



Extra 532 - 540

Operator's manual

Translated from the original instruction manual

Revision	02
Date printed	08.2021
Language	EN
Machine number	KT499850
Document number	A132101500
Index	2021-08



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Machine identification

In order for your dealer to assist you as efficiently as possible, you will need to provide some information about your machine. Please enter the details here:

Designation Extra 532 - 540

Operating width 532: 3.2 m; 540: 4.0 m

Weight 532: 1220 kg; 540: 1340 kg

Machine number

Accessories

Address of supplier

Address of the manufacturer
Kverneland Group Kerteminde AS
Taarupstrandvej 25
DK -5300 Kerteminde - Denmark
Tel./fax: +45 65 19 19 00 / +45 65 19 19 99
web: www.kvernelandgroup.com

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Contents

Target group



Simplified illustrations to improve understanding

All of the illustrations of the machine in this instruction manual show it without the guards or with the protective equipment open to improve understanding. Ensure that the safety instructions are complied with and the instructions in the instruction manual are followed. Failure to do so can endanger lives.

This manual is intended for trained farmers and others who are qualified to work in agriculture and who are familiar with assembling equipment.

Minimum age

Children under the age of 16 are not permitted to operate the machine.

For your own safety

Read this instruction manual thoroughly before use and assembly. This will enable you to have optimal working conditions and to work in safety.

For the employer

Every employee must be trained how to use this machinery at regular intervals (at least once a year) in accordance with the employer's insurance guidelines. Untrained or unauthorised persons must not use this machine.

Instructions

Your dealer will assist with the instructions on how to use and maintain this machinery.

The meaning of the symbols

We have used different symbols to make the text clear. An explanation follows:

- A dot symbol marks a list of instructions or information.
- ▶ A triangle marks an action you must carry out.
- An arrow refers you to other parts of the text.

We have also used pictograms to help you find relevant places in the text.



Denotes tips or instructions on use.



Denotes information that requires particular attention.



A spanner indicates tips for assembling and settings.



Warning

A warning triangle indicates important safety instructions. If these are not adhered to, it may result in:

- Serious errors in the machine function.
- Damage to the machine.
- Injury or accident.



This pictogram indicates that the tractor can be started.



This pictogram indicates that the tractor must be stopped, the handbrake applied and the ignition key removed.



For your own safety

Know your equipment and its limits. Read the manual through before attempting to start up and operate the unit.

This chapter includes general safety instructions. In addition, each chapter in the instruction manual includes specific safety instructions not set out here. The safety instructions must be complied with

- For your own safety.
- For the safety of others.
- To ensure the safety of the machine.

When working with agricultural machines, incorrect handling can result in various dangers. Therefore, you should always be very thorough and never work under pressure.

The operator must be receive regular training

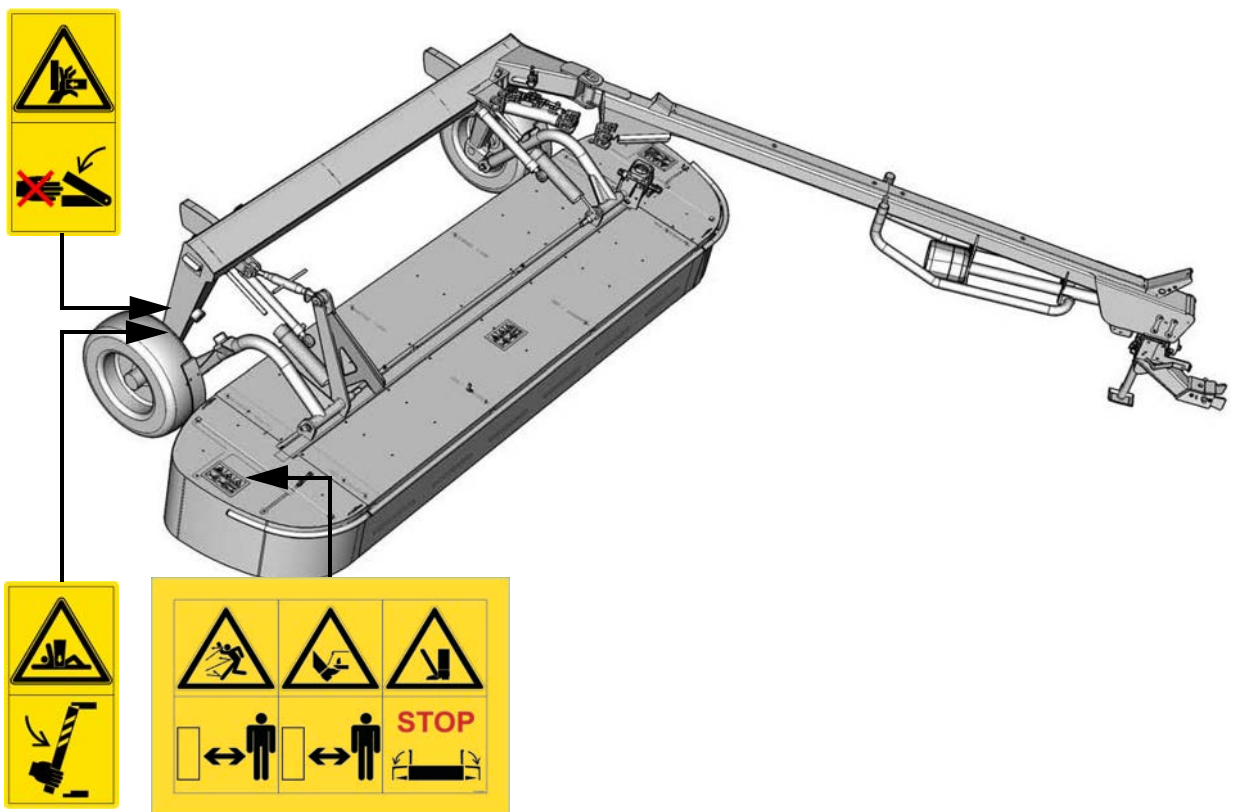
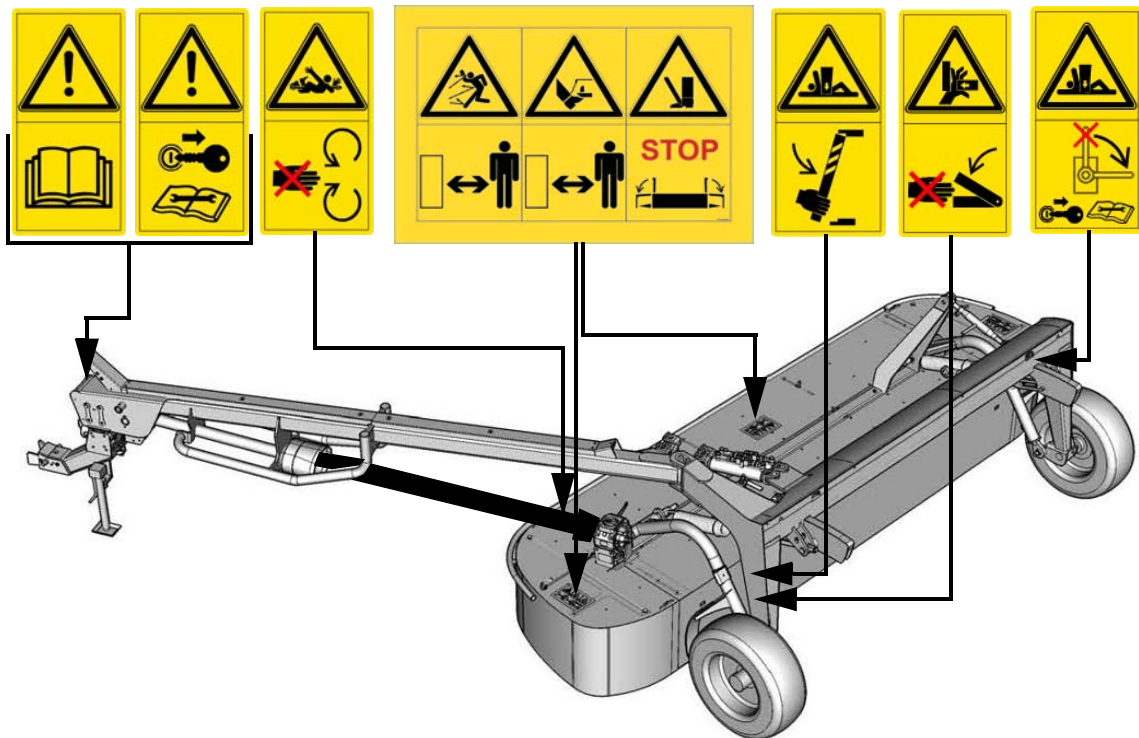
Inform the persons working with the machine about these safety instructions regularly.

The safety instructions should be complied with in accordance with local legislation concerning agricultural machines.



Safety symbols

On the machine you will find labels relating to your safety. These labels must not be removed. If the labels become illegible or detached, new labels can be ordered and affixed to the relevant areas.





The meaning of the symbols



Read the instruction manual

Read and understand all safety instructions in the instruction manual. Do not start and/or operate the machine until you have read all the safety instructions in the instruction manual. Starting and/or operating the machine without understanding all the safety instructions can cause serious injury or death.



Read the instructions before starting servicing and/or maintenance work

Switch off the engine and remove the ignition key before starting maintenance work. Do not perform any service or repair work on the machine when the engine is running. Performing service or repair work on the machine when the engine is running can cause serious injury or death.



Risk of entangling body in transmission parts

Risk of entangling body in rotating machine parts. Do not remove guards until the machine has stopped rotating. Placing the body in rotating machine parts can cause serious injury or death.



Risk of crushing the torso - force from above

Risk of crushing the torso when performing maintenance work on and/or inspecting the machine. Close the safety valve, switch off the engine and remove the ignition key when performing maintenance work or inspections. Crushing of the torso can cause serious injury or death.



Risk of crushing the torso - force from above

Risk of crushing the torso when inspecting and/or performing maintenance on the machine. Ensure the machine is secured using a suitable approved support before entering the hazard area. Crushing of the torso can cause serious injury or death.



Risk of crushing the fingers and hands - force from the sides

Risk of crushing fingers and hands any time the machine's parts are moving. Keep fingers and hands out of the hazard area until the machine's parts have stopped moving. Crushing of fingers and hands can cause serious injury.



Risk of objects being ejected.

Risk of objects being ejected out of the machine. Keep a safe distance from the machine when it is operating. Anyone close to the machine when it is operating is at risk of serious injury.



Risk of severing feet and toes

Risk of severing feet and toes in rotating knives. Keep a safe distance from the machine when it is operating. Severing feet and toes in rotating knives can cause serious injury.



Risk of cutting feet and toes

Risk of rotating machine parts cutting feet and toes. Do not start and/or operate the machine unless all the safety guards are in place. Cutting of feet and toes can cause serious injury.



Lighting equipment

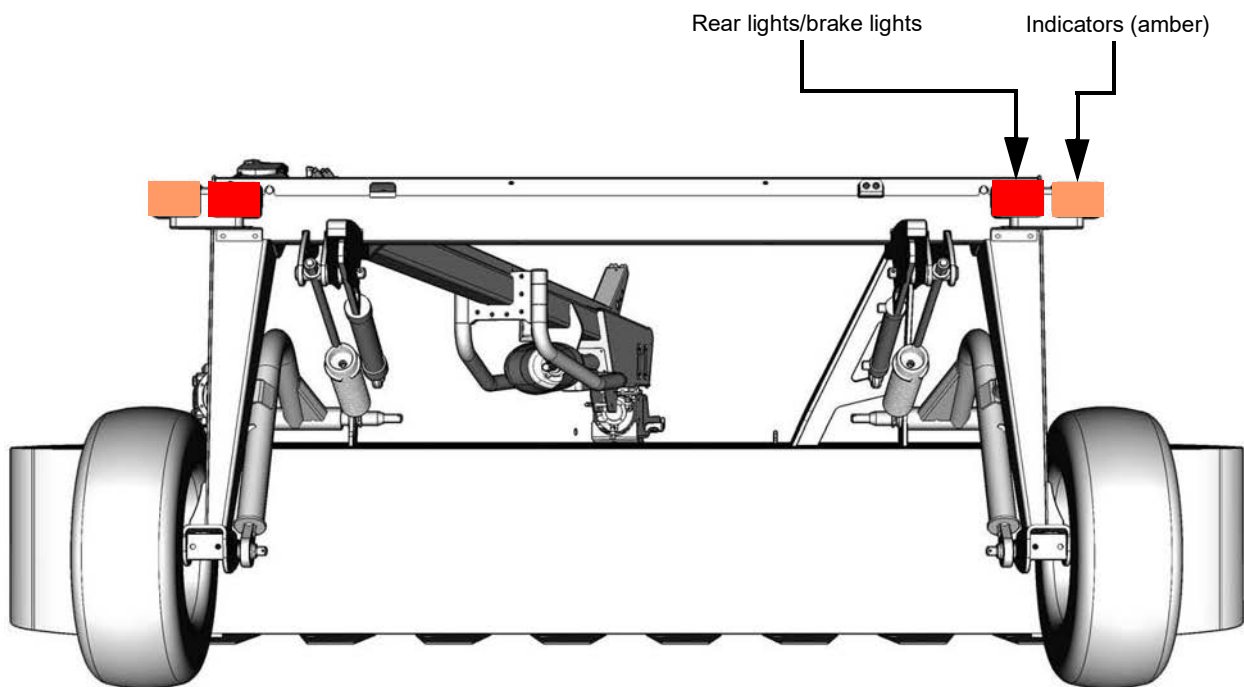


Checking the electric cable

Check the electric cable. The insulation of the electric leads must not be unduly worn, and the cables must not be hanging loose. Electric cables with cable insulation that is missing or worn through must be replaced. Otherwise, this will damage the machine.

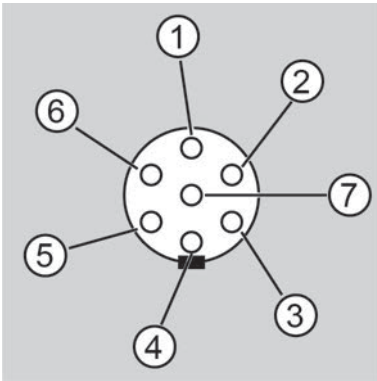
- ▶ Connect the 12 V power supply plug to the tractor's 7-pin connector.

The machine has lights and reflective equipment fitted as standard, to ensure its safety on roads. The lights and reflective equipment must be in good working order at all times. Lights and labels must not be removed from the machine. Any illegible or missing labels must be replaced. New labels can be ordered as spare parts from your dealer.





ISO 1724 connector - overview



Pin	Cable	connection for:
1	Yellow	Left-hand indicator (amber)
2	Blue	Not used
3	White	Earth; all lights
4	Green	Right-hand indicator (amber)
5	Brown	Right-hand rear light (red) / Reg. plate (white)
6	Red	Brake light (red)
7	Black	Left-hand rear light (red)

- ▶ Connect the 12 V power supply plug to the tractor's 7-pin connector.

i Observe the regional regulations concerning lights and markings for travel on public highways. Contact your dealer if the lights do not work as stated.



Who can operate the machine?

Qualified machine operators

Minors under the age of 16 must not operate the machine. The machine must only be operated, serviced or repaired by persons who hold the required qualifications and have been informed of the risks relating to handling of the machine. The required knowledge is gained through agricultural training or professional education, or through very close supervision.

General safety instructions

The operator must be receive regular training

Inform the persons working with the machine about these safety instructions regularly. The safety instructions should be complied with in accordance with local legislation concerning agricultural machines.



Stop the tractor and ensure it is secured

Before alighting:

- Stop the tractor.
- Remove the ignition key.
- Make sure that the tractor cannot roll.

If not secured, the tractor can move of its own accord, potentially trapping you under its wheels. Failure to follow these instructions could lead to serious — potentially even fatal — injuries.

The operator should receive careful instructions before using the machine

The machine should only be used if the operator has been given thorough instructions. Thorough machine instruction allows safe usage.

Insufficient training may lead to incorrect usage of the machine and accidents.

You are responsible for safety

Comply with the safety instructions. You are responsible for ensuring compliance with the safety instructions. Serious or fatal accidents can be avoided by complying with the safety instructions.

Carrying passengers on the machine is prohibited

It is dangerous and illegal to carry passengers on the machine. The machine is not approved for personal transportation. Transporting persons on the machine may result in serious injuries and death.

Prescribed workwear

Do not wear loose-fitting clothing. Loose-fitting clothing can get caught in rotating parts. Wear the type of protective clothing or workwear prescribed by the trade unions. Failure to follow these instructions could lead to serious — potentially even fatal — injuries.

**Check the surrounding area before starting to use machine**

Check the surrounding area before driving and using the machine. This prevents persons and animals in the vicinity from being harmed. If the surrounding area is not checked, it may result in serious injuries to persons or animals.

Keep away from the machine

No passers-by should be close to the machine when active. This will ensure that no dangerous situations can arise. Persons close to the machine during operation are at risk of being severely injured.

Never perform servicing or maintenance work on the machine when in motion

Servicing and maintenance work must not be performed on any part of the machine when it is in motion. People or objects can be dragged along or drawn into the machine, or may become trapped. Failure to follow these instructions could lead to serious — potentially even fatal — injuries.

Child safety

Never assume that children are still where you last saw them. Take care to ensure your machine is secured if children are in the working area. Never allow children to play on or operate the machine.

Comply with the service and maintenance intervals given in the instructions

Comply with the intervals for service and maintenance as given in the instructions. By complying with the maintenance intervals you ensure that the machine will operate without malfunctions and provide maximum protection for the environment. An incorrectly maintained machine is a danger to the surroundings.



Connecting

Correct attachment of the machine

The machine must be correctly connected, following the instructions. The machine can be detached from the tractor if the connection is not carried out properly. Incorrect attachment can lead to accidents.

When attaching the machine to the tractor you must therefore:

- Make sure that the tractor cannot roll.
- Make sure that the tractor and the machine belong to the same category.
- Never stand between the tractor and the machine during attachment.
- Use the hydraulic three point suspension slowly and carefully.

Following the above instructions will protect you and others from injury. Failure to follow the above instructions may result in serious injuries.

Make electrical connection after attachment

When connecting the lighting equipment, the tractor must be stopped, the ignition key removed, and all lights switched off. This will prevent short circuits and damage to the electric circuit. There is a risk the electric circuit can short circuit.

PTO shaft check

Refer to the manufacturer's user manual delivered with the PTO shaft. It contains instructions on the correct use of the PTO shaft. Failure to follow these instructions can lead to damage to the PTO shaft or the machine.

**Be careful when working around the PTO shaft**

When working on the PTO shaft, the tractor PTO outlet must be disconnected, the tractor must be stopped and the ignition key removed. This prevents the PTO shaft from suddenly starting to rotate. If the tractor and the PTO shaft have not been connected in accordance with the instructions, serious accidents causing damage to limbs can occur.

Use the prescribed PTO shaft

Only use PTO shafts prescribed by the manufacturer.

- Read the accompanying operating instructions with care. Failure to familiarise yourself with these can risk damage to the machine, or serious or fatal injuries.
- Adjust the length of the PTO shaft as required. If the PTO shaft is the incorrect length, it may cause damage to the machine or injury.
- Other PTO shafts with disconnection couplings may allow for higher uncoupling torque. Higher uncoupling torque can cause damage to the machine.

Checking and securing the guards on the PTO shaft

The rotating PTO shaft is protected by guards. Make sure that the guards are intact. Secure the guards for the PTO shaft to both the tractor and the implement with chains. An unprotected PTO shaft can cause life-threatening injuries.



Hydraulic

Only connect hydraulics when the system is depressurised

You should only connect the hydraulic hoses to the tractor's hydraulics when the hydraulic system on both the tractor and the machine is depressurised. There is a risk that the machine will move accidentally. Unintentional movement of the machine may result in serious injuries.

Pressurised hydraulic oil can cause serious injuries

Before connecting hydraulic connections, any excess pressure must be released. Pressurised hydraulic oil can penetrate the skin and cause serious injuries. Before connecting the hydraulic system, ensure all connections are tightened securely, and none of the tubes or hoses are damaged.

High pressure in the hydraulic system

The hydraulic system is under high pressure. Check all joints, hoses, and fittings regularly for visible damage. Only use suitable aids to help locate leaks. Repair any damage immediately. Escaping oil can lead to injuries or cause a fire. In the event of an accident, seek medical attention immediately.

Never use fingers or hands to check for leaks

Never use fingers or hands to check the hydraulic system for leaks and loose connections. Use a piece of paper or card to check the hydraulic system for leaks and loose connections. Escaping pressurised oil can cause serious injuries to the skin or cold burns.

**Replacing the hydraulic hoses**

Replace the hydraulic hoses at least once every 6 years. Hydraulic hoses also wear without any visible damage. Only use hydraulic hoses with identical technical specifications. The necessary data is printed on the hydraulic hose. Defective hydraulic hoses may cause serious or fatal injury.

Avoid physical contact with hydraulic oil

Hydraulic oil contains additives that under certain circumstances can have serious consequences for your health. Therefore, when handling hydraulic oil be aware of the following:

- Avoid direct contact with hydraulic oil. They can damage the skin.
- Protect your skin with barrier cream or protective gloves.
- Never use oil or lubricants to clean your hands.
- Clothes contaminated with oil should be changed immediately.
- Oily cloths should not be kept in your pockets.
- Seek medical attention for skin injuries after contact with pressurised hydraulic oil, as this can cause cold burns.

Colour marking of hydraulic connections

The hydraulic connections between the tractor and the machine must be marked in different colours. By marking the hydraulic connections you prevent the machine from being incorrectly operated. Incorrect operation or unintentional movement of the machine may result in serious injuries.



Load capacity

Compliance with total weight, axle pressure, carrying capacity of the tyres, and minimum tractor load

Neither the tractor's total weight, axle pressure or the carrying capacity of the tyres may be exceeded with front mounted and rear mounted machines. To ensure the manoeuvrability of the tractor, the load on the front axle must be at least 20% of the tractor's weight. Failure to do so can result in a loss of driving control and accidents.

Weight/power ratio between machine and tractor

The machine may only be connected to a tractor with a proper size and performance.

The tractor's size and P.T.O outlet must correspond to the power consumption of the machine and its weight. Wrong weight/power ratio can result in damage to both machine and tractor.



Transport on public roads

Check that the machine complies with all national and local requirements regarding transport on public roads

When driving on public roads, the machine must comply with the Road Traffic Act's current requirements. This ensures your safety and that of other road users. Failure to meet the requirements can result in accidents.

Compliance with the Road Traffic Act's current requirements includes, for example:

- Mounting of lights, warning and safety equipment.
- Compliance with permitted transport width, weight, axle pressure, tyre carrying capacity and total weight.
- Comply with the maximum permitted transport speed.
- Ensure the machine is secured.

The unladen weight of the tractor must be greater than the weight of the machine. The driver and owner of the vehicle are liable for any breaches of this rule.

Pay due attention to the tractor's braking ability

Do not exceed the braking distance with either front-mounted or rear-mounted machines. At least 50% of the vehicle's total weight must rest on the braked wheel to ensure the tractor's braking ability. Exceeding the braking ability can result in uncontrolled driving and accidents.

Keep away from overhead power lines

When the machine exceeds a height of 4 metres, there is a high risk that it may come too close to, or into direct contact with, overhead power lines. Keep a sufficient distance from overhead power lines! Failure to keep a sufficient distance from overhead power lines can result in serious injuries or death.

Keep away from thunder and lightning

Avoid driving with the machine or working on the machine in a thunder and/or lightning storm. There is a high risk of being struck by lightning. Lightning can cause serious injuries or death.



Risk of instability when heavy hitched implements are used in the raised position

Drive carefully when heavy hitched implements are used in the raised position.

There is a high risk of the machine overturning. This can result in serious injuries or death.

Carrying passengers on the machine is prohibited

It is dangerous and illegal to carry passengers on the machine. The machine is not approved for personal transportation. Transporting persons on the machine may result in serious injuries and death.

Mounted machines will change the driving and braking abilities of the tractor

Be aware of changed driving and braking abilities when driving with mounted machines. You should be especially aware of the machine's width and length when driving around bends and turns. Serious accidents and a loss of driving control may result if this is not taken into account.

Adjust the speed according to the road conditions

Adjust driving speed according to the conditions on the road. Poor road conditions and high speeds can lead to parts of the tractor and machine being overloaded. Driving too fast can lead to accidents and damage both the machine and the tractor.



Use

Keep away from thunder and lightning

Avoid driving with the machine or working on the machine in a thunder and/or lightning storm. There is a high risk of being struck by lightning. Lightning can cause serious injuries or death.

Risk of instability when heavy hitched implements are used in the raised position

Drive carefully when heavy hitched implements are used in the raised position. There is a high risk of the machine overturning. This can result in serious injuries or death.

