

BC 1200

Operating manual

Translated from the original instruction manual

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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	BC 1200
Operating width	2 m ³
Weight	Standard model: 1310 kg Swivel chute model: 1340 kg
Machine number	
Accessories	
Address of supplier	
Address of manufacturer	Kverneland Group Kerteminde AS Taarpstrandvej 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 mounting. By doing this you have optimal working conditions and you can 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 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 also use 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 on the machine.
- Personal injury or an 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.

- Serious errors in the machine function.
- Damage on the machine.



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. Furthermore, each chapter in the instruction manual includes specific safety instructions that are not described here. The safety instructions must be complied with

- In terms of your own safety.
- In terms of others safety.
- To assure the safety of the machine.

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

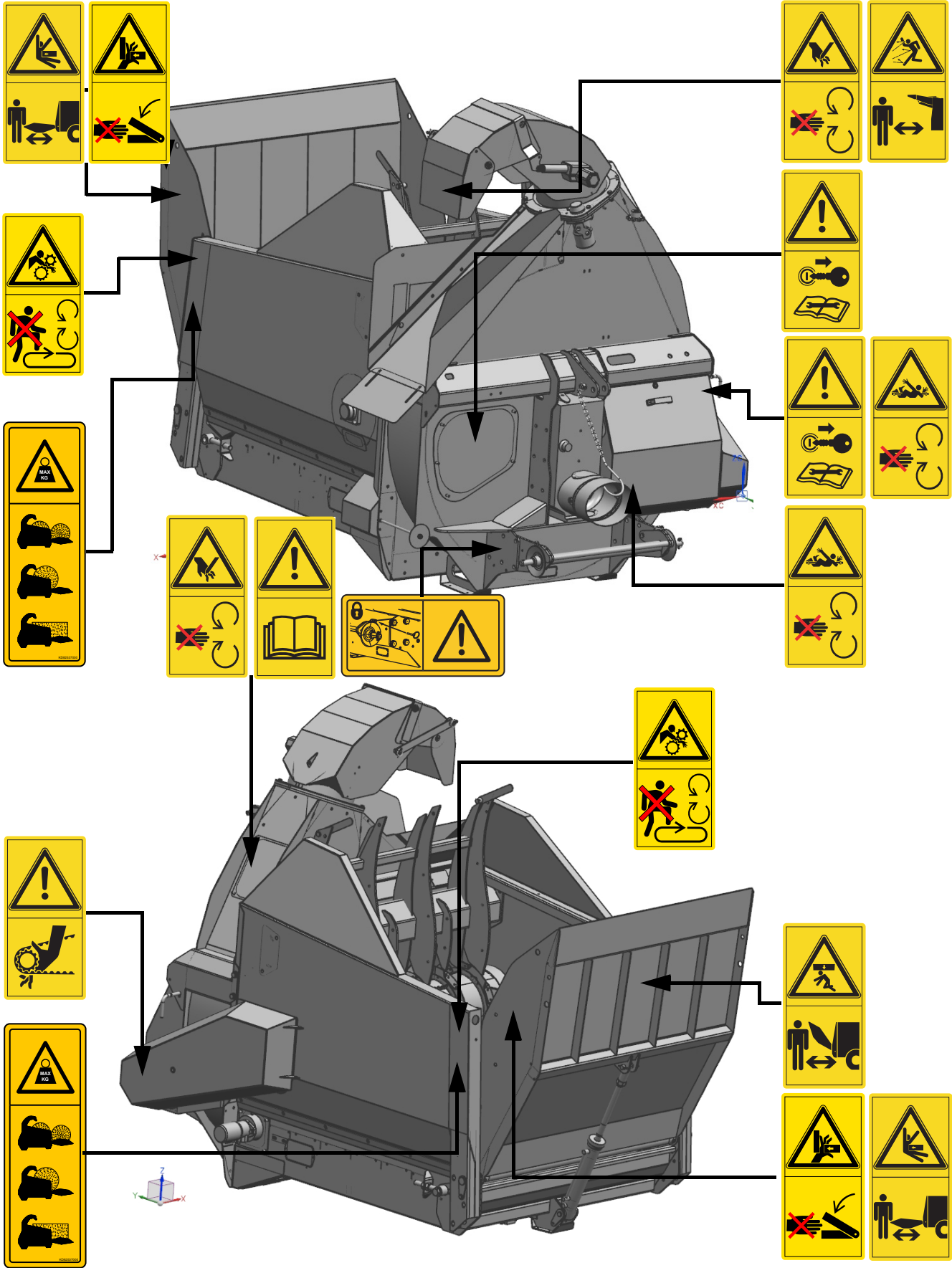
The operator must be informed regularly

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

The safety instructions should be complied with according to local law for agricultural machines.



Swivel chute model





The meaning of the symbols



Read and comply with the instruction manual

Be attentive! Read and understand the instruction manual before the machine is put into service.



Stop the tractor before working on the machine

Be attentive! Always let the tractor come to a stop and remove the ignition key before you repair, rinse, lubricate or carry out any maintenance work on the machine.



Do not remove guards

Be attentive! Hands and arms can get caught in the chain drive! The guard must not be removed or opened before the machine has stopped rotating. The tractor engine must be stopped, the ignition key removed and the handbrake applied.



Ensure no clothing/body parts get caught in the PTO shaft

Guards may not be removed or opened until the machine has stopped rotating. The tractor engine must be stopped, the ignition key removed and the handbrake applied.



Risk of injury to fingers and hands

There is a high risk of injury to fingers and hands. Guards may not be removed or opened until the machine has stopped rotating. The tractor engine must be stopped, the ignition key removed and the handbrake applied.



Risk of trapping fingers or hands

Be careful as there is a risk that hands or fingers may be trapped when the machine is used.



Never step into the machine bale chamber during operation

Never step into the machine bale chamber when the machine is operating.

The moving floor conveyor and rotating shredding drums could cause severe injuries or death.

Never step into the machine bale chamber until the machine has stopped rotating. The tractor engine must be stopped, the ignition key removed and the handbrake applied.



Be aware of discharge material

Discharge material! People must not stand in the discharge path or walk through it at any time.



Be aware of swinging rear door

Be aware of out swinging rear door! When in use, no persons should be behind the machine.



Danger of crushing

Danger of crushing! Always keep a safe distance to the rear door.



Secure the lock

The security lock on the lift arm must be secured with a pin before the machine is used.



Do not exceed the machine load capacity

Be attentive! The machine should not be overloaded. Do not exceed the machine load capacity instructions.



Lights and reflective equipment

Only as accessory

Electrical connections



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

Connection



7-pin connector



Observe the local regulations concerning lights and markings for road transport. Contact your dealer if the lights do not work as stated.



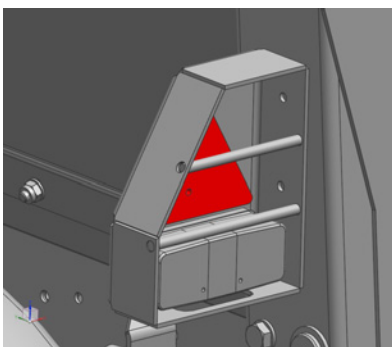
Observe the local laws and regulations concerning lighting equipment when travelling on public roads. Contact your dealer if the lighting equipment does not work as stated.



Reflective equipment for slow-moving vehicles – SMV

This triangular sign must be placed in the centre at the rear of the tractor or machine, so that it is clearly visible at all times when the machine is in the transport position. This sign is compulsory for machines that are being transported at speeds of below 40 km/h (25 mph) on public roads.

The machine should be equipped with a lighting kit.



Transport on public roads



This machine must be transported on public roads **at speeds of less than 40 km/h (25 mph) only.**

»Speed when driving on public roads« Page 54



Who can operate the machine?

Operators of this machine should only be educated farmers and persons who in other ways are qualified to perform agricultural work and who have knowledge on installing the equipment. Untrained or unauthorised members of staff may not use this machine.

Connecting

Correct attachment of the machine

The connection must be carried out properly and according to the instructions.

The machine can be detached from the tractor if the connection is not carried out properly.

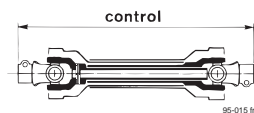
Improper connection can lead to an accident.

Therefore, when connecting the machine to the tractor:

- Make sure the tractor can not move.
- Make sure that the tractor and the machine belong to the same category.
- Never stand between the machine and the tractor when connecting.
- Operate the hydraulic three-point lift slowly and carefully.

Attention to the above instruction points will protect you and others from injury.

Failure to follow the above instructions may result in serious injury.



Checking the PTO shaft

Refer to the manufacturer's maintenance and safety instructions delivered with the PTO shaft.



Only connect the hydraulics when system is depressurised

You should only connect the hydraulic hoses to the hydraulic of the tractor, when the hydraulic system on both tractor and machine is without pressure.

There is a risk that the machine will move unintentionally.

Unintentional movement of the machine may result in serious injury.



The hydraulic system should be checked regularly

All hoses and fittings should be checked regularly for visual damage. Hydraulic hoses also age without visual damage.

Defect hydraulic hoses can result in personal injury or fire.

Colour marking of the hydraulic connections

The hydraulic connections between the tractor and the machine must be colour marked.

By colour marking the hydraulic connections you avoid wrong operation of the machine.

Incorrect operation or unintentional movement of the machine may result in serious injuries.

Load capacity



Comply with the total weight, the shaft pressure, the wheel load capacity and the minimum 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.

Exceeding this can result in uncontrolled driving and accidents.



P.T.O. speed



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 following the instructions, serious accidents causing damage to limbs can occur.



HP/kW



Weight/power ratio between machine and tractor

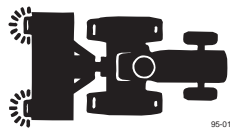
The machine is only to be connected to a tractor with proper size and power.

The tractor's size and PTO outlet must correspond to the power consumption of the machine and its weight.

Wrong weight/power ratio can result in damages on both machine and tractor.



Transport on public roads



Ensure that the machine meets the Road Traffic Act's requirements concerning its condition

When driving on public road the machine must fulfil the demands put forth in the Road Traffic Act.

This assures road safety for you and other drivers.

If the demands are not fulfilled it can result in an accident.

Fulfilling the Road Traffic Act demands includes:

- Mounting of lights, warning and safety equipment.
- Complying with the legal transport width and weight, shaft pressure, tire load capacity and total weight.

Transportation of persons in the machine is prohibited

It is dangerous and illegal to transport persons in the machine.

The machine is not approved for personal transportation.

Transporting persons in the machine could lead to serious injuries or 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.

Especially when driving in curves and turns you should be aware of the machine's width and swing length.

If no attention is paid it will result in uncontrolled driving and serious accidents.



Pay due attention to the tractor's braking ability

The braking ability must not be exceeded for 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 this can result in uncontrolled driving and accidents.



Adjust the speed according to the road conditions

Adjust the road speed according to the conditions.

Bad road conditions and high speeds can lead to an overloading of the tractor and machine parts.

Driving with high speed can result in accidents and damages on both machine and tractor.



Use

Keep distance to the machine

No unauthorised persons should be close to the machine during operation.

This gives you a guarantee to work safely and securely.

Persons close to the machine during operation are at high risk of being crushed, severely injured or killed.

The tractor must be fitted with mirrors

The tractor should be fitted with mirrors which are kept clean and in good condition.

This ensures the tractor driver has a good view to both sides of the machine.

A restricted view to the sides of the machine can lead to persons being crushed, severely injured or killed.



95-002-1 fr

The operator should be instructed carefully before the machine is put into use

Only use the machine when the operator has been given thorough instructions.

Thorough machine instruction results in safe usage.

Insufficient instructions can result in wrong usage of the machine and accidents.



Check that the machine is free of technical errors

Only use the machine if it is free of technical errors.

It assures that the machine works properly and its safety condition is OK.

A machine with technical errors and defects can be dangerous.



95-003 fr

Do not remove the protection guards

Check that all protection guards are in place before use.

This assures that the machine will give maximum protection to the operator.

If the safety guards are removed or not used it may result in serious injuries and accidents.

Transportation of persons in the machine is prohibited

It is dangerous and illegal to transport persons in the machine.

The machine is not approved for personal transportation.

Transporting persons in the machine could lead to serious injuries or death.



Check the surrounding area before taking machine into use

Before driving and using the machine the surrounding area should be checked.

This prevents persons and animals around the machine from being exposed to danger.

If the surrounding area is not checked it may lead to serious injuries to persons or animals.

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.



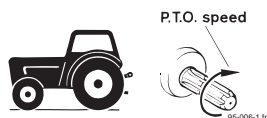
95-018 fr

Checking bolts on moving parts

Check that all bolts on moving parts are properly tightened.

Tightened parts prevent jarring sounds from moving parts.

Non-tightened parts can shake loose and result in damage on the machine.



P.T.O. speed

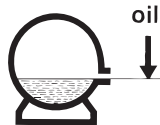
95-006-1 fr

Have the correct rotational speed on the tractor PTO outlet

It is dangerous to connect a tractor with a PTO. of 1000 rpm to a machine intended for a PTO. of 540 rpm.

The machine is not designed for this speed.

It can result in damage on the machine and be a danger for persons nearby.



oil

95-017 fr

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 assures the transmission a long and fault-free service life.

Incorrect oil level will result in damage on the transmission.

Stop the machine immediately in case of malfunction

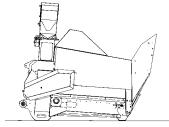
In case of malfunction the machine should be stopped immediately.

Malfunction on the machine can bring surrounding persons and animals in danger.

Machines with a malfunction can result in dangerous situations.



Disconnection



Increased risk of injury when disconnecting

When disconnecting the machine from the tractor there is an enhanced risk of personal injury.

Attention to the above instruction points will protect you and others from injury.

Failure to follow the above instructions may result in serious injury.

Therefore, when disconnecting:

- Make sure the tractor can not move.
- Never stand between the machine and the tractor when disconnecting.
- Operate the hydraulic three-point lift slowly and carefully.
- Make sure the machine is situated on an even and safe surface.
- Only disconnect the hydraulic hoses, when the hydraulic system is without pressure on both the tractor and the machine.



Maintenance

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

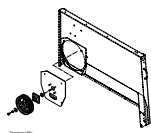
If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

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 assure that the machine will operate without malfunctions and give maximum protection to the surroundings.

A non-maintained machine is a danger to the surroundings.



Always use original spare parts on the machine

Always use original spare parts.

The manufacture warranty becomes void if non-original spare parts are being used

The manufacturer takes on no warranty responsibility in cases where non-original spare parts are used.



High risk when performing service and maintenance work

When performing service or maintenance work there is a higher risk of personal injury.

Attention to the above instruction points will protect you and others from injury.

Failure to follow the above instructions may result in serious injury.

Therefore, when you perform maintenance work:

- Disconnect the PTO shaft.
- Make the hydraulic system free of pressure.
- Stop or disconnect the tractor.
- Check that the machine is parked safely, support it if necessary.
- Make sure the machine is correctly supported.
- Do not use parts on the machine to climb the machine, but employ the proper units for climbing.



Disconnect the power source when working on the electric systems

Always disconnect the power source before you start working on the electric system.

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.



Replacing the hydraulic hoses

Replace the hydraulic hoses at least once every 6 years.

Hydraulic hoses also age without visual damage.

Defect hydraulic hoses can result in serious injuries.

Be careful when cleaning with high pressure cleaner

Do only clean bearings, hydraulic hoses, plastic components, electrical control boxes and electrical equipment with low water pressure.

By cleaning with low water pressure you will protect sensitive equipment on the machine.

Cleaning with high water pressure could damage vital parts of the machine.

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 when performing welding work.

The tractor alternator could be damaged or destroyed if the electric connections are not disconnected before performing welding work.



Tighten all fittings on moving parts

Check that bolts on moving parts are tightened after performing maintenance work.

Tightened parts prevent jarring sounds from moving parts.

Parts which are not correctly tightened can shake loose and can cause damage to the machine.

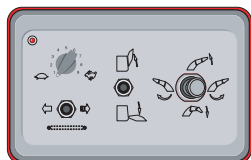


Do not alter the machine construction

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.



Connect control box to the correct power source

The control box should only be connected to a 12 V electric system.

A connection to a proper power source prevents overloading the system.

An incorrect power source could lead to short circuits and damage to the electrical circuit.



Further safety instructions



95-005 fr



95-013 fr

Follow the instructions when working on the machine

The machine safety instructions should always be complied with.

It will protect you and others from personal injury.

Failure to follow the safety instructions may result in serious injuries.

Apart from the safety instructions the following should be complied with:

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



This chapter includes general information about your machine. Furthermore, following information are included:

- The machine application area.
- The machine characteristics.
- View of the machine.
- Technical data.

The machine application area

The 1200 is a bale chopper intended for harvesting and chopping common grass and corn crops used for animal bedding and feed. The instructions for use are given in the following chapters.

Proper usage of the machine

The machine can be used for the following crops:

- Straw from common corn crops
- Hay from common grass crops
- Silage* from common grass and corn crops

* Only with extra equipment fitted.

Incorrect use of the machine

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

- harvesting/chopping beet or potato crops
- transporting earth, gravel or stone materials

Similar use is outside the intended applications of the machine.

The manufacture does not stand responsible for any damages cause by improper application of the machine. The user is fully responsible for the machine.

About the machine

Machine characteristics

Description of the machine

The 1200 is a bale chopper intended for harvesting and chopping most common grass and corn crops and must be coupled to the tractor's lift arms.

The machine is built around a large bale chamber and a strong flywheel housing on which is mounted a powerful shredding drum.

Inside the bale chamber is a powerful floor conveyor with variable speed control. The floor conveyor transports the crop to the shredding drum where the crop is guided into the flywheel housing.

The shredding drum shreds the crop and guides it into the flywheel housing where the shredded crop is transferred through a chute and thrown out at high speed. The chute is hydraulically controlled and throws the crop out in the direction determined by the user.

- On standard models, the chute can be controlled vertically (up/down).
- On swivel chute models, the chute can be controlled both vertically (up/down) and horizontally (from side to side).

The machine's hydraulic functions are electrically controlled using an electric control box.

The machine 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 a flexible build up the machine is both strong and reliable.

Machine connection possibilities

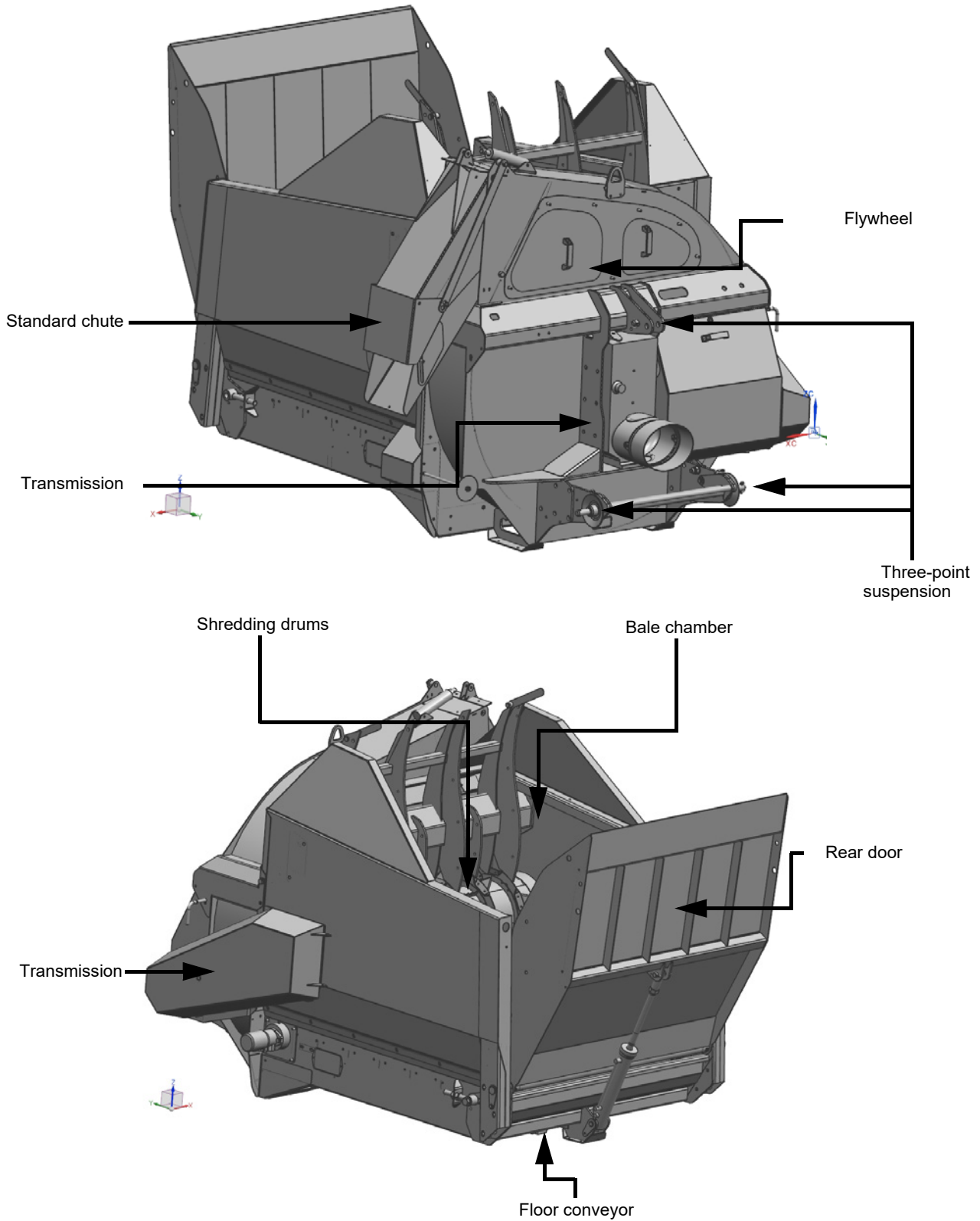
You can connect the machine to the tractor using the tractor's three-point hitch.

