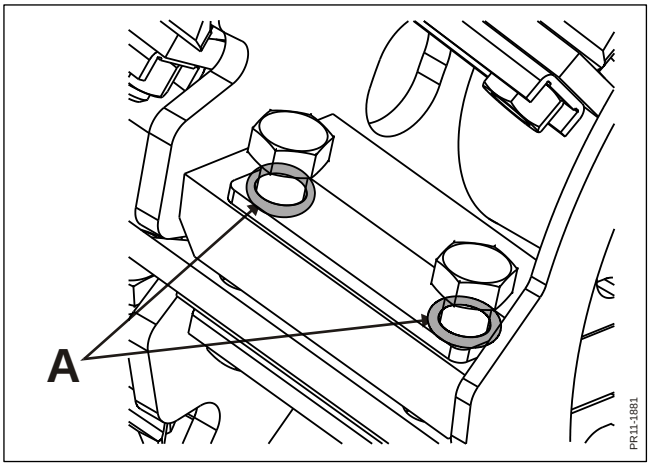


Fig. 4-19

Fig. 4-19 When replacing blade bolts, it is important to ensure that the area **A** under the bolt heads is greased.

GRINDING

Adjustment of the PTO drive shaft for the rotor to or from grinding position, respectively, may only take place **when the machine has been stopped and the rotor has come to a complete standstill.** The rotor may only rotate when the grinding device is in grinding position.

Check before grinding:

- that the grindstone is undamaged.
- that the device is easily sliding back and forth.
- that the device is parallel with the rotor.

The grinding device is correctly adjusted from the factory and therefore there is normally no need for adjustment, but if it has been dismounted adjustment can be made at the oblong holes of the lateral guides. The bolts must be tightened firmly after the adjustment.

The stone is fed by turning the handle.

Normally you should grind the blades once a day – but avoid too much grinding since it will reduce the life of the blades.

CAUTION: **<u>Protect your eyes</u> – <u>always</u> use safety glasses when grinding. The guard above the grinding device <u>must</u> be closed while grinding.**

GRINDING OPERATION

1. Lift the guard above the grinding device.

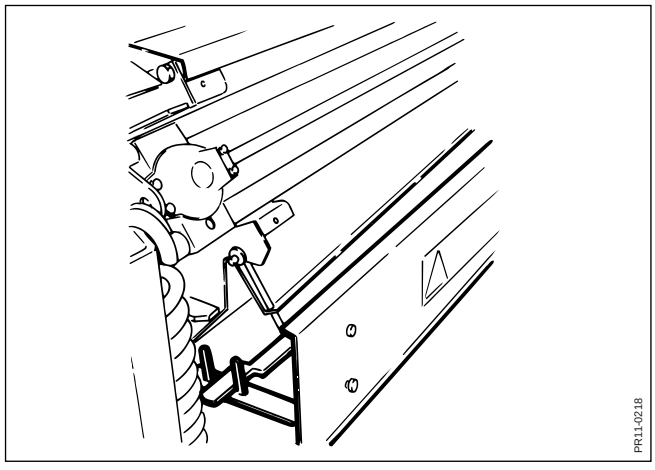


Fig. 4-20

Fig. 4-20

2. Lower the guard between the grinding device and the rotor so that there is free space between the device and the rotor.

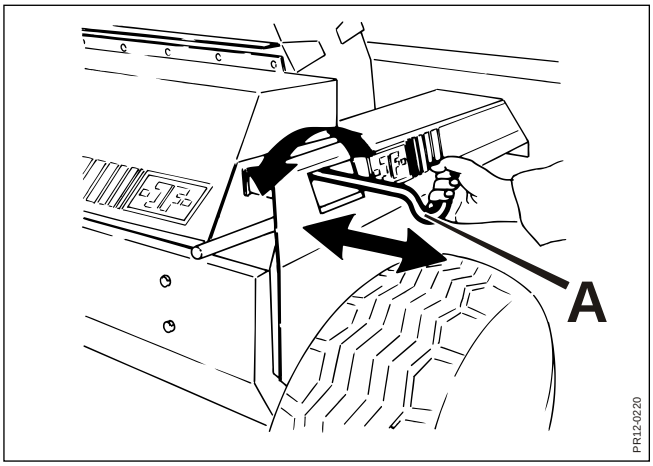


Fig. 4-21

Fig. 4-21 3. Adjust the grindstone so that there is 2-3 mm clearance between the stone and the blades by turning the handle **A**.

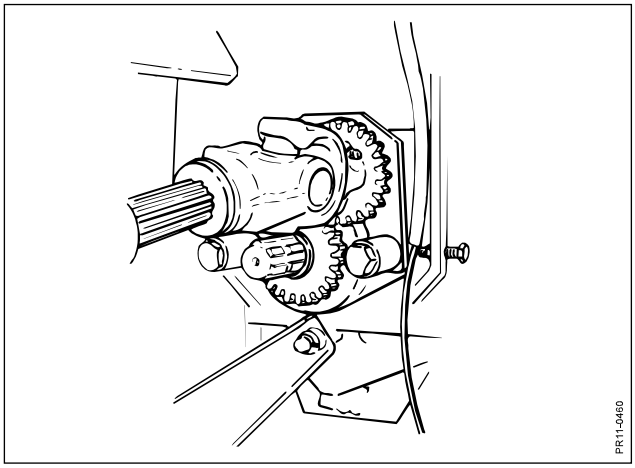


Fig. 4-22

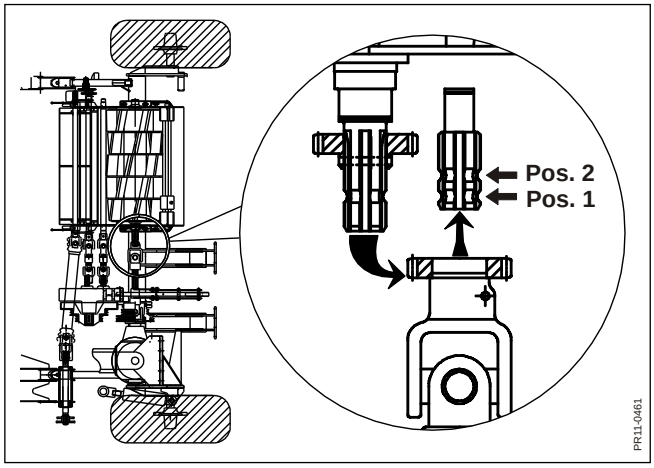


Fig. 4-23

Fig. 4-22 4. Mount the PTO drive shaft for the rotor on the free pin on the rotor housing. The
Fig. 4-23 PTO drive shaft must be fixed at position 2 whereby the rotor will rotate in the opposite direction.

5. Close all guards.

6. Start the tractor and keep the rpm at a little above idle speed.

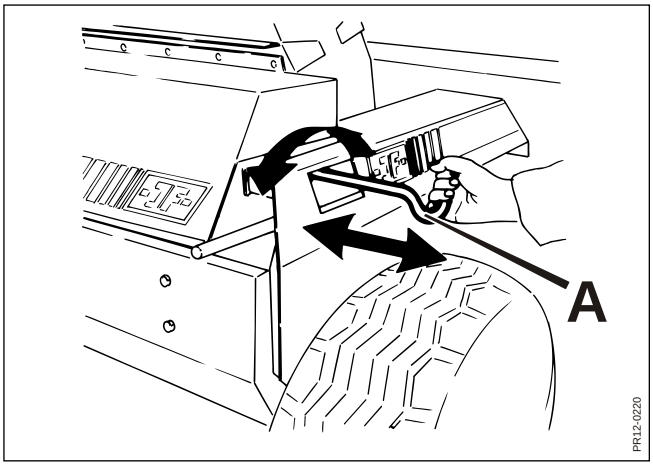


Fig. 4-24

Fig. 4-24 7. Feed carefully by turning the handle **A** until the stone touches the blade. Now move the stone in a sliding movement across the rotor and back again. Feed some more and repeat the movement across the whole width of the rotor so that the blades in the whole width of the rotor are sharpened.

