



Disc mower

GMD800GII-FF





Dear Owner

In buying a Kuhn machine you have chosen wisely. Into it have gone years of thought, research and improvement. You will find, as have thousands of owners all over the world, that you have the best that engineering skill and actual field testing can produce. You have purchased a dependable machine, but only through proper care and operation can you expect to receive the performance and long service built into it.

This manual contains all the necessary information for you to receive full efficiency from your machine. The performance you get from this machine is largely dependent on how well you read and understand this manual and apply this knowledge. Please **DO NOT ASSUME YOU KNOW HOW TO OPERATE AND MAINTAIN YOUR MACHINE** before reading this manual carefully. **KEEP THIS MANUAL AVAILABLE FOR REFERENCE.** Pass it on to the next owner if you re-sell the machine.

Your KUHN dealer can offer a complete line of genuine KUHN service parts. These parts are manufactured and carefully inspected in the same factory that builds the machine to assure high quality and accurate fitting of any necessary replacements.

■ About improvements

We are continually striving to improve our products. It therefore reserves the right to make improvements or changes when it becomes practical to do so, without incurring any obligations to make changes or additions to the equipment sold previously.

■ Designated use of the machine

The **GMD800 GII** mower must only be used for the purpose for which it was manufactured: mowing on the ground of hay fields, grass silage fields and improved pastures for the purpose of harvesting fodder for feeding livestock.

Contents

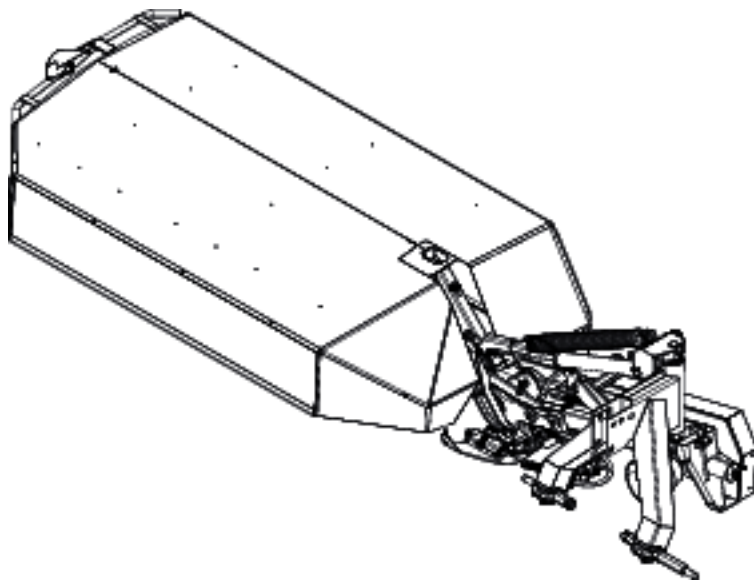
■ Dear Owner	1
■ Contents	2
■ Identification of the machine.....	4
Front view.....	4
Rear view.....	4
Model identification plate	5
Optional equipment.....	5
■ Safety.....	6
Description of symbols used in this document.....	6
Safety instructions	7
Location and description of safety decals on the machine	17
Road safety equipment and recommendations.....	22
■ Machine specifications	23
Description and glossary.....	23
Technical specifications	24
Sound levels	24
■ Putting into service	25
Description of control elements.....	25
Coupling and uncoupling	26
■ Instructions for transport	35
Putting the machine into transport position.....	35
Conformity with the road regulations.....	36



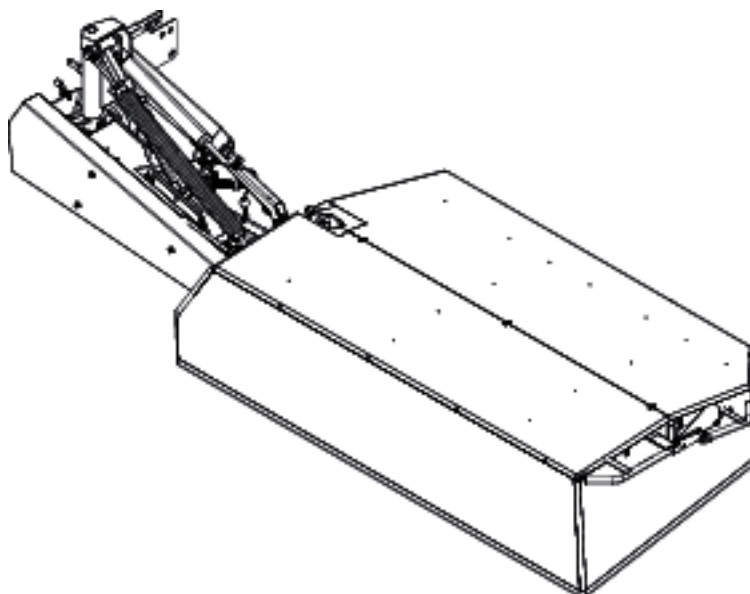
■ Instructions for work	37
Putting the machine into work position	37
Adjustments in working position.....	39
Machine use.....	41
■ Optional equipment	45
Raised skid shoes.....	45
Side deflector.....	45
Side deflector with high cone disk	46
Lighting and signalling	46
Lateral signalling equipment.....	47
1000 min-1 drive kit.....	48
Longer hitch pins	49
■ Maintenance and storage	50
Frequency chart	50
Lubrication.....	51
Maintenance.....	54
Storage.....	74
■ Trouble shooting guide	75
■ Appendix	77
Calculating the load on an axle.....	77
■ Limited warranty	83

Identification of the machine

1. Front view

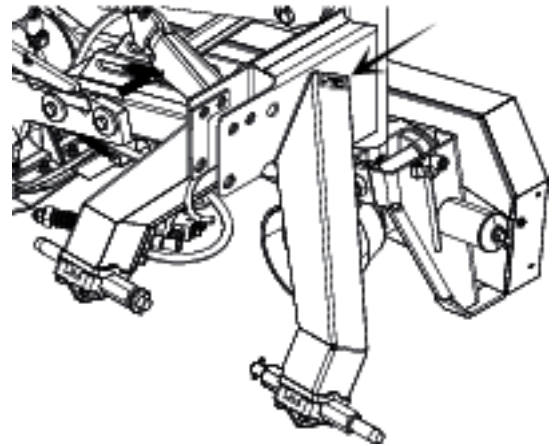


2. Rear view



3. Model identification plate

Please write below the type and serial number of the machine. This information is to be indicated to the dealer for all spare parts orders.



Type: **GMD800GII**

Serial no.:



4. Optional equipment

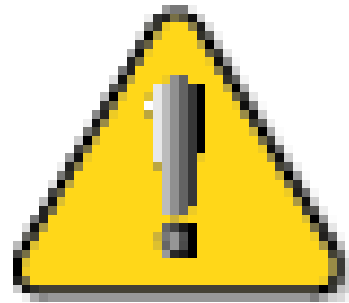
Tick box corresponding to the equipment fitted on your machine:

- Kit no. 1036230: Raised skid shoes 90 mm (3.54").
- Kit no. 1036340: Side deflector.
- Kit no. 1036290: Side deflector with high cone disk.
- Kit no. 1026100: Lighting and signalling.
- Kit no. 1016440: Lateral signalling equipment.
- Kit no. 1066010: 1000 min⁻¹ drive kit.
- Kit no. 56820700: Longer hitch pins.

Safety

1. Description of symbols used in this document

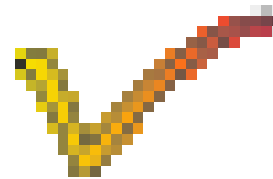
This symbol indicates a potentially hazardous situation that if not avoided, could result in serious bodily injury.



This symbol is used to identify special instructions or procedures which, if not followed strictly, could result in machinery damage.



This symbol is used to communicate technical information of particular interest.



2. Safety instructions

■ Introduction

The machine must only be operated, maintained and repaired by competent persons who are familiar with machines' specifications and operation and aware of safety regulations for preventing accidents.

The operator must imperatively respect safety instructions in this manual and in the warnings posted on the machine. The operator is also obliged to respect current legislation concerning accident prevention, work safety and public traffic circulation.

Designated use of the machine also means following operation, maintenance and repair recommendations given by the manufacturer, and using only genuine spare parts, equipment and accessories, as recommended by the manufacturer.

The manufacturer is not held liable for any damage resulting from machine applications other than those specified by the manufacturer. Any use other than the designated operation is at the risk and responsibility of the operator.

The manufacturer is not held liable for any damage or accident resulting from machine modifications carried out by the operator himself or by a third party without previous written agreement from the manufacturer.

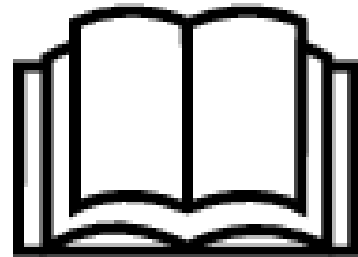
■ Read and follow the safety instructions

Before using the machine, carefully read all the safety instructions in this manual and the warnings placed on the machine.

Before starting work, the operator must be familiar with all machine controls, handling devices and their functions. It is too late to learn once work has been started!

Never let anyone operate the machine who is not trained to do so.

Should you have any difficulties in understanding certain parts in this manual, please contact your KUHN dealer.



■ Precautions to be taken before carrying out any operations on the machine

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.



■ Precautions to take before using the machine

Do not wear loose clothing which could become caught up in moving parts.

Wear the appropriate protective clothing for the work in hand (gloves, shoes, goggles, helmet, ear defenders, etc.).

Ensure that all operating controls (ropes, cables, rods, etc) are placed so as they cannot be operated unintentionally and cause damage or injury.

Before operating the machine, check tightness of nuts and bolts, particularly on fixing elements (tines, forks, blades, knives, etc). Retighten if necessary.

Before operating the machine, ensure that all the safety guards are firmly in place and in good condition. Immediately replace any worn or damaged guard.



■ Precautions when driving

Tractor handling, stability, performance and braking efficiency are all affected by weight distribution, trailed or mounted implements, additional ballast and driving conditions. It is therefore of great importance that the operator exercises caution in every given situation.

Groundspeed must be adapted to ground conditions as well as to roads and paths. Always avoid abrupt changes of direction.

Be particularly cautious when turning corners, paying attention to machine overhang, length, height and weight.

Never use a narrow track tractor on very uneven or steeply sloping ground.

Never leave the tractor seat while the machine is operating.

Carrying people or animals on the machine when working or in transport is strictly forbidden.



■ Precautions when driving on public roads

Dimensions

Depending on the dimensions of the machine, contact the relevant authorities to ensure that it can be legally transported on public roads.

If the machine is over the maximum legal size, follow the local regulations for special transportation of oversize equipment.

Transport position

Before transporting the machine on public roads, place the machine into its transport position, according to the instructions in this manual.

Lights and indicators

Before transporting the machine on public roads, ensure that all legally required lightings and signalings are in place.

Ensure that lightings and signalings are clean and in good working order. Replace any missing or broken equipment.



Always obey current regulations for driving on roads.



Gross weight and weight per axle



The drawings are not legally binding, their only aim is to illustrate the method to use.

Prior to driving on public roads, check that criteria are met to be in conformity with the country's regulations:



- When coupling a tool to the front and rear 3-point lift linkage, the maximum authorized payload must not be exceeded.
- When coupling tools to the front and rear 3-point lift linkages, the maximum load on each axle's tires must not be exceeded.
- The load on the tractor front axle must always represent 20 % of the tractor unladen weight.

For machines with hoppers or tanks:



- If the total unit weight exceeds the tractor Gross Combined Weight Rating in accordance with the country's legislation, empty the hopper to travel on public roads.
- In any case, we recommend to travel on public roads with empty hoppers and tanks.

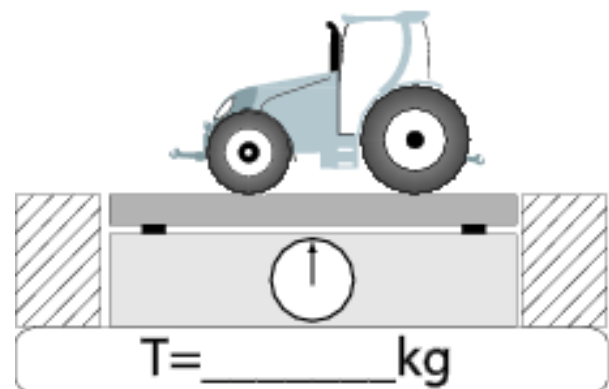
Description of symbols

Description	Units	Description
T	kg	Tractor unladen weight
PTAC	kg	Gross Combined Weight Rating
T1	kg	Unladen load on tractor front axle
T2	kg	Empty load on tractor rear axle
t	kg	Axle loads (Tractor + machine)
t1	kg	Load on front axle (Tractor + machine)
t2	kg	Load on rear axle (Tractor + machine)
t1 max	kg	Maximum load authorized on the tractor front axle according to the tires
t2 max	kg	Maximum load authorized on the tractor rear axle according to the tires
M1	kg	Total weight of front tool or front ballast

Stage 1:

To measure:

- Tractor tare (T).



Stage 2:

- Couple the machine to the tractor.

To measure:

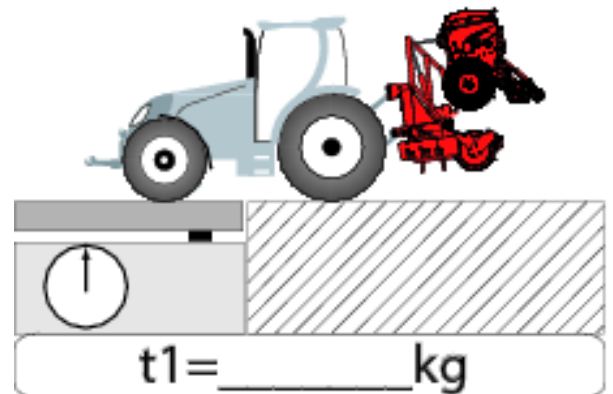
- Load on front axle (t1):
 - Tractor + machine (transport position).

To do:

- If the front axle load (t1) is below 20% of the tractor tare (T), add ballast weights (M1) to exceed the minimum load on the front axle.

Example:

- (T) = 7500 kg (16535 lb)
- The front axle load must be of minimum 1500 kg (3300 lb). (20% of T)
- (t1) = 700 kg (1545 lb).
- 700 kg (1545 lb) < 1500 kg (3300 lb).
- Add ballast weights until the minimum front axle load is exceeded.
- Repeat checking procedure.



$$t1 < 20\% T \longrightarrow \times$$

$$t1 \geq 20\% T \longrightarrow \checkmark$$

Stage 3:

To measure:

- Total weight (t):
 - Tractor + machine (transport position).
 - Ballast weights.

Checking:

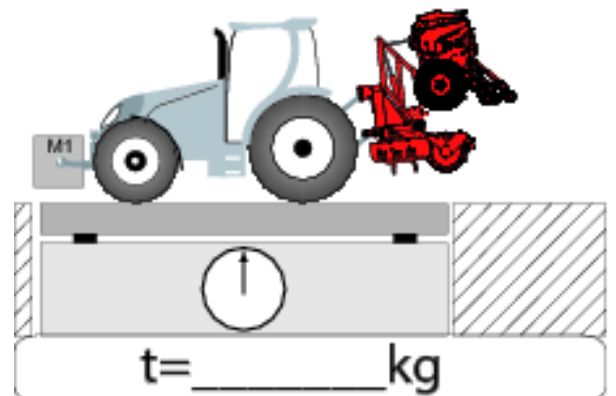
- To go to the next stage:
 - Check in the tractor's operator's manual that the value measured is below the tractor's Gross Combined Weight Rating.

To do:

- If $t < PTAC$ go to the next stage.
- If the total unit weight exceeds the tractor Gross Combined Weight Rating in accordance with the country's legislation, empty the hopper to travel on public roads.

Example:

- (t) = 10000 kg (24250 lb)
- PTAC = 13000 kg .
- $t < PTAC$: Go to the next stage.



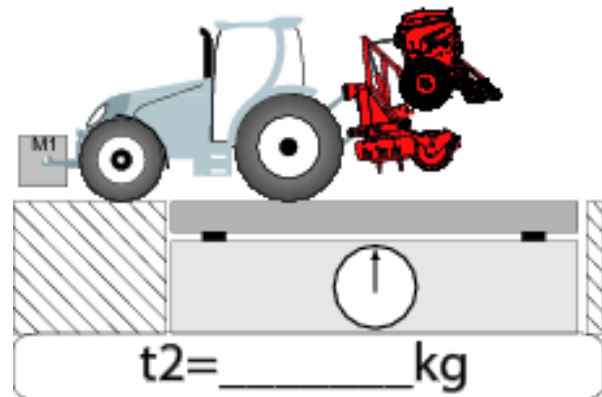
Stage 4:

To measure:

- Load on rear axle (t_2):
 - Tractor + machine (transport position).
 - Ballast weights.

Checking:

- Check in the tractor's operator's manual that the value measured is below the maximum allowed tractor rear axle load.
- Check that tyre and rim specifications are in conformity with the requirements of the tractor manufacturer.



Example:

- Load on rear axle (t_2) = 8500 kg (18740 lb)
- Check in the tractor's operator's manual that the value measured is below the maximum allowed tractor rear axle load.
- Check that tyre and rim specifications are in conformity with the requirements of the tractor manufacturer.

$$t_2 > t_2 \text{ max} \longrightarrow \text{X}$$

$$t_2 \leq t_2 \text{ max} \longrightarrow \checkmark$$

■ Maximum speed

Always keep to the legal speed limit for driving a tractor-machine assembly on public roads.

■ Precautions when coupling

Before attaching the machine, make sure that it cannot accidentally start moving (chock the wheels) and that the parking stand is in the right position.

The machine must only be attached to the hitch points provided for this purpose.

Never stand between the tractor and the machine when operating the three point linkage.

Do not stand between the tractor and the machine without ensuring that the parking brake is applied.



■ Hydraulic circuit

Caution! The hydraulic circuit is under high pressure. Maximum pressure at work: 200 bar (2900 psi).

Before connecting hoses to the tractor hydraulics, ensure that tractor and machine circuits are not under pressure. Before disconnecting a hose, depressurize the hydraulic circuit.

To avoid making incorrect connections, mark hydraulic couplers and corresponding hoses with colors. **WARNING!** Functions could be reversed (for example: lift/lower) and cause accidents.

Regularly check the hydraulic hoses. In case of normal wear, replace the hydraulic hoses every 5 years. Damaged or worn hoses must immediately be replaced. When replacing the hydraulic hoses, only use hoses with the specification recommended by the manufacturer of the machine.

To locate a leak, use appropriate means. Protect body and hands from liquid under pressure.

Any liquid under pressure (particularly oil from hydraulics) can penetrate the skin and cause severe injury. If injured, see a doctor immediately, there could be danger of infection.

Before any adjustments, maintenance or repairs are carried out, lower the machine to the ground, depressurize the hydraulics, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop.



■ PTO shaft

Use only PTO shafts supplied with the machine or recommended by the manufacturer.

The protective shield of the tractor PTO stub, the PTO shaft guards and the protective covering of the machine input shaft must always be in place and in good condition.

Make sure that the PTO shaft guards are secured with the safety chains provided.

Any worn or damaged guards must be replaced immediately. A worn guard or an unprotected PTO shaft can cause a serious or even a lethal accident.

Do not wear loose clothing that could be caught in the rotating PTO shaft.

Before attaching or removing a PTO shaft, or before doing any work on the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait for all moving parts have come to a complete stop.

If the primary PTO shaft is equipped with a slip clutch or a free wheel, these must be fitted on the machine side.

Ensure that the PTO shaft is always correctly fitted and locked into place.