Your safety when using the machine

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

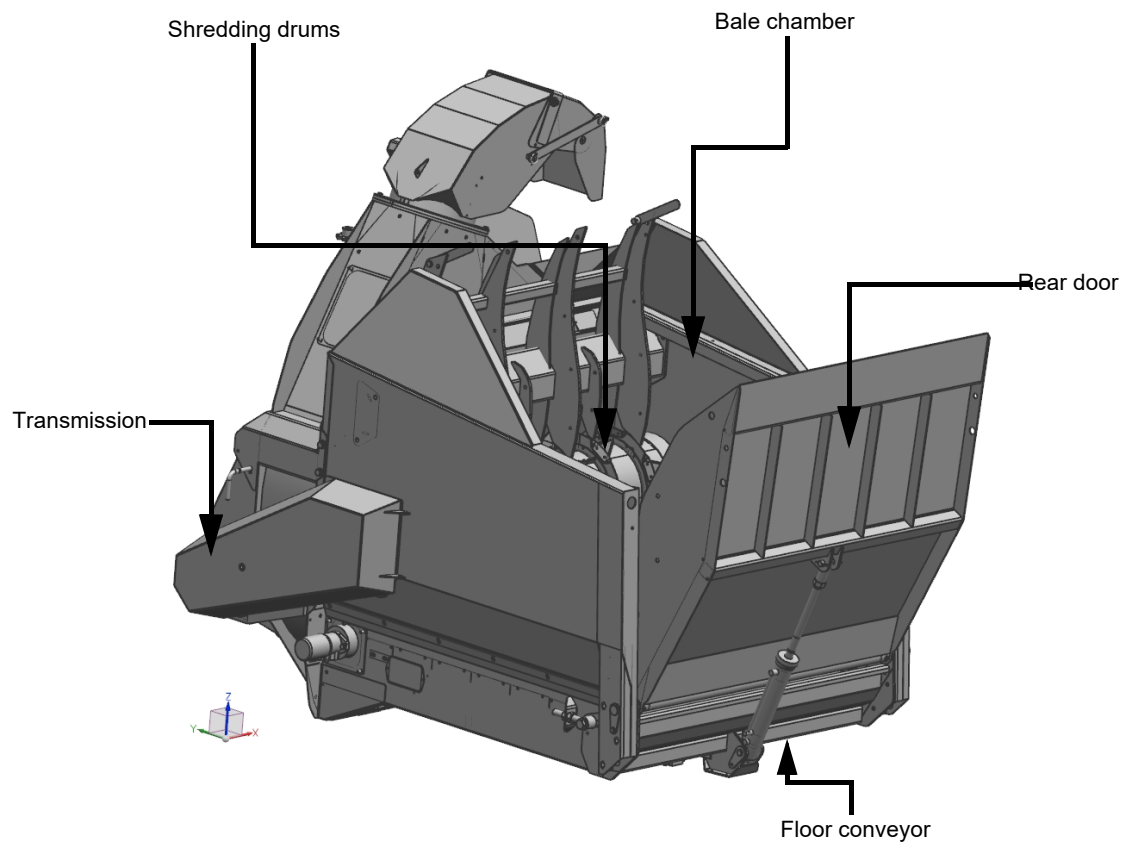
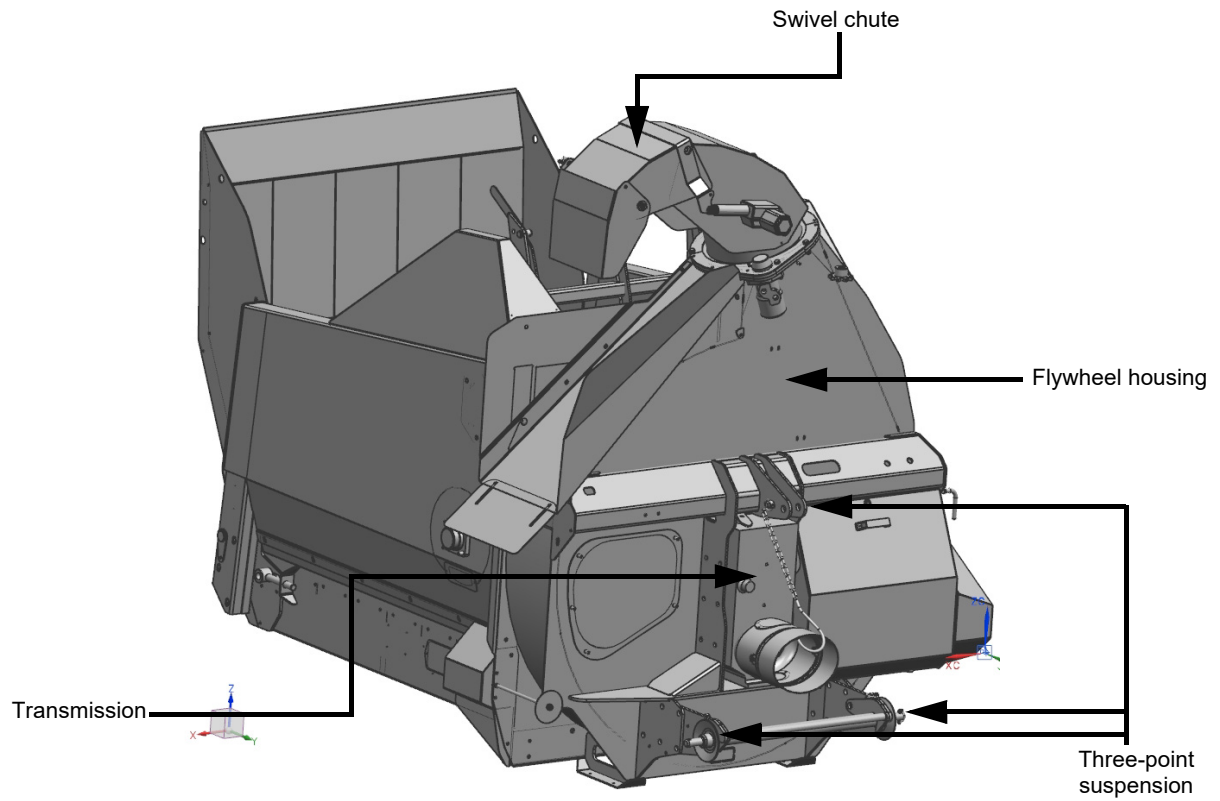
Synopsis

Standard model



About the machine

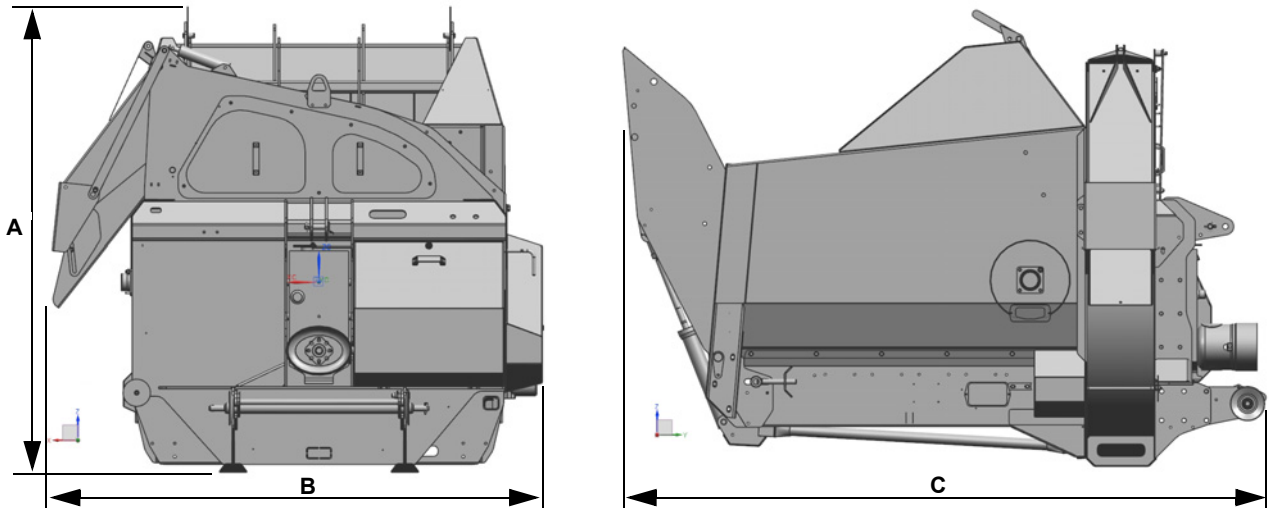
Swivel chute model



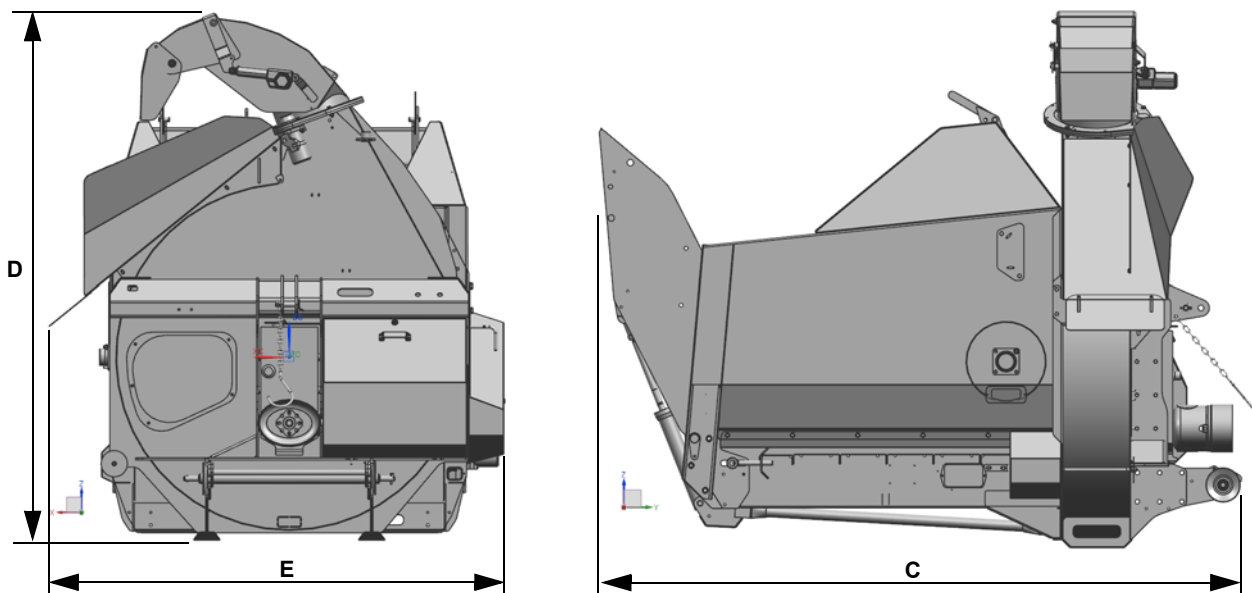
Technical data

The dimensions of the machine

Standard model



Swivel chute model



Dim.	1200	
	mm	inch (")
A	2040	80
B	2140	84
C	2950	116
D	2400	95.5
E	2070	81.5

About the machine

Machine specifications

	Unit	1200	
		Standard model	Swivel chute model
Unladen weight	KG	1347	1387
	lb	2970	3058
Extra weight - Silage kit*	KG	110	
	lb	243	
Load capacity	KG	700	
	lb	1544	
Bulk density	m ³	2	
	ft ³	70.6	
P.T.O. Power take-off	rpm	540	
Power requirement, minimum	kW	63	
	HP	85	
Max. hydraulic flow (electrical hydraulics)	L/min	70	
	gallons (US)	18,5	
	gallons (imp)	15,4	
Hydraulic pressure	bar	150	
	psi	2175	
Control box: power/fuse	V	12	
	amp	25	

* Extra equipment.

→ »Optional equipment« Page 117

Tractor requirements



Tractor weight and size

The tractor must in terms of weight have a proper size. Local regulations governing this relationship must be observed.

A correct ratio between tractor and machine assures proper braking and manoeuvring abilities.

An incorrect ratio between tractor and machine can be dangerous.

About the machine

Permissible total weight of the tractor



Comply with the total weight, the shaft pressure, the wheel load capacity and the minimum 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.

Exceeding this can result in uncontrolled driving and accidents.

The maximum permissible unladen weight of the tractor including static axle and tyre pressures must be checked before the machine is used.

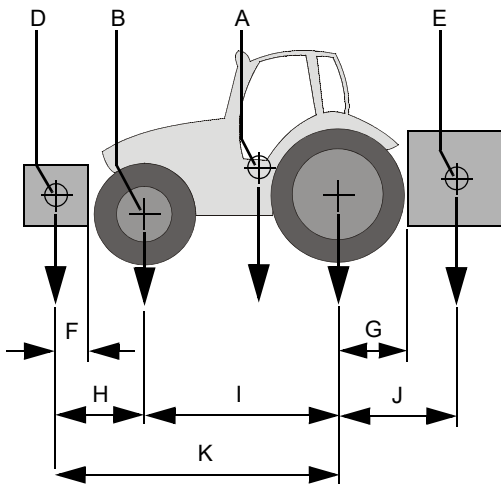
When coupling machines to the tractor's lift, you must ensure that:

- The tractor's permissible total weight is not exceeded.
- The permissible loads on the front or rear axle are not exceeded.
- The permissible tyre pressure is not exceeded.
- The permissible carrying capacity of the tyres is not exceeded.
- The minimum load on the tractor's front axle must not be less than that stated by the tractor manufacturer.
- The minimum load on the tractor's rear axle must not be less than that stated by the tractor manufacturer.



Also take the weight of water in the tyres, extra equipment etc. into account.

About the machine



Before starting to use the machine, the tractor must be checked for compliance with the above conditions.

Most of the measurements and weight specifications in the diagram can be found in the tractor's instruction manual. If, however, this is not the case, you should contact the relevant tractor dealer to obtain the missing information.

	Specification	Unit
A	Tractor unladen weight (see instruction manual for the tractor)	kg/lb
B	Weight, front axle (see instruction manual for the tractor)	kg/lb
C	Weight, rear axle (see instruction manual for the tractor)	kg/lb
D	Unladen weight on front-mounted machine (see "Machine specifications")	kg/lb
E	Unladen weight on rear-mounted machine (see "Machine specifications")	kg/lb
F	Distance from lifting eyes to the centre of the front-mounted machine	cm/inch
G	Distance from centre of the rear axle to lifting eyes/hitch on tractor	cm/inch
H	Distance from centre of the front axle to centre of the front-mounted machine	cm/inch
I	Distance between front and rear axle	cm/inch
J	Distance from centre of the rear axle to centre of the rear-mounted machine	cm/inch
K	Distance from centre of the rear axle to centre of the front-mounted machine	cm/inch

About the machine

Calculation

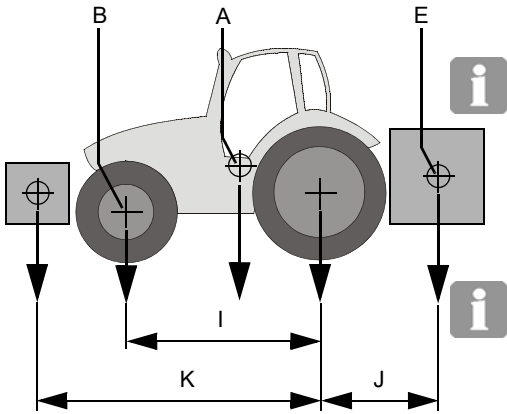
The values "A" to "K" can be inserted in formulae.

Front ballast for rear-mounted machines

Calculation of the front ballast for rear-mounted machines.

Front ballast [kg/lb]:

$$\frac{(E \times J) - (B \times I) + ((A \times 0,2) \times I)}{K}$$



It is recommended that the smallest permissible load [kg/lb] on the tractor's front axle is at least 20% of the tractor's unladen weight [A]. Information can be found in the instruction manual for the tractor.

→ »Estimation« Page 34

→ »Carrying capacity of the tyres« Page 34



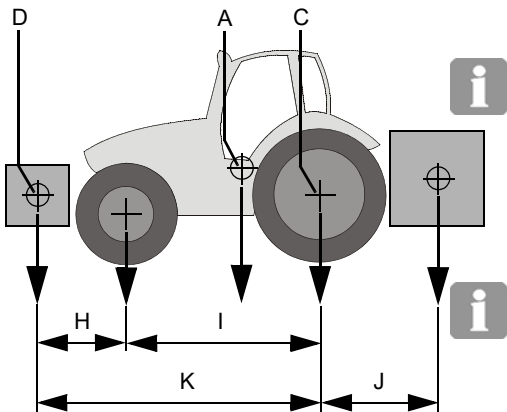
The calculation is only a guide.

Rear ballast for front-mounted machines

Calculation of the rear ballast for front-mounted machines.

Rear ballast [kg/lb]:

$$\frac{(D \times H) - (C \times I) + ((A \times 0,45) \times I)}{I + J}$$



It is recommended that the smallest permissible load [kg] on the tractor's rear axle is at least 45% of the tractor's unladen weight [A]. Information can be found in the instruction manual for the tractor.

→ »Estimation« Page 34

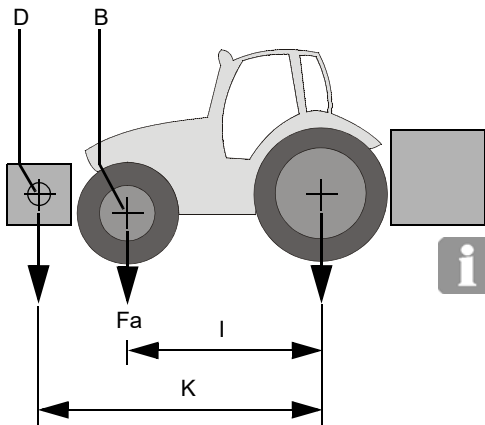
→ »Carrying capacity of the tyres« Page 34



The calculation is only a guide.

Load on the front axle

Calculation of the actual load on the front axle (Fa).



Actual load on the front axle (Fa) [kg/lb]:

$$F_a = \frac{B + D \times K}{I} - \frac{D \times K}{I}$$

→ »Estimation« Page 34

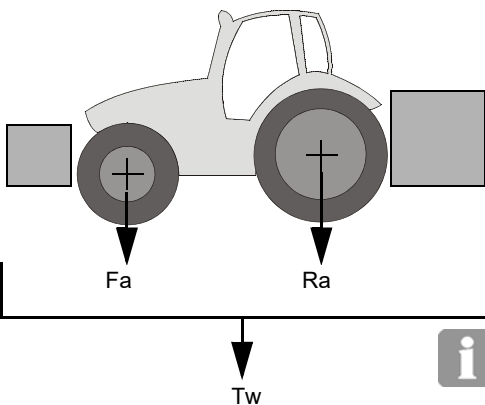
→ »Carrying capacity of the tyres« Page 34



The calculation is only a guide.

Load on the rear axle

Calculation of the actual load on the rear axle (Ra).



Actual load on the rear axle (Rwra) [kg/lb]:

$$R_a = T_w - F_a$$

→ »Estimation« Page 34

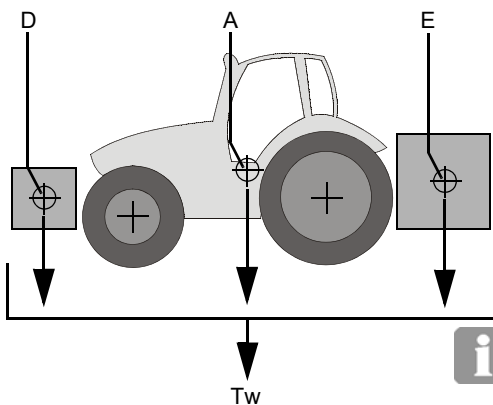
→ »Carrying capacity of the tyres« Page 34



The calculation is only a guide.

Total weight

Calculation of the vehicle total all-up weight (Tw).



Total all-up weight (Tw) [kg/lb]:

$$T_w = D + A + E$$

→ »Estimation« Page 34

→ »Carrying capacity of the tyres« Page 34



The calculation is only a guide.

About the machine

Carrying capacity of the tyres

Information on the carrying capacity for front and rear tyres respectively can be found in the tyre manufacturer documentation.



- The carrying capacity for front tyres gives the maximum permissible load for one front tyre.
 - With a normal wheel configuration on the tractor's front axle (2 wheels in total), the maximum permissible carrying capacity of the tyre is multiplied by 2.
 - If dual wheels are fitted on the tractor's front axle (4 wheels in total), the maximum permissible carrying capacity of the tyre is multiplied by 4.



- The carrying capacity for rear tyres gives the maximum permissible load for one rear tyre.
 - With a normal wheel configuration on the tractor's rear axle (2 wheels in total), the maximum permissible carrying capacity of the tyre is multiplied by 2.
 - If dual wheels are fitted on the tractor's rear axle (4 wheels in total), the maximum permissible carrying capacity of the tyre is multiplied by 4.

Estimation

- The actual load [kg/lb] on both front and rear axles must not exceed the maximum permissible loads given in the instruction manual for the tractor.
- The tyre carrying capacity [kg/lb] (front and rear) must be higher than the maximum permissible loads on the front and rear axles given in the instruction manual for the tractor.
- The actual total weight [kg/lb] must not exceed the maximum permissible total weight given in the instruction manual for the tractor.



If this requirement is not observed, machines must not be fitted to this tractor.

Preparing the machine

For transporting the user the machine is divided into main components. The machine is assembled according to 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.

Preparation

PTO shaft length

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.

A user manual is supplied with the PTO shaft. The user manual contains information on the version of the PTO shaft in question and details the correct PTO shaft length for the tractor. The description and information in the user manual must be observed.

Safety



Stop the tractor and secure it

Before uncoupling:

- ▶ Disconnect the tractor's PTO outlet.
- ▶ Lower the machine to the ground.
- ▶ Neutralise all hydraulics.
- ▶ Stop the tractor.
- ▶ Remove the ignition key.
- ▶ Apply the handbrake.
- ▶ Secure the tractor to prevent it from rolling.