8 Push the handle in after grinding. Stop the tractor and when the rotor has come to a complete stop, the guard between the device and the rotor must be lifted back into its right position.

9. **The PTO drive shaft for the rotor must be moved back to the pin for normal direction of rotation of the rotor.**

WARNING: REMEMBER, only grind with CLOSED guards.

For safety's sake check the distance between blades and shear-bars again with the gauge.

Check wear of the grindstone regularly. If the stone has been worn down to a thickness of 10 mm it must be replaced.

ROUGH GRINDING

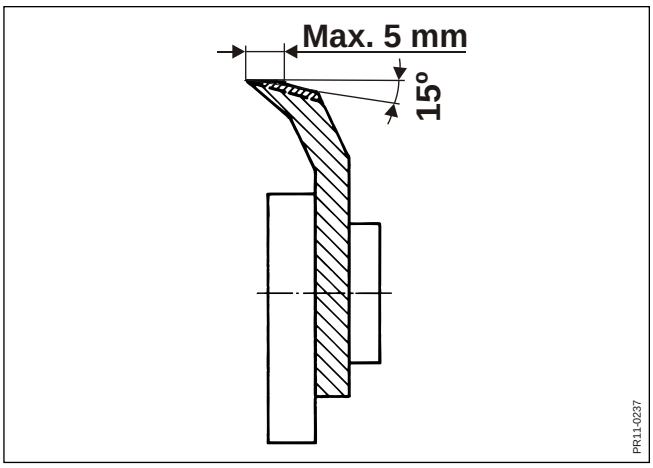


Fig. 4-25

Fig. 4-25 To avoid unnecessary power consumption and excessive wear of the grindstone when working with the harvester, it is necessary to make a rough grinding or adjustment of the blades when the cutting edge is 5 mm wide or more. Grind the rear edge to an angle of approx. 15°.

Rough grinding can be made by means of an angle grinder with the rotor and blades positioned in the machine.

CAUTION: **Be careful not to grind down the cutting edge (front edge) of the blades.**

WARNING: First, block the blade cylinder with a wooden wedge as the sharp blades can easily cause injury.

Always use safety glasses when grinding.

REVERSE

The reverse function **can** be used at full rpm (1000 rpm on the PTO), but **we recommend you to reduce the rpm** to relieve the machine as much as possible and reduce the wear of the rubber disc.

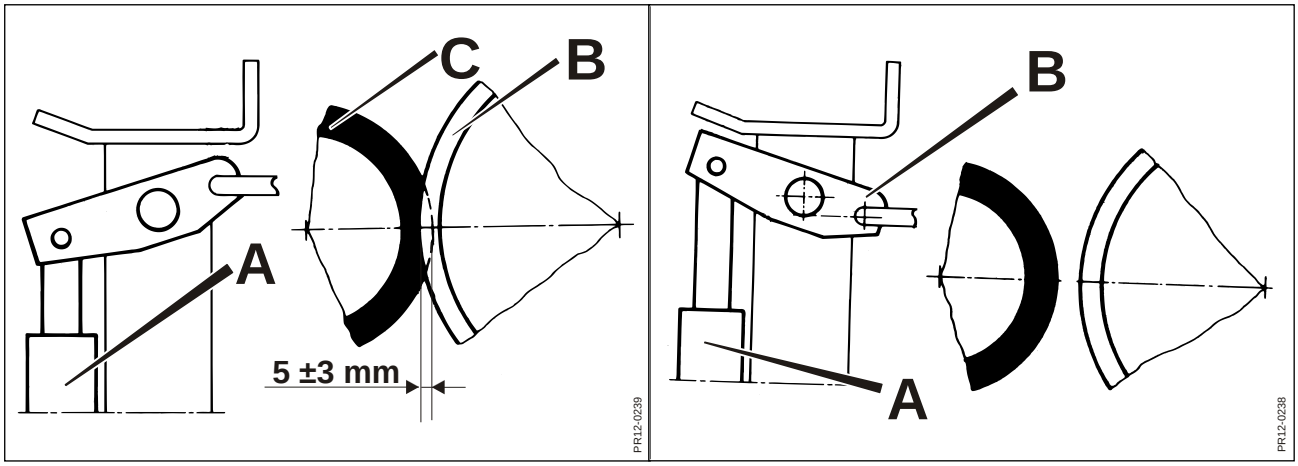


Fig. 4-26

Fig. 4-26 The overlap between the steel friction disc **B** and the rubber disc **C** must, with new rubber disc, be 5+/-3mm. If the rubber disc is worn, the overlap is adjusted automatically by the electric motor **A**, as it always presses with the same maximum pressure and thus ensures a constant pressure between the two parts **B** and **C**.

CAUTION: **Only use the reverse function shortly each time to ensure correct functioning and long life of the rubber disc.**

The tightening of the V-belt drive is also adjusted automatically. It is determined by the electric motor **A**, which always drives with the same constant power.

IMPORTANT: **If the tightening of the belt drive is not correct it can be because the bracket B which transmits the correct power from the electric motor is too tight or stuck. Disassemble the parts, clean, and grease the rocking mechanism before reassembling the parts.**

5. DRIVING IN THE FIELD

GENERAL CONDITIONS

Adjust the machine to the maximum cutting length acceptable for the crop in question. This will reduce the stress in the feed intake section and the transmission and increase the possibility of working with the machine continuously without blockages.

Always work with sharp blades and correctly adjusted shear-bar. Be aware that adjustment for short cutting length increases the power consumption and also the wear of blades.

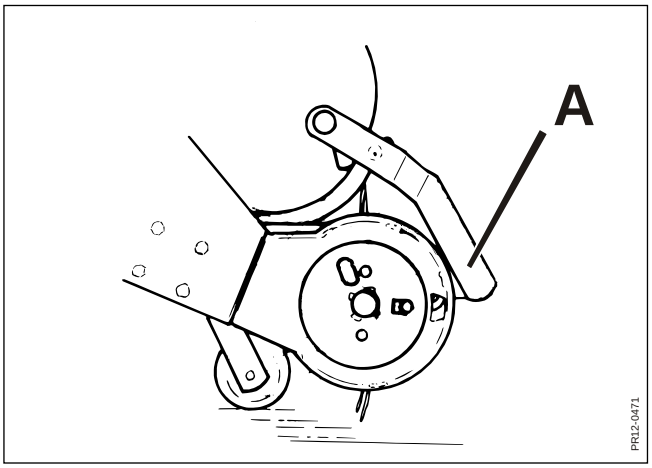


Fig. 5-1

Fig. 5-1 The feed intake plate **A** above the pick-up should be dismounted when working in heavy and strong crops as the auger can easily pull the crop into the feed intake section under such conditions. At the same time you will have optimal preconditions for problem-free reverse out of the auger as the feed intake plate **A** may prevent the crop from being reversed freely out of the auger.

Under difficult conditions we recommend you to bring spare friction discs for the slip clutch on the auger as the pre-adjusted torque on a slip clutch falls gradually when it is activated and the wanted power cannot be transmitted. When replacing discs remember that they must be of the same number and quality so that the required torque can be transmitted and to secure maximum life.

SWATHING BEFORE CHOPPING

If it is possible to influence the swathing made before chopping it is important to emphasise that regular and even swaths are optimal for the subsequent chopping and will spare the tractor driver a lot of trouble.