Before connecting the PTO shaft, ensure that the PTO speed (rotational frequency) and directions of rotation are in line with manufacturer's recommendations.

Before engaging the PTO drive, make sure all people and animals are clear from the machine. Never engage the PTO drive when the tractor engine is stopped.

When uncoupling the machine, rest the PTO shaft on the support specially provided, and replace protective cover on the PTO stub of the tractor.

Read and follow the instructions in the operator's manual provided with the PTO shaft.



■ Precautions during manoeuvres

When moving the machine from the transport position to the working position and vice versa, make sure that nobody is within the machine pivoting area.

■ Remote controlled components

Danger of crushing and shearing can exist when components are operated by hydraulic or pneumatic controls. Keep away from these danger zones.

■ Safety decals

Safety warning decals are placed in pictorial form on various parts of the machine. They are there to warn you of potential dangers and to tell you how to avoid accidents.

Always keep the safety decals clean and readable, and replace them when they are worn, damaged, missing or illegible.

■ Waste disposal

Respect the environment! Never spill pollutants (oil, grease, filters, etc.) on the ground, never pour them down the drain and never discard them in any other place where they could pollute the environment. Never throw away or burn a tyre. Always take waste to specialized recycling or waste disposal centers.



■ Precautions for maintenance and repair work

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.

Rest the machine on the ground, release the pressure from the hydraulic circuit and leave the machine to cool down.

Make sure that the parts of the machine that need to be lifted for maintenance or repair work are firmly propped up.

Before any work is done on the electric circuit or before any electric welding is carried out on the attached machine, disconnect the machine from the tractor electrical circuit. Also disconnect alternator and battery terminals.

Repairs on elements under pressure or tension (springs, pressure accumulators, etc.) must only be carried out by competent persons with regulation equipment.

Wear the appropriate protective clothing for the work in hand (gloves, shoes, goggles, helmet, ear defenders, etc.).

Do not solder, weld or use a blow torch near fluids under pressure or inflammable products.

For your own safety and for correct machine operation, only use original manufacturer parts.

It is strongly recommended to have your machine checked by your Kuhn dealer after each season, especially tools and their attaching hardware.



■ Projection of stones and foreign objects

For driver safety, always use a tractor equipped with a cab. Keep the ground to mow free of foreign bodies. Avoid mowing on stony or rocky grounds. If this is not possible, take extra safety precautions, such as:

- Fit polycarbonate screens inside the tractor cab's side and rear windows, or install narrow mesh guards on their exterior.
- Increase the cutting height to avoid contact with stones or rocks.

Never start the machine when there are people nearby.



Even when the machine is used in accordance with its purpose, objects may be projected. Stones and other foreign objects projected by the moving parts can travel a considerable distance. Keep all persons and animals away from the danger zone.

The protection covers help reducing risks of projections. Therefore, make sure that all mower protection devices are in place and good condition prior to using the machine.

Regularly check the condition of the protection covers. Immediately replace any worn, damaged or missing cover.

■ Precautions for machine use

After each use, check the cutting tools (discs, knives) and their attachment hardware in accordance with the instructions given in the present manual. Immediately replace any worn, damaged or missing cutting tool or element. To do this, use the tool outfit supplied with the machine. For your safety, only use genuine parts !

Regularly check the condition of the protection covers. Immediately replace any worn, damaged or missing cover. Before engaging the PTO, rest the cutterbar on the ground. Make sure all the guards are in place. Keep all persons and animals away from the danger zone.

Stay a safe distance from the machine when the cutting tools are in movement.

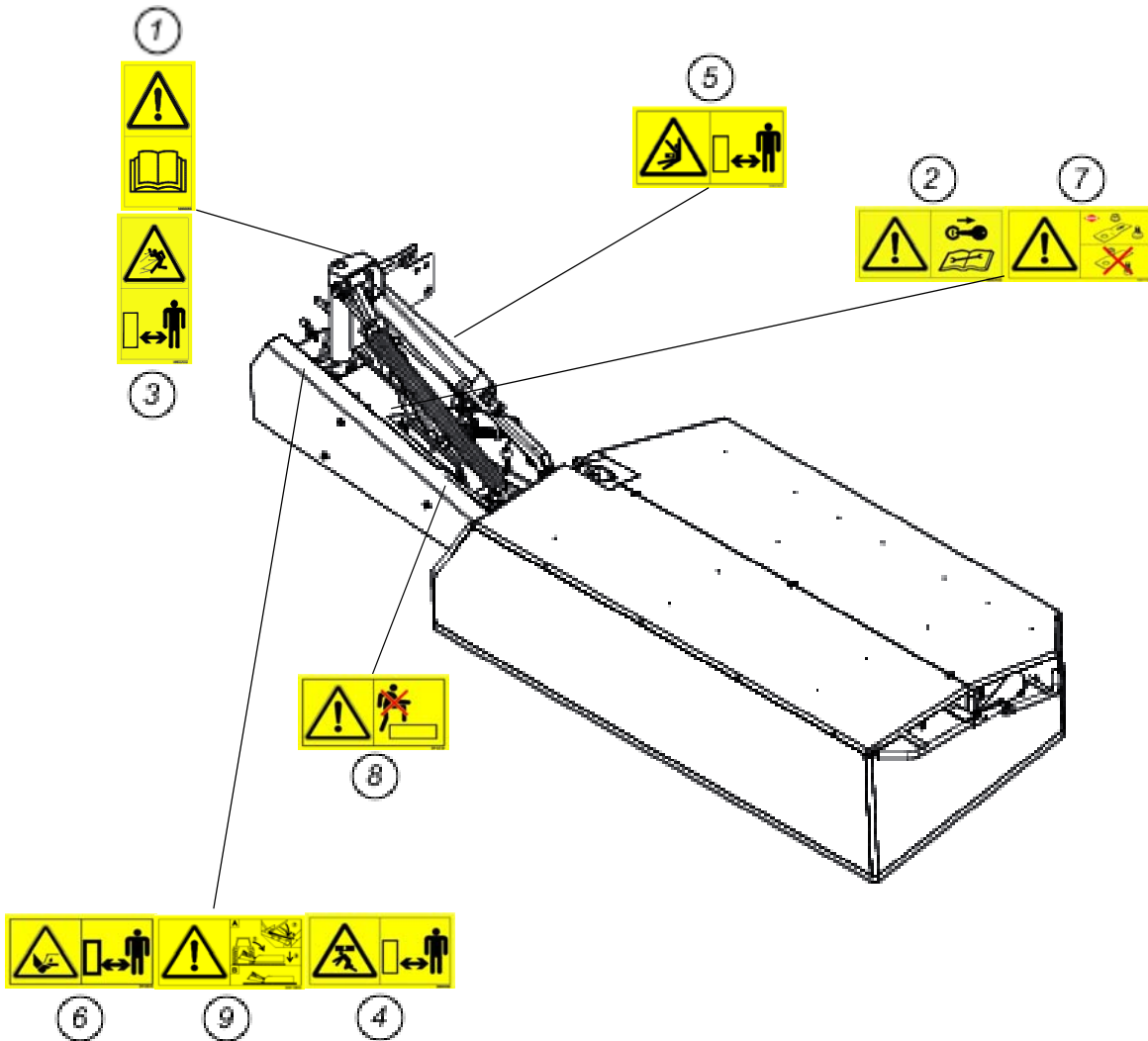
Never work in reverse.

After disengaging the PTO drive, cuttings tools can continue rotating for some time. Stay away from the machine until all moving parts have come to a complete standstill.

If the machine hits an obstacle, disengage the PTO drive, stop the tractor engine, remove the ignition key and wait for all moving parts to come to a complete standstill. Check the entire machine for any damage before resuming work.

3. Location and description of safety decals on the machine

■ Location of safety decals



■ Description of safety decals

Operating instructions (1)

The operators' manual contains all the information necessary for using the machine safely. It is imperative to read and comply with all instructions.



Working on the machine (2)

Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.



Projections (3)

Stones and other debris projected by the moving parts can travel a long distance. The protection covers must always be in position and in good condition. Always stay at a safe distance from the machine.



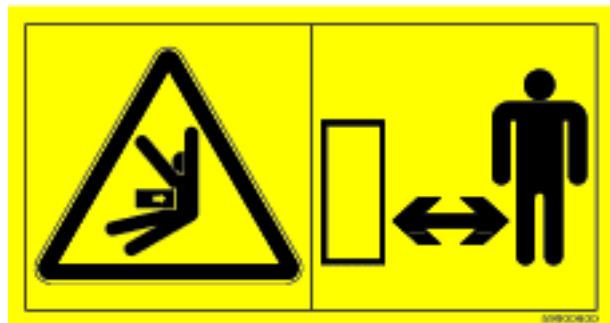
Crushing area (4)

Never operate in an area where there is a crushing risk before all moving parts have come to a complete stop.



Manoeuvring area (5)

Stay a safe distance from the machine. Crushing hazard.



Rotating cutting tools (6)

Keep away from the mower knives all the time the engine is running, the PTO drive engaged and the moving parts have not come to a complete stop.



Cutting tools (7)

The cutting tools and their attachment hardware meet safety and reliability criteria set by standards and by the manufacturer. For your own safety and for correct machine operation, only use original manufacturer parts.



Do not step on the machine (8)

Do not step on the machine : Risk of falling or damaging the protection device.



Prior to uncoupling the machine (9)

- Place the cutterbar in horizontal position.
- Lower parking lock.
- Lower the machine.

The machine must always be parked with the cutter bar in horizontal position (B).



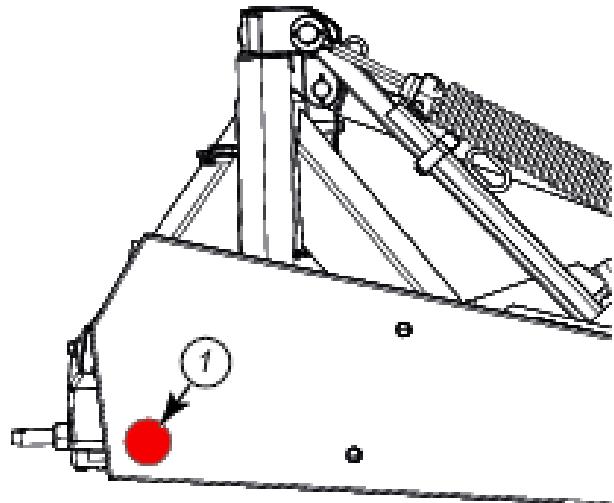
4. Road safety equipment and recommendations

The road safety equipment is mounted in the factory or by your authorized Kuhn dealer according to current safety regulations.

The device is composed of:

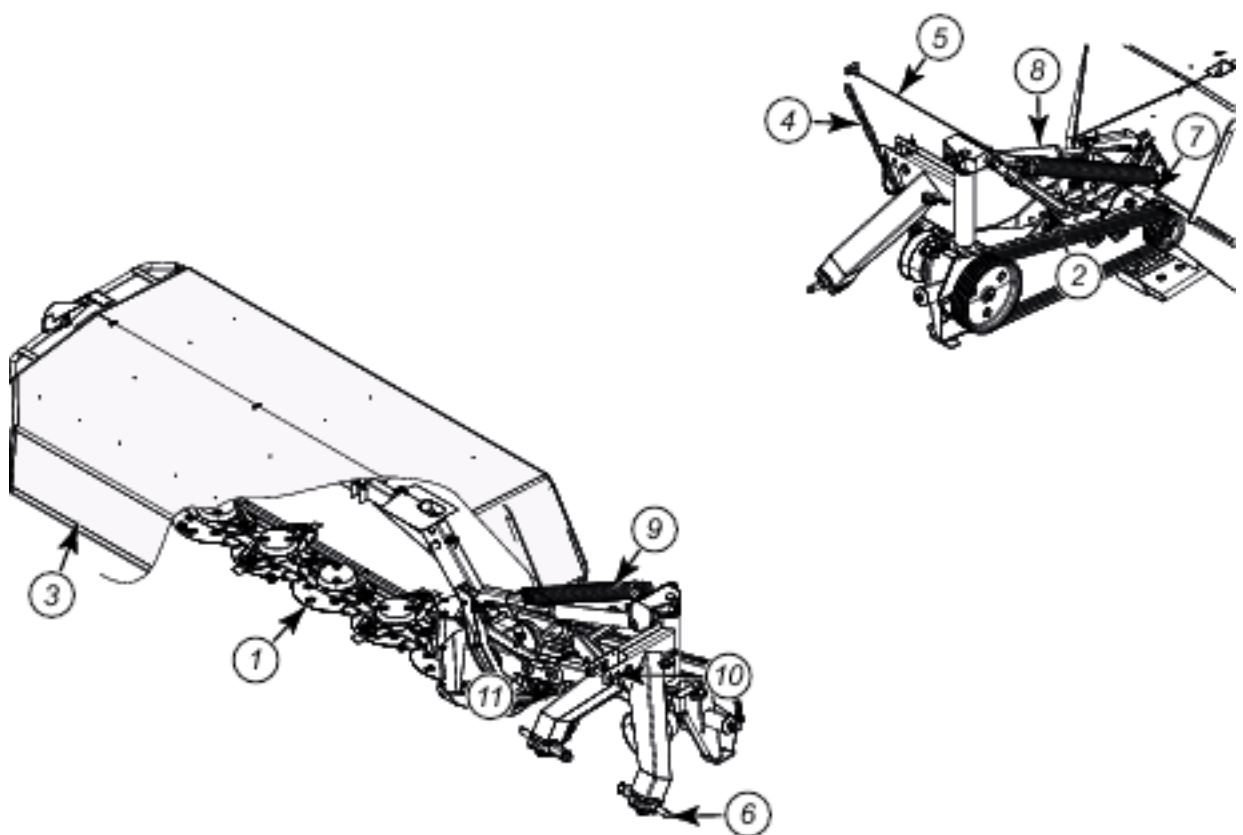
- 1 red reflector (1).

Always keep to the legal speed limit for driving a tractor-machine assembly on public roads. Whatever this speed, we recommend, for everyone's safety, not to exceed a speed of 40 km/h (25 mph).



Machine specifications

1. Description and glossary



- | | |
|-------------------------|--------------------------|
| 1 : Cutterbar | 2 : Parking lock |
| 3 : Front guard | 4 : Check chain |
| 5 : Release cord | 6 : Hitch pin |
| 7 : Gearbox | 8 : Lift cylinder |
| 9 : Compensating spring | 10 : Upper coupling yoke |
| 11 : Safety breakback | |

2. Technical specifications

Attachment type	3 point, Category 2
Number of discs	8
Working width	3.10 m (10'2")
Width in working position	4.98 m (16'4")
Height in working position	1.17 m (3'98")
Length in working position	1.33 m (4'41")
Width in transport position	1.635 m (5'4")
Height in transport position	3.665 m (12')
Length in transport position	1.38 m (4'63")
Disc rotational speed	2986 min ⁻¹
PTO speed	540 min ⁻¹
Weight	710 kg (1565 lb)
Minimum PTO power requirement	41 kW (55 hp)

3. Sound levels

Sound levels have been measured in accordance with the measuring methods as defined in:

NF EN ISO 4254-1

«Agricultural machinery - Safety - Part 1: General requirements»

Weighted equivalent continuous acoustic pressure level at the driver's seat (closed cabin) L (A) eq:

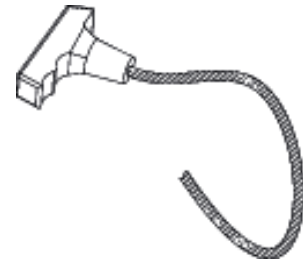
Tractor only: **76 dB(A)**

Tractor + machine: **80.3 dB(A)**

Putting into service

1. Description of control elements

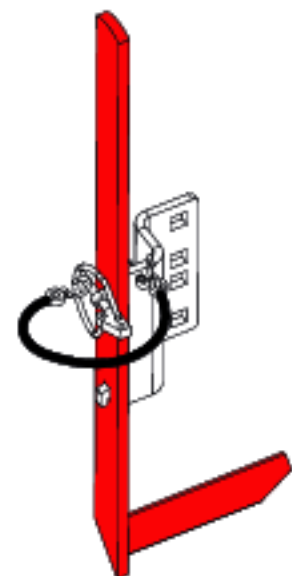
The machine is fitted with a release cord operated from the tractor cab.



The machine is supplied with an 18 mm box wrench (1) to carry out certain adjustment and maintenance tasks.



The machine is supplied with a tool for replacing the knives.



2. Coupling and uncoupling

The machine adapts to tractors fitted with a 3 point linkage category 2.

■ Description of coupling elements

- A PTO shaft 1 3/8" - 6 splines.
- A check chain.
- A release cord.
- 1 hydraulic hose controlling the machine transport/work position cylinder.

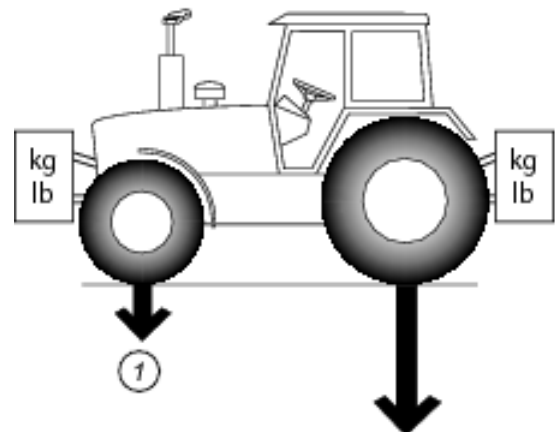


■ Preparing the tractor



Check that the tractor's authorized gross weight as well as its lift capacity and maximum weight per axle are not exceeded.

The front axle load (1) must never, under any circumstances, be less than 20% of the tractor's unladen weight. Add ballast weights to the front in order to preserve the steering and braking efficiency.



The tractor must be fitted with lower link stabilizers.

The tractor PTO stub must rotate at a speed of 540 min^{-1} .
The tractor must be fitted with a single acting hydraulic outlet with float position.



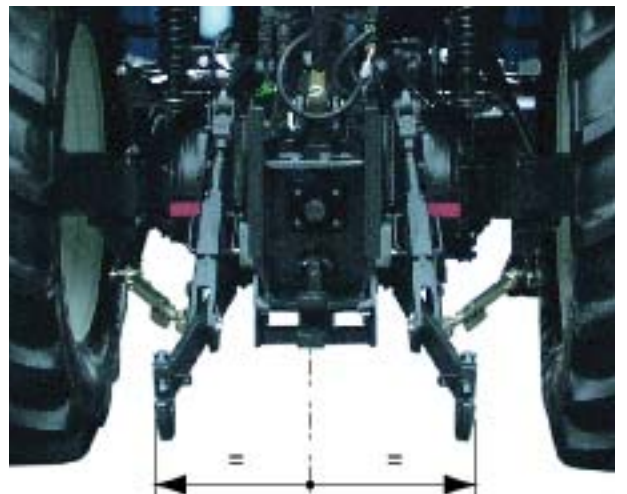
Hitch pin parallelism

Adjust tractor lift rods so that hitch pins are parallel to the ground.



Lateral adjustment of the lower links

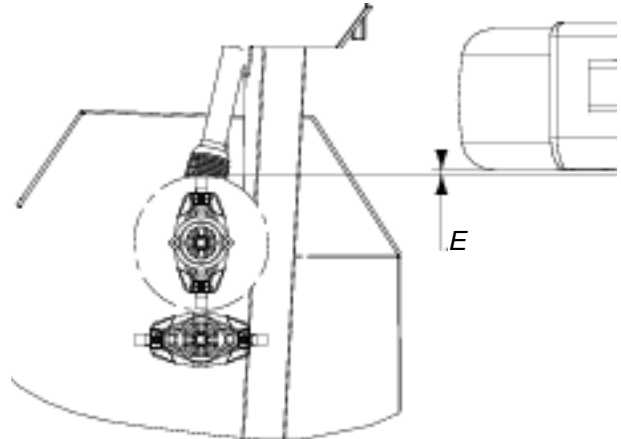
- Balance the play on either sides of the lift linkage and lock lower link stabilizers.