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

Checking the angle of the lock

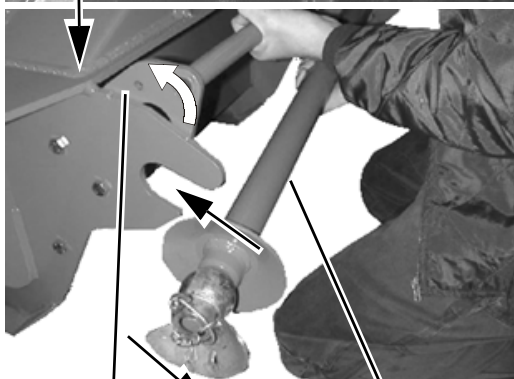
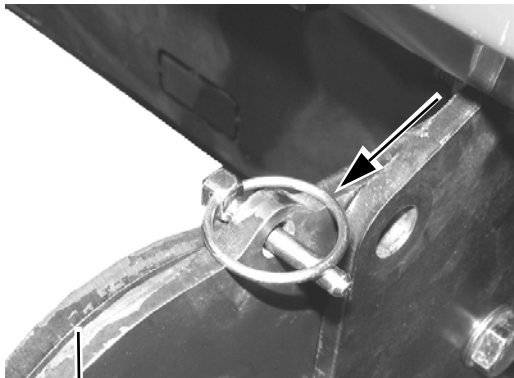
The PTO shaft has a wide hinged joint which gives the tractor a steering angle of up to 80°. Ensure that the PTO shaft is not damaged when performing sharp turns. This can result in damage to the machine.

Correct length

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

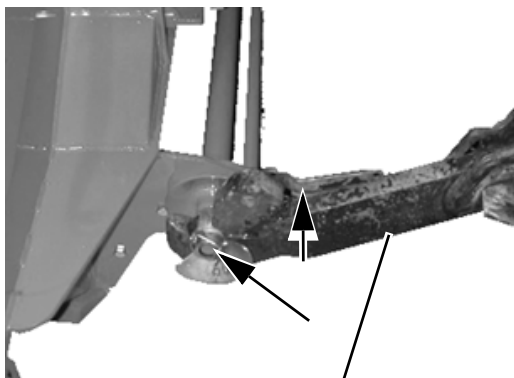
Checking the PTO shaft length

- ▶ Couple the machine to the tractor without the PTO shaft:
- ▶ Remove the pins from the safety lock.
- ▶ Lift up the lock and remove the lift bar from the lock.



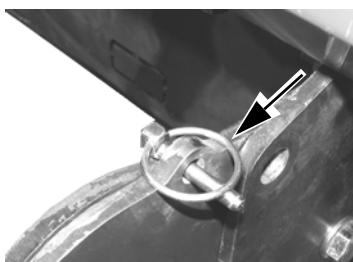
Lock

Lift bar

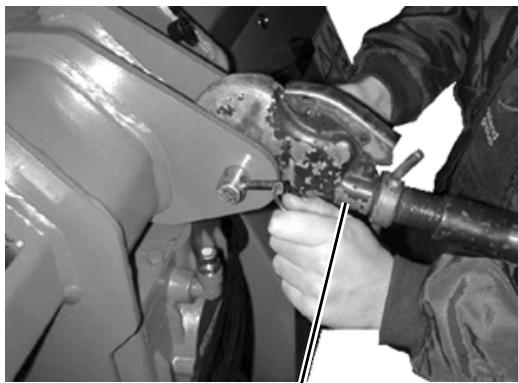


Lift bar

- ▶ Mount the lift boom on the tractor's lift arms.
- ▶ Reverse the tractor to the machine.
- ▶ Put the lift bar into the lock with the tractor lift arms.
- ▶ Check that the lift bar is securely locked.
- ▶ Fit the pins in the safety lock.

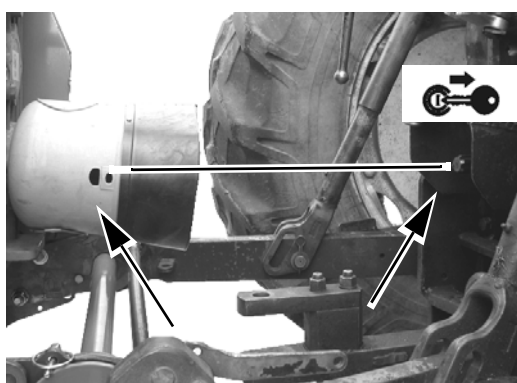


Preparation



Top link

- ▶ Fit the top link.

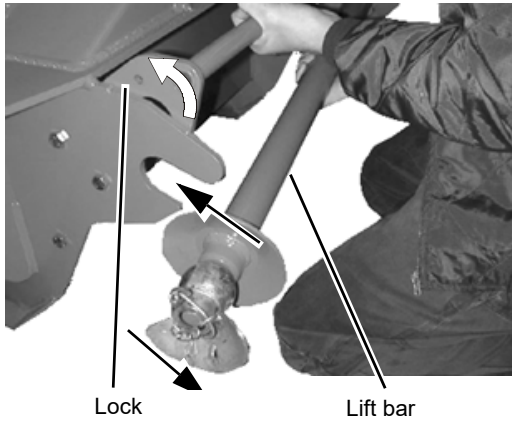


- ▶ Raise the machine until the PTO outlet on the tractor and the PTO shaft on the machine are level with each other.
- ▶ Stop the tractor, remove the ignition key and secure the tractor to prevent it from rolling.

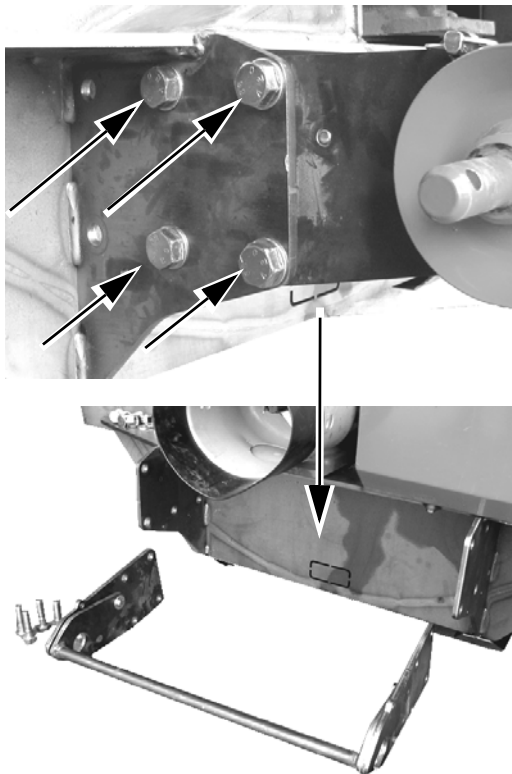
Adjust the brackets for the attachment



If the distance between the shaft ends is less than 550 mm/21.6", proceed as follows:

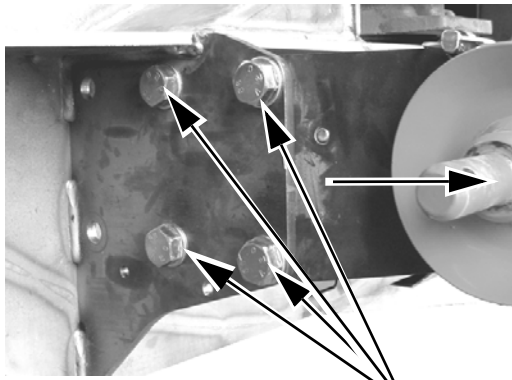


- ▶ The machine is uncoupled from the tractor.
- ▶ Remove the pins from the safety lock.
- ▶ Lift up the lock and remove the lift bar from the lock.



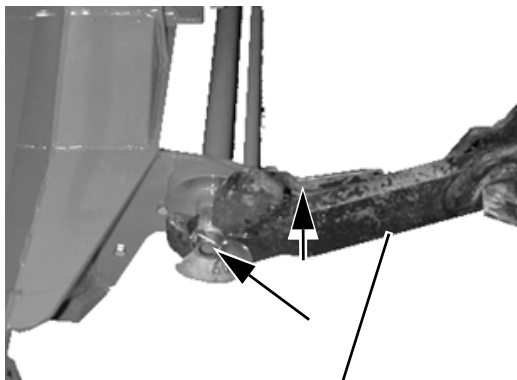
- ▶ Remove the bolts shown on both sides of the bracket.

Preparation



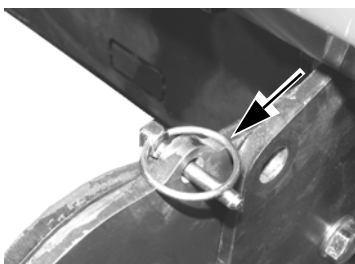
- ▶ Extend the bracket to its outermost position and insert the bolts in both sides of the bracket.
- ▶ Tighten the bolts to the specified torque.

440 Nm
325 ft/lb



- ▶ Mount the lift boom on the tractor's lift arms.
- ▶ Reverse the tractor to the machine.
- ▶ Put the lift bar into the lock with the tractor lift arms.
- ▶ Check that the lift bar is securely locked.
- ▶ Fit the pins in the safety lock.

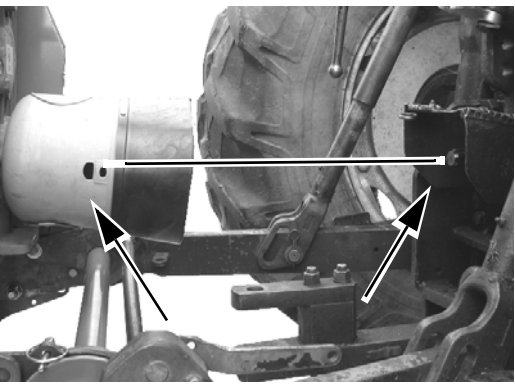
Lift bar





- ▶ Fit the top link.

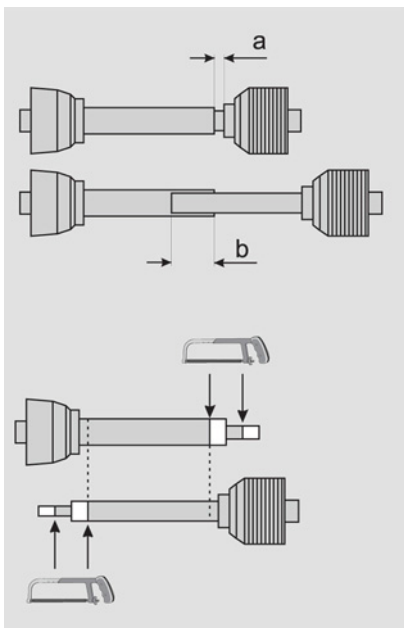
Top link



- ▶ Raise the machine until the PTO outlet on the tractor and the PTO shaft on the machine are level with each other.

Preparation

Shortening the PTO shaft



- ▶ Pull the PTO shaft apart.
- ▶ Fit one half on the tractor's PTO outlet.
- ▶ Fit the other half on the machine's PTO input shaft.
- ▶ Position the two halves of the shaft side by side and:
 - Check that the halves of the shaft have a minimum overlap of 200 mm (8") [b].
 - Check that the PTO shaft has a minimum clearance of 20 mm (0.8") [a].
- ▶ Shorten both profile tubes and the protective tube by the same amount.
- ▶ Deburr the ends of both profile tubes.
- ▶ Clean any metal shavings or similar from the profile tubes.
- ▶ Grease the sliding surfaces of the profile tubes thoroughly.
- ▶ Fit and connect the two halves of the shaft.

Fitting the PTO shaft

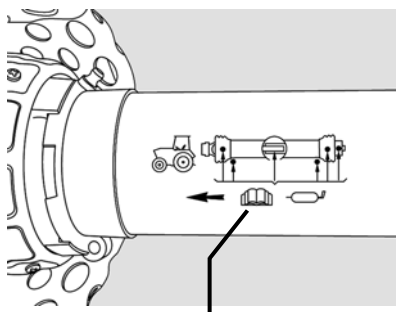


Initial connection of the machine

Exercise caution when a new machine is connected for the first time. Make sure that all safety instructions are complied with. Attention to the safety instructions will increase your personal safety.

Failure to follow the safety instructions may result in serious injuries and accidents.

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



Marking on the protective tube

- ▶ Fit the PTO shaft on the machine's PTO input shaft.
- ▶ Fit the PTO shaft on the tractor's PTO outlet.
- ▶ Secure the PTO shaft with a locking pin and safety chain.

Connecting the machine



Connection between machine and tractor

When connecting the machine and the tractor there is an increased risk of personal injury.

Attention to the safety instructions assures your and others personal safety.

Failure to follow the safety instructions may result in serious injuries.

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

- Make sure the tractor can not move.
- Make sure that the tractor and the machine belong to the same category.
- Never stand between the machine and the tractor when connecting.
- Operate the hydraulic three-point lift slowly and carefully.

Connecting the machine

When connecting the machine on the tractor there is an increased risk of personal injuries.

Attention will assure yours and others safety.

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.
- Make sure that the machine can not be disconnected from the tractor.
- Make sure the tractor lift arms will move both up and down, when the machine is used for self loading of bales with the machine rear door.
- The tractor PTO shaft must be 1" 3/8 with 6 splines and able to run at 540 rpm.

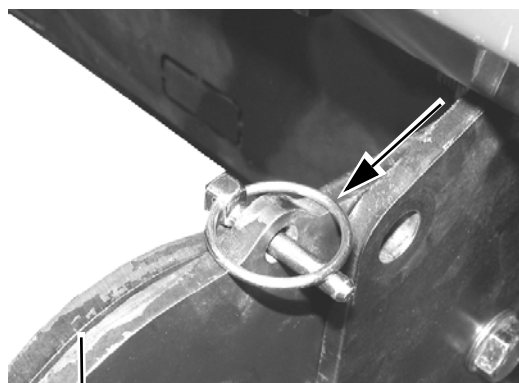
Lock the tractor's lift arms

Lock the tractor's lift arms at the correct height.

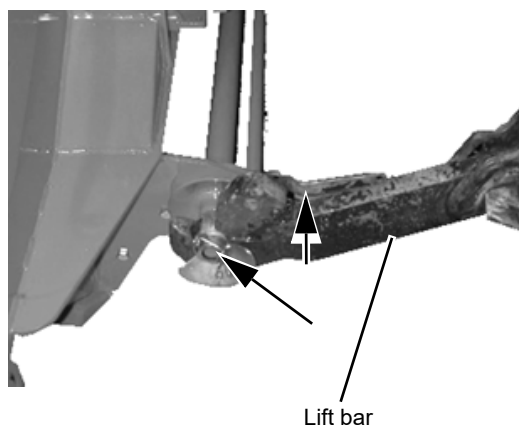
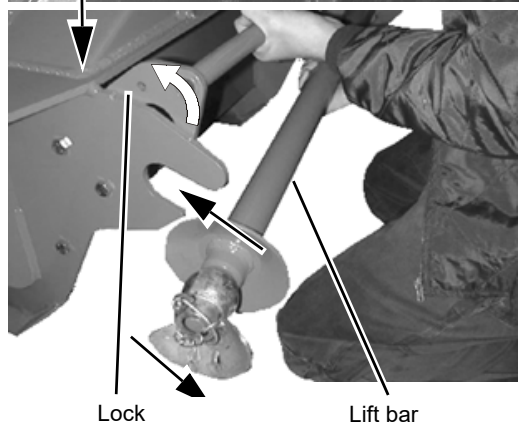
If the lift arms are at the correct height, it will prevent damage to the PTO shaft and injury to persons in the vicinity.

Lowering or raising the lift arms can lead to injury and can damage the PTO shaft.

Assembly - attachment



- ▶ Remove the pins from the safety lock.
- ▶ Lift up the lock and remove the lift bar from the lock.



- ▶ Mount the lift boom on the tractor's lift arms.
- ▶ Reverse the tractor to the machine.
- ▶ Put the lift bar into the lock with the tractor lift arms.
- ▶ Check that the lift bar is securely locked.
- ▶ Fit the pins in the safety lock.

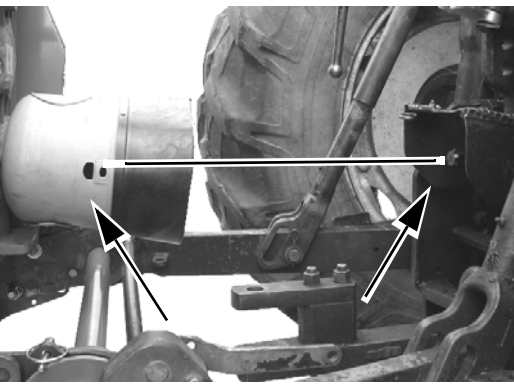


Assembly - attachment

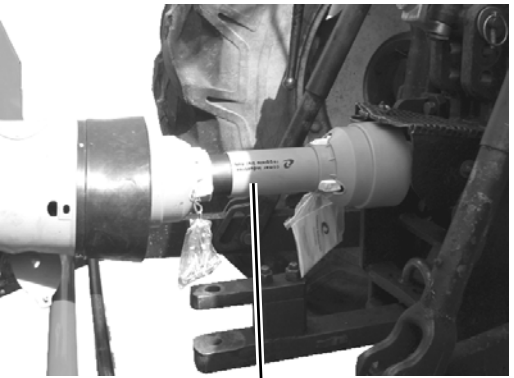


Top link

- ▶ Fit the top link.



- ▶ Raise the machine until the PTO outlet on the tractor and the PTO shaft on the machine are level with each other.



PTO shaft

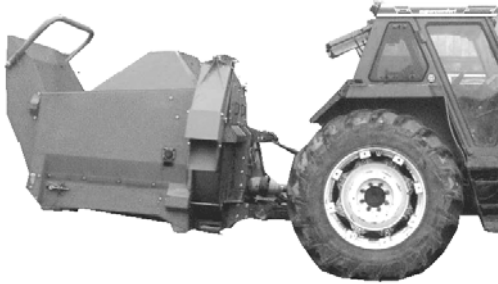
- ▶ Fit the PTO shaft.

Assembly - attachment



Stabiliser chains

- ▶ The lift arms should be secured against sideways movements by tightening the stabiliser chains.



- ▶ Check that the machine is level.

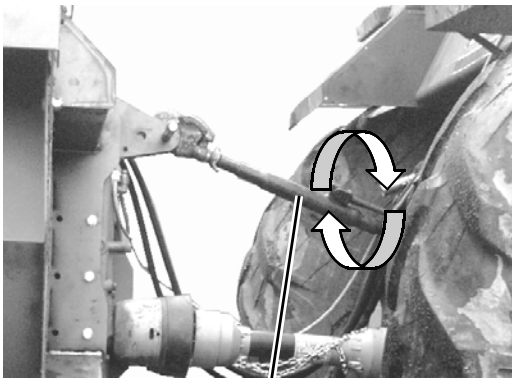
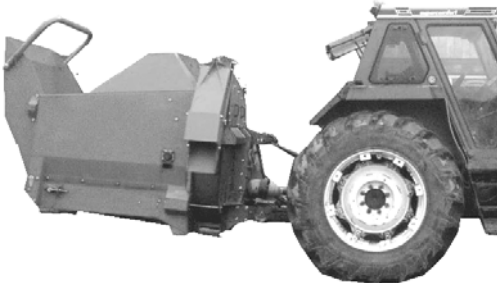
Adjusting the machine



When the machine is coupled to the tractor, check the machine to ensure it is horizontal.

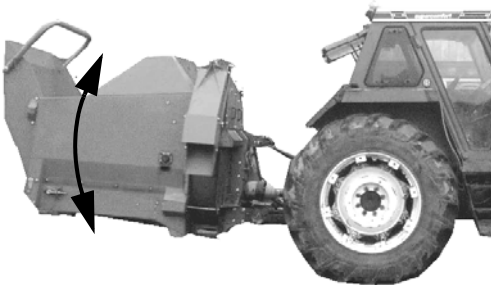
The machine is adjusted in the following way:

- ▶ Activate the tractor's lift arms and raise the machine until the PTO shaft between the tractor and the machine is horizontal.
- ▶ Check that the floor of the bale chamber is horizontal.
- Open the rear door of the machine to gain access to the bale chamber, if necessary.



Top link

- ▶ Adjust the length of the top link until the position of the machine is correct.



Assembly - attachment

Hydraulic

Safety



Only connect the hydraulics when system is depressurised

You should only connect the hydraulic hoses to the hydraulic of the tractor, when the hydraulic system on both tractor and machine is without pressure.

There is a risk that the machine will move unintentionally.

Unintentional movement of the machine may result in serious injury.

Avoid mixing oil

Avoid using different tractors with the same machine.

It can lead to illegal mixing of various oil types.

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 visual damage.

Hydraulic hoses also age without visual damage.

Defect hydraulic hoses can result in personal injury or fire.



Colour marking of the hydraulic connections

The hydraulic connections between the tractor and the machine must be colour marked.

By colour marking the hydraulic connections you avoid wrong operation of the machine.

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 personal injuries. Paying full attention to this will protect your own and others' safety.

Failure to pay attention to this point may result in serious injuries.

Therefore, when connecting the hydraulics you should check that:

- The tractor should be equipped with a double hydraulic outlet.
- The tractor must have a minimum capacity of:
 - 45 l/min at 150 bar (2175 psi)
 - 11.9 gallons (US) at 150 bar (2175 psi).
 - 9.9 gallons (imp.) at 150 bar (2175 psi)

Securing the hydraulics in transport position

The tractor hydraulic system must not be activated unintentionally in transport position.

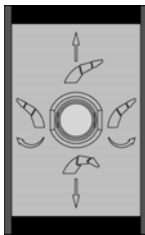
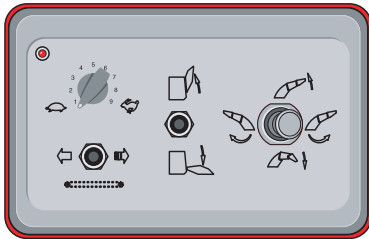
Accidental activation of the tractor hydraulic system can result in unexpected movement.