TRANSPORT POSITION

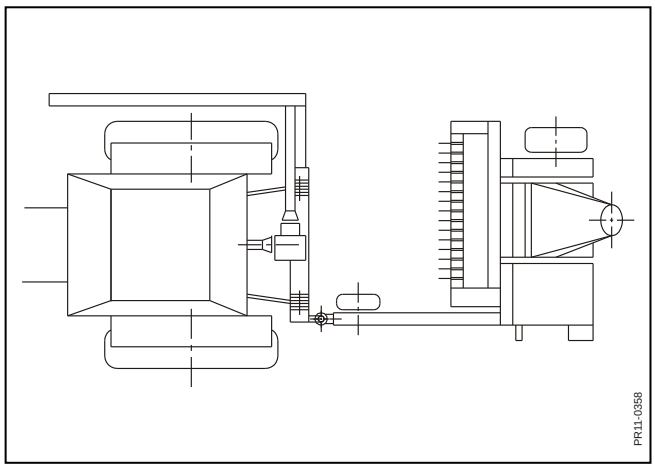


Fig. 5-2

Fig. 5-2 The machine is connected so that it follows behind the tractor. Make sure that the safety pin is in mesh before driving on public roads.

When driving on public roads, the delivery chute must be in a position where it does not increase the transport width of the machine.

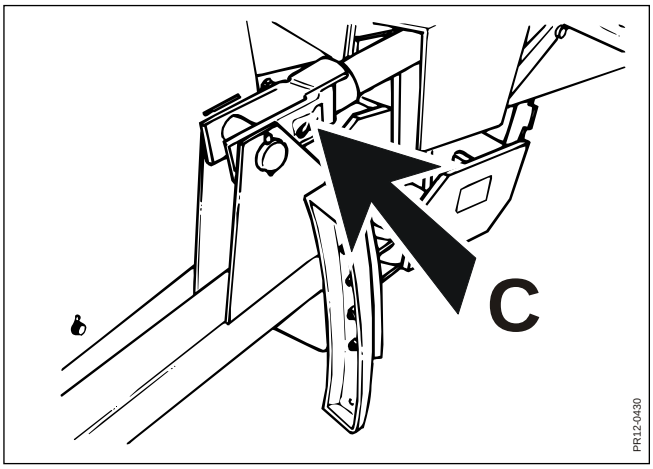


Fig. 5-3

Fig. 5-3 **Make sure** that the cylinder stop **C** is engaged before driving on public roads.

STARTING IN THE FIELD

Gradually increase to the correct number of rpm. This is 1000 rpm or 540 rpm on the PTO during working, therefore start with approx. 1050-1100 rpm or 580-600 rpm unloaded.
Drive slowly into the crop and increase the forward speed as long as the tractor can keep the required number of revolutions of approx. 1000 or 540 rpm.
An inexperienced operator should always work with a capacity reserve in the machine to avoid problems with the flow through the machine.

IMPORTANT: **Always make sure the tractor can keep the correct number of revolutions of 540 or 1000 rpm on the PTO.** This ensures a regular load of the machine and you avoid torque increases (in case of reduced rpm) which wears the safety clutches and the transmission.

To obtain optimal pick-up function it is important that:

- The crop enters the machine regularly and that you, if possible, drive in the opposite direction of the mower conditioner.
- The forward speed is adjusted to the amount of crop and is not so high that blockage is frequent.
- You drive as straight as possible into the crop and are aware of this when turning in the field.

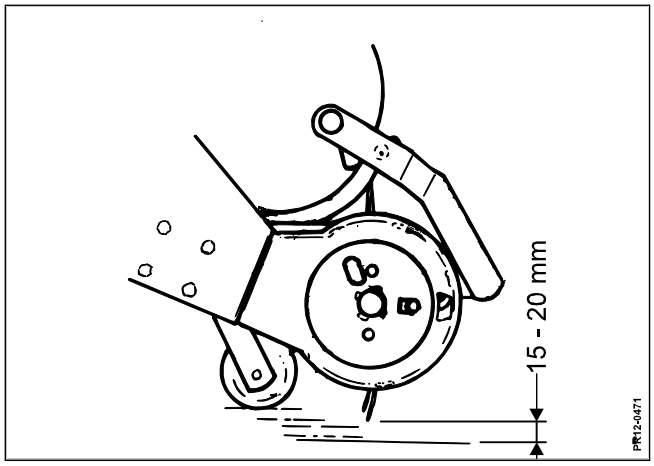


Fig. 5-4

Fig. 5-4 The pick-up is fitted with support rollers of steel which are adjustable in height. From the factory the wheels have been adjusted so that there is 15-20 mm space between the tines and an even and firm ground.
Check regularly that the pick-up tines do not reach further down than necessary to be able to pick up the swath efficiently. If the tines hit the ground too hard they are quickly worn and the drive of the pick-up may be overloaded.

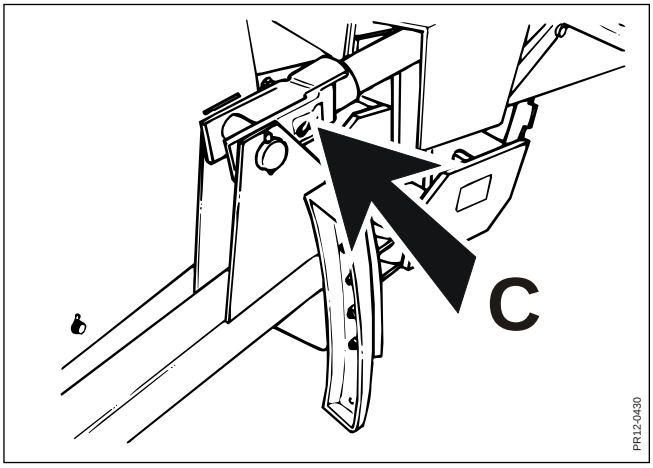


Fig. 5-5

Fig. 5-5 Before making any adjustment, the cylinder stop C must be engaged.

Lift the pick-up completely during transport and when turning. When driving through soft areas in the field, the pick-up can be lifted partly to avoid picking up earth etc. Remember to set the hydraulic outlet to floating position when the pick-up is lowered again so the support rollers can follow the ground.

BLOCKAGE IN THE MACHINE

Auger and feed intake section:
In case of blockage in the auger or feed intake section, activate the reverse function **immediately** and reduce the number of revolutions. Now place the reverse system in reverse position at a low number of rpm, with the switch on the control box, and reverse the material out of the machine. We recommend reversing slowly with the machine while the material is pushed out. Thereby you avoid accumulation of material behind the pick-up auger and in front of the pick-up fingers.
After reversing move the reverse system back to normal feed intake at a low number of rpm. When the machine runs correctly, increase to correct number of rpm and the work can be continued.

The rotor

In case of blockage in the rotor, activate the reverse function **immediately** and turn off the power transmission. To enable the feed rollers to pull the material out of the rotor, it must be disconnected during reverse. The procedure is as follows:

DANGER: **Do not approach the machine until the rotating parts have come to a complete stop. Although the feed intake has stopped, you cannot be sure it will not start, as long as the rotor is rotating.**

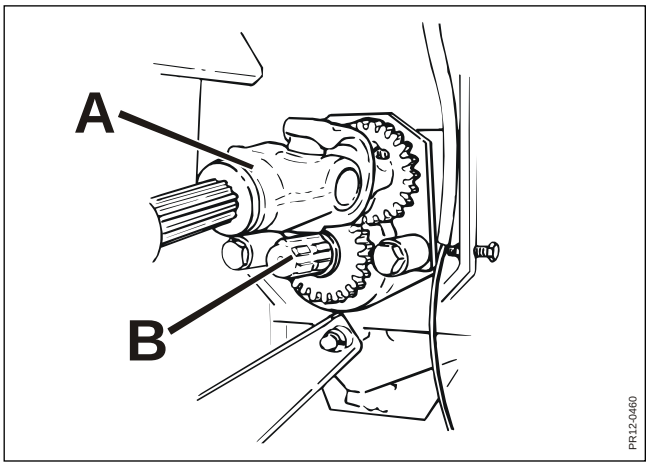


Fig. 5-6

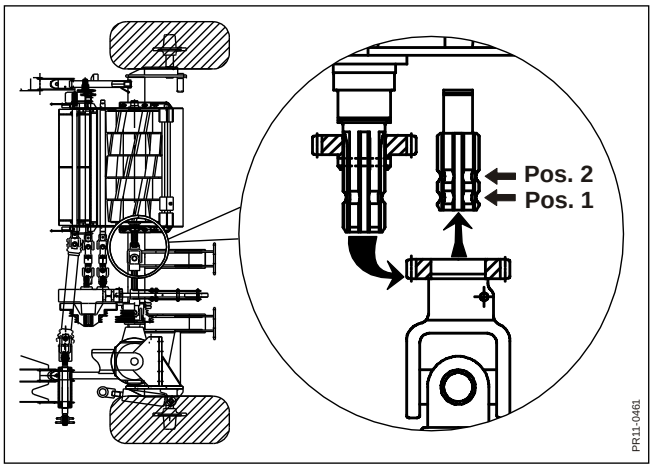


Fig. 5-7

1) When the **power take-off has been disconnected, the engine has stopped and the rotating parts have come to a complete stop**, go to the machine.

