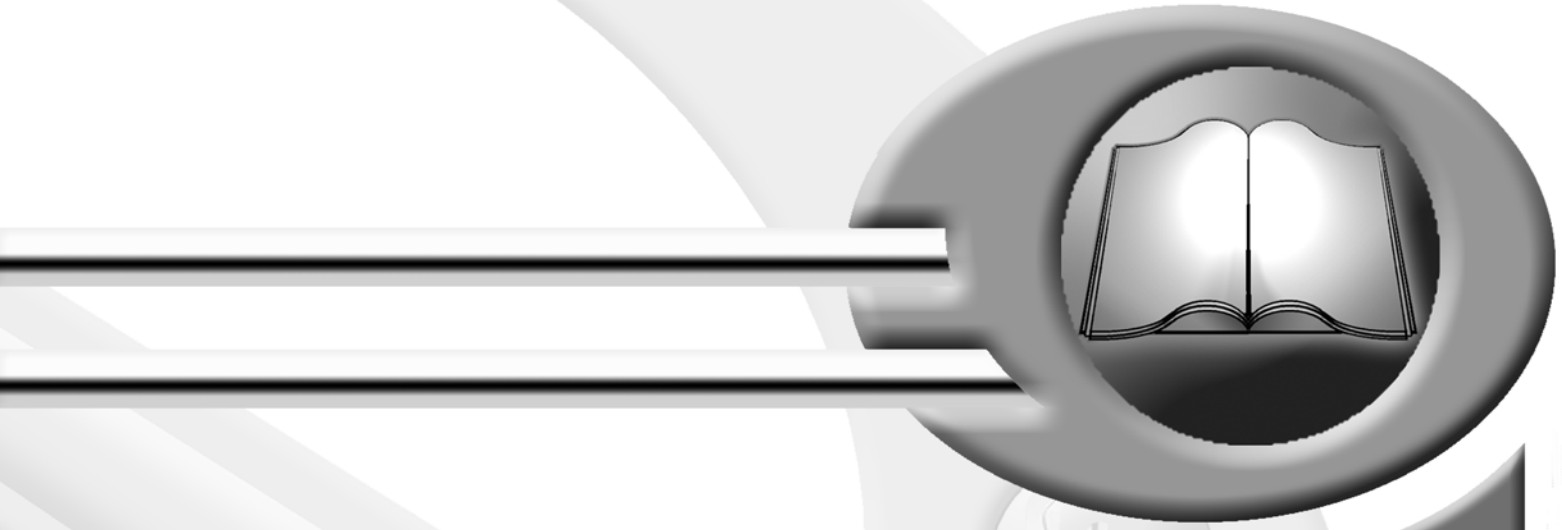
OPERATOR'S MANUAL



Disc mower

GMD883

KUHN

KN017CGB D

- English - 03-2007

DEAR OWNER

In buying a Kuhn machine you have chosen wisely. Into it have gone years of thought, research and improvements. 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 by 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 **GMD883** disc 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.

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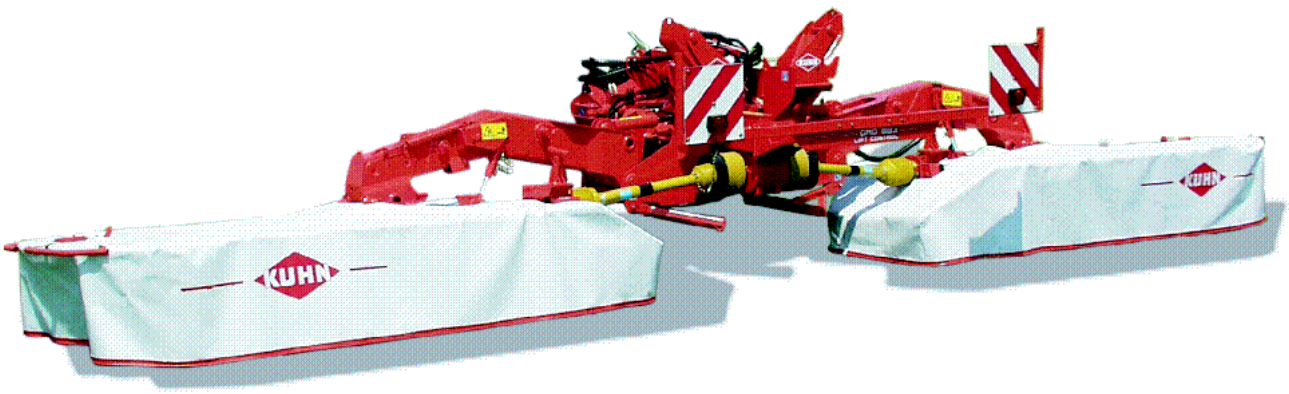
IDENTIFICATION OF THE MACHINE

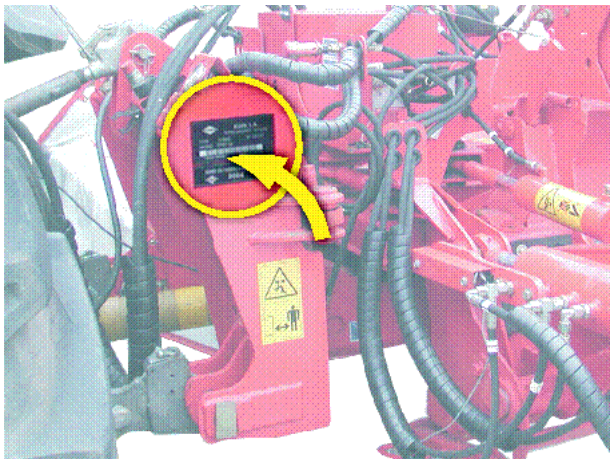
1. Front view

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: GMD883

No:

4. Optional equipment

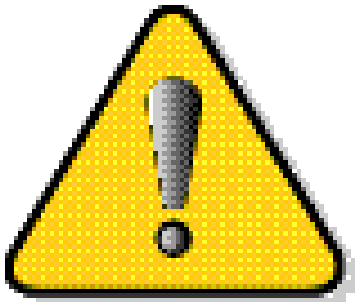
Tick box corresponding to the equipment fitted on your machine:

- ❑ **Part no. 4604602**: 1 3/4'' - 6 spline yoke.
- ❑ **Part no. 4604603**: 1 3/4'' - 20 spline yoke.
- ❑ **Part no. 4604604**: 13/8'' - 6 spline yoke.
- ❑ **Part no. 4604601**: 1 3/8'' - 21 spline yoke.
- ❑ **Kit no. 1076440 (x2)**: Raised skid shoes 120 mm (4.7'').
- ❑ **Kit no. 1036320**: Large cone discs.

SAFETY

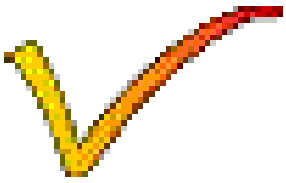
1. Description of symbols used in this document

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 machine 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 accidents 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.

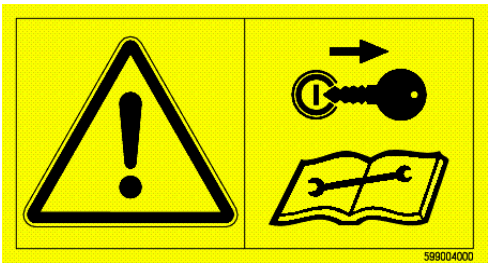
Before starting work, the operator must be familiar with all machine controls, handling devices and their functions. It is too late to learn once work has been started!

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.

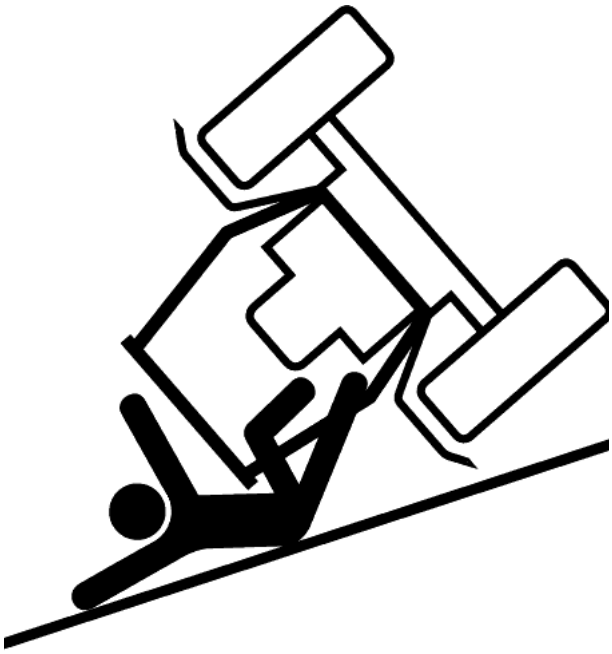
Wear the appropriate protective clothing for the work in hand (gloves, shoes, goggles, helmet, ear-protectors, etc.).

Make sure that all operating controls (ropes, cables, rods, etc) are placed so that they cannot be set off accidentally, risking accident or damage.

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



Precision steering, tractor adherence, road holding and efficient braking are influenced by the type of implement, weight, ballast of front axle, ground or road conditions. It is therefore of the utmost importance to be cautious 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

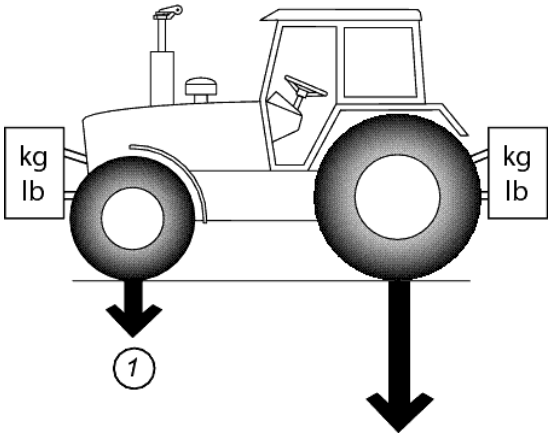
Depending on the dimensions of the machine, contact the relevant authorities to ensure that it can be legally transported on public roads.

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

Gross weight and weight per axle

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

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



Transport position

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

Lightings and signallings

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

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

Always obey current regulations for driving on roads.

■ Maximum speed

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

Precautions when coupling

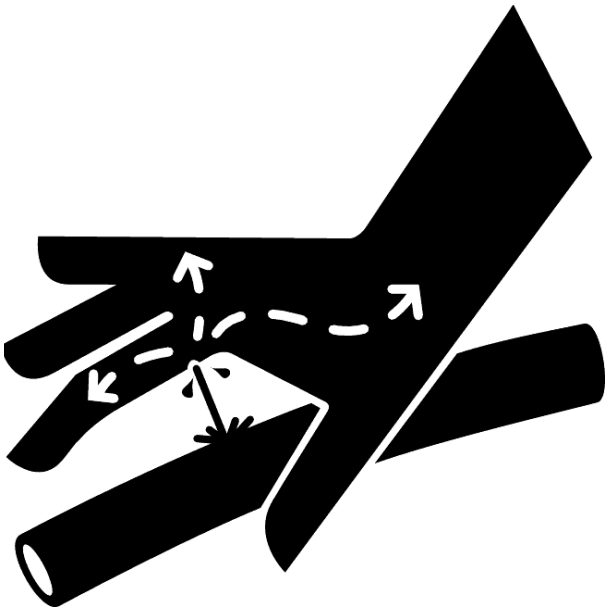
Before attaching the machine, make sure that it cannot accidentally start moving (chock the wheels) and that the parking stand is in the right position.

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 rear remote control lever of the three point linkage.

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

Hydraulic circuit



Beware! The hydraulic circuit is under pressure. Maximum pressure at work: 200 bar.

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 wrong connections, mark hydraulic couplers and corresponding hoses with colours. 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, make sure to use hoses with the specifications and quality 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 on 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 protection 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.

Hydro-pneumatic accumulator

A hydro-pneumatic accumulator contains nitrogen under pressure (risk of suffocation in closed rooms).

Repairs, maintenance or putting into service must only be carried out by competent persons. Wait for the accumulator to cool down before handling it. Only use nitrogen to precharge it.

Depressurize the gaz and oil sides of the hydraulic accumulator before opening it.

It is strictly forbidden to weld, grind or drill onto a hydro-pneumatic accumulator.

Make sure that the accumulator and its attachment are in good condition.

Safety decals

Safety warning decals to respect, 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 neither pour them down the drain or discard them in any other place where they could pollute the environment. Never throw away or burn a tire. 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-protectors, 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 a mower conditioner when other people are close.

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. Immediatly 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. Immediatly 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.

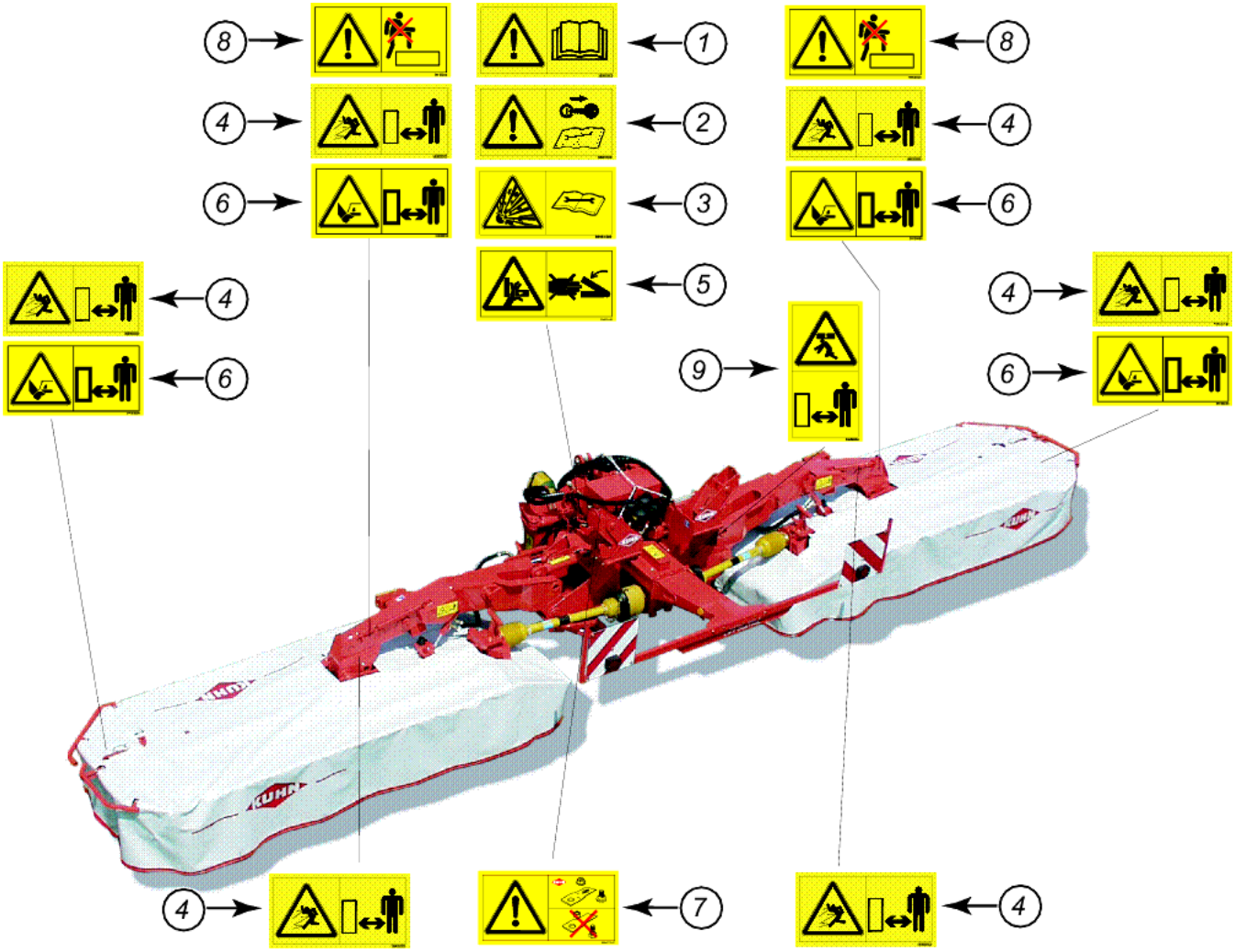
Never work in reverse.

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

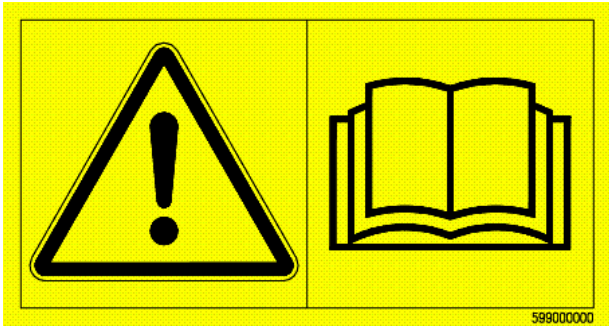
■ Location of safety decals



■ Description of safety decals

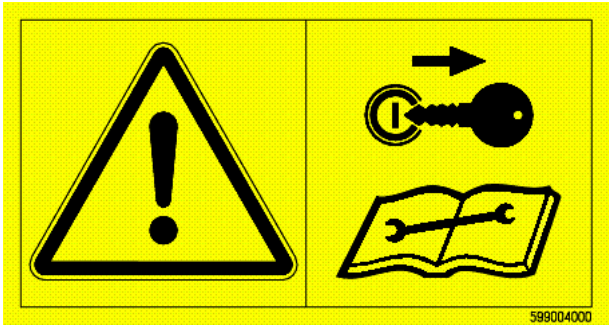
Operating instructions (1)

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



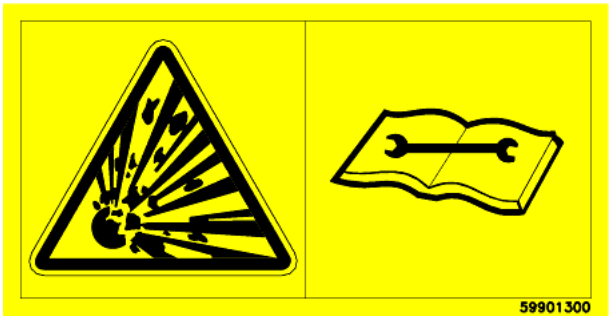
Working on the machine (2)

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.