Unexpected movement can result in injuries.

Assembly - attachment

Connection

Electric connection



Correct connection of electric control box

The electrical system must be connected correctly:

- The tractor power supply must be 12 V.
- The tractor power supply terminals must be turned in the right direction.
- The tractor must be equipped with a 3-pin DIN plug.

Connect the power correctly

Connect the power correctly.

A correct power connection prevents short circuit and damages on the electrical circuit.

A wrong power connection could result in short circuit and damages on the electrical circuit.

Drilling and welding on the tractor safety frame

It is recommended that you do not drill or weld in the tractor safety frame.

Drilling and welding on the tractor safety frame can cause fatigue in the construction.

A fatigue of the tractor safety frame can cause an insufficient protection of the driver if the tractor tilts.



The control box bracket must be dismantled in the tractor cab.

Hydraulic connection



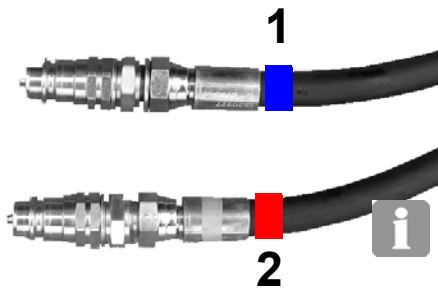
Checking that the hydraulic system is correctly connected

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 manual and electric hydraulic system is factory mounted with open centre hydraulics.
- To convert the hydraulic block from open centre hydraulic to closed centre hydraulic, please consult your local dealer.

The tractor must be equipped with 1 pair of double acting hydraulic outlets:



- The hydraulic hose with a red marking is fitted to the tractor's hydraulic pressure outlet (usually marked "P").
- The hydraulic hose with a blue marking is fitted to the tractor's hydraulic outlet when the oil returns to the oil tank (usually marked "T").

Ensure that this return outlet has zero pressure; as some spool valves can create a back pressure that may damage the hydraulic motor seals.

No.	Colour marking
1	Blue
2	Red

Control valves

The function of the control valves is as follows:

Function	Valve
Standard chute-swivel chute left/right/up/down	Double acting
Floor conveyor forward/back	Double acting
Rear door open/close	Double acting

Hydraulic system with closed centre

Operating manually

Refer to Kverneland Technical Service Information No. 04-0001

Electrical hydraulic controls

Refer to Kverneland Technical Service Information No. 04-0003

Assembly - attachment

First start-up of machine



The initial test drive of the machine is important

When the machine is connected to the tractor for the first time into must be test driven.

Attention to the safety instructions assures your and others personal safety.

Failure to follow the safety instructions may result in serious injuries.

Do not remove the protection guards

Check that all protective guards are in place before use.

This assures 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.

Keep distance to the machine

No unauthorised persons should be close to the machine during operation.

This gives you a guarantee to work safely and securely.

Persons close to the machine during operation are at high risk of being crushed, severely injured or killed.

The tractor must be fitted with mirrors

The tractor should be fitted with mirrors which are kept clean and in good condition.

This ensures the tractor driver has a good view to both sides of the machine.

A restricted view to the sides of the machine can lead to persons being crushed, severely injured or killed.

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 without any materials.

Attention to the safety instructions assures your and others personal safety.

Failure to follow the safety instructions may result in serious injuries.



- ▶ Start the tractor.
- ▶ Carefully connect the tractor's PTO outlet.
- ▶ Carefully increase the speed of the PTO outlet to 540 rpm.
- ▶ Check that the machine runs even without any vibrations.
- ▶ Return the PTO outlet to idle speed.
- ▶ Activate all the hydraulic functions of the machine, one by one.
- ▶ Disconnect the tractor's PTO outlet.

Safety



Read the safety instructions carefully before driving on public road

Before driving on public road, you must read the safety instructions carefully.

This assures that you avoid dangerous situations and accidents. Lack of information can lead to an accident.

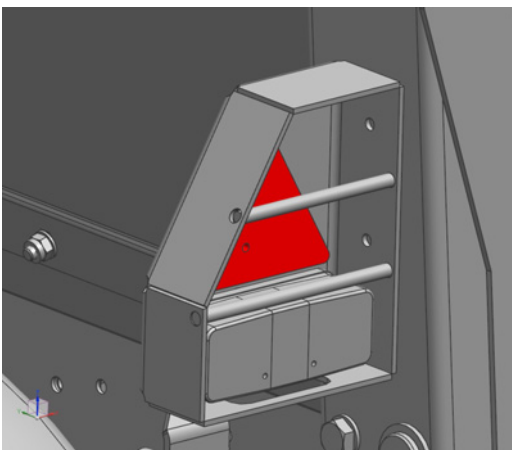
General

- Comply with the local law concerning lights, warning and safety units.
- The driver and/or owner of the machine is responsible for ensuring local requirements are observed when driving on public roads.
- The manoeuvring ability of the tractor should not be reduced. 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 machine's hydraulic functions should be placed in neutral and locked.
- Make sure there are no children or unauthorised persons in the machine's hazard area.
- Check the surrounding area before starting the machine.

Only as accessory



The machine should be equipped with a lighting kit.

→ »Lighting and reflection kit« Page 118

- ▶ Clean lights and reflexes on the tractor and the machine.
- All hydraulic and electric functions of the machine should be neutral and in locked position.
- The tractor hydraulics should be disconnected.
- The bale chamber of the machine should be emptied and cleaned.
- If materials are transported in the machine the bale chamber should be covered.
- Be aware of children in the danger area of the machine.
- Check the nearest area before operating the machine.

Transport on public roads

Checking the machine

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

- Are all hydraulic and electric functions neutral and turned off?
- Is the machine connection secured by a pin?
- Is the machine bale chamber empty and cleaned?
- Is the material in the bale chamber covered?
- Does the lighting kit of the machine work properly?

Travelling on public roads

- Check the nearest area around the machine before you start. Make sure there are no children or unauthorised persons 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 with the machine.
- Make sure that steering and braking ability is sufficient.

Speed when driving on public roads



When driving on public roads with this machine, the speed must be less than 40 km/h (25 mph).

Knives on shredding drum

The 1200 is equipped with 1 shredding drum and a floor conveyor with variable speeds.

To optimise the chopping of the materials, the setting can vary according to the type of material, its length and moistness.

Standard model



The diagram below is only for guidance.

Material		Condition	Length	Number of knives		
				14	28	42
Straw:	Round bale	Dry	Short	X		
	Large bale		Long			
Hay:	Round bale	Dry	Short	X		
	Large bale		Long	X		
Silage:	Round bale	Dry	Short		X	
			Long			X
	Large bale	Medium	Short	X		
			Long		X	
		Wet	Short	X		
			Long		X	
Silage:	Cut	Dry	Short	X		
		Wet	Long		X	

Swivel chute model



The diagram below is only for guidance.

Material		Condition	Length	Number of knives		
				14	28	56
Straw:	Round bale	Dry	Short	X		
	Large bale		Long			
Hay:	Round bale	Dry	Short	X		
	Large bale		Long	X		
Silage:	Round bale	Dry	Short		X	
			Long			X
	Large bale	Medium	Short	X		
			Long		X	
		Wet	Short	X		
			Long		X	
Silage:	Cut	Dry	Short	X		
		Wet	Long		X	

Setting

Mounting/ removing knives



Be very careful when replacing the knives

Use protection gloves when replacing the knives on the shredding drum.

The knives on the shredding drum are very sharp.

Replacing the knives without protective gloves can result in severe hand injuries.

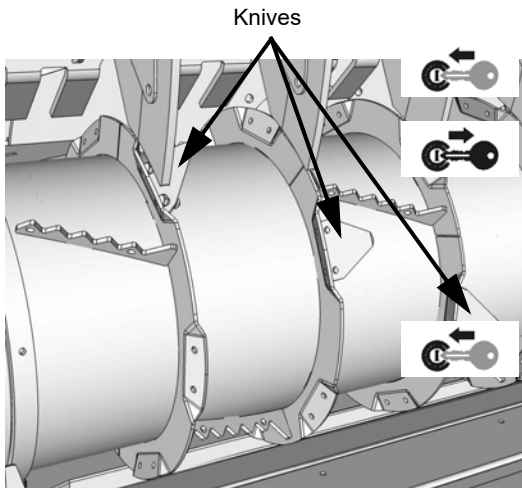
The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

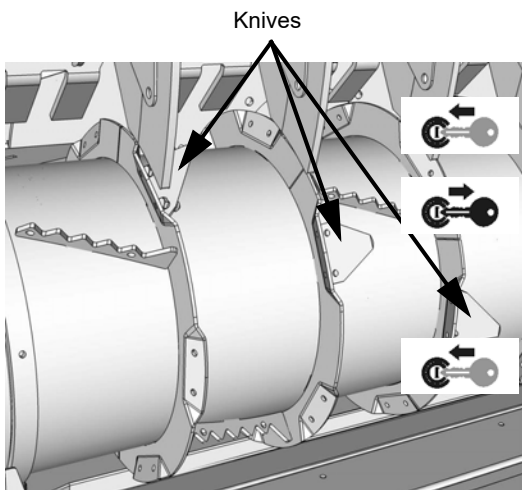
If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Mounting the knives



- ▶ Start the tractor.
- ▶ Open the machine rear door all the way up.
- ▶ Stop the tractor.
- ▶ Enter the machine bale chamber.
- ▶ Mount the knife and bolt.
- ▶ Mount the nut and tighten the knife.
- ▶ Exit the machine bale chamber.
- ▶ Start the tractor.
- ▶ Close the rear door of the machine.

Removing the knives



- ▶ Start the tractor.
- ▶ Open the machine rear door all the way up.
- ▶ Stop the tractor.
- ▶ Enter the machine bale chamber.
- ▶ Remove the knife and bolt.
- ▶ Exit the machine bale chamber.
- ▶ Start the tractor.
- ▶ Close the rear door of the machine.

Safety



Keep distance to the machine

No unauthorised persons should be close to the machine during operation.

This gives you a guarantee to work safely and securely.

Persons close to the machine during operation are at high risk of being crushed, severely injured or killed.

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

The tractor must be fitted with mirrors

The tractor should be fitted with mirrors which are kept clean and in good condition.

This ensures the tractor driver has a good view to both sides of the machine.

A restricted view to the sides of the machine can lead to persons being crushed, severely injured or killed.

The operator should be instructed carefully before the machine is put into use

The machine should only be used if the operator has been given thorough instructions; this instruction manual must be read and understood.

Thorough machine instruction results in 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 7

Attention to the safety instructions assures your and others personal safety.

Failure to follow the instructions may result in serious injuries.

Work on the machine should only be carried out by persons who have been thoroughly instructed

The machine should only be operated when the operator has been given thorough instructions.

Thorough machine instruction results in safe usage.

Insufficient instructions can result in wrong usage of the machine and accidents.

Do not remove the protection guards

Check that all protective guards are in place before use.

This assures 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



Make sure that the initial start of the machine is unhindered
Make sure the area around the machine is checked and cleared before start-up.
Paying attention to the area around the machine will prevent injuring persons or animals.
Insufficient attention to the area around the machine can result in serious 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.

Limitation of the hydraulic flow of the tractor

Limit the hydraulic flow of the tractor.
Hereby you will avoid overheating and overloading the hydraulic system.
Overloading the hydraulic system may result in serious injuries.

The hydraulic flow of the tractor should therefore be limited to:

- 70 l/min. at electrical hydraulic operation.



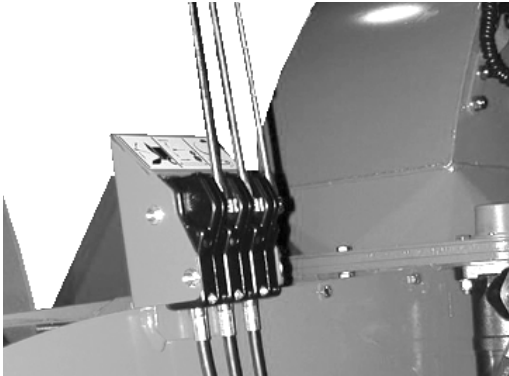
Following instructions should be complied with:

- Check all points mentioned in the section "maintenance".
→ »Specific safety information« Page 89
→ »Lubrication safety and use of oil« Page 89
- Check knives are not worn down. The knives can be turned so that they rotate in the opposite direction.
→ »Knives« Page 103

Operation

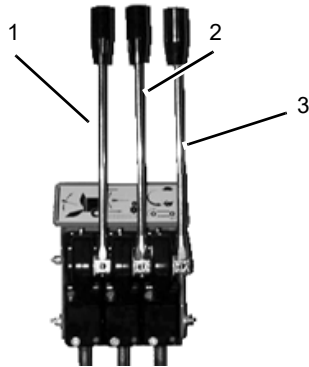
Standard model

Operating manually



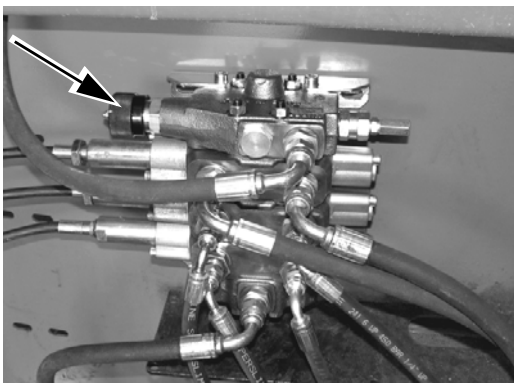
The valve block handles are mounted on a removable bracket that can be placed in the tractor cab. The bracket should be mounted properly on an appropriate mounting point in the tractor cab. See the tractor manufacturer's manual.

The valve block is mounted behind the guard in front of the shredding house. The valves should be operated by the handles, which are to be mounted in the tractor cab.



The control levers operate the following functions:

Handle	Function
1	Standard chute raise/lower
2	Rear door open/close
3	Forward and reverse of floor conveyor



The speed of the floor conveyor is set using the rotary button shown on the valve block behind the guard on the front of the shredder housing.

Electrical hydraulic controls

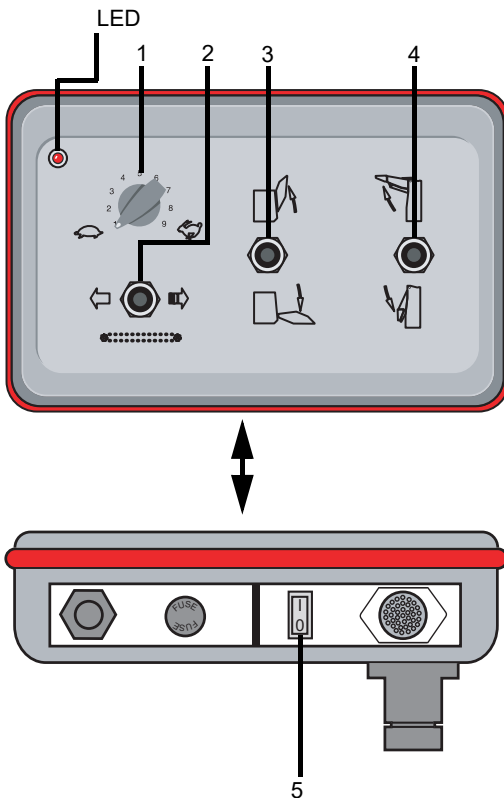


Connect the control box power source properly

The control box must be connected to a 12 V electrical system. A proper connection of the power source prevents a short-circuit. Incorrect connection can result in short circuiting and burns to the skin.

The electric valve block is located behind the protection on the front of the cutting case. The valves are operated from the control box which is mounted in the tractor's cab with the brackets supplied.

Operation of the control box functions are described below.

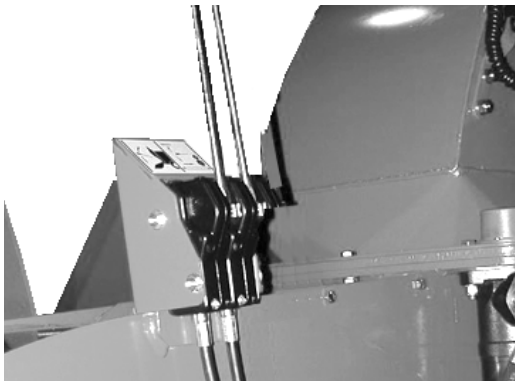


Contact	Action	Function
1	Variable Position 1 - 9	Floor conveyor speed
2	Switch in left position	Floor conveyor forward
	Switch in middle position	Floor conveyor stopped
	Switch in right position	Floor conveyor reverse
3	Switch up	Rear door up
	Switch in middle position	No movement
	Switch in down position	Rear door down
4	Switch up	Standard chute up
	Switch in middle position	Standard chute stop
	Switch in down position	Standard chute down
5	Switch in position "1"	Control box on (LED lit)
	Switch in position "0"	Control box off (LED off)

Operation

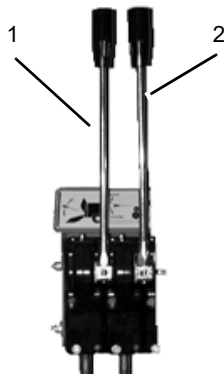
Swivel chute model

Operating manually



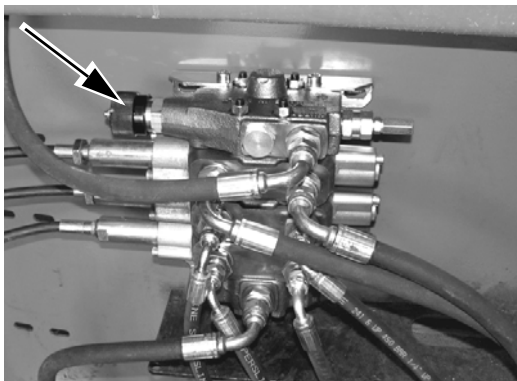
The valve block handles are mounted on a removable bracket that can be placed in the tractor cab. The bracket should be mounted properly on an appropriate mounting point in the tractor cab. See the tractor manufacturer's manual.

The valve block is mounted behind the guard in front of the shredding house. The valves should be operated by the handles, which are to be mounted in the tractor cab.



The control levers operate the following functions:

Handle	Function
1	Rear door open/close
2	Forward and reverse of floor conveyor

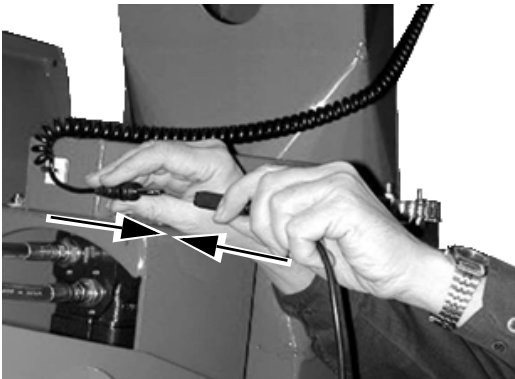


The speed of the floor conveyor is set using the rotary button shown on the valve block behind the guard on the front of the shredder housing.

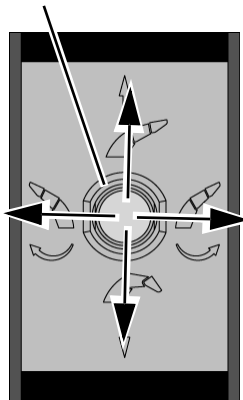
The swivel chute is operated by the delivered joystick.

The swivel chute is connected to the joystick in the following way:

- ▶ Make sure the tractor motor is stopped.
- ▶ Mount the joystick in the tractor cab.
- ▶ Connect the joystick to the machine swivel chute.
- ▶ Connect the lead to the swivel chute flap as shown
- ▶ Connect the joystick to the electric system of the tractor.



Joystick



The joystick has the following functions:

Joystick	Function
←	The swivel chute turns to the right
→	The swivel chute turns to the left
↑	Swivel chute up
↓	Swivel chute down

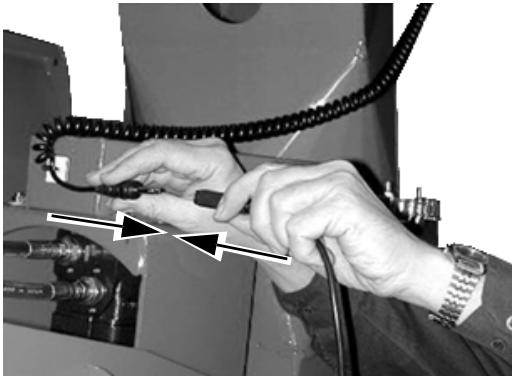
Operation

Electrical hydraulic controls



Connect the control box power source properly

The control box must be connected to a 12 V electrical system. A proper connection of the power source prevents a short-circuit. Incorrect connection can result in short circuiting and burns to the skin.

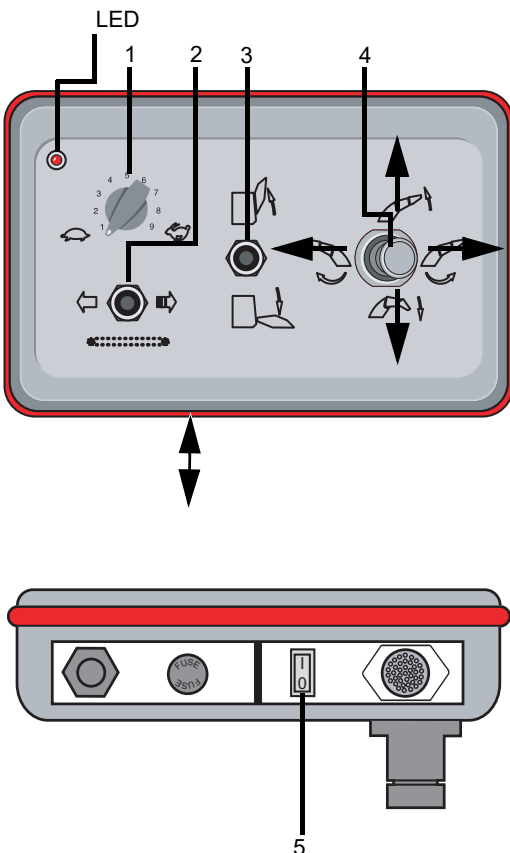


The electric valve block is located behind the protection guard on the front of the chopper house. The valves are operated from the control box which is mounted in the tractor's cab with the brackets supplied.