DANGER: **Do not approach the machine until the rotating parts have come to a complete stop.**

Fig. 5-6 2) Move the PTO shaft **A** for the rotor to the alternative pin in **pos. 1** where the gear
Fig. 5-7 wheels are not in mesh. Thereby the rotor is not driven.

WARNING: **It is important that the PTO shaft is NOT moved to pos. 2, where the rotor rotates in the opposite direction. This position is only used for grinding.**

3) Connect the power take-off at a low number of rpm and place the reverse system in reverse position. Thereby the material is pushed out of the machine.

Fig. 5-6 4) After reversing disconnect the power take-off again and, **when the feed intake has come to a complete stop**, remove any grass residue and move the PTO shaft **A** for the rotor back to the pin **B** for driving the rotor.

5) The reverse function is brought back to normal feed intake. Now **it is normally possible** to connect the power take-off and ”blow” the chopped grass, which is in the rotor housing, out of the chute, unless this is also blocked. In order to ”blow the rotor housing empty” it is necessary to increase the number of revolutions to maximum.

When the machine runs correctly, increase to correct number of rpm and the work can be continued.

VARIOUS

If you use ensiling agents, the safety instructions of these must be observed.
It is very important to protect the eyes.

6. MAINTENANCE

IN GENERAL

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

IMPORTANT: Screws and bolts on your new machine must be retightened after some hours of operation. This also applies if repairs have been made.
Especially the bolts for the blades on the rotor must be retightened carefully.

Torque measurement **M_A** for bolts on the machine (if nothing else stated in this instruction manual).

A 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 24	640	900	1100
M 24x1,5	690	960	1175
M 30	1300	1800	2300

GUARDS

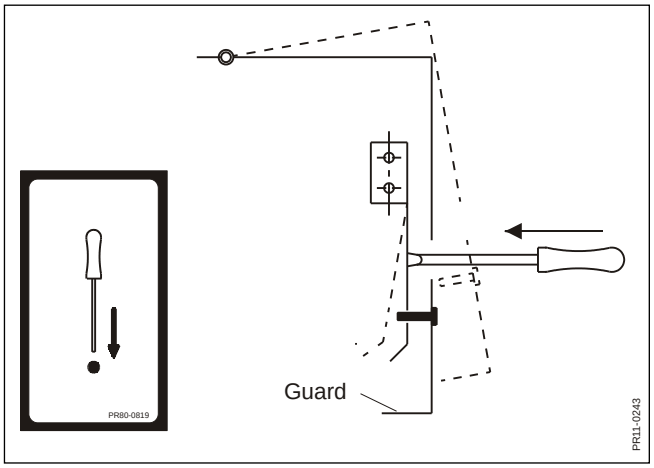


Fig. 6-1

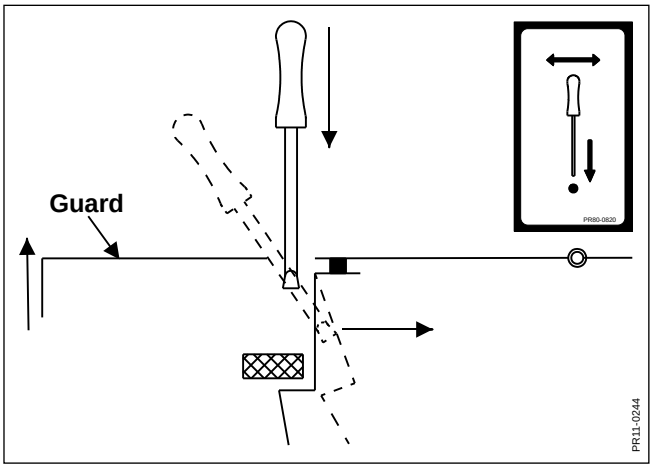


Fig. 6-2

Fig. 6-1 When maintaining the machine you often need to open or remove guards. For safety
Fig. 6-2 reasons all guards have been equipped with a lock. The lock ensures that the guard cannot be opened without using tools. Fig. 6-1 and 6-2 show the two different locking principles and the corresponding transfers which indicate and illustrate the locks on the machine.

REPLACEMENT OF BLADES

See description for replacement of blades in the rotor and the subsequent adjustment in the section REPLACEMENT AND ADJUSTMENT OF BLADES in chapter 4 "ADJUSTMENTS".

TYRE PRESSURE

The below table indicates the recommended tyre pressure.

FC 860	**Tyre dimension**	**Tyre pressure**
Machine	23x10,5-12/4	Max. 1,4 bar
Support wheel	500-8	Max. 2,4 bar
Rubber wheels for pick-up (Optional equipment)	3.50-6/4	3,0 bar

CAUTION: **Check the tyre pressure regularly and make sure that the wheel-fixing bolts are tightened correctly.**

FRICTION CLUTCH

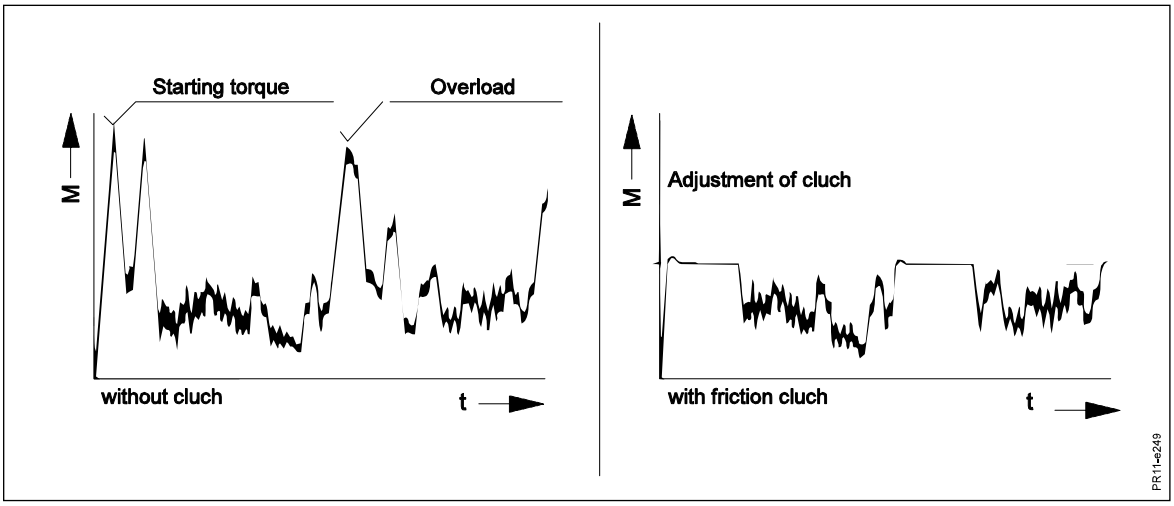


Fig. 6-3

Fig. 6-3 In order to ensure a long life for your tractor and machine, the machine is delivered with a friction clutch on the PTO drive shaft from the bevel gearbox to the machine. The figure illustrates how the clutch protects the transmission against high torque peaks and at the same time is capable of transmitting the torque while it is in function (slips).