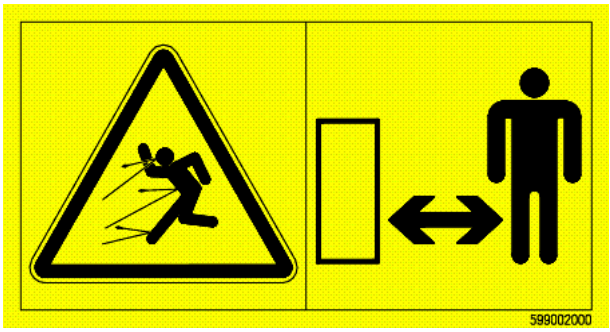
Danger accumulator (3)

The hydraulic accumulator contains gaz and oil under pressure. To park the machine or carry out maintenance work, conform with the instructions given in the operator's manual



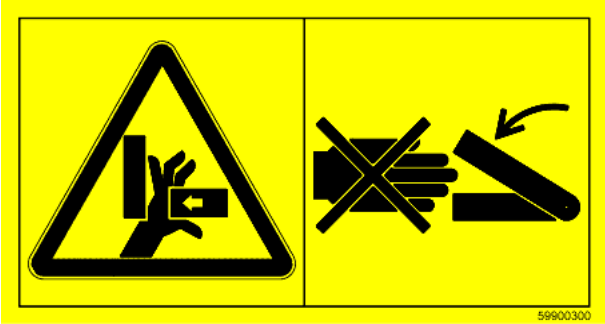
Projections (4)

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 (5)

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



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.

Body crushing (9)

Stay a safe distance from the machine.

Crushing hazard.

4. Road safety equipment and recommendations

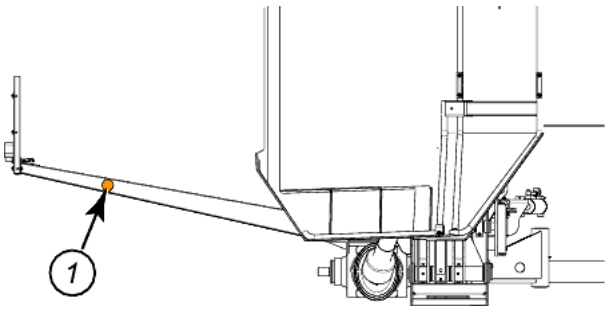
The road safety equipment is mounted in the factory or by your authorized dealer according to current safety regulations.

The rear safety device comprises:

- 2 signalling lights (1).
- 2 signalling panels (2).
- 2 red reflectors (3).

The side device comprises:

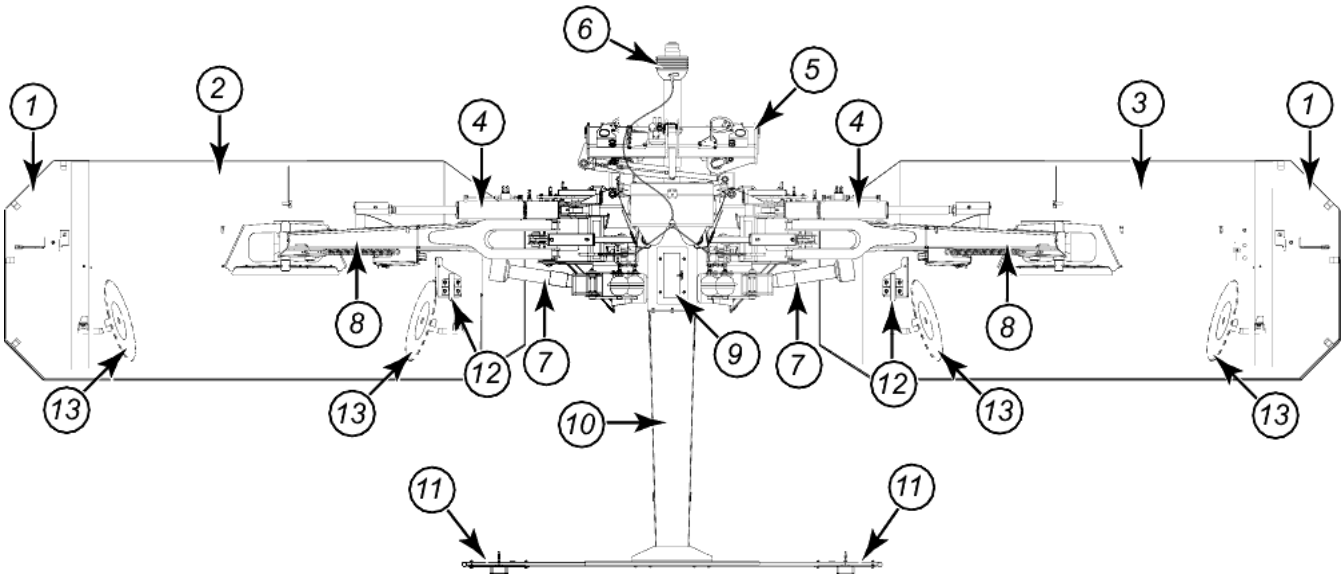
- 2 amber reflectors (1) on each machine side.



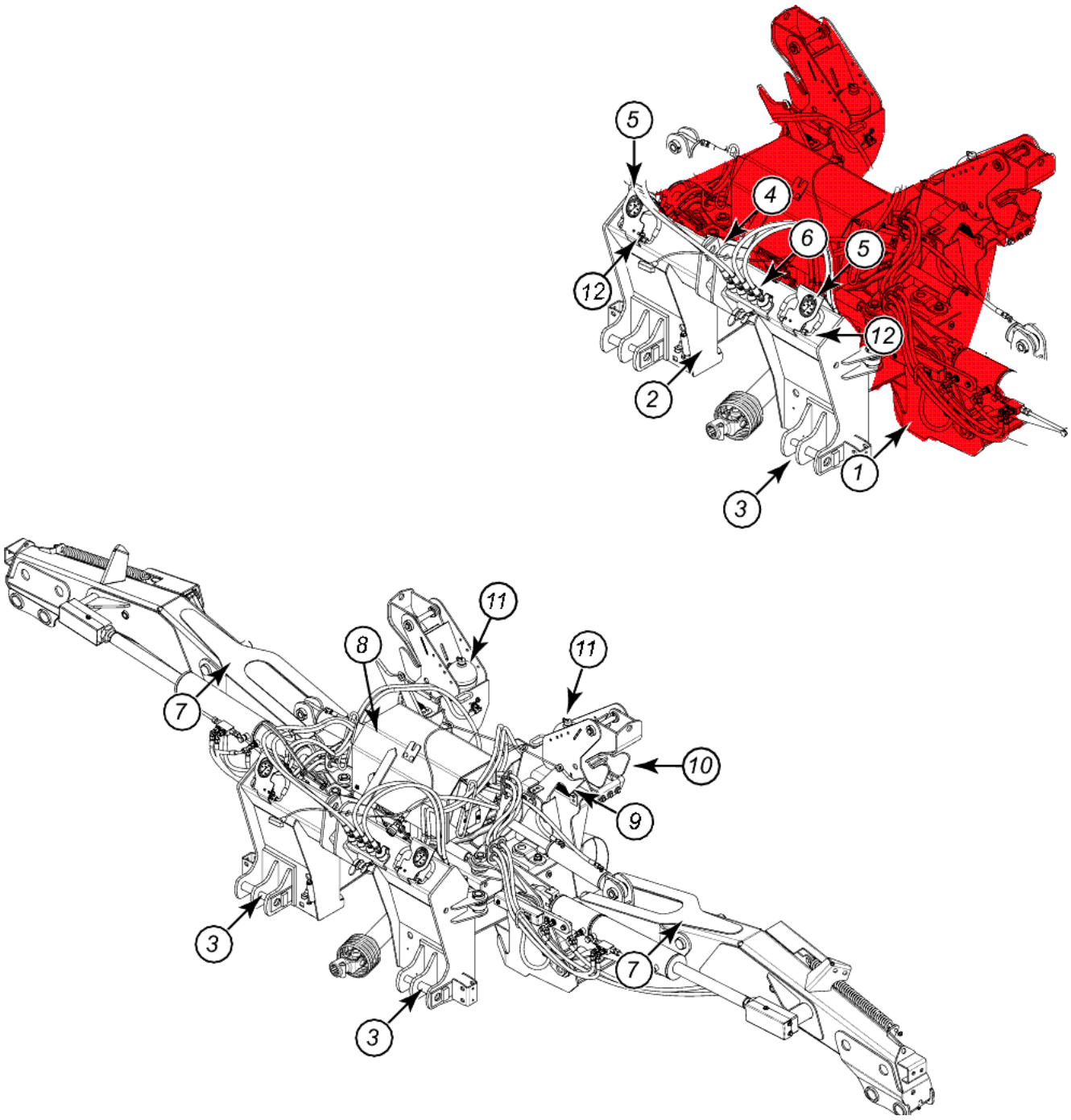
Always keep to the legal speed limit for driving a tractor-machine assembly on public roads.

MACHINE SPECIFICATIONS

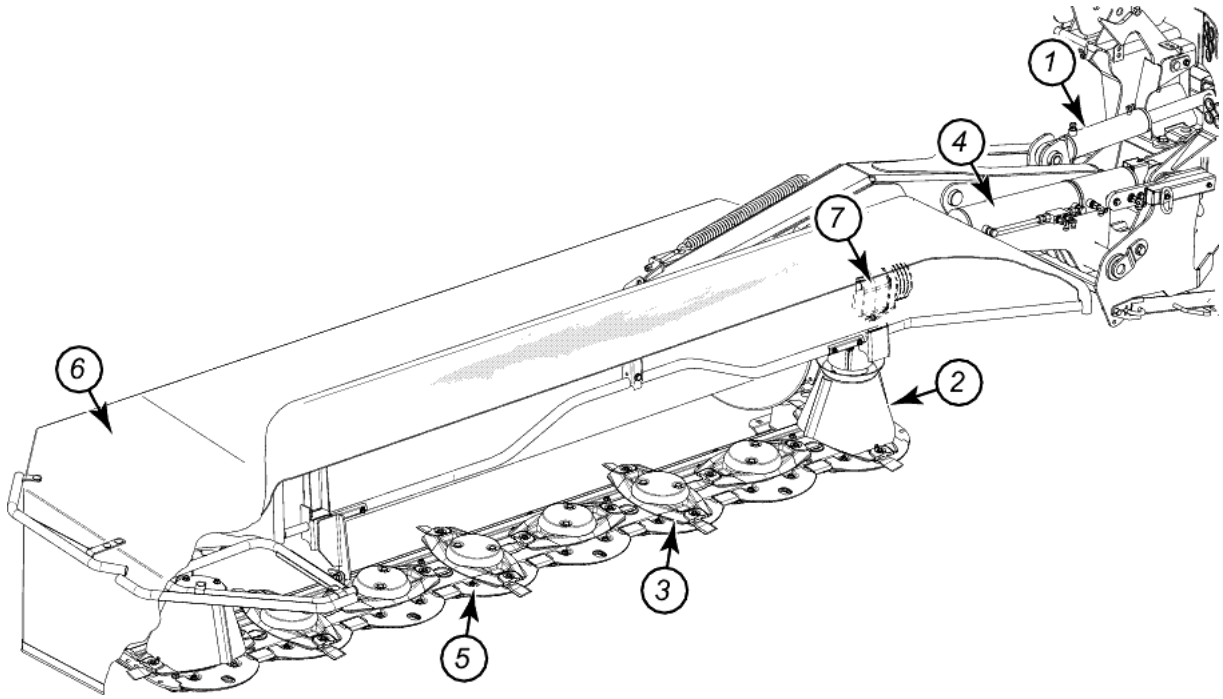
1. Description and glossary



1 : Side guards
2 : Left mowing unit
3 : Right mowing unit
4 : Lift cylinders
5 : Three-point hitch coupler
6 : Primary PTO shaft
7 : Secondary PTO shafts
8 : Mowing unit connecting frames
9 : Toolbox
10 : Signalling panel support
11 : Signalling panels
12 : Stop pins
13 : Swath wheel



1 : Main frame
2 : Three-point hitch coupler
3 : Lower hitch attachments
4 : Upper hitch attachment
5 : Gauges
6 : Hoses holder
7 : Mowing unit connecting frames
8 : Hydraulic valve bank
9 : Transport locks
10 : Transport stops
11 : Hydro-pneumatic accumulators
12 : Suspension circuit valves



1 : Ground pressure adjustment cylinder
2 : Large cone disc
3 : Disc
4 : Lift cylinder
5 : Side guard
6 : Cutterbar
7 : Side gearbox

2. Technical specifications

Attachment type	3 point attachment category 2 and 3
Number of discs	2 X 8
Working width (with a front mounted machine)	8.73 m (23'7'')
Width in working position	9.35 m (30'8'')
Width in transport position	2.98 m (9'9'')
Length in transport position	3.05 m (10')
Height in transport position	4.00 m (13'1'')
Disc rotational speed	2986 min^{-1}
PTO speed	1000 min^{-1}
Weight	2293 kg (5055 lb)
Minimum PTO power requirement (with a front mounted machine)	103 kW (140 hp)
Standard oil flow	30 to 40 L/min (8-10 US gal/min)

3. Sound levels

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

NF EN 1553

"Agricultural machinery - Self-propelled, mounted, semi-mounted and trailed - Common safety recommendations"

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

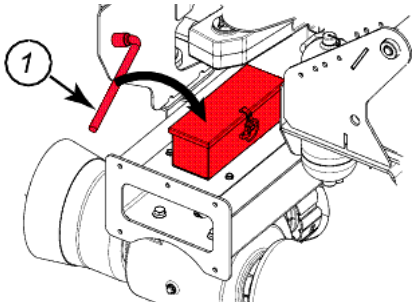
Tractor only: **75 dB(A)**

Tractor + machine: **82.2 dB(A)**

PUTTING INTO SERVICE

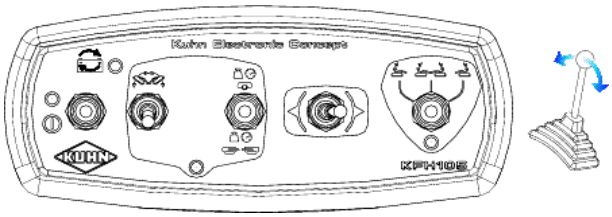
1. Description of control elements

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



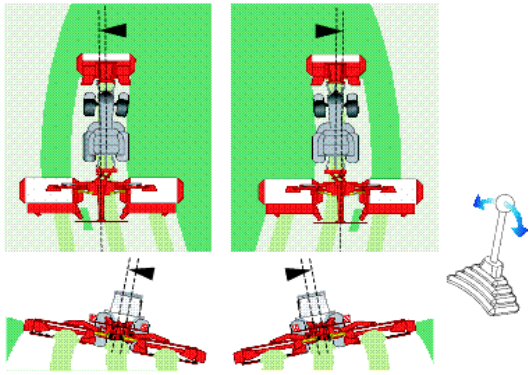
The tractor must be equipped with:

- 1 double acting valve for use in combination with the control box.

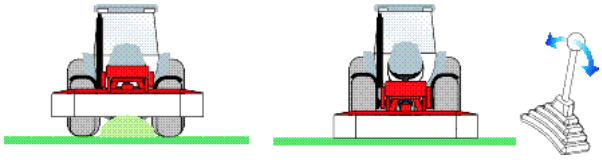


Operating principle: The operations are carried out by combining the control box switches with the hydraulic valve.

- 1 double acting valve for machine offsetting manoeuvres.



- 1 single acting valve for setting the front unit in transport/work position and vice-versa.



■ Positioning and parking

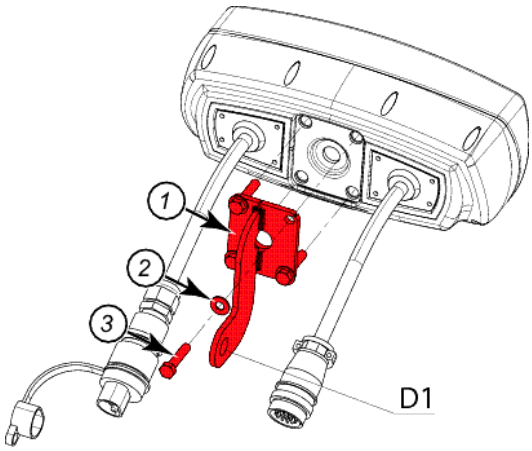
The control box must be easily accessible from the tractor cab.

