12165578 A1
2012-01
EN

Operator’s Manual

100 Series

100c | 140c | 160c | 180c

Original instructions

Caution!
Read through the entire instruction manual before you begin to use the loader.

CONTENT

1 PREFACE

1.1 General information

Warning!
Careless or incorrect use may result in serious injury or fatality to the driver or others. Observe the safety instructions.

This operator's manual describes the operation and maintenance of a compact loader. The information in the operator's manual was correct when this manual went to press. Please visit your dealer if there is anything you do not understand in the manual.

One operator's manual is supplied with every machine in order to show the driver how it should be operated and maintained. Read and use the information so that you can use the machine in a safe manner, in combination with short stoppages. This machine is designed with simple service in mind, and it can be maintained with normal hand tools.

Read and study the text in the operator's manual thoroughly before you begin to use the machine. If you are not an experienced driver, study the operator's manual and ask an experienced driver to explain things to you. Your dealer can help you by teaching you about operation and suitable work methods. Keep this operator's manual readily available, preferably inside the tractor. Get a new operator's manual if the old one is damaged or is misplaced.

Warning!
Read through the entire operator's manual before you begin to use the product.

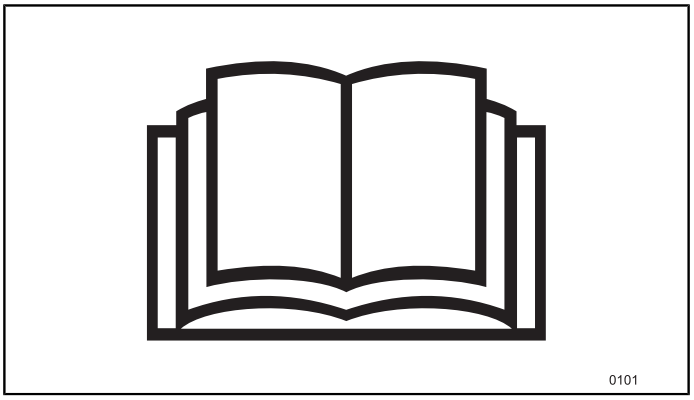


Fig.1 Read through the entire operator's manual before you begin to use the product.

We reserve the right to introduce changes to the design and specification, or improvements at any time, without prior notice or commitment.

Important!The loader subframe is designed suit specific models of tractors. Do not install a loader subframe on another model of tractor without prior permission from the manufacturer.

Installation and operation instructions for implements and accessories are not included in this operator's manual. Use the publications supplied with each implement.

1.2 Identification

1.2.1 Model and serial number

Each loader has a machine sign (A) with an identification number. The sign is located on the inside of the left arm.

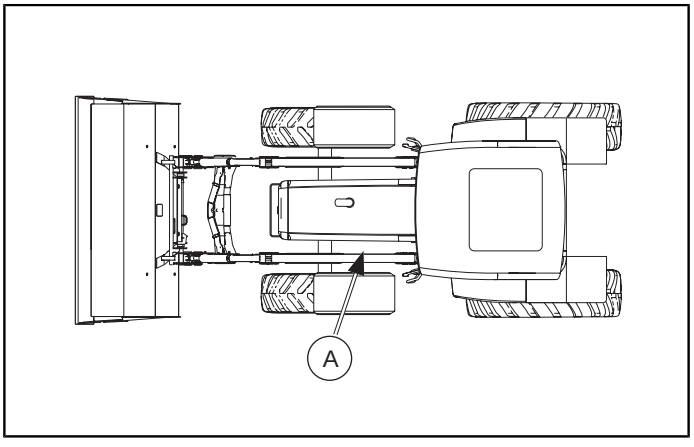


Fig.2 Position of machine sign.

The sign specifies:

Product, type, date of manufacture, weight, reference and serial number.

The type (1), serial number (2) and date of manufacture (3) must always be quoted during service questions or when spare parts are needed.

A. Type - model

B. Serial number

C. Date of manufacture

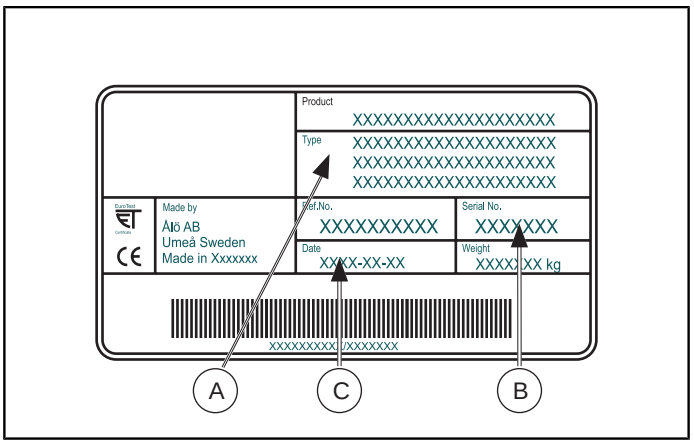


Fig.3 Machine sign.

Cylinders, valves, control cables and hoses are also equipped with machine signs or punched/printed order numbers.