The swivel chute is connected to the joystick in the following way:

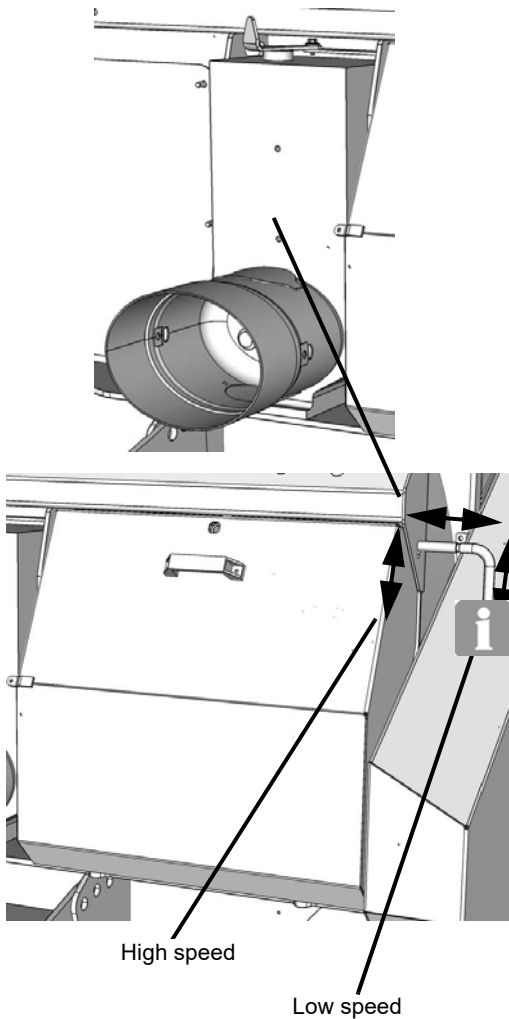
- ▶ Make sure the tractor motor is stopped.
- ▶ Mount the control box in the tractor cab.
- ▶ Connect the joystick to the machine swivel chute.
- ▶ Connect the lead to the swivel chute flap as shown
- ▶ Connect the control box to the electrical system of the tractor.

Operation of the control box joystick functions are described below.



Contact	Action	Function
1	Variable Position 1 - 9	Floor conveyor speed
2	Switch in left position	Floor conveyor forward
	Switch in middle position	Floor conveyor stopped
	Switch in right position	Floor conveyor reverse
3	Switch up	Rear door up
	Switch in middle position	No movement
	Switch in down position	Rear door down
4	Joystick up	Swivel chute up
	Joystick down	Swivel chute down
	Joystick to left	The swivel chute turns to the right
	Joystick to right	The swivel chute turns to the left
5	Switch in position "1"	Control box on (LED lit)
	Switch in position "0"	Control box off (LED off)

2-speed transmission



The machine is fitted with a 2-speed transmission to allow adjustment of the flywheel rotation speed depending on crop type, length and condition.

To select the transmission, do the following:

- ▶ Raise the handle from the lock.
- ▶ Select the transmission.

Material		Condition	Length	Transmission	
				Low	High
Straw:	Round bale	Dry	Short		X
	Large bale		Long		
Hay:	Round bale	Dry	Short	X	
	Large bale		Long		X
Silage:	Round bale	Dry	Short	X	
			Long	X	
	Large bale	Medium	Short	X	
			Long	X	
		Wet	Short	X	
			Long	X	
Silage:	Cut	Dry	Short	X	
		Wet	Long	X	X

The table is only a guide.

- ▶ Press the handle down in the lock.



The machine is operated in the following way:

- ▶ Make sure that no bypassing persons are in the surrounding area.
- ▶ Use the machine handle and open the rear door.
- ▶ Fasten all the guards on the machine.
- ▶ Remove any foreign objects from the machine's bale chamber.
- ▶ Use the machine handle and close the rear door again.
- ▶ Carefully connect the tractor's PTO shaft.
- ▶ Carefully increase the speed of the PTO shaft to 540 rpm.
- ▶ Use the machine handle to operate the hydraulic functions.



In case there is no function on the machine:



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

→ »Fault finding« Page 121



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

→ »Fault finding« Page 121

Loading the machine



Keep distance to the machine

No unauthorised persons should be close to the machine during operation.

This gives you a guarantee to work safely and securely.

Persons close to the machine during operation are at high risk of being crushed, severely injured or killed.

The tractor must be fitted with mirrors

The tractor should be fitted with mirrors which are kept clean and in good condition.

This ensures the tractor driver has a good view to both sides of the machine.

A restricted view to the sides of the machine can lead to persons being crushed, severely injured or killed.

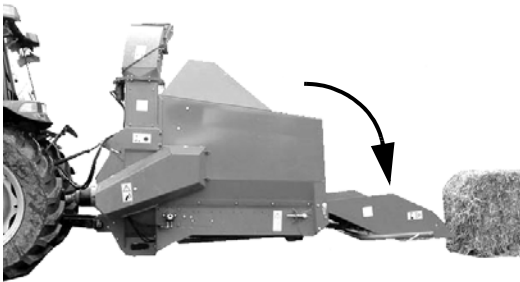


The machine can be used for self loading of round or big bales.

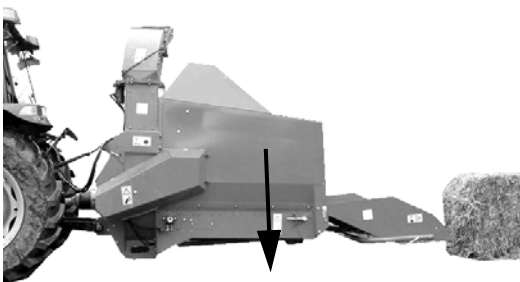
The bale to be loaded should be placed on the ground in front of a wall or similar. Round bales must be loaded on their side so that the bale can revolve easily in the bale chamber.

Do the following:

- ▶ Lower the rear door to horizontal position.

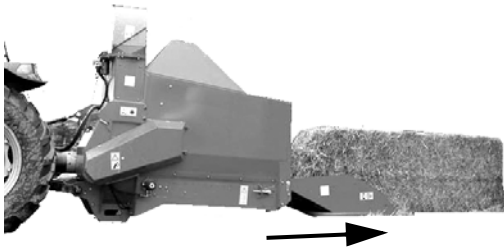


- ▶ Lower the lift arms on the tractor until the machine's rear door touches the ground.

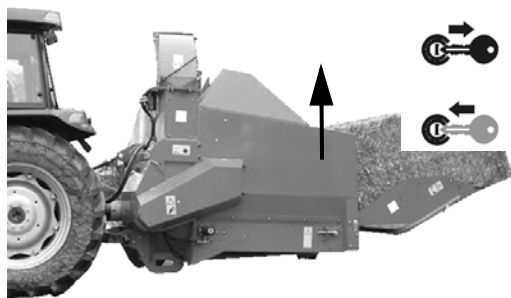


Operation

- ▶ Put the tractor in reverse and push the machine's rear door in underneath the bale.



- ▶ Raise the lift arms on the tractor until the PTO shaft is horizontal.
- ▶ Stop the tractor and remove the ignition key.
- ▶ Remove net and all strings around the bale.
- ▶ Start the tractor.
- ▶ Raise and close the rear door completely.





Remove the packing properly

Remove net and other packing material properly. This gives you a guarantee to work safely and securely. Failure to follow the safety instructions may result in severe injuries or death.

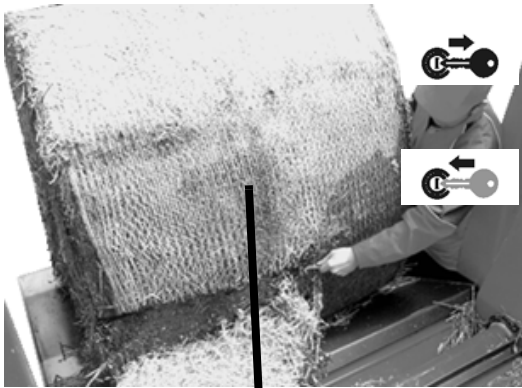


The machine can also be loaded by a loader tractor, bobcat or the like. Round bales must be loaded on their side so that the bale will revolve easily in the bale chamber.

Do the following:

- ▶ Lower the rear door to horizontal position.
- ▶ Stop the tractor and remove the ignition key.
- ▶ Use a loader tractor or a bob cat to place the bale on the rear door.
- ▶ Remove net and all strings around the bale.
- ▶ Start the tractor.
- ▶ Raise and close the rear door completely.

A new bale can now be placed on the rear door for transportation as described earlier.



Remove net and all strings around the bale



The bale should be placed on its side so the strings are easier to remove

Large rectangular bales are loaded so that part of the bale is inside the bale chamber, and part of the bale is on the rear door in its level position.

Do the following:

- ▶ Lower the rear door to horizontal position.
- ▶ Stop the tractor and remove the ignition key.
- ▶ Use a loader tractor or a bobcat to place the bale on the side on the rear door.
- ▶ Remove net and all strings around the bale.
- ▶ Start the tractor.

When chopping large rectangular bales, the machine should be operated with the rear door level so that the first part of the bale is chopped, and then the door is raised to its closed position, placing the remaining half of the bale in the chamber for further chopping.

Machine start-up



Keep distance to the machine

No unauthorised persons should be close to the machine during operation.

This gives you a guarantee to work safely and securely.

Persons close to the machine during operation are at high risk of being crushed, severely injured or killed.

The tractor must be fitted with mirrors

The tractor should be fitted with mirrors which are kept clean and in good condition.

This ensures the tractor driver has a good view to both sides of the machine.

A restricted view to the sides of the machine can lead to persons being crushed, severely injured or killed.

The rear door on the machine should not force material into the shredding drum

Never use the rear door to force material into the machine shredding drum.

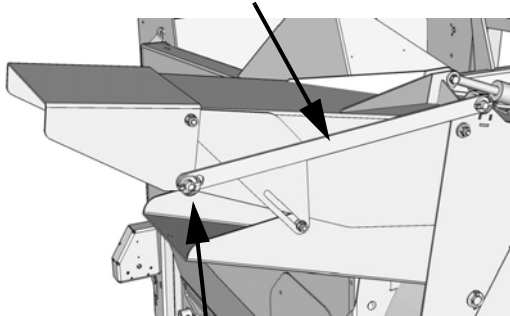
This could result in blocking the machine - especially when starting up.

A blocking of the machine can result in damages on the vital machine parts.

Standard model

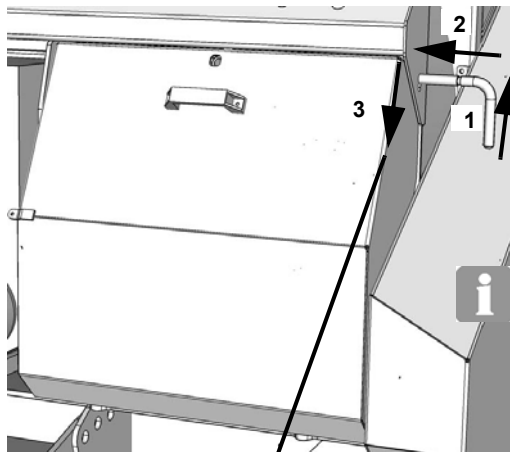
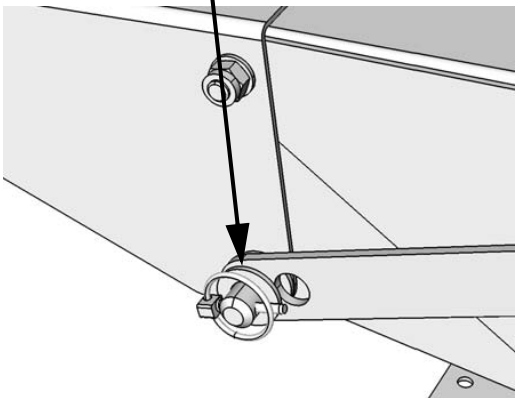
Hay and straw

Connection rod



To spread straw, do the following:

- ▶ Extend the standard chute completely using the machine's control lever or control box.
- ▶ Adjust the connecting rods to the standard chute as shown.



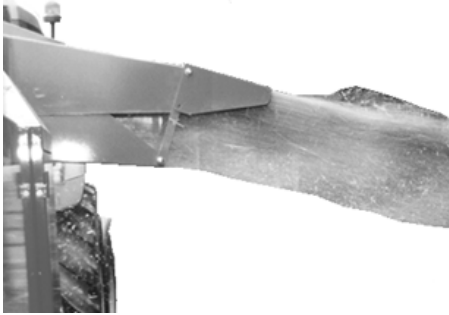
High speed

- ▶ Set the transmission to high speed:
- ▶ Raise the handle from the lock [1].
- ▶ Push the handle into the machine [2].
- ▶ Press the handle down in the lock [3].
- ▶ Carefully connect the tractor's PTO outlet.
- ▶ Increase the speed of the tractor's PTO outlet to 540 rpm.



It is recommended to bring the PTO outlet up to 540 rpm as quickly as possible.

Operation



- ▶ Start the machine floor conveyor with the handle or control box and the bale is brought to the front of the machine.
- ▶ Set the speed of the floor conveyor to give the required discharge rate.
- ▶ Select an appropriate tractor forward speed for the desired amount to be chopped.
- ▶ Hydraulically adjust the standard chute to place the crop in the desired area.



The machine can throw material up to 15 metres (49').



If a shorter throwing distance is desired, the rpm on the tractor PTO outlet should be reduced.

Silage



Do not use the rear door for loading

The machine rear door must never be used to load cut silage. The machine is not designed for loading cut silage with the rear door. Doing so may cause damage to the machine's structure.

Silage is loaded as follows:

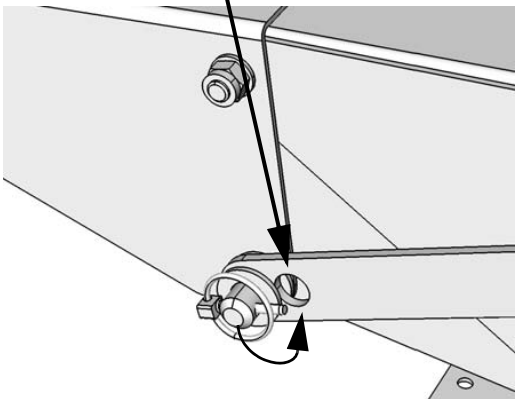
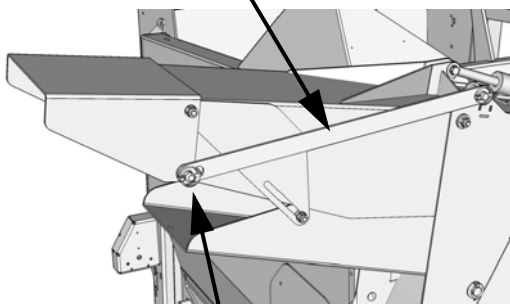
- ▶ The machine rear door must be completely closed.
- ▶ Load the silage into the machine with a tractor fitted with a front loader or similar.



Silage must not be loaded higher than the top of the bale chamber side plates.

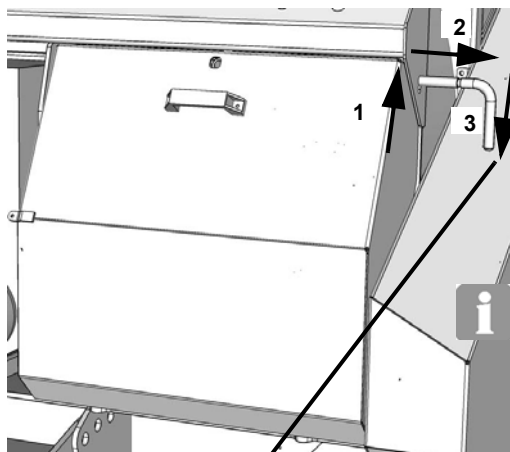
The machine can be used to feed silage and pressed crop.

Connection rod



To feed hay and silage, do the following:

- ▶ Extend the standard chute completely using the machine's control lever or control box.
- ▶ Adjust the connecting rods to the standard chute as shown.



- ▶ Set the transmission to low speed:
- ▶ Raise the handle from the lock [1].
- ▶ Pull out the handle [2].
- ▶ Press the handle down in the lock [3].
- ▶ Carefully connect the tractor's PTO outlet.
- ▶ Increase the speed of the tractor's PTO outlet to 540 rpm.



It is recommended that the PTO outlet is brought up to 540 rpm as quickly as possible.

Low speed

Operation

Operating manually

Stop the floor conveyor



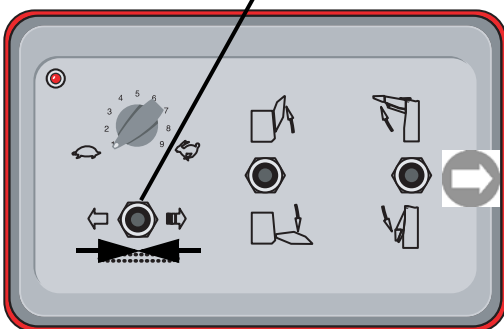
by following the stopping procedure:

- ▶ Operate the shown handle to stop the floor conveyor.
- ▶ Wait until no more material is discharged from the standard chute.
- ▶ Run down PTO speed to engine idle.
- ▶ Disconnect the PTO transmission.
- ▶ Wait until the machine flywheel has come to a complete stop.

By following the above procedure, the flywheel will not contain any excess material that may cause blockages when the machine is started again.

Electrical hydraulic controls

Stop the floor conveyor



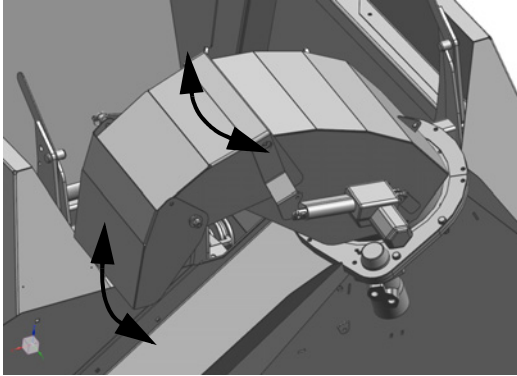
by following the stopping procedure:

- ▶ Stop the floor conveyor.
- ▶ Wait until no more material is discharged from the standard chute.
- ▶ Lower the machine's flywheel speed to idle.
- ▶ Disconnect the tractor's PTO outlet.
- ▶ Wait until the machine flywheel has come to a complete stop.

By following the above procedure, the flywheel will not contain any excess material that may cause blockages when the machine is started again.

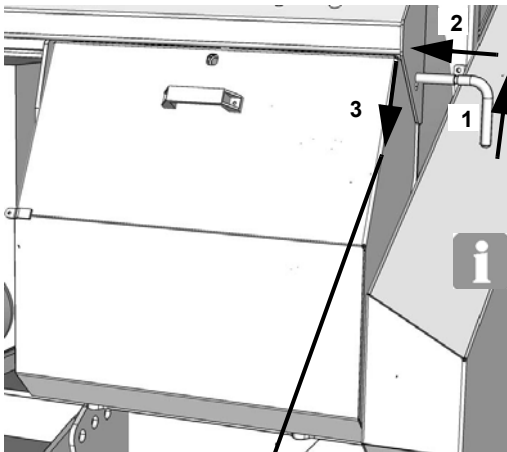
Swivel chute model

Hay and straw



To spread straw with the swivel chute, do the following:

- ▶ Raise the swivel chute with the machine's control handle or control box.

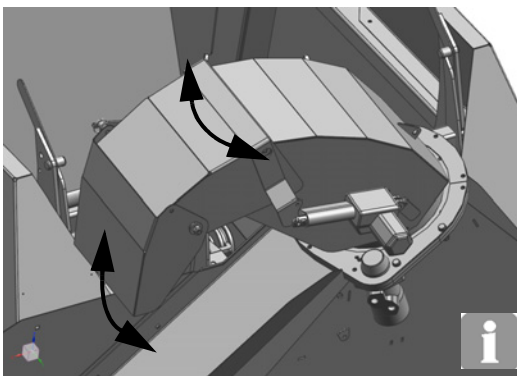


Set the transmission to high speed:

- ▶ Raise the handle from the lock [1].
- ▶ Push the handle into the machine [2].
- ▶ Press the handle down in the lock [3].
- ▶ Carefully connect the tractor's PTO outlet.
- ▶ Increase the speed of the tractor's PTO outlet to 540 rpm.

It is recommended that the PTO outlet is brought up to 540 rpm as quickly as possible.

High speed



- ▶ Start the machine floor conveyor with the control box to pull the bale to the front of the machine.
- ▶ Set the speed of the floor conveyor to give the required discharge rate.
- ▶ Select a forward speed with the tractor suitable for the desired amount to be processed.
- ▶ Adjust the swivel chute with the machine's control box to bring the crop to the desired point.

The machine can throw material up to 15 metres (49').



If a shorter throwing distance is desired, the rpm on the tractor PTO outlet should be reduced.

Operation

Silage



Do not use the rear door for loading

The machine rear door must never be used to load cut silage. The machine is not designed for loading cut silage with the rear door. Doing so may cause damage to the machine's structure.