Risk of overturning when driving on sloping or uneven ground

Never drive at high speeds on sloping or uneven ground. There is a high risk of the machine overturning. This can result in serious injuries or death.

Check that the machine has no technical faults

Only use the machine if it has no technical faults. This ensures that the machine is operating correctly and safely. A machine with technical faults and defects can be dangerous.

Checking the safety equipment

Check that all safety equipment is in place before use. This ensures that the machine will give maximum protection to the operator. If the safety equipment is removed or not used it may result in serious injuries and accidents.

**Carrying passengers on the machine is prohibited**

It is dangerous and illegal to carry passengers on the machine. The machine is not approved for personal transportation. Transporting persons on the machine may result in serious injuries and death.

Check the surrounding area before starting to use machine

Check the surrounding area before driving and using the machine. This prevents persons and animals in the vicinity from being harmed. If the surrounding area is not checked, it may result in serious injuries to persons or animals.

Never perform servicing or maintenance work on the machine when in motion

Servicing and maintenance work must not be performed on any part of the machine when it is in motion. People or objects can be dragged along or drawn into the machine, or may become trapped. Failure to follow these instructions could lead to serious — potentially even fatal — injuries.

Keep away from the machine

No passers-by should be close to the machine when active. This will ensure that no dangerous situations can arise. Persons close to the machine during operation are at risk of being severely injured.

Child safety

Never assume that children are still where you last saw them. Take care to ensure your machine is secured if children are in the working area. Never allow children to play on or operate the machine.

**Checking bolts on moving parts**

Check that all bolts on moving parts are correctly tightened. Tightening parts prevents moving parts jarring. Parts which are not correctly tightened can work loose and damage the machine.

Maintain the rotational speed on the tractor PTO outlet

The prescribed rotational speed for the PTO shaft must not be exceeded. It can result in damage to the machine and be dangerous to any persons in the vicinity.

Check the transmission oil level regularly

Check that the transmission is filled with oil and that the oil level is correct. A correct oil level ensures the transmission a long and trouble free service life. An incorrect oil level will damage the transmission.

Stop the machine immediately in case of malfunction

In case of malfunction, the machine should be stopped immediately. A machine malfunction can be endanger any persons and animals in the vicinity. Malfunctioning machines can cause dangerous situations to arise.

Ensure that the tractor and machine are on level ground

Ensure that the machine is level before moving it between the transport position and working position. There is a high risk that the machine will overturn on a slope. Failure to follow these instructions may result in serious damage to the machine, and cause fatal injuries to the operator.

Check the tyre pressure regularly

Check the tyre pressure on the tractor and machine at regular intervals. This ensures optimum roadholding, and prevents the tractor and machine from accidentally banking. Abnormal, uncontrolled banking of the tractor and machine can cause accidents.



Disconnection

Increased risk of injury when disengaging

There is an increased risk of injury when disengaging the machine from the tractor. Following the above instructions will protect you and others from injury. Failure to follow the above instructions may result in serious injuries.

Therefore, when disconnecting:

- Make sure that the tractor cannot roll.
- Never stand between the tractor and the machine during disconnection.
- Use the hydraulic three point suspension slowly and carefully.
- Make sure that the machine is standing on a safe, level surface.
- When depressurising the hydraulic system for both tractor and machine, first disconnect the hydraulic hoses.

Failure to follow these instructions can lead to serious injury or death.



Maintenance

Comply with the service and maintenance intervals given in the instructions

Comply with the intervals for service and maintenance as given in the instructions. By complying with the maintenance intervals you ensure that the machine will operate without malfunctions and provide maximum protection for the environment. An incorrectly maintained machine is a danger to the surroundings.

Maintenance of the PTO shaft

Comply with the prescribed intervals for servicing and maintenance of the PTO shaft. Refer to the manufacturer's user manual delivered with the PTO shaft. It contains instructions on the correct maintenance of the PTO shaft. Failure to follow these instructions can lead to damage to the PTO shaft or the machine.

Always use original spare parts on the machine

Always use original spare parts. Original spare parts should be used for safety reasons. The manufacturer takes on no warranty responsibility in cases where non-original spare parts are used.

Never perform servicing or maintenance work on the machine when in motion

Servicing and maintenance work must not be performed on any part of the machine when it is in motion. People or objects can be dragged along or drawn into the machine, or may become trapped. Failure to follow these instructions could lead to serious — potentially even fatal — injuries.

High risk when performing service and maintenance work

When performing service or maintenance work there is a higher risk of injury. Paying full attention to the above mentioned point ensures your safety and that of others. Failure to pay attention to this point may result in serious injuries.

Therefore, when you perform maintenance work:

- Disconnect the P.T.O shaft.
- Depressurise the hydraulic system.
- Stop or disconnect the tractor.
- Check that the machine is parked safely, support it if necessary.
- Do not use parts of the machine to climb onto it, the correct units for climbing must be used.
- Make sure that the machine cannot overturn.



Disconnect the power source when working on the electrical systems

Always disconnect the negative battery terminal before you start working on the electric system. This will prevent short circuits and damage to the electric circuit.

Be careful when cleaning with high pressure cleaning equipment

Only use low pressure cleaning equipment to clean bearings, hydraulic hoses, plastic components, electrical control boxes and electrical equipment. Using low water pressure to clean will protect the sensitive equipment on the machine. Using high water pressure to clean could damage vital parts of the machine.

Do not use aggressive cleaning products

Do not use aggressive cleaning products when cleaning. These can damage shiny metal surfaces.

Disconnect the battery, engine control unit and alternator before welding

The tractor battery and alternator should be disconnected before performing welding work on the machine. This will protect the tractor alternator during welding work. The tractor alternator could be damaged or destroyed if the electric connections are not disconnected before welding.

Tighten all fittings on moving parts

Check that bolts on moving parts are tightened after performing maintenance work. Tightening parts prevents moving parts jarring. Parts which are not correctly tightened can work loose and damage the machine.

Do not alter the machine construction

The technical construction of the machine should not be altered and machine maintenance should be performed. A well maintained machine will offer maximum protection.

A poorly maintained machine will not offer proper protection and could be dangerous.



Further safety instructions

Follow the instructions when working on the machine

The machine safety instructions should always be complied with. This will protect you and others from injury. Failure to follow the safety instructions may result in serious injuries.

In addition to the safety instructions the following should be complied with:

- Environmental legislation.
- The general technical, medical and road act regulations.
- Instructions in this instruction manual.
- Instructions for use, maintenance and service.

The machine

This chapter includes general information about your machine.

Field of application

532 - 540 is a trailed mower intended for mowing common grass and cereal crops. The instructions for use are given in the following chapters.

Correct usage of the machine

The machine can be used in fields for mowing the following crops:

- All types of grass
- All types of clover
- Whole crop
- Alfalfa
- Sorghum

Incorrect usage

The machine must not, under any circumstances, be used for the following:

- Cutting grass in park facilities and lawns
- Cutting grass on the verges of public roads
- Harvesting corn
- Clearing forest floors or other densely wooded areas

Similar use is outside the intended applications of the machine. The manufacturer is not liable for any damages caused by incorrect usage of the machine. The user is wholly liable for the machine.

Machine characteristics

Description of the machine

532 - 540 is a trailed mower which operates on the tractor's right-hand side.

The machine is trailed behind the tractor via a drawbar which is coupled to the tractor's lift arms. The drawbar is connected to the main frame of the machine which carries the whole machine on 2 powerful wheels. The machine can be set in either the transport position or the working position using the drawbar which is operated using the tractor's hydraulic system.

The machine's cutting unit is hydraulically connected to the main frame of the machine and can be lowered using the tractor's hydraulic system. The cutting unit is balanced using strong springs which secure the machine's cutterbar, following the ground precisely and cutting the crop uniformly.

The machine's cutting discs are equipped with durable, reversible knives, which have a high capacity when used at a high speed of rotation, even for difficult crops.

Even at high mowing speeds, the machine is able to mow the crop cleanly and uniformly. For safety reasons, it is recommended that the speed does not exceed 15 km/h.

The cutting unit is fitted with a guard, which protects it against moving objects. The guard, or parts of the guard, must never be removed from the machine and must always be kept in good condition.

Solid construction

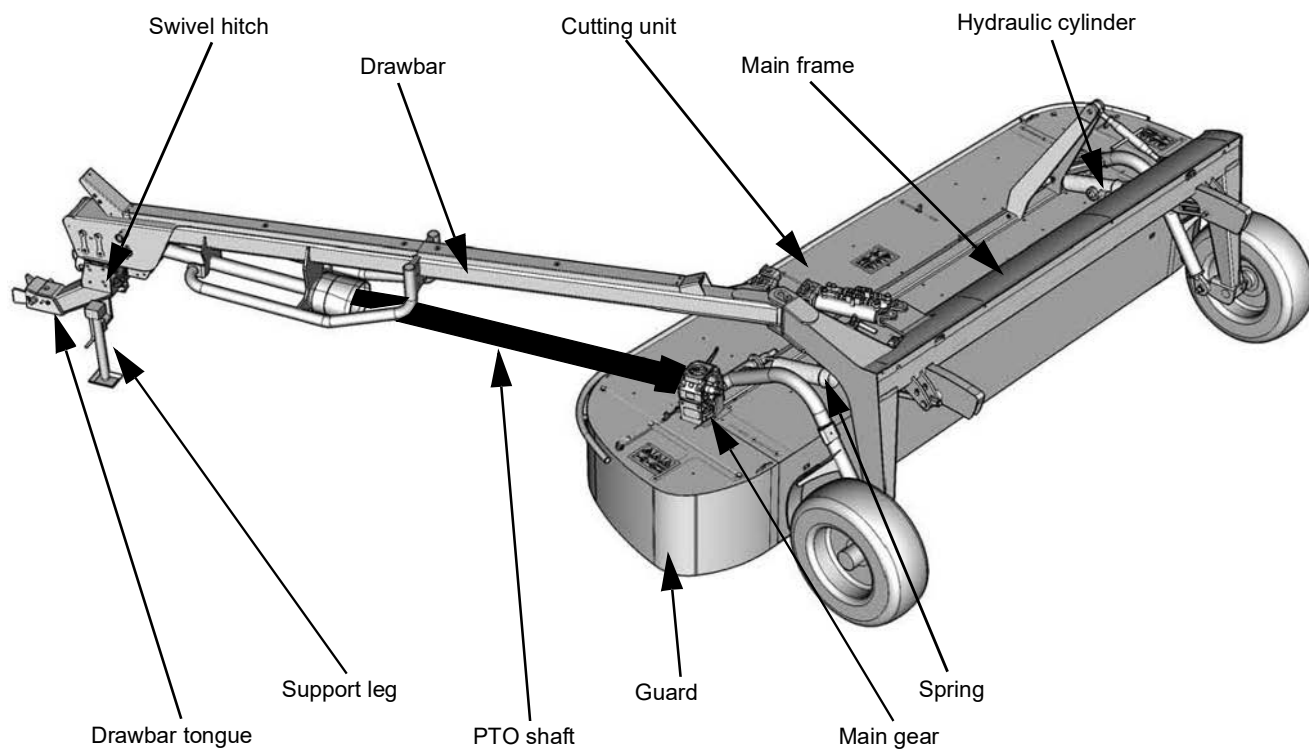
Thanks to a solid construction and its flexibility, the machine is both strong and reliable.

Your safety when using the machine

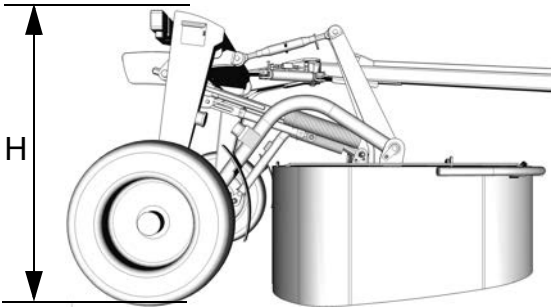
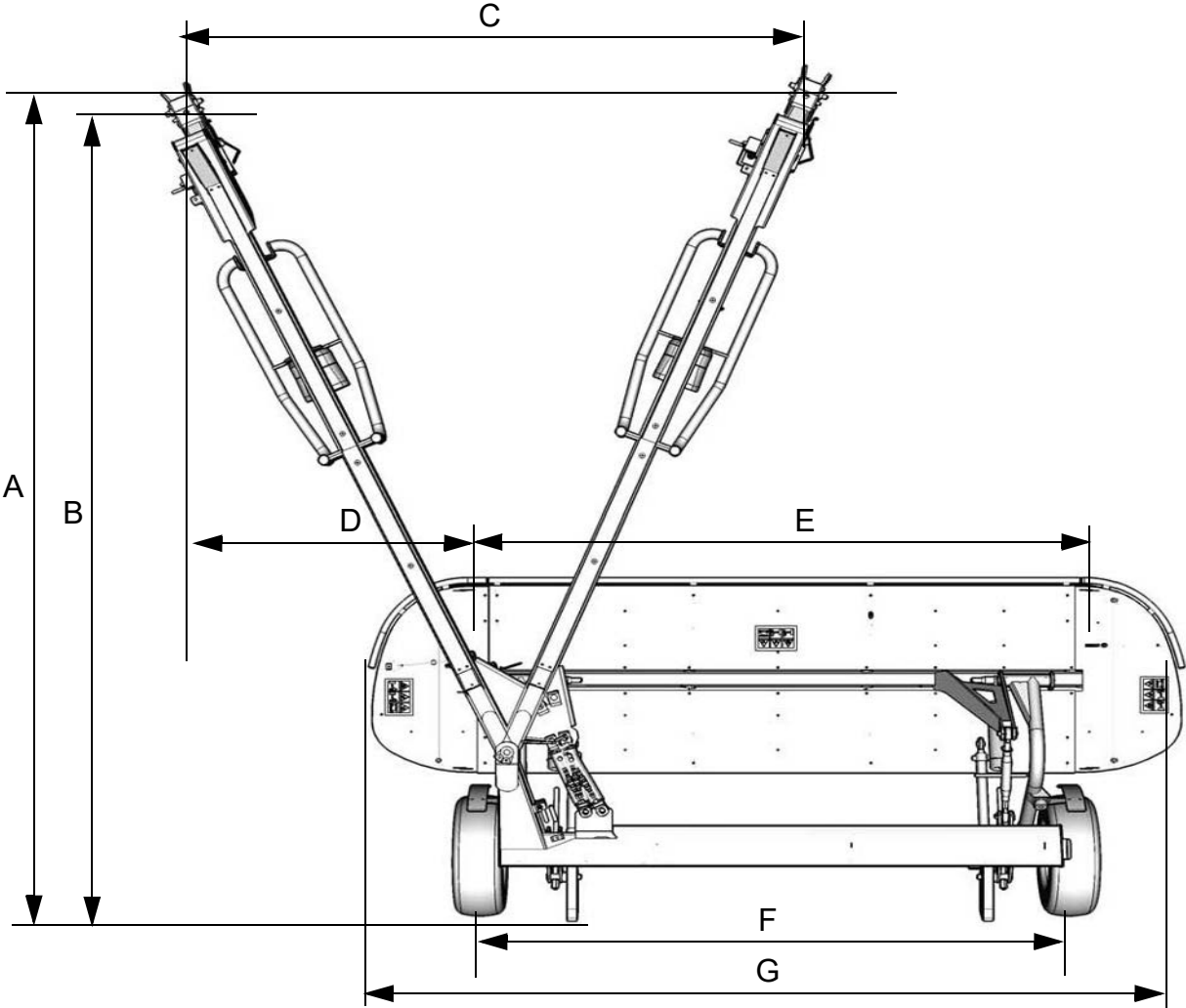
To make working with the machine as safe as possible the machine complies with EC regulations. The machine is CE marked.

The machine

Synopsis



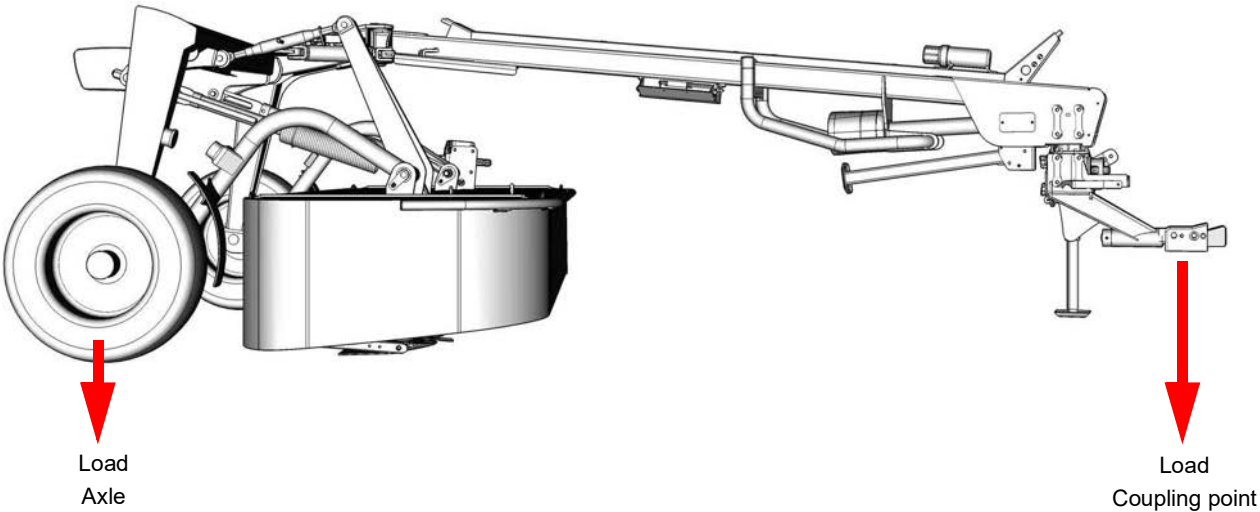
Dimensions



The machine

Dim.	Unit	532	540
A	mm	4530	5000
B	mm	4220	4900
C	mm	3380	
D	mm	1530	
E	mm	3200	4000
F	mm	2690	3450
G	mm	3970	4730
H	mm	1450	

Weight



Model	Load Axle kg	Load Coupling point kg	Total weight kg
532	864	356	1220
540	966	374	1340

Specifications

Specification	Unit	532	540
Unladen weight	kg	1220	1340
PTO (Power takeoff)	RPM	540/1000 ¹	
Power requirement	kW	48	65
	HP	63	85
Number of cutting discs	parts	8	10
Number of knives	parts	24	30
RPM, cutting discs	RPM	3000	
Stubble height	mm	20-100 ²	
Hydraulic flow min/max	l/min	15 - 50	
Hydraulic pressure min/max	bar	90 - 200	
Working width	m	3.2	4.0
Speed during operation	km/h	8 - 15	
Noise level	dB(A)	85	
Transport width	m	3.0	3.8

- ¹ PTO

→ »RPM on the PTO outlet« Page 40

- ² Extra equipment

→ »Skids« Page 117

Tractor requirements



Tractor weight and size

The tractor must be of the appropriate size for its weight. Local legislation governing this ratio must be observed. The correct ratio between tractor and machine ensures correct braking functions and manoeuvrability. An incorrect ratio between tractor and machine can be dangerous.

Preparation

Preparing the machine

The machine is divided into its main components for transport to the user. The machine must be assembled in accordance with the specific assembly instructions delivered with each machine.



Do not attempt to assemble the machine alone

Personnel must be trained before assembling the machine. Do not carry out assembly work alone. The following must be observed to ensure that the machine is in good working order:

- Adhere to the sequence of the work steps.
- Adhere to the tolerances and tightening torques of bolts, screws and component parts of the machine.
- Knowledge of occupational safety when assembling the machine.

Incorrect assembly can cause accidents or damage to the machine.



If parts are missing and/or are damaged during transport, please inform the dealer, importer or manufacturer immediately.

Check list of component parts	Quantity
PTO shaft	1
Operator's Manual	1
Spare parts manual	1
Additional parts	See delivery note

Operator's Manual

The instruction manual belongs with the machine and must always be kept on or by the machine.

PTO shaft length



Stopping the tractor and preventing it from rolling

Before uncoupling:

- ▶ Stop the tractor.
- ▶ Remove the ignition key.
- ▶ Secure the tractor to prevent it from rolling.

Failure to secure the tractor to prevent it from rolling could endanger lives.

Correct length

If the PTO shaft is too long, it must not be used. It will damage the tractor and the machine.



The length of the PTO shaft is factory-set, and is suitable for virtually all types of tractor. The PTO will only need to be corrected in a few exceptional cases, to achieve the correct length for certain tractors. Check the length of the PTO shaft on every tractor before using for the first time.

Checking the PTO shaft length



- ▶ Couple the machine to the tractor with the PTO shaft.
- ▶ Stop the tractor, remove the ignition key and secure the tractor to prevent it from rolling.

Refer to the manufacturer's user manual delivered with the PTO shaft.

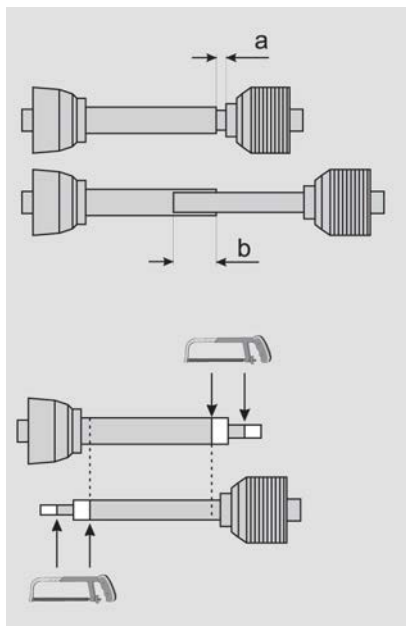
User manual for the PTO shaft

A user manual is supplied by the manufacturer with the PTO shaft. The user manual contains information on the version of the PTO shaft in question, and on maintenance, and details the correct PTO shaft length for the tractor.

The description and information in the user manual must be observed.

Preparation

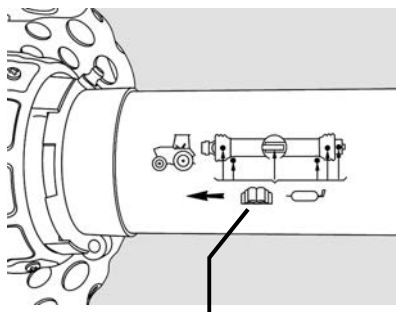
Shortening the PTO shaft



Refer to the manufacturer's user manual delivered with the PTO shaft.
→ »User manual for the PTO shaft« Page 37

a	Minimum 20 mm
b	Minimum 200 mm

Fitting the PTO shaft



Marking on the protective tube

Ensure that the PTO shaft is fitted in the correct position. This is indicated by a marking on the PTO shaft's protective tube.

- ▶ Fit the PTO shaft between the tractor and the machine.
- ▶ Secure the PTO shaft with a locking pin and safety chain.

Swivel hitch

Checking the rpm



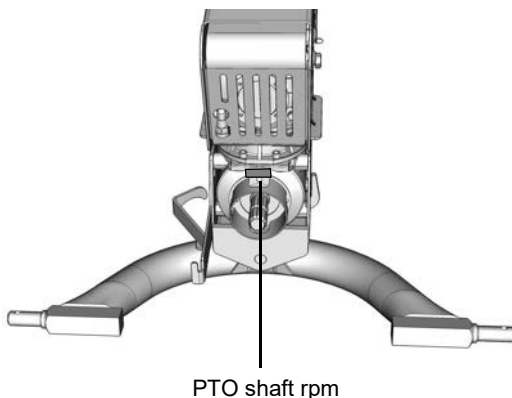
Maintain the rotational speed on the tractor PTO outlet

It is dangerous to connect a tractor with PTO = 1000 rpm to a machine intended for PTO running at 540 rpm. The machine is not designed for this speed. It can result in damage to the machine and be dangerous to any persons in the vicinity.

The swivel gear can be switched to 2 modes, so that both rotational speeds, 540 rpm or 1000 rpm, can be used. The machine is factory set to be adapted to tractors with a PTO outlet running at 1000 rpm.



Whenever possible, one should always aim to run the PTO outlet at 1000 rpm. It is especially recommended that tractors with power above 70 kW (90 hp) on the PTO outlet run at a rotational speed of 1000 rpm, as high rpm exerts less load on the PTO shaft.