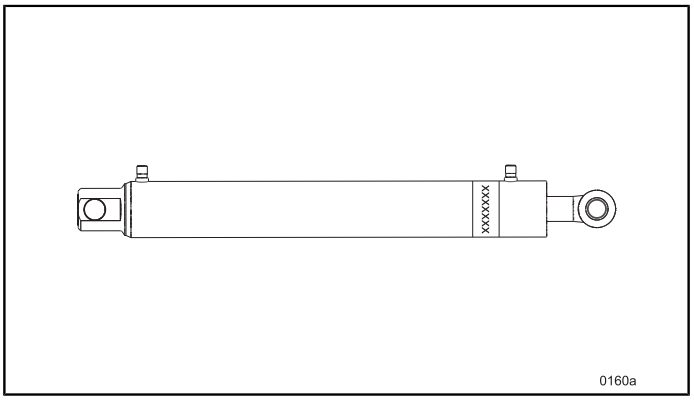


Fig.4 Marking of components, e.g., cylinder.

When ordering replacement control cables, please specify the control cable length (L) and make of control valve.

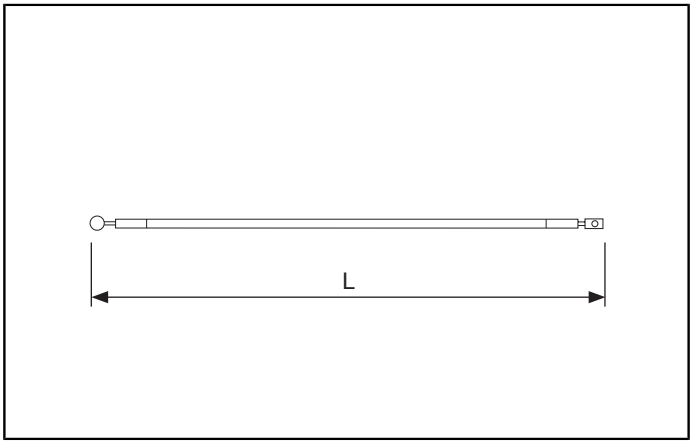


Fig.5 Indicate length when ordering control cable.

1.3 Alignment reference

Throughout this operator's manual, references to the right and left are seen from the operator's seat in forward direction.

*Note.*Some illustrations in this operator's manual may show a different model of tractor or loader, compared with your loader. The same information applies to your equipment unless otherwise specified, however.

2 DESCRIPTION

2.1 Definitions

2.1.1 Model - definitions

Model	Skidsteer or Euro tool carrier	Position indicator	Pin-on bucket	Parallel linkage kit (optional)	Third function (optional)
100c			X		
140c			X		
160c	X	X		X	X
180c	X	X		X	X

2.1.2 Third function (Only applicable to models 160c-180c)

Optional hydraulic function for operating the implement's hydraulics.

The electrical diverter valve is fitted to the front part of the loader, designed for implements which have hydraulic functions.

2.1.3 ErgoDrive

The ErgoDrive system is composed of a control valve and mechanical joystick as well as hydraulic connections and control cables for specified tractor models.

2.1.4 Position indicator (Only applicable to models 160c-180c)

Device to indicate the angular position of the implement.

2.1.5 Control valve

Valve intended for controlling the operation of the loader.

2.1.6 Tool carrier (Only applicable to models 160c-180c)

Type 8 = Euro in compliance with ISO 23206.

SSL = Skid Steer Loader Style

2.1.7 Hose kit

Hoses and hydraulic components for connecting the loader to the tractor's original valve.

2.1.8 SoftDrive (Only applicable to models 140c-180c)

Boom suspension, improves driver comfort and reduces stress on the tractor and loader when driving in rough surfaces.

2.1.9 Parallel linkage kit - optional (Only applicable to models 160c-180c)

Enables the tool to maintain the same angle during the entire lifting and lowering movement.

2.1.10 Pin-on bucket (Only applicable to models 100c-140c)

Directly connect the tool to the loader using the four locking pins.

2.2 Tool carrier (Only applicable to models 160c-180c)

The loader can be equipped with two different types of tool carriers. Euro 8 or SSL (skid steer loader). Please contact your dealer to ask about suitable options for your loader.

Important!Incorrectly designed tool carriers can damage the loader. Do not fit any implement without first checking with the manufacturer.

Use only implements adapted to the loader and suited for the work at hand.

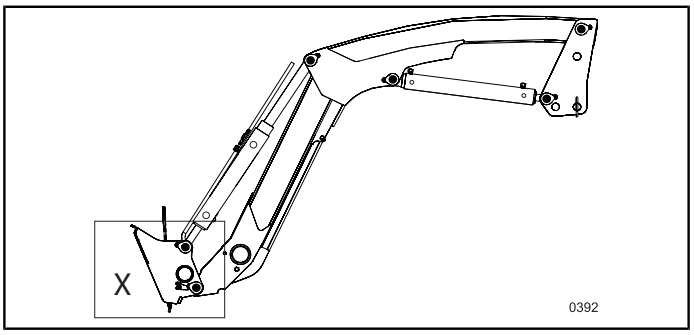


Fig.6 The loader can be equipped with different tool carriers.