Control box mounting

- Fit support (1).
- Fit the 4 screws (3) and washers (2)

Fit control box using:

- 1 screw diameter D1 (M12).

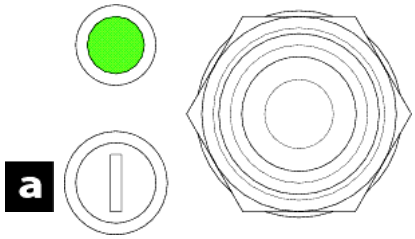


Control box removal

Store control box in a dry place free of dust.

■ Description of the controls

ON/OFF push button (a).

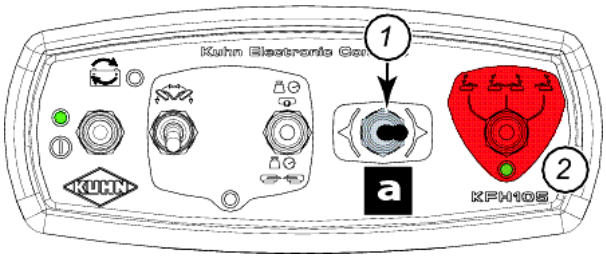


The warning light is on when the control box is energized.

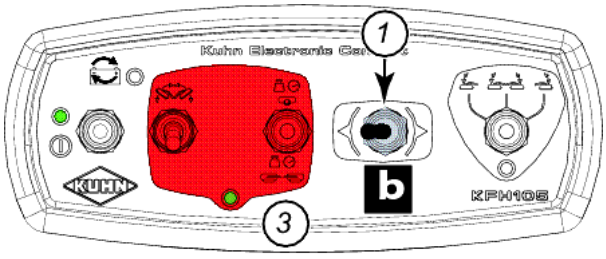
The direction of operation of different functions may be inverted depending upon the way the hydraulic hoses have been connected to the tractor outlet.

Control box area selector:

Toggle switch (1) in position (a) activates area (2).

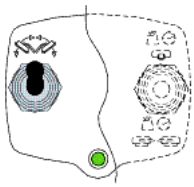


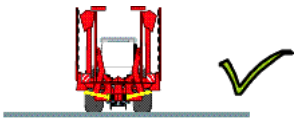
Toggle switch (1) in position (b) activates area (3).



Putting the machine from headland turn into transport position and vice versa:

- Fold or unfold mowing units.

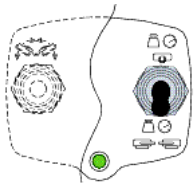


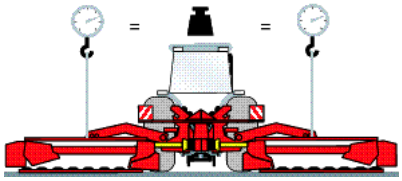


Setting the machine into transport position is carried out with the machine in headland turn position.

Reduced or increased ground pressure:

Increase or reduce mowing unit ground pressure.



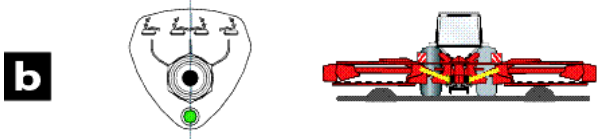


Putting the mowing units in headland turn position:

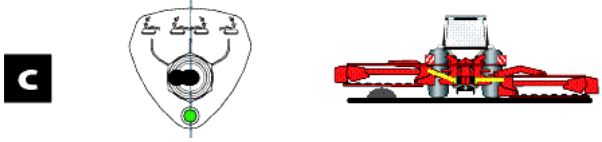
- Position switch in the following position:

- Position (a) : Right mowing unit.

- Position (b): Left and right mowing units.



- Position (c): Left mowing unit.



■ Control box protection

A 7 Amper fuse integrated in the control box protects the control box against overvoltage.

Automatic fuse resetting.

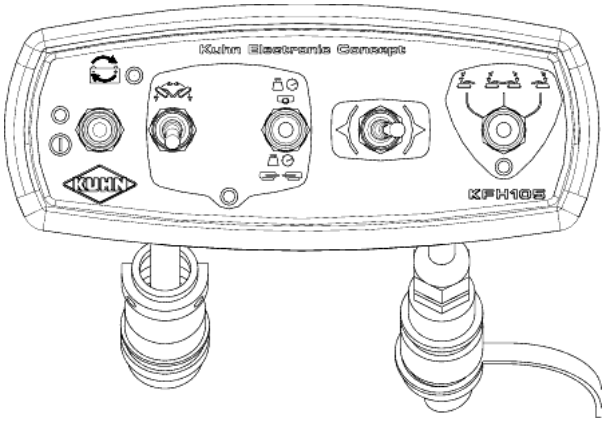
■ Description of the connection

Never connect battery charger or perform welding tasks without having previously disconnected the control box.

The control box is connected to:

- A tractor 3-pin socket.
- A machine wiring harness connected to the hydraulic valve bank.

For tractors not fitted with a 3-pin socket, a wiring harness can be ordered under Part no. N01602A0.

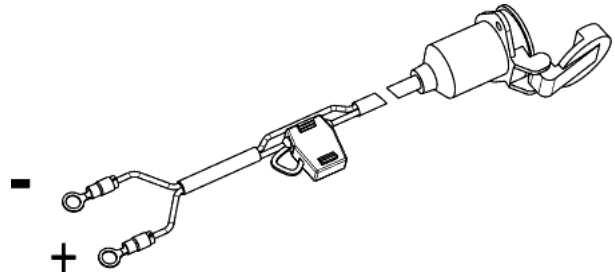


Do not connect the wiring harness to the starter connections.

Check that the connectors are in a good condition and clean.

Connect the wiring harness directly to the battery terminals respecting the polarities.

The wiring harness is fitted with a 15 Amp ATO type fuse Part no. 83233017.

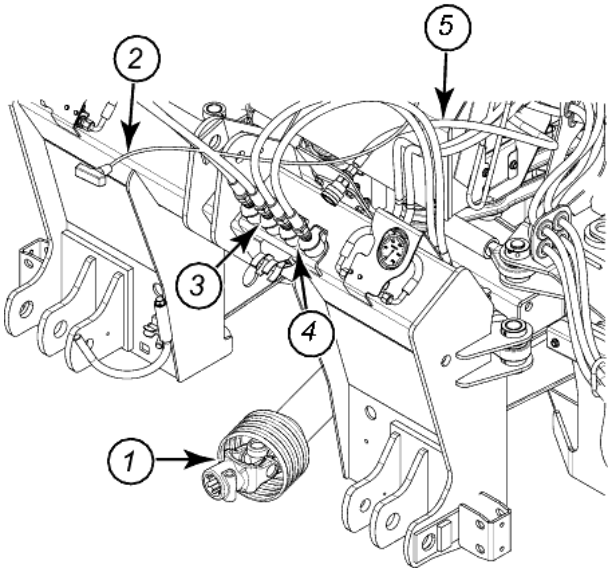


2. Coupling and uncoupling

The machine adapts to tractors fitted with a 3-point hitch coupler category 2 or 3.

■ Description of coupling elements

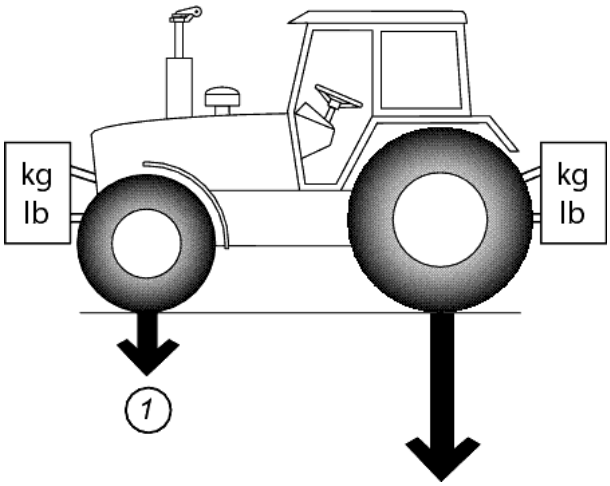
- A PTO shaft 1 3/4'' - 6 splines (1).
- A release cord (2).
- 2 hydraulic hoses (3) pressurize the hydraulic valve bank.
- 2 hydraulic hoses (4) pressurize the offset cylinder.
- 1 hydraulic hose (5) controlling the front mowing unit suspension.
- A 7-pin electric plug for the electrical signalling equipment.
- A 19-pin plug for the hydraulic valve bank.



■ Preparing the tractor

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

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 1000 min^{-1}.

The tractor must be equipped with:

- 2 double-acting hydraulic valves.

or

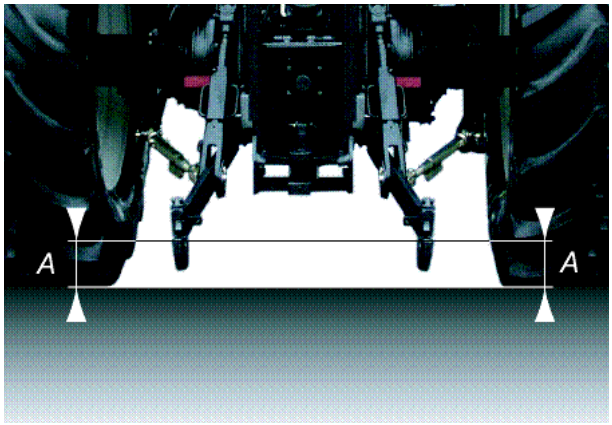
- 1 single acting hydraulic outlet.

for easier attachment and pitch angle adjustment, we recommend to use a hydraulic top link.

In this case, an additional double acting outlet is required.

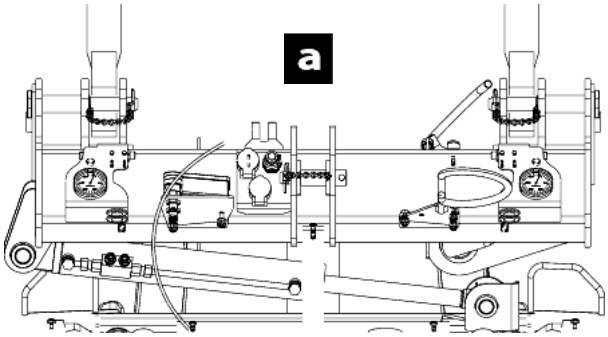
Hitch pin parallelism.

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

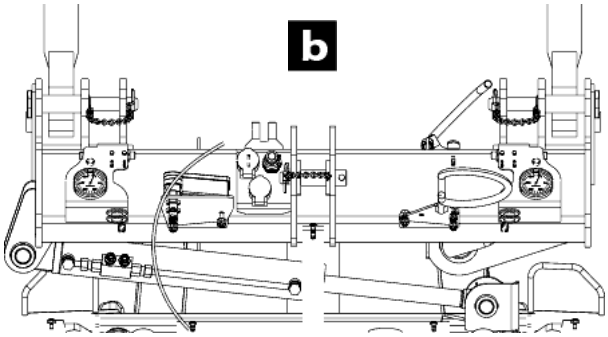


■ Coupling the machine

- Lower the tractor three-point linkage.
- Place the lower links as close as possible under the hitch pins.
- Attach the lower links to the hitch pins.

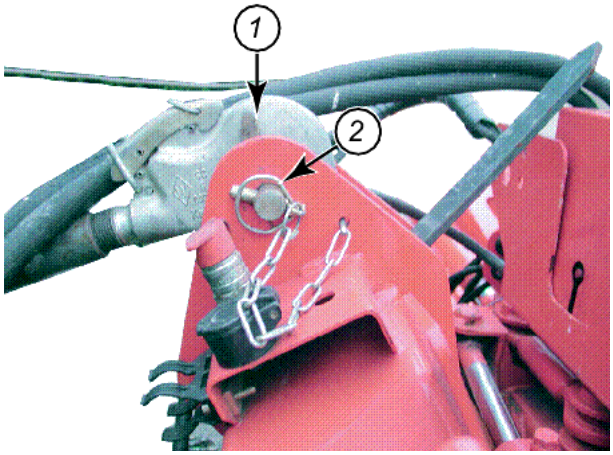


• Category 2 (a)

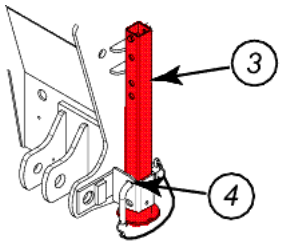


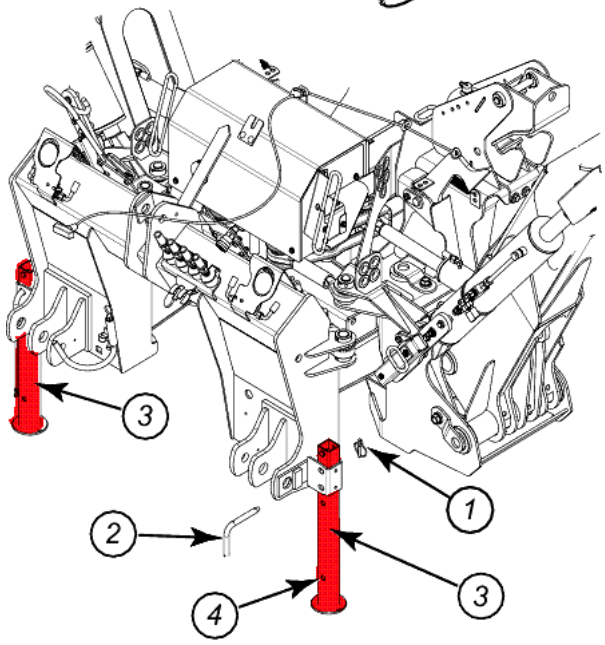
• Category 3 (b)

- Secure each hitch pin with lynch pin.
- Attach top link (1).
- Lock the upper hitch attachment using lynch pin (2).



- Raise machine using the tractor lift linkage until parking stands no longer rest on the ground.
- Unlock and remove lynch pin (1).
- Remove pin (2).
- Raise parking stand (3).
- Insert pin in hole corresponding to transport position (4).
- Insert and lock lynch pin (1).





Proceed the same way on each parking stand.

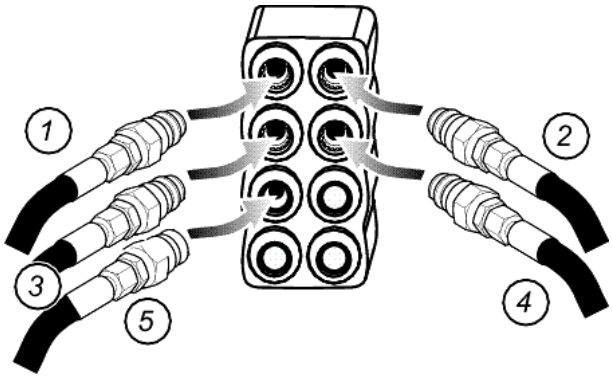
■ HYDRAULIC Connections

The machine hydraulic suspension circuit is pressurized at the factory.

- Connect hydraulic hoses (1) and (2) to:
  - 1 double acting hydraulic outlet.

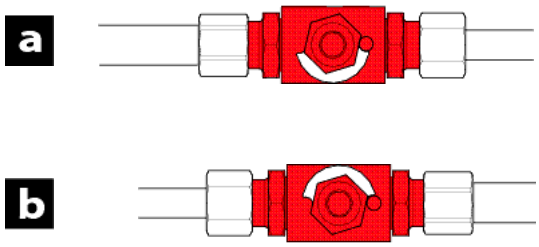
- Connect offset cylinder hydraulic hoses (3) and (4) to:
  - 1 double acting hydraulic outlet.

- Connect front mounted mower hydraulic hose (5) to:
  - 1 single acting hydraulic outlet.



Check that all suspension system valves are shut-off.

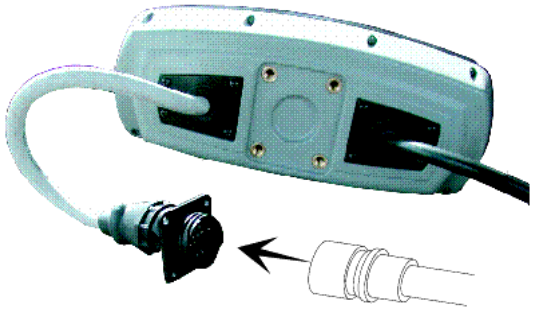
Position a: Circuit open.
Position b: Circuit closed.



■ Electrical CONNECTIONS

- Connect 7-pin plug to the tractor.

- Connect control box to the 19-pin electric plug.



■ Primary PTO shaft

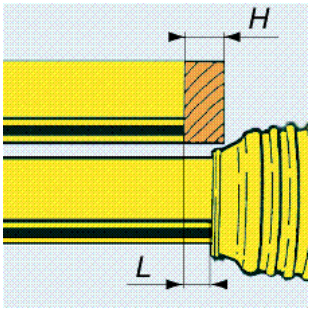
Make sure that the PTO shaft is correctly adjusted, to avoid premature wear and tear.

The tractor PTO stub must rotate at a speed of 1000 min^{-1}.