■ **Preparing the machine**

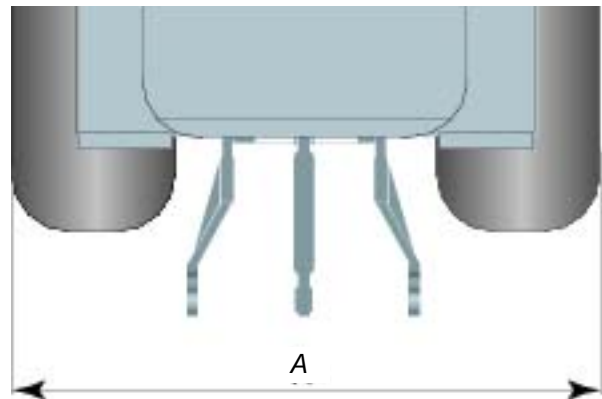
Positioning of lower links

- Measure dimension E.
- Adjust tractor lower link stabilizers to measure E = 50 mm (2").



Linkage adjustment

- Measure dimension A.

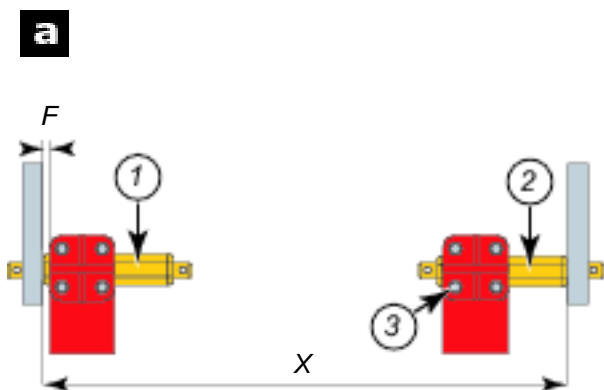


If measure A is below 2.10 m (6'11"):

- Place lower links in position a:

Adjust machine lower hitch pin position:

- Loosen the 8 screws (3).
- Position hitch pin (1) at measure F = 10 mm (0.4").
- Tighten 4 hitch pin screws (1).
 - Torque : 12 daN m (89 lbf ft).
- Position hitch pin (2) at measure (X = 825 mm (2'8")).
- Tighten 4 hitch pin screws (2).
 - Torque : 12 daN m (89 lbf ft).



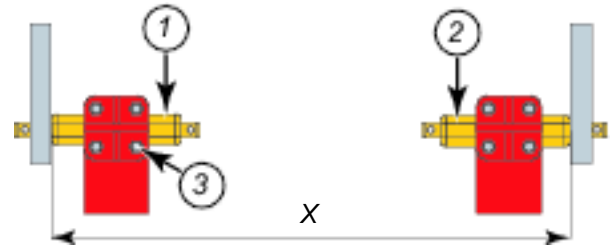
If measure A is comprised between 2.10 m (6'11") and 2.25 m (7'04"):

- Place lower links in position b:

Adjust machine lower hitch pin position:

- Loosen the 8 screws (3).
- Centre hitch pin (1) with regards to the mounting plate.
- Tighten 4 hitch pin screws (1).
 - Torque : 12 daN m (89 lbf ft).
- Position hitch pin (2) at measure (X = 825 mm (2'8")).
- Tighten 4 hitch pin screws (2).
 - Torque : 12 daN m (89 lbf ft).

b



If measure A is comprised between 2.25 m (7'04") and 2.40 m (7'10"):

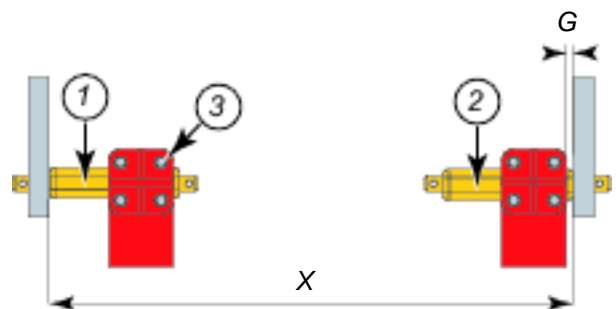
- Place lower links in position c:

Adjust machine lower hitch pin position:

- Loosen the 8 screws (3).
- Position hitch pin (2) at measure G = 10 mm (0.4").
- Tighten 4 hitch pin screws (2).
 - Torque : 12 daN m (89 lbf ft).
- Position hitch pin (1) at measure (X = 825 mm (2'8")).
- Tighten 4 hitch pin screws (1).

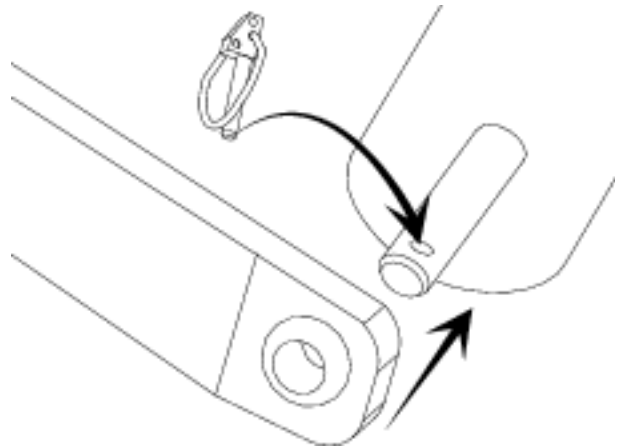
Torque : 12 daN m (89 lbf ft).

c

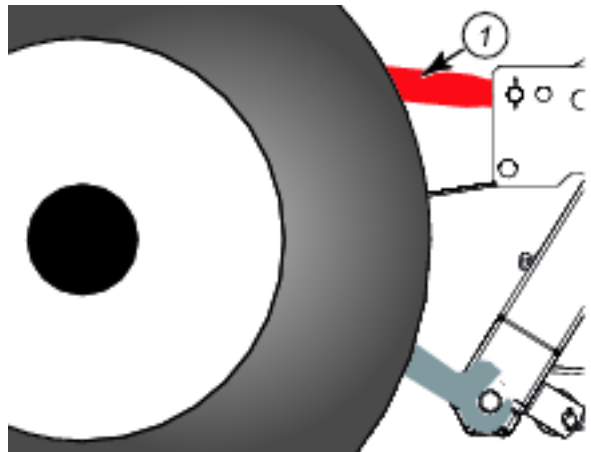


■ Coupling the machine

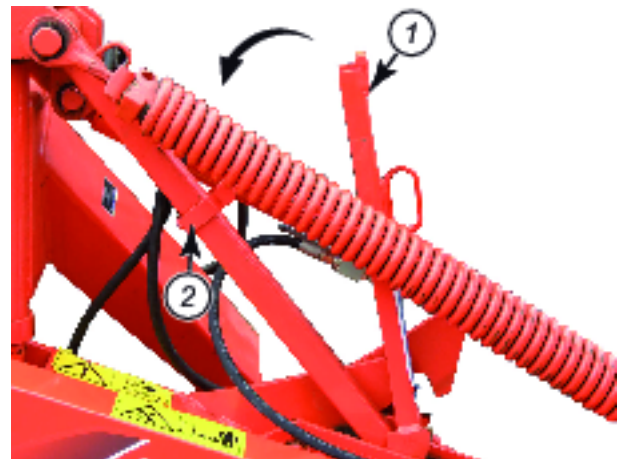
- Lower the tractor three-point linkage.
- Position ball joints of tractor lower links in line with machine lower yokes.
- Attach the lower links to the hitch pins.
- Secure each hitch pin with lynch pin.



- Attach top link (1) in one of the upper holes on the tractor side.
- Insert and lock top link lynch pin.



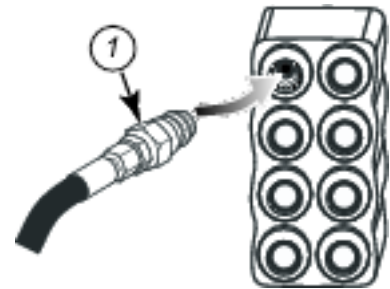
- Place release cord handle in the tractor cab.
- Lift machine using tractor hydraulic lift linkage.
- Fold and lock parking latch (1) using spring (2).



The parking latch must always be locked for work and transport.

■ Hydraulic connections

Connect hydraulic hose (1) of the transport/work cylinder to a single acting valve with float position.



■ Fit check chain

See chapter: "Frame height and check chains".

■ Primary PTO shaft



Make sure that the PTO shaft is correctly adjusted, to avoid premature wear and tear.

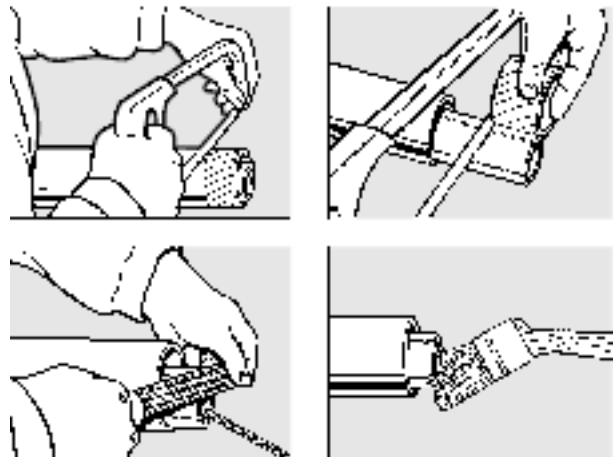
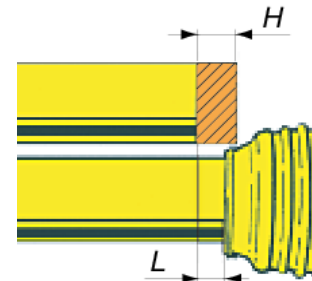
The tractor PTO stub must rotate at a speed of 540 min^{-1} . Separate the two half PTO shafts and connect them to the machine's input shaft and to the tractor PTO stub.

Check the length of the PTO shaft:

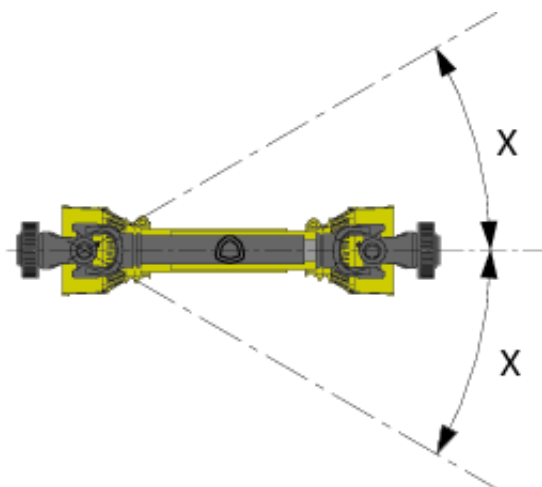
- When the PTO shaft is in its maximum overlap position (retracted), tubes should not butt against the yokes. As a safety measure, a clearance (L) of at least 25 mm (1") must be maintained.
- When the PTO shaft is in its maximum extended position, the tube overlap must be more than 250 mm (10").

If this is not the case:

- Mark length (H) to cut when the transmission is the maximum overlap position.
- Shorten the guard tubes and the transmission tubes by the same length.
- Bevel and clean the tubes.
- Grease the inside of the outer tube.



Never operate the PTO shaft at an angle X exceeding 30° .



To avoid serious accidents, the PTO drive shaft guards must be properly in place and fixed with the chains provided.

On machine side, attach guard chain to the main frame.



Immediately replace any worn or damaged guard.

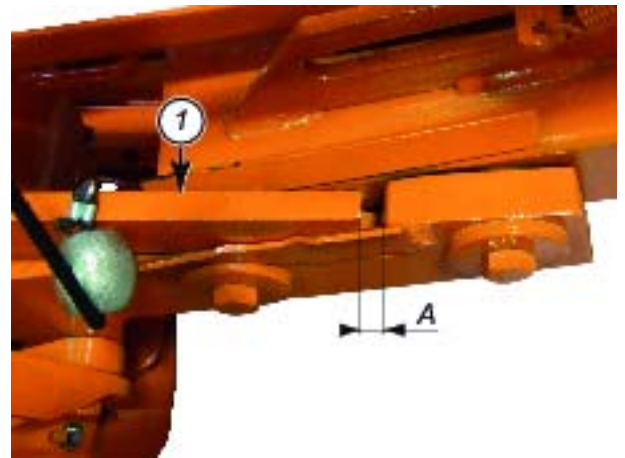
■ Adjusting the machine

Frame height and check chains.

- Tractor fitted with a hydraulic position control function:
 - Lower tractor lift linkage in order to engage lift stop (1) in its housing.
 - Respect a lift stop functional play A of 3 mm (0.1").
 - Note the corresponding lever position in the tractor cab.



It is not necessary to use the check chain supplied with the machine.



Tractor not fitted with a hydraulic position control function:

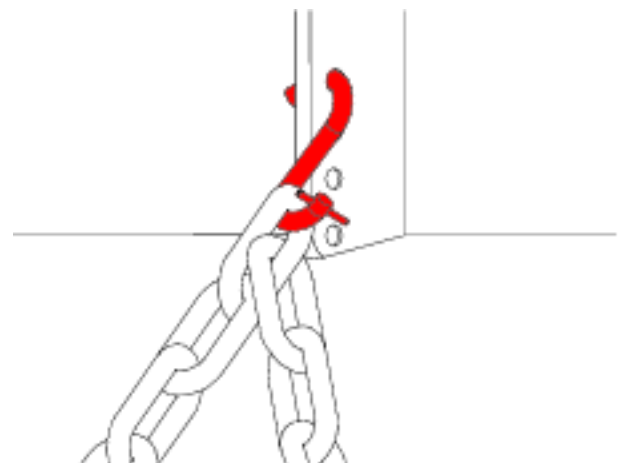
- Attach hook of check chain supplied with the machine in one of the upper holes of the tractor top link yoke.
- Lower the machine until the check chain is under tension.
- Respect a lift stop functional play A of 3 mm (0.1").

The tractor lift linkage is in working position.

The frame height is correct when:

- The cutterbar is resting on the ground.
- The check chain is under tension.
- The lift stop has a functional play of approximately 3 mm (0.1") in its housing.
- The 2 hitch pins are parallel to the ground.

Close hook eyelet with roll pin when properly adjusted.

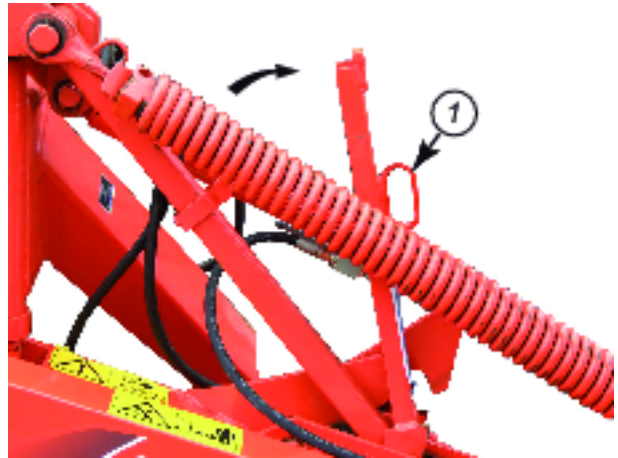


■ Uncoupling the machine



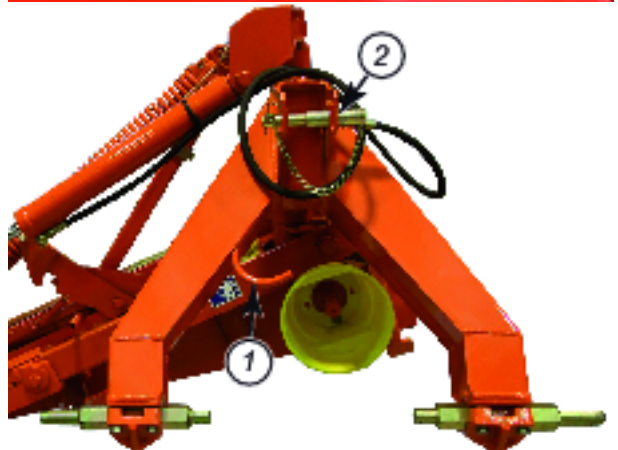
For tractors not fitted with a hydraulic position control function, unhook and attach check chain to its support.

- Place the cutterbar in horizontal position.
- Release parking lock (1).
- Engage parking latch behind the bevel gearbox mounting plate (2).
- Lower the tractor three-point linkage to rest the machine on the ground.



Make sure no foreign material is located on the bevel gearbox.

- Uncouple the PTO shaft.
- Place PTO shaft in holder (1).
- Disconnect hydraulic hose.
- Position hydraulic hose on holder (2).
- Remove cord from tractor and store it in its holder on the machine.
- Detach the top link from the machine end.
- Release the lower links.
- Lower the tractor three-point linkage.



The machine is uncoupled.



Always park the machine with the cutter bar in horizontal position.

Instructions for transport

Before placing the machine into transport position:



Wait until the rotating parts have come to a complete stop.

Check that nobody is located in the machine pivoting area. If there is someone, make sure the person moves away.

1. Putting the machine into transport position

When optional equipment is used, follow specific procedures mentioned in the related section:

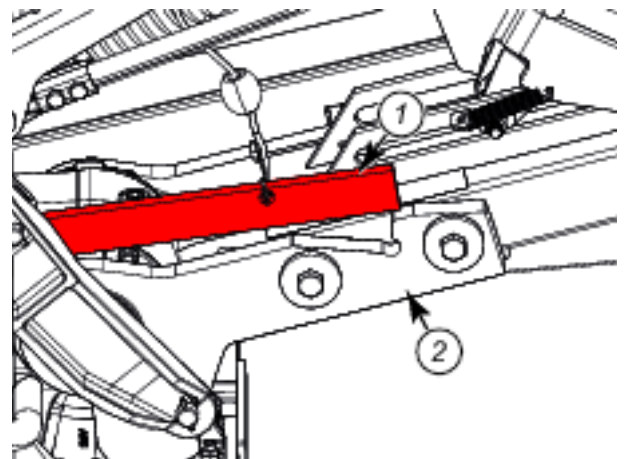
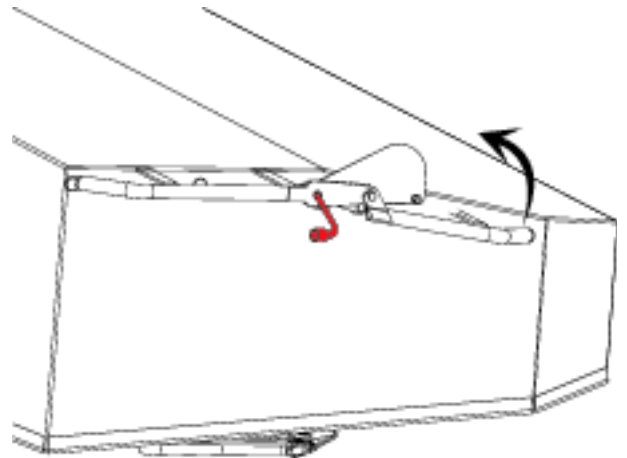


- Lighting and signalling.
- Lateral signalling equipment.

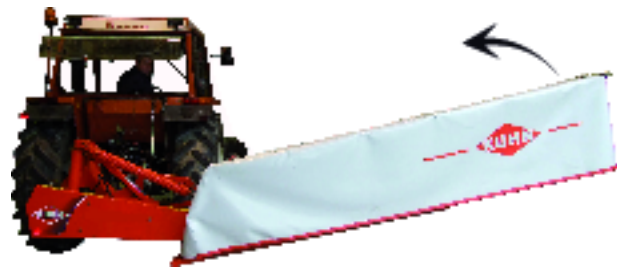
From the working position:

- Unlock and lift front guard using 18mm box spanner supplied with the machine.
- The guard locks automatically.