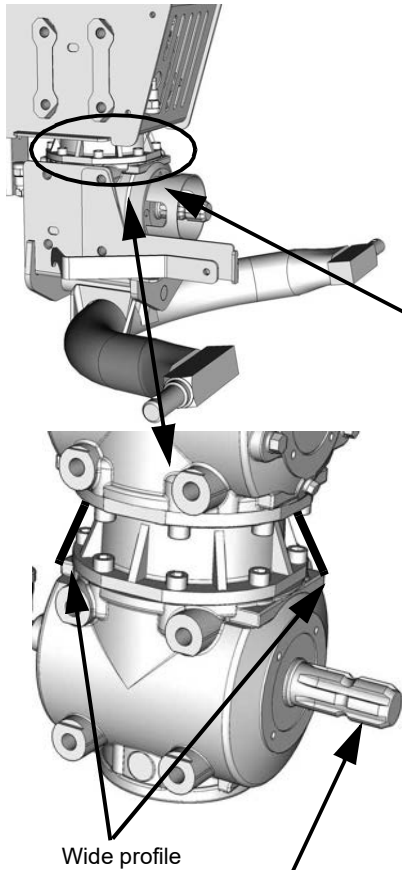


The swivel gear's rpm can be checked in 2 ways:

The swivel gear is factory-fitted with a sign that gives the tractor's PTO shaft rpm.

- If the sign shows 1000 rpm, the machine must run at a rotational speed of 1000 rpm.
- If the sign shows 540 rpm, the machine must run at a rotational speed of 540 rpm.

Preparation



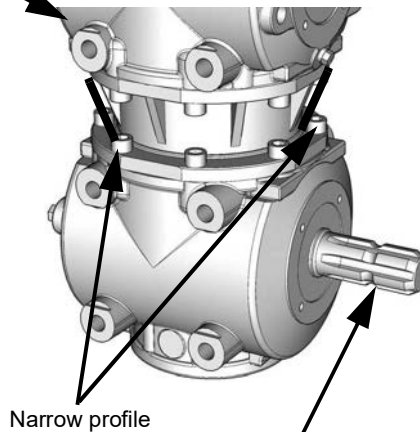
Wide profile

The rotational speed of the tractor's PTO outlet = 1000 rpm.

The swivel gear's rpm can also be checked by observing the gear's pivot joint.

Check the swivel gear in the following way:

- ▶ Observe the gear's profile in the middle of the swivel gear.
- If the swivel gear's profile on the lower part of the swivel gear is wide, the machine should be run at a rotational speed of 1000 rpm.
- If the swivel gear's profile on the lower part of the swivel gear is narrow, the machine should be run at a rotational speed of 540 rpm.



Narrow profile

The rotational speed of the tractor's PTO outlet = 540 rpm.

RPM on the PTO outlet

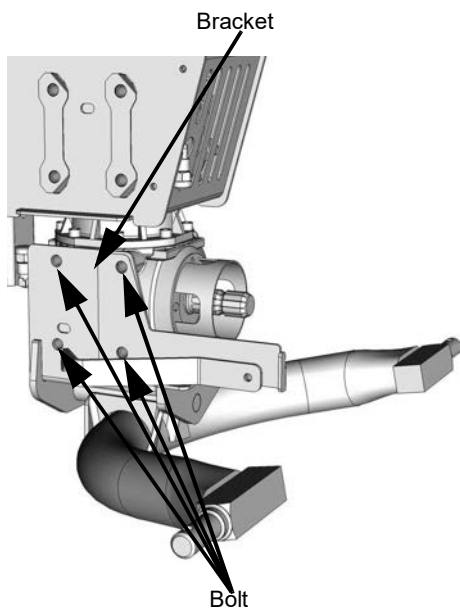
540 RPM

The machine is factory set to be adapted to tractors with a PTO outlet running at 540 rpm.

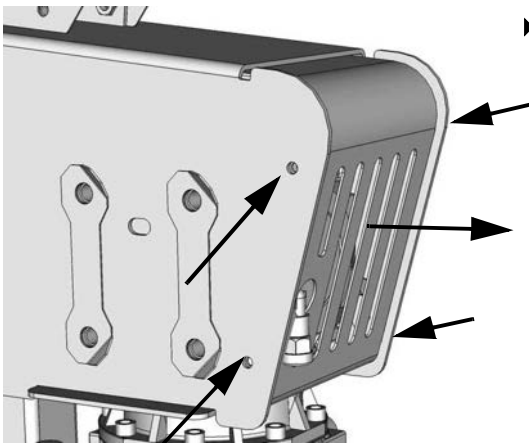
1000 RPM

If the machine is to be fitted to a tractor's PTO shaft running at 1000 RPM, the following procedure must be followed:

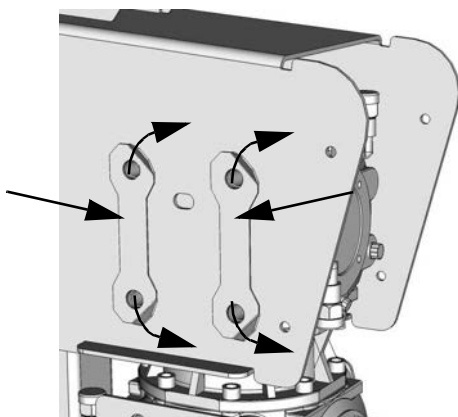
- ▶ Remove the PTO shaft.
- ▶ Remove the bolts shown on both sides of the transmission.
- ▶ Remove the bracket.



- ▶ Remove the guard.

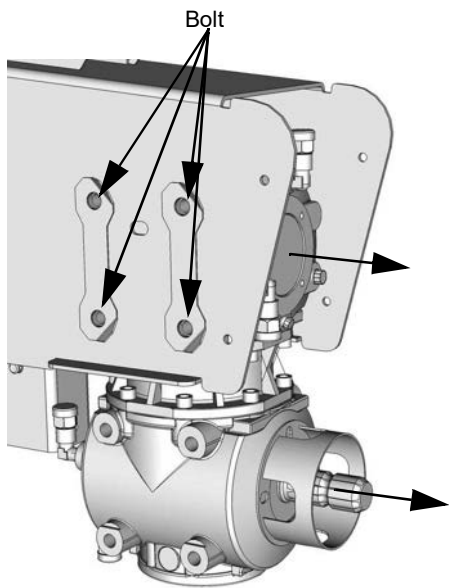


- ▶ Force the corners of the lock plate away from the bolt heads.

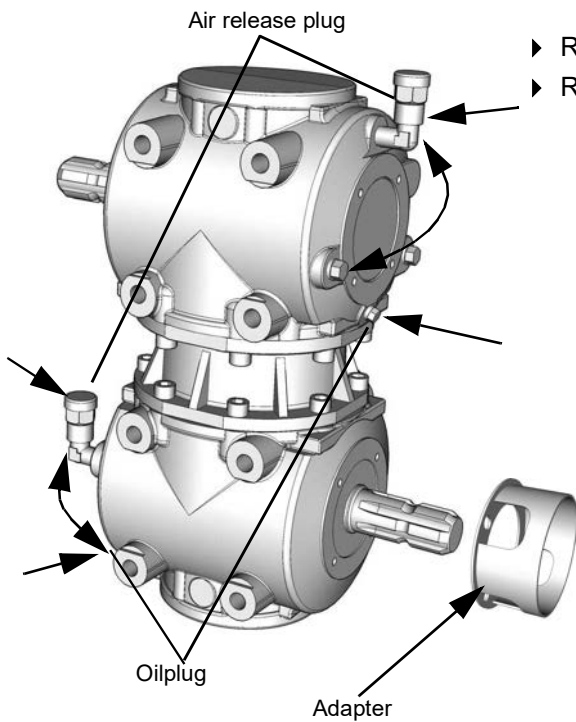


Preparation

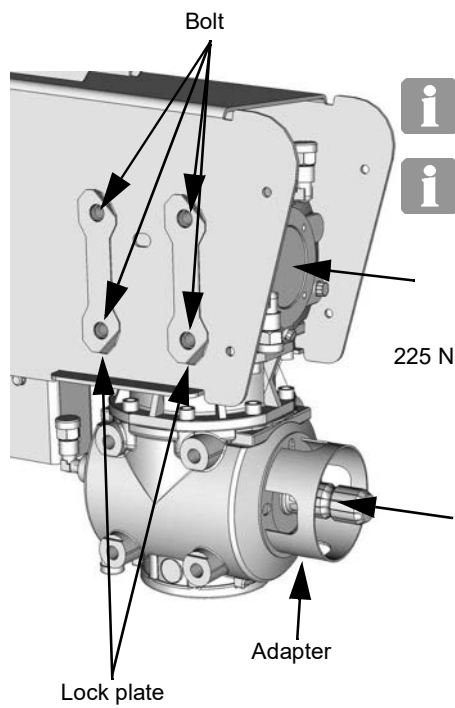
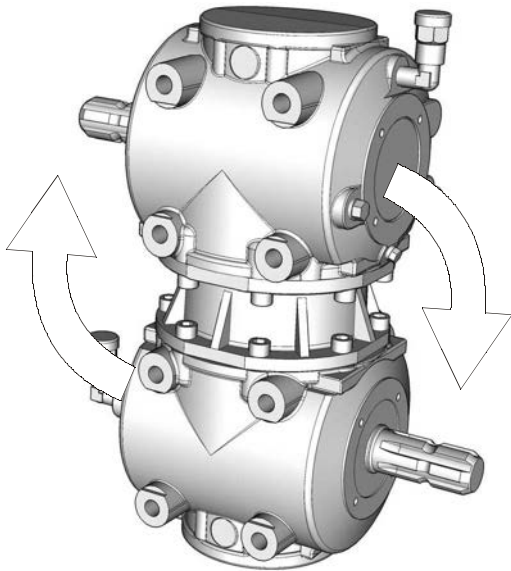
- ▶ Remove the bolts shown on both sides of the transmission.
- ▶ Remove the transmission.



- ▶ Remove the air release plug and the oilplug and switch them over.
- ▶ Remove the adapter for the PTO shaft.

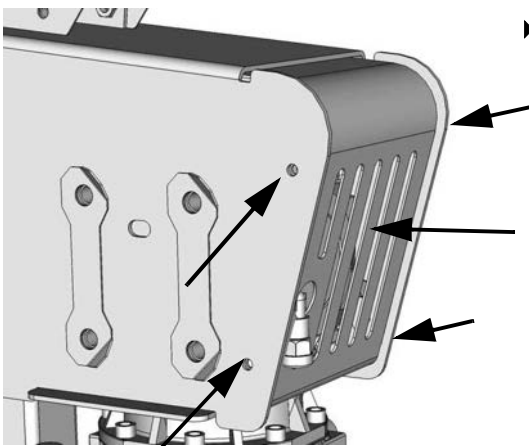


- ▶ Rotate the transmission 180 degrees.

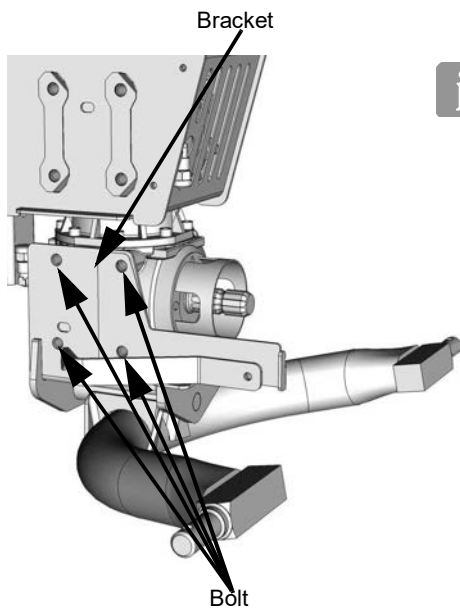


- ▶ Fit the transmission.
- i** Do not forget the lock plate.
- ▶ Fit the bolts on both sides of the transmission
- i** Tighten all bolts to a torque of 225 Nm.
- ▶ Fit the adapter.

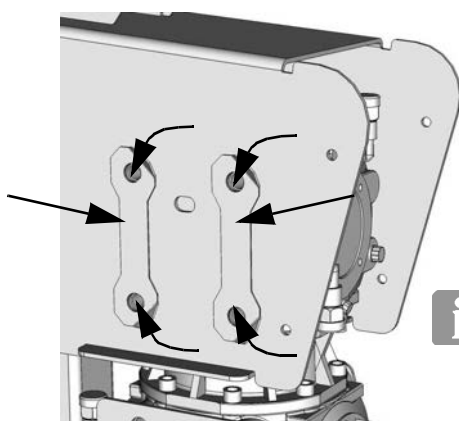
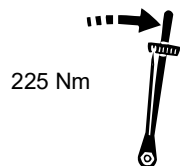
- ▶ Fit the guard.



Preparation



- ▶ Fit the bracket.
- ▶ Fit the bolts on both sides of the transmission.
- ▶ Tighten all bolts to a torque of 225 Nm.



- ▶ Force the corners of the lock plate back in against all the bolt heads.
- ▶ Fit the PTO shaft.

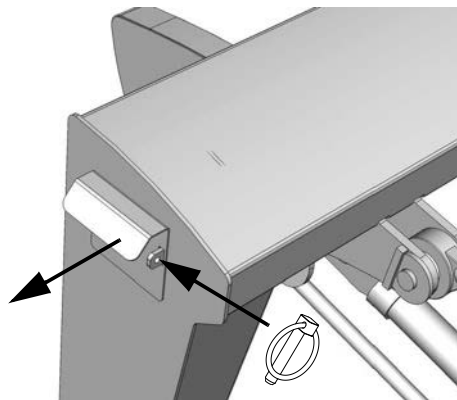
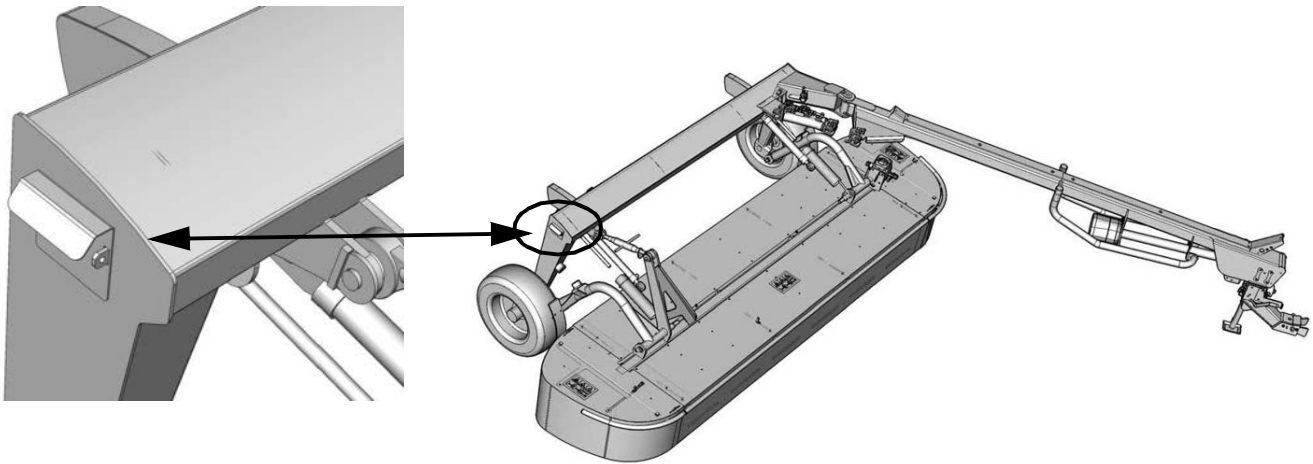


Important!

- ▶ Check the oil level in both the upper and lower swivel gears.
→ »Swivel hitch« Page 74

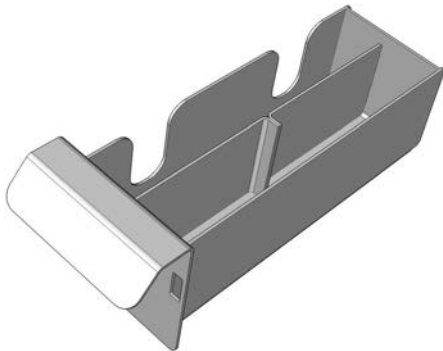
Tool box

The machine is equipped with a tool box for storing standard hand tools, extra knives, etc.

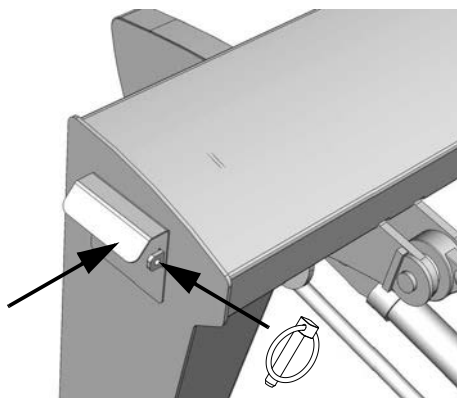


The tool box is used as follows:

- ▶ Remove the pin.
- ▶ Pull the tool box out.



The tool box can be used to store standard hand tools, extra knives, etc.



- ▶ Push the tool box in.
- ▶ Fit the pin.

Attachment of the tractor



Coupling a tractor and a machine

There is an increased risk of injury when attaching the machine to the tractor. Attention to the task will ensure your safety and that of others. Failure to follow the safety instructions may result in serious injuries.

Therefore, when connecting the machine and the tractor you should:

- Make sure that the tractor cannot roll.
- Make sure that the tractor and the machine belong to the same category.
- Never stand between the tractor and the machine during attachment.
- Use the hydraulic three point suspension slowly and carefully.

Attachment of the machine

There is an increased risk of injury when coupling the machine to the tractor. Attention to the task will ensure your safety and that of others. Failure to follow the safety instructions may result in serious injuries.

When carrying out an attachment you must make sure that:

- The machine is placed on an even surface.
- The machine is secured with a sturdy support.

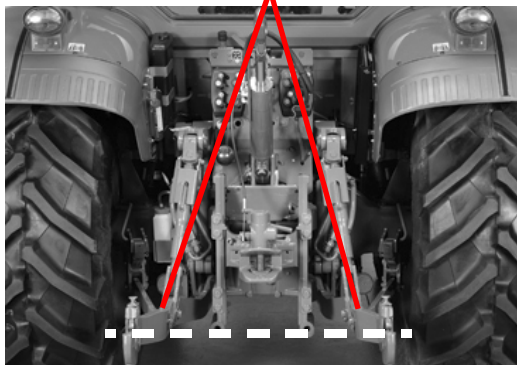
Secure the attachment with the locking pin

The attachment must be secured to the machine with the locking pin. The locking pin secures the machine against becoming detached from the tractor. Attachment without the locking pin can result in the machine becoming detached, leading to serious or fatal injury.

Therefore, when connecting the machine you should be sure that:

- The machine cannot become detached from the tractor.
- The coupling is secured with the locking pin.

Lifter



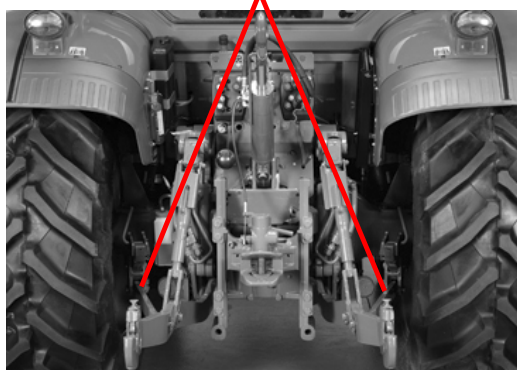
- ▶ Check that the tyre pressure for the tractor's rear wheels is correct.
→ »Check the tyre pressure regularly« Page 23

- As the starting point:
 - ▶ Adjust the right and left lift arms so they are at the same height.

If the tractor is equipped with a swivelling lower link crossbar:

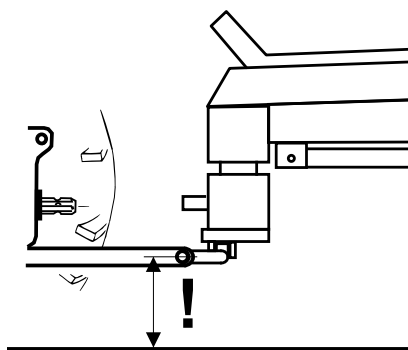
- ▶ Swing the lower link crossbar to the side or remove the lower link crossbar.
- ▶ Raise or lower the tractor's lift arms until the machine's linkage pin can be mounted on the tractor's lift arms.

Stabilizers



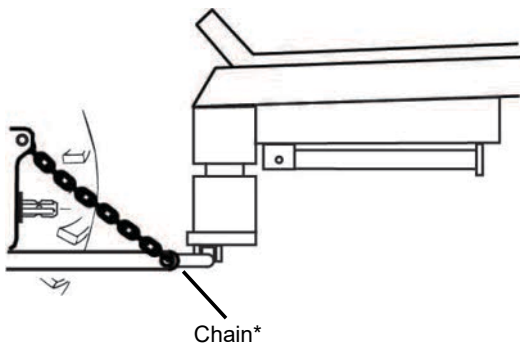
- ▶ Secure the attachment with the locking pin on both lift arms.
- ▶ Tighten the tractor's stabilizers.

- ▶ Adjust the tractor's lift arms to the height shown:



Dim.
740 - 750 mm

Connecting



▶ Lock the lift arms with a chain* between the lift arm and highest point.

* Optional equipment.

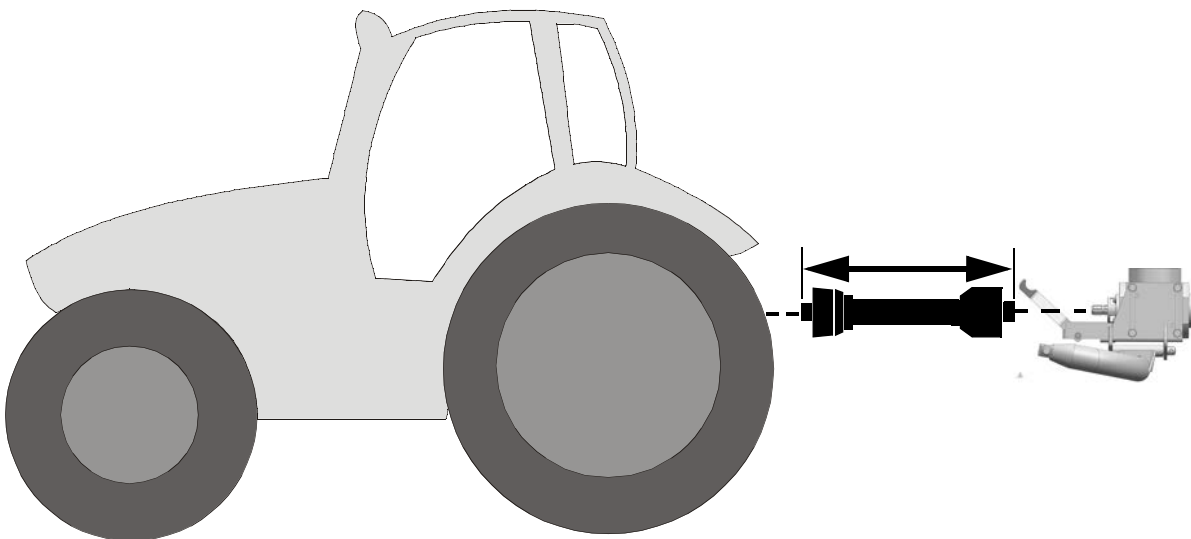
→ »Extra equipment« Page 117

▶ Check the length of the PTO shaft and adjust if necessary.

→ »PTO shaft length« Page 37

→ »Checking the PTO shaft length« Page 37

→ »Shortening the PTO shaft« Page 38



Hydraulic

Safety

**Only connect hydraulics when the system is depressurised**

You should only connect the hydraulic hoses to the tractor's hydraulics when the hydraulic system on both the tractor and the machine is depressurised. There is a risk that the machine will move accidentally. Unintentional movement of the machine may result in serious injuries.

Avoid mixing oil

Avoid using different tractors with the same machine. It can lead to various oil types being illegally mixed. Illegal mixing of various oil types can damage the hydraulic system of the tractor.

The hydraulic system should be checked regularly

All hoses and fittings should be checked regularly for visible damage. Hydraulic hoses also wear without any visible damage. Defective hydraulic hoses can cause injury or fire.

Colour marking of hydraulic connections

The hydraulic connections between the tractor and the machine must be marked in different colours. By marking the hydraulic connections you prevent the machine from being incorrectly operated. Incorrect operation or unintentional movement of the machine may result in serious injuries.

Connecting hydraulics

When connecting the hydraulics there is an increased risk of injuries. Paying full attention to the above mentioned point ensures your safety and that of others. Failure to pay attention to this point may result in serious injuries.

Securing the hydraulics in the transport position

The tractor hydraulic system must not be activated unintentionally in the transport position. Accidental activation of the tractor hydraulic system can result in unexpected movement. Unexpected movement can result in injuries.

Connecting

Hydraulic connection

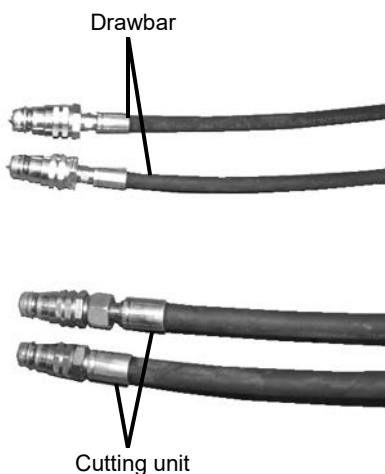


Checking that the hydraulic system is correctly connected

Ensure that the hydraulic system is correctly connected. Otherwise, this can cause injuries, and damage to the machine.