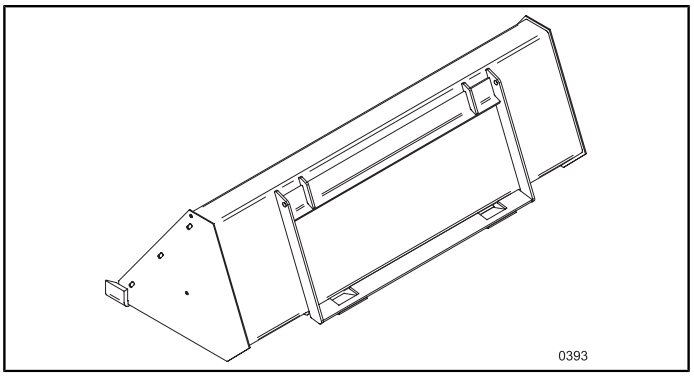


Fig.7 Implement hooks SSL (skid steer loader) (21).

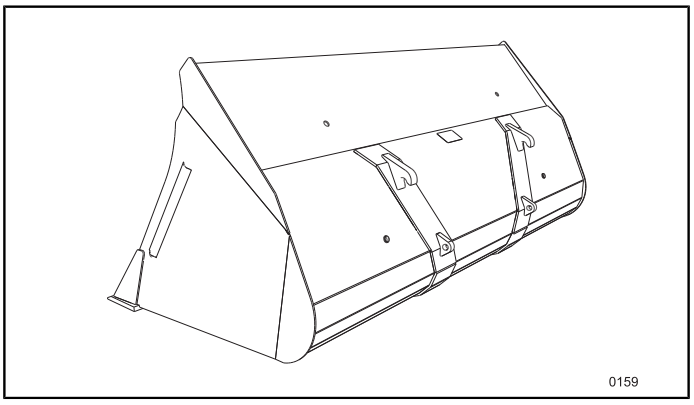


Fig.8 EURO (8) implement hooks per ISO 23206.

3 SAFETY INSTRUCTIONS

3.1 General information

Driver safety is one of the most important matters when a new loader is designed. The designer builds in as many safety functions as possible. However, several accidents occur every year which could have been avoided by a few seconds of reflection and more careful operation of the machine.

Avoid personal injury. Read the following personal safety instructions and insist that everybody who works with you, or for you, also complies with the instructions.

Only use implements which have been approved by the manufacturer for use with the loader.

3.1.1 Guards

This operator's manual contains a number of illustrations which show guards removed for better visibility. Never use the machine with guards removed. If a guard has been removed for service or repairs, re-install the guard before the machine is taken back into service.

3.1.2 Warning decals

Warning decals are installed at various places on the loader and the implements. Localise, read and find out what the decals mean before the loader and the implements are used. See section *3.8 Position of warning decals*.

Do not cover or remove any of the warning decals. If a warning decal is missing or illegible, replace it with a new decal. New warning decals are available from your dealer.

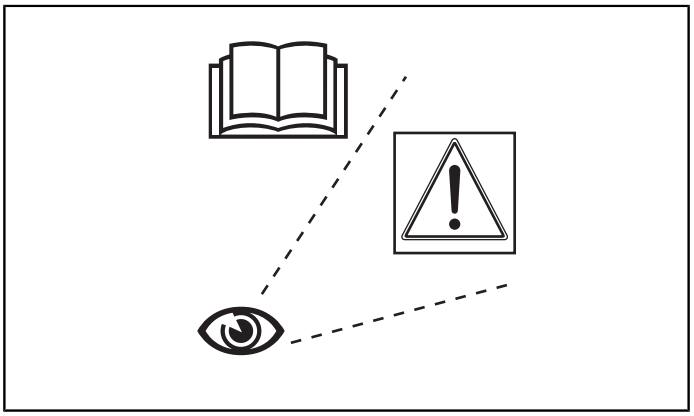


Fig.9 Locate, read and find out what the decals mean before the loader and implement are used.

3.2 Explanation of warning levels

When you see the safety alert symbol and the signal word on decals or in the operator's manual, the instructions MUST be followed since they are related to your own personal safety.

Warning!
Means that an accident could occur if the instruction is not followed. The accident might lead to serious personal injury or fatality.

Caution!
Means that an accident could occur if the instruction is not followed. An accident could lead to personal injury.

The following texts and instructions do not refer to personal safety, but are used consistently in the operator's manual to provide tips about operation or service of the machine.

Fig.10 Safety alert symbol.

Important!Means that an accident could occur if the instruction is not followed. The accident might lead to damage to the property or to the process, or personal injury.

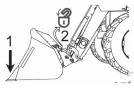
*Note.*Refers to extra information which could facilitate the understanding or implementation of a certain task.

3.3 Explanation of symbols

A Operator's manual. Read the operator's manual — it contains important information for your safety.

B Safety symbol. Information adjacent to this symbol refers to your personal safety and must be observed.

C Implement lock. Verify that coupled implement is secured correctly and locked in place.



D Risk of crushing. Never stand between the front of the tractor and the cross-tube on the loader.

E Risk of falling. Do not use the loader to lift or transport people.

F Attention. Information adjacent to this symbol refers to your personal safety and refers to the section in the instruction manual.

3.3.1 Responsibility

Caution!
Always store this operator's manual as well as the tractor's own operator's manual in the tractor.

- If there is no operator's manual included with the tractor then obtain one from the dealer before fitting and using the loader.
- Read through all material carefully and learn how to use the equipment in a safe and correct manner.
- DO NOT ALLOW people who are not trained or otherwise qualified to drive the machine.