Silage is loaded as follows:

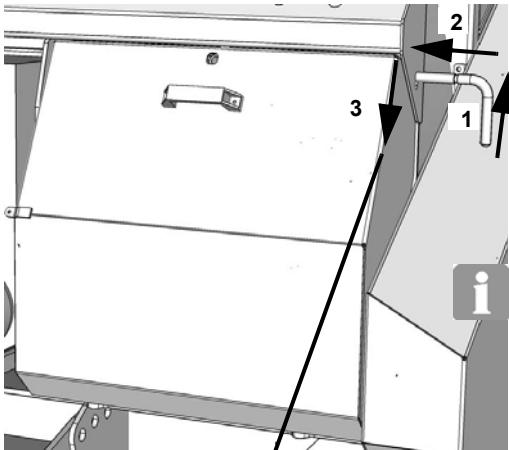
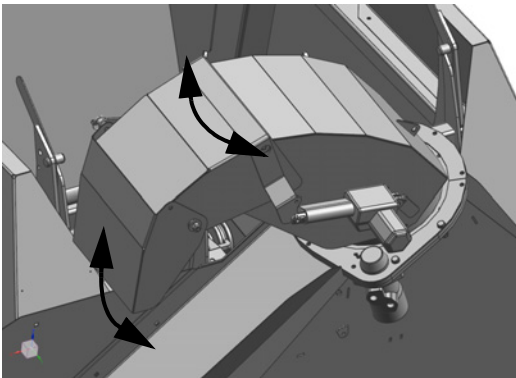
- ▶ The machine rear door must be completely closed.
- ▶ Load the silage into the machine with a tractor fitted with a front loader or similar.



Silage must not be loaded higher than the top of the bale chamber side plates.

To spread silage with the swivel chute, carry out the following:

- ▶ Raise the swivel chute with the machine's control handle or control box.



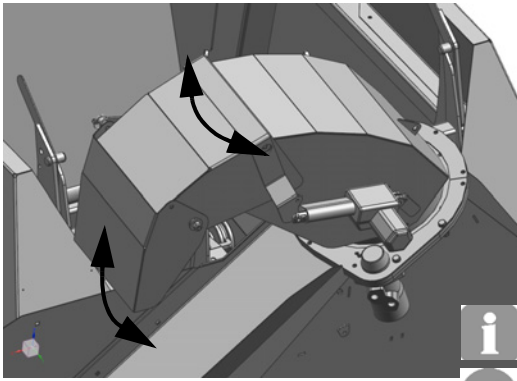
High speed

Set the transmission to high speed:

- ▶ Raise the handle from the lock [1].
- ▶ Push the handle into the machine [2].
- ▶ Press the handle down in the lock [3].
- ▶ Carefully connect the tractor's PTO outlet.
- ▶ Increase the speed of the tractor's PTO outlet to 540 rpm.



It is recommended that the PTO outlet is brought up to 540 rpm as quickly as possible.



- ▶ Start the machine floor conveyor with the control box to pull the bale to the front of the machine.
- ▶ Set the speed of the floor conveyor to give the required discharge rate.
- ▶ Select a forward speed for the tractor suitable for the desired amount to be processed.
- ▶ Adjust the swivel chute with the machine's control box to bring the crop to the desired point.



The machine can throw material up to 15 metres (49').

If a shorter throwing distance is desired, the rpm on the tractor PTO outlet should be reduced.

Operating manually

Stop the floor conveyor



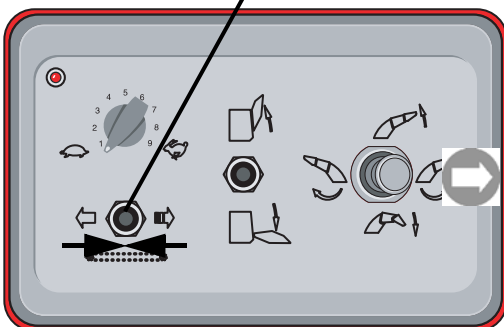
by following the stopping procedure:

- ▶ Operate the shown handle to stop the floor conveyor.
- ▶ Wait until no more material is discharged from the swivel chute.
- ▶ Run down PTO speed to engine idle.
- ▶ Disconnect the PTO transmission.
- ▶ Wait until the machine flywheel has come to a complete stop.

By following the above procedure, the flywheel will not contain any excess material that may cause blockages when the machine is started again.

Electrical hydraulic controls

Stop the floor conveyor



by following the stopping procedure:

- ▶ Stop the floor conveyor.
- ▶ Wait until no more material is discharged from the swivel chute.
- ▶ Lower the machine's flywheel speed to idle.
- ▶ Disconnect the tractor's PTO outlet.
- ▶ Wait until the machine flywheel has come to a complete stop.

By following the above procedure, the flywheel will not contain any excess material that may cause blockages when the machine is started again.

Operation

Setting the floor conveyor speed



The diagram below is only for guidance.

Material		Condition	Length	Number of knives		
				Fast	Medium	Slow
Straw:	Round bale	Dry	Short	X		
	Large bale		Long			
Hay:	Round bale	Dry	Short		X	
	Large bale		Long		X	
Silage:	Round bale	Dry	Short		X	
			Long		X	
	Large bale	Medium	Short		X	
			Long		X	
		Wet	Short		X	
			Long		X	
Silage:	Cut	Dry	Short			X
		Wet	Long			X

Flywheel speed



Avoid a rotational speed on the PTO outlet that is too low

The rpm speed on the PTO shaft should not drop below 400 rpm. Too low rpm speed can result in blocking of the swivel chute. A blocking of the swivel chute can result in damages on the machine.

The minimum stopping time for the flywheel is two minutes

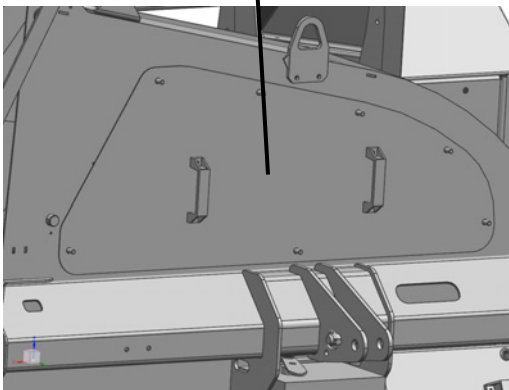
Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Standard model

Remove the flywheel housing access panel



Unblocking tool for flywheel housing

In case of blocking:

- ▶ Stop the tractor.
- ▶ Disconnect the PTO outlet on the tractor.
- ▶ Allow the flywheel to come to a stop - wait for at least 2 minutes.
- ▶ Disconnect the PTO shaft.
- ▶ Remove the flywheel housing access panel, if present.

Operation

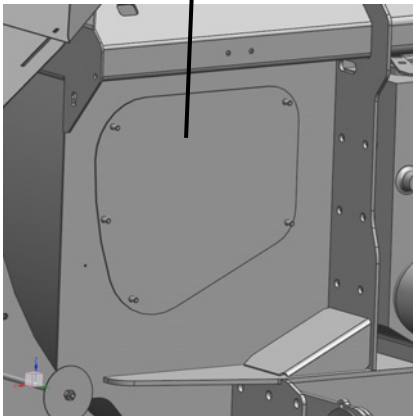
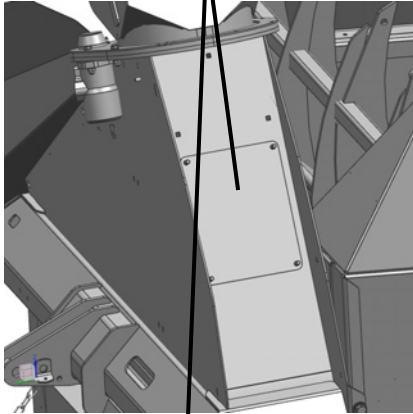
Remove the cause of the blocking by using the delivered tool.



Tool for cleaning the standard chute

Swivel chute model

Remove the access panel



In case of blocking:

- ▶ Disconnect the PTO outlet on the tractor immediately.
- ▶ Stop the tractor.
- ▶ Allow the flywheel to come to a stop - wait for at least 2 minutes.
- ▶ Remove the access panel bolts.
- ▶ Remove the flywheel housing access panel.

- ▶ Remove the cause of the blocking by using the delivered tool.



Unblocking tool for flywheel housing



Operation

Cleaning the shredding drum



Be aware of the shredding drum knives

Use protection gloves when working on the shredding drum.

The knives on the shredding drum are very sharp.

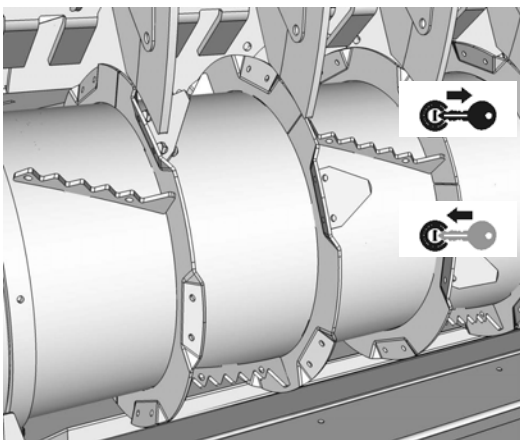
Working on the shredding drum without protective gloves can lead to severe hand injuries.

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.



String/net/packing is removed from the shredding drum as follows:

- ▶ Open the rear door on the machine.
- ▶ Stop the tractor and remove the ignition key.
- ▶ Put on the protective gloves.
- ▶ Remove the accumulated material carefully.
- ▶ Start the tractor and close the rear door on the machine.

Before cleaning



Higher risk when performing cleaning work

When carrying out cleaning work there is a higher risk of personal injury.

Attention when carrying out cleaning work protects your own and others safety.

Failure to follow the safety instructions may cause serious injuries.

Therefore, before cleaning do the following:

- ▶ Disconnect the tractor's PTO outlet.
- ▶ Ensure that the machine's flywheel has come to a complete stop.
- ▶ Neutralise all hydraulics.
- ▶ Stop the tractor.
- ▶ Remove the ignition key.
- ▶ Apply the handbrake.
- ▶ Secure the tractor to prevent it from rolling.



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

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

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 proper protection gear on body and face when cleaning the machine.

It will protect your body and face from dirt and oil splashes.

Insufficient protection of body and face can lead to severe skin and eye injuries.

Before starting cleaning the machine do the following:

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

Cleaning

Only electrical hydraulics



- Disconnect the electric circuit to the machine.
- Disconnect the electric control box and remove it from the machine.

Cleaning



Use the proper cleaning agents

Use only PH neutral cleaning agents when cleaning the machine. PH neutral cleaning agents give your machine a maximum protection.

Cleaning agents with either a high or low PH value can corrode plastic, rubber and varnished surfaces.

- The cleaning procedure can be performed by a high pressure cleaner, however cleaning around all bearings should be carried out with soft squirts of water.
- Hydraulic components should only be cleaned with soft squirts of water to protect the packing.

After cleaning

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

Before storage

When the season has come to an end the machine should be prepared for storage:

- ▶ Check and tighten all bolts.

→ »Torque moment« Page 129

- ▶ Repair all damaged components.

- ▶ Replace all defect components.

- ▶ Repair varnish damages.

- ▶ Lubricate the machine according to the lubrication scheme.

→ »Lubrication« Page 94

Parking/ uncoupling the machine



Disconnecting the machine from the tractor

There is an increased risk of injury (crushing) when disconnecting the machine from the tractor.

Attention when disconnecting protects your own and others safety. Failure to follow the safety instructions may result in serious injuries.

Therefore, when disconnecting make sure that:

- the machine is placed on an even and stable surface.
- The tractor's PTO outlet is disconnected.
- The machine 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.

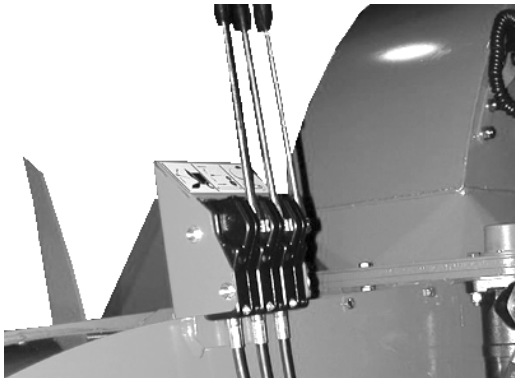


Failure to secure the tractor to prevent it from rolling could endanger lives.

Parking and Storage

Standard model / Swivel chute model

Operating manually

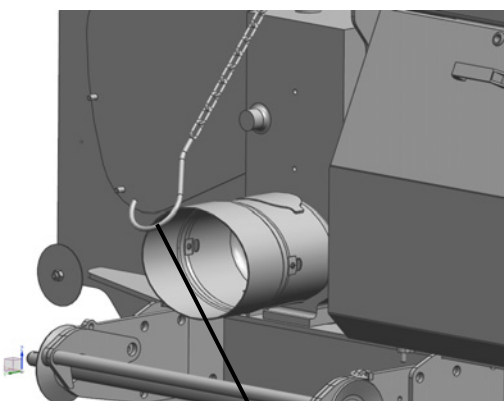


When the bracket with the operating handles are dismantled from the tractor cab it can be stored at the front of the machine as shown.

Electrical hydraulic controls



- ▶ Remove the control box for the swivel chute from the tractor cab
- The control box must be stored in a dry environment.



Hook

- ▶ Remove the PTO shaft from the tractor.
- ▶ Fit the PTO shaft into the hook shown on the machine.

Hydraulic



Only disconnect the 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 unintentionally.

Unintentional movement of the machine may result in serious injury.

Avoid physical contact with hydraulic oil

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

- Avoid direct contact with hydraulic oil. It can cause injuries to your skin.
- Protect your skin with barrier cream or protective gloves.
- Never use oil or lubricants for cleaning your hands.
- Clothes contaminated with oil should be changed immediately.
- Oily clothes 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.

Parking and Storage

Storage

When the season is over, the machine must be made ready for storage. Do the following:

- Clean the machine thoroughly..
→ »Cleaning« Page 83
- Change the transmission oil.
→ »Lubricants« Page 128
- 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, greased and stored in a dry place to avoid damage and deterioration.
- Chain transmission should be checked for wear and tear.
- Make sure that the machine safety equipment is not worn or damaged.
- Release the excess hydraulic pressure in the cylinders and hoses as much as you can.
- Store the machine in a ventilated engine house.
- The electric control box must be stored in a dry environment.
- If stored outside, place the machine so rain and moisture will drain towards the front, where the drain holes are located.

Safety



The machine should be secured when parked

When stored the machine must be properly secured in parking position.

Properly secured machines prevent serious accidents.

If the machine is not properly secured when parked it can result in serious injuries and death.

Therefore, when parking the machine make sure that:

- the machine is placed on an even and stable surface.
- The tractor's PTO outlet is disconnected.
- The machine 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 the environment.

Specific safety information



- Repair and maintenance work should only be performed if you have the necessary professional knowledge and the proper tools.
- The PTO outlet on the tractor should be disconnected, and the engine 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 the correct support 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 an air pressure lubrication spray to lubricate the machine bearings.

Lubrication safety and use of oil



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

- Avoid direct contact with these agents. It can cause injuries to your skin.
- Protect your skin with barrier cream or protective gloves.
- Never use oil or lubricants for cleaning your hands.
- Clothes contaminated with oil should be changed immediately.
- Oily clothes should not be kept in your pockets.
- Used oil must be collected and be delivered to a disposal company, where the oil will be processed according to the governing regulations.
- Contact medical help in case of skin injuries caused by oil or lubricants.



Maintenance

General instructions

These instructions concern general maintenance work. Specific maintenance work procedures for each machine will be described later. When performing all 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 concerning this work.



Working with lubricant spray

Lubrication is performed by one or two pumps on the lubricant spray. If you feel resistance after just one pump on the lubricant spray do not apply more grease to the bearings. Too much grease bearings drift apart. In this case dust and dirt can enter the bearings and cause an early wear and tear.

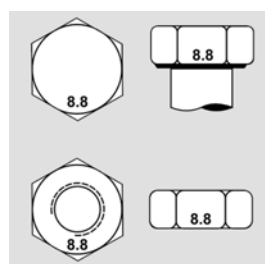
Basic

This table contains explanations of the most important terms related to maintenance.

Work	Performance
Lubricating with oil can	Add oil from the can to the moving parts. Use only authorised products. → »Technical information« Page 128
Lubricating with lubricant spray	1-2 pumps with the grease gun is sufficient unless otherwise stated. Use only authorised products. → »Technical information« Page 128
Oil change	Use only authorised oil products. Using used oil is dangerous for your health and is strictly prohibited. → »Technical information« Page 128
Replace	Replace the appropriate part following the instructions given in the "Replacement" chapter → »Replacement« Page 109
Check	Check the appropriate part following the instructions given in the "Service - check" chapter The check is sometimes related to replacing the part in question → »Service - check« Page 96
Complying with the maintenance intervals	All specifications have as starting point an average use of the machine. If heavily loaded, e.g. contractor, maintenance should be performed more often. In work conditions with high levels of dust, maintenance should also be performed more often

Tightening torque for screw connections

→ »Torque moment« Page 129



Maintenance intervals

		After 2 hours of use	Every day	Every week	Every 50 hours of use	Every month	Every season	As required	Oil change	Lubrication	Check	Replacing	Page
General	Hydraulic hoses every 6 years										•	•	19
	Bearing/universal joint					•				•			94
	Floor conveyor	•									•		101
			•								•		101
	Knives		•								•		103
									•			•	113
	Throwing wings on the flywheel						•				•		105
								•				•	115
Transmission	Main gear				•				•				109
						•					•		97
							•		•				109
	Main drive line			•							•		98
								•				•	111
	Floor conveyor	•									•		101
		•								•		101	
	Friction discs, PTO shaft							•				•	93
Other	Bolts on the main gear	•									•		107
						•					•		107
	Bolts on bracket for three-point hitch	•									•		108
					•					•		108	



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 outlet must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Always use original spare parts on the machine

Always use original spare parts.

Original spare parts should be used for safety reasons.

The manufacture warranty becomes void if non-original spare parts are being used.

Make sure that all guard protection is in place

Check that all protective guards are in place.

This assures 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.

PTO shaft check



Refer to the manufacturer's maintenance and safety instructions delivered with the PTO shaft.

→ »PTO shaft length« Page 36

Protecting the drive line



Replacing the friction discs on the PTO shaft

Replace the friction discs on the PTO shaft when they become worn.

Optimal friction discs offer the transmission the proper protection. Worn friction discs can cause the machine performance to be under normal standard.

As required

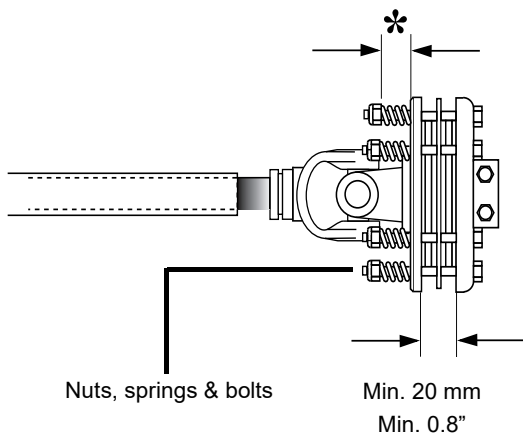
The length of the friction springs should be as follows:

Shaft type	Dimension *
COMER	34 mm
	1.3"

When the measurement between the friction discs is 20 mm (0.8 ") or less, the discs should be replaced.

The friction discs are replaced in the following way:

- ▶ Remove all nuts, springs and bolts on the clutch.
- ▶ Separate the friction clutch.
- ▶ Replace the friction discs.
- ▶ Assemble the friction clutch and mount the bolts, springs and nuts.
- ▶ Tighten all springs to the correct measure, see the above table.