- ▶ Stop the tractor and remove the ignition key.



The tractor must be fitted with 2 sets of double acting hydraulic outlets, which are connected as follows:

Hydraulic hose for:	Function
Drawbar	right
	left
Cutting unit	up
	down

When connecting the hydraulic hoses you should check that:

- The hydraulic hoses are connected in pairs to the tractor's hydraulic pressure and return outlet on the tractor.

First start-up



The initial test drive of the machine is important

When the machine is connected to the tractor for the first time it must be test driven. Attention to the task will ensure your safety and that of others. Failure to follow the safety instructions may result in serious injuries.

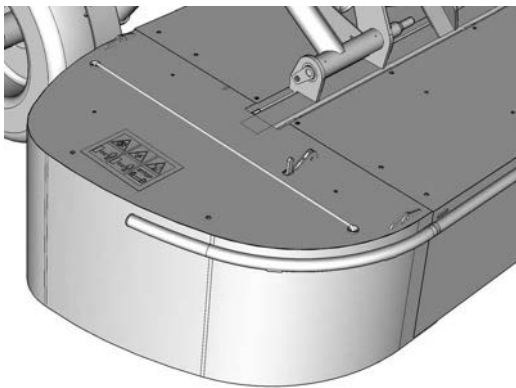
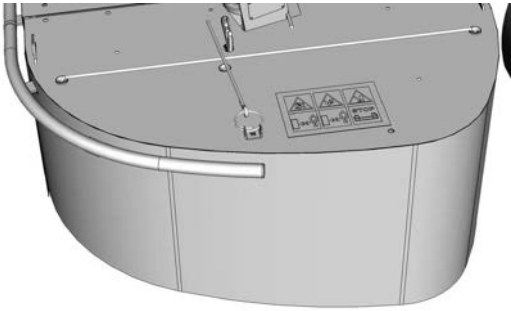
Do not remove the protective guards

Check that all protective guards are in place before use.

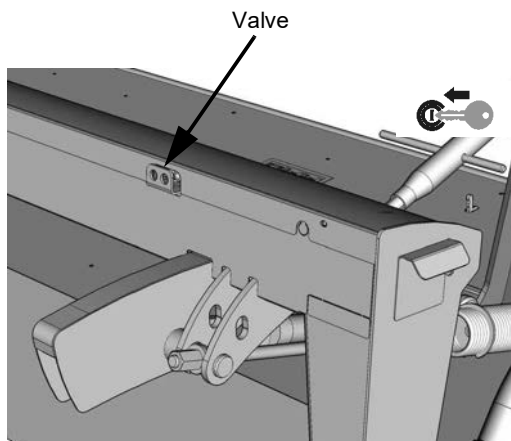
This ensures that the machine will offer maximum protection to the operator. If the safety guards are removed or not used, it may result in serious injuries and accidents.

The side guard for the cutting unit must be correctly positioned before start up

The side guard for the cutting unit must be folded out and correctly positioned before the machine is started. This ensures that the machine will give maximum protection to the operator. Moving objects may cause serious injuries and accidents.



- ▶ Check that the machine's guards are in place.
- ▶ Check that the side guard on the cutting unit is folded out and correctly positioned.

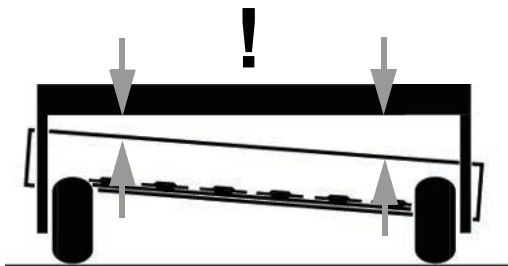


- ▶ Check that the mechanical safety valve is open.
- ▶ Start the tractor.
- ▶ Activate the tractor's hydraulic system and lower the machine down to the working position.
- ▶ Carefully connect the tractor's PTO shaft.
- ▶ Carefully increase the speed on the PTO shaft to 540/1000 RPM.
→ »RPM on the PTO outlet« Page 40
- ▶ Check that the machine runs smoothly without any vibrations.
- ▶ Return the PTO shaft to idle speed.
- ▶ Activate all the hydraulic functions of the machine, one by one.
- ▶ Disconnect the tractor's PTO shaft.

Connecting

Checking the cutting unit

Equalising the hydraulic system



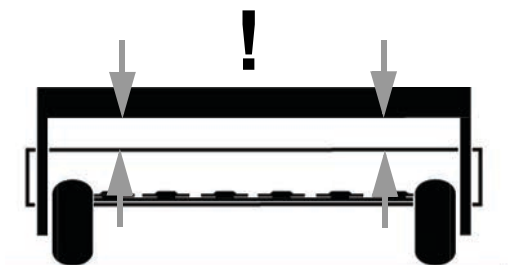
After a prolonged period without use with the cutting unit raised, there is a risk that the machine's cutting unit may sink unevenly in the machine's hydraulic cylinder. This means that the cutting unit is not parallel with the machine's main frame. The problem can be solved by equalising the machine's hydraulic system, which is carried out as follows:



- ▶ Activate the tractor's hydraulics and lower the machine's cutting unit down to the ground.
- ▶ Continue to run the tractor's hydraulic system for approx. 2-5 minutes.



This ensures the machine's hydraulic cylinders are emptied of any air and excess hydraulic oil.

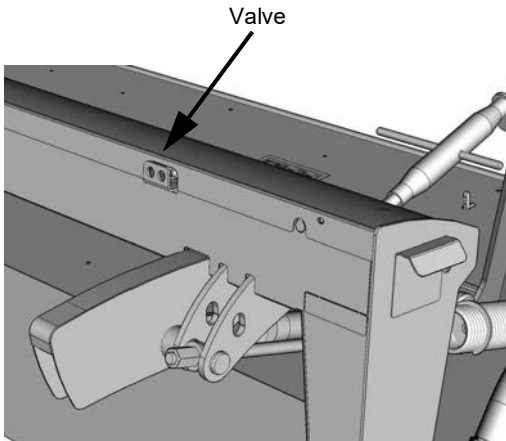


- ▶ Raise the machine's cutting unit and check that the cutting unit is parallel with the main frame of the machine.
- ▶ Repeat the procedure if the cutting unit is not parallel with the main frame of the machine.

Transport position

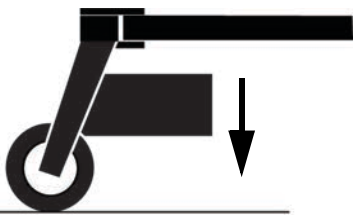


Check the surrounding area before starting to use machine
Check the surrounding area before driving and using the machine. This prevents persons and animals in the vicinity from being harmed. If the surrounding area is not checked, it may result in serious injuries to persons or animals.

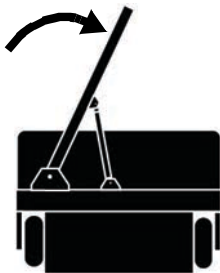


The machine is moved to the transport position as follows:

- ▶ Check that the mechanical safety valve is open.

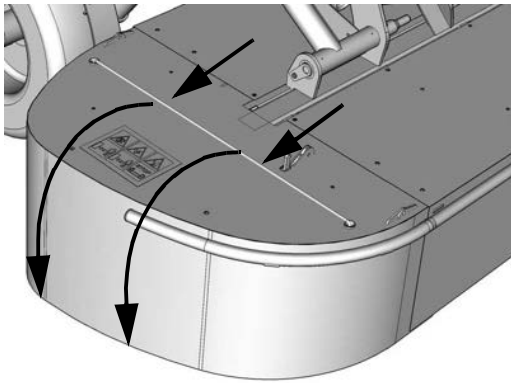


- ▶ Activate the tractor hydraulics and raise the machine's cutting unit.

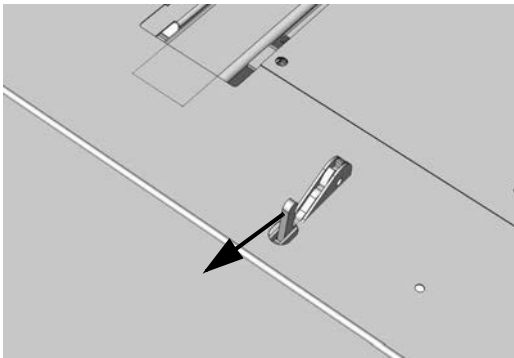


- ▶ Activate the tractor's hydraulics and set the machine's drawbar as shown.

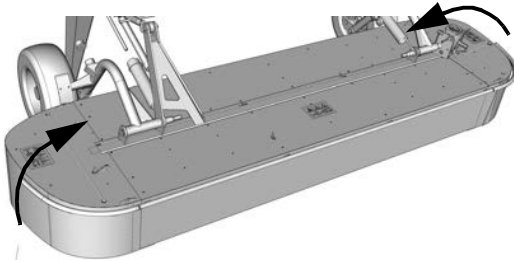
Connecting



- ▶ Pull the elastic cord out over both ends of the guard as shown.
- ▶ This prevents the tarpaulin from flapping during transportation.



- ▶ Pull out and release the lock for the guard.
- ▶ Swivel both guards upwards as shown.



Safety



The operator should receive careful instructions before using the machine

The machine should only be used if the operator has been given thorough instructions. Thorough machine instruction allows safe usage. Insufficient instructions can result in wrong usage of the machine and accidents.

Read the safety instructions before using the machine

Before using and loading the machine the operator should read the safety instructions carefully.

→ »Safety« Page 6

Attention to the task will ensure your safety and that of others. Failure to follow the instructions may result in serious injuries.

The side guard for the cutting unit must be correctly positioned before start up

The side guard for the cutting unit must be folded out and correctly positioned before the machine is started. This ensures that the machine will give maximum protection to the operator. Moving objects may cause serious injuries and accidents.

Do not remove the protective guards

Check that all protective guards are in place before use. This ensures that the machine will offer maximum protection to the operator. If the safety guards are removed or not used, it may result in serious injuries and accidents.

Before operating

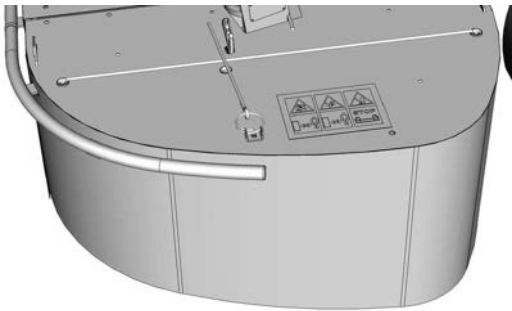


The following instructions should be complied with:

- Check all points mentioned in the “maintenance” section.
- »Specific safety information« Page 69
- »Lubrication safety and use of oil« Page 70
- Check blades are not worn down. The knives can be turned so as to gain the opposite rotational direction.
- »Knives« Page 78

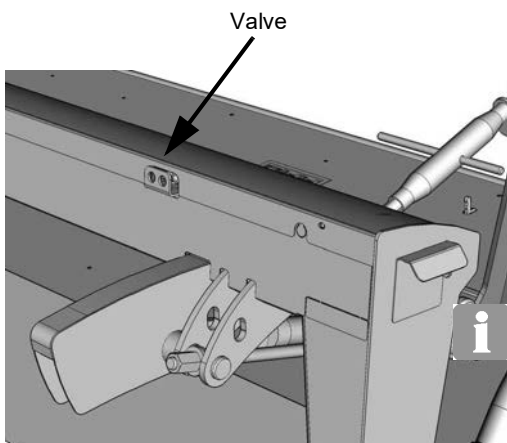
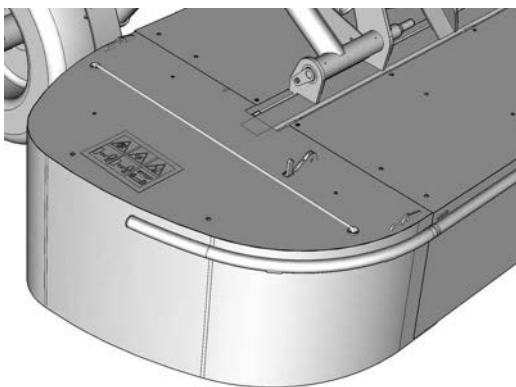
Operation

Working position



The machine is operated in the following way:

- ▶ Make sure that there are no persons in the surrounding area.
- ▶ Fasten all the guards on the machine.
- ▶ Check that the side guard on the cutting unit is folded out and correctly positioned.
- ▶ Position the tractor and the machine in a straight line.



- ▶ Check that the mechanical safety valve is open.
- ▶ Carefully connect the tractor's PTO shaft.
- ▶ Carefully increase the speed of the PTO shaft to 540/1000 RPM.
→ »RPM on the PTO outlet« Page 40
- ▶ Use the tractor's machine handle to operate the hydraulic functions.



If none of the machine's functions are working:

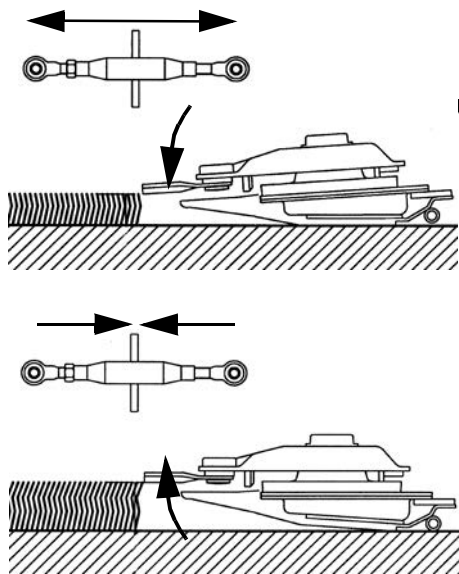
- ▶ Stop the tractor's forward drive.
- ▶ Stop the tractor.
- ▶ Disconnect the PTO shaft immediately.



If the machine is too noisy or vibrates too much, stop the machine immediately.

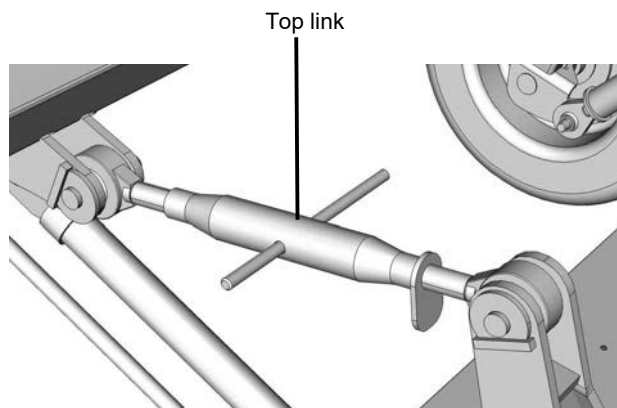
→ »Troubleshooting« page 119.

Stubble height



The stubble height is adjusted in the following way:

- Making the top link longer reduces the stubble height.
- Making the top link shorter increases the stubble height.



The stubble height can be combined with fitting high skids* which can be used to set the stubble height as follows:

Stubble height	Note
20-45 mm	No skids fitted
35-65 mm	20 mm skids* fitted
45-80 mm	40 mm skids* fitted
65-105 mm	60 mm skids* fitted
85-130 mm	80 mm skids* fitted

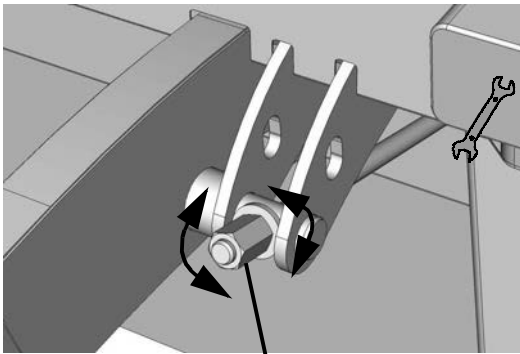
* Extra equipment
»Skids« Page 117

Balancing

The balance of the machine's cutting unit should be adjusted so that the downward pressure on the machine's cutting unit is about 40-60 kg.

The balancing of the cutting unit is adjusted in the following way:

- ▶ Undo the counter nuts with the springs on both sides of the machine.
- ▶ Screw the bolt indicated.
- When the bolt is screwed clockwise the cutting unit's downward pressure decreases.
- When the bolt is screwed anticlockwise the cutting unit's downward pressure increases.

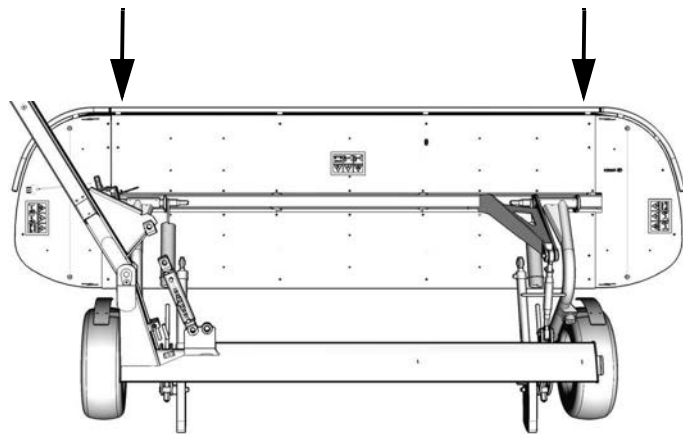


Bolt

- ▶ Adjust the cutting unit's downward pressure for both springs.
- ▶ Secure the counter nuts with the springs on both sides of the machine.
- ▶ Check by lifting the cutting unit by hand, gripping both sides of the cutting unit in the places shown.

➡ When checking the suspension, position yourself in front of the cutting unit and lift the cutting unit up as shown.

➡ The weight on both sides of the cutting unit must be approximately 40-60 kg when lifting by hand.



Working in the field



Check the surrounding area before starting to use machine

Check the surrounding area before driving and using the machine. This prevents persons and animals in the vicinity from being harmed. If the surrounding area is not checked, it may result in serious injuries to persons or animals.

Keep away from the machine

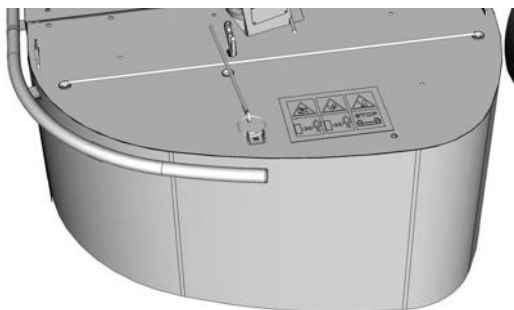
No unauthorised persons should be close to the machine during operation. This will ensure that no dangerous situations can arise. Persons close to the machine during operation are at risk of being severely injured.

Do not remove the protective guards

Check that all protective guards are in place before use. This ensures that the machine will offer the operator maximum protection against moving objects and the machine's cutting knives. If the safety guards are removed or not used, it may result in serious injuries and accidents.

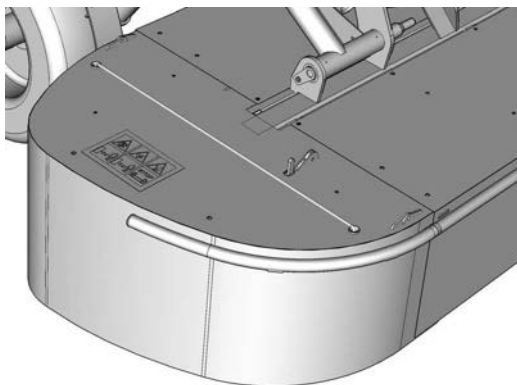
The side guard for the cutting unit must be correctly positioned before start up

The side guard for the cutting unit must be folded out and correctly positioned before the machine is started. This ensures that the machine offers the operator maximum protection against moving objects. Moving objects may cause serious injuries and accidents.

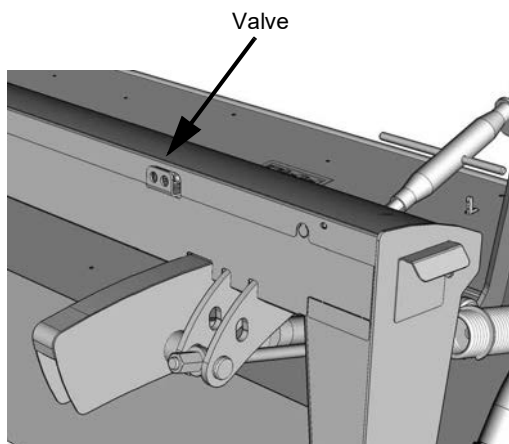


The operation is carried out as follows:

- ▶ Check that all guards on the machine are folded out and correctly positioned.



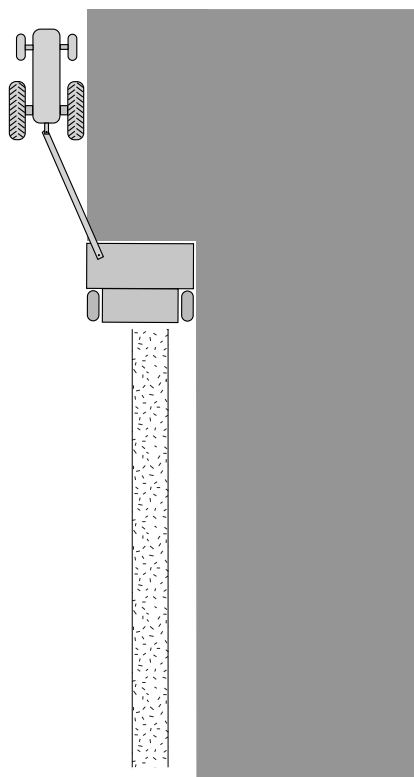
Operation



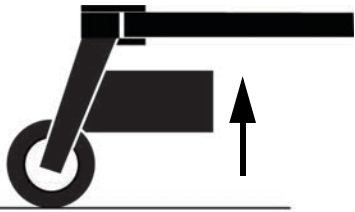
- ▶ Check that the hydraulic mechanical safety valve is open.
- ▶ Connect the tractor's PTO outlet.
- ▶ Carefully increase the speed on the PTO shaft to 540/1000 RPM.
→ »RPM on the PTO outlet« Page 40
- ▶ Activate the tractor hydraulics and turn the machine's drawbar to the right side of the tractor.



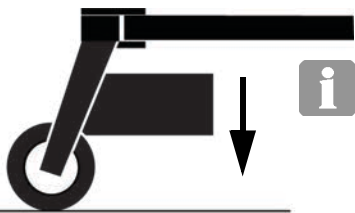
- ▶ Activate the tractor hydraulics and lower the cutting unit of the machine to its working position.
- i** Activate the tractor hydraulics until the hydraulic cylinders on the cutting unit are fully extended to their maximum length.



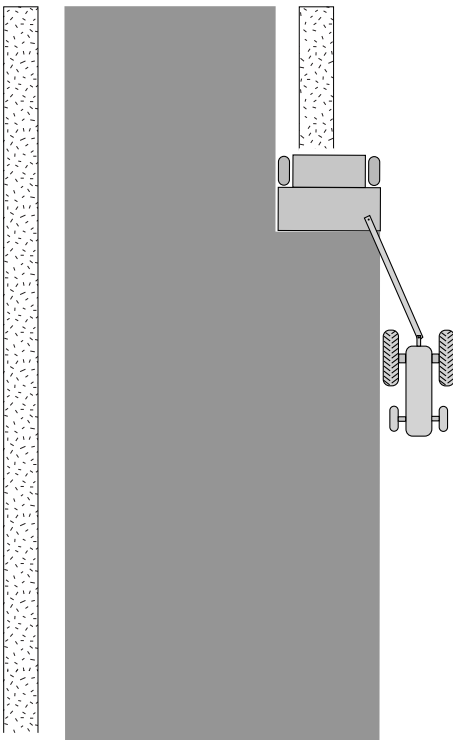
- ▶ Find a suitable driving speed for the tractor and cut the 1st swath.



- ▶ Activate the tractor hydraulics and raise the cutting unit when turning at the headland.



- ▶ Activate the tractor hydraulics and lower the cutting unit of the machine to its working position.
- ▶ Activate the tractor hydraulics until the hydraulic cylinders on the cutting unit are fully extended to their maximum length.



- ▶ Find a suitable driving speed for the tractor and cut the 2nd swath.

Transport on public roads

Safety



Read the safety instructions carefully before driving on public roads

You must read the safety instructions carefully before driving on a public road.

→ »Transport on public roads« Page 19

This will ensure that dangerous situations and accidents are avoided. Lack of information can cause accidents.