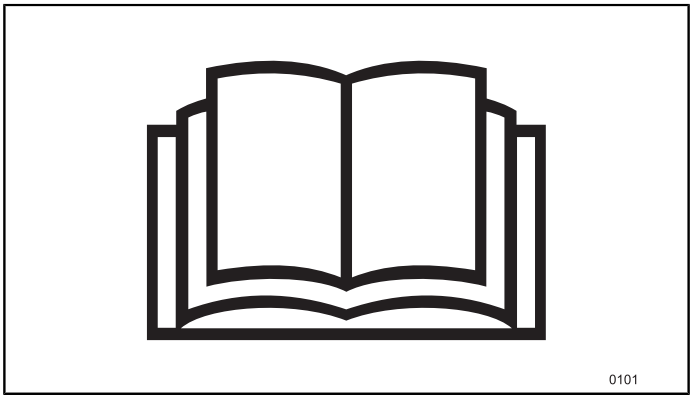


Fig.11 Always store this operator's manual as well as the tractor's own operator's manual in the tractor.

3.4 Installing the loader

Warning!
The loader must not be connected in series with any of the tractor's functions. Working with the loader requires the operator's full attention.

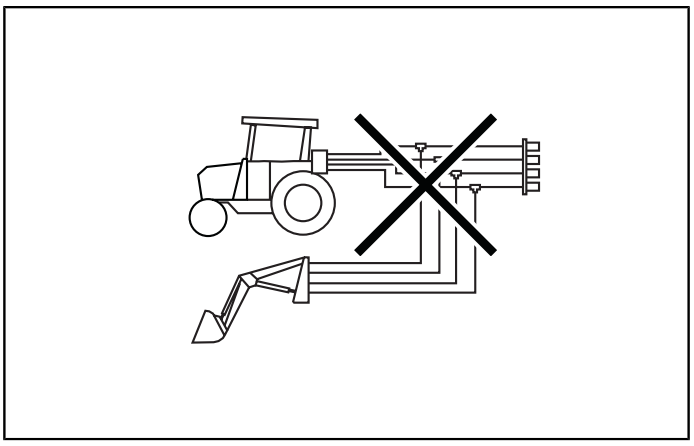


Fig.12 The loader must not be connected in series with any of the tractor's functions.

Caution!
The tractor and loader use fluids under high pressure when working. Check all components and keep them in good condition.

Make sure that no hydraulic components, especially hoses, are damaged in contact with moving components.

Fig.13 NEVER use fingers or hands for leakage detection.

3.4.1 Joystick operation

Warning!
The loader must not be operated with a programmable joystick or other equipment that enables automatic loader movements.

If the loader is connected to a tractor valve with a programmable joystick, see the tractor's user manual for information on how the programmable function can be inactivated.

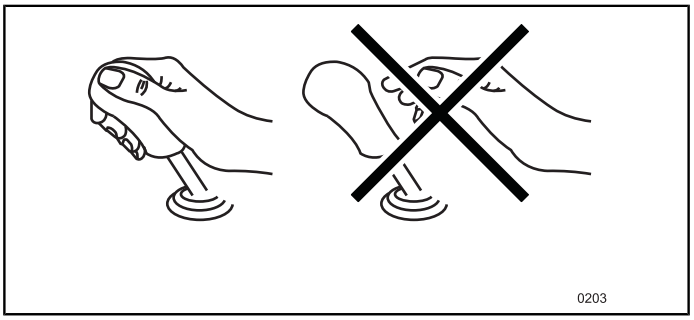


Fig.14 The loader must not be operated with a programmable joystick or other equipment that enables automatic loader movements.

3.5 Protection equipment

Warning!
If the tractor is equipped with a seatbelt, it must be used and be correctly adjusted during work. Change damaged seat belts before the machine is used.

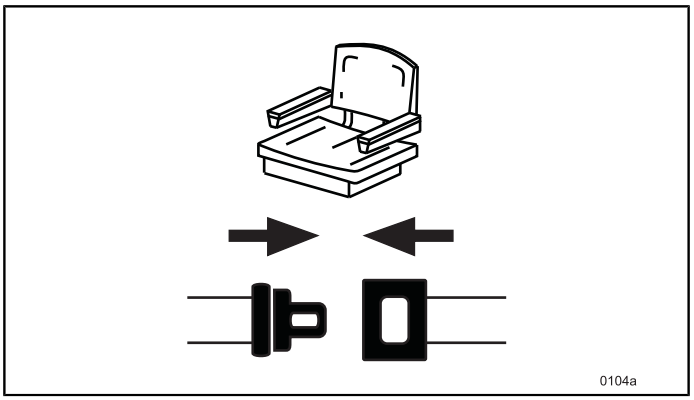


Fig.15 Wear the seat belt when working.

3.5.1 Roll Over Protective Structure (ROPS)

The tractor must be equipped with Roll Over Protective Structure (ROPS) - frame or cab.

Warning!
Only use a loader on a tractor equipped with ROPS. If possible, use the tractor and loader with ROPS in the upright and locked position and with the safety belt fastened and correctly adjusted. When driving in areas with limited height clearance and ROPS lowered, never use the safety belt. ALWAYS reset ROPS to the upright and locked position as soon as circumstances allow.

Fig.16 Rollover risk - wear the seatbelt.

3.5.2 Counterweight and tread width

Caution!
Check that the machine has ballast (counterweight) at the rear to stabilise the machine's load-carrying ability. The counterweight is essential for maintaining control of the machine.