- Pull release cord until lift stop (1) is free.
- Lift the machine using the tractor's lift linkage.
- Activate the transport/work cylinder to bring the mowing unit in transport position.
- As cutter bar is being pivoted, wait until lift stop end (1) passes over lock (2) and release cord.
- The machine automatically locks in transport position.



The machine is in transport position.



Never engage the tractor PTO drive when the machine is in transport position.

2. Conformity with the road regulations



Before driving the machine on public roads, ensure that the machine complies with current highway code regulations.

Check that the retroreflective signalling equipment is clean before going on public roads.



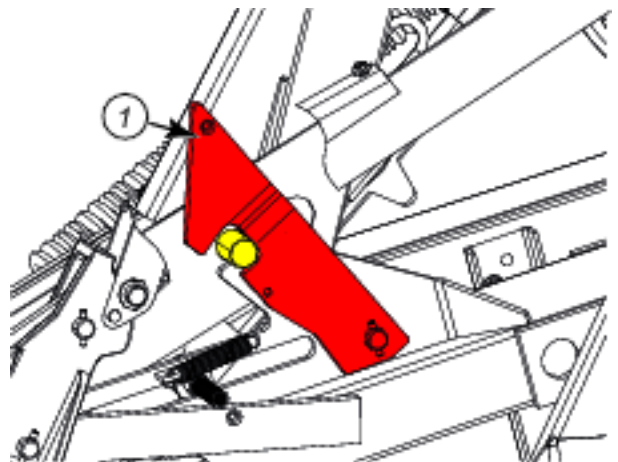
Replace worn or damaged reflectors.



Make sure the release cord cannot be operated inadvertently.



Make sure that transport lock (1) is fully engaged.

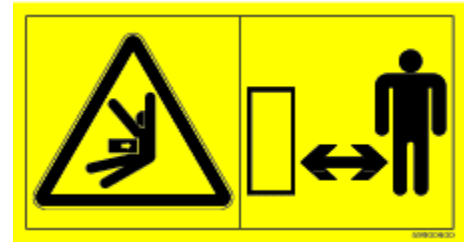


Instructions for work

Before placing the machine in working position:



- Check that nobody is within the machine pivoting area.
- If there is someone, make sure the person moves away.



1. Putting the machine into work position

When optional equipment is used, follow specific procedures mentioned in the related section:



- Lighting and signalling.
- Lateral signalling equipment.

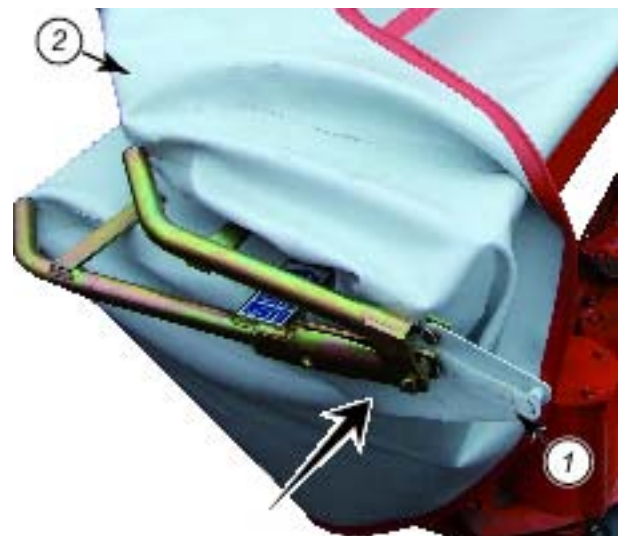


From the transport position:

- Fully lift tractor lift linkage.
- Operate transport/work position cylinder to relieve pressure on the transport lock.
- Pull the release cord until transport lock is released.
- Lower the mowing unit onto the ground using the mowing unit lift cylinder.



- Press lock (1) and lower front guard (2).
- The guard locks automatically.



-
- Shift the mowing unit lift cylinder directional control valve in float position.
 - Lower the tractor lift linkage in working position.

The machine is in working position.



During work, only use the mowing unit lift cylinder to place the machine in headland turn position.

2. Adjustments in working position



Before leaving the tractor or before adjusting, maintaining or repairing the machine, disengage the PTO drive, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop and apply park brake.

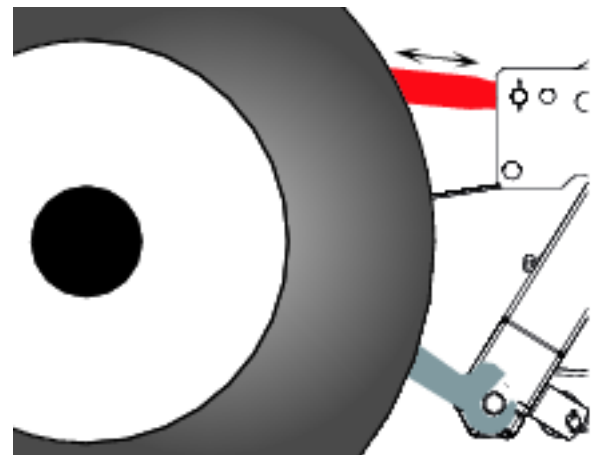


■ Cutting height

The desired cutting height is obtained directly by adjusting the top link length. The height can be adjusted from 30 to 50 mm (1.1" - 1.9").

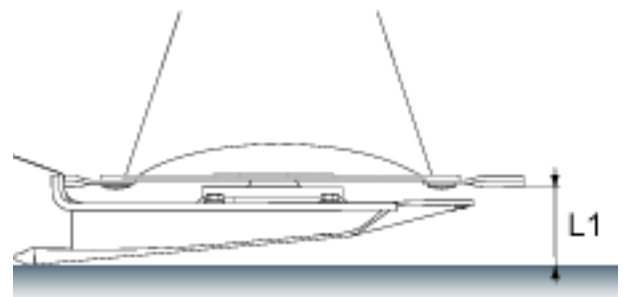
To obtain a different cutting height:

- Place the machine in working position.
- Lower the machine on the ground to remove weight from the top link.
- Modify the top link length to alter the machine tilt angle.
- Check cutting height.



The maximum cutting height ($L1 = 50 \text{ mm (1.9")}$) is obtained when the discs are parallel to the ground.

The minimum cutting height must not be below ($L2 = 30 \text{ mm (1.1")}$).



Too low a cutting height can lead to:
Excessive disc and knife wear.
Crop being contaminated by soil.
Delay in regrowth.

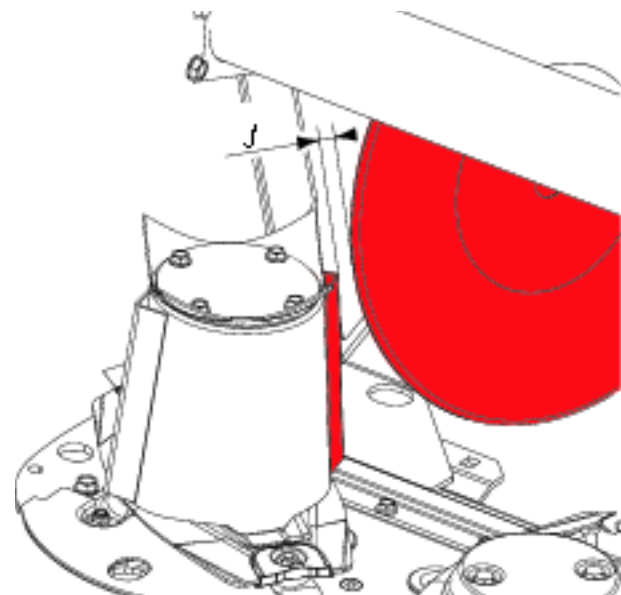
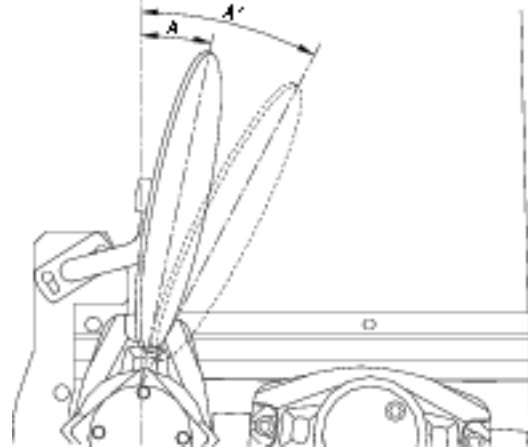


■ Swathing system

The swathing system comprises:

- 1 outer swath wheel (Adjustable).

Position the swath wheel in order to obtain an angle between 16° (A) and 32° (A').



Check that there is a minimum clearance (J) of 15 mm (0.59") between the cone rib and the swath wheel.

■ Compensating spring tension

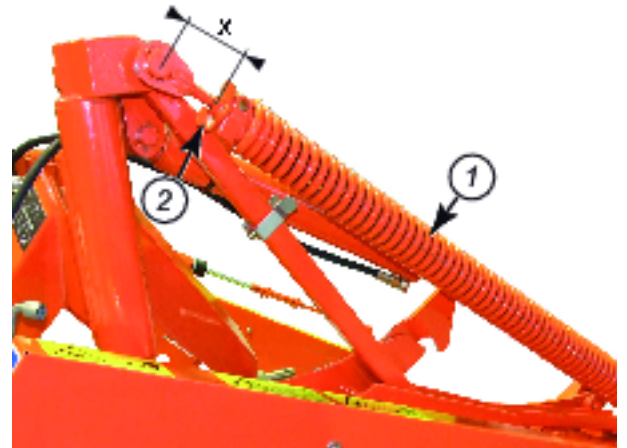
✓ The mowing unit is suspended by means of compensating spring (1).

In difficult working conditions, the compensating spring adjustment can be modified.

- Place the machine in working position.
- Lift mowing unit to release tension on the spring.
- Loosen counter nut (2).
- Rotate spring (1) to modify the mowing unit suspension:
 - Reduce measure (X) to increase the suspension.
 - Increase measure (X) to reduce suspension.

✓ The measure (X) is factory set at 90 mm (3.5").

- Tighten counter nut (2).



3. Machine use



Before mowing and to reduce risks of projections, lower the front guard.

Keep all persons and animals away from the machine danger zone.



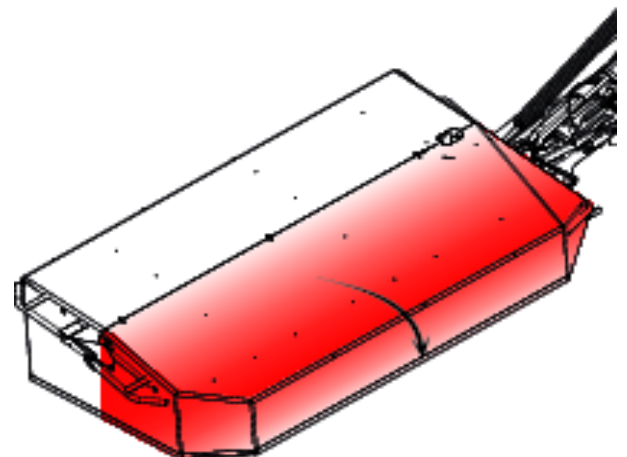
Never lean or step on the protection cover.



At work, the tractor hydraulic valve must always be in floating position to ensure good ground contour adaptation.

Before the machine engages the crop:

- Engage the tractor PTO and slowly increase the speed up to 540 min⁻¹.



■ Groundspeed



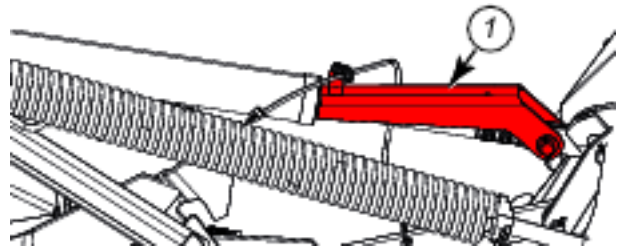
Adapt the forward speed to the working conditions.

■ Headland turn maneuvers



Operate the cutterbar using the "pivot into transport/work" position cylinder.

- Activate the transport/work cylinder control valve in the "pivot into transport" position. The cylinder lock (1) bottoms.



The lift linkage clears simultaneously the main frame and cutter bar off the ground.

■ Machine safety

When hitting an obstacle:

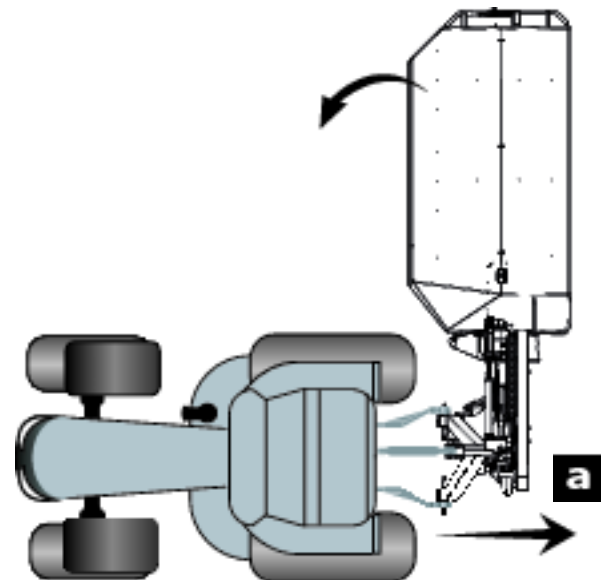
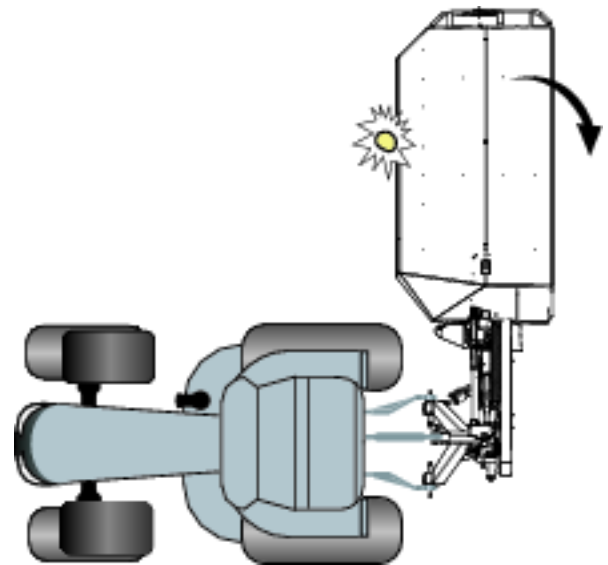


Before carrying out any maintenance or repairs on the machine, switch off the tractor engine, remove ignition key, wait until all moving parts have come to a standstill and apply park brake.

The break-away latch allows the cutter bar to pivot to the rear when hitting an obstacle.




In case an obstacle has been struck, check that the mowing unit has not been damaged.




The safety breakback is reset by reversing (a).

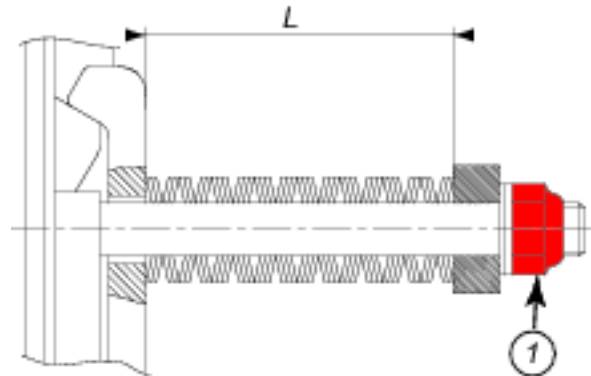
If the break-away latch releases too easily after reset, tighten nut (1) to increase spring washer compression slightly.

 *Respect spring washer layout.*

Basic adjustment:

L= 95 mm (3.7")

 *For normal functioning of the break-away latch, measure L must never be below 91 mm (3.60").*



In case of clogging:



Before carrying out any maintenance or repairs on the machine, switch off the tractor engine, remove ignition key, wait until all moving parts have come to a standstill and apply park brake.

- Lift and lock front guard.
- Remove foreign body.
- Check that the mowing unit has not been damaged.
- Check rotating components for damage.
- Lower and lock front guard.

Optional equipment

1. Raised skid shoes

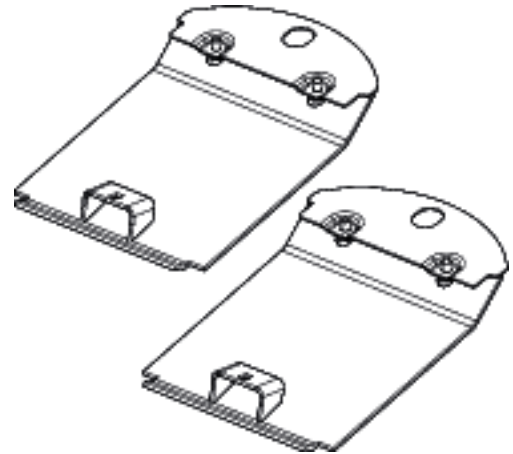
Kit no. 1036230

The raised skid shoes enable mowing higher, between 35 and 90 mm (1.4" - 3.5").

Replace the end disc skids by the 2 raised skid shoes.



The use of raised skid shoes is also recommended on sticky grounds.

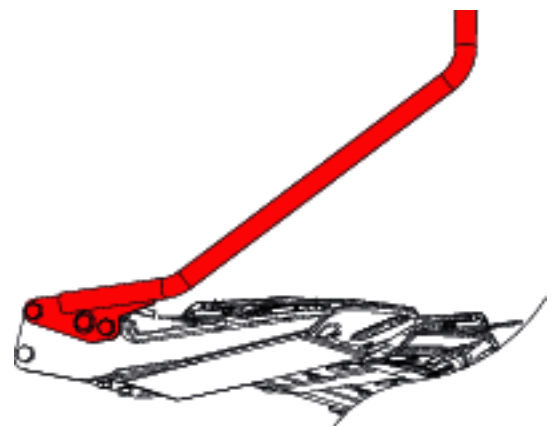


2. Side deflector

Kit no. 1036340

The side deflector enables mowing dense or down crops with long stems.

Fit side deflector on the outer side plates of the cutterbar stiffener.

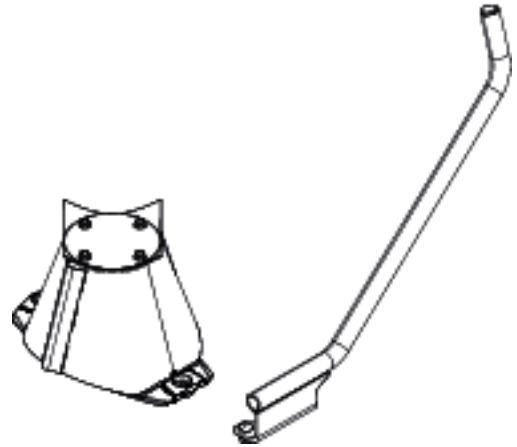


3. Side deflector with high cone disk

Kit no. 1036290

Large cone discs allow mowing dense or down crops with long stems.

The side deflector prevents crop from wrapping around the outer large cone disk when mowing in dense or down crops with long stems.



4. Lighting and signalling

Kit no. 1026100

The machine can be fitted with specific signalling lights to comply with the road regulations.



■ Electrical connection

Connect machine 7-pin plug on the tractor 7-pin socket.

After making the connections, check that there is no risk of the cables being caught during operation.



■ Instructions for transport

- Position rear signalling device.
- Connect signalling device wiring harness.