General



- Comply with the local law concerning lights, warning and safety devices.
- The driver and/or the owner of the machine is responsible for complying with the Road Traffic Act.
- The tractor's manoeuvrability should not be adversely affected. The tractor's steering shaft should be loaded with at least 20% of the tractor's dead weight.
- The braking distance of the tractor should not be reduced. At least 50% of the vehicle's total weight must rest on the braked wheel.
- Carrying passengers on the machine is strictly prohibited.

Before travelling on public roads

- All of the hydraulic functions of the machine should be placed in neutral and in locked position.
- The tractor hydraulic system must be disconnected.
- Be sure there are no children in the machine's hazard area.
- Check the surrounding area before starting the machine.

Check

Before travelling on the road the machine should be checked according to this check list:

- Is the machine in the transport position?
- Is the mowing device lifted all the way up?
- Are the machine side guards folded in?

→ »Transport position« Page 53

- Are all hydraulic functions in neutral?
- Is the tractor's hydraulic system deactivated?
- Are the machine attachment points secured by a pin?
- Is the tyre pressure of the transport wheels correct?
- Does the lighting kit of the machine work correctly?

Travelling on public roads

- Check the area around the machine before you start. Be sure there are no children in the machine's hazard area.
- Do not exceed the maximum permitted speed.
- Adjust the speed according to the road conditions.
- Avoid sudden sideways movement of the machine.
- ▶ Make sure that steering and braking ability is sufficient.

Speed when driving on public roads



This machine must be transported on public roads at speeds of less than 40 km/h only.

Before cleaning



Higher risk when cleaning the equipment

When cleaning, there is an increased risk of injury. Paying attention when carrying out cleaning work will ensure your safety and that of others. Failure to follow the safety instructions may cause serious injuries.

Therefore, do the following before cleaning:

- Disconnect the tractor's PTO outlet.
- Neutralise all hydraulics.
- Stop the tractor.
- Remove the ignition key.
- Apply the handbrake.



Failure to secure the tractor to prevent it from rolling could endanger lives.

Disconnect the power when cleaning the machine

Always disconnect the power before you start cleaning the machine. This will prevent short circuits and damage to the electric circuit. There is a risk of burns and other serious injuries if the electrical systems short circuit.

Protect your body and face when cleaning the machine

Wear the correct protective gear for body and face when cleaning the machine. This will protect your body and face from dirt and oil splashes. Severe skin and eye injuries can be caused if body and face are insufficiently protected.

Before starting to clean the machine do the following:

- Open the guard around the cutting unit.
- Remove all loose material from the machine.

Cleaning



Use the correct cleaning agents

Use only PH neutral cleaning agents when cleaning the machine. PH neutral cleaning agents give your machine maximum protection. Cleaning agents with either a high or low PH value can corrode plastic, rubber and varnished surfaces.

- High pressure cleaning equipment may be used to clean. However, the area around the bearings should be cleaned using gentle squirts of water.
- Hydraulic components should only be cleaned with gentle squirts of water to protect the gaskets.

After cleaning

- Let the remaining water run off for about 1 hour.
- Remove any water which has collected behind the guards.

Parking and Storage

Before storage

At the end of the season, the machine should be prepared for storage:

- ▶ Check and tighten all bolts.
- »Torque moment« Page 126
- ▶ Repair any damaged components.
- ▶ Replace any defective components.
- ▶ Repair any damage to the paintwork.
- ▶ Reduce the air pressure in the tyres.
- ▶ Lubricate the machine following the program.
- »Maintenance intervals« Page 72

Parking/disconnection



Disconnecting the machine from the tractor

There is an increased risk of injury (crushing) when disconnecting the machine from the tractor. Paying full attention when disconnecting ensures your safety and that of others. Failure to follow the safety instructions may result in serious injuries.

Therefore, when disconnecting make sure that:

- The machine is placed upon a horizontal and level surface.
- The tractor's PTO outlet is disconnected.
- All hydraulics are neutralised.
- The tractor is stopped.
- The ignition key is removed.
- The handbrake is activated.
- The tractor is prevented from rolling.
- Children and unauthorised persons must never be allowed near the machine.

Failure to secure the tractor to prevent it from rolling could endanger lives.



Hydraulic



Only disconnect hydraulics when the system is depressurised

You should only disconnect the hydraulic hoses from the tractor's hydraulics if the hydraulic systems on both tractor and machine are depressurised. There is a risk that the machine will move accidentally. Unintentional movement of the machine may result in serious injuries.

Avoid physical contact with hydraulic oil

Hydraulic oil contains additives that under certain circumstances can have serious consequences for your health. Therefore, when handling hydraulic oil be aware of the following:

- Avoid direct contact with hydraulic oil. They can damage the skin.
- Protect your skin with barrier cream or protective gloves.
- Never use oil or lubricants to clean your hands.
- Clothes contaminated with oil should be changed immediately.
- Oily cloths should not be kept in your pockets.
- Seek medical attention for skin injuries after contact with pressurised hydraulic oil, as this can cause cold burns.

Storage

At the end of the season, the machine should be prepared for storage:
Carry out the following:

- Clean the machine thoroughly.
→ »Cleaning« Page 64
- Change the oil in all the machine's transmissions.
→ »Lubricants« Page 125
- The hydraulic quick coupling should either be covered with a dust cap or placed in a small plastic bag.
- The PTO shaft should be cleaned, oiled and stored somewhere dry so as to avoid damage or corrosion.
- Always check that the machine's safety equipment is not worn or damaged.
- Always park the machine with the cutting unit lowered and its wheels on the ground.



If the machine's cutting unit is parked in the raised position for a prolonged period, there is a risk that the cutting unit may sink unevenly in the machine's hydraulic cylinder. This will cause problems when the machine's hydraulic system is coupled to the tractor.

→ »Checking the cutting unit« Page 52

- Bleed as much excess hydraulic pressure from the cylinders and hoses as possible.
- Place the machine in a ventilated machine room.
- Both of the machine's wheel axles should be supported on blocks so that the wheels are lifted off the ground.

Safety



The machine must be secured when parked

The machine must be correctly secured when parked in storage. If correctly secured, there is no risk of the machine running anyone over, or causing other serious injuries. If the machine is not correctly secured when parked, this may result in serious or fatal injuries.

Therefore, when disconnecting make sure that:

- the machine is in the working position.
- The machine is placed upon a horizontal and level surface.
- The tractor's PTO outlet is disconnected.
- The tool is lowered to the ground.
- All hydraulics are neutralised.
- The tractor is stopped.
- The ignition key is removed.
- The handbrake is activated.
- The tractor is prevented from rolling.
- Children and unauthorised persons must never be allowed near the machine.



Failure to secure the tractor to prevent it from rolling could endanger lives.

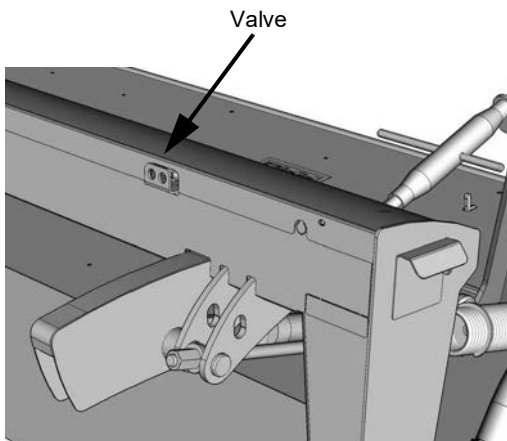
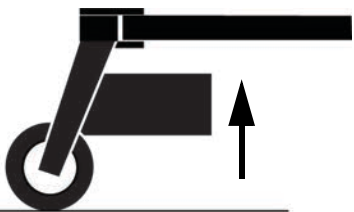
For your own safety



Comply with the service and maintenance intervals given in the instructions

Comply with the intervals for service and maintenance as given in the instructions. Complying with the maintenance intervals will ensure that the machine operates without malfunctions, preventing injury and offering maximum protection of the surroundings. An incorrectly maintained machine is a danger to people and to its surroundings.

Specific safety information



- Repair and maintenance work should only be carried out by persons with the necessary professional knowledge and the correct tools.
- The PTO on the tractor should be disconnected, and the motor should be stopped.
- Make sure that the handbrake is applied and the ignition key has been removed from the tractor.
- Make sure the machine is secured with wedges under the wheels before starting work.
- No one should be in between the tractor and the machine if the machine has not been secured.
- Always use original spare parts on the machine.
- Never use a pressurised grease gun spray to lubricate the machine bearings.
- When carrying out any type of service and maintenance work where the machine's cutting unit is raised up, the mechanical safety valve must always be closed.

Lubrication safety and use of oil



Oils and lubricants contain additives that under certain circumstances can have serious consequences for your health. Therefore, when using oil and lubricants be aware of the following:

- Avoid direct contact with these agents. They can damage the skin.
- Protect your skin with barrier cream or protective gloves.
- Never use oil or lubricants to clean your hands.
- Clothes contaminated with oil should be changed immediately.
- Oily cloths should not be kept in your pockets.
- Used oil must be collected and sent to a disposal company, where the oil will be processed in accordance with the regulations in force.
- Seek medical help if skin is injured by oil or lubricants.

General instructions

These instructions concern general maintenance work. Specific maintenance work procedures for each machine will be described later. When performing any maintenance work the machine must be secured in the transport position. If the work position is necessary for performing maintenance work, you will find appropriate instructions to cover this.



Working with the grease gun

One or two pumps of the grease gun is sufficient for lubrication. If you feel resistance after just one pump of the grease gun, do not apply more grease to the bearings. When too much grease is applied, bearings drift apart. This can result in dust and dirt entering the bearings and causing premature wear and tear.

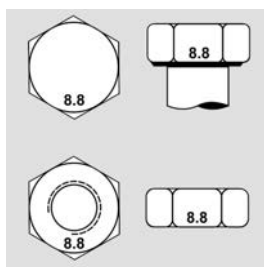
Basic

This table contains explanations of the most important maintenance terms.

Work	Performance
Lubricating with oil can	Add oil from the can to the moving parts. Use only authorised products. → »Technical information« Page 125
Lubricating with grease gun	Use only authorised products. → »Technical information« Page 125
Oil change	Use only authorised oil products. Using used oil is dangerous for your health and is strictly prohibited. → »Technical information« Page 125
Replace	Replace the appropriate part as per the instructions.
Check	Check the appropriate part as per the instructions. The check is sometimes related to the replacement of the part in question
Complying with the maintenance intervals	All specifications are based on an average usage of the machine. If heavily loaded, e.g. contractor, the maintenance intervals should be performed on a more regular basis. In work conditions with heavy dust development, maintenance should also be performed more often.

Torque moment for screw connections

→ »Torque moment« Page 126



Maintenance

Maintenance intervals

		Daily	Every 200 hours of use / once a year	As required	Oil change	Lubrication	Check	Replacement	Page
Hydraulic hoses every 6 years								•	17
Cutting unit	Knives	•					•		78
				•				•	104
	Cutting disc	•					•		82
				•				•	107
	Stone guard and counter knife	•					•		84
				•				•	110
Tarpaulin		•					•		86
				•				•	115
Transmission Cutterbar	After 50 working hours				•				76
	Cutterbar		•		•				89
	Swivel hitch		•		•				92
	Main gear		•		•				91
Lubrication	Drive shaft		•			•			101
	Moving joints		•			•			101
Cone	External	•					•		83
	Internal		•				•		94
Other	Drive shaft		•				•		97
				•				•	112
	Wheel	•					•		87
				•				•	115



Safety in connection with maintenance work on the machine

When working on the machine the tractor must be stopped and secured. This prevents the PTO shaft from suddenly starting to rotate. Failure to follow the safety instructions may result in serious injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The tool must be lowered to the ground.
- The tractor engine must be stopped.
- The ignition key must be removed.
- The hand brake must be activated.
- The tractor must be prevented from rolling.



Failure to secure the tractor to prevent it from rolling could endanger lives.

Always use original spare parts on the machine

Always use original spare parts. Original spare parts should be used for safety reasons. The manufacturer takes on no warranty responsibility in cases where non-original spare parts are used.

Make sure that all safety equipment is in place

Check that all safety equipment is in place. This ensures that the machine will offer maximum protection to the operator. If the safety equipment is removed or not used it may result in serious injuries and accidents.

PTO shaft check



Refer to the manufacturer's user manual delivered with the PTO shaft.
→ »User manual for the PTO shaft« Page 37

Swivel hitch



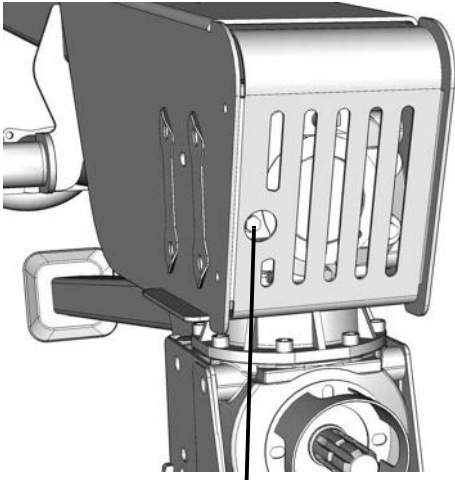
Only to be performed if the swivel gear has been removed and inverted.

→ »RPM on the PTO outlet« Page 40

The oil level is checked as follows:

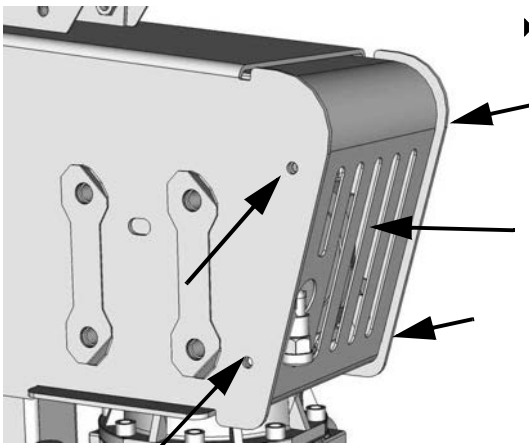
The upper part of the swivel hitch

- ▶ Remove oilplug 2.
- ▶ Check that the oil is filled all the way up to the hole.

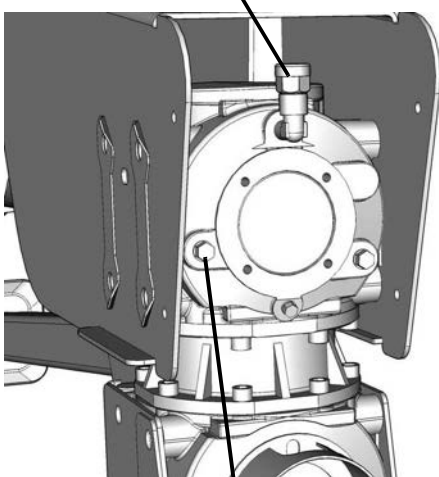


Oilplug 2

- ▶ When topping up, remove the guard.



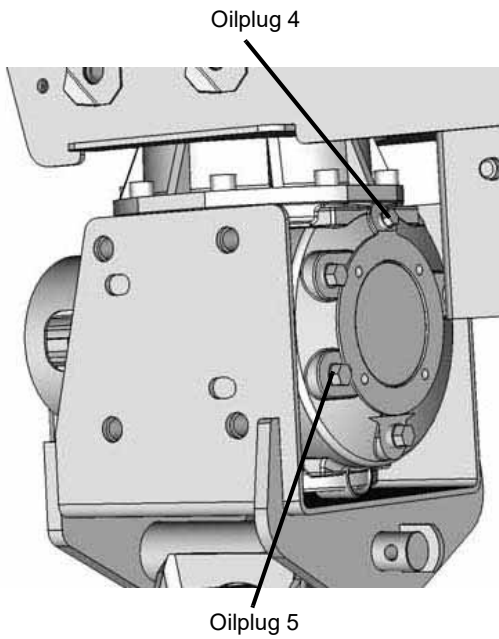
Oilplug 1



Oilplug 2

- ▶ Remove oilplug 1.
- ▶ Fill the oil through the hole for oilplug 1.
- The correct oil level is reached when the oil reaches the edge of the hole for oilplug 2.
- ▶ Fit oilplugs 1 and 2 and tighten them.
- ▶ Fit the guard.

→ »Lubricants« Page 125



The lower part of the swivel hitch

- ▶ Remove oilplug 5.
- ▶ Check that the oil is filled all the way up to the hole.
- ▶ When topping up, remove oilplug 4.
- ▶ Fill the oil through the hole for oilplug 4.
- The correct oil level is reached when the oil reaches the edge of the hole for oilplug 5.
- ▶ Fit oilplugs 4 and 5 and tighten them.

→ »Lubricants« Page 125

After 50 hours of use



Safety in connection with maintenance work on the machine

When working on the machine the tractor must be stopped and secured. This prevents the PTO shaft from suddenly starting to rotate. Failure to follow the safety instructions may result in serious injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The tool must be lowered to the ground.
- The tractor engine must be stopped.
- The ignition key must be removed.
- The hand brake must be activated.
- The tractor must be prevented from rolling.



Failure to secure the tractor to prevent it from rolling could endanger lives.

Be careful when using oil

Use barrier cream or protective gloves when handling oil. It will protect your hands against skin injuries. Direct contact with the oil could lead to serious skin injuries

Use the correct oil type

Always use the correct oil type for the transmission. This will ensure the transmission has a long service life. Using the incorrect oil type may damage the transmission.

Maintain correct oil level

The maximum and minimum oil level indicators on the transmission must not be exceeded. Correct transmission oil level will ensure a long service life. Incorrect oil levels can cause the transmission to overheat, resulting in serious damage.

After 50 hours of use, the machine oil should be changed:

	Page
»Cutterbar«	89
»Swivel hitch«	92
»Main gear«	91

Daily



Safety in connection with maintenance work on the machine

When working on the machine the tractor must be stopped and secured. This prevents the PTO shaft from suddenly starting to rotate. Failure to follow the safety instructions may result in serious injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The cutting unit must be lowered to the ground.
- The tractor engine must be stopped.
- The ignition key must be removed.
- The hand brake must be activated.
- The tractor must be prevented from rolling.



Failure to secure the tractor to prevent it from rolling could endanger lives.

Knives



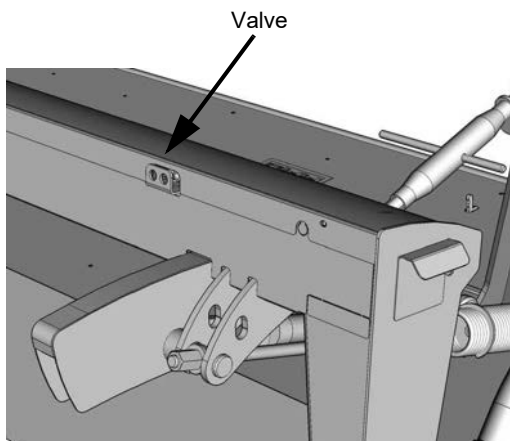
Check the machine knives on a regular basis

The machine's knives must be regularly inspected. Worn or damaged knives can unbalance the rotating parts. Vibrations can cause damage to the machine.

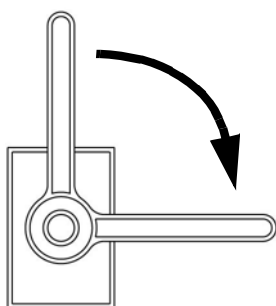
→ »Maintenance intervals« Page 72

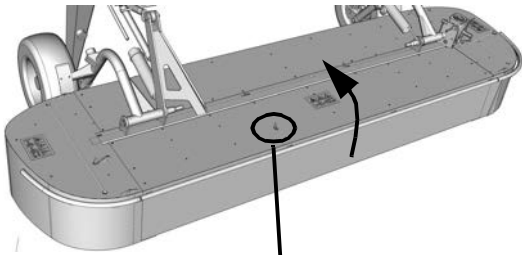
The knives are checked as follows:

- ▶ Activate the tractor hydraulics and raise the machine's cutterbar fully.

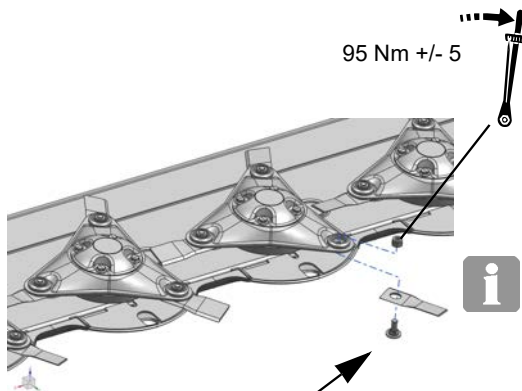
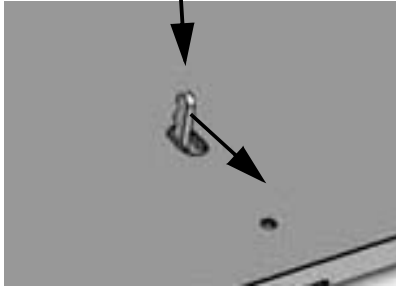


- ▶ Close the mechanical safety valve.





- ▶ Pull out and release the lock for the guard.
- ▶ Open the machine's front guard.

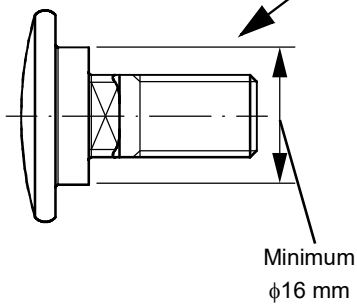


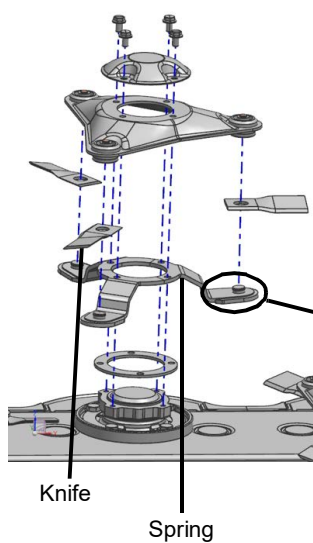
- ▶ Turn the cutting discs by hand until the damaged knife is in the position shown.
- ▶ Inspect the condition of the knives for wear.
- ▶ Inspect the bolt for damage or wear.
 - If the bolt is damaged or worn, it must be changed.



The minimum diameter of the bolt must not be less than $\phi 16$ mm.
 → »Knives« Page 104

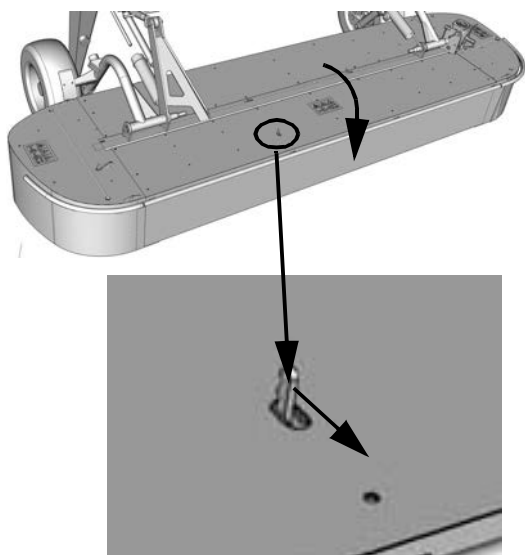
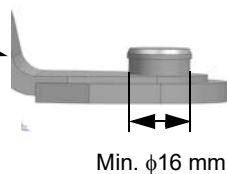
- ▶ Check that the bolt is fully tightened.
- ▶ If not, tighten the bolt to the torque shown.





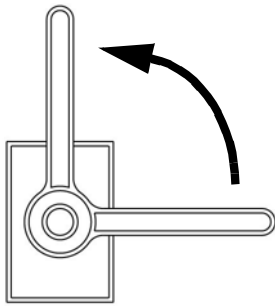
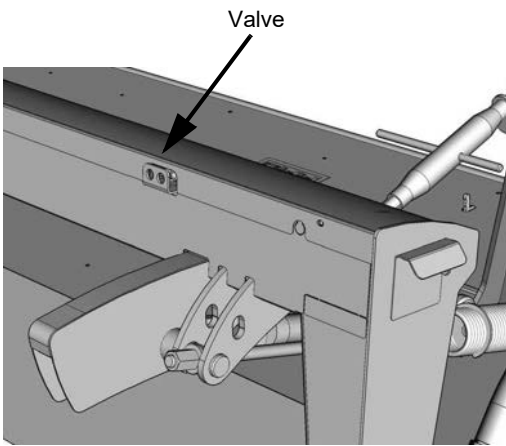
i If the machine is fitted with knife quick release*, the same requirement applies for bolt wear.
→ »Knives« Page 104

* Extra equipment
→ »EXPRESS« Page 117.



- ▶ Pull out and release the lock for the guard.
- ▶ Close the machine's front guard.

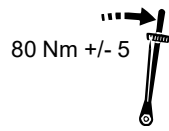
- ▶ Open the mechanical safety valve.