Refer to section *4 Driving instructions* in the operator's manual for information on the counterweight and tread width. Also refer to the tractor operator's manual for further information.

Important!Incorrectly designed implements can damage the loader. For this reason, do not install third party implements without making sure that it has been approved by the loader manufacturer.

3.5.2.1 Before work

Familiarise yourself with the working area and terrain. ALWAYS inspect the site before starting work. Look out for holes in the ground, stones and other hidden dangers.

- Do NOT drive a machine which is damaged or lacks any component. Make sure that the recommended maintenance work has been done before the machine is used.
- Check all controls regularly and adjust as necessary. Ensure that the tractor's brakes are adjusted to pull evenly.
- Check all screws and nuts regularly for tightening, especially those that fix the tractor wheels. See section *5 Lubrication and maintenance* for information about tightening torques.
- Ensure that the loader is correctly mounted to the tractor, and that all pins are secured.
- Change worn components before the machine is used.

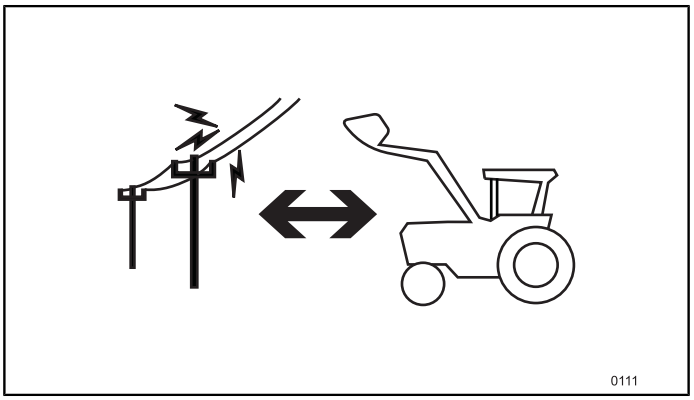


Fig.17 Familiarise yourself with the working area before starting. Maintain a safe distance from electrical cables and other obstructions.

3.6 Operation

3.6.1 Operator's position

Caution!
Only operate the machine when sitting in the driver's seat.

Fig.18 Only operate the machine when sitting in the driver's seat.

- Drive carefully and think about safety.
- Always leave the brake pedals locked to each other. NEVER use parted brakes with a loader mounted to avoid the risk of losing control of the tractor and/or the tractor overturning.
- Always adjust the speed to the current conditions. Never drive so fast that you cannot stop quickly in an emergency situation.

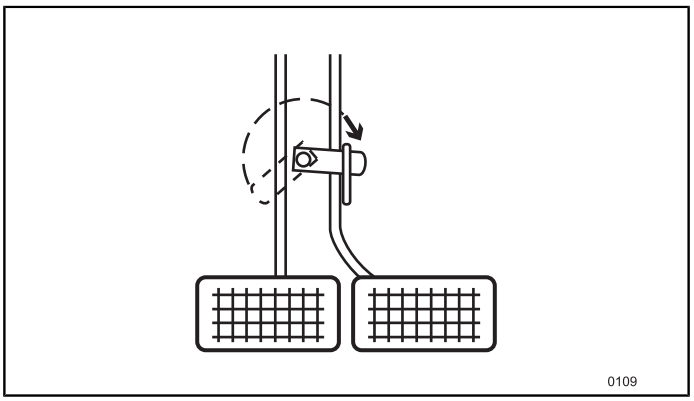


Fig.19 Always leave the brake pedals locked to each other.

3.6.2 Workplace

Always check the machine's surroundings and ensure that all individuals, especially children, and animals have moved away before starting or driving the machine.

You may not hear any shouting to attract your attention from individuals on the outside when you are sitting in the cab with the door closed.

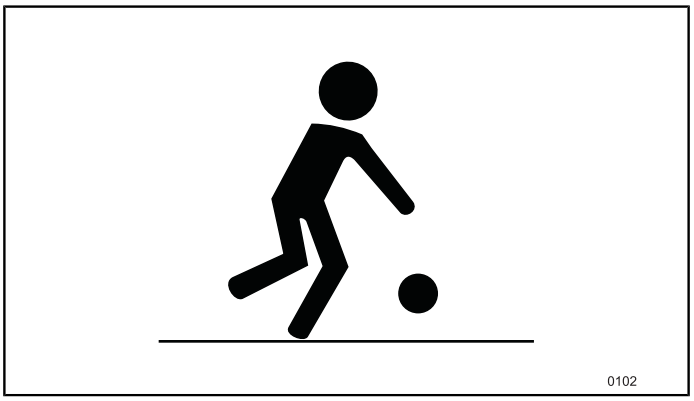


Fig.20 Before starting, make sure that no individuals are within the vicinity of the machine.

Make sure that the bucket or other implement is correctly installed in the tool carrier and that the pins are in the locked position. Press the front end of the implement against the ground to make sure that the implement is properly secured.