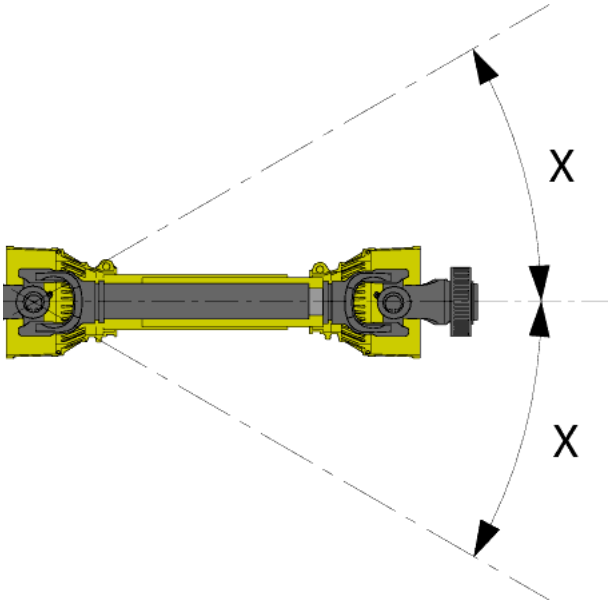
Separate the two half PTO shafts and connect them to the machine's input shaft and to the tractor PTO stub.

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'').

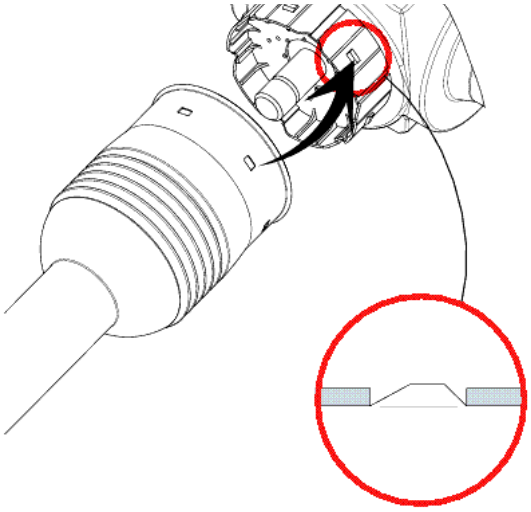


Never operate the PTO shaft at an angle X exceeding 30°.



To avoid serious accidents, the PTO drive shaft guards must be properly engaged in the catches.

Check that the system is properly engaged.



■ Secondary PTO shafts

Before adjusting, maintaining or repairing the machine, turn off ignition key and wait until all moving parts have come to a complete stop.

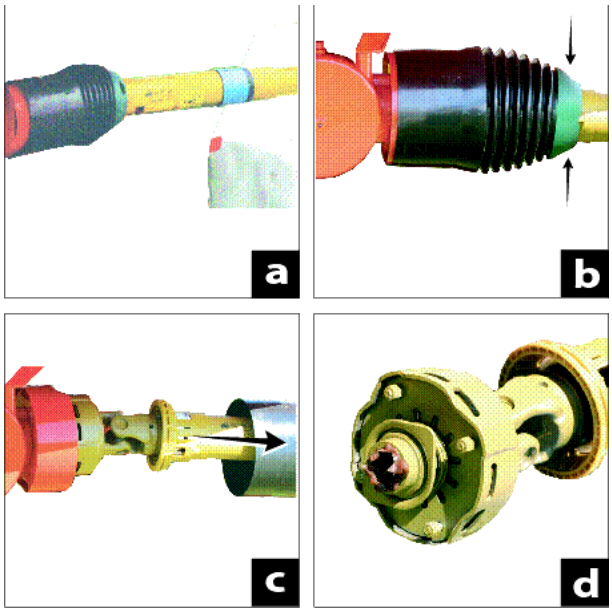
Friction slip clutch

The secondary PTO transmission shafts are fitted with a friction slip clutch.

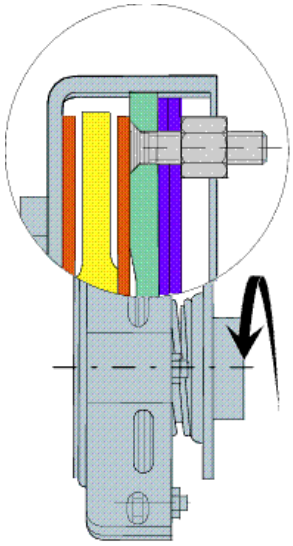
Before the machine is put into service and after a long period of non-use, check the function of slip clutch to ensure it is not locked up.

Remove the secondary PTO shaft from the central gearbox:

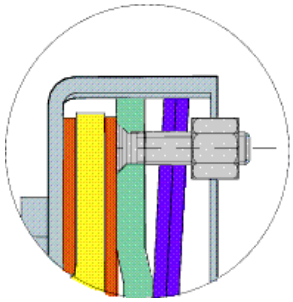
- Place the machine in working position (a).
- Press vertically on the 2 lugs using a screwdriver to release the PTO shaft guard (b).
- Slide the guard along the PTO shaft (c).
- Remove the secondary PTO shaft from the central gearbox (d).



- Tighten nuts to release the friction discs.
- Let the friction discs slip for a few seconds.



- Thread nuts away until they bottom against the threaded studs.



The friction slip clutch is ready to function.

Follow same procedure on the second mowing unit.

■ Adjusting the machine

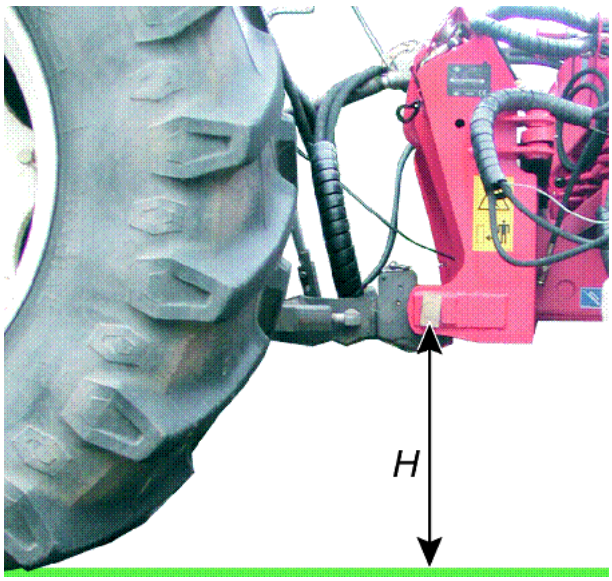
Lateral adjustment of the lower links

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

Frame height adjustment.

Working position:

- Lower the tractor lift linkage so that hitch pins are at a distance 600 mm (2') from the ground.



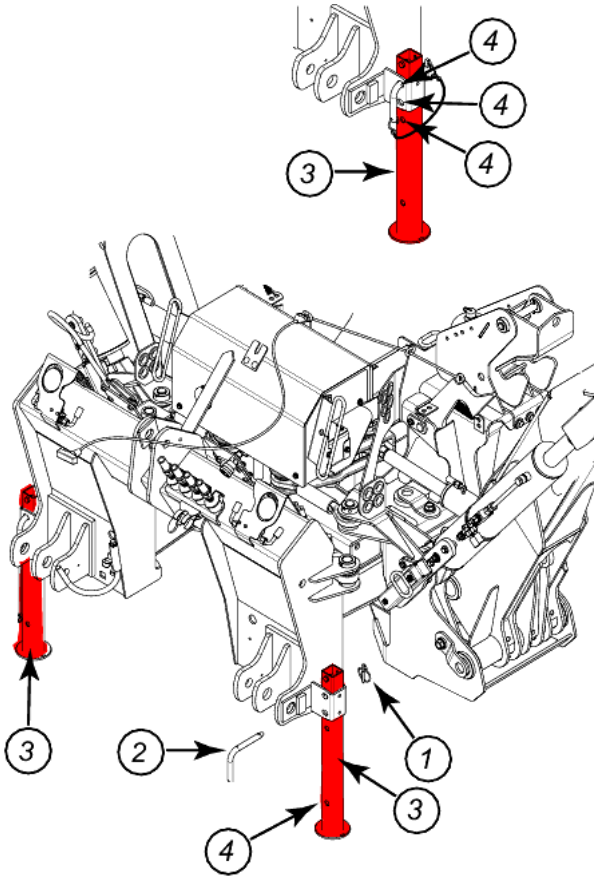
Note the corresponding lever position in the tractor cab.

■ Uncoupling the machine

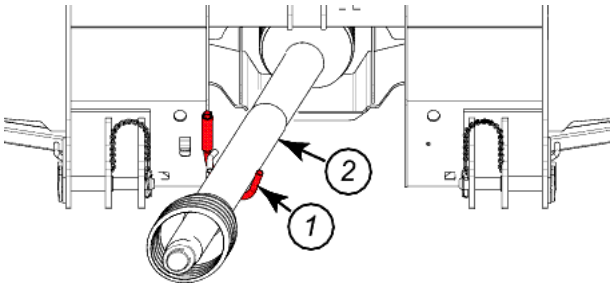
The machine must be uncoupled in working position.

- Unlock and remove lynch pin (1).
- Remove pin (2).
- Lower parking stand (3).
- Insert pin in one of the 3 parking stand upper holes corresponding to parking position (4).
- Insert and lock lynch pin (1).

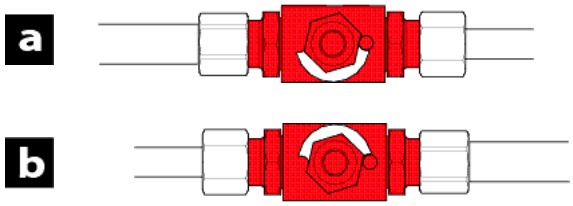
Proceed the same way on each parking stand.



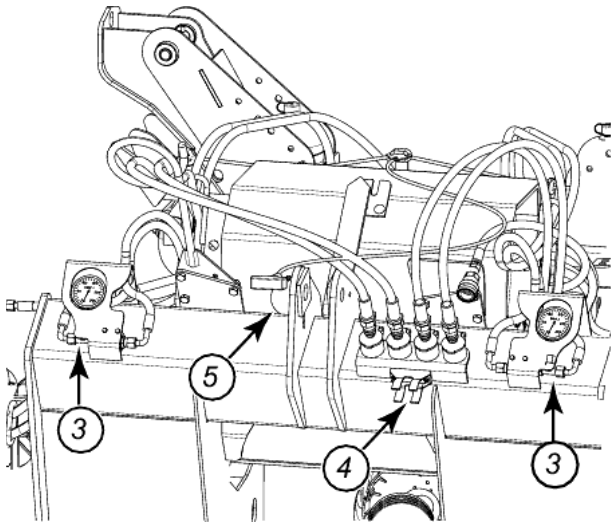
- Lower the tractor three-point linkage to rest the machine on the ground.
- Uncouple PTO shaft (2) and place it in its holder (1).



Position (a): Circuit open.
Position (b): Circuit closed.



- Check that all suspension system valves are shut-off (3).
- Disconnect hydraulic hoses and electric plug.
- Place hydraulic hoses and electric signalling plug in their respective supports (4).
- Disconnect and store 19 pin plug in holder (5).
- Detach the top link from the machine end.
- Uncouple the lower links.
- Lower the tractor three-point linkage.



The machine is uncoupled.

INSTRUCTIONS FOR TRANSPORT

Before placing the machine into transport position:

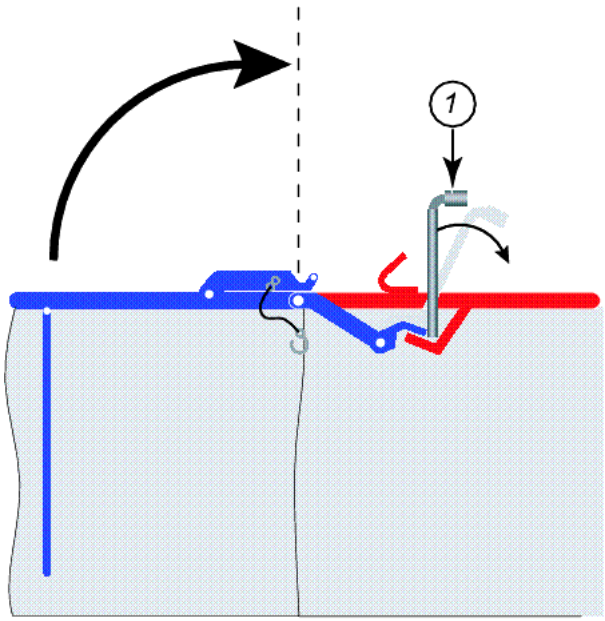
- **Wait until the rotating parts have come to a complete stop.**
- **Check that nobody is within the machine pivoting area.**
- **If there is someone, make sure the person moves away**.

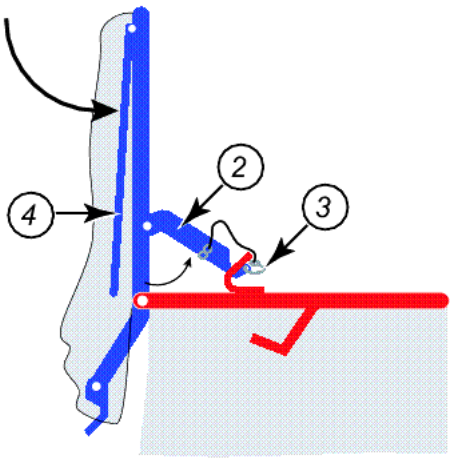
1. Putting the machine into transport position

If the torque limiter has become very hot due to slippage, wait for it to cool down before pivoting the machine into transport position.

From the working position:

- Release and fold side guards upwards using 18mm box spanner supplied with the machine (1).
- Lock guards using bracket (2) and lynch pin (3).
- Fold stop rod (4).

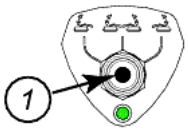




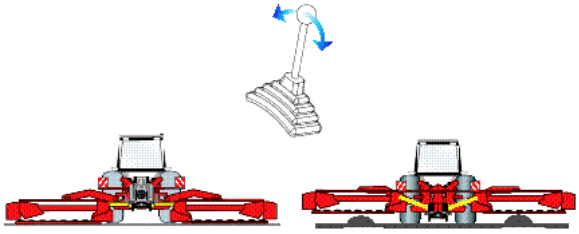
Putting the machine in headland turn position:

- Place central switch in position (a).

- Select the 2 mowing units using switch (1).



- Activate tractor hydraulic outlet associated with the control box.

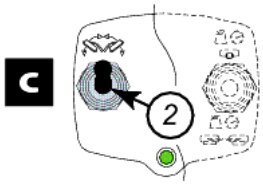


Wait until cylinders are fully retracted.

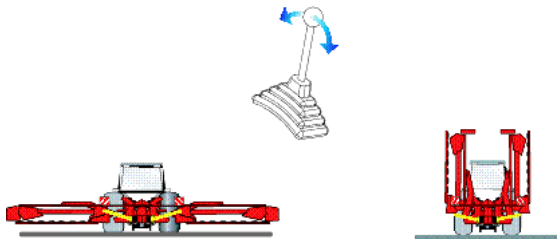
Putting the machine into transport position:

- Place central switch in position (b).

- Maintain switch (2) in position (c).

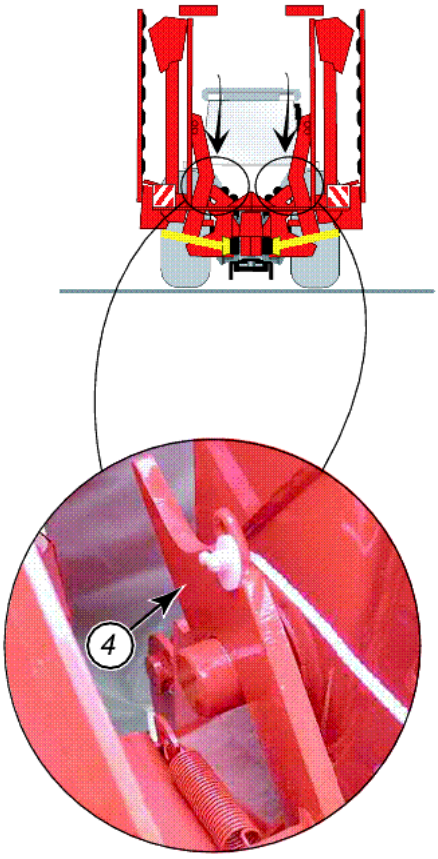


- Activate tractor hydraulic outlet associated with the control box.



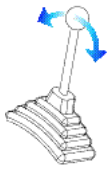
Locks engage automatically.

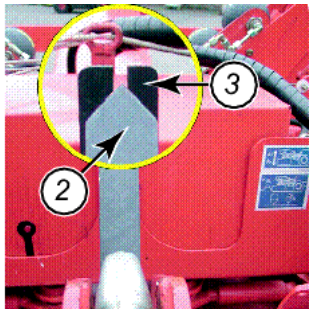
- Check that transport locks (4) are fully engaged.



- Activate machine offset using the hydraulic offset cylinder to centre the frame.

From the tractor cab, check that the offset mark (2) is in line with mark (3).