Cutting disc

→ »Maintenance intervals« Page 72
The cutting discs are checked as follows:

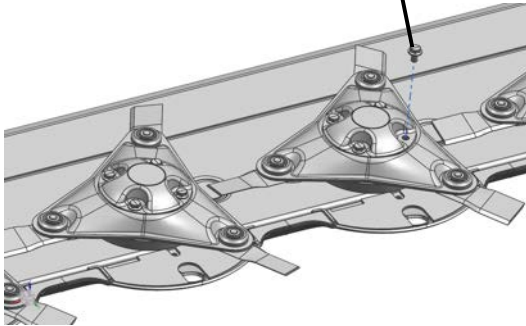
80 Nm +/- 5



▶ Inspect the condition of the cutting discs for deformities and cracks.
Damaged and/or deformed cutting discs must be replaced immediately.

→ »Cutting disc« Page 107

▶ Tighten the cutting disc to the given torque.



Cone



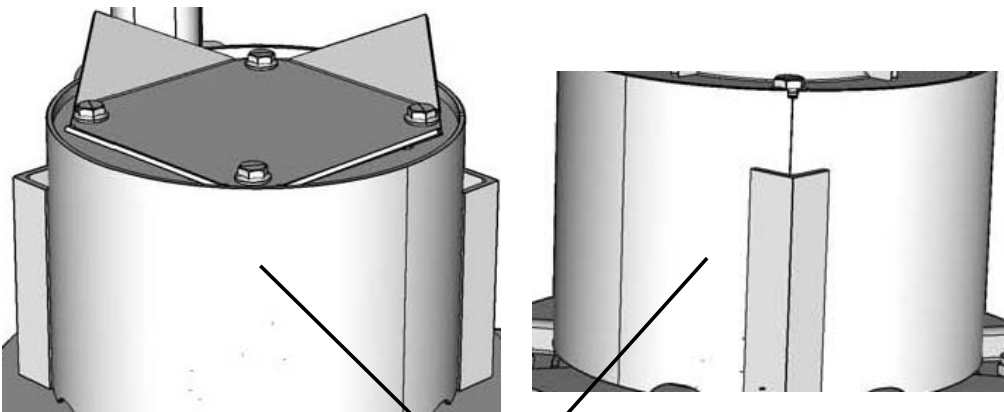
Check the machine cones on a regular basis

The machine's cones must be checked and cleaned regularly. Build-up of crop waste can cause imbalance in the rotating parts. Vibrations can cause damage to the machine.

→ »Maintenance intervals« Page 72

An external check of the cones is carried out in the following way:

- ▶ Remove dirt from the cones on both sides of the machine.



Clean the cones regularly

Maintenance

Stone guard and counter knife



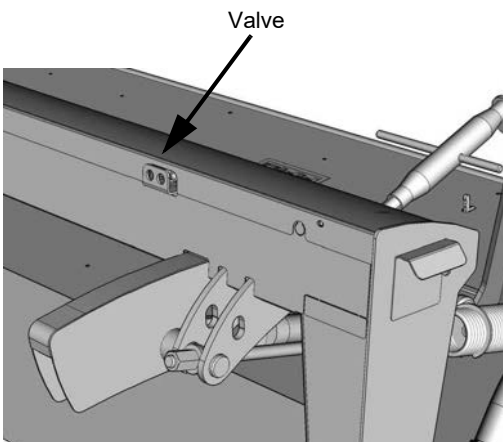
Correct support of the machine is necessary to prevent injury

The machine must be properly supported when work is being carried out underneath it. If the machine is not correctly supported, there is a high risk that it may overturn, causing injury. If the machine is not sufficiently supported, this can result in serious or even fatal injuries.

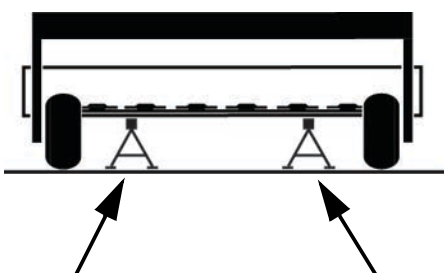
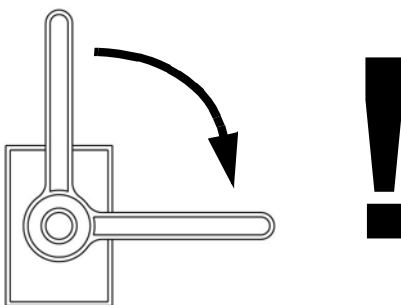
→ »Maintenance intervals« Page 72

The stone guard and counter knife are inspected as follows:

- ▶ Activate the tractor's hydraulics and raise the machine fully.



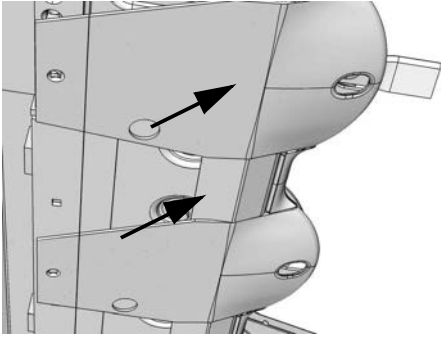
- ▶ Close the mechanical safety valve.



- ▶ Place a suitable support under the machine's cutting unit.



It is important that the machine is correctly secured with a sturdy support before work is started.



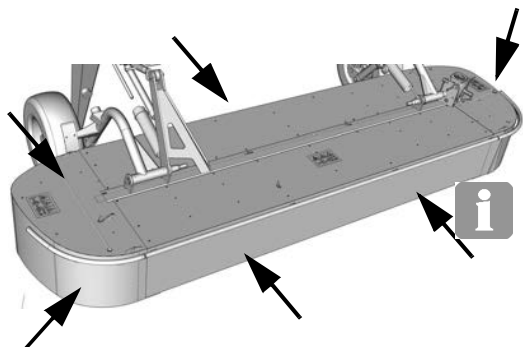
- ▶ Carry out a visual inspection of the machine's stone guard and counter knife for wear.
- ▶ Stone guards and counter knives with visible holes caused by heavy wear must be replaced immediately.
→ »Stone guard and counter knife« Page 110
- ▶ Remove the support.
- ▶ Open the mechanical safety valve.
- ▶ Activate the tractor hydraulics and lower the cutting unit of the machine.

Tarpaulin

The tarpaulin and other guards around the cutting unit must be checked regularly.

The tarpaulin and other guards are checked as follows:

- ▶ Visually inspect the machine's guards for holes and other damage.



Any guards with visible holes or other damage must be replaced immediately.

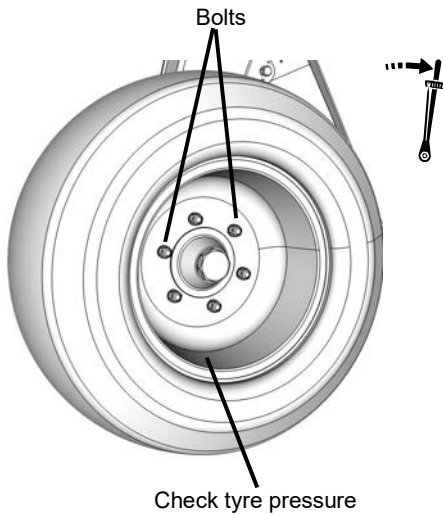
- ▶ »Tarpaulin« Page 115

Wheel



Do not drive on tyres which are worn or damaged

Do not drive on tyres which are worn or damaged. Replace worn or damaged tyres with tyres with the same specifications. There is an increased risk of accidents when driving on public roads with tyres in this condition.



→ »Maintenance intervals« Page 72

- ▶ Use a torque wrench adjusted to the torque shown in the table below.
- ▶ Check all the bolts on the wheels and tighten them to the torque shown.
- ▶ Check the tyre pressure and, if necessary, top up the tyre to the pressure shown in the table below.

Model	Tyre Dimension	Tyre pressure bar (psi)	Bolt torque Nm (ft/lb)
4132-40L	10.0/75 -15.3	3.9 (57)	300 (220)

Every 200 hours of use

or once a year



Safety in connection with maintenance work on the machine

When working on the machine the tractor must be stopped and secured. This prevents the PTO shaft from suddenly starting to rotate. Failure to follow the safety instructions may result in serious injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The tool must be lowered to the ground.
- The tractor engine must be stopped.
- The ignition key must be removed.
- The hand brake must be activated.
- The tractor must be prevented from rolling.



Failure to secure the tractor to prevent it from rolling could endanger lives.

Be careful when using oil

Use barrier cream or protective gloves when handling oil. It will protect your hands against skin injuries. Direct contact with the oil could lead to serious skin injuries

Use the correct oil type

Always use the correct oil type for the transmission. This will ensure the transmission has a long service life. Using the incorrect oil type may damage the transmission.

Maintain correct oil level

The maximum and minimum oil level indicators on the transmission must not be exceeded. Correct transmission oil level will ensure a long service life. Incorrect oil levels can cause the transmission to overheat, resulting in serious damage.



Correct support of the machine is necessary to prevent injury

The machine must be properly supported when work is being carried out underneath it. If the machine is not correctly supported, there is a high risk that it may overturn, causing injury. If the machine is not sufficiently supported, this can result in serious or even fatal injuries.

Cutterbar

→ »Maintenance intervals« Page 72

The oil in the cutterbar is changed as follows:

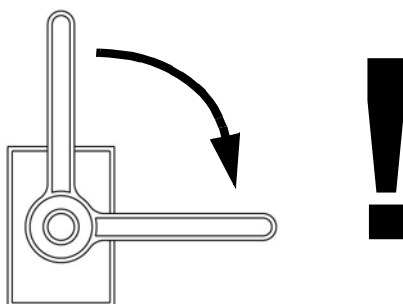
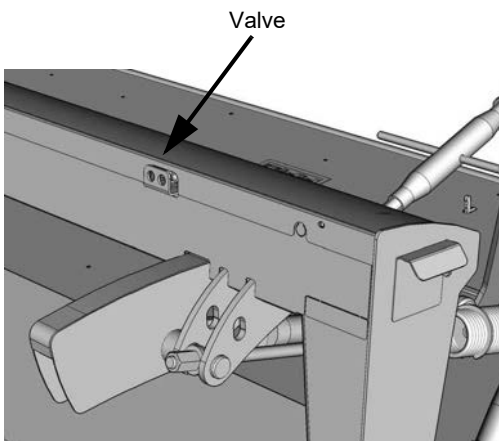
- ▶ Place a wooden block or similar under the right-hand wheel of the machine so that the machine tilts slightly to the left.



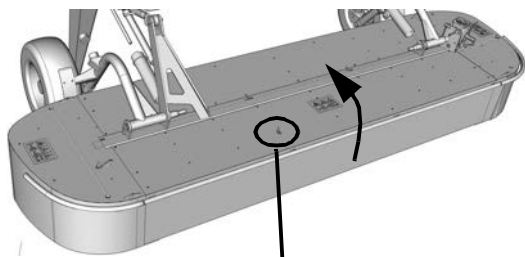
- ▶ Activate the tractor hydraulics and raise the machine's cutterbar fully.



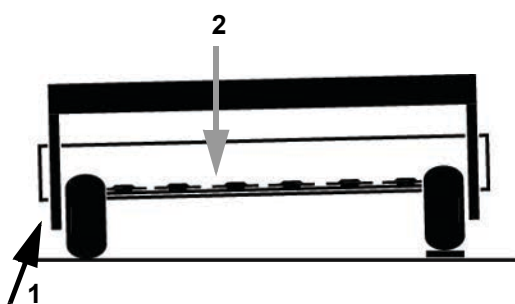
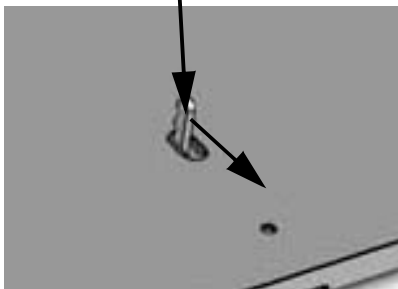
- ▶ Close the mechanical safety valve.



Maintenance



- ▶ Pull out and release the lock for the guard.
- ▶ Open the machine's front guard.



- ▶ Locate oilplugs 1 and 2 on the cutterbar and clean the area.
- ▶ Remove oilplugs 1 and 2.
- ▶ Let the oil flow into a suitable container.
- ▶ Allow the last of the oil to drip out of the cutterbar for approx. 10 - 15 minutes.
- ▶ Fit oilplug [1].
- ▶ Fill with new oil.



- ▶ Always add the correct amount of oil.

Model	Litre
532	3.2
540	4.0

→ »Lubricants« Page 125

→ »Maintenance intervals« Page 72

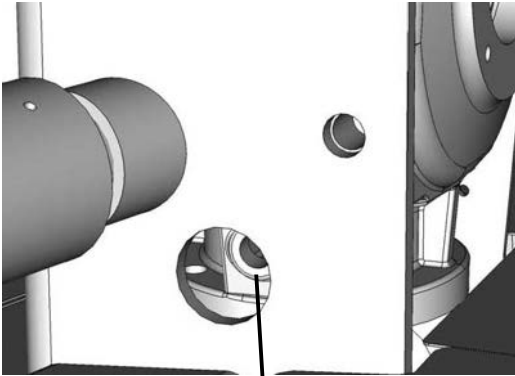
- ▶ Fit oilplug [2].
- ▶ Close the first guard.

Main gear

→ »Maintenance intervals« Page 72

The oil is changed as follows:

→



Oilplug

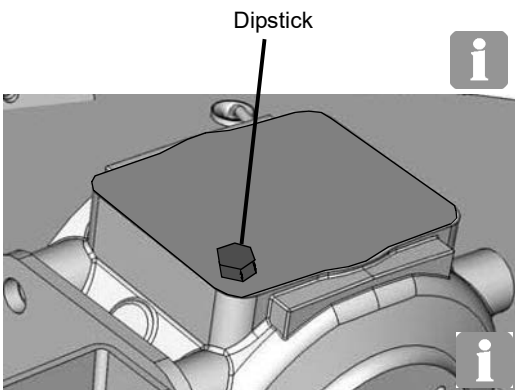
The oil is changed as follows:

- ▶ Remove the oilplug.
- ▶ Let the oil flow into a suitable container.
- ▶ Allow the last of the oil to drip out of the transmission for approx. 10 - 15 minutes.
- ▶ Fit the oilplug.

- ▶ Remove the dipstick.

- ▶ Pour the oil through the hole where the dipstick is fitted.

Always add the correct amount of oil:



Dipstick



Litre (approx.)
1.0

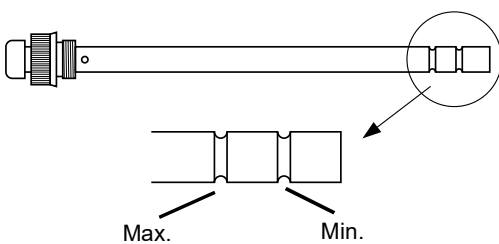
- ▶ Check that the oil level is up to the “max” indication on the dipstick.
- ▶ Repeat the procedure until the correct oil level is reached.

The oil level on the main gear must always be between “min.” and “max.” as shown on the dipstick.

- ▶ Fit the dipstick and fasten it.

→ »Lubricants« Page 125

→ »Maintenance intervals« Page 72



Max.

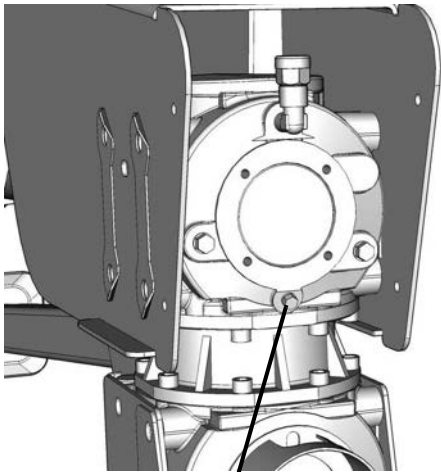
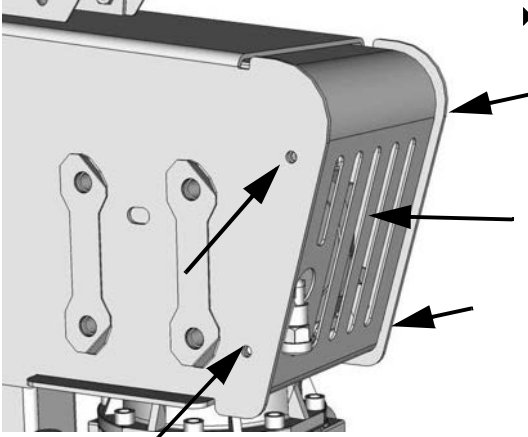
Min.

Swivel hitch

The upper part of the swivel hitch

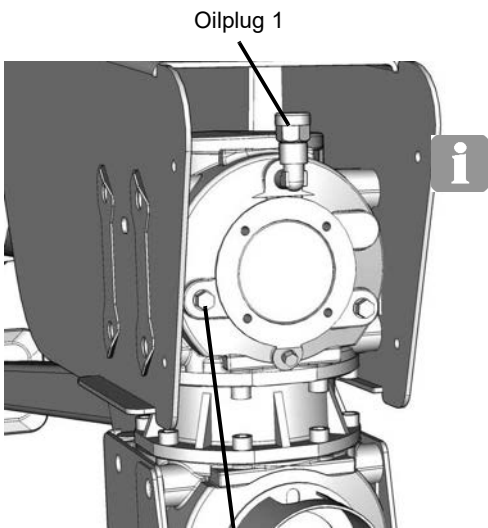
→ »Maintenance intervals« Page 72
The oil is changed as follows:

- ▶ Remove the guard.



Oilplug 3

- ▶ Remove oilplug 3.
- ▶ Let the oil flow into a suitable container.
- ▶ Allow the last of the oil to drip out of the transmission for approx. 10 - 15 minutes.
- ▶ Fit oilplug 3 and tighten it.



Oilplug 1

Oilplug 2

- ▶ Remove oilplug 1 and 2.
- ▶ Fill the new oil through the hole for oilplug 1.

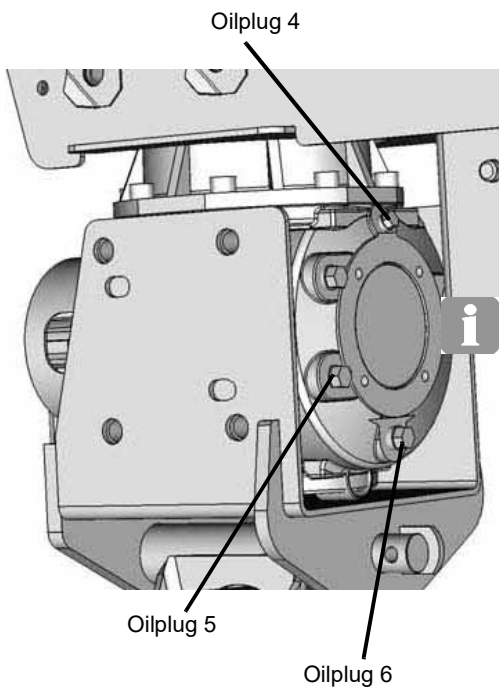


Always add the correct amount of oil

Litre (approx.)
0.65

- The correct oil level is reached when the oil reaches the edge of the hole for oilplug 2.
 - ▶ Fit oilplugs 1 and 2 and tighten them.
- »Lubricants« Page 125
- ▶ Fit the guard.

The lower part of the swivel hitch



→ »Maintenance intervals« Page 72

Oil amount when changing oil:

The oil is changed as follows:

- ▶ Use a suitable tool to remove oilplug 6.
- ▶ Let the oil flow into a suitable container.
- ▶ Allow the last of the oil to drip out of the transmission for approx. 10 - 15 minutes.
- ▶ Fit oilplug 6 and tighten it.
- ▶ Remove oilplugs 4 and 5.
- ▶ Fill the new oil through the hole for oilplug 4.

Always add the correct amount of oil.

Litre (approx.)
1.8

- ▶ The correct oil level is reached when the oil reaches the edge of the hole for oilplug 5.
- ▶ Fit oilplugs 4 and 5 and tighten them.

→ »Lubricants« Page 125

Maintenance

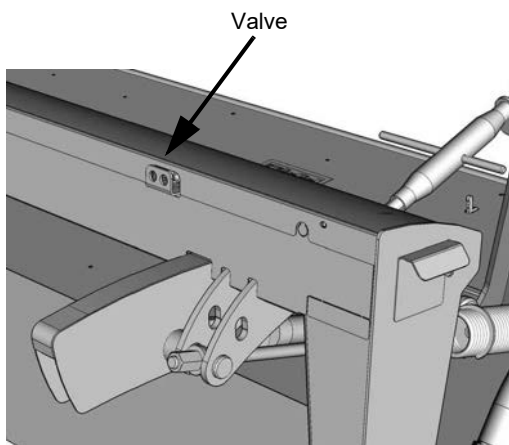
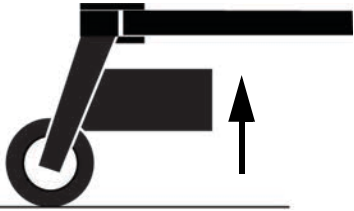
Cone

Internal inspection

→ »Maintenance intervals« Page 72

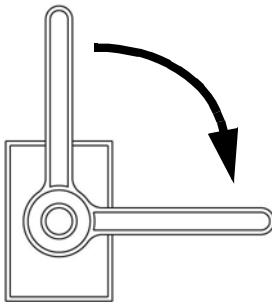
An internal check of the cones is carried out in the following way:

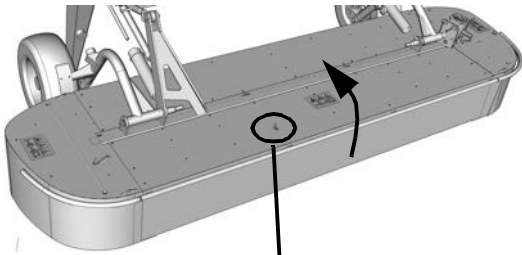
- ▶ Activate the tractor hydraulics and raise the machine's cutterbar fully.



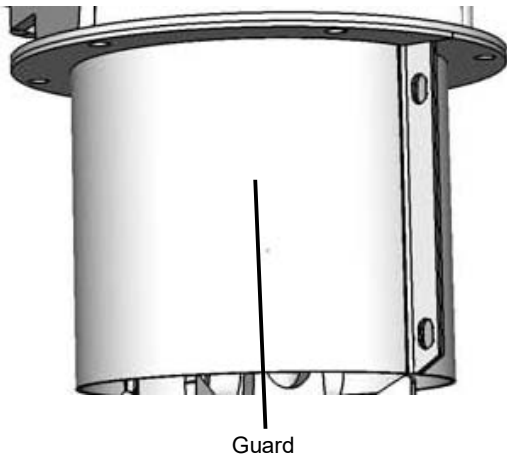
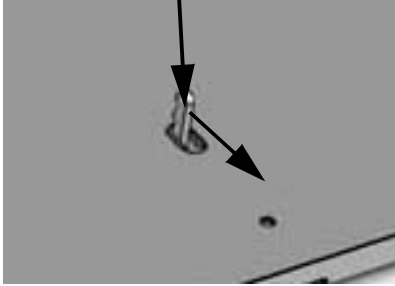
- ▶ Close the mechanical safety valve.

An internal inspection of the cones is carried out in the following way:

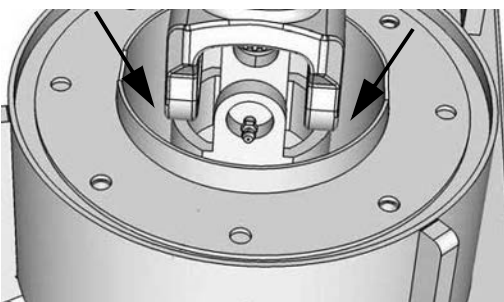




- ▶ Pull out and release the lock for the guard.
- ▶ Open the machine's front guard.

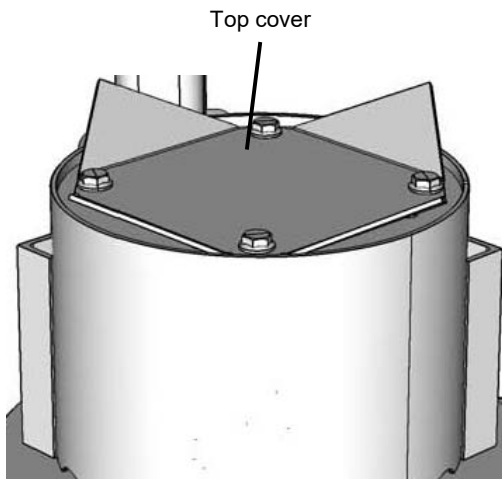


- ▶ Remove the guard around the cutterbar's transmission.