■ Instructions for work

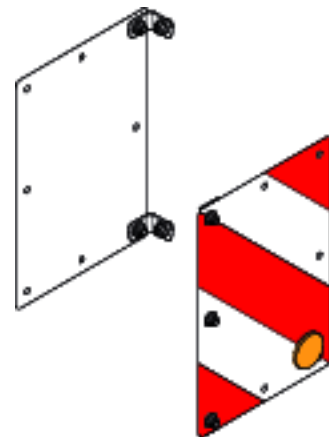
- Disconnect signalling device wiring harness.
- Position rear signalling device.



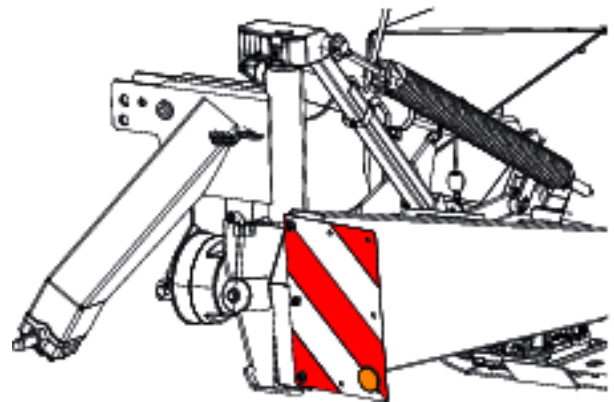
5. Lateral signalling equipment

Kit no. 1016440

The machine can be fitted with specific signalling lights to comply with the road regulations.



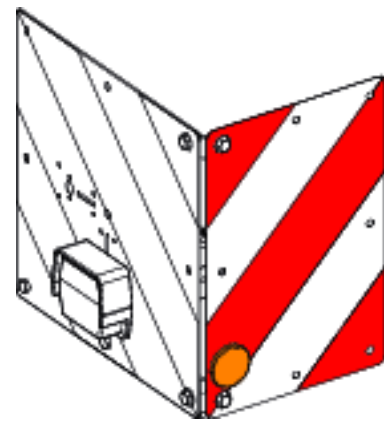
1 on each machine side.



1 in combination with signalling panel.



Lighting and signalling:
Kit no. 1026100



6. 1000 min⁻¹ drive kit

Kit no. 1066010

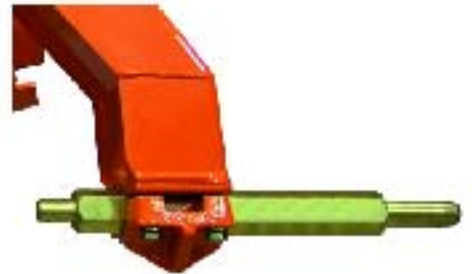
Belt and pulley assembly for tractors with a pto speed of 1000 min⁻¹.



7. Longer hitch pins

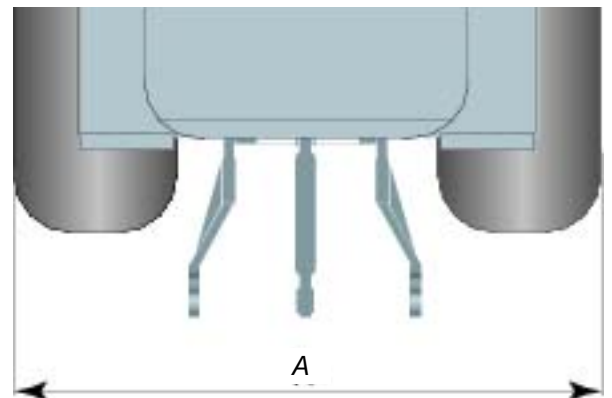
Kit no. 56820700

The longer hitch pin enables offsetting the machine by 200 mm (7.9").



Linkage adjustment

- Measure dimension A.

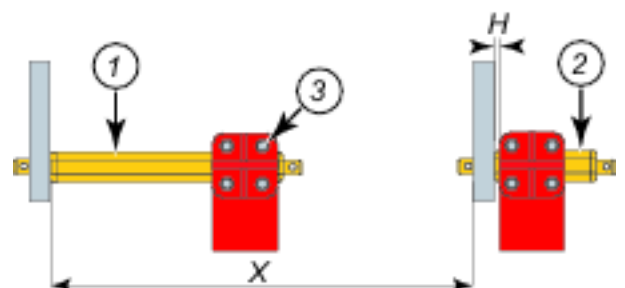


If measure A exceeds 2.40 m (7'10"):

Position lower links.

Adjust machine lower hitch pin position:

- Loosen the 8 screws (3).
- Position hitch pin (2) at measure H = 10 mm (0.4").
- Tighten 4 hitch pin screws (2).
 - Torque : 12 daN m (89 lbf ft).
- Position left longer hitch pin (1) at a distance of X = 825 mm (2'8").
- Tighten 4 hitch pin screws (1).
 - Torque : 12 daN m (89 lbf ft).



Maintenance and storage



Before carrying out any maintenance or repairs on the machine, switch off the tractor engine, remove ignition key, wait until all moving parts have come to a standstill and apply park brake.



1. Frequency chart



Maintenance intervals are indicated for normal conditions of use.

	After the first 10 hours of use	Every 50 hours	Every 200 hours or at the end of the season
Cutterbar draining and refilling	✓		✓
Lubricate moving parts and articulations		✓	
Changing angle gearbox oil	✓		✓

2. Lubrication



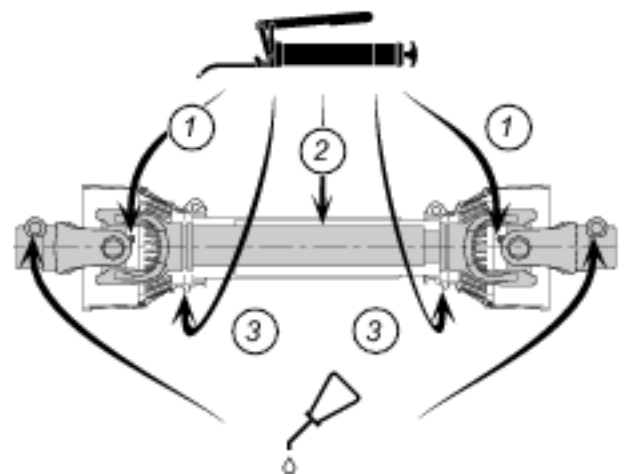
Lubricate with SHELL multi-purpose grease grade NLGI 2.



■ PTO shaft

Primary PTO shaft

- Every 8 hours:
 - universal joints (1).
- Every 20 hours:
 - transmission tube (2).
- Every 40 hours:
 - guide rings (3).



Place the machine in working position.
Stop the tractor engine and remove ignition key.

■ Cutterbar draining and refilling.



Before draining oil, operate the machine for a few minutes so that the oil warms up.



The cutterbar is lubricated with 2.25 L (0.59 US gal) of SHELL SPIRAX A extreme-pressure gear oil with viscosity grade SAE 80W90 and API grade GL5.

When draining and refilling, it is recommended to use either a mineral base oil with viscosity grade SAE 80W90 and API grade GL5, or a synthetic base oil, type PAO (Poly-Alpha-Olefins) with a viscosity grade equivalent to SAE 80W90.



Never use an oil of viscosity SAE 90 in the cutterbar.

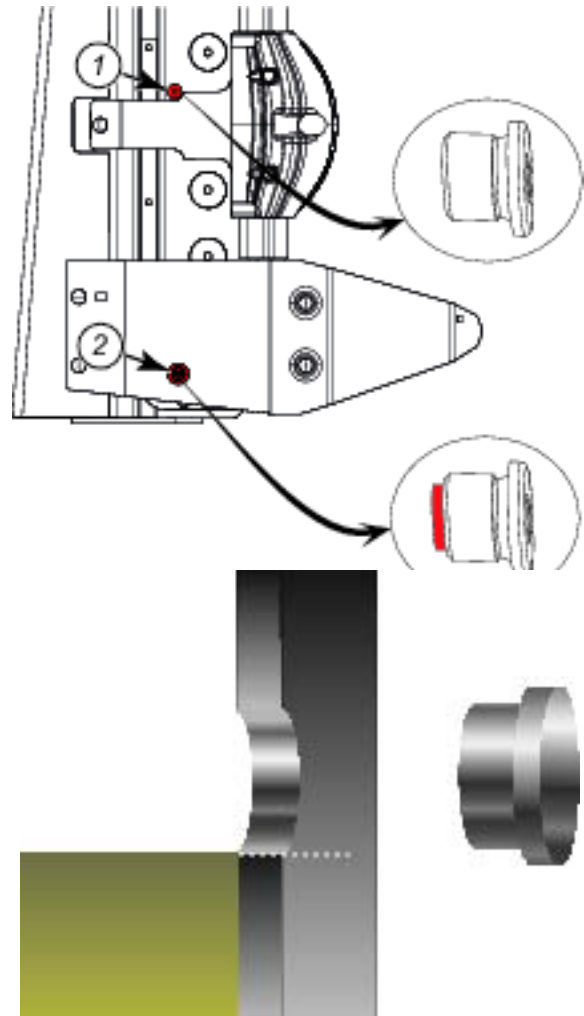
From the transport position:



For safety reasons, hook check chain as high as possible.

- Place a container of sufficient capacity under drain plug.
- Remove filler plug (1) and its washer.
- Unscrew drain plug (2) and its seal.
- Allow oil to drain completely.
- Wait for dripping to stop.
- Clean and reinstall drain plug (2) and its washer. Replace if necessary.
- Pour the correct oil quantity and quality through the opening of the filler plug.
- Clean and reinstall filler plug (1) and its washer. Replace if necessary.

- Check angle gearbox oil level:
 - The oil level must reach the lower edge of the emptying hole.
- Clean and reinstall drain plug (2) and its washer.
- Clean and reinstall filler plug (1) and its washer.



■ Changing angle gearbox oil.



Before draining oil, operate the machine for a few minutes so that the oil warms up.



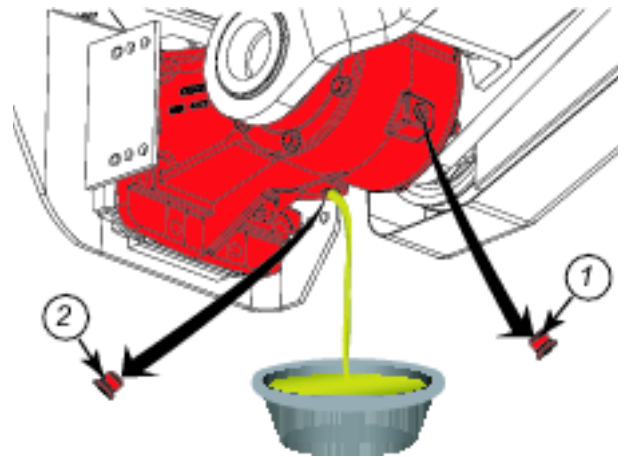
The angle gearbox is lubricated with 0.45 L (0.12 US gal) of SHELL SPIRAX A extreme-pressure oil for mechanical transmissions with viscosity grade SAE 80W90 and API grade GL5.



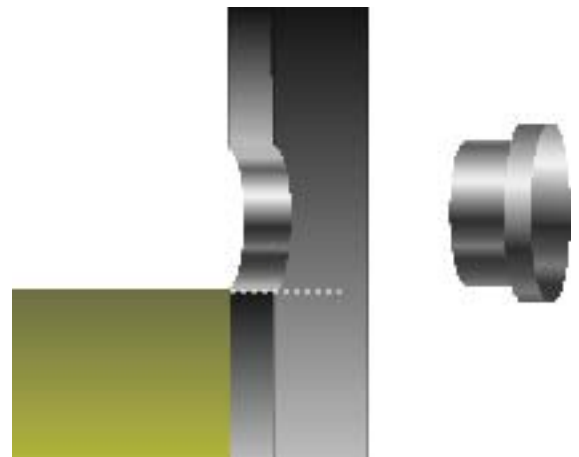
When draining and refilling, it is recommended to use either a mineral base oil with viscosity grade SAE 80W90 and API grade GL5, or a synthetic base oil, type PAO (Poly-Alpha-Olefins) with a viscosity grade equivalent to SAE 80W90.

From the transport position:

- Remove filler plug (1) and its washer.
- Place a container of sufficient capacity under drain plug.
- Remove drain plug (2) and its washer.
- Allow oil to drain completely.
- Wait for dripping to stop.
- Place the cutterbar in horizontal position.
- Pour the correct oil quantity and quality through the opening of the filler plug (1).



- Check angle gearbox oil level:
- Place the cutterbar in horizontal position.
 - The oil level must reach the lower edge of the emptying hole.
- Clean and reinstall drain plug (2) and its washer.
- Clean and reinstall filler plug (1) and its washer.



3. Maintenance



Before carrying out any maintenance or repairs on the machine, switch off the tractor engine, remove ignition key, wait until all moving parts have come to a standstill and apply park brake.

■ Belt tension



Regularly check belt tension and in particular during the first hours of use.



Never replace belts individually.
Replace belts in full sets.

Adjusting the tension:

- Tighten screw (1) using the 18mm box spanner supplied with the machine.
- Spacer tube (2) must be in contact with main frame (3) and washer (4).



During the initial assembly or when installing a new set of belts, give screw (1) 2 additional turns to compensate for the initial stretch of a new set of belts.

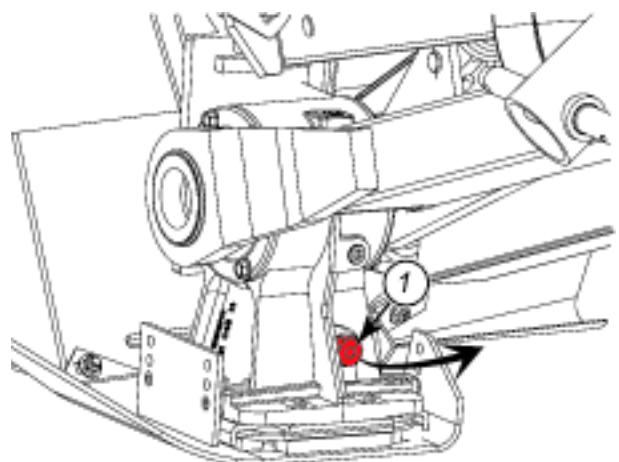
■ Breather plug checking and cleaning

From the working position:

Remove breather plug (1) and its seal.

Clean and check breather plug for good functioning (1).

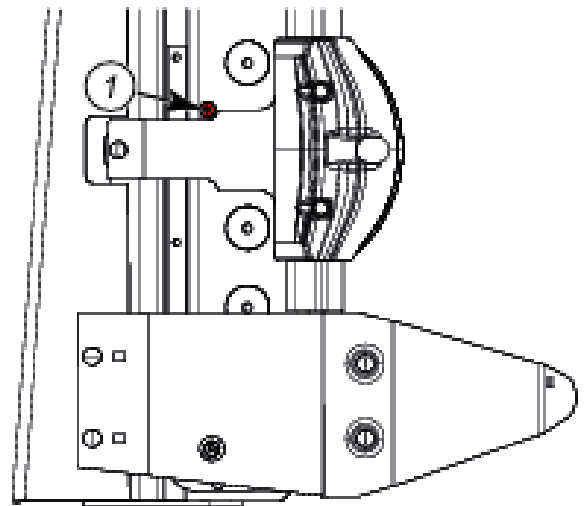
Reinstall breather plug (1) and its seal.



■ Checking cutterbar oil level

Regularly check the cutterbar oil level:

- Place cutter bar in vertical position.
- Remove filler plug (1) and its washer.
- Check the oil level.
- Top up if necessary.
- Clean and reinstall filler plug (1) and its washer. Replace if necessary.



- The oil must reach the lower edge of the filling hole.
- Top up if necessary.
- Clean and reinstall filler plug (1) and its washer. Replace if necessary.

If it is found that the transmission case is very hot to touch by hand, there is no cause of alarm provided:

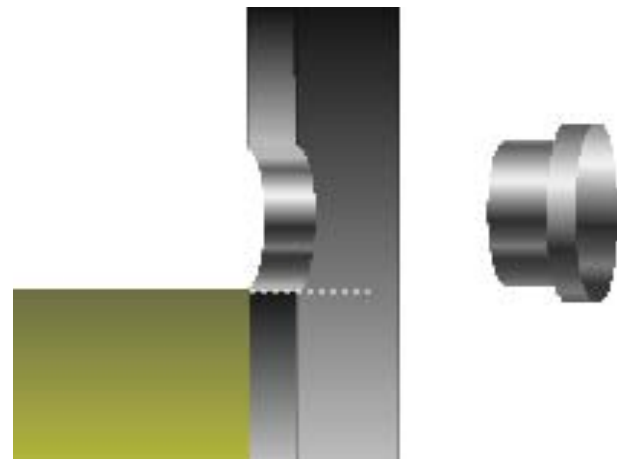


- *Lubrication recommendations have been respected.*
- *Discs can be rotated freely by hand when the machine is hot.*

Before checking that the discs rotate freely by hand:



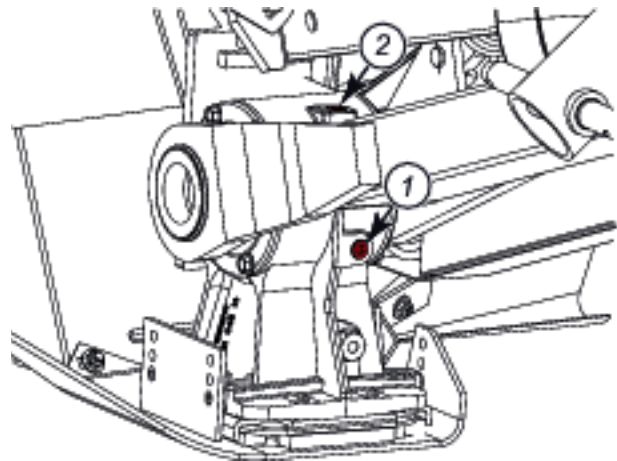
Before carrying out any maintenance or repairs on the machine, switch off the tractor engine, remove ignition key, wait until all moving parts have come to a standstill and apply park brake.



■ Check angle gearbox oil level

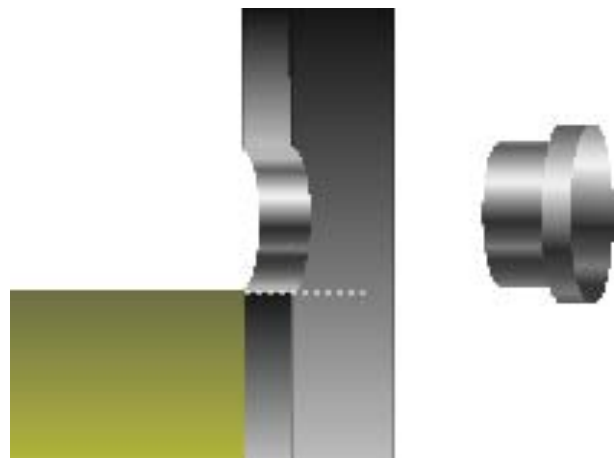
Regularly check the oil level:

- Place the cutterbar in horizontal position.
- Remove drain plug (1) and its washer.
- Check the oil level.
- Top up if necessary.
- Clean and reinstall drain plug (1) and its washer.



Replace if necessary.

- Check angle gearbox oil level:
 - The oil level must reach the lower edge of the emptying hole.
- Clean and reinstall drain plug (1) and its washer.
- Clean and reinstall filler plug (2) and its washer.