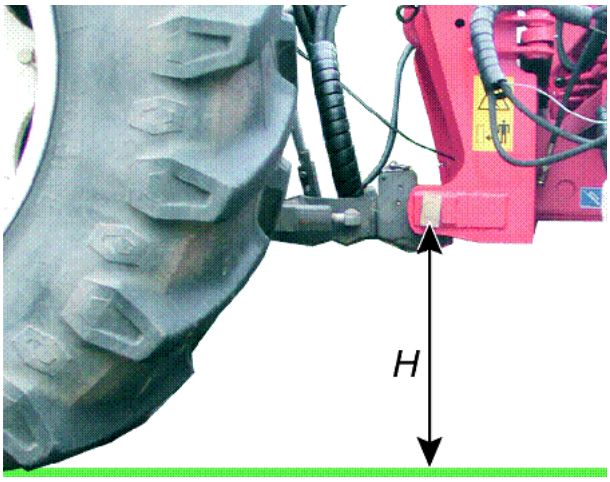
- Shut-off the machine hydraulic circuit supply from the tractor cab.

- Switch the control box OFF.

Adjust main frame height with regards to the ground:

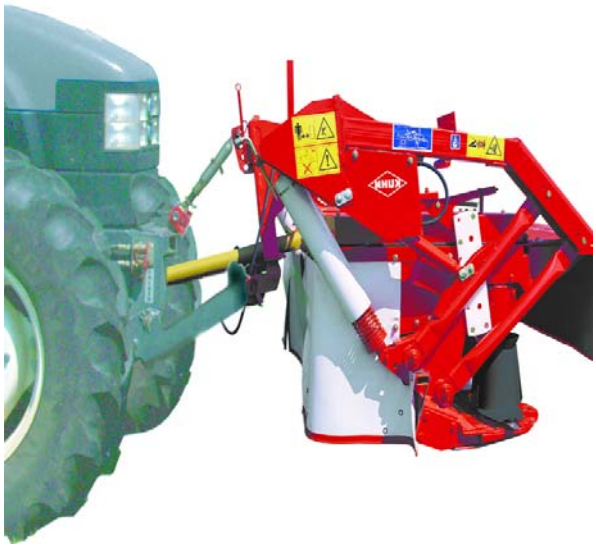
- Lower the tractor lift linkage so that hitch pins are at a distance H = 500 mm (1’8’’) from the ground.

The machine is in transport position.



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

Raise the front mounted machine in transport position.

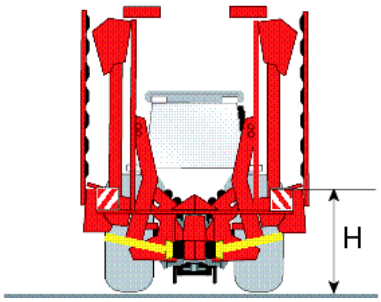


2. Conformity with the road regulations

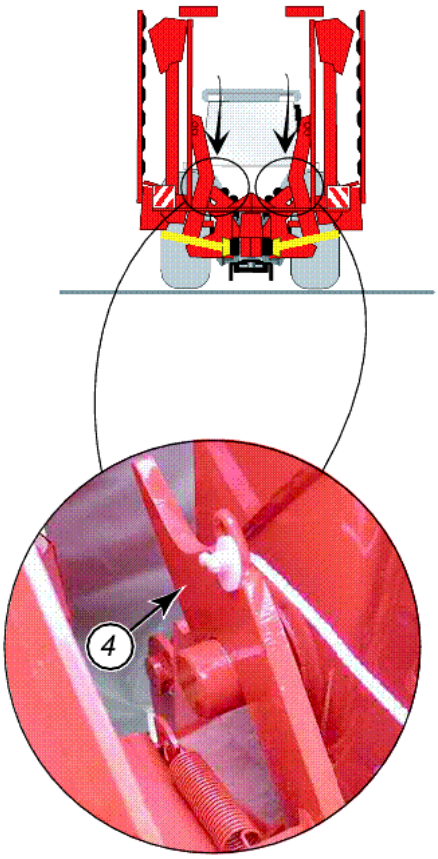
Before driving the machine on public roads, ensure that the machine meets current highway code regulations.

- Check that the signalling panels are clean and that the lighting equipment functions before going on public roads.

Before driving onto a main road, ensure that upper edge of signalling panel is not more than H = 1.5 m (4’11’’) from the ground.



- Check that transport locks (4) are fully engaged.



Immediately replace any worn or damaged signalling panels or lights.

INSTRUCTIONS FOR WORK

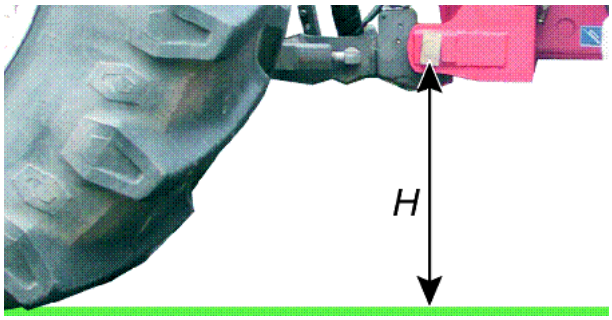
1. Putting the machine into work position

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.

From the transport position:

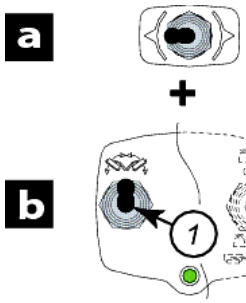
- Lift the machine with the tractor's three point linkage H = 600 mm (2’).



- Energize control box using ON/OFF switch.

Release locks:

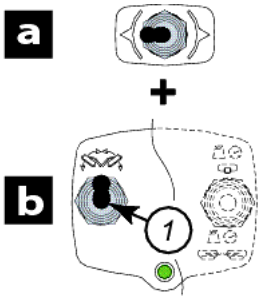
- Place central switch in position (a).



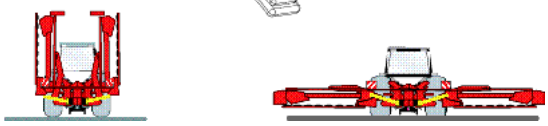
- Maintain switch (1) in position (b).
- Activate tractor hydraulic valve connected to the control box to release locks.
- Pull release cord until stop pins are released.

Putting the machine in headland turn position:

- Place central switch in position (a).



- Maintain switch (1) in position (b).
- Activate tractor hydraulic valve connected to the control box to lower the mowing units.

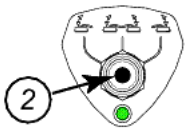


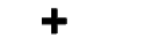
The machine is in headland turn position.

Putting the machine into work position:

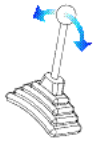
- Place central switch in position (b).

- Select the 2 mowing units using switch (2).

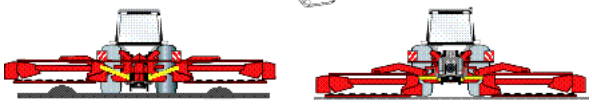




- Activate tractor hydraulic valve connected to the control box to lower the mowing units.

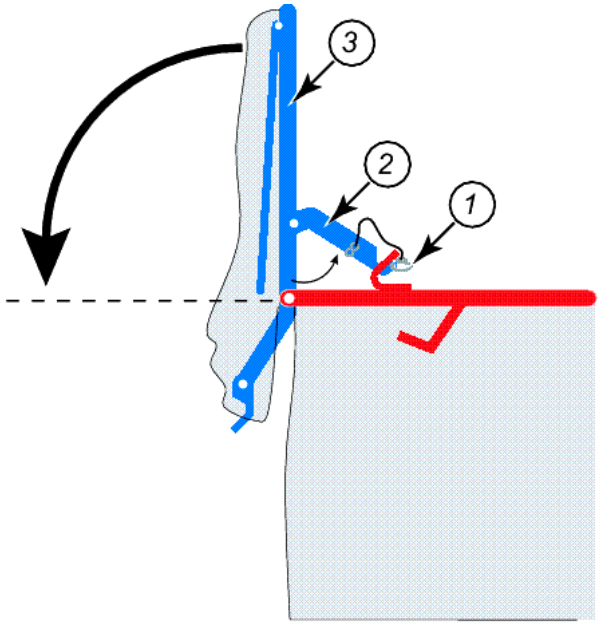


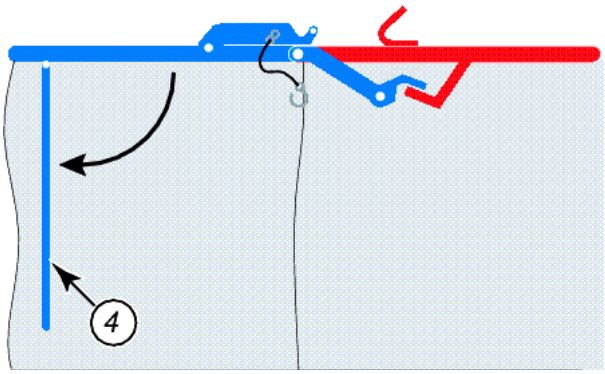
The machine is in working position.



During work, only use the hydraulic valve to put the machine into headland turn position and not the tractor lift linkage.

- Remove lynch pin (1) to release bracket (2) and unfold guards (3).
- Lower stop rod (4).





The machine is in working position.

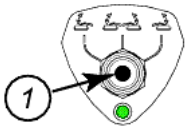
2. Putting the machine in headland turn position

Before putting the machine into headland turn position:

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

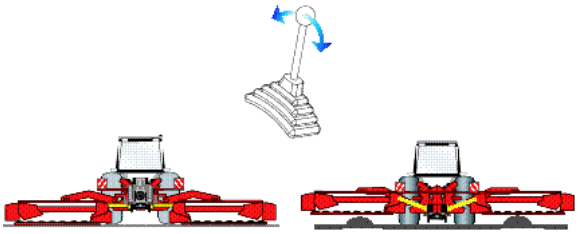
From the working position:

- Place central switch in position (a).

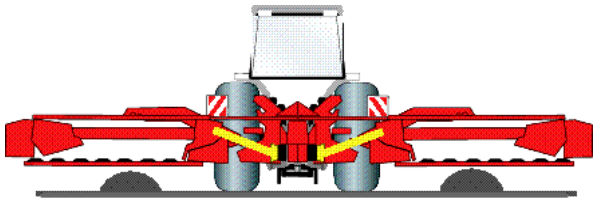


- Select the 2 mowing units using switch (1).

- Activate tractor hydraulic outlet associated with the control box.



The machine is in headland turn position.



3. Adjustments in working position

■ Cutting height

The desired cutting height is obtained directly by adjusting the top link length. The height can be adjusted between 30 and 80 mm (1.1'' - 3.1'') depending on the tractors.

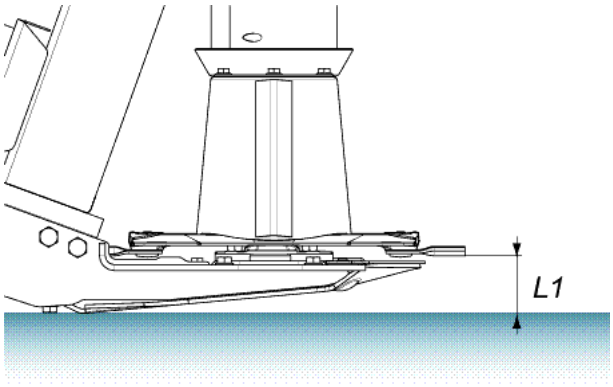
To obtain a different cutting height:

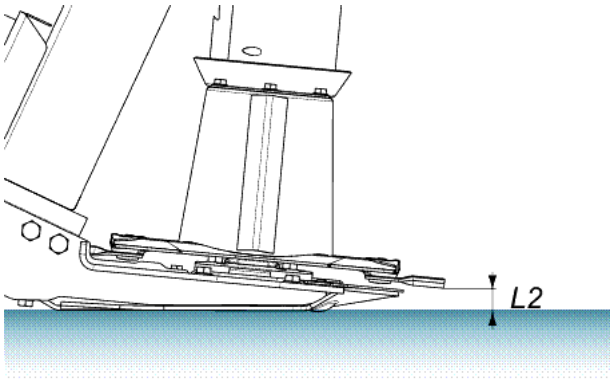
- Lower the machine on the ground to remove weight from the top link.
- Modify the top link length to alter the machine tilt angle.
- Check cutting height.

If the tractor is equipped with a hydraulic top link, the machine pitch angle can be adjusted during work.

The maximum cutting height (L1 = 80 mm (3.1'')) is obtained when the discs are parallel to the ground.

The minimum cutting height must not be below (L2 = 30 mm (1.1'')).





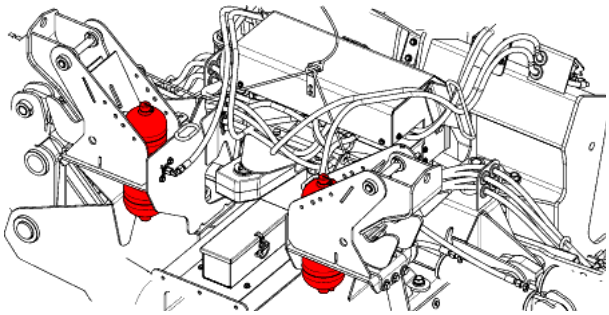
Too low a cutting height can lead to:

- *Excessive disc and knife wear.*
- *Crop being contaminated by soil.*
- *Delay in regrowth.*

■ Ground pressure

The ground pressure adjustment determins the safety breakback adjustment.

Example: when the pressure in the gauges increases, the ground pressure of the mowing units decreases and the breakback force increases.

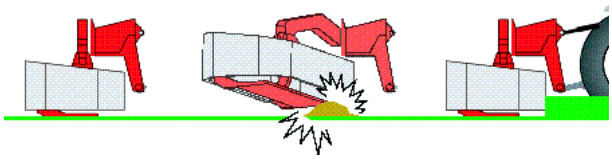


The suspension of the mowing units is obtained by 4 hydro-pneumatic accumulators.By modifying the pressure in the accumulators, the ground pressure of the mowing units is altered.

The hydro-pneumatic accumulator system also operates the "safety breakback " function.

In case an obstacle is struck:

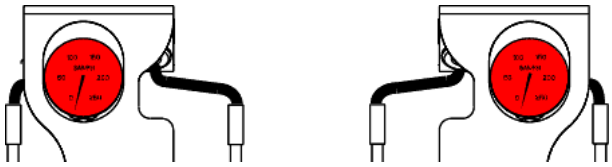
- The suspension pressure increases in order to decrease the ground pressure.
- The mowing units can pivot up to 25° rearwards and upwards.
- Once the obstacle is passed, the mowing unit automatically regains its initial position.



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

To check the ground pressure:

- Place the machine in working position.
- Check that the chassis height is correct H = 600 mm (2').
- Check pressure indicated on gauges:
  - NORMAL operating pressure = 70 bar (1015 psi).
  - MINIMUM operating pressure = 55 bar (798 psi).
  - MAXIMUM operating pressure = 85 bar (1233 psi).



The pressure must be adapted to the nature and moisture degree of the ground.

Never adjust machine to a pressure not comprized between these limit values.

Reduced or increased ground pressure

The following adjustments do not cause the machine to move.

The direction of operation of different functions may be inverted depending upon the way the hydraulic hoses have been connected to the tractor outlet.

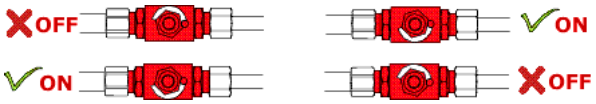
The suspension of the 2 mowing units is adjusted separately.

Place the machine in working position:

- Energize control box using ON/OFF switch.

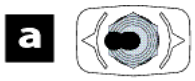
Adjust left mowing unit suspension:

- Shut-off valve of right mowing unit suspension system.

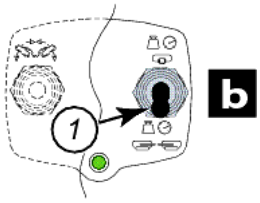


Check that suspension circuit valve of left mowing unit is opened.

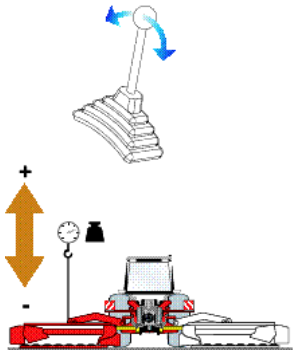
- Place central switch in position (a)



- Maintain switch (1) in position (b).



- Activate tractor hydraulic outlet associated with the control box.

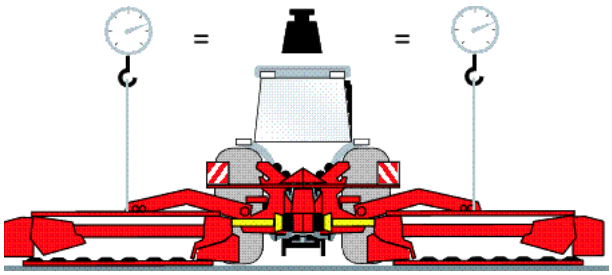


- Check the pressure increase indication on the gauge.
- Check the pressure decrease indication on the gauge.

- When the required pressure is reached, close the valve.

Proceed the same way for second mowing unit by inverting opening/closing of mowing unit suspension valves.

When gauges indicate the same pressure, the ground pressure of the mowing units is not necessarily identical.



- Check that the ground pressure is identical on the 2 mowing units.
- Adjust hydro-pneumatic accumulator pressure if necessary.