- ▶ Carry out an inspection of the cone for dirt.
- ▶ Clean the cone, if necessary.
- ▶ Fit the guard around the cutterbar's transmission.

Maintenance



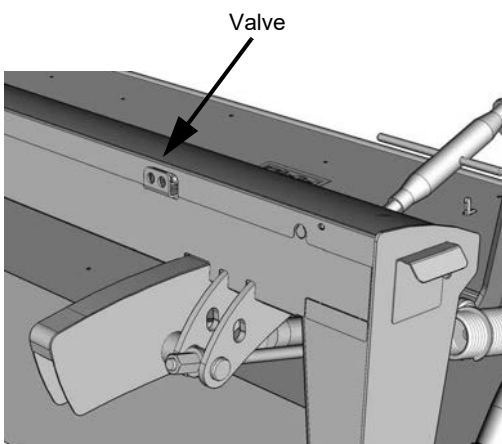
- ▶ Remove the top cover on the cones on the opposite side of the cutterbar.
- ▶ Clean the inside of the cone.
- ▶ Fit the cone's top cover.
- ▶ Close the machine's front guard.

Drive shaft

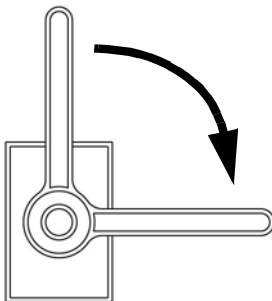
→ »Maintenance intervals« Page 72

The drive shaft between the transmission and the cutterbar is checked as follows:

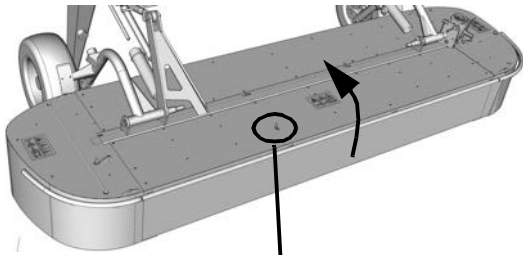
- ▶ Activate the tractor hydraulics and raise the machine's cutterbar fully.



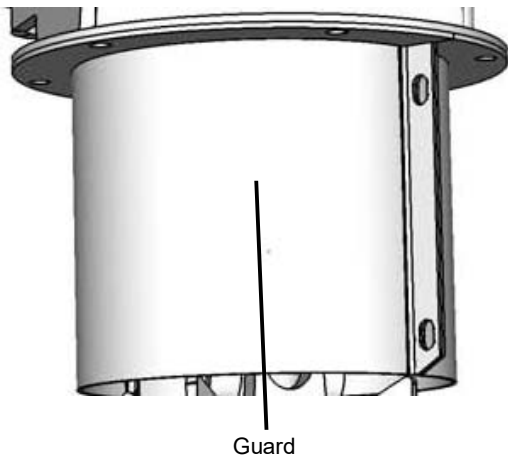
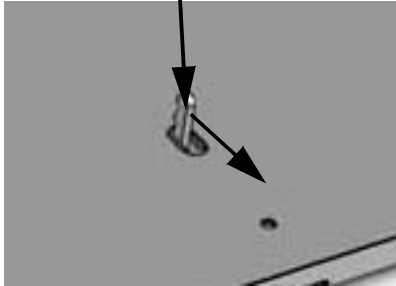
- ▶ Close the mechanical safety valve.



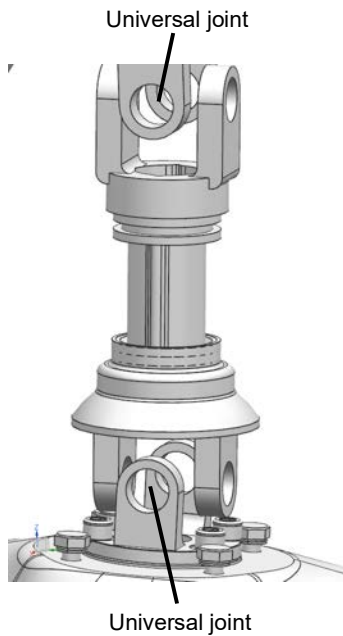
Maintenance



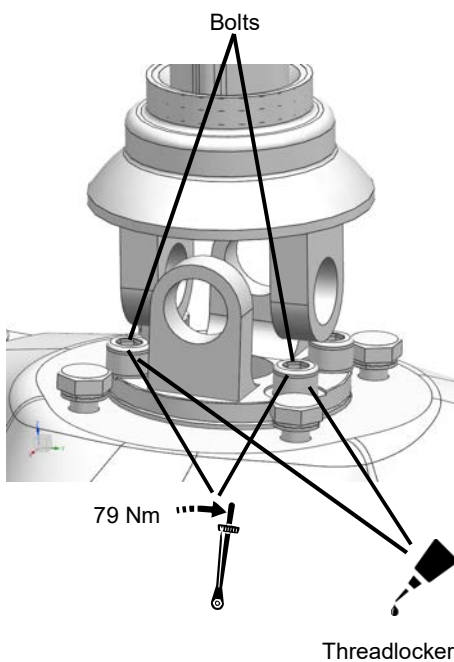
- ▶ Pull out and release the lock for the guard.
- ▶ Open the machine's front guard.



- ▶ Remove the guard around the PTO shaft between the transmission and the cutterbar.



- ▶ Inspect both universal joints for wear.



- ▶ Check for broken or loose bolts.
- ▶ Replace the broken bolts.
- ▶ Apply a known brand of threadlocker to the bolts.
 - ▶ Follow the instructions for application of the threadlocker.



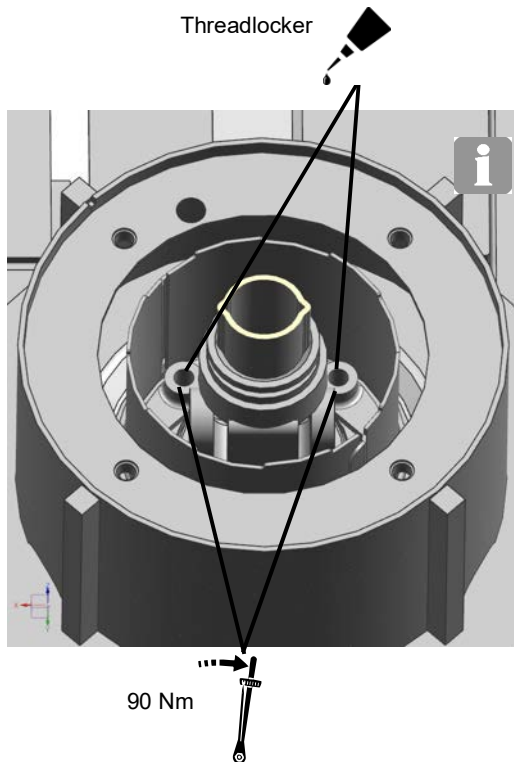
- The threadlocker must be a high strength (high viscosity) product.
- ▶ Fit the bolts and tighten them to the torque shown.

If there are loose bolts the following procedure should be followed:

- ▶ Remove and clean the bolts.
- ▶ Apply a known brand of threadlocker to the bolts.
 - ▶ Follow the instructions for application of the threadlocker.



- The threadlocker must be a high strength (high viscosity) product.
- ▶ Fit the bolts and tighten them to the torque shown.

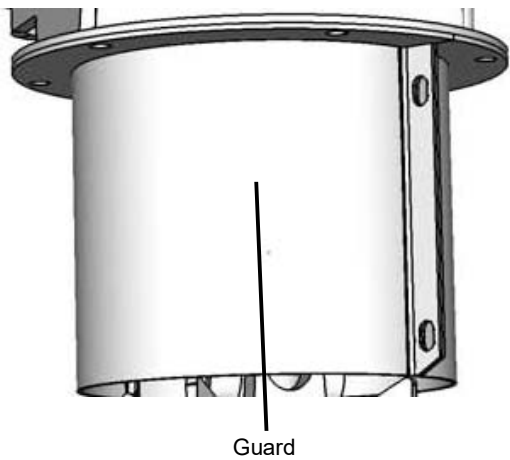


If the cone has been removed:

- ▶ Clean all bolts for the cone.
- ▶ Apply a known brand of threadlocker to the bolts.
 - ▶ Follow the instructions for application of the threadlocker.

The threadlocker must be a high strength (high viscosity) product.

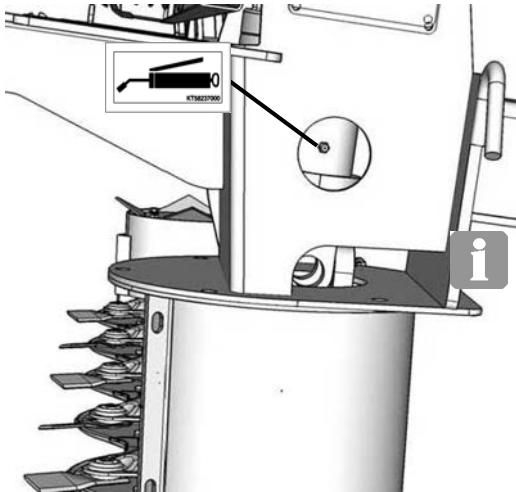
- ▶ Tighten the cone to the given tightening torque.



- ▶ Fit the guard around the PTO shaft between the transmission and the cutterbar.

Lubrication

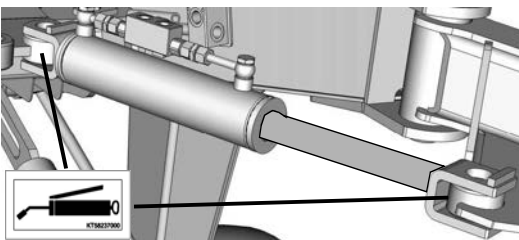
Drive shaft



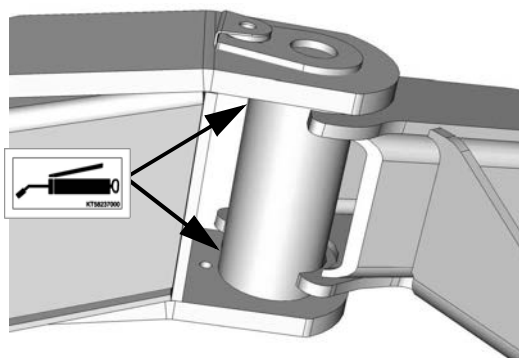
- ▶ Turn the cutting disc until both grease nipples are visible
 - ▶ Press the nozzle of the grease gun over the grease nipples.
 - ▶ Pump the grease gun once or twice (max.).
- »Maintenance intervals« Page 72
→ »Lubricants« Page 125

i Be careful of knives and sharp edges.

Moving joints

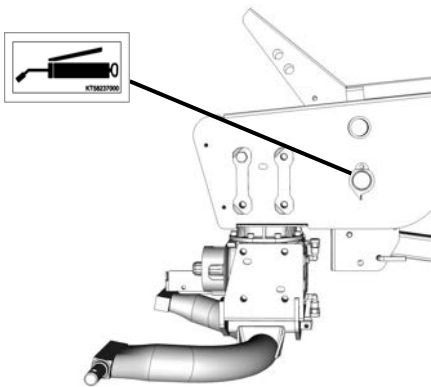


- ▶ Press the nozzle of the grease gun over the grease nipples.
 - ▶ Pump the grease gun once or twice (max.).
- »Maintenance intervals« Page 72
→ »Lubricants« Page 125

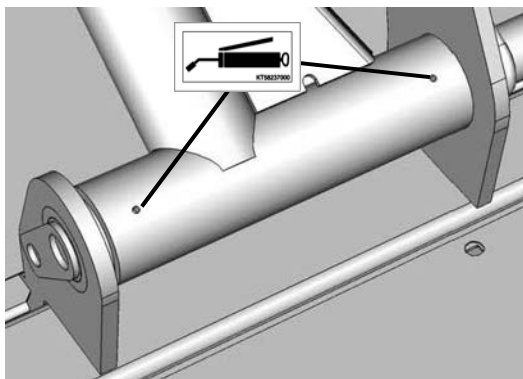


- ▶ Press the nozzle of the grease gun over the grease nipple.
 - ▶ Pump the grease gun once or twice (max.).
- »Maintenance intervals« Page 72
→ »Lubricants« Page 125

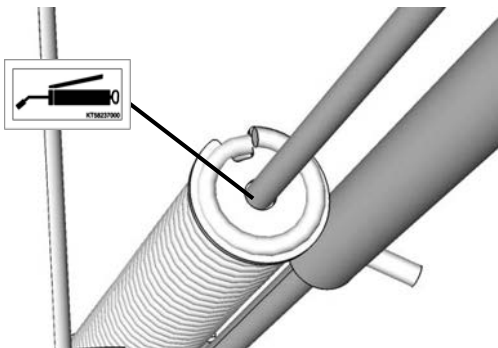
Maintenance



- ▶ Open the cover.
 - ▶ Press the nozzle of the grease gun over the grease nipple.
 - ▶ Pump the grease gun once or twice (max.).
- »Maintenance intervals« Page 72
→ »Lubricants« Page 125
- ▶ Close the cover.



- ▶ Press the nozzle of the grease gun over the grease nipple.
 - ▶ Pump the grease gun once or twice (max.).
- »Maintenance intervals« Page 72
→ »Lubricants« Page 125



- ▶ Lubricate the spindle with oil.
- »Maintenance intervals« Page 72
→ »Lubricants« Page 125

As required

**Safety in connection with maintenance work on the machine**

When working on the machine the tractor must be stopped and secured. This prevents the PTO shaft from suddenly starting to rotate. Failure to follow the safety instructions may result in serious injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The tool must be lowered to the ground.
- The tractor engine must be stopped.
- The ignition key must be removed.
- The hand brake must be activated.
- The tractor must be prevented from rolling.



Failure to secure the tractor to prevent it from rolling could endanger lives.

Always use original spare parts on the machine

Always use original spare parts. Original spare parts should be used for safety reasons. The manufacturer takes on no warranty responsibility in cases where non-original spare parts are used.

Make sure that all protective guards are in place

Check that all protective guards are in place. This ensures that the machine will offer maximum protection to the operator. If the safety guards are removed or not used it may result in serious injuries and accidents.

Knives



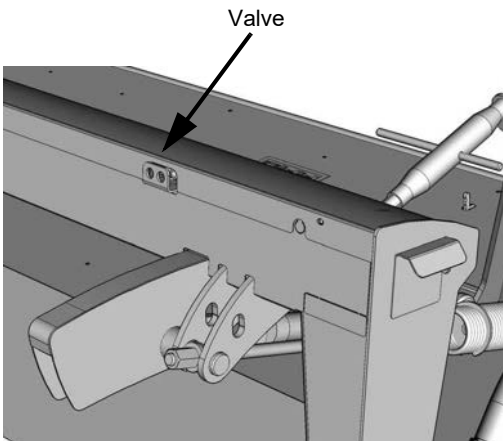
Check the machine knives on a regular basis

The machine's knives must be regularly inspected. Worn or damaged knives can unbalance the rotating parts. Vibrations can cause damage to the machine.

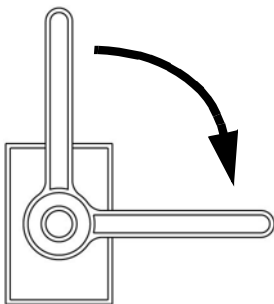
→ »Maintenance intervals« Page 72

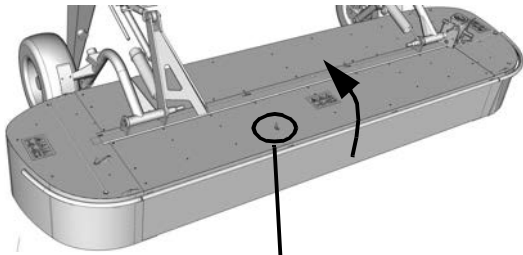
The knives are replaced as follows:

- ▶ Activate the tractor hydraulics and raise the machine's cutterbar fully.

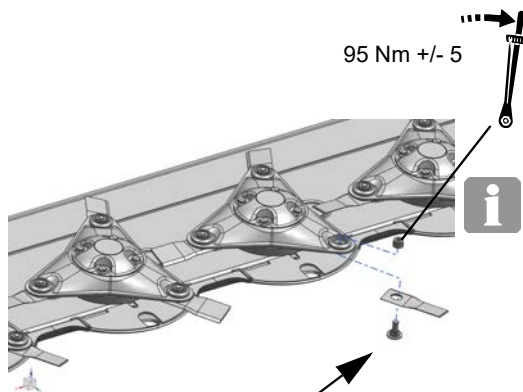
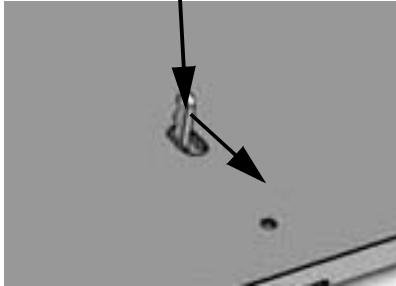


- ▶ Close the mechanical safety valve.





- ▶ Pull out and release the lock for the guard.
- ▶ Open the machine's front guard.



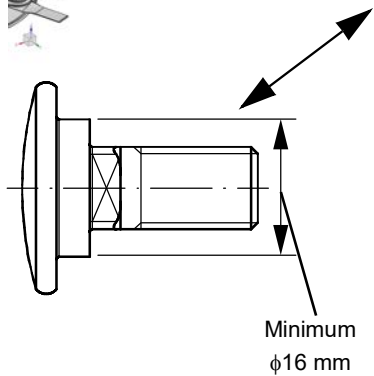
95 Nm +/- 5

- ▶ Turn the cutting discs by hand until the damaged knife is in the position shown.
- ▶ Remove the bolt.

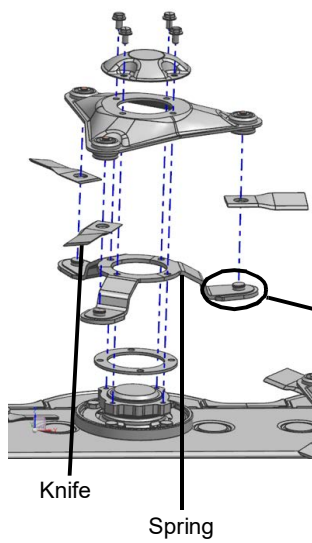


The minimum diameter of the bolt must not be less than $\phi 16$ mm.

- ▶ Replace the knife and fit the bolt.
- ▶ Use a torque wrench to tighten the bolt to the torque shown.

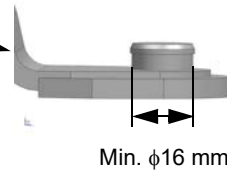


Minimum
 $\phi 16$ mm



i If the machine is fitted with knife quick release*, the same requirement applies for bolt wear.
→ »Knives« Page 78

* Extra equipment
→ »EXPRESS« Page 117.



- ▶ Close the first guard.
- ▶ Open the mechanical safety valve.

Cutting disc

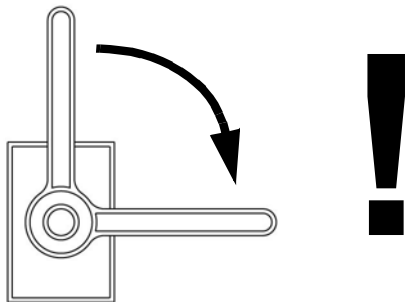
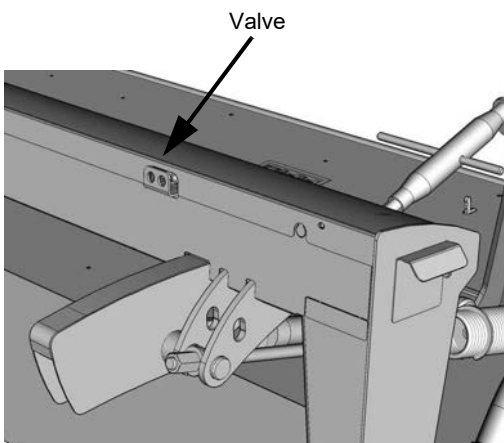
→ »Maintenance intervals« Page 72

The cutting discs are replaced as follows:

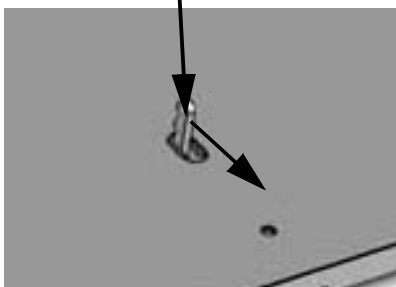
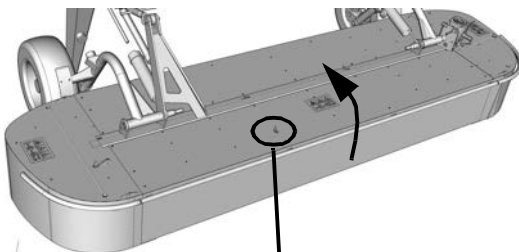
- ▶ Activate the tractor hydraulics and raise the machine's cutterbar fully.



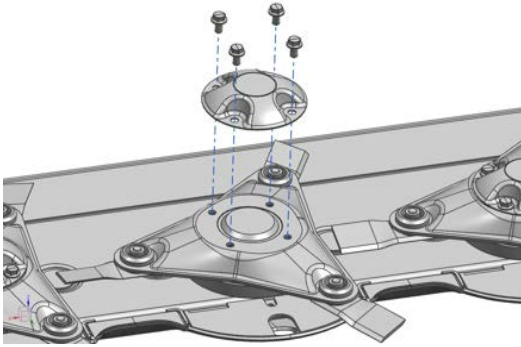
- ▶ Close the mechanical safety valve.



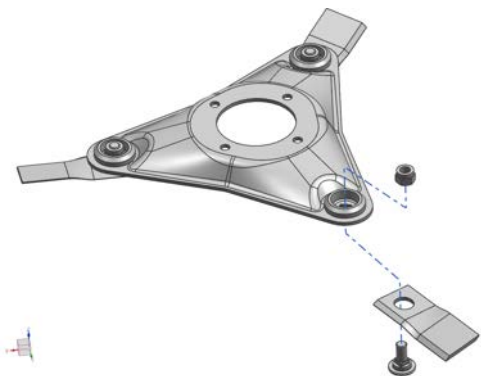
- ▶ Pull out and release the lock for the guard.
- ▶ Open the machine's front guard.



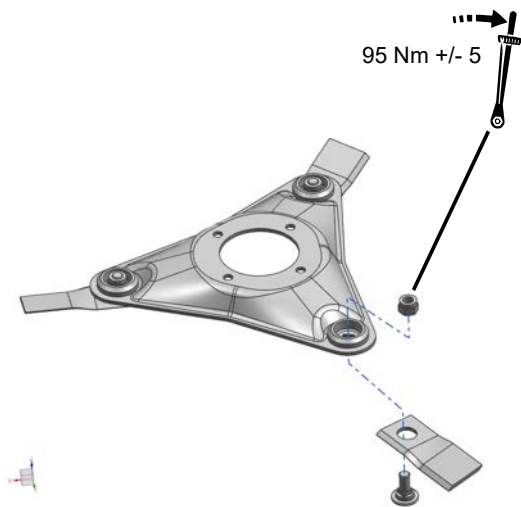
- ▶ Remove the cutting disc.

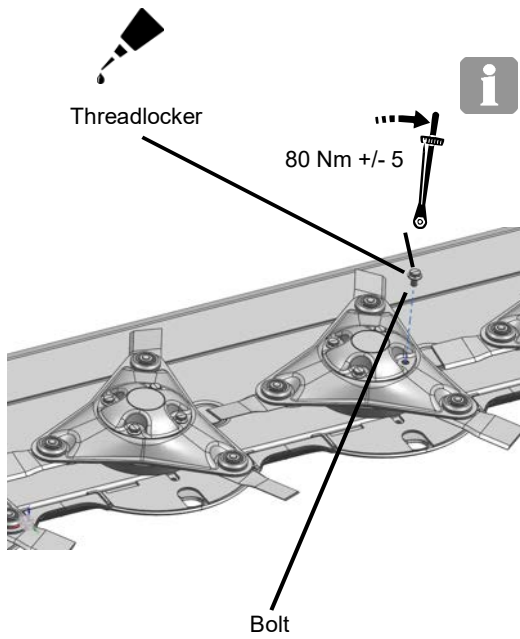


- ▶ Remove the bolt and knife from the cutting disc.



- ▶ Fit the knife and bolt on the new cutting disc.
- ▶ Use a torque wrench to tighten the nut to the torque shown.





- ▶ Apply a known brand of threadlocker to all bolts.
 - ▶ Follow the instructions for application of the threadlocker.
- ▶ The threadlocker must be a high strength (high viscosity) product.
- ▶ Fit the cutting disc on the cutterbar.
- ▶ Tighten the bolts to the given torque.
- ▶ Close the first guard.
- ▶ Open the mechanical safety valve.
- ▶ Activate the tractor hydraulics and lower the cutting unit of the machine.