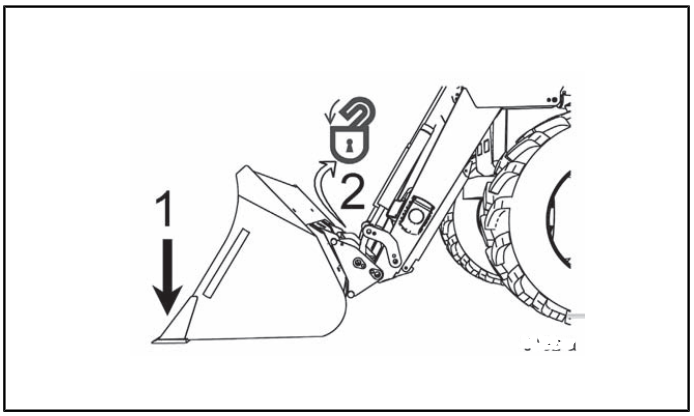


Fig.21 Make sure that the implement is secured by pressing its front end against the ground.

Familiarise yourself with the working area and terrain. Pay attention to vertical clearance and limitations that arise due to the increased reach.

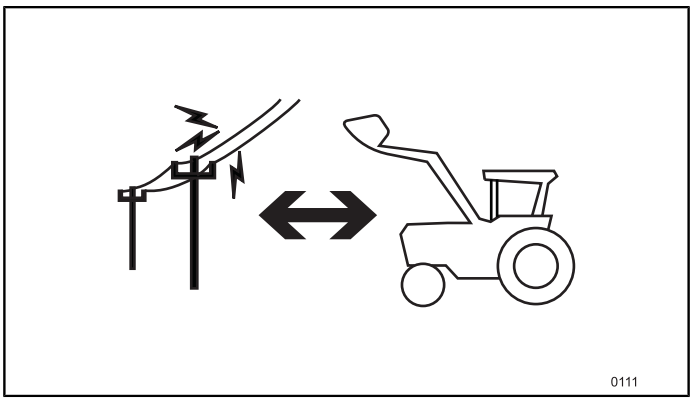


Fig.22 Familiarise yourself with the working area before starting. Maintain a safe distance from electrical cables and other obstructions.

Warning!
Do NOT use the loader or the bucket as a working platform.

Fig.23 Do NOT use the loader or the bucket as a working platform.

Warning!
Do NOT use the loader to lift or transport people.

Fig.24 Do NOT use the loader to lift or transport people.

With standard fittings, the loader is not designed for lifting that requires one person to be in the vicinity of the loader.

For this type of handling, the loader must be equipped with a safety device that prevents the loader from falling down if a hydraulic failure were to occur.

Contact your dealer for more information.

Warning!
Do NOT stand, walk or work under a lifted loader. Make sure that you keep people, especially children and animals, away from the working area.

- Always keep an eye on your workplace.
- Never carry out work with an implement that requires another person to be in the vicinity of the loader, e.g. handling large sacks or pallets.

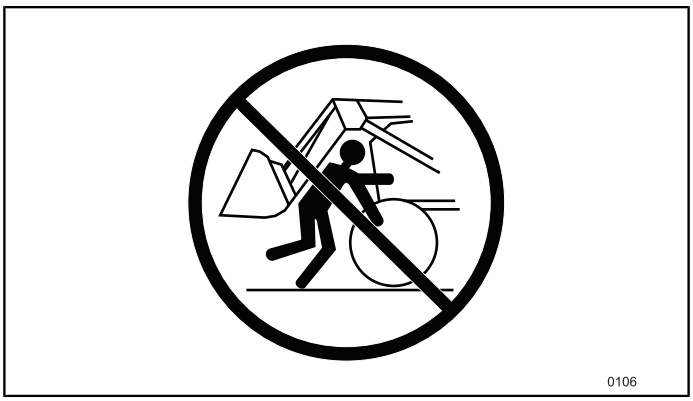


Fig.25 Do NOT stand, walk or work under a lifted loader.

3.6.3 Load stability

Warning!
Always look at the implement. Objects can fall or roll backwards onto the driver when the loader is raised.

Only lift loads which can be contained in, and are intended for, the specific implement.

Some implements should be equipped with a collapse protector.

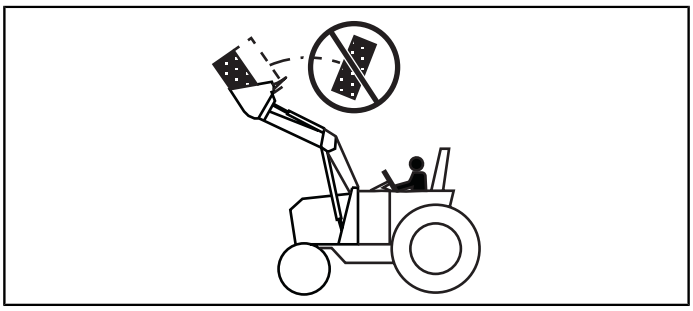


Fig.26 Pay attention to the implement, objects may fall off.

Warning!
If the tractor is only equipped with Roll Over Protective Structure (ROPS), and does not have a Falling Objects Protective Structure (FOPS), there is only limited protection against falling loads. The driver risks injury if the load falls when the loader is operated at height.

FOPS is not designed to protect against all falling loads. It is therefore critical to use an implement that prevents the load from falling.

Exercise caution when working with raised loads.

The tractor should not be operated on public roads with a load in the implement.

- Only use implements that are approved for the relevant application.
- Make sure that the load is positioned securely in the implement. In terms of loose material, the implement must not be overfilled, and for solid material, the load must not stick up above the rear of the implement.