■ **Inspection of knives and securing elements**



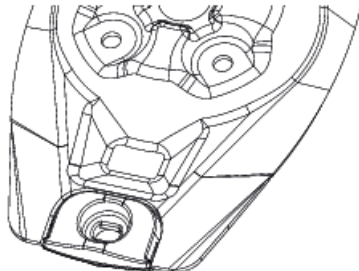
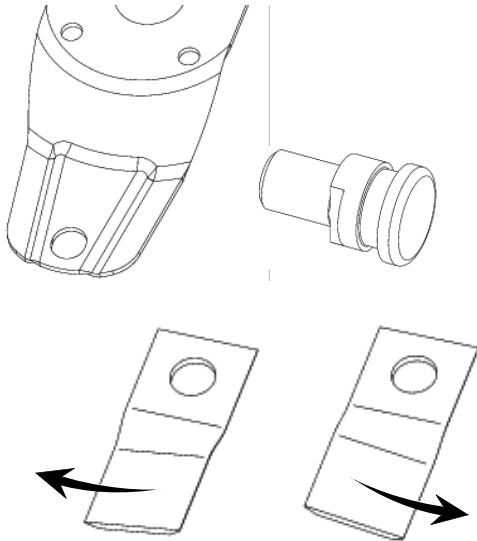
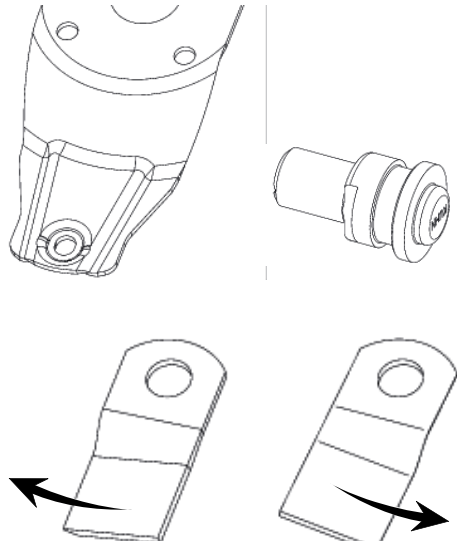


Immediately replace worn or damaged parts with genuine KUHN parts.

The following procedures take into account the 2 machine configuration possibilities:



- I) For machines up to serial number K0211 + Coupling device (a).
- II) For machines up to serial number K0211 + Coupling device (b)
or For machines with serial number as from K0212

 Coupling device (a)	 Coupling device (b)
	
New spring plate	New spring plate
	



Never mount a knife in configuration (b) with a spring plate in configuration (a).
Never fit a bolt in configuration (a) with spring plate in configuration (b)



I) For machines up to serial number K0211 + Coupling device (a).

Knives

Inspect systematically all knives before the machine is operated to:

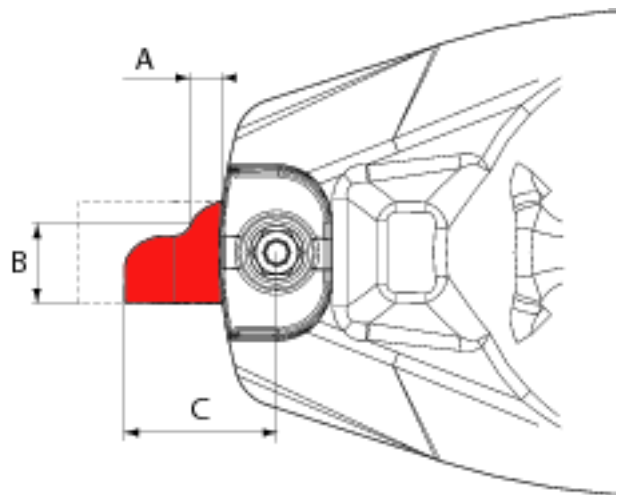
- guarantee the cutting quality.
- guarantee safety in use.
- Prevent cutterbar damage risks.

Replace knives in the following cases:

- Damaged knives.
 - Very rough conditions can cause knives to crack and become deformed.
- Worn knives.

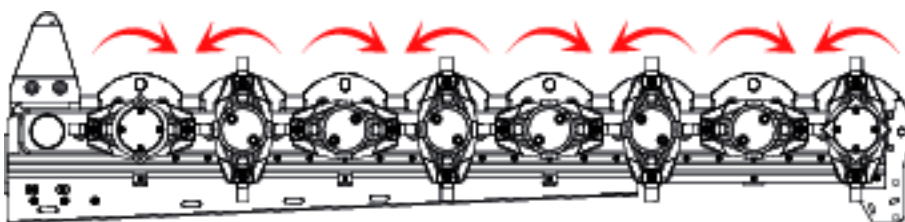
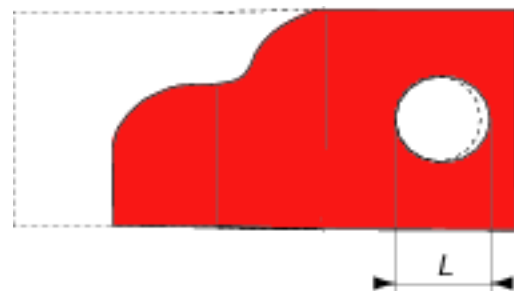
Knife length C must exceed 65 mm (2.6").

Knife width B, measured at a distance A of 10 mm (0.4") from the disc edge must exceed 20 mm (0.78").



The hole L for the securing bolt must not become oval by more than 22 mm (0.86").

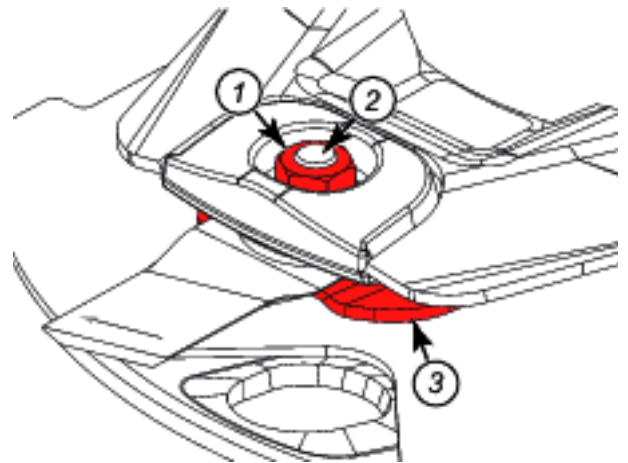
Always replace both knives per disc to avoid creating an out-of-balance force.



Fixing elements

Check the fixing elements:

- After hitting an obstacle.
- When replacing knives.
- At the beginning of each season.

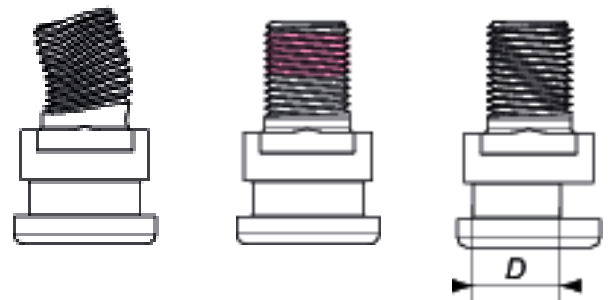


The fixing bolts should be changed in the following cases (2):

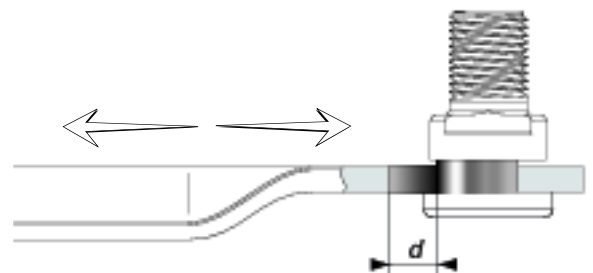
- When there is visible distortion.
- When the locking compound is worn or inoperational.
- When diameter D of the bolt shoulder is less than 11 mm (0.43").



See section: "Disc replacement".

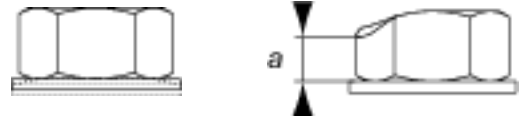


The radial play between a worn bolt and a new knife must not exceed $d = 10 \text{ mm}$ (0.4").



Replace nuts in the following cases (1):

- When nut wear reaches $a = 5 \text{ mm}$ (0.2").

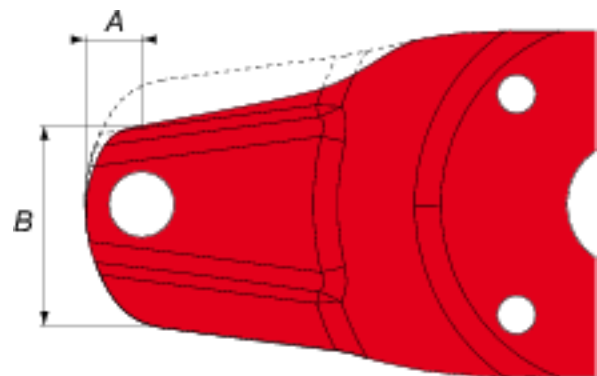


Check the condition of the fixing elements regularly and also the torque of the knife-fixing bolt:

- Torque: 12 daN m (89 lbf ft).

Replace spring plate in the following cases (3):

- When there is visible distortion.
- When you have noticed important wear on a spring plate:
 - Width B of a spring plate, measured at A = 20 mm (0.8"), must exceed 74 mm (2.9").



See section: "Spring plate replacement".

■ Knife replacement



Before carrying out any maintenance or repairs on the machine, switch off the tractor engine, remove ignition key, wait until all moving parts have come to a standstill and apply park brake.



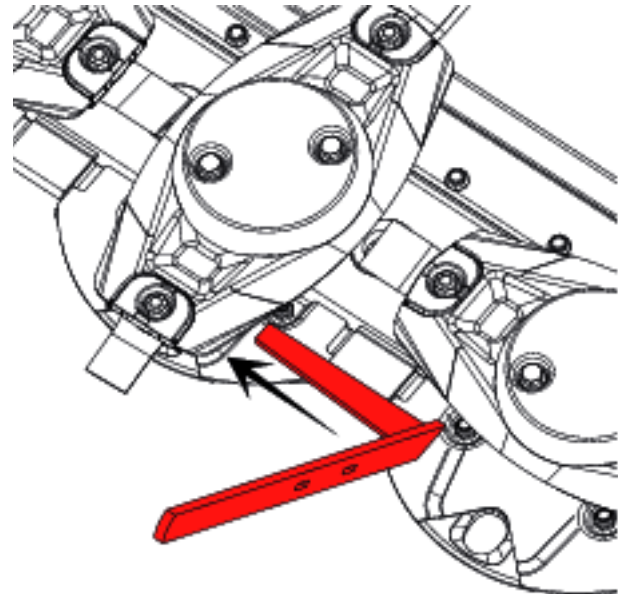
Replace immediately all worn or distorted knives.

Never straighten a bent knife.

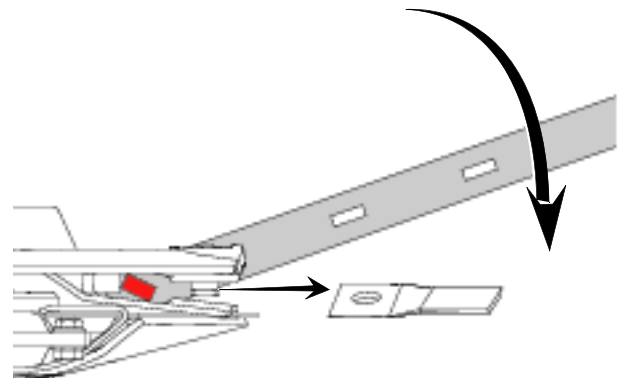
Always replace both knives per disc.

Parking

- Clean the top side of the disk guard.
- Clean cavities between disc and spring plate.
- Fully insert special tool between disc and spring plate.



- Pivot special tool downwards to free spring plate from screw head.



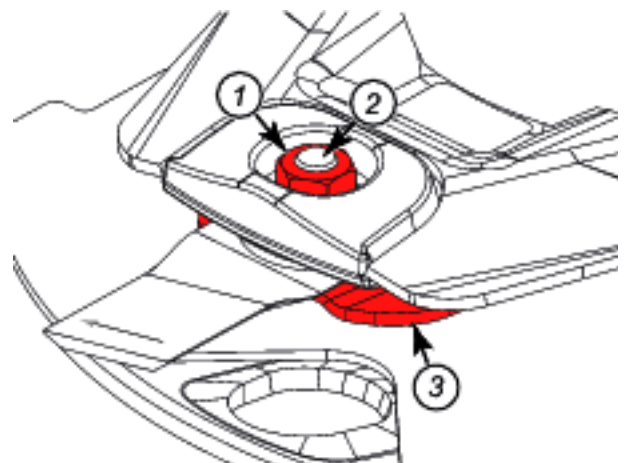
- Make sure that the securing nut and bolt are in good condition and if necessary, replace them:
 - Torque: 12 daN m (89 lbf ft).



Bolt: Part no. K6801010 (2).

Nut: Part no. 80201262 (1).

Dull knives require more horse power and have a negative effect on the cut quality.



Fitting

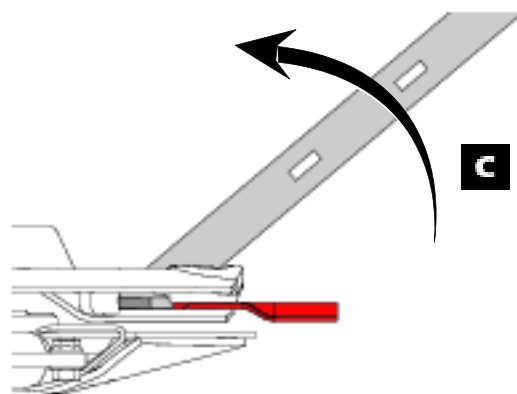
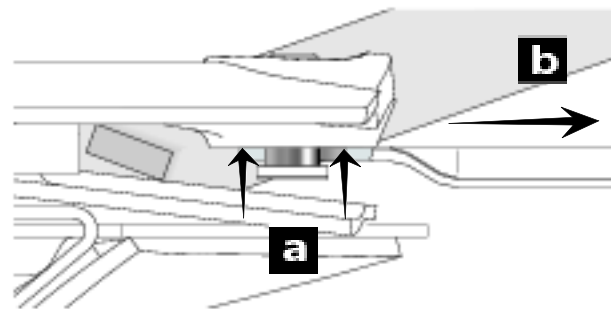
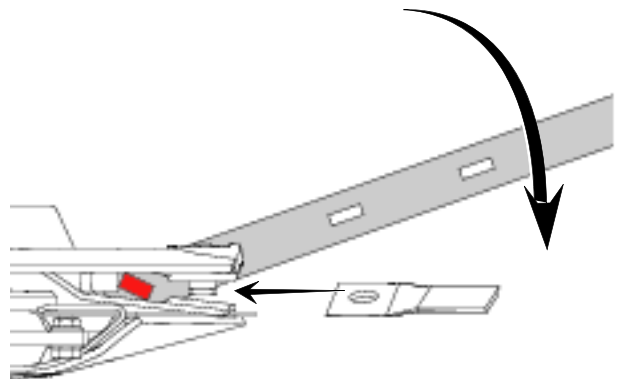
Knives can be turned over on the same disc to use the other cutting edge or replaced. On each knife, an arrow indicates the disc's direction of rotation.



Knife for disk rotating to the left: Part no. K6801410

Knife for disk rotating to the right: Part no. K6801420

- Pivot special tool downwards to free spring plate from screw head.
- Insert the new knife on the screw head.



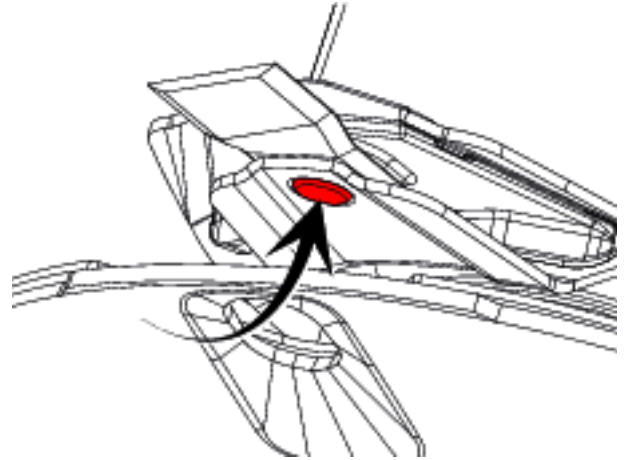
Press knife upwards and pull it towards yourself before releasing the special tool.

- (a), (b), (c)

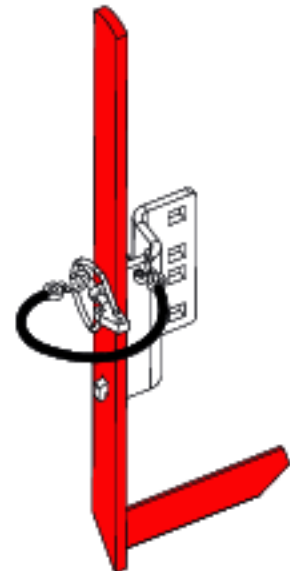


Checking the full locking and free rotation of the knife on the screw head.

- Check that screw head (2) is free to slide in spring plate hole (3).
- Remove special tool.
- Rotate disk by half a turn.
- Repeat previous tasks.
- Repeat previous tasks on the other disks.



After replacing the last knife, check that the tool has been removed and put away.



■ Disc replacement

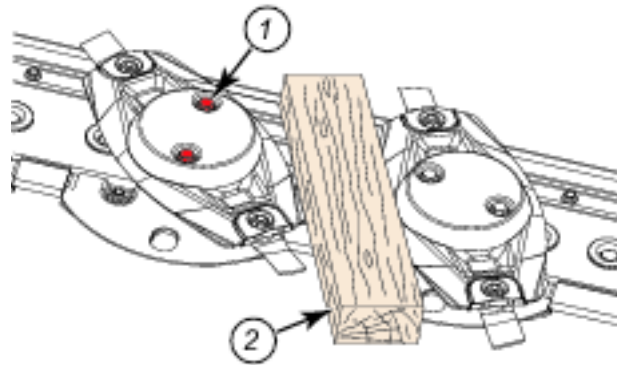
Inner disc:



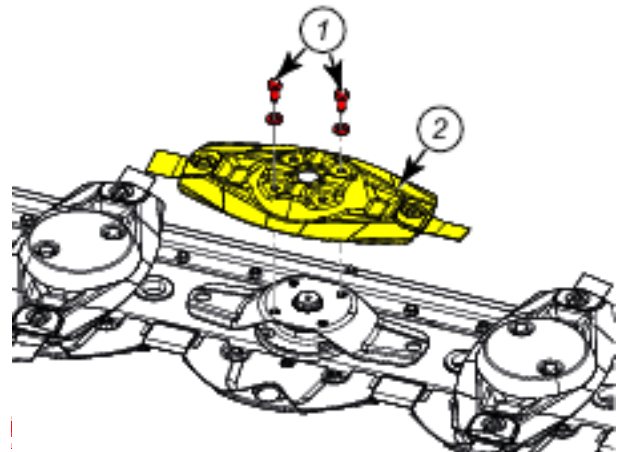
The replacement of the inner disc must be carried out by your Kuhn authorized dealer.

Intermediate disc:

- Place a wooden wedge (2) between two discs to stop them from moving.
- Remove 2 bolts (1) and their spring washers using the box spanner supplied with the machine.
- Remove the disc conical cover.