Stone guard and counter knife



Correct support of the machine is necessary to prevent injury

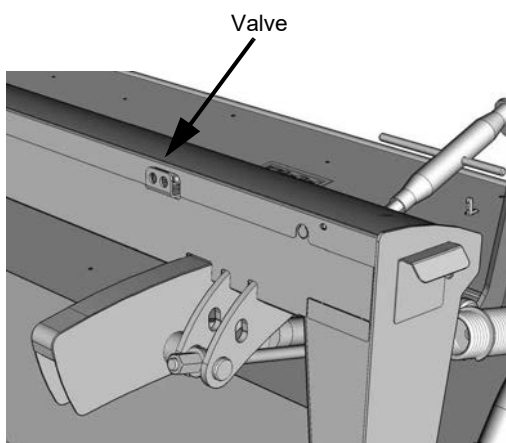
The machine must be properly supported when work is being carried out underneath it. If the machine is not correctly supported, there is a high risk that it may overturn, causing injury. If the machine is not sufficiently supported, this can result in serious or even fatal injuries.

→ »Maintenance intervals« Page 72

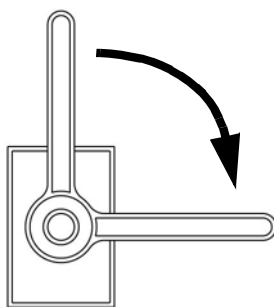
The stone guard and counter knife are changed as follows:

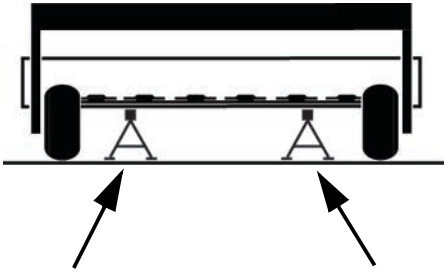


- ▶ Activate the tractor's hydraulics and raise the machine fully.

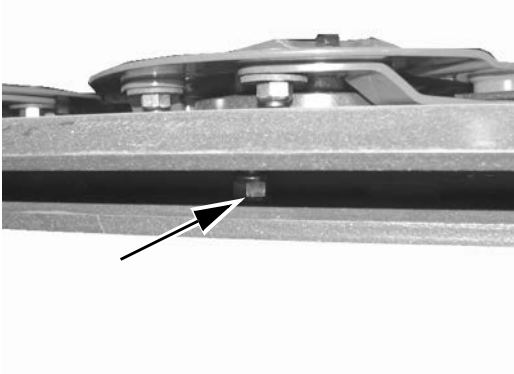


- ▶ Close the mechanical safety valve.

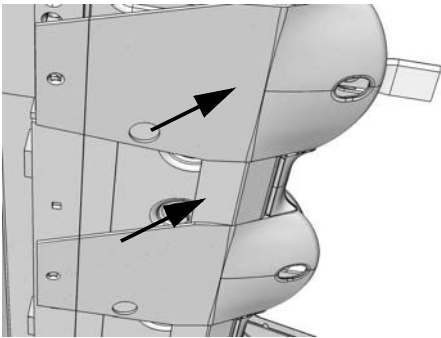




- ▶ Place a suitable support under the machine's cutting unit.
- It is important that the machine is correctly secured with a sturdy support before work is started.



- ▶ Remove the worn stone guard and counter knife.



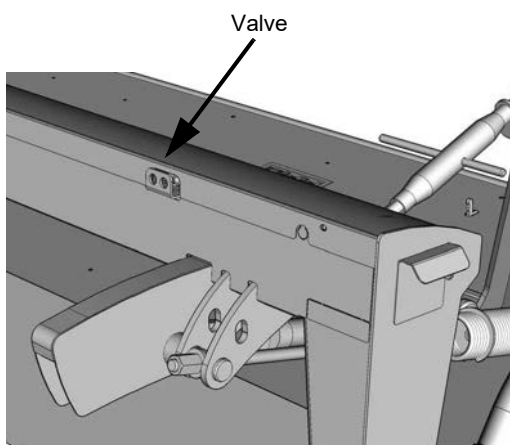
- ▶ Fit the new stone guard and counter knife.
- Stone guards and counter knives with visible holes caused by heavy wear must be replaced immediately.
- ▶ Remove the support.
 - ▶ Open the mechanical safety valve.
 - ▶ Activate the tractor hydraulics and lower the cutting unit of the machine.

Drive shaft

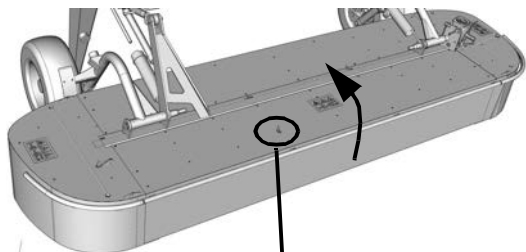
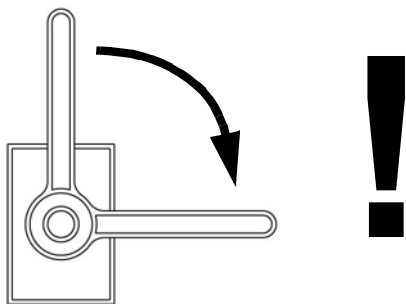
→ »Maintenance intervals« Page 72

The drive shaft is replaced as follows:

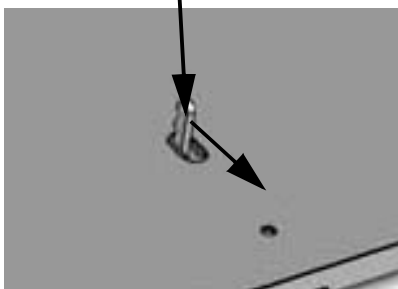
- ▶ Activate the tractor hydraulics and raise the machine's cutterbar fully.

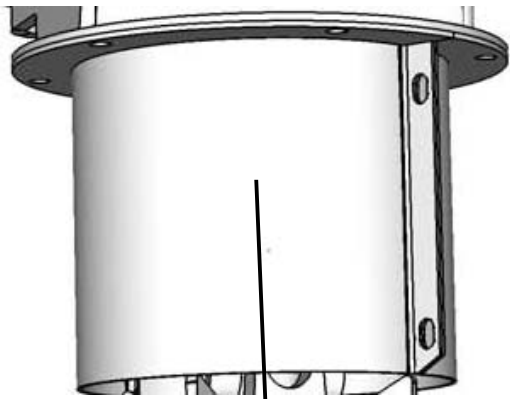


- ▶ Close the mechanical safety valve.



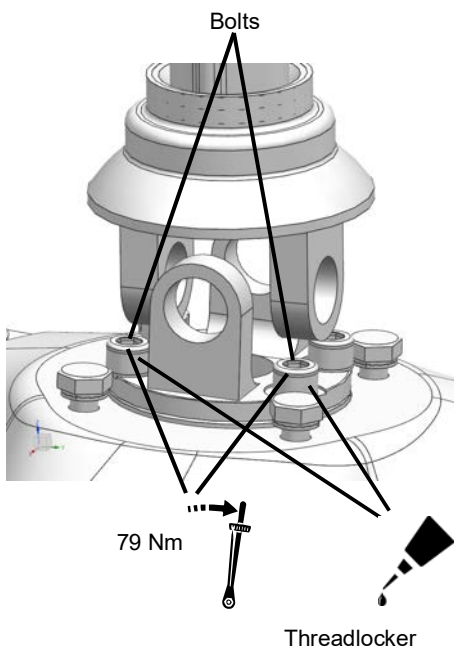
- ▶ Pull out and release the lock for the guard.
- ▶ Open the machine's front guard.





Guard

- ▶ Remove the guard around the PTO shaft between the transmission and the cutterbar.



Bolts

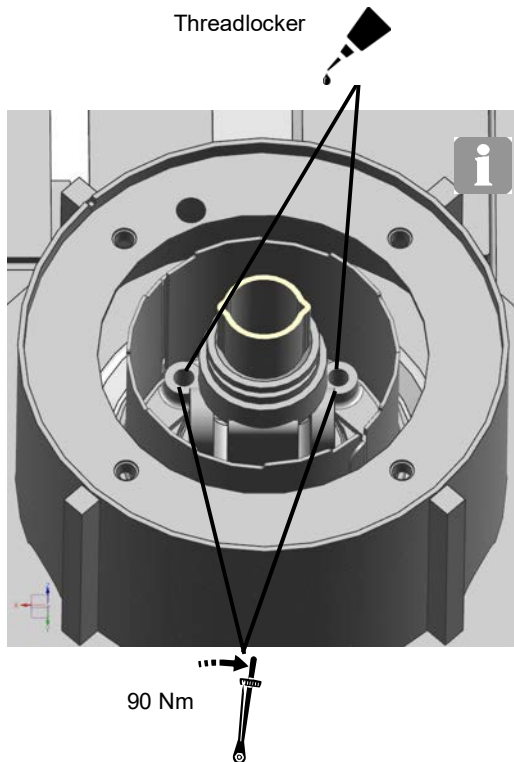
79 Nm

Threadlocker

- ▶ Remove the bolts and replace the drive shaft.
- ▶ Clean the bolts.
- ▶ Apply a known brand of threadlocker.
 - ▶ Follow the instructions for application of the threadlocker.
- ▶ Fit the bolts and tighten them to the torque shown.



The threadlocker must be a high strength (high viscosity) product.

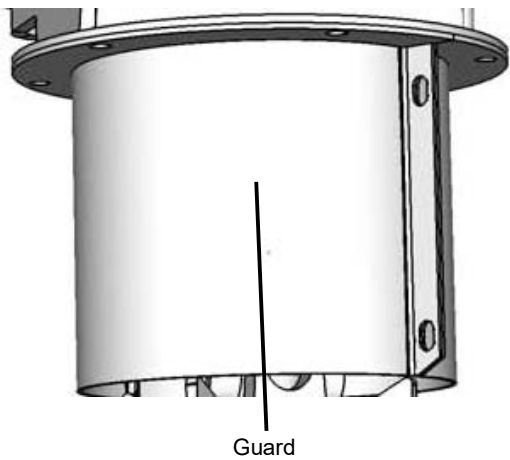


If the cone has been removed:

- ▶ Clean all bolts for the cone.
- ▶ Apply a known brand of threadlocker.
 - ▶ Follow the instructions for application of the threadlocker.

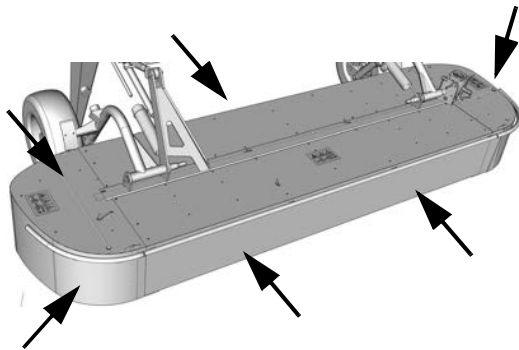
The threadlocker must be a high strength (high viscosity) product.

- ▶ Tighten the cone to the given tightening torque.



- ▶ Fit the guard around the PTO shaft between the transmission and the cutterbar.

Tarpaulin



Any damaged tarpaulins and other guards are replaced as follows:

- ▶ Remove the machine's guard.
- ▶ Replace the damaged parts.
- ▶ Fit the machine's guard.
- ▶ Check that the machine's guards are fitted correctly.

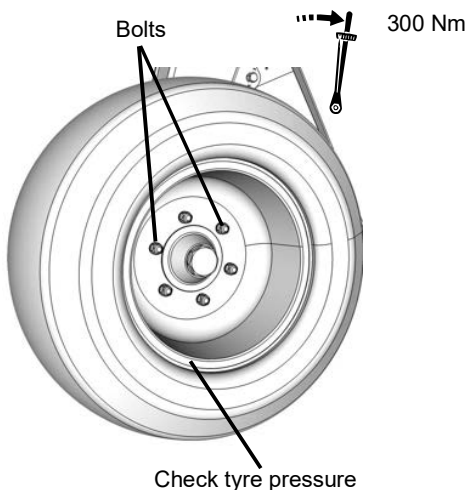
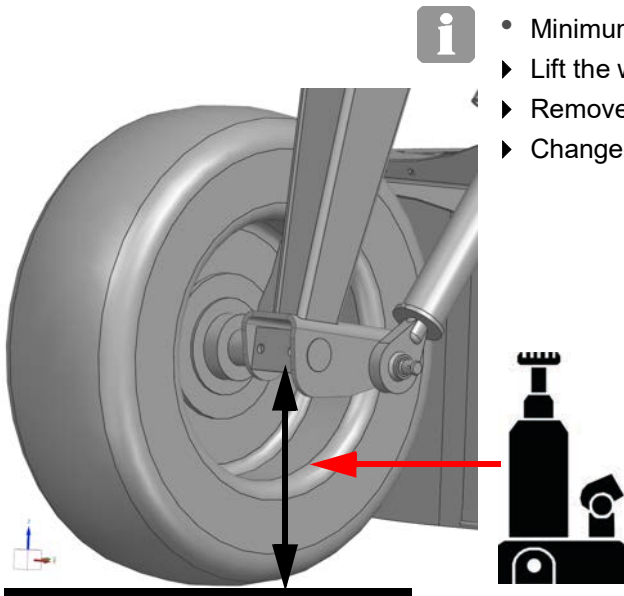
Wheel

→ »Maintenance intervals« Page 72

If tyres are worn or punctured, then the machine's wheel will need to be changed.

The wheel is changed as follows:

- ▶ Place a jack on the machine's wheel as shown.
- Minimum jack lifting capacity: 2000 kg.
- ▶ Lift the wheel clear of the ground.
- ▶ Remove all the bolts from the wheel.
- ▶ Change the wheel.



- ▶ Fit all bolts to the wheel and tighten to the given torque.
- ▶ Check the tyre pressure and, if necessary, inflate to the correct pressure.

→ »Specifications« Page 34

PTO shaft



Refer to the manufacturer's user manual delivered with the PTO shaft.

→ »User manual for the PTO shaft« Page 37

→ »Lubricants« Page 125



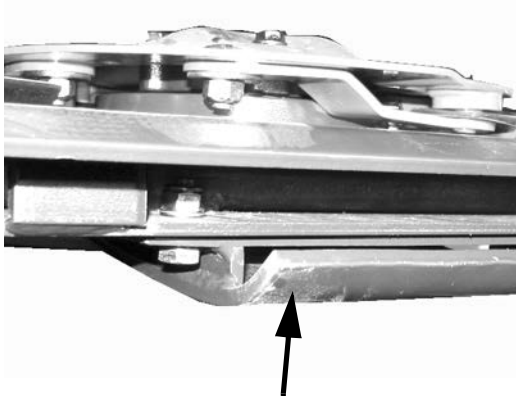
Friction clutch

Refer to the user manual supplied for information on replacing friction discs on the PTO shaft.

▶ »User manual for the PTO shaft« Page 37

Skids

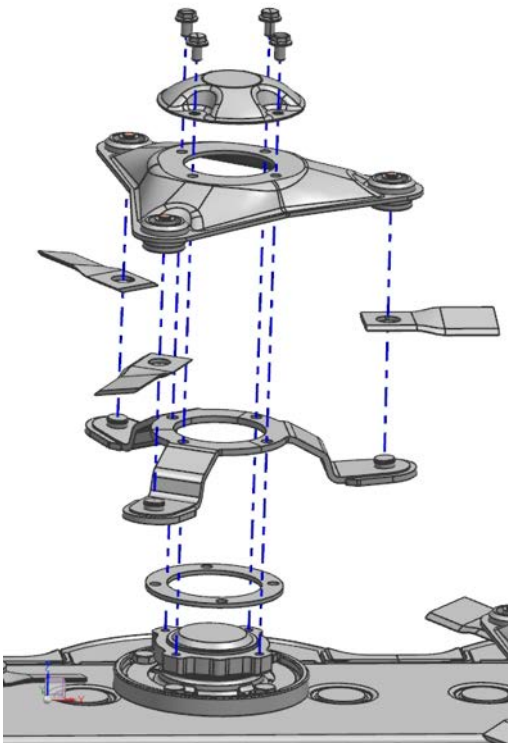
The machine can be fitted with high skids if a higher stubble height is required. High skids are recommended for uneven fields with lots of stones or molehills.



Stubble height	Note
20-45 mm	No skids fitted
35-65 mm	20 mm skids fitted
45-80 mm	40 mm skids fitted
65-105 mm	60 mm skids fitted
85-130 mm	80 mm skids fitted

EXPRESS

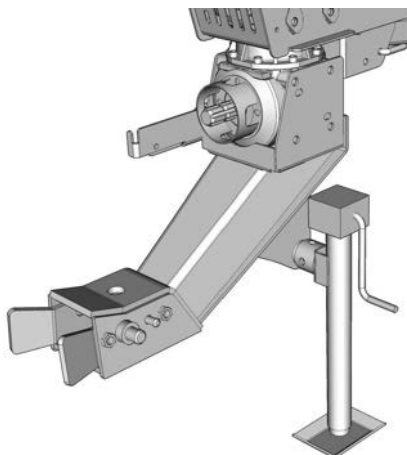
The machine can be fitted with knife quick release [EXPRESS], so the knives can easily be changed or turned in just a few seconds with the help of a simple tool.



Extra equipment

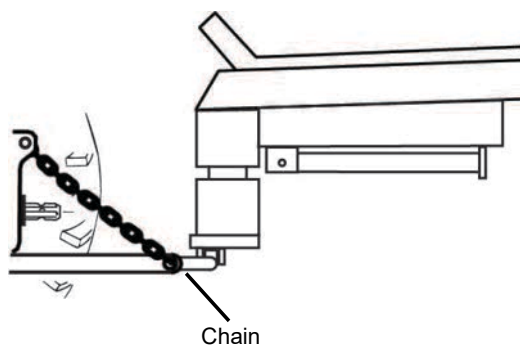
Connecting

A specially designed coupling for the tractor's drawbar tongue and a jack are available as extra equipment.



Chain

A chain is available as extra equipment to prevent the tractor's lift arms from lowering. The chain is fitted between the highest point on the tractor and one of the lift arms.



→ »Attachment of the tractor« Page 46

→ »Weight« Page 33

Electric and hydraulic system

Fault	Possible cause	Remedy	Page
Hydraulic system	The machine's hydraulic functions do not work	Check that the hydraulic hoses are correctly connected to the tractor's hydraulic outlet	50
		Make sure that the tractor hydraulics are engaged.	
	The machine's hydraulic functions seem sluggish	Insufficient amount of oil from the tractor.	

Cutterbar

Fault	Possible cause	Remedy	Page
The machine leaves wear tracks in the field	There is too much downward pressure from the cutterbar	Adjust the suspension	58
Uneven stubble	Driving too slowly	Increase speed	34
	The tractor RPM on the PTO is too low	Check RPM	
	The knives are blunt or individual knives are missing	Turn or replace the knives	104
	The balancing springs are too taut	Adjust the suspension	58
Stripes in the stubble ¹	The cutterbar does not have the correct angle for the crop in question	Adjust the angle of the cutterbar	57
	The cutterbar is fitted with high skids ²	Remove the high skids ² Note! The field must be free of stones	117
	Build up of crop on the cutting discs	Increase the cutting speed/forward speed	34
The cutterbar gets abnormally warm	Too much oil in the cutterbar	ensure the cutterbar contains the correct amount of oil	89
	Wrong oil type	Change to the correct oil type	125

PTO shaft

Fault	Possible cause	Remedy	Page
The friction clutch on the PTO shaft becomes abnormally warm	The RPM on the PTO shaft is too low	Check RPM	34
Insufficient transferral of power/ torque to the machine	The friction discs in the coupling are worn	Replace the friction discs in the clutch	37
The friction clutch on the PTO shaft becomes abnormally warm	The RPM on the PTO shaft is too low	Check RPM	34

- ¹ Problems with stripes are more likely to occur when mowing short, strong, spring crops in less than ideal weather conditions. Always begin by checking that the knives on the cutting discs are sharp.
- ² Extra equipment - Page 117.

Guidelines for warranty

The warranty period for our product is 12 months from the date of purchase. The warranty does not include the parts subject to wear.

Warranty claims can be made with Kverneland warranty application which must be filled out by your local Kverneland dealer where your machine/equipment was purchased.

No liability is accepted for any damage arising

We are not liable for compensation for any damage not arising from the actual machine/equipment. This also includes damage arising from incorrect usage of the machine/equipment.

Therefore, read this instruction manual before starting to use the machine/equipment into use. Furthermore, always check that the machine/equipment works correctly before and during use.

Disposal

When the machine reaches the end of its service life, it must be disposed of in the correct way. Observe the following:

Metal parts

Send usable parts to an authorised recycling plant. Larger scrap parts must be taken to an authorised breaker's yard where they can be processed in accordance with current regulations.

Rubber parts

Send usable parts to an authorised recycling plant where they can be processed in accordance with current regulations.

Plastic

Send usable parts to an authorised recycling plant where they can be processed in accordance with current regulations.

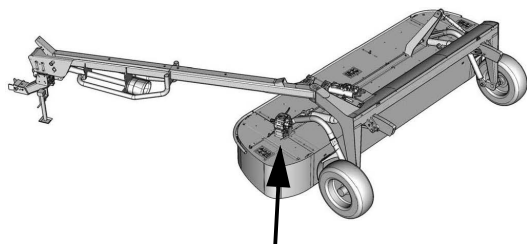
Hydraulic oil

All oil must be drained from the machine
The used oil must be sent to a breaker's yard where it can be processed in accordance with current regulations.

Electronic parts

Send usable parts to an authorised recycling plant where they can be processed in accordance with current regulations.

Original EU Declaration of Conformity



Type plate and CE marking

Kverneland Group Kerteminde AS
Taarupstrandvej 25
DK - 5300 Kerteminde
Denmark

declare that we alone are responsible for ensuring the product

Vicon Extra
all equipment variants and accessories

Type: 532 - 540

Valid from serial number:
KT499850

complies with the following applicable EU regulations:

- Directive 2006/42/EC

The following harmonised standards have been used:

- EN ISO 4254-1:2015
- EN ISO 4254-12:2012 / A1:2017

Kverneland Group Kerteminde AS
Kerteminde - Denmark
Date: 01.12.2020

Claus Udengaard Thomsen

CEO and authorised representative*

* Person authorised to compile the technical annexes, who is based within the European Union. Address, see above.

Conversion table

Basic unit:	SI - unit	Conversion figures:
Length	1 m	39.4 in = 3.3 ft = 1.1 yrd = 0.00062 miles (US)
Area	1 m ²	1.2 yd ² = 10.8 ft ² = 0.00025 acre = 0.0001 ha
Volume	1 dm ³ (1 l)	61 in ³ = 0.035 ft ³ = 0.22 gallon (Imp) = 0.26 gallon (US)
Speed	1 m/sec	3.6 km/h = 2.24 mph = 3.28 ft/sec
Power	1 N	0.10 kp = 0.22 lbf
Effect	1 kW	1.36 hp = 102 kpm/sec
Mass	1 kg	2.2 lb = 0.0197 cwt = 35 oz
Torque moment	1 Nm	0.102 kpm = 8.8 lb-in = 0.74 ft. lbs.
Pressure	1 bar	0.01 atm. (kp/cm ²) = 0.14 psi
R.P.M.	min ⁻¹ = revolutions / min = rpm	

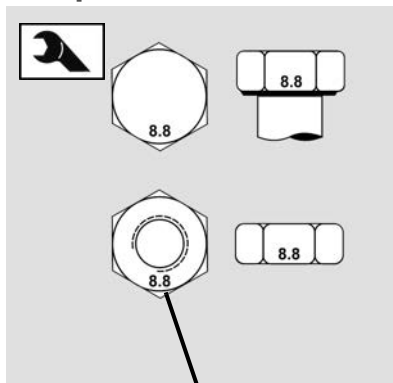
Lubricants

Only check the oil level when there is visible oil loss, while the machine is horizontal.

The transmission oil and grease must meet the following requirements:

Specifications			
Transmission oil		Grease	
SAE J-2360	80W-90	NLGI GC/LB	2
API	GL-4		

Torque moment



Grade class specification



Use the correct torque moment

Screws, nuts and bolts must be tightened to the given torque. Failure to do so can cause damage to the machine or serious or fatal injuries.

Note the grade class for screws, nuts and bolts.

Note the size of the screw, nut or bolt and find the correct torque moment in the table.

Tighten the screws, nuts and bolts to the given values, provided that no other value is given.

Torque moment for bolts of quality 8.8 black and/or galvanised and not greased when tightened on a smooth surface or a plain washer									
Thread dia. mm	5	6	8	10	12	14	16	20	22
Nm	5.5	10	24	47	81	128	197	385	518

The above tables are valid unless otherwise indicated in the instruction manual for this machine.

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