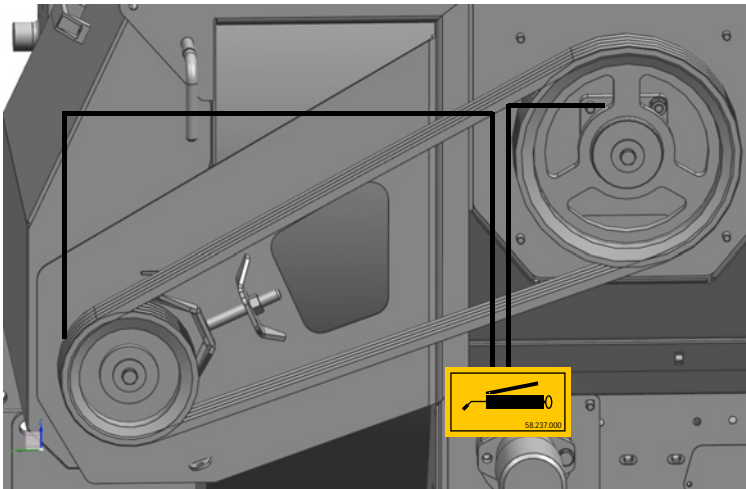
Nuts, springs & bolts

Min. 20 mm
Min. 0.8"

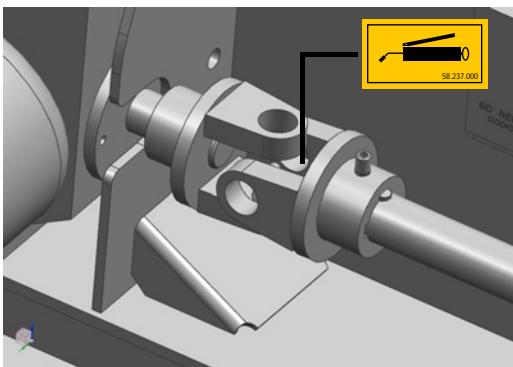
Maintenance

Lubrication

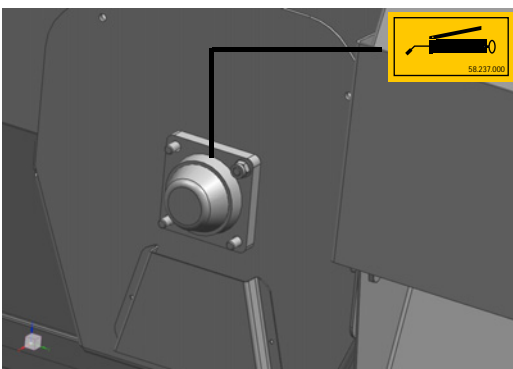
Every month



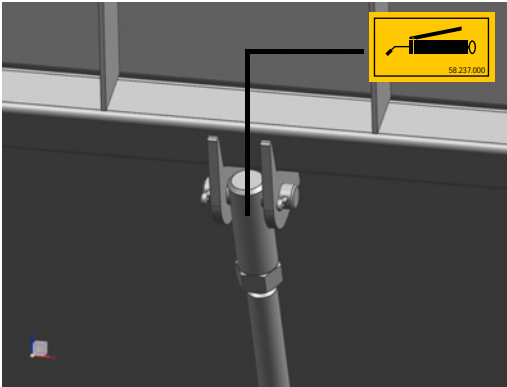
- ▶ Press the nozzle of the grease gun onto the grease nipple.
 - ▶ Pump 1, max. 2 times with the lubricant spray.
- »Maintenance intervals« Page 91
→ »Lubricants« Page 128



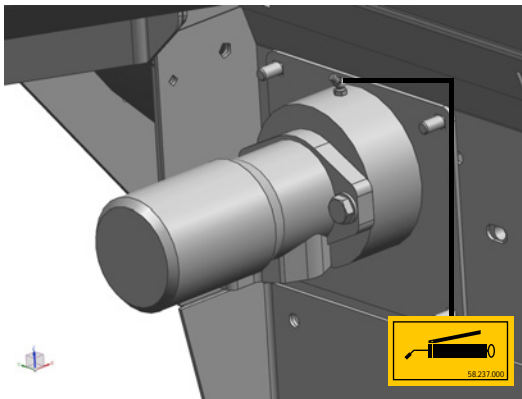
- ▶ Press the nozzle on the lubricant spray over the grease nipple.
 - ▶ Pump 1, max. 2 times with the lubricant spray.
- »Maintenance intervals« Page 91
→ »Lubricants« Page 128



- ▶ Press the nozzle on the lubricant spray over the grease nipple.
 - ▶ Pump 1, max. 2 times with the lubricant spray.
- »Maintenance intervals« Page 91
→ »Lubricants« Page 128



- ▶ Press the nozzle on the lubricant spray over the grease nipple in both ends of the hydraulic cylinder.
- ▶ Pump 1, max. 2 times with the lubricant spray.
- »Maintenance intervals« Page 91
- »Lubricants« Page 128



- ▶ Press the nozzle on the lubricant spray over the grease nipple in both ends of the machine.
- ▶ Pump 1, max. 2 times with the lubricant spray.
- »Maintenance intervals« Page 91
- »Lubricants« Page 128

Service - check



Safety concerning maintenance work with the transmission

When working on the transmission the tractor must be stopped and secured.

This prevents the machine 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 machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Pay attention when performing oil change

Use barrier cream or protective gloves when changing 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

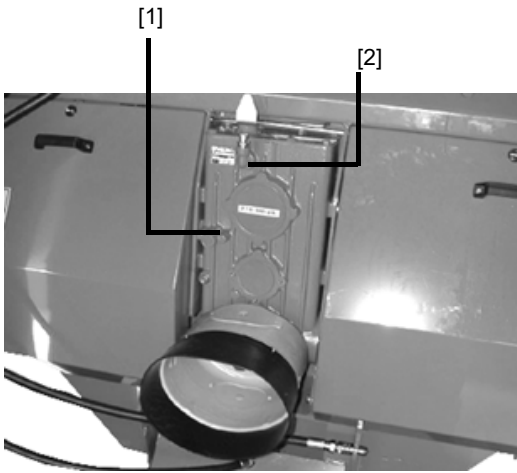
The max. and min. oil level indicators on the transmission must not be exceeded.

Correct transmission oil level will ensure a long service life.

Incorrect oil levels can cause the transmission to overheat, resulting in serious damage.

Main gear

Every month



- ▶ Remove oilplug [1].
 - ▶ Check that the oil stands all the way to the hole.
 - ▶ When topping up, remove oilplug [2].
 - ▶ Fill oil to the correct level.
 - ▶ Fit oilplugs [1] and [2] and tighten them.
- »Maintenance intervals« Page 91
→ »Lubricants« Page 128

Maintenance

Main drive line



Safety concerning maintenance work with the transmission
When working on the transmission the tractor must be stopped and secured.
This prevents the machine from suddenly starting to rotate.
Failure to follow the safety instructions may result in serious injuries.

When working on the machine:

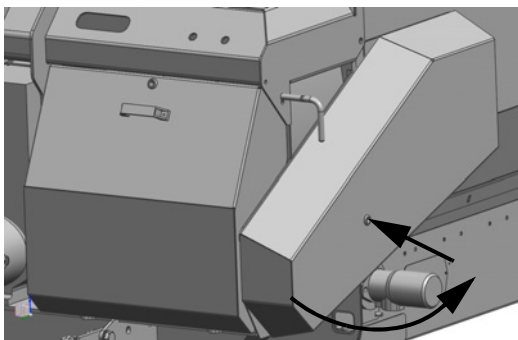
- The tractor's PTO must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- The tractor engine must be stopped.
- The ignition key must be removed.
- The hand brake must be activated.
- The tractor must be prevented from rolling.

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

The minimum stopping time for the flywheel is two minutes
Wait at least two minutes before starting any kind of work on the machine.
It takes the machine's flywheel at least two minutes to come to a complete standstill.
If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.



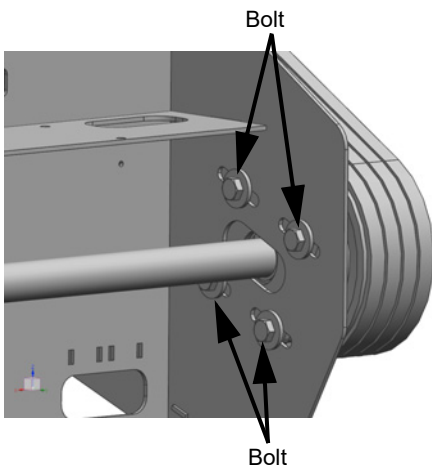
Every week



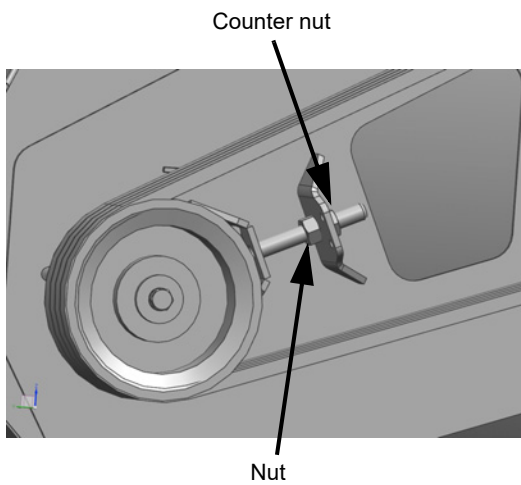
→ »Maintenance intervals« Page 91

The V-belts are checked as follows:

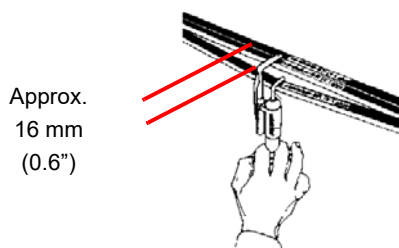
- ▶ Open the guard using a screwdriver or similar tool.



- ▶ Undo the bolts shown.

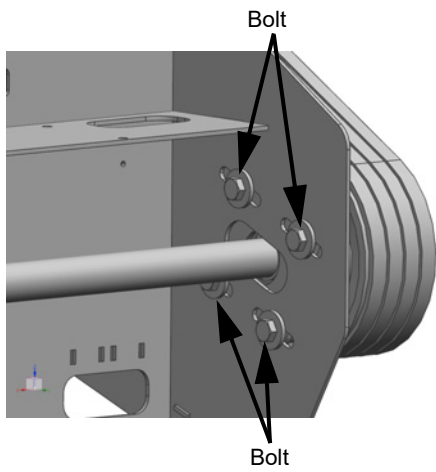


- ▶ Undo the counter nut shown.
- ▶ Tighten the V-belts with the nut shown.
- ▶ Tighten the counter nut shown.

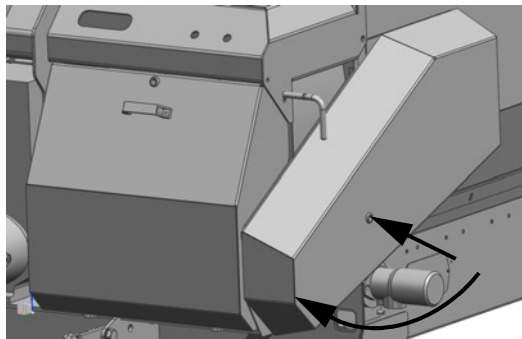


- ▶ If the V-belt tension is correct, you should be able to press each belt down approx. 16 mm (0.6") by hand.

Maintenance



► Tighten all the bolts.



► Close the guard.

Floor conveyor



Safety concerning maintenance work with the transmission

When working on the transmission the tractor must be stopped and secured.

This prevents the machine 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 machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.



The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

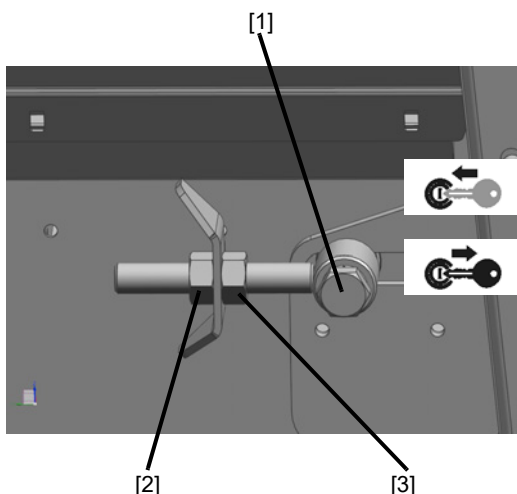
It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

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

After 2 hours of use

Thereafter, every day



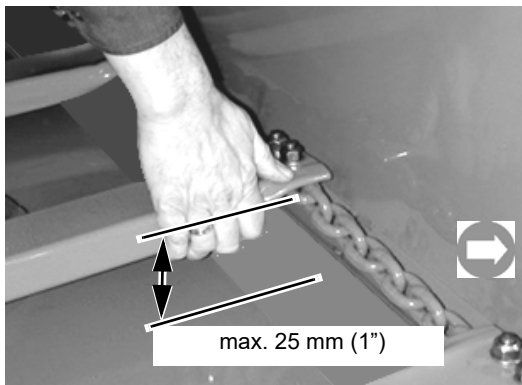
→ »Maintenance intervals« Page 91

The floor conveyor tension is adjusted on both sides of the rear of the machine.

The floor conveyor is checked as follows:

- ▶ Start the tractor.
- ▶ Open the machine rear door.
- ▶ Stop the tractor and remove the ignition key.
- ▶ Undo bolt [1] on both sides of the machine.
- ▶ Undo nut [2] on both sides of the machine.
- ▶ Turn nut [3] half a turn clockwise to tighten the floor conveyor or anticlockwise to loosen it.
- ▶ Carry out this operation to both left and right side of machine.

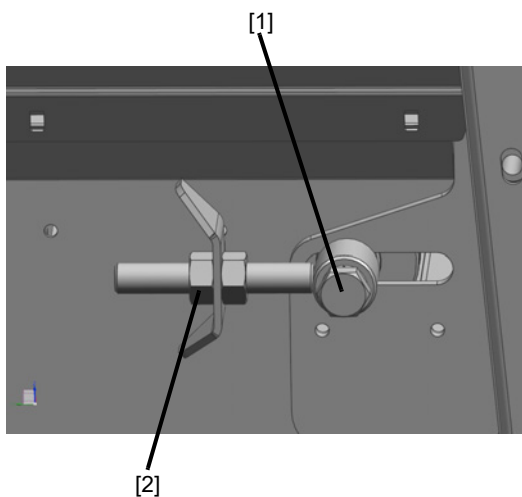
Maintenance



Check that the floor conveyor is correctly tensioned, as follows:

- ▶ Lift the carrier in the bale chamber that is closest to the centre.
- ▶ Step into the machine bale chamber.
- ▶ Lift the carrier in the bale chamber that is closest to the centre by hand.
- ▶ Check the tension on the floor conveyor and adjust it if necessary.

When the floor conveyor is correctly tensioned, you should not be able to raise the carrier more than 25 mm (1") from the base by hand.



- ▶ Tighten and secure bolt [1] on both sides of the machine.
- ▶ Tighten and secure nut [2] on both sides of the machine.

Knives



Be very careful when replacing the knives

Use protection gloves when replacing the knives on the shredding drum.

The knives on the shredding drum are very sharp.

Replacing the knives without protective gloves can result in severe hand injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.

Stop the tractor

Under no circumstances may anyone enter the machine's bale chamber when the tractor is running.

There is a danger that the machine will start to rotate unintentionally.

This can result in damage to the machine.

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Check the machine knives on a regular basis

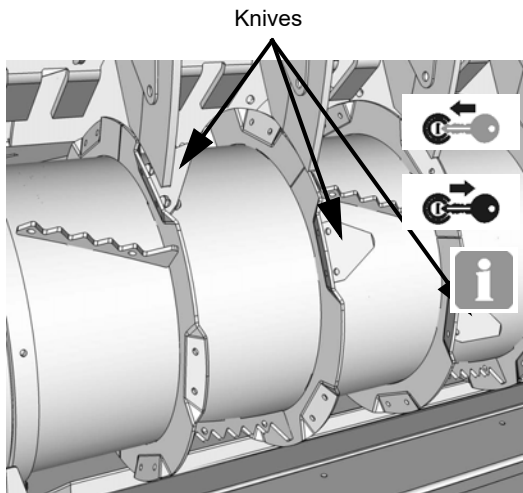
Machine knives should be checked on a regular basis.

Worn or damaged knives can result in imbalance in the rotating parts.

Vibrations can cause damage on the machine.

Maintenance

Every day



→ »Maintenance intervals« Page 91

The knives are checked in the following way:

- ▶ Start the tractor.
- ▶ Open the machine rear door.
- ▶ Stop the tractor and remove the ignition key.
- ▶ Carefully turn the shredding drum round.

The knives can be very sharp - use protective gloves!

- ▶ Inspect the bolts and knives for wear.
- ▶ If the knives are loose, they must be tightened completely.
- ▶ Tighten the bolts on the knives.

→ »Torque moment« Page 129

- ▶ If knives are damaged or deformed, they must be replaced.

→ »Knives« Page 113

Wings on the flywheel



Higher risk when performing maintenance work

When carrying out maintenance work there is a higher risk of personal injury.

Attention when carrying out cleaning work protects your own and others safety.

Failure to follow the safety instructions may cause serious injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.
- ▶ Only the equipment specifically provided must be used for climbing onto the machine.



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

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Maintenance

Every season

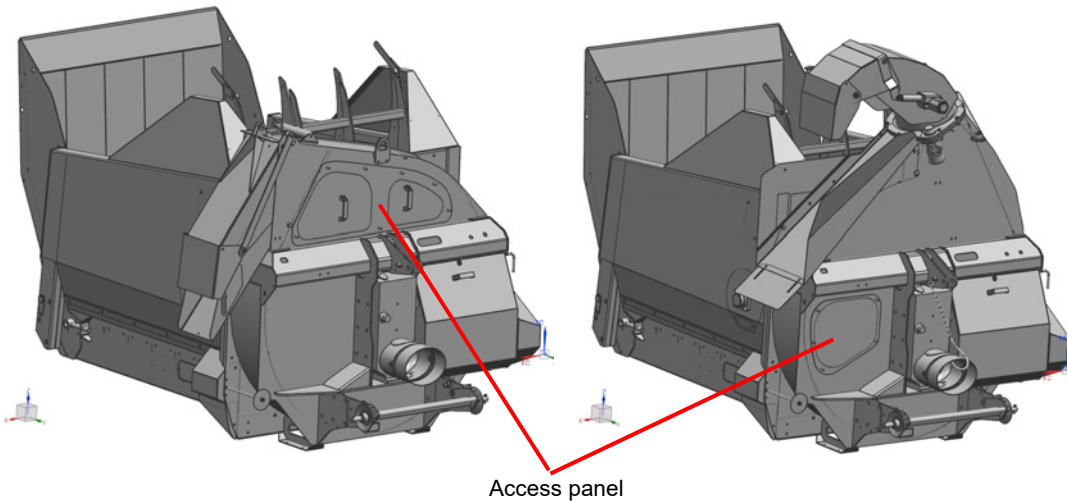
→ »Maintenance intervals« Page 91

The throwing wings are checked in the following way:

- ▶ Remove both access panels.
- ▶ Turn the flywheel by hand and find the throwing wing.
- ▶ Secure any loose throwing wings.
- ▶ Damaged or deformed throwing wings must be replaced.

→ »Wings on the flywheel« Page 115

- ▶ Fit both access panels.



Main gear



Higher risk when performing maintenance work

When carrying out maintenance work there is a higher risk of personal injury.

Attention when carrying out cleaning work protects your own and others safety.

Failure to follow the safety instructions may cause serious injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.
- ▶ Only the equipment specifically provided must be used for climbing onto the machine.



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

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

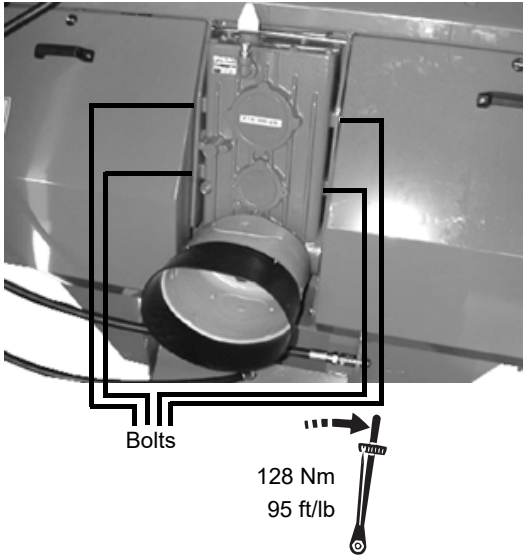
It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Maintenance

After 2 hours of use

Thereafter, every month

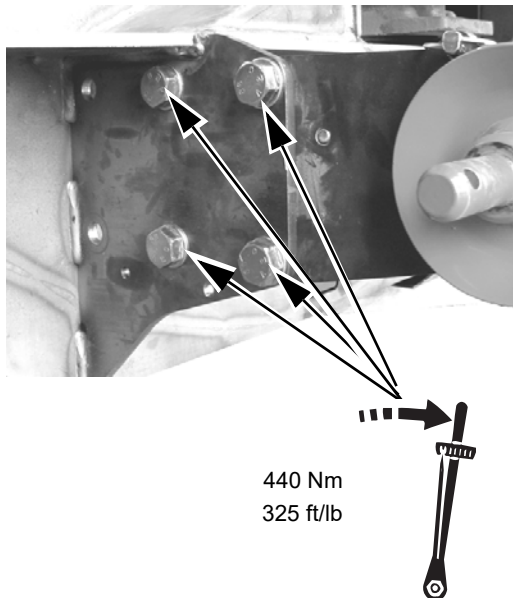


▶ Check and tighten all bolts on the transmission to the given torque.

Bracket for attachment

After 2 hours of use

Thereafter, every month



▶ Check and tighten all bolts on the transmission to the given torque.

Replacement



Safety concerning maintenance work with the transmission

When working on the transmission the tractor must be stopped and secured.

This prevents the machine from suddenly starting to rotate.

Failure to follow the safety instructions may result in serious injuries.

When working on the transmission:

- The tractor's PTO must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Main gear



Pay attention when performing oil change

Use barrier cream or protective gloves when changing 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 indication 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.

Maintenance

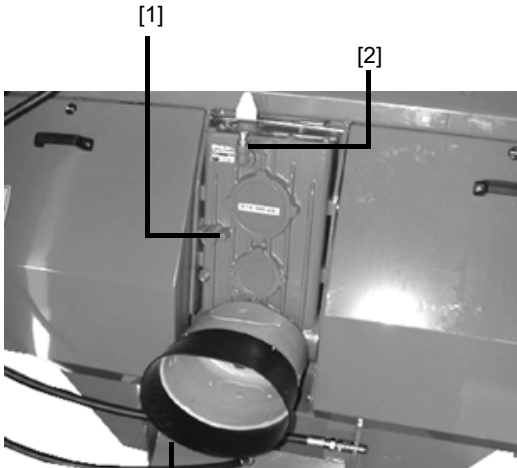
Changing oil

After 50 hours of use

Thereafter, every season

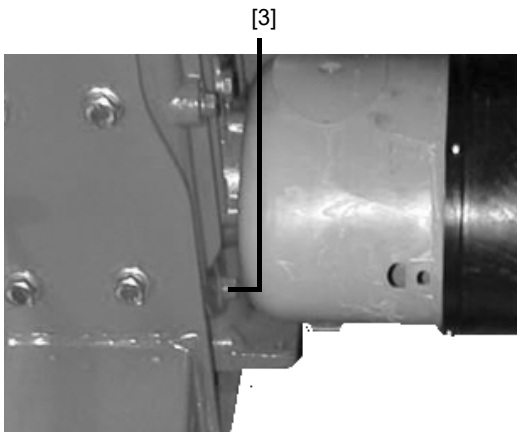
→ »Maintenance intervals« Page 91

1200		
Litre (approx.)	pints (US) (approx.)	pints (imp.) (approx.)
5,6	11,8	9,9



The oil is changed as follows:

- ▶ Remove oilplug [3].
- ▶ Let the oil run into an appropriate reception container.
- ▶ Allow the last of the oil to drip out of the transmission for approx. 10 - 15 minutes.
- ▶ Fit oilplug [3] and tighten it.
- ▶ Remove oilplugs [1] and [2].
- ▶ Fill up with new oil until the oil level reaches the hole [1].
- ▶ Fit oilplugs [1] and [2] and tighten them.