■ Swathing system

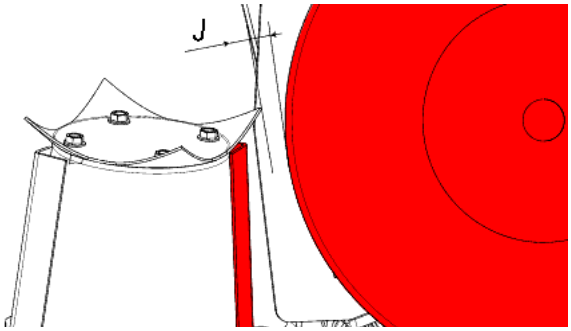
The swathing system comprises:

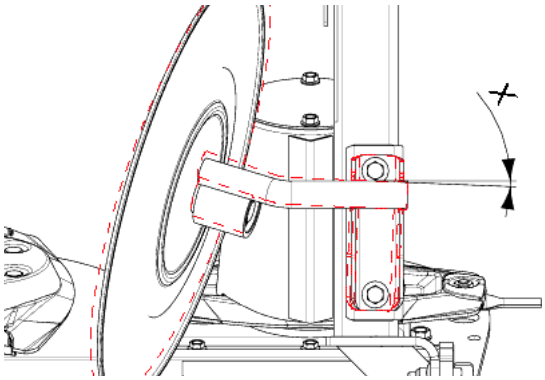
- 2 Swath wheels.

The swath width is 2.40 m (7’10") approximately.

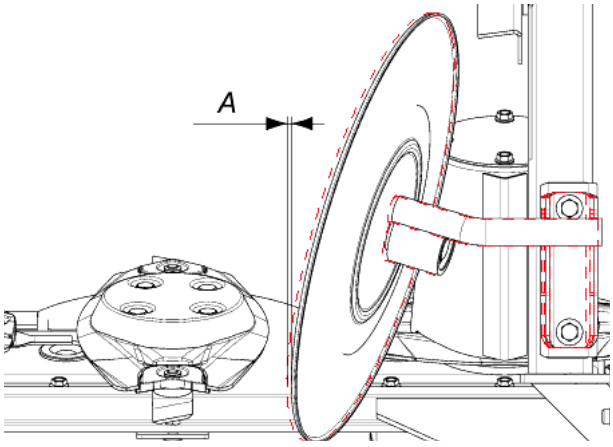
- Right swath wheel

Make sure that distance (J) equals at least 15 mm (0.6’’).



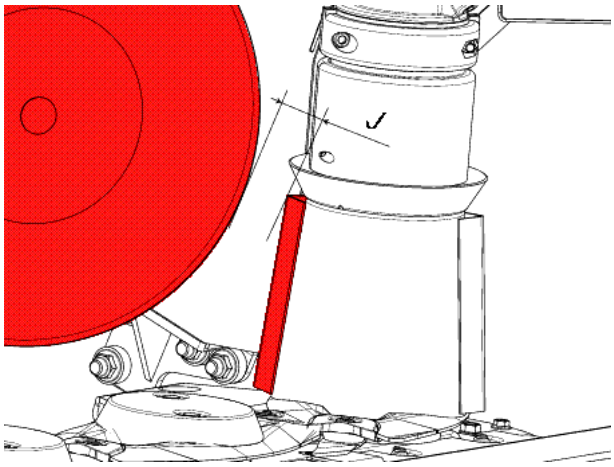


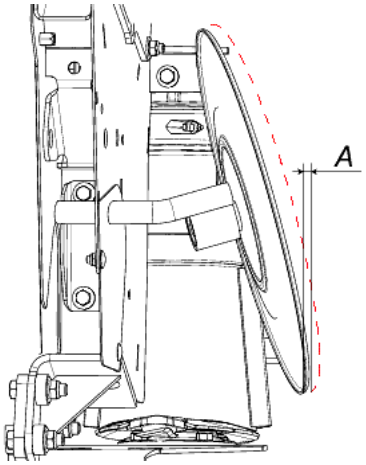
The swath wheel's lateral position (A) and angle (X) can be adjusted.



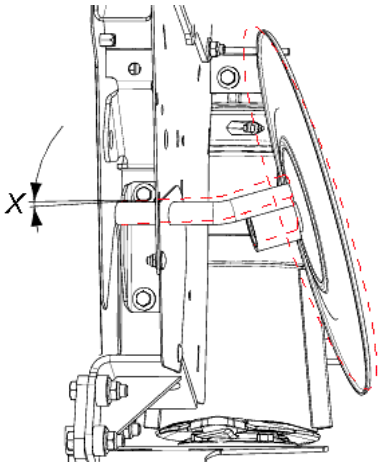
Left swath wheel

Make sure that distance (J) equals at least 15 mm (0.6'').

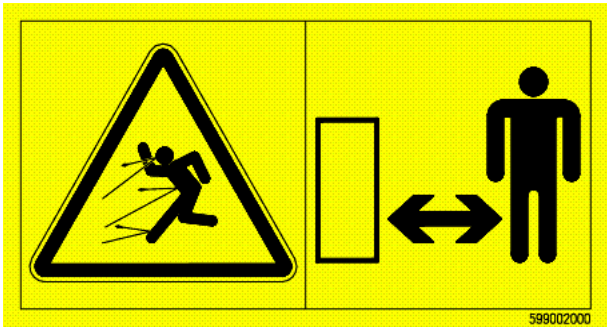




The swath wheel's lateral position (A) and angle (X) can be adjusted.



4. Machine use



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

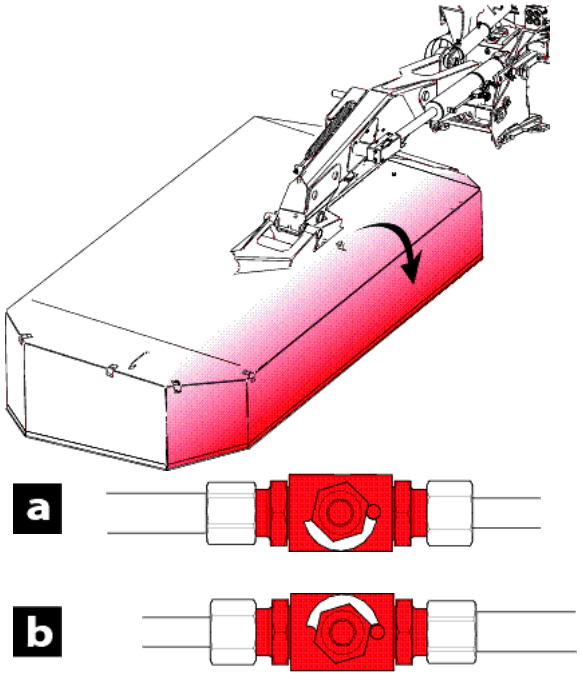
Keep all persons and animals away from the machine danger zone.

Never lean or step on the protection cover.

Before the machine engages the crop:

- Engage the tractor PTO and slowly increase the speed up to 1000 min^{-1}.

Only use the mowing unit lift cylinders to lift the machine from working position into headland turn position.



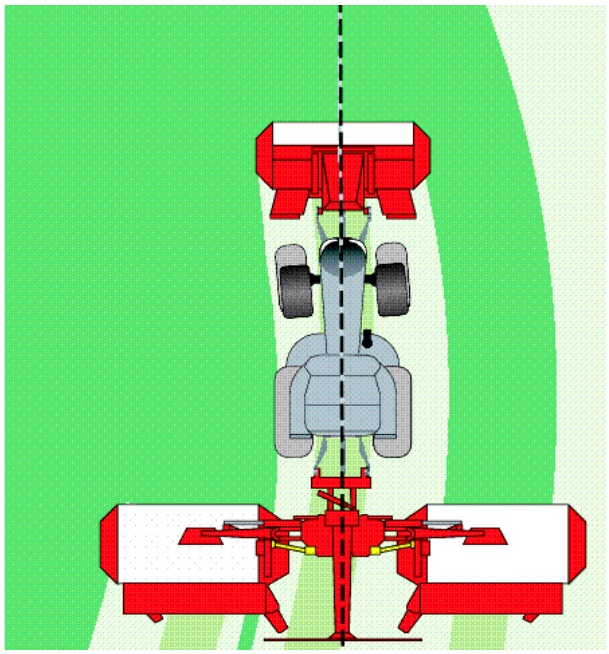
Position a: Circuit open.

Position b: Circuit closed.

Certain fields with mixed soil conditions require frequent suspension adjustments. The valves must be opened to allow suspension adjustment on the move during work.

■ Lateral offset

During work, the machine frame can be offset laterally to avoid strips of uncut crop when turning or on slopes.

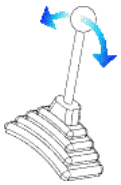


When turning:

When turning at work, the overlap between the mowing units can be insufficient.

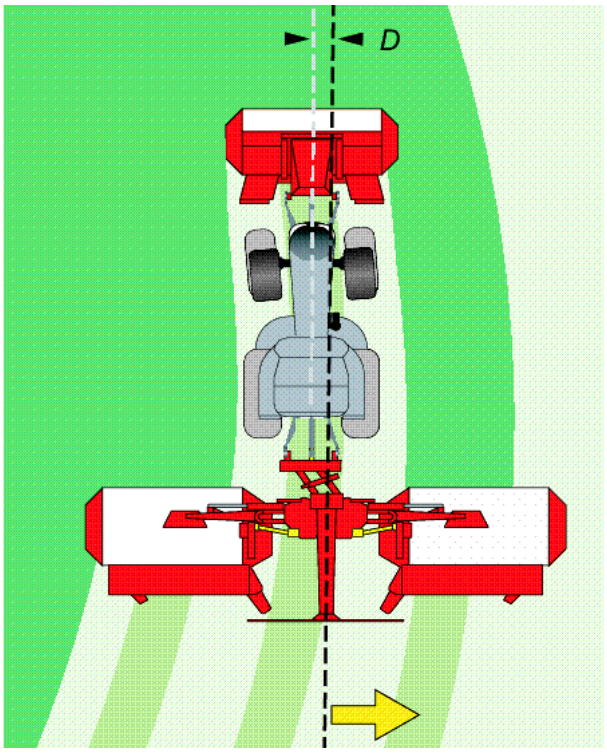
To adjust the overlap.

- Offset the rear machine:
  - Shift offset cylinder double acting valve.



The frame must be offset towards the outer curb side.

The offset increases the overlap up to D = 270 mm (10’6”).

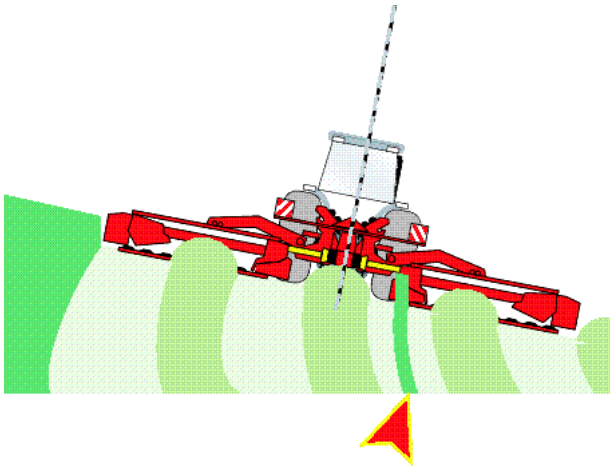


- Position the central frame in line with the tractor when coming out of the curb.

On slopes

During work, the machine frame can be offset laterally to avoid strips of uncut crop when turning or on slopes.

During work on slopes, the mowing unit overlap can be insufficient due to the tractor rear axle side drift.

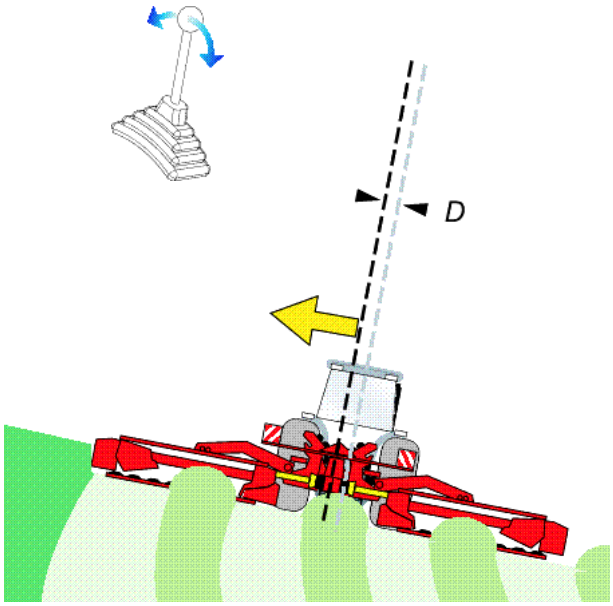


To adjust the overlap.

- Offset the rear machine:
  - Shift offset cylinder double acting valve.

The frame must be offset uphill.

The offset increases the overlap up to D = 270 mm (10'6").



- Position main frame in line with the tractor on even field.

■ Groundspeed

Adapt the forward speed to the working conditions.

OPTIONAL EQUIPMENT

1. Yokes

Part no. 4604603

A specific yoke is available as option for tractors equipped with a 1 3/4'' - 20 spline pto stub.

Part no. 4604604

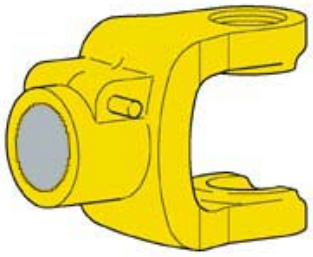
A specific yoke is available as option for tractors equipped with a 1 3/8'' - 6 spline pto stub.

Part no. 4604601

A specific yoke is available as option for tractors equipped with a 1 3/8'' - 21 spline pto stub.

Part no. 4604602

A specific yoke is available as option for tractors equipped with a 1 3/4'' - 6 spline pto stub.

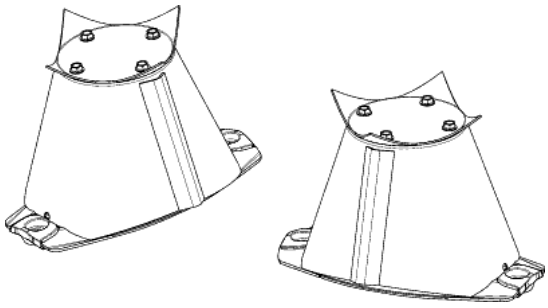


2. Large cone discs

Kit no. 1036320

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

Replace original cone discs with the 2 large cone discs.



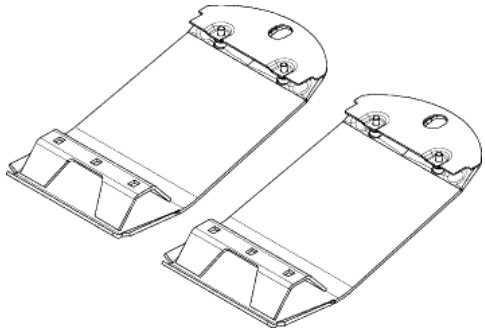
3. Raised skid shoes

Equipment delivered depending on country.

Kit no. 1076440 (x2)

The raised skid shoes enable mowing higher, between 60 and 120 mm (2.4'' - 4.8'').

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



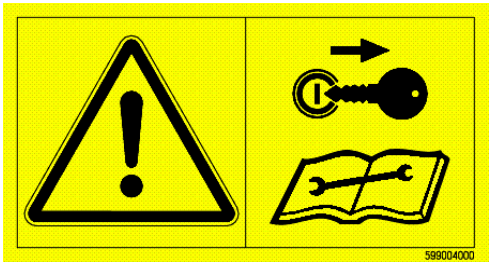
Follow same procedure on the second mowing unit.

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

The width in transport position increases when the "raised skids" optional equipment is mounted.

MAINTENANCE AND STORAGE

Before adjusting, maintaining or repairing the machine, turn off ignition key and wait until all moving parts have come to a complete stop.



1. Frequency chart

	After the first 10 hours of use	Every 50 hours	Every 200 hours or at the end of the season
Lubrication			
Oil change: - Cutterbar.	✓		✓
- Side gearbox.			✓
- Central gearbox.			✓
Grease: - Offset cylinder pivot pins.		✓	
- Lift cylinder pivot points.		✓	
- Offset linkage pivot points.		✓	
- Transport stops and stop pins.		✓	
- Carrying frame pivot points.		✓	

2. Cleaning the machine

Clean the machine thoroughly.

3. Lubrication

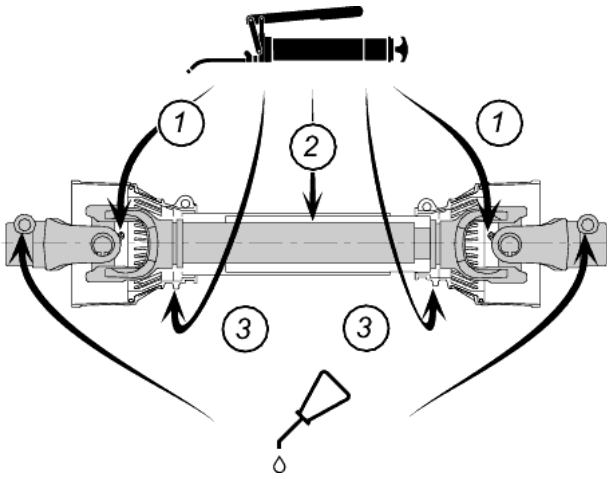
Clean grease zerks before greasing.