The auger is also fitted with a friction clutch as described in the section PICK-UP in chapter 4 "ADJUSTMENTS".

The friction clutches must be maintained at regular intervals. At the same time, the clutches must be checked if they have not been in operation for some time. This especially applies after winter storage before the machine is used for the first time in the season.

Maintenance of the friction clutch on the PTO drive shaft:

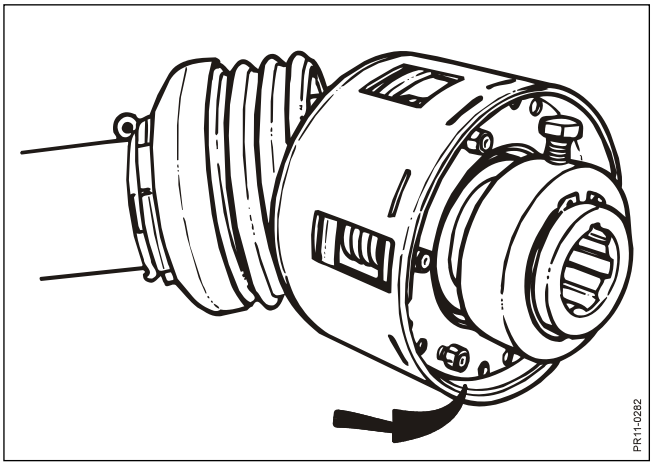


Fig. 6-4

Fig. 6-4 Before the start of a new machine and after a long period of standstill, e.g. winter storage, **the clutch is "aired" in the following way:**

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

Maintenance of the friction clutch on the auger:

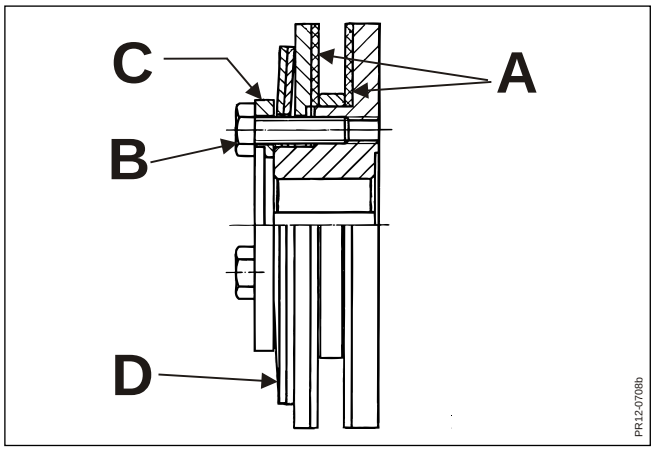


Fig. 6-5

Fig. 6-5 1) Disassemble the clutch and clean all parts of possible rust.
2) Check the clutch discs **A** for wear and replace if required.
3) Assemble and mount the clutch again. Tighten the bolts **B** with normal torque as the flange **C** ensures the correct compression of the springs **D** and thus the correct torque setting.

WARNING: **If the clutch is overloaded by slipping for some time, it will get heated and thus 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.

FUSE

The supplied electrical connection includes a 20A fuse.

WARNING: Never mount fuses with a higher power value. The control system may be damaged. If fuses blow there is an error in the electric system.

VARIOUS

ROLLERS

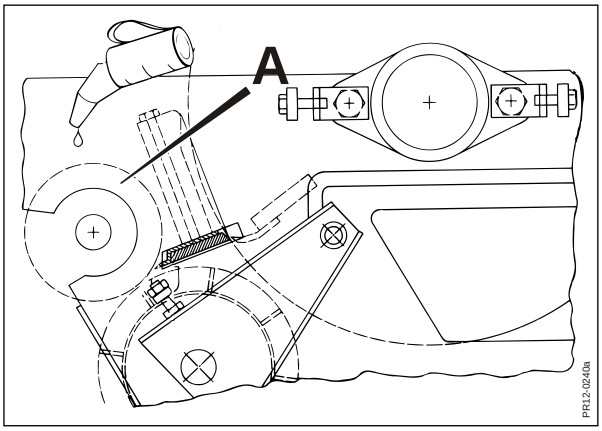


Fig. 6-6

Fig. 6-6 The upper rear feed roller, the smooth roller **A**, should be secured against formation of rust on the surface. If the machine is not in use in a period of more than one day, the whole surface should be lubricated with some oil.

CHAIN TIGHTENER FOR PICK-UP AUGER

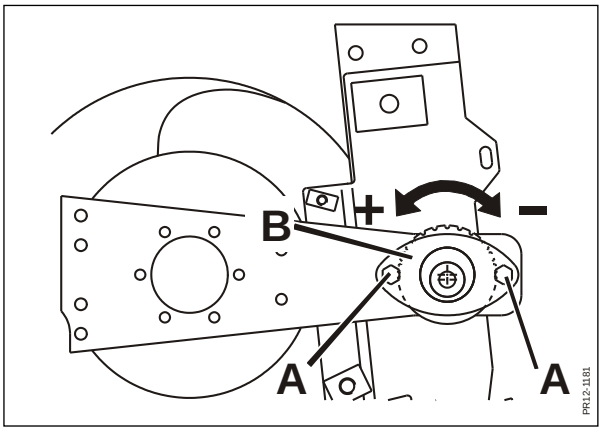
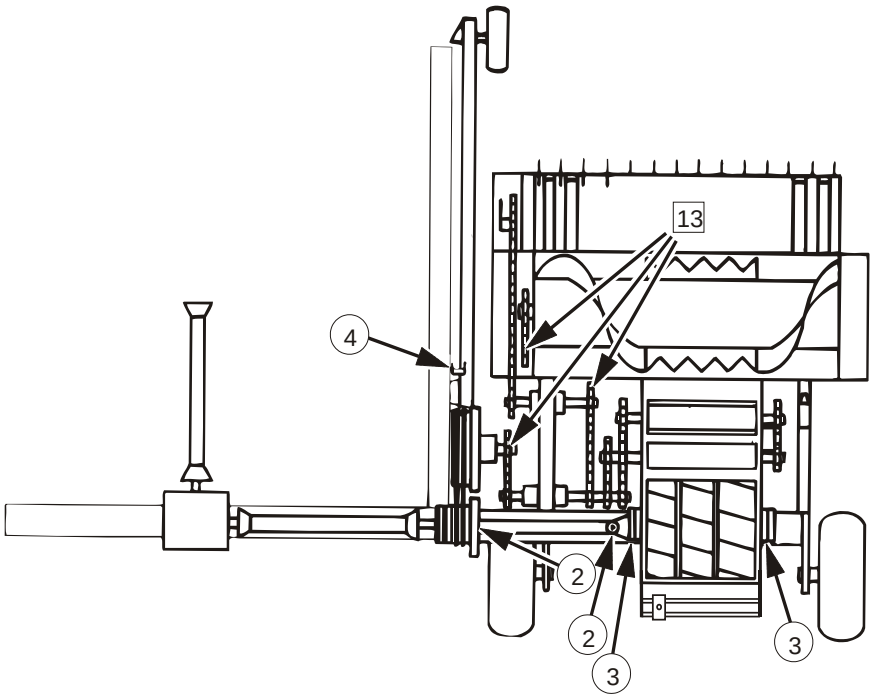