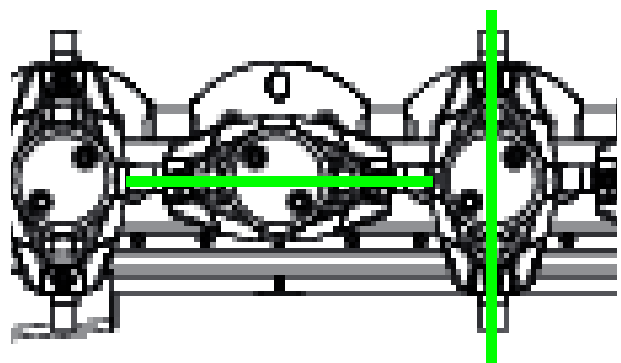


- Remove the 2 screws (1) and their spring washers.
- Remove the disc (2).

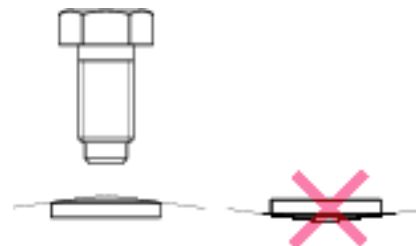


When remounting:

- Position their largest diameters at right angles to each other.



- Position conical centre of spring washer at the top.
- Tighten screws:
 - Torque: 12 daN m (89 lbf ft).



■ Spring plate replacement

The inner disc spring plate:



The replacement of the inner disc spring plate must be carried out by a Kuhn authorized dealer.

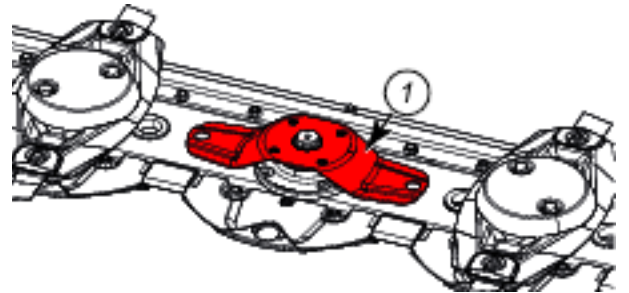
Intermediate disk spring plate:

- Remove the disc.
 - See section: "Disc replacement".

- Remove spring plate (1).



Spring plate Part no. K6801090.



- Refit the disc.
 - See section: "Disc replacement".



**II) For machines up to serial number K0211 + Coupling device (b)
or For machines with serial number as from K0212.**

Knives

Inspect systematically all knives before the machine is operated to:

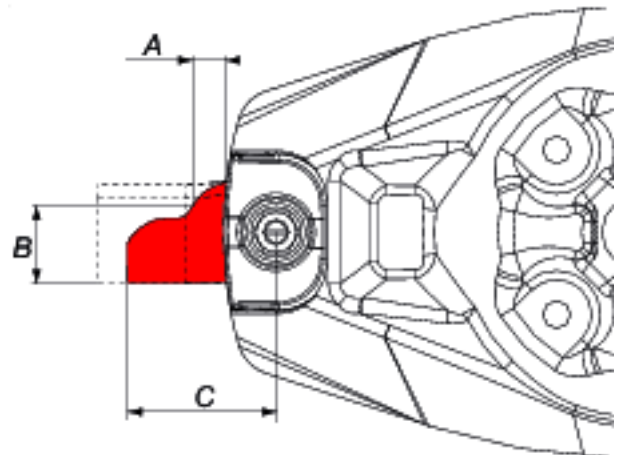
- guarantee the cutting quality.
- guarantee safety in use.
- Prevent cutterbar damage risks.

Replace knives in the following cases:

- Damaged knives.
 - Very rough conditions can cause knives to crack and become deformed.
- Worn knives.

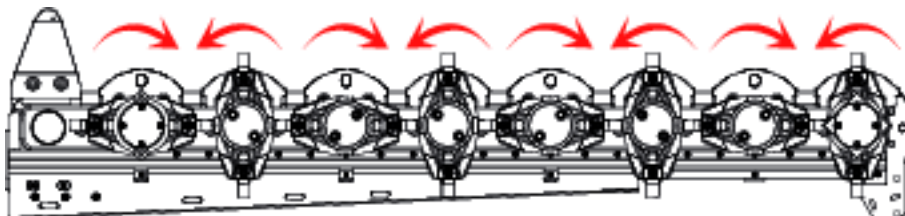
Knife length C must exceed 65 mm (2.6").

Knife width B, measured at a distance A of 10 mm (0.4") from the disc edge must exceed 20 mm (0.78").



The hole L for the securing bolt must not become oval by more than 22 mm (0.86").

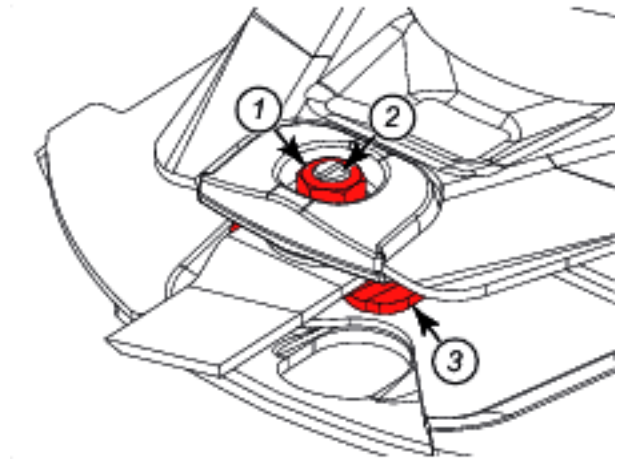
Always replace both knives per disc to avoid creating an out-of-balance force.



Fixing elements

Check the fixing elements:

- After hitting an obstacle.
- When replacing knives.
- At the start of each season.



The fixing bolts should be changed in the following cases (2):

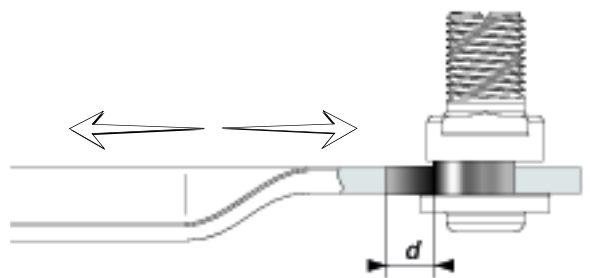
- When there is visible distortion.
- When the locking compound is worn or inoperational.
- When diameter D of the bolt shoulder is less than 11 mm (0.43").



See section: "Disc replacement".

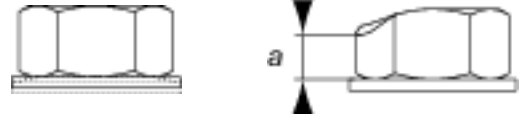


The radial play between a worn bolt and a new knife must not exceed $d = 10 \text{ mm}$ (0.4").



Replace nuts in the following cases (1):

- When nut wear reaches $a = 5 \text{ mm}$ (0.2").



Check the condition of the fixing elements regularly and also the torque of the knife-fixing bolt:

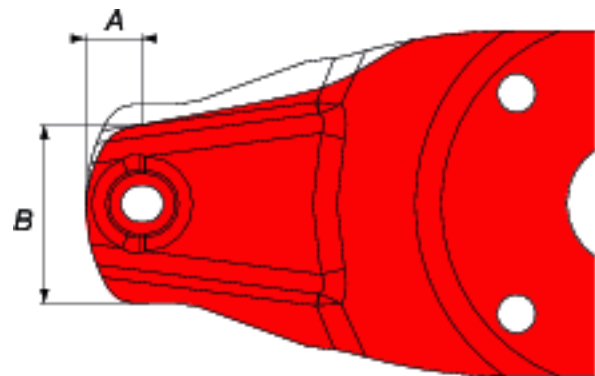
- Torque: 12 daN m (89 lbf ft).

Replace spring plate in the following cases (3):

- When there is visible distortion.
- When you have noticed important wear on a spring plate:
 - Width B of a spring plate, measured at A = 20 mm (0.8"), must exceed 60 mm (2.4").



See section: "Spring plate replacement".



■ Knife replacement



Before carrying out any maintenance or repairs on the machine, switch off the tractor engine, remove ignition key, wait until all moving parts have come to a standstill and apply park brake.



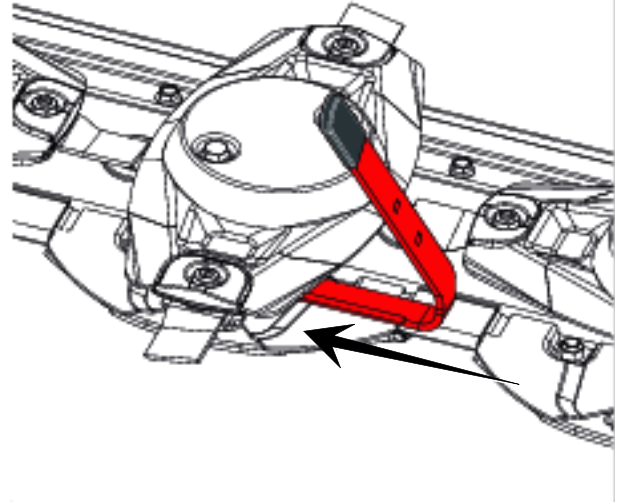
Replace immediately all worn or distorted knives.

Never straighten a bent knife.

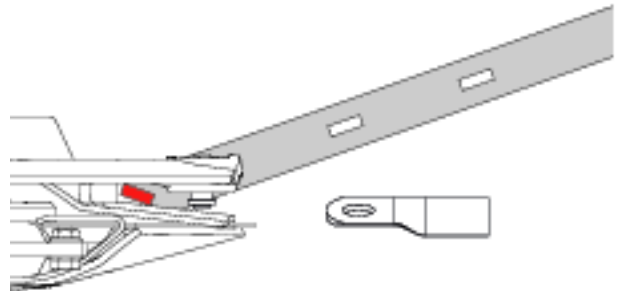
Always replace both knives per disc.

Parking

- Clean the top side of the disk guard.
- Clean cavities between disc and spring plate.
- Fully insert special tool between disc and spring plate.



- Pivot special tool downwards to free spring plate from screw head.

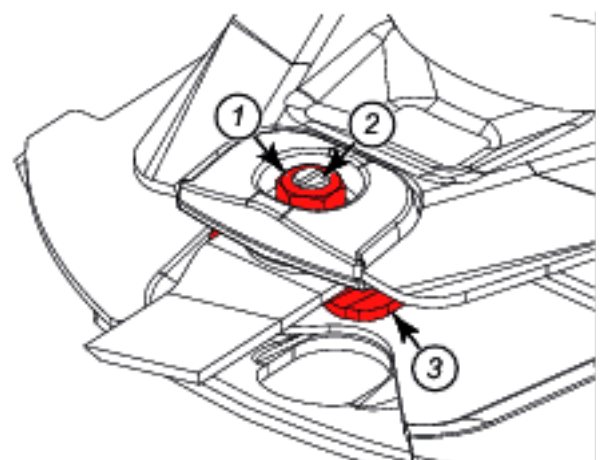


- Make sure that the securing nut and bolt are in good condition and if necessary, replace them.
 - Torque: 12 daN m (89 lbf ft).



Bolt: Part no. K6801011.

Nut: Part no. 80201262.



Dull knives require more horse power and have a negative effect on the cut quality.

Fitting

Knife for disk rotating to the left:

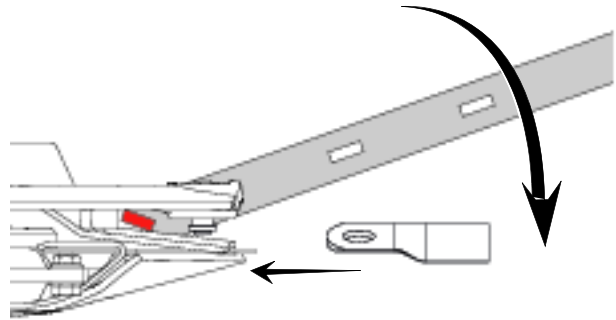
- Part no. **K6802970**



Knife for disk rotating to the right:

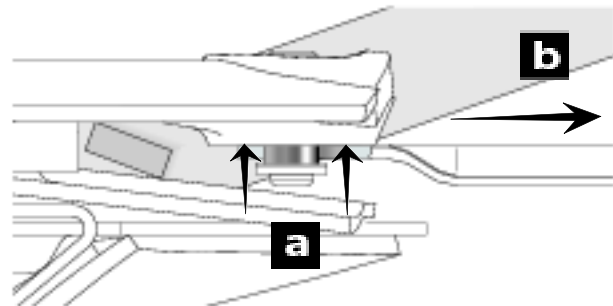
- Part no. **K6802980**

- Pivot special tool downwards to free spring plate from screw head.
- Insert the new knife on the screw head.

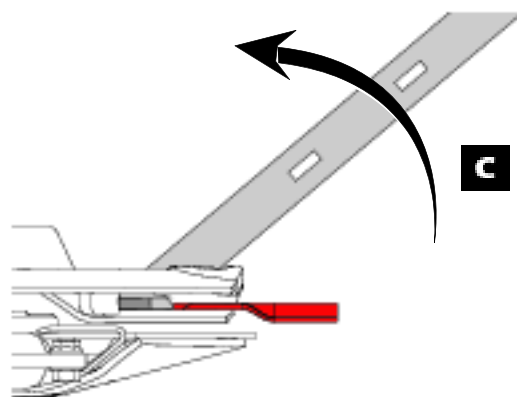


Press knife upwards and pull it towards yourself before releasing the special tool.

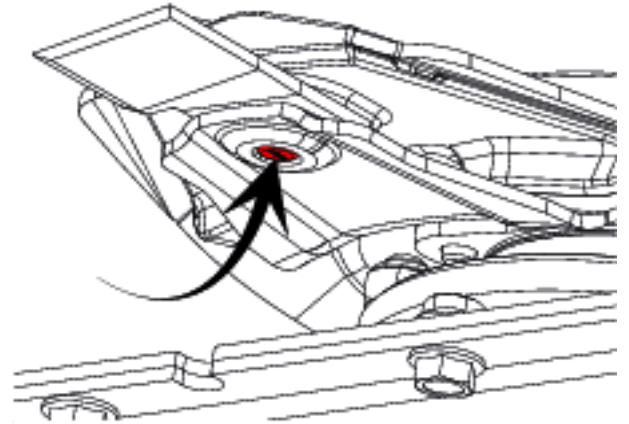
- (a), (b), (c)



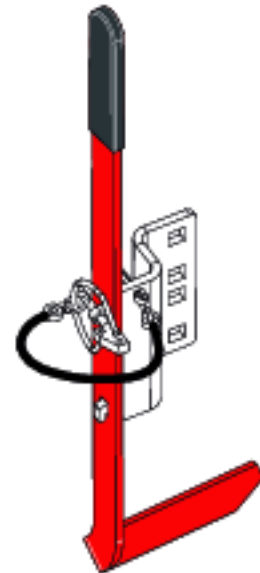
Checking the full locking and free rotation of the knife on the screw head.



- Check that screw head (2) is free to slide in spring plate hole (3).
- Remove special tool.
- Rotate disk by half a turn.
- Repeat previous tasks.
- Repeat previous tasks on the other disks.



After replacing the last knife, check that the tool has been removed and put away.



■ Disc replacement

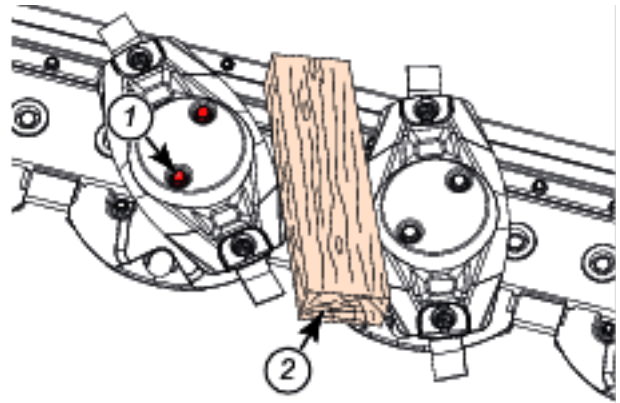
Inner disc:



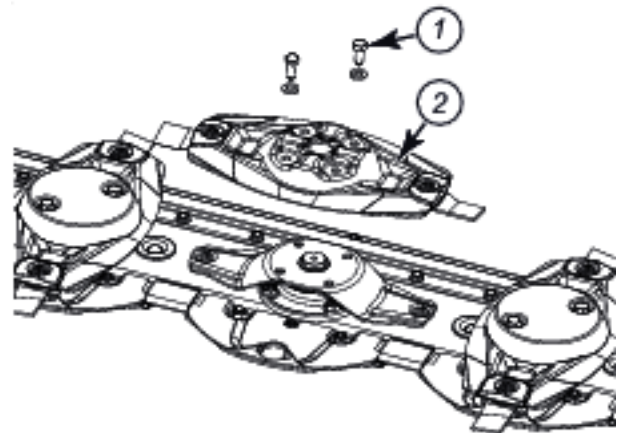
The replacement of the inner disc must be carried out by your Kuhn authorized dealer.

Intermediate disc:

- Place a wooden wedge (2) between two discs to stop them from moving.
- Remove 2 bolts (1) and their spring washers using the box spanner supplied with the machine.
- Remove the disc conical cover.

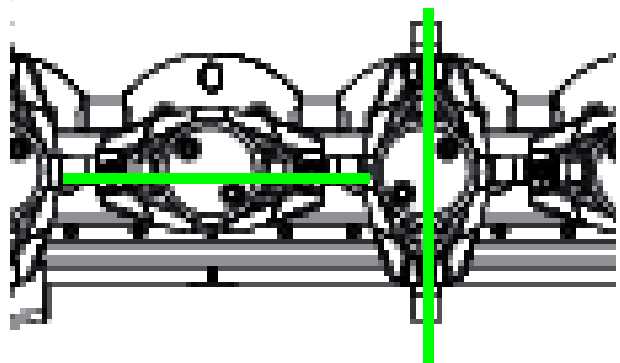


- Remove the 2 screws (1) and their spring washers.
- Remove the disc (2).

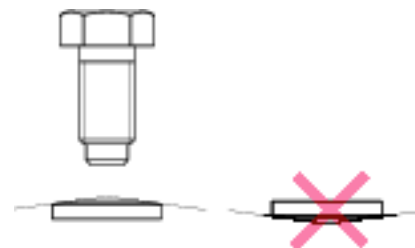


When remounting:

- Position their largest diameters at right angles to each other.



- Position conical centre of spring washer at the top.
- Tighten screws:
 - Torque: 12 daN m (89 lbf ft).



■ Spring plate replacement

The inner disk spring plate:



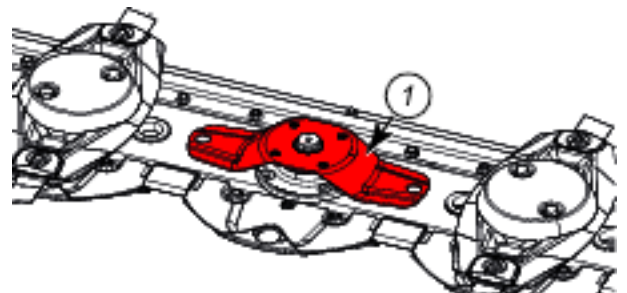
The replacement of the inner disk spring plate must be carried out by a Kuhn authorized dealer.

Intermediate disk spring plate:

- Remove the disc:
 - See section: "Disc replacement".
- Remove spring plate (1).



Spring plate Part no. K6803410.



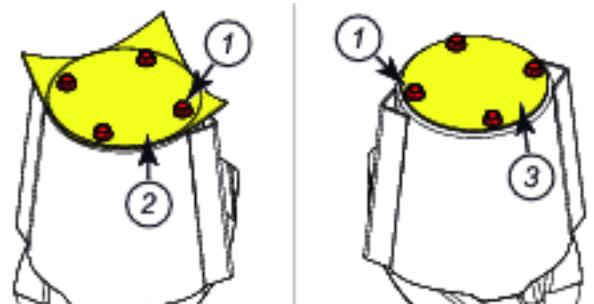
- Refit the disc.
 - See section: "Disc replacement".