Main drive line



Safety concerning maintenance work with the transmission

When working on the transmission the tractor must be stopped and secured.

This prevents the machine from suddenly starting to rotate.

Failure to follow the safety instructions may result in serious injuries.

When working on the transmission:

- The tractor's PTO must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.

The minimum stopping time for the flywheel is two minutes

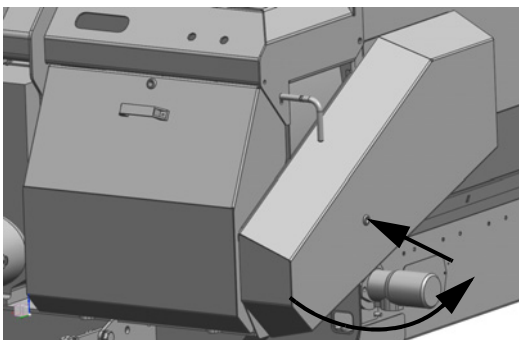
Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.



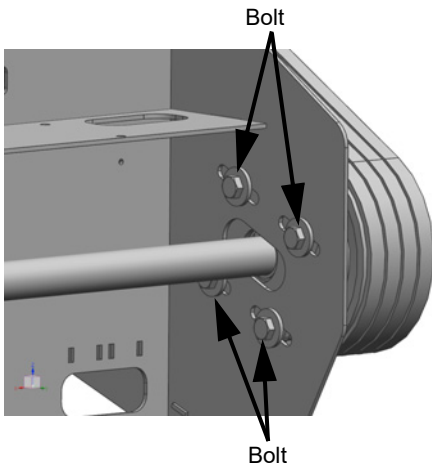
As required



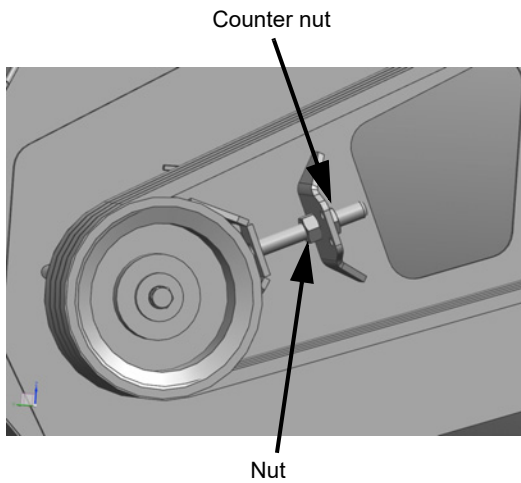
→ »Maintenance intervals« Page 91

- ▶ Use a screwdriver or similar tool to open the guard.

Maintenance

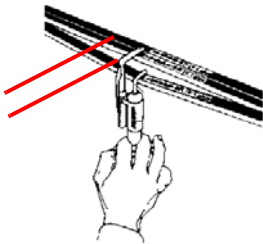


- ▶ Undo the bolts shown.



- ▶ Undo the counter nut shown.
- ▶ Undo the nut shown until the V-belts are released.
- ▶ Remove the V-belts.
- ▶ Fit new V-belts.
- ▶ Then tighten the belts with the bolt shown.
- ▶ Tighten the counter nut shown.

Approx.
16 mm
(0.6")



- ▶ If the V-belt tension is correct, you should be able to press each belt down approx. 16 mm (0.6") by hand.
- ▶ Tighten all the bolts.
- ▶ Close all the guards.

Knives



Be very careful when replacing the knives

Use protection gloves when replacing the knives on the shredding drum.

The knives on the shredding drum are very sharp.

Replacing the knives without protective gloves can result in severe hand injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.

Stop the tractor

Under no circumstances may anyone enter the machine's bale chamber when the tractor is running.

There is a danger that the machine will start to rotate unintentionally.

This can result in damage to the machine.

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Check the machine knives on a regular basis

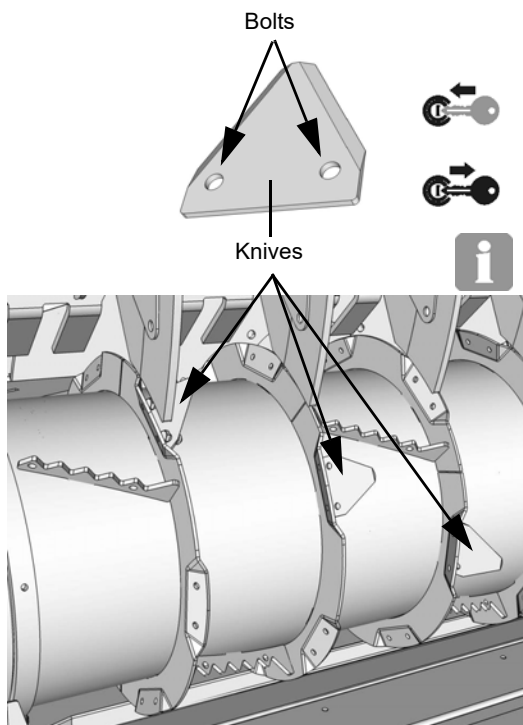
Machine knives should be checked on a regular basis.

Worn or damaged knives can result in imbalance in the rotating parts.

Vibrations can cause damage on the machine.

Maintenance

As required



→ »Maintenance intervals« Page 91

Replace the knives as follows:

- ▶ Start the tractor.
- ▶ Open the machine rear door.
- ▶ Stop the tractor and remove the ignition key.
- ▶ Carefully turn the shredding drum round.



The knives can be very sharp - use protective gloves!

- ▶ Undo and remove the bolts on the knife.
- ▶ Replace the knife.
- ▶ Mount the knife and bolt.
- ▶ Tighten the bolts.

→ »Torque moment« Page 129

Wings on the flywheel



Higher risk when performing maintenance work

When carrying out maintenance work there is a higher risk of personal injury.

Attention when carrying out cleaning work protects your own and others safety.

Failure to follow the safety instructions may cause serious injuries.

When working on the machine:

- The tractor's PTO must be disconnected.
- The machine must be lowered to the ground.
- All hydraulics must be neutralised.
- 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.
- ▶ Only the equipment specifically provided must be used for climbing onto the machine.



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

The minimum stopping time for the flywheel is two minutes

Wait at least two minutes before starting any kind of work on the machine.

It takes the machine's flywheel at least two minutes to come to a complete standstill.

If work is started on the machine before the machine's flywheel has stopped rotating, this can lead to serious injury or accidents.

Maintenance

As required

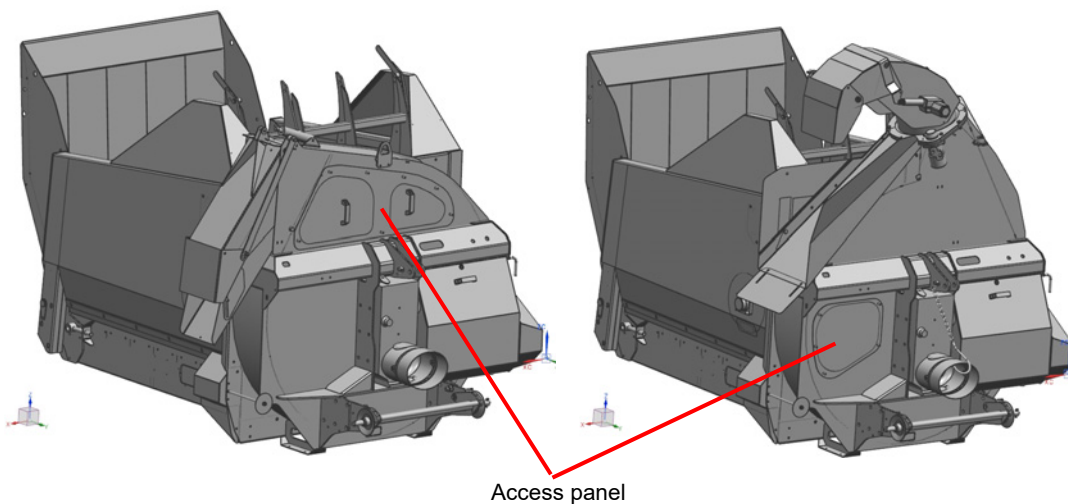
→ »Maintenance intervals« Page 91

Bent/defective wings are replaced as follows:

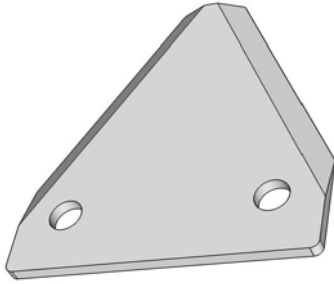
- ▶ Remove the access panel.
- ▶ Turn the flywheel by hand and detect the damaged wing.
- ▶ Remove both bolts on the damaged wing.
- ▶ Remove the damaged wing.
- ▶ Mount a new wing and new bolts.
- ▶ Tighten the bolts.

→ »Torque moment« Page 129

- ▶ Fit the access panel.



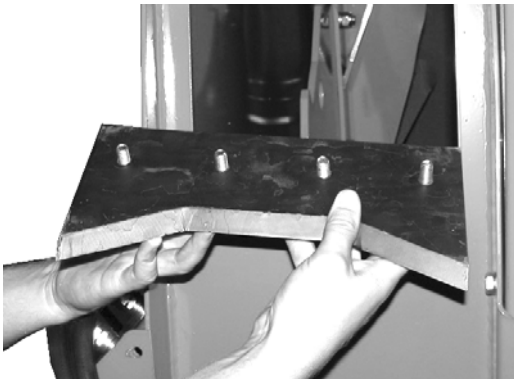
Extra knives for shredding drums



An extra set of knives consists of 14 3 mm (0.12") knives for replacing worn or damaged knives on the shredding drum.

Haylage knife

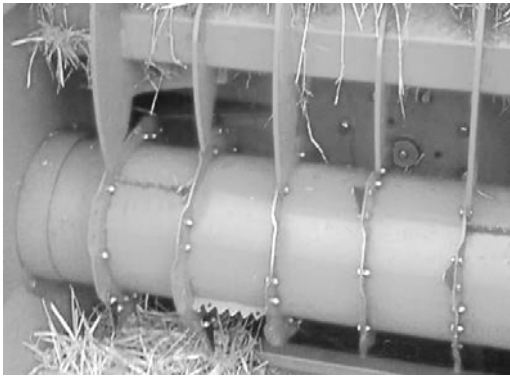
Swivel chute model only



A knife for cut hay is available as extra equipment. The knife is used for cutting the silage hay and reducing blocking and accumulation of material in the flywheel housing and swivel chute.

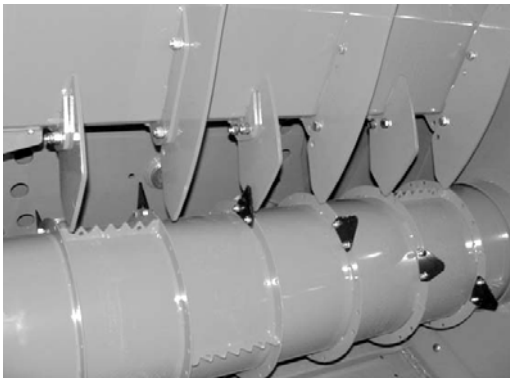
Optional equipment

Silage kit



A kit for cutting silage is available as extra equipment. The silage kit consists of rings mounted on the shredding drum, and a new powerful comb to replace the standard comb. The rings mounted on the shredding drum have angled brackets for the knives which give a more effective cut of the material. The kit also includes a powerful comb which gives an even distribution of material.

Comb for shredding drum



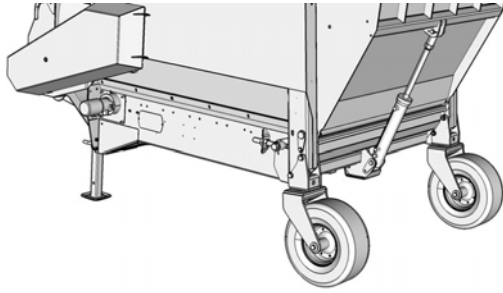
A comb for the shredding drum is available as an accessory. The comb ensures a more uniform flow of material through the machine. The comb is used primarily for hay and straw.

Lighting and reflection kit



The machine can also be equipped with a lighting and reflection kit. The lighting kit should be fitted as shown.

Castor wheel kit



The machine can be equipped with 2 swivelling wheels. The wheels swivel through 360° and are used when the machine is coupled to smaller tractors with limited lift capacity.

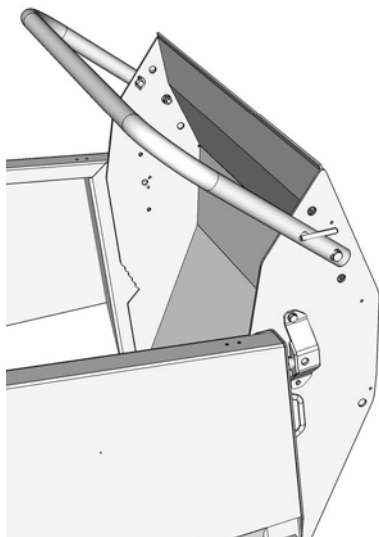
Remote controlled rear door

Only electrical hydraulics



The machine can be equipped with a rear door remote control, which gives the opportunity to operate the rear door with the operator standing next to the machine. The operator can now view the entire rear of the machine.

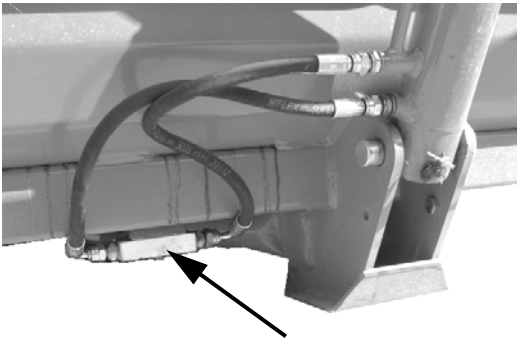
Big bale equipment



A big bale retention kit is available as optional equipment to fit onto the rear door. The equipment will prevent sections of the bale from falling of the rear door.

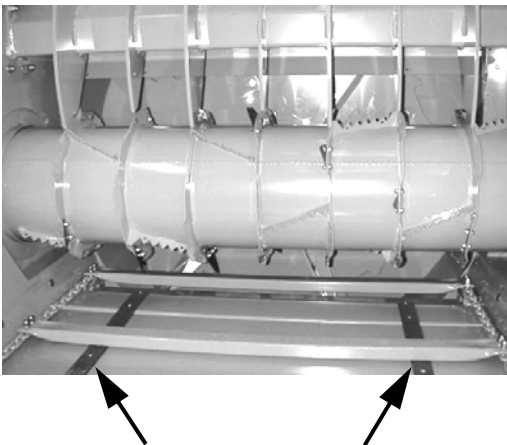
Optional equipment

Rear door safety valve



A valve which secures the rear door is available as extra equipment. When the machine is fully laden, and the rear door is subjected to a large load, the valve prevents the rear door being lowered unintentionally.

Ultra-Glide rails for the bale chamber



2 Ultra-Glide rails to be fitted in the bale chamber are available as accessories.

The rails protect both carriers which are mounted on the floor conveyor and the bottom of the bale chamber from undue wear and also reduce friction between the floor conveyor and the bottom of the bale chamber.

Closed centre hydraulic system

Operating manually

For tractors fitted with closed centre hydraulics, the machine can be equipped with and set for manually operated closed centre hydraulics

Electrical hydraulic controls

For tractors fitted with closed centre hydraulics, the machine can be equipped with and set for electrically operated closed centre hydraulics.

Electric and hydraulic system

Fault	Possible cause	Remedy	Page
Electrical circuit	No response	Check that the control box is switched on	64
		Check fuse	64
		Check the tractor's 12 V current supply	
		Check that the cables from the power supply is correctly pole reversed	50
Hydraulic circuit	Hydraulic supply not operating	Check that the hydraulic hoses are correctly connected to the tractor's outlet	50
	The swivel chute hydraulic motor does not function when the floor conveyor is running	Insufficient amount of oil from the tractor	28
	Hydraulic oil overheats or there is cavitation	Make sure that the hydraulic circuit is set to closed centre ¹	51
	Tractor spool valve overloaded	Make sure that the hydraulic circuit is set to open centre	51
Blockage of discharge	The floor conveyor is not running	Check that the tractor hydraulic supply is connected	50
		The machine hydraulic pressure relief valve must be checked, contact service	

Fault finding

Flywheel housing

Fault	Possible cause	Remedy	Page
Blocking of swivel chute	Material left in flywheel from previous bale	Make sure that the flywheel is up to the correct speed before the floor conveyor is started	79
	The rear gate forces the bales into the shredding drum	Slightly lower rear door	70
	Material is pressing against the shredding drum	check that the machine is horizontal; adjust the top link if necessary	47
	Material cannot pass through swivel chute	Fit the haylage knife ¹	117
High output from swivel chute	Floor conveyor speed too high	Decrease floor conveyor speed	78
Wet and heavy material stuck in swivel chute	Too much material is guided into the flywheel	Decrease floor conveyor speed	78
	Flywheel speed too low	Adjust speed of PTO drive shaft (max 540 rpm)	79
Blockage of discharge	The floor conveyor is not running	Possible blockage - stop tractor engine and investigate	79
	V belt drive line for shredding drums is slipping	Check the V-belts	98
	Material is pressing against the shredding drum	check that the machine is horizontal; adjust the top link if necessary	47
Material is thrown out in large clumps	Very uneven passage of material through the flywheel housing	Fit the comb on the shredding drum ¹	118
Excessive machine vibrations	Imbalance in machine	Check the flywheel for damaged or bent thrower paddles	115

Bale chamber

Fault	Possible cause	Remedy	Page
Machine will not start	The rear door presses the materials against the shredding drums	Open rear door slightly to the pressure against the shredding drum	70
Blockage of discharge	V belt drive line for shredding drums is slipping	Check the bale chamber for foreign objects, open the rear door - stop the tractor and investigate the fault	64
	Material is pressing against the shredding drum	check that the machine is horizontal; adjust the top link if necessary	47
Excessive machine vibrations	Imbalance in machine	Adjust the coupling of the PTO shaft	13
		Check the shredding drum for damage or missing knives	103
		Remove any accumulation of string/net/packing on the shredding drum	82
Material is thrown out in large clumps	Very uneven passage of material through the flywheel housing	Fit the comb on the shredding drum ¹	118
signs of wear between the carrier and the bottom of the bale chamber	Material pressing the floor conveyor against the bottom of the bale chamber	Fit Ultra-Glide rails in the bottom of the bale chamber ¹	120
Rear door cannot be lowered to the ground	The top link is incorrectly positioned	Reset the top link	47
Rear door lowers unintentionally when a bale is placed on the machine's rear door	Minor leakage in the tractor's hydraulic system	Fit a safety valve on the rear door ¹	120

PTO shaft

Fault	Possible cause	Remedy	Page
Blockage of discharge	The friction clutch on the PTO shaft is slipping	Check the condition of the friction plates and springs	93
Excessive machine vibrations	Imbalance in machine	Adjust the coupling of the PTO shaft	13

¹ Extra equipment - see page 117

² Only for machines with a swivel chute

Guarantee

Guidelines for guarantee

The guarantee period for our product is 12 months from the date of purchase. The guarantee does not include the wearing parts.

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

No liability is accepted for consequential damage

We are not liable for compensation of any damage that has not been sustained to the machine/equipment. This also includes consequential damage as a result of wrongful use of the machine/equipment.

Therefore, read this instruction manual before taking the machine/equipment into use. Furthermore, do always check that the machine/equipment works properly before and during use.

When the machine is worn out, it must be scrapped in a proper way. Observe the following:

Metal parts

Send usable parts to an authorised recycling station. The 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.

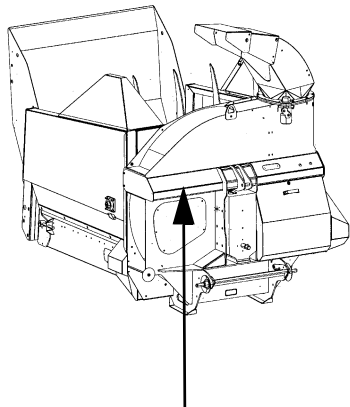
Hydraulic oil and lubricants

The machine must be emptied of all oil and lubricants. The used oil and lubricants must be sent to a breaker's yard where they can be processed in accordance with current regulations.

Electronic parts

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

Original EC Conformity Declaration



Type plate and CE marking

Kverneland Group Kerteminde AS
Taarupstrandvej 25
DK - 5300 Kerteminde
Denmark

declare with sole responsibility that the product

Kubota BC
in all variants and it's accessories

Type: 1200

Valid from serial number:
KT111015

complies with the following relevant EU regulations:

- Directive 2006/42/EC

The following harmonized standards have been consulted for proper compliance:

- EN ISO 4254-1:2015
- EN 703+A1:2009

Kverneland Group Kerteminde AS
Kerteminde - Denmark
Date: 01.12.2020

Claus Udengaard Thomsen

Managing Director and authorised representative*

*person who is responsible for compiling the technical file and resides in the European Community. See address above.

Technical information

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 gallons (Imp) = 0.26 gallons (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	

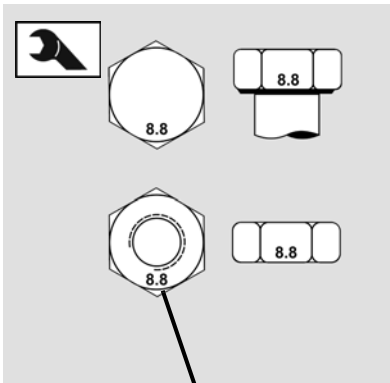
Lubricants

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 tightening torque

Tighten screws, nuts and bolts 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 tightening torque in the table.

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

Tightening torque for grade 8.8 black and/or galvanised and ungreased bolts 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
ft/lb.	4	7.5	18	35	60	94.5	145.5	284	382.5

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

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