Fig. 6-7

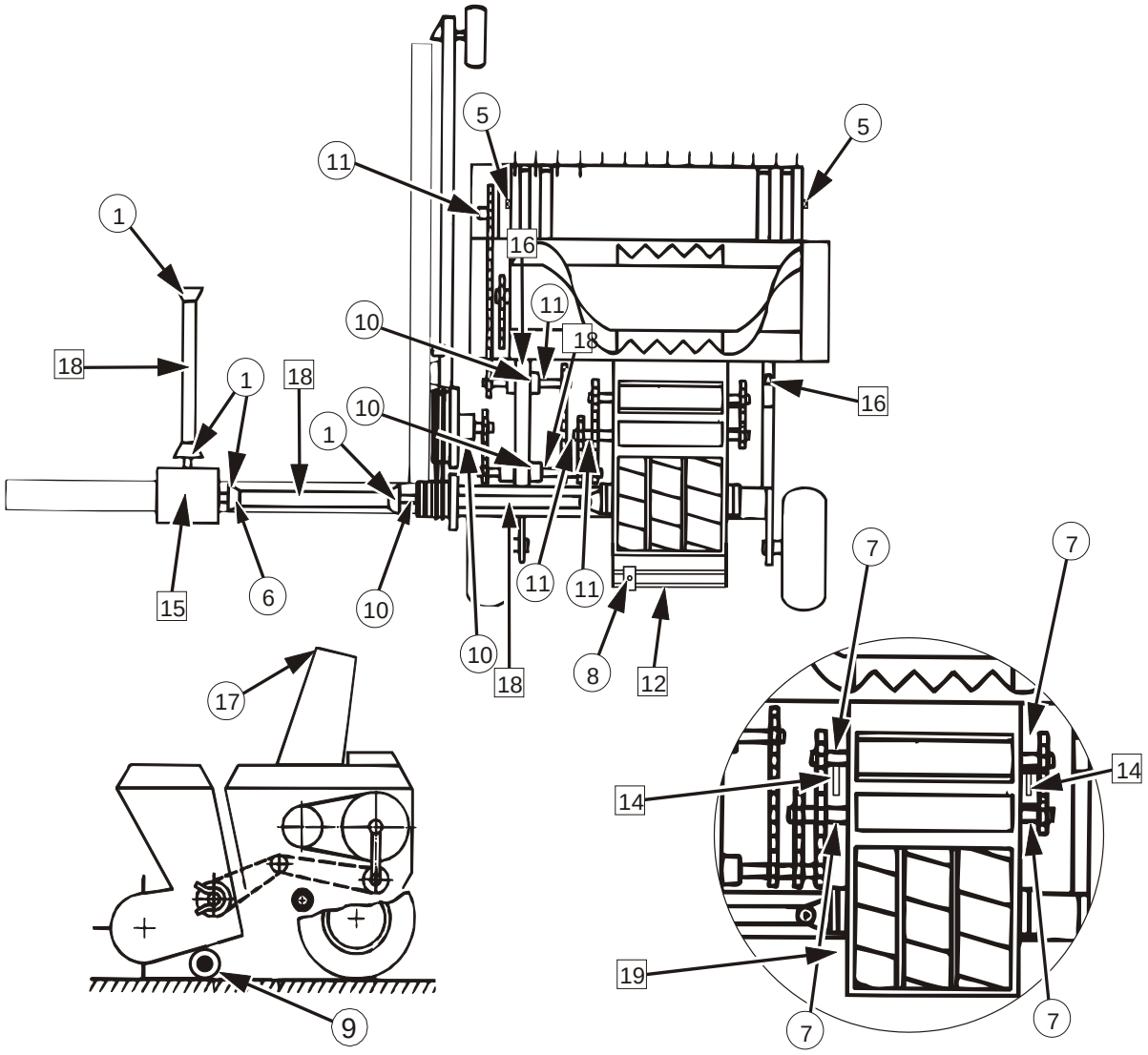
Fig. 6-7 Two bolts **A** are loosened after which the eccentric **B** can be turned with a screwdriver or the like. It is turned in **+** direction for tightening and in **–** direction for loosening.

CAUTION: **It should always be possible to move the chain at least 20 mm up and down in the middle.**

Daily lubrication



Lubrication once a week



7. GREASING

After every 8 hours of operation or once a day, the following must be greased:

3	Rotor bearings	2
13	Chains (grease with thin oil/chain saw oil)	8
2	Transmission shaft at rotor	2
4	Lateral steering (with grease)	1
7	Feed rollers	8

After every 50 hours of operation or once a week, the following must be greased:

1	Universal joints on PTO shafts	4
6	Overrun clutch	1
18	Profile tubes on PTO shafts	3
5	Bearings for tube in the pick-up	2
17	Swivel chute	4
8	Grinding device	1
9	Support rollers	3
14	Link bearings in rocker arms	2
10	Bearing housing	4
11	Couplings	3
19	Alternative pin for transmission shaft at rotor (grinding/blocking)	1
12	Steering device for grindstone (rust-preventing oil)	2

After every 500 hours of operation or once a year, the following must be greased:

16	Support arm for pick-up	2

15 Bevel gearbox:

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

- **Oil content:**

PTO 540	PTO 1000
3l	3l

- **Oil change:** After the first 10 working hours and then anually.

8. STORAGE (WINTER STORAGE)

When the season is over, the preparation for winter storage should be made immediately after. First, clean the machine thoroughly. Dust and dirt absorb moisture and moisture increases the formation of rust.

CAUTION: **Be careful when cleaning with a high pressure cleaner. <u>Never</u> spray directly on the bearings and grease all grease points carefully after cleaning so that possible water is pressed out of the bearings.**

IMPORTANT: **Grease all grease points after cleaning the machine.**

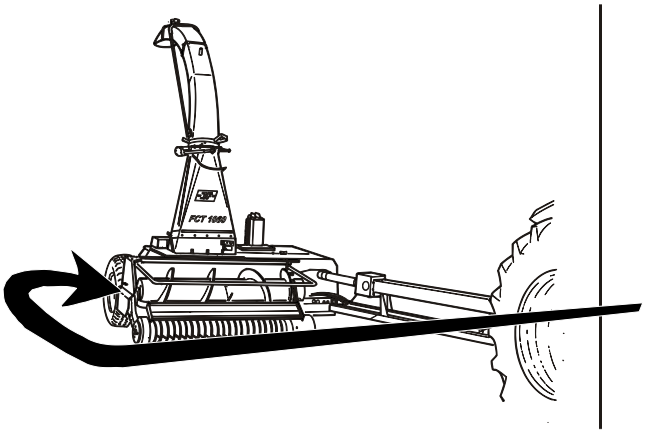
The following points are instructions how to prepare for winter storage.

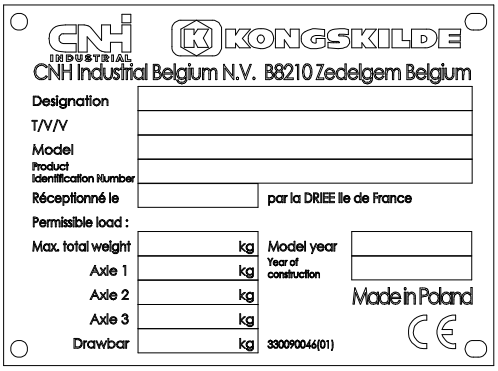
- Check the machine for wear and other defects – note down the necessary parts you will need before the next season and order the spare parts.
- Dismount the PTO drive shafts, lubricate the profile tubes and keep them in a dry place.
- Spray the machine with a thin coat of rust-preventing oil. This is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

10. SPARE PARTS ORDERING

When ordering spare parts, please state the exact 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.