Lubricate with SHELL multi-purpose grease grade NLGI2.

■ PTO shaft

Primary PTO shaft

- Every 250 hours:
  - universal joints (1).
- Every 40 hours:
  - transmission tube (2).
  - guide rings (3).



Secondary PTO shaft

- Every 250 hours:
  - universal joints (1).
- Every 40 hours:
  - transmission tube (2).
  - guide rings (3).

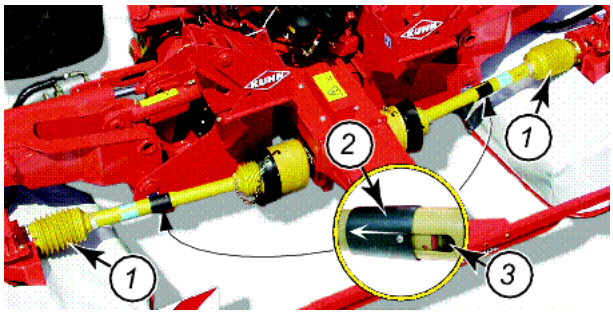
Place the machine in working position.

Stop the tractor engine and remove ignition key.

The grease zerks of the secondary PTO shaft U-joints and guiding bushes are accessible by unlocking the 2 clips of the 2 guard cones (1).

The profiled tubes are lubricated by grease zerk (3):

- Slide the black collar (2).
- If necessary, rotate a disc to access the grease zerk.
- Slide the black collar back in place when lubrication has been completed.



Follow same procedure on the second mowing unit.

■ Oil change

Cutterbars

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

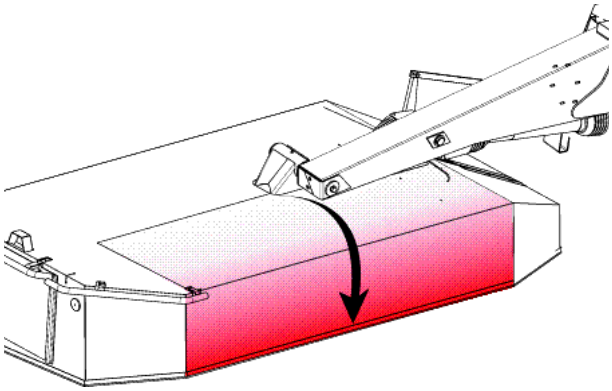
The cutterbar is lubricated with 2.25 L (0.7 US gal) of SHELL SPIRAX A extreme-pressure gear oil with viscosity grade SAE80W90 and API grade GL5.

When draining and refilling, it is recommended to use either a mineral base oil with viscosity grade SAE80W90 and API grade GL5, or a synthetic base oil, type PAO (Poly-Alpha-Olefins) with a viscosity grade equivalent to SAE80W90.

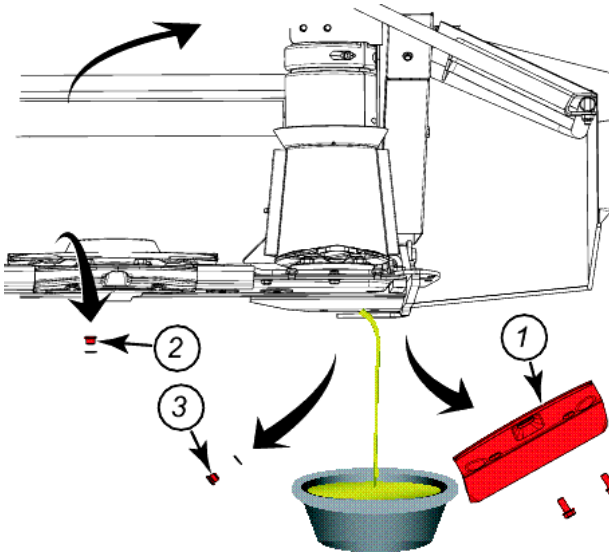
Never use an oil of viscosity SAE90 in the cutterbar.

From the headland turn position:

- Lift up the front guard.



- Remove the inner skid shoe (1) on drive side.
- Place a container of sufficient capacity under drain plug.
- Remove filler plug (2) and its washer.
- Raise cutterbar on opposite side of drain plug.
- Remove drain plug (3) and its washer.
- Allow oil to drain completely.
- Wait for dripping to stop.
- Clean and reinstall drain plug (3) and its washer. replace them if necessary.
- Pour the correct oil quantity and quality through the opening of the filler plug.
- Clean and reinstall filler plug (2) and its washer.
- Reinstall inner disc skid (1) on drive side.
- Lower front guard.



Follow same procedure on the second cutterbar.

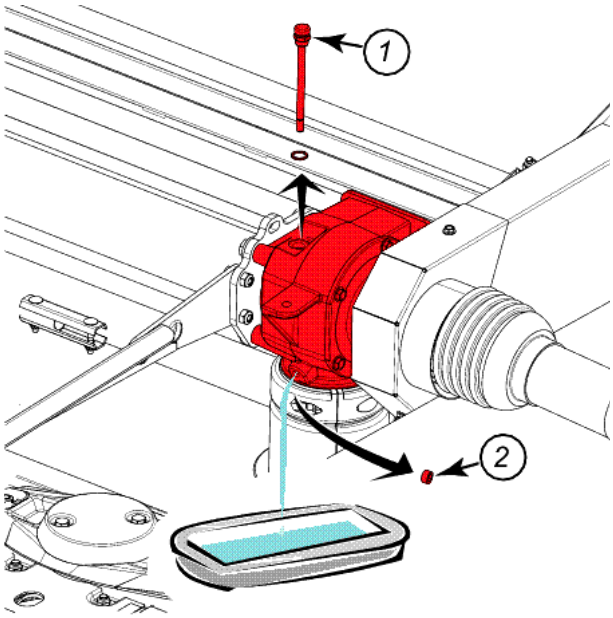
Angle gearboxes

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

The angle gearbox is lubricated with 0.6 L (0.16 US gal) of SHELL SPIRAX A extreme-pressure oil for mechanical transmissions with viscosity grade SAE80W90 and API grade GL5.

When draining and refilling, it is recommended to use either a mineral base oil with viscosity grade SAE80W90 and API grade GL5, or a synthetic base oil, type PAO (Poly-Alpha-Olefins) with a viscosity grade equivalent to SAE80W90.

- Place the machine in working position.
- Remove dipstick plug (1).
- Place a container of sufficient capacity under drain plug.
- Remove drain plug (2).
- Allow oil to drain completely.
- Wait for dripping to stop.
- Clean and reinstall drain plug (2) and its washer. replace them if necessary.
- Pour the correct oil quantity and quality through the opening of dipstick plug (1).
- Check angle gearbox oil level:
  - The "MAX" level corresponds to the mark on the dipstick plug.
  - The "MIN" level corresponds to the end of the disptick plug.
- Reinstall dipstick plug (1).



Follow same procedure on the second gearbox.

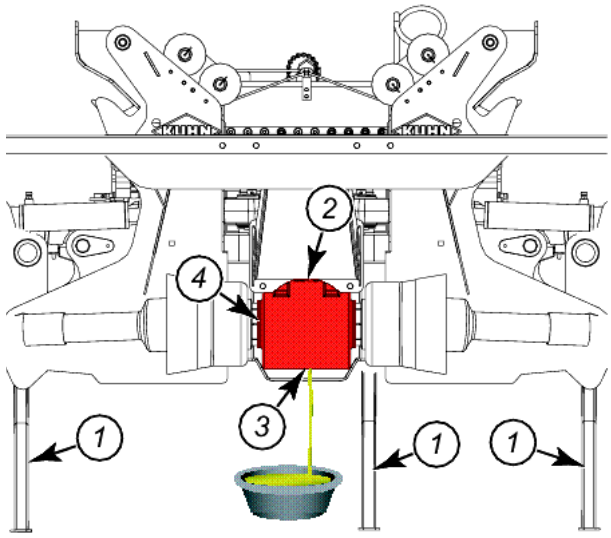
Central gearbox

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

The angle gearbox is lubricated with 5.5 L (1.45 US gal) of SHELL SPIRAX A extreme-pressure oil for mechanical transmissions with viscosity grade SAE80W90 and API grade GL5.

When draining and refilling, it is recommended to use either a mineral base oil with viscosity grade SAE80W90 and API grade GL5, or a synthetic base oil, type PAO (Poly-Alpha-Olefins) with a viscosity grade equivalent to SAE80W90.

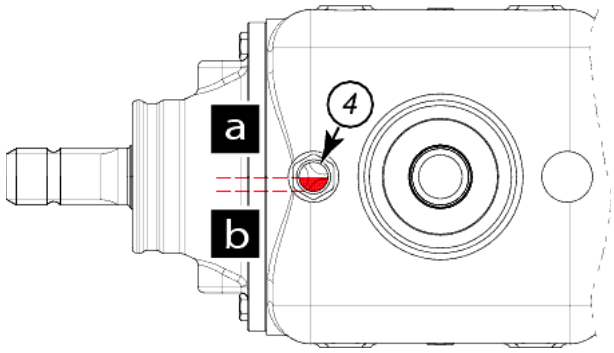
- Lower and lock parking stands (1).
- Place the machine in working position.
- Remove filler plug (2).
- Place a container of sufficient capacity under drain plug.
- Remove drain plug (3).
- Allow oil to drain completely.
- Wait for dripping to stop.
- Clean and reinstall drain plug (3) and its washer. replace them if necessary.
- Pour the correct oil quantity and quality through the opening of the filler plug (2).



- Check central gearbox oil level.
- The oil level must reach the medium level of sight glass (4).

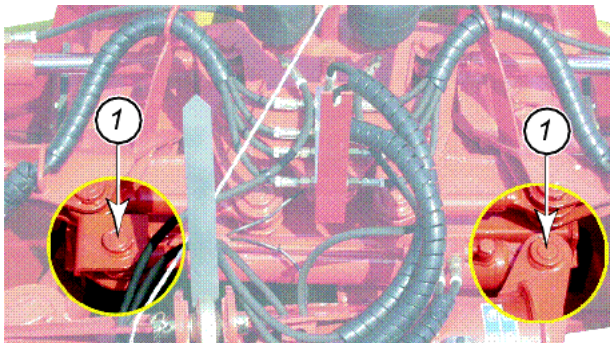
Maximum level: (a).

Minimum level : (b).

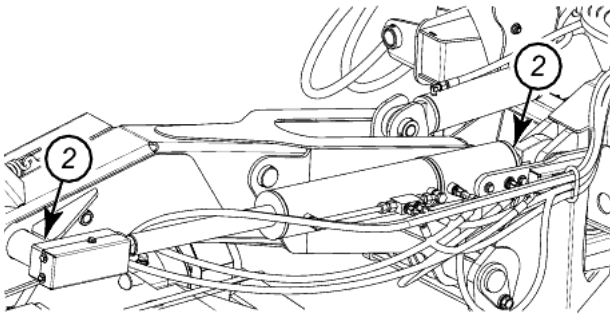


■ Grease:

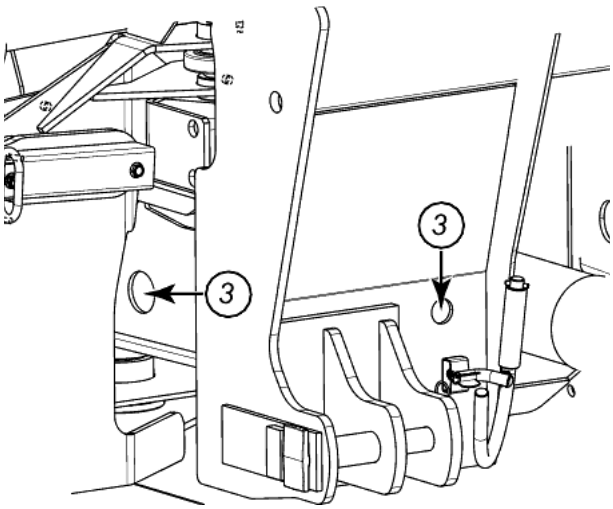
- Offset cylinder pivot pins (1).



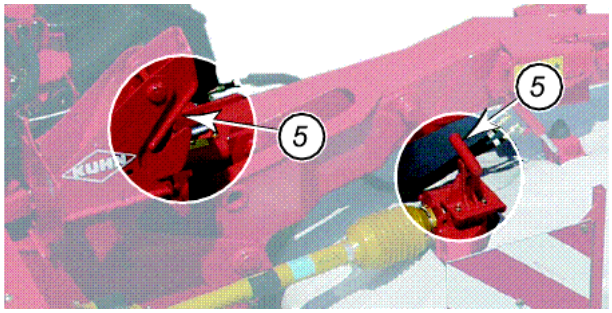
- Lift cylinder pivot points (2).



- Offset linkage pivot points (3).

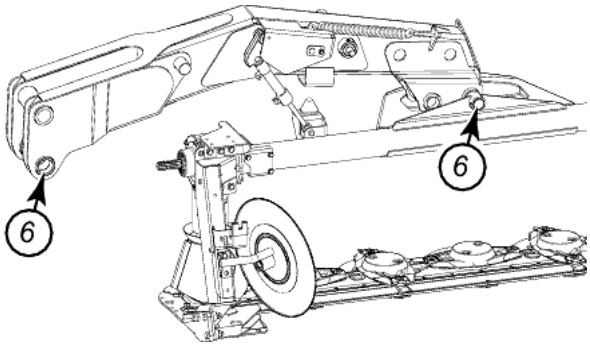


- Transport stops and stop pins (5).



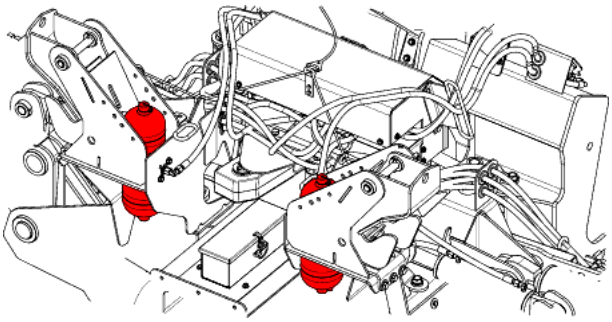
Fold the machine in transport position to access the grease zerks.

- Carrying frame pivot points (6).



4. Maintenance

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.



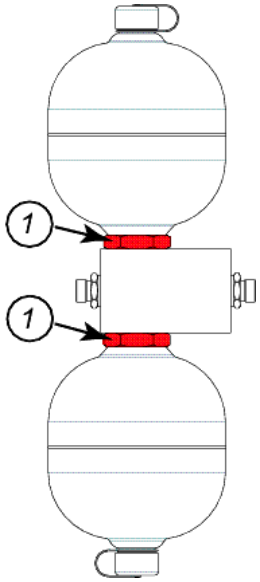
■ Hydro-pneumatic accumulators

Before any work is carried out on a hydraulic circuit with hydro-pneumatic accumulator, depressurize the circuit.

It is strictly forbidden to weld, grind or drill onto a hydro-pneumatic accumulator.

Hydro-pneumatic accumulators do not require any particular maintenance.

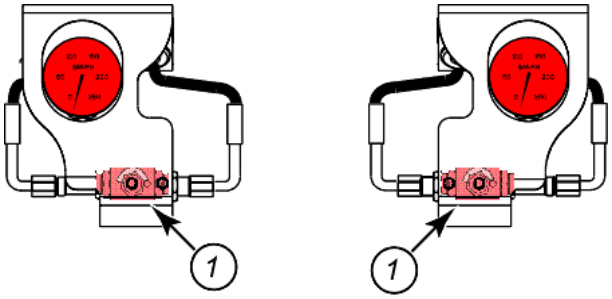
Regularly check the tightness of the accumulator fixing bolts and that no oil has leaked from hydraulic circuit (a small oil leak can change settings) (1).



To depressurize the circuit:

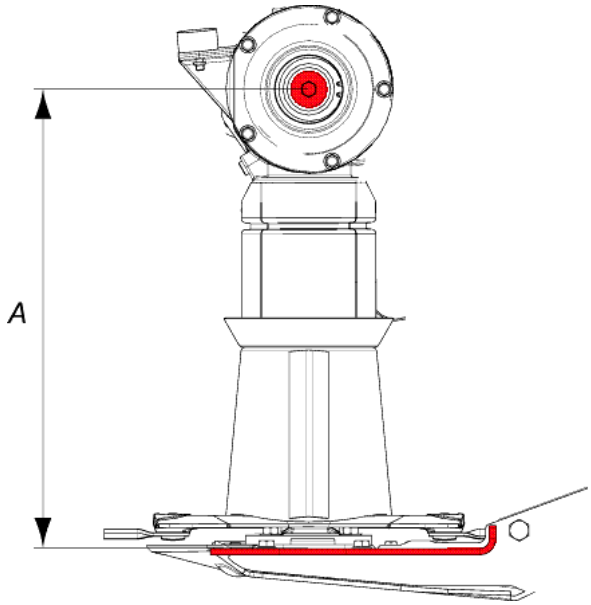
- Place the machine in parking position.
- Open valves (1).
- Decrease pressure until gauges indicate 0 bar (0 psi).
- Shut-off lock valves.

Pressurize the hydraulic circuit before activating any other hydraulic function of the machine.



The drive system

Following all service operations on the drive system, check that the distance between the side gearbox drive shaft and the upper side of the cutterbar stiffener equals measure A =577 mm (1’10’’)$^{+/-}$4 mm (0.15’’).