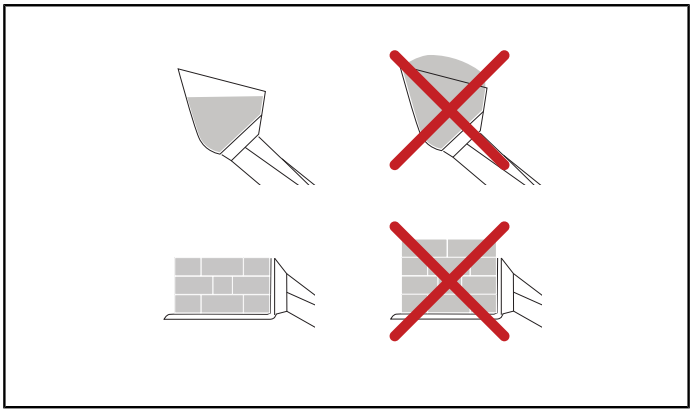


Fig.27 Only lift loads which can be contained in, and are intended for, the specific implement.

- Adjust the tilt angle of the implement when the load is raised so that the load is not aimed at the driver

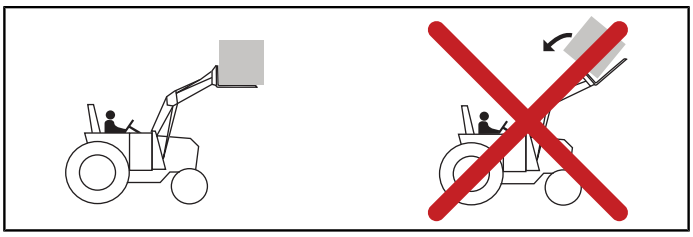


Fig.28 Exercise caution when working with raised loads.

Warning!
Reduce speed before cornering to avoid overturning the machine.

Avoid sudden turns when driving down slopes.

- Always leave the engine in gear to obtain engine braking when driving downhill. Do not allow the tractor to roll freely. Use the same gear when driving downhill as when driving uphill.
- Lower the loader as far as possible when moving. Keep in mind that the higher you lift the loader, the higher the centre of gravity, resulting in increased risk of the tractor overturning.

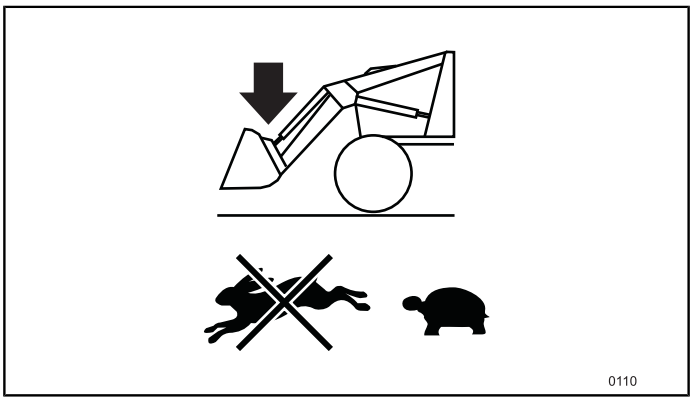


Fig.29 Lower the load and reduce the speed when cornering.

3.6.3.1 Machine stability

Warning!
Do not work on or near steep slopes.

The tractor must always be kept a distance from the edge that is equal to or greater than the height of the bank or ditch.

- Drive straight up or down slopes (not horizontally). Avoid braking sharply or driving away at speed. Lower the loader as far as possible.
- Drive the tractor forwards up slopes with an empty bucket. Fill the bucket and then reverse slowly down the slope.

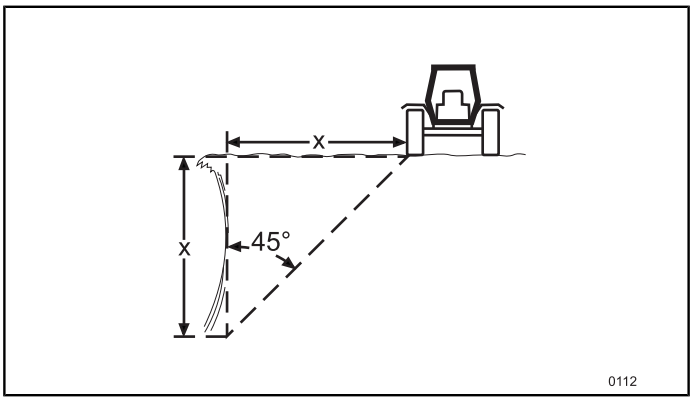


Fig.30 Keep at a distance when working near slopes.

Warning!
Before you leave the operator's seat:

1. Lower the loader and implement to the ground.
2. Apply the handbrake securely.
3. Move the gear lever to the neutral or park position.
4. Shut the engine off.
5. Remove the ignition key.
6. Move the control handle through all positions, then return the control handle to the centre position in order to unload the hydraulic pressure.

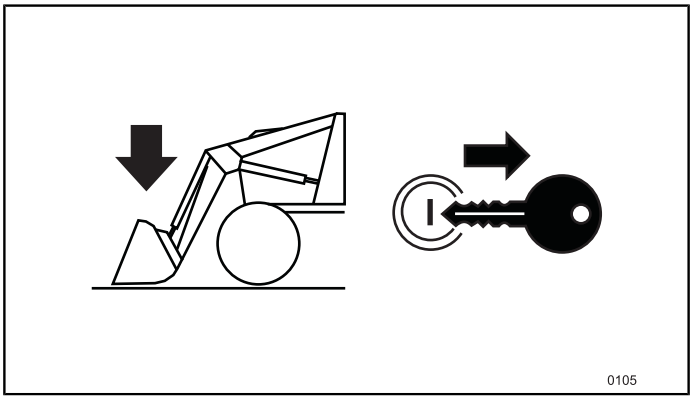


Fig.31 Lower the loader and remove the ignition key.