11. DISPOSAL

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

Observe the following:

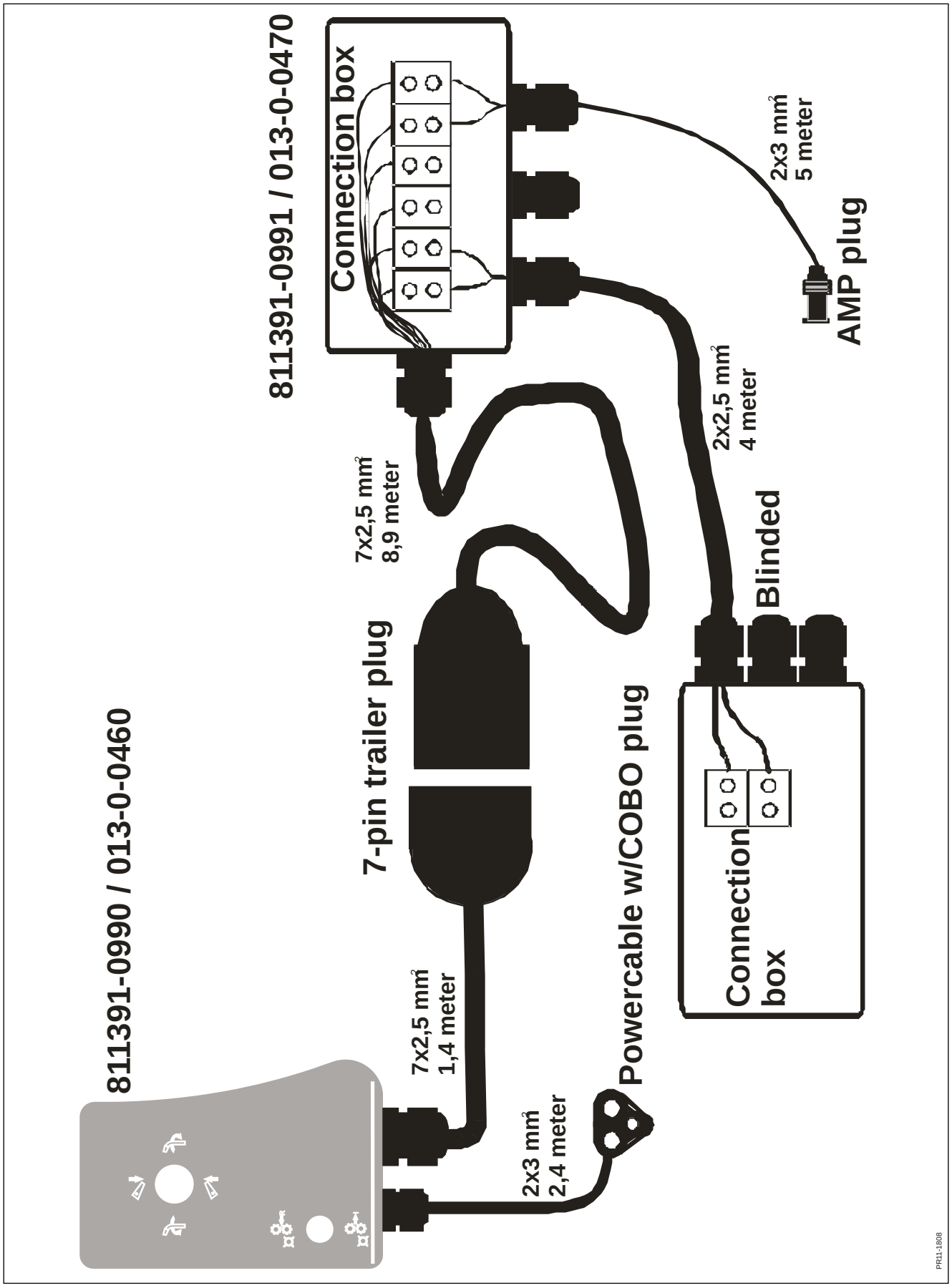
- The machine must **not** be placed somewhere outside.
- Gearboxes, cylinders and hoses must be emptied of oil. These oils must be handed over to a recycling company.
- Disassemble the machine and separate the individual parts, e.g. PTO drive shafts, tyres, hydraulic components etc.
- Hand over the usable parts to an authorised recycling centre. The large scrapping parts are handed over to an authorised breaker's yard.

12. FAULT FINDING

DIAGRAMS:

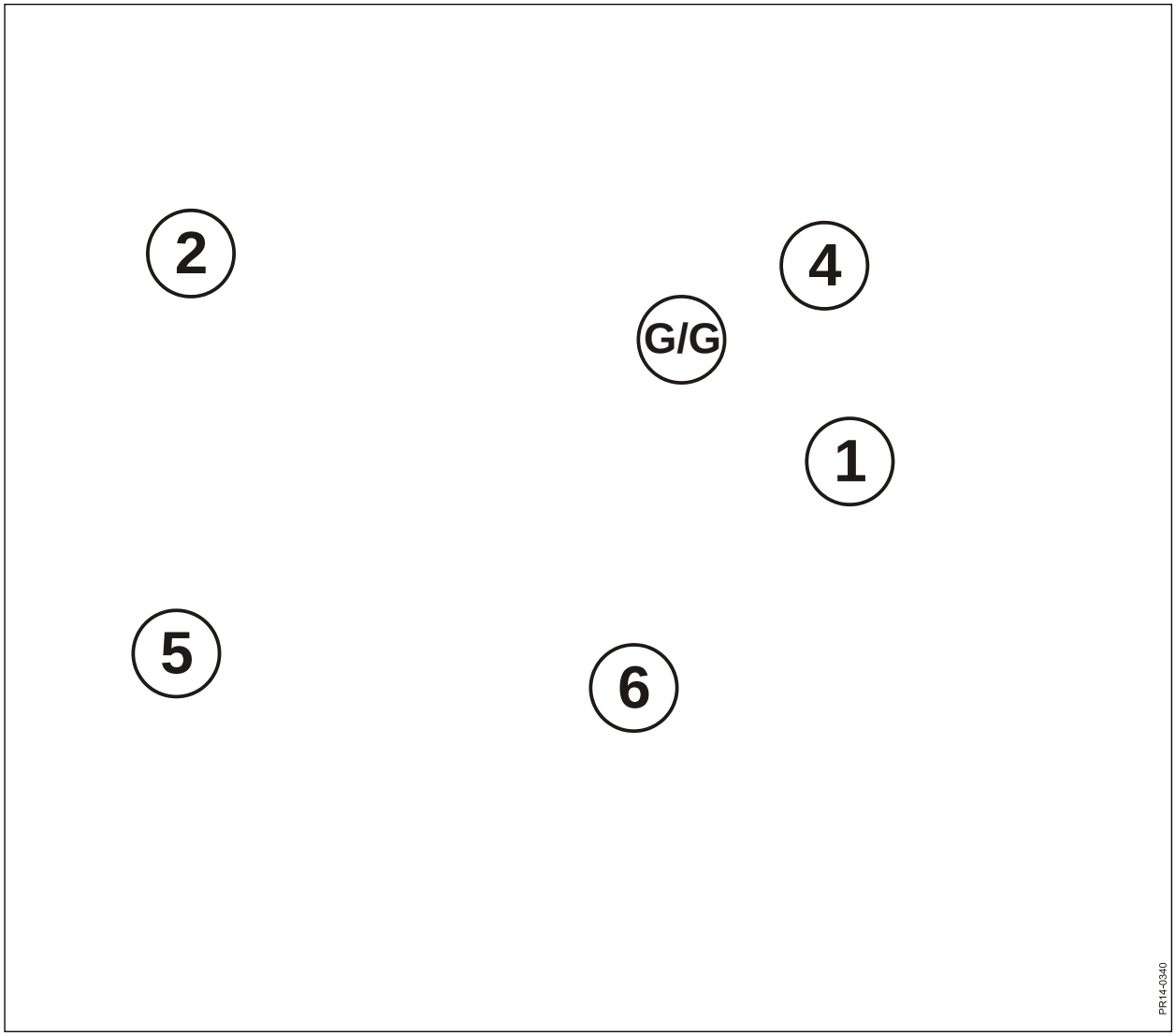
The figures below show the electric diagrams for the machine. Here you can follow the wiring system between the components, for instance when maintaining or replacing cables.