■ Outer and inner cones

- Check torque of attachment bolts (1) of outer and inner cone covers (2) and (3):
 - Torque: 6 daN m (44 lbf ft).

Replace any lost or damaged cover.

- (2) Part no. 56803420.
- (3) Part no. 56803400.



4. Storage

■ At the end of each season

- Clean the machine thoroughly.
- Drain gearbox and cutterbar and refill with new oil.
- Touch up any areas of damaged paintwork.
- Store machine with the cutter bar in horizontal position in a sheltered dry place.
- Inspect and replace worn knives and bolts (See section "Inspection of knives and securing elements").
- Release belt tension.

■ At the start of each season

- Re-read the operators' manual.
 - Inspect and replace worn knives and bolts (See section "Inspection of knives and securing elements").
 - Check that all nuts and bolts are sufficiently tightened.
 - Check belt condition. Replace them if necessary.
 - Check belt tension. Retension if necessary
 - Make sure that all protection devices are in place and in good condition.
-

Trouble shooting guide

■ Problem	■ Cause	■ Remedy
Uneven stubble.	Dull or broken knives.	Replace knives.
	Knives not installed correctly.	Make sure the arrow on the knife upper face is pointing in the disc's direction of rotation.
	Insufficient disk speed.	Check belt tension.
	Too low PTO speed (rotational frequency).	Increase speed to 540 min ⁻¹ .
	Cutter bar pitch angle too high.	Reduce angle.
Soil build up in front of the cutterbar.	Too much cutterbar down pressure.	Adjust compensating spring tension.
	Very wet working conditions.	Adjust main frame height with regards to the ground. Fit raised skid shoes.
Bad ground contour adaptation.	Incorrect main frame setting.	Adjust main frame height with regards to the ground.
	Excessive ground speed.	Reduce ground speed.
	Hydraulic cylinder blocked.	Set hydraulic valve in floating position.
	Incorrect compensating spring adjustment.	Adjust compensating spring tension.
	Cutter bar pivot bushes are worn or seized.	Check condition of pivot bushes. Replace if necessary.
Stubble too long.	Incorrect cutter bar pitch angle.	Modify pitch angle using top link.
	Machine too light.	Adjust compensating spring tension. Check frame position.
Too frequent safety breakback release.	Insufficient spring washer compression.	Increase spring washer compression.
Interference between tractor and front guard.	Incorrect cam adjustment.	Adjust machine pivot moment.



<p>Incorrect mowing unit positioning with regards to the tractor when placed in working position.</p>	<p>The tractor valve double acting position has not been used to lower the mowing unit.</p>	<p>Use the tractor double acting position to lower the mowing unit.</p>
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Appendix

1. Calculating the load on an axle

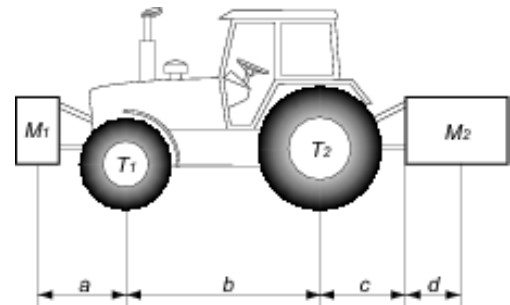


When coupling a tool to the front and rear 3-point lift linkage, the maximum authorized payload must not be exceeded.

The load on the tractor front axle must always represent 20 % of the tractor unladen weight.

Prior to use, check that these conditions are satisfied by making this calculation or by weighing the tractor-machine unit

- Define the total weight, axle loads, tyre capacity and minimum additional mass:



The following values are required for the calculation:

Description	Units	Description	Obtained by
T	kg	Tractor unladen weight	① ④
T1	kg	Unladen load on tractor front axle	① ④
T2	kg	Empty load on tractor rear axle	① ④
t	kg	Axle loads (Tractor + machine)	④
t1	kg	Load on front axle (Tractor + machine)	④
t2	kg	Load on rear axle (Tractor + machine)	④
M1	kg	Total weight of front tool or front ballast	② ④
M2	kg	Total weight of rear tool or rear ballast	② ④
a	m	Distance between the tools' centre of gravity or the front ballast and the front axle centre	② ③
b	m	Distance between the tractor axles	① ③
c	m	Distance between the rear axle center and the center of the lower link ball joints	① ③
d	m	Distance between the centre of the lower link ball joints and the centre of gravity of the rear tool or rear ballast	②

① Refer to the tractor operators' manual

③ Dimensions

② Refer to the machine price-list or operators' manual

④ Measure on scale

Rear tool or front-rear combination:

1) Calculation of the minimum front ballast weight $M1_{\text{minimum}}$

$$M1_{\text{minimum}} = \frac{M2 \times (c+d) - T1 \times b + 0.2 \times T \times b}{a+b}$$

Write the minimal additional weight in the chart.

Front tool:

2) Calculation of the minimum rear ballast weight $M2_{\text{minimum}}$

$$M2_{\text{minimum}} = \frac{M1 \times a - T2 \times b + 0.45 \times T \times b}{b+c+d}$$

Write the minimal additional weight in the chart.

3) Calculation of the actual load on the front axle $T1_{\text{real}}$

If the front tool (M1) is lighter than the minimum load required at the front (minimum), increase tool weight until the required minimum front load is reached

$$T1_{\text{real}} = \frac{M1 \times (a+b) + T1 \times b - M2 \times (c+d)}{b}$$

Indicate front axle calculated load value and the one indicated in the tractor operators' manual.

4) Calculation of the total weight M_{real}

If the rear tool (M2) is lighter than the minimum load required at the rear (minimum), increase tool weight until the required minimum rear load is reached

$$M_{\text{real}} = M1 + T + M2$$

Indicate calculated total load value and the one authorized as indicated in the tractor operator's manual.

5) Calculation of the actual rear axle load $T2_{\text{real}}$

$$T2_{\text{real}} = M_{\text{real}} - T1_{\text{real}}$$

Indicate rear axle calculated load value and the one indicated in the tractor operator's manual.

6) Tyre carrying capacity

Indicate double (2 tyres) the authorized load value (see tyre manufacturer indications).



Table:

	Actual value obtained by calculation	Value authorized according to operator's manual	Double value of the authorized capacity per tyre (2 tyres)
Minimum front/rear ballasting	kg		
Total weight	kg ≤	kg	
Load on front axle	kg ≤	kg ≤	kg
Load on rear axle	kg ≤	kg ≤	kg

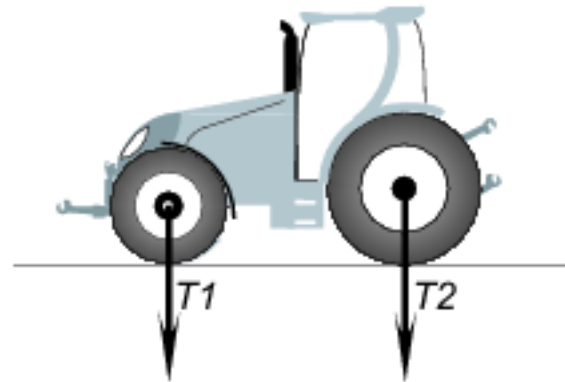
The minimum ballasting must be made by fitting a tool or an additional mass to the tractor.
The values obtained must be below or equal the authorized values.

■ **Determining the machine weight (M2) and the position of its centre of gravity (d)**

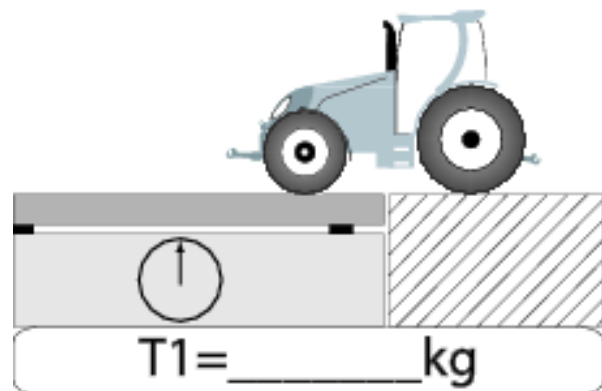


If the data required to calculate the total weight, axle loads and minimum ballasting are not supplied, use the following method.

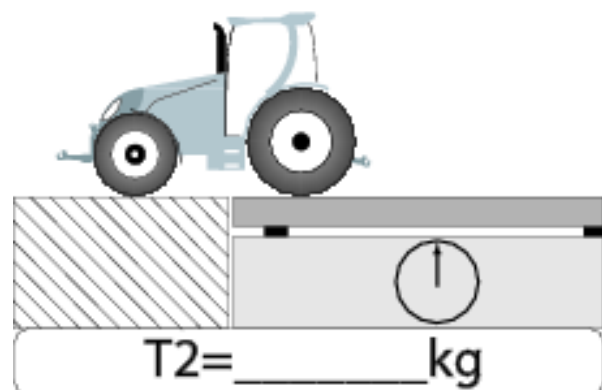
Tractor only:



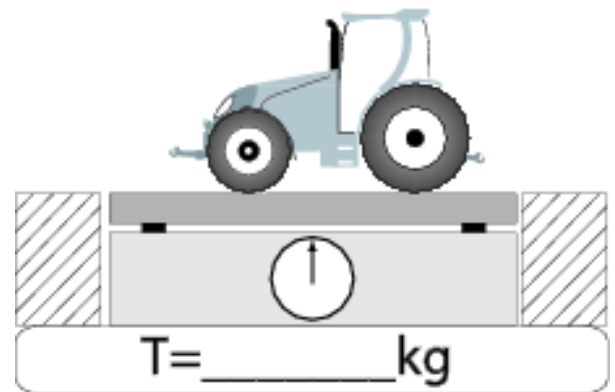
- T1: Load on front axle.
 - Tractor only.



- T2: Load on rear axle.
 - Tractor only.



- T: Axle loads.
 - Tractor only.



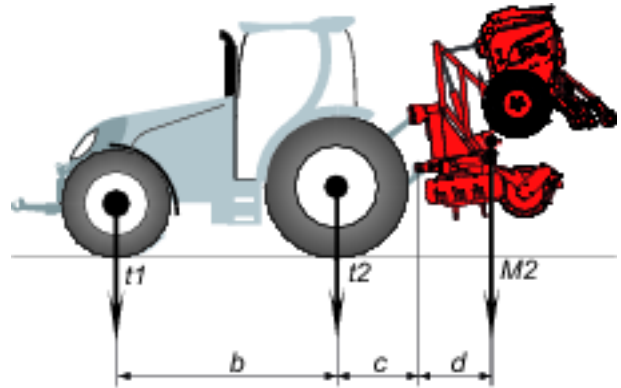
Rear tool or front-rear combination:



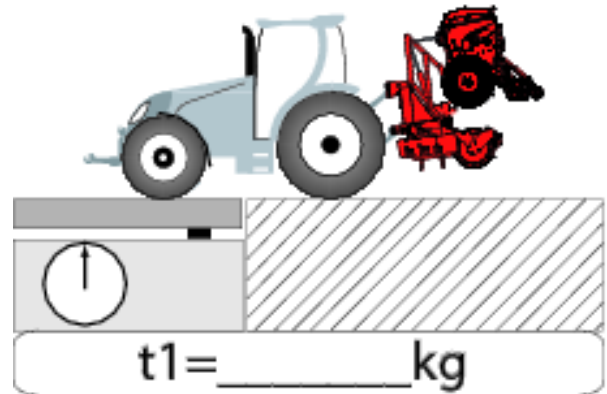
If the total unit weight exceeds the tractor Gross Combined Weight Rating in accordance with the country's legislation, empty the hopper to travel on public roads.

In any case, we recommend to travel on public roads with empty hoppers and tanks.

- Measure dimension (b).
- Measure dimension (c).



- t1: Load on front axle.
 - Tractor + machine.
 - Hopper empty.



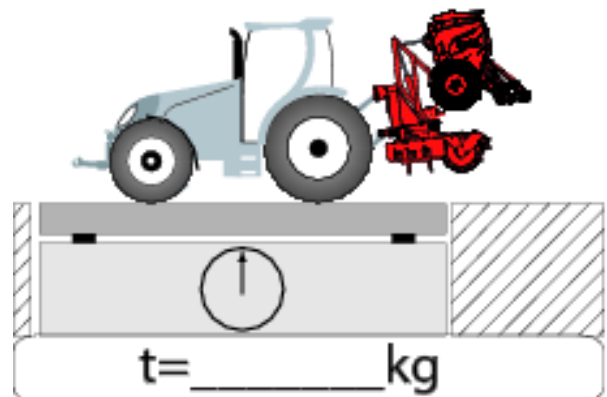
- t: Axle loads.
 - Tractor + machine.
 - Hopper empty.

Calculating the rear tool weight (M2):

$$M2 = T - t$$

Calculating the distance (d):

$$d = ((b \times (T1 - t1)) / M2) - c$$



Limited warranty

KUHN S.A. 4, Impasse des Fabriques, 67706 SAVERNE Cedex FRANCE (hereinafter called "the Company") warrants, in accordance with the provisions below, to each retail purchaser of a new KUHN equipment from an authorized KUHN dealer, that such equipment is, at the time of delivery to such purchaser, free from defects in material and workmanship, and that such equipment is covered under this Limited Warranty providing the machine is used and serviced in accordance with the recommendations in the Operator's manual.

This Limited Warranty covers the equipment for a period of one year starting from the date the equipment is delivered to the retail purchaser and during this period up to a limit of 500 hours of use.

The date of invoice to the retail purchaser and the registration of the machine by the dealer are taken as evidence of delivery of the machine.

This Limited Warranty covers the reimbursement (or repair) of components as well as labor charges incurred, based on the Company warranty labor rate and allowable time for repair.

■ **These conditions are subject to the following exceptions:**

- Parts of the machine which are not of KUHN manufacture, such as tires, PTO shafts, slip clutches, hydraulic cylinders, etc. are not covered by this Limited Warranty, but are subject to the warranty of the original manufacturer.

Warranty claims applying to these types of parts must be submitted in the same way as if they were parts manufactured by KUHN. However, compensation will be paid in accordance with the warranty agreement of the manufacturer concerned, in as much as the latter justifies such a claim.

- This Limited Warranty does not apply to failure through normal wear and tear, to damage resulting from negligence or from lack of inspection, from misuse, from lack of maintenance and/or if the machine has been involved in an accident, lent out or used for purposes other than those for which it was intended by the Company.
- This Limited Warranty will not apply to any product that has been altered or modified in any way without the express permission of the Company, or if parts and/or equipment not approved by Kuhn are used on a machine manufactured by the Company and/or if repairs have been carried out by anyone other than an authorized KUHN dealer.
- The Company shall not be responsible for any damage to the machine or its equipment in transit or handling by any common carrier, within or without the Warranty period. Machines, equipment and parts are transported at owner's risk.
- The Company cannot be held responsible for any claims or injuries to the owner or to any third party, nor to any resulting responsibility.
- Also, on no account can the Company be held liable for incidental or consequential damages (including loss of anticipated profits) or for any impairment due to a failure, a latent defect or a breakdown of the machine.

■ **The customer will be responsible for and bear the costs of:**

- Normal maintenance such as greasing, maintenance of oil levels, minor adjustments, etc.
- Dealer travel time, or travelling costs to and from the machine.
- Transporting machines, equipment or parts to the repair site and returning them to the user site.
- Parts defined as normal wearing items such as, but not limited to belts, blades, discs, knives, shares, tines, tine holders, slip clutches, etc. that are not covered by the Limited Warranty.

■ **The Limited Warranty is dependent on the strict observance of the following conditions:**

- The machine has been put in service by the dealer according to our instructions.
- The machine has been registered on line via extranet - www.kuhn.com or the warranty/product registration form has been completed and returned to the address indicated on the form as soon as the machine had been delivered to the retail purchaser.
- The warranty claim is completed on line via extranet - www.kuhn.com or submitted on a KUHN warranty claim form and returned to the Company within one month after the date of failure or the date of problem becoming apparent.
- The claim must be completed by the dealer and following information must be mentioned.
 - **Dealer's name and address**
 - **Name and address of retail purchaser**
 - **Exact type of machine**
 - **Machine serial number**
 - **Date of delivery to the retail purchaser**
 - **Date of failure**
 - **Number of hours of use or area (hectares, acres) worked**
 - **Power of tractor used**
 - **PTO speed (if applicable)**
 - **Detailed description and estimated cause of the failure**
 - **Quantity, reference number and name of the damaged parts**
 - **Invoice number and invoicing date for replacement parts.**
- The dealer has stored the damaged parts safely and labelled them clearly so that they can be recognised and returned to the Company if requested. They must be retained until a credit note has been issued to cover the parts. Carriage charges for the return of said parts are borne by the sender.
- The machine has been used and maintained according to the instructions in the operator's manual. The quality and quantity of lubricants used must always be in accordance with Company specifications.
- The safety measures mentioned in the Operator's manual and on the machine itself have been followed, and all the guards and protective elements, of whatever nature, have been inspected regularly and maintained in perfect working order.
- The judgment of the Company in all case of claims under this Limited Warranty shall be final and conclusive and the retail purchaser agrees to accept its decisions.
- If damaged parts have been returned to the Company and Warranty is refused , the dealer is allowed a period of 1 month from the date of receiving our letter of decision to request the return of the damaged parts to the dealer site.

■ **Further conditions: limits of application and responsibility**

- This Limited Warranty can not be assigned or transferred to anyone without the prior written consent of the Company.
- Authorized KUHN Dealers have no right or authority to assume any obligation or take any decision on the Company's behalf, whether expressly or tacitly.
- Technical assistance given by the Company or its agents for repairing or operating equipment does not lead to any responsibility on the Company's behalf and cannot under any circumstances bring novation or derogation to the conditions of the present Limited Warranty.
- The Company reserves the right to incorporate changes in its machines without prior notice and without obligation to apply these changes to machines previously manufactured.
- Moreover, because of the constant progress in technology, no guarantee is given to the descriptions of equipment published in any document by the Company.
- The present Limited Warranty excludes any other responsibility, whether legal or conventional, express or implied, and there are no warranties extending beyond those defined herein.



Specimen of the "Declaration of conformity"



EC Declaration of conformity (European directive 2006/42/CE)

The manufacturer:

KUHN S.A., 4 impasse des fabriques B.P. 50060 F - 67706 SAVERNE CEDEX

declares that the product described hereafter:

Type: "*Machine name*"

Serial no.: "*Machine serial number*"

- conforms to the requirements of the European directive 2006/42/CE
- conforms to the requirements of following European harmonized standards:
**EN 1553 - NF U 02-007 - EN 703 - EN 708 - EN 745+A1 - EN 907
EN 14017 - EN 14018 - EN ISO 4254-6**
- conforms to the requirements of following standards or technical specifications:

Name and address of the person authorised to compile the technical file:

Made in Saverne, on 00/00/0000

In the event of the machine being re-sold, this declaration of conformity is to be passed on to the new owner

Customer code or order number

98 - - -



www.kuhn.com

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Société Anonyme au Capital de 19 488 000 Euros

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Société Anonyme au Capital de 2 530 000 Euros

KUHN-BLANCHARD SAS - 24, route de Nantes - F - 44680 CHEMERE (FRANCE)

Tél. : + 33 (0) 2 40 21 30 24 - Fax : + 33 (0) 2 40 64 80 11

Société par Action Simplifiée au Capital de 2 000 000 Euros

KUHN-HUARD S.A. B.P. 49 F - 44142 CHATEAUBRIANT CEDEX (FRANCE)

Tél. : + 33 (0) 2 40 55 77 00 - Fax : + 33 (0) 2 40 55 77 10

Société Anonyme au Capital de 4 800 000 Euros

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