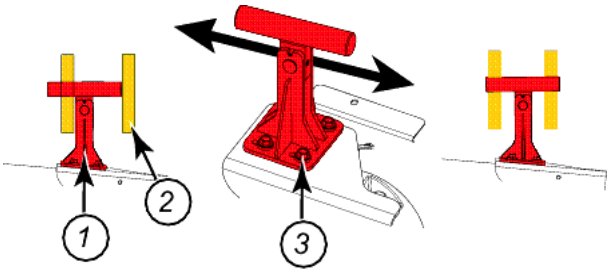


Stop pins

The stop pins enable locking the mowing units for transport.

Adjustment:

- Place the machine in working position.
- Unscrew the 4 nuts (3).
- Slide the stop pin (1) in the required position.
- Tighten the 4 nuts (3).
- Check that stop pins are in line with the transport stops (2).
- Repeat procedure if necessary.



Follow same procedure on the second stop pin.

■ Checking the cutterbar oil level

Periodically check the cutterbar oil level:

- Place the cutterbar in horizontal position (with regards to X and Y axis).
- Remove filler plug (1) and (2) as well as their seals.
- Through filler plugs, check that the oil level (h) is comprised between 6 and 7 mm (0.24'' - 0.28'').
- Top up if necessary.
- Clean and reinstall filler plugs and their seals (1) and (2). Replace if necessary.

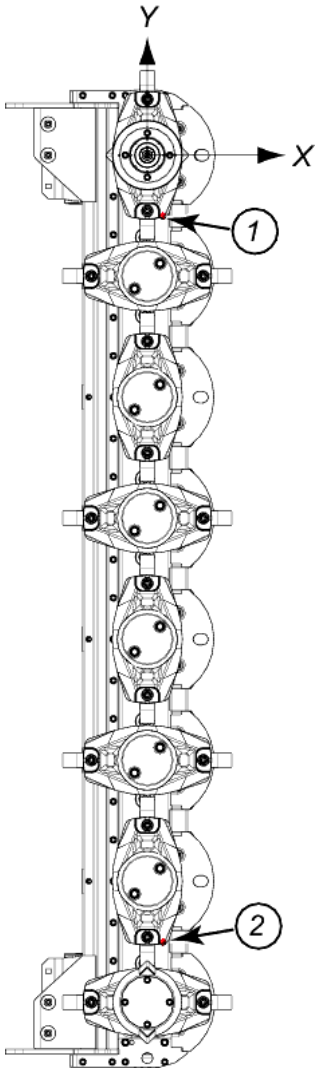
If in doubt as to the oil quantity contained in the cutterbar, fully drain and refill cutterbar respecting recommended oil quantity and quality.

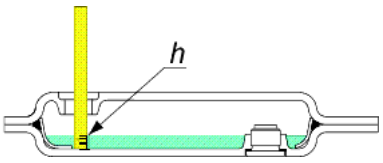
If it is found that the transmission case is very hot to touch by hand, there is no cause of alarm provided:

- *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:

Turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop.





Follow same procedure on the second cutterbar.

■ Inspection of knives and securing elements

Immediately replace worn or damaged parts with genuine KUHN parts.

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:

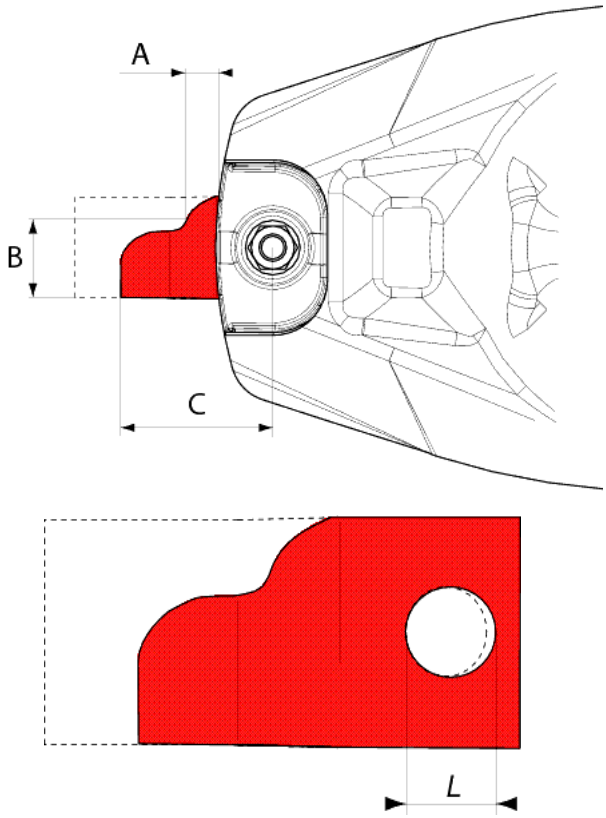
- Damaged knives.
  - Very rough conditions can cause knives to crack and become deformed.
- Worn knives.

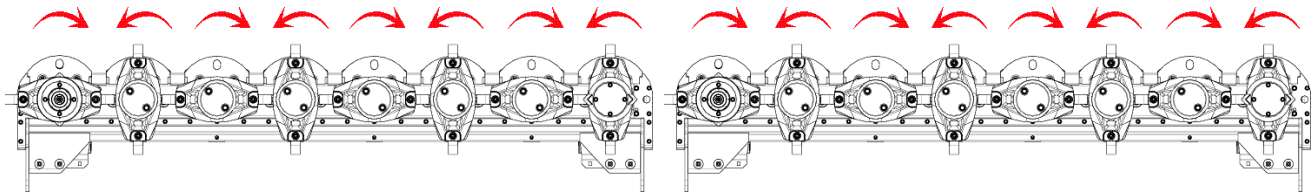
Knife length C must exceed 65 mm (2.6’’).

Knife width B, measured at a distance A of 10 mm (0.4’’) from the disc edge must exceed 20 mm (0.8’’).

The hole L for the securing bolt must not become oval by more than 20 mm (0.8’’) compared to its original diameter.

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

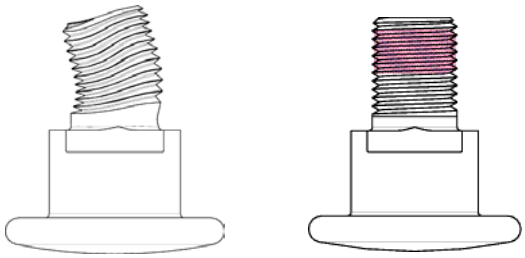




Fixing elements

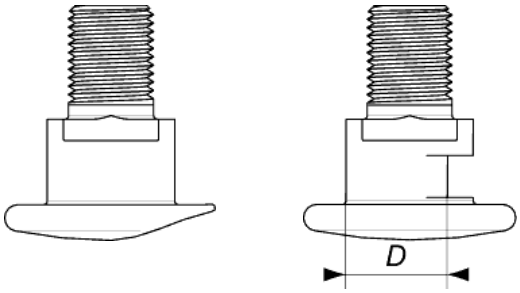
Check the fixing elements:

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



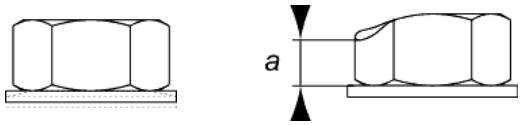
The fixing bolts should be changed in the following cases:

- When there is visible warping.
- When the locking compound is worn or inoperational.
- When the bolt head wear reaches the knife contact area.
- When diameter D of the bolt shoulder is less than 15 mm (0.6'').
- After having been removed 5 times.



Replace nuts in the following cases:

- When the contact washer has lost its elasticity.
- When the contact washer loosens itself from the nut.
- When nut wear reaches = 5 mm (0.2'').
- After having been removed 5 times.



Check the condition of the fixing elements regularly and also the torque of the knife-fixing bolt. Torque nut to 12 daN m (89 lbf ft).

■ Knife replacement

Replace knife lock-nuts and bolts when they have been removed 5 times.

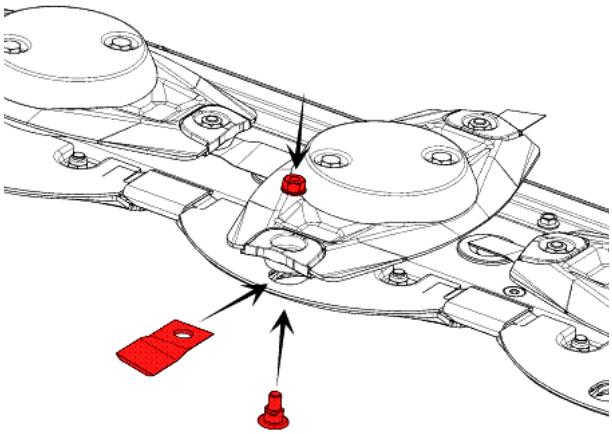
Replace systematically all worn or distorted knives. Never straighten a bent knife.

Always replace both knives per disc.

Clean the nut case.

- Place a wooden wedge between two discs to stop them from rotating.
- Loosen nut using box spanner supplied with the machine.
- Remove bolt through opening located at the front of the disc guard.
- 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.
- Make sure that the securing nut and bolt are in good condition and if necessary, replace them.
- Torque knife locknut to 12 daN m (89 lbf ft).

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

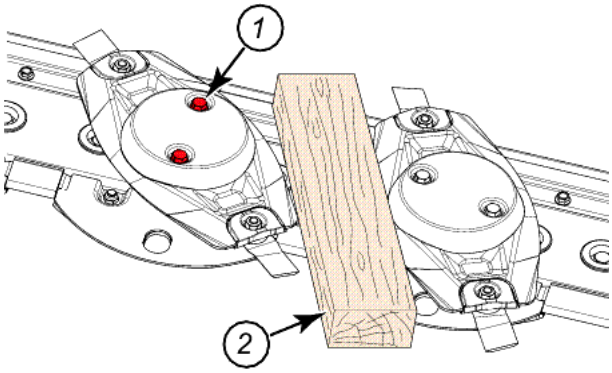


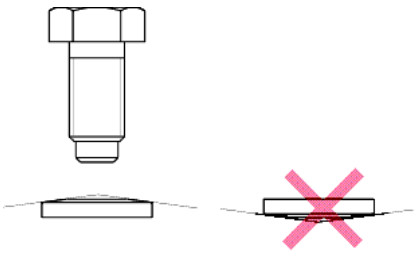
■ Disc replacement

- Place a wooden wegde (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 other nipple-screws and their spring washers.
- Remove the disc.

When remounting:

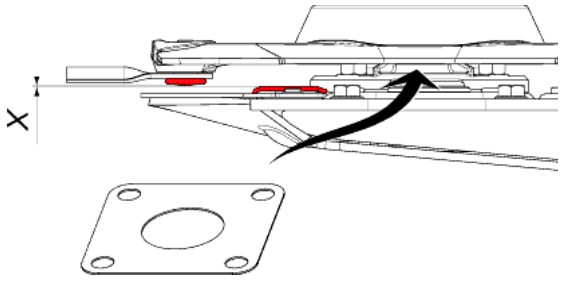
- Position their largest diameters at right angles to each other.
- Position conical centre of spring washer at the top.
- Torque bolts to (1):
  - Torque: 12 daN m (89 lbf ft).

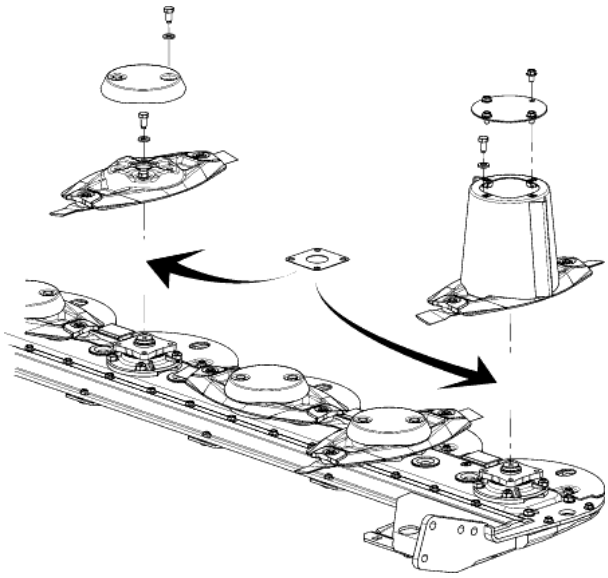




Check if there is still a gap of 1 mm (0.04'') between the disc lower part and the cutterbar wear plates.

If this is not the case, fit one (maximum two) spacer(s) between the disc and the mounting hub (Part no. 56807100).





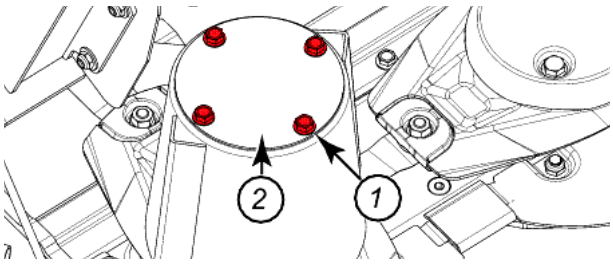
■ Outer and inner cones

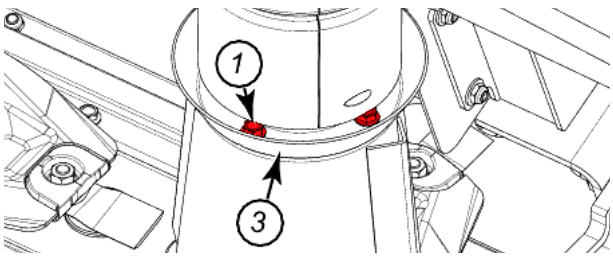
Check torque of attachment bolts (1) of outer and inner cone covers (2) and (3): 6 daN m (44 lbf ft).

Replace any lost or damaged cover.

(2) (Part no. 56803400)

(3) (Part no. 56806610)





5. Storage

■ At the end of each season

- Clean the machine thoroughly.
- Drain all gearboxes and cutterbar and refill with new oil: See section ''Lubrication''.
- Touch up paint if necessary.
- Put the machine under cover in a dry place.
- Inspect and replace worn knives and bolts: See section "Inspection of knives and securing elements".
- Depressurize all hydraulic functions.

■ At the start of each season

- Read through the operator's manual again.
- Pressurize the hydraulic circuit.
- Check the condition of the friction slip clutch: See section ''Secondary PTO shaft''.
- Inspect and replace worn knives and bolts: See section ''Inspection of knives and securing elements''.
- Check that all nuts and bolts are sufficiently tightened.
- Make sure that all protection devices are in place and 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.
	Too low PTO speed (rotational frequency).	Increase speed to 1000 min^{-1}.
Soil build up in front of the cutterbar.	Too much cutterbar down pressure.	Increase accumulator pressure.
	Very wet working conditions.	Adjust main frame height with regards to the ground.
Bad ground contour adaptation.	Incorrect main frame setting.	Adjust main frame height with regards to the ground.
	Excessive ground speed.	Reduce ground speed.
	Insufficient ground pressure.	Reduce accumulator pressure.
Insufficient cutterbar ground clearance in "headland turn" position.	Incorrect tractor lift linkage setting.	See machine attachment.
	Too long levelling rod adjustment.	Shorten levelling rods.
Mowing units do not lift.	The tractor valve does not supply oil at the right pressure.	Replace the faulty component if necessary.
The mowing units do not fold.	Setting the machine into transport position can only be carried out with the machine in headland turn position.	Place the machine in headland turn position.

Adjusting the hydro-pneumatic accumulator pressure on the move is not possible.	The suspension circuit valve is closed.	Open the suspension circuit valve.
Excessive noise caused by a control or check valve.	Faulty valve.	Replace the faulty component if necessary.
	The oil level in the tractor tank is insufficient to supply the whole hydraulic circuit.	Check oil level and top up if necessary.
Control box switches have no effect on the cylinders	The control box is not energized.	Energize control box using ON/OFF switch
	The tractor valve does not supply oil.	Take hose in hand and feel if oil flows continuously.
	The electric wiring harness is incorrectly connected and does not supply the control valves in 12 V.	
One switch on the control box has no effect on the corresponding cylinder.	There is a faulty connection of the valve connectors.	
	The corresponding valve is defective.	
	The check valve located underneath the control valve is faulty or blocked.	If the control valve is operational, the check valve is probably defective. Replace it if necessary.

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 original retail purchaser of new KUHN equipment of its own manufacture from an authorized KUHN dealer, that such equipment is, at the time of delivery to such purchaser, free from defects in material and workmanship, 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 original retail purchaser and during this period up to a limit of 500 hours of use.

The date of invoice to the original retail purchaser and the return of the warranty/product registration form by the dealer to the address indicated on the warranty/product registration form are taken as evidence of delivery of the machine to the original retail purchaser.

■ 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.
- Labor charges other than originally agreed, incurred in the removal or replacement of components.
- 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 warranty/product registration form has been correctly completed by the dealer and the retail purchaser, dated, signed by the dealer and the retail purchaser and returned to the address indicated on the warranty/product registration form as soon as the machine had been put in service.
- The warranty claim is submitted on a KUHN warranty claim form, and is sent to the Company (preferably via extranet - www.kuhnsa.com) within one month after the date of failure or the date of problem becoming apparent.
- The claim must be filled in legibly 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.

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