CONTROL SYSTEM



WIRING SYSTEM

Function category	Functional description	Multicable wire n°	Trailer connection
Joystick sw 5.1	V5a Valve	1	1
Joystick 6.4	Joystick Right V4A	2	2
	not used	3	3
Joystick sw 5.2	V6 Valve	4	4
Joystick 6.2	Joystick Down V3B	5	5
Joystick 6.3	Joystick Left V4B	6	6
Joystick 6.1	Joystick Up V3A	g/g	7



13. WARRANTY

Your machine is warranted according to legal rights in your country and the contractual agreement with the selling dealer. No warranty shall, however, apply if the machine has not been used, adjusted and maintained according to the instructions given in this operator's manual.
It is prohibited to carry out any modifications to the machine unless specifically authorized, in writing, by a NEW HOLLAND representative.

EF-overensstemmelseserklæring/ EG-Konformitätserklärung/ EC Declaration of Conformity/ Déclaration CE de conformité/ Dichiarazione CE di conformita/ EG Verklaring van Overeenstemming/ EG-försäkran om överensstämmelse/ EY-vaatimustenmukaisuusvakuutus/ Declaración de conformidad CE/ Deklaracja Zgodności WE./ Декларация за съответствие ЕО/ EK Megfelelőségi Nyilatkozat /ES Prohlášení o shodě/ EB Atitikties deklaracija/ ES prehlásenie o zhode/ Declaraţia de conformitate CE/ Vastavuse Deklaratsioon EÜ /ES Izjava o skladnosti/ Δήλωση πιστότητας ΕΚ/ Declaração de fidelidade CE/ Dikjarazzjoni ta' Konformità tal-KE/ EK Atbilstības deklarācija/

Fabrikant/ Hersteller/ Manufacturer/ Fabricant/ Produttore/ Fabrikant/ Fabrikant/ Valmistaja/ Fabricante/ Producent/ Производител/ Gyártó/ Výrobce/ Gamintojas/ Výrobca/ Producător/ Tootja/ Proizvajalec/ Κατασκευαστής/ Fabricante/ Fabbrikant/ Ražotājs

CNH INDUSTRIAL BELGIUM N.V.

Leon Claeysstraat 3a, 8210 Zedelgem, BELGIUM

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Erklærer hermed, at/ Erklären hiermit, daß/ Hereby declare that/ Déclare par la présente que/ Dichiara che/ Verklaren hierbij dat/ Försäkrar härmed, att/ Vakuuttaa täten, että tuote/ Por el presente declara que/ Niniejszym deklaruje, że/ Декларирам, че/ Az alábbiakban kijelentem, hogy/ Tímto prohlašuje, že/ Deklaruoja, kad/ Týmto prehlasujeme, že/ Prin prezenta declar că/ Alljärgnevaga deklareerib, et/ Izjavljamo, da je/ Με το παρόν δηλώνω ότι/ Abaixo declara que **/** Jiddikjaraw li / Apstiprinu, ka

Maskine:	La máquina:	Masin:
Maschine:	Maszyna:	Stroj:
Machine:	Машината:	Η μηχανή:
Machine:	Gép:	Máquina:
La macchina:	Stroj:	Il-magna:
Machine:	Mašina:	Mašīna:
Maskin:		Stroj:
Laite:		Maşina:

KONGSKILDE

Model/Type**: FC 860**
Designation: Harvester
Serial:

- er i overensstemmelse med Maskindirektivets bestemmelser (Direktiv 2006/42/EF) og hvis relevant også bestemmelserne i EMC-direktivet 2014/30/EU.

- In übereinstimmung mit den Bestimmungen der Maschinen-Richtlinie 2006/42/EG und wenn erforderlich auch mit der EMC-Richtlinie 2014/30/EU hergestellt wurde.

- is in conformity with the provisions of the Machinery Directive 2006/42/EC and if relevant also the provisions of the EMC Directive 2014/30/EU.

- est conforme aux dispositions de la Directive relatives aux machines 2006/42/CE et également aux dispositions de la Directive sur la Directive EMC 2014/30/UE.

- é in conformita' con la Direttiva Macchine 2006/42/CE e, se pertinente, anche alla Direttiva alla Direttiva EMC 2014/30/UE.

- in overeenstemming is met de bepalingen van de Machine richtlijn 2006/42/EG en wanneer relevant ook met de bepalingen van de EMC richtlijn 2014/30/EU.

- är i överensstämmelse med Maskindirektivets bestämmelser (Direktiv 2006/42/EG) ock om relevant också bestämmelserne EMC-direktivet 2014/30/EU.

- täyttää Konedirektiivin (Direktiivi 2006/42/EY) määräykset ja oleellisilta osin myös EMC-direktiivin 2014/30/EU.

- es conforme a la Directiva de Maquinaria 2006/42/CE y, si aplica, es conforme también a la Directiva EMC 2014/30/EU.

- pozostaje w zgodzie z warunkami Dyrektywy Maszynowej 2006/42/WE i jeżeli ma to zastosowanie również z warunkami Dyrektywy dot. kompatybilności elektro magnetycznej EMC 2014/30/UE.

- отговаря на изискванията на Директивата за Машините 2006/42/ЕО и ако има приложение на изискванията на Директивата за електромагнитна съвместимост 2014/30/ЕС.

- Megfelel a 2006/42/EK Gépi Eszközökre vonatkozó előírásoknak és amennyiben felhasználásra kerül, a 2014/30/EU Elektromágneses kompatibilitás Irányelv feltételeinek.

- odpovídá základním požadavkům Strojní směrnice 2006/42/ES a jestliže to její uplatnění vyžaduje i s podmínkami Směrnice 2014/30/EU týkající se elektromagnetické kompatibility.

- atitinka Mašinų direktyvos Nr. 2006/42/EB ir, jeigu taikoma, Elektromagnetinio suderinamumo direktyvos Nr. 2014/30/ES reikalavimus.

- je v súlade s podmienkami Smernice 2006/42/ES o strojných zariadeniach a pokiaľ si to jeho uplatnenie vyžaduje aj s podmienkami Smernice 2014/30/EÚ o elektromagnetickej kompatibilite.

- îndeplineşte prevederilor Directivei de Maşini 2006/42/CE şi dacă este utilizată de asemenea cu prevederile Directivei referitoare la compatibilitatea electro-magnetică EMC 2014/30/UE.

- on vastavuses Masinate Direktiivi tingimustega 2006/42/EÜ ning sammuti juhul, kui on tegemist sammuti on vastavuses Elektromagnetilise kokkusobivuse Direktiivitingimustega EMC 2014/30/EL.

- z določili Direktive o strojih 2006/42/ES ter, če je to relevantno, tudi z določili EMC Direktive 2014/30/EU.

- παραμένει σύμφωνη με τους όρους της Οδηγίας περί Μηχανών 2006/42/ΕΚ και σε περίπτωση που αυτό εφαρμόζεται και με τους όρους της Οδηγίας περί ηλεκτρομαγνητικής συμβατότητας (ΗΜΣ) 2014/30/ΕΕ.

- Está de acordo com exigências das Directivas das Maquínarias 2006/42/CE e no caso em que tiver igualmente aplicação com as exigências das Directivas referentes a compatibilidade electromagnética EMC 2014/30/UE.

- tikkonforma mad-dispożizzjonijiet tad-Direttiva dwar il-Makkinarju 2006/42/KE u jekk rilevanti wkoll mad-dispożizzjonijiet tad d-Direttiva EMC 2014/30/EU.

- atbilst mašīnu direktīvai 2006/42/EK, kā arī nepieciešamības gadījumā elektromagnētiskās saderības direktīvai EMC 2014/30/ES.

Zedelgem, date:

Antoon Vermeulen

Dealer's stamp

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Availability of some models and equipment builds varies according to the country in which the equipment is being used. For exact information about any particular product, please consult your Kongskilde dealer.

KONGSKILDE