Warning!
Lock the joystick in neutral to prevent inadvertent operation of the loader.

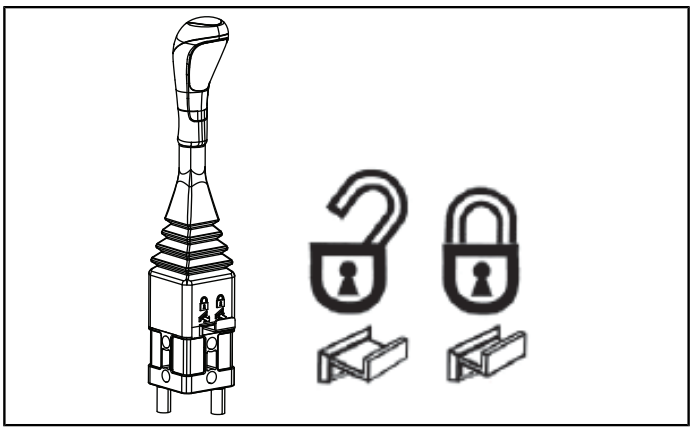


Fig.32 Lock the joystick in the neutral position.

Warning!
Never stand between the front of the tractor and the loader's cross tube.

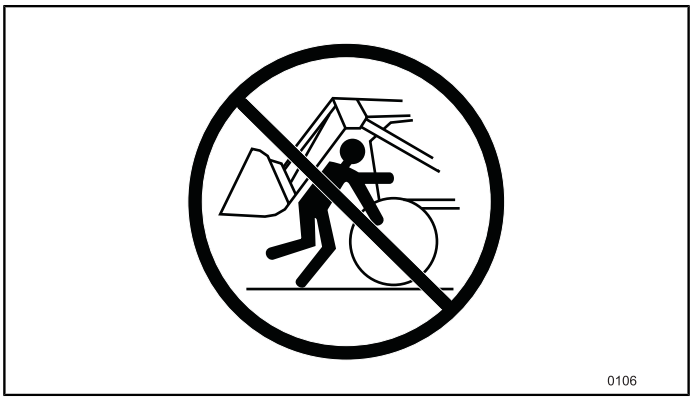


Fig.33 Never stand between the front of the tractor and the loader's cross tube.

3.7 Risk factors during work

3.7.1 During transport

Caution!
When the machine is used for carrying or transporting loads on public roads, by day or at night, the warning signs may not be visible. When this occurs, make sure that extra warning material is used.

When transporting bulky load on public roads, make sure that SMV-emblem, lights and reflectors are visible and use extra warning devices if needed.

When driving either with or without a load, always lower the loader as far as possible to give maximum visibility and allow others to see you at all times.

- Remove or tilt up the implement to minimise the risk of damage in the event of collision.
- Leave a margin for the vehicle's extra length and weight when cornering, braking etc.
- Make sure that lamps and reflectors are visible during road transport and are not obscured by the implement.

Warning!
The loader may not be moved during transport. When transporting on public roads, the control lever must be locked in neutral.

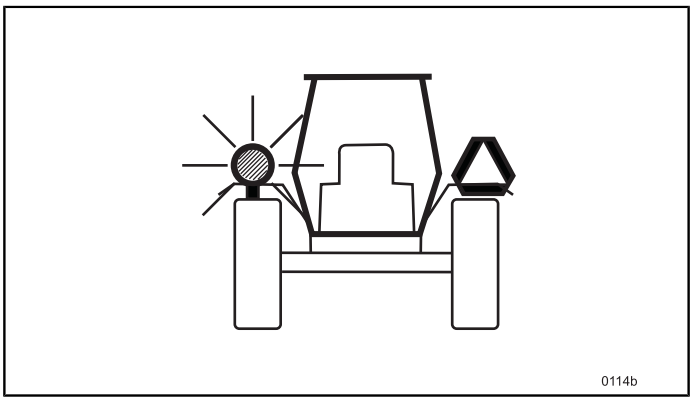


Fig.34 During transport

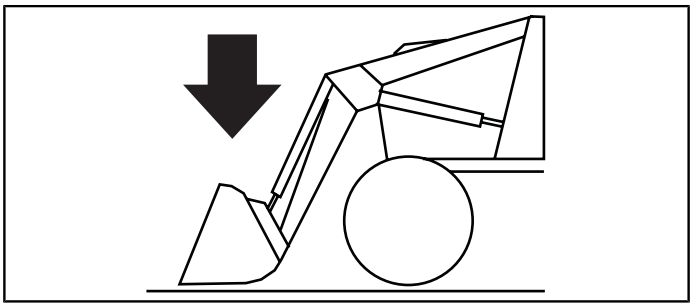


Fig.35 Lower the loader to obtain maximal visibility.

The loader may not be moved during transport. When transporting on public roads, the control lever must be locked in neutral.

3.7.1.1 During service

Do NOT do any service on the loader when the tractor engine is running or hot, or when the machine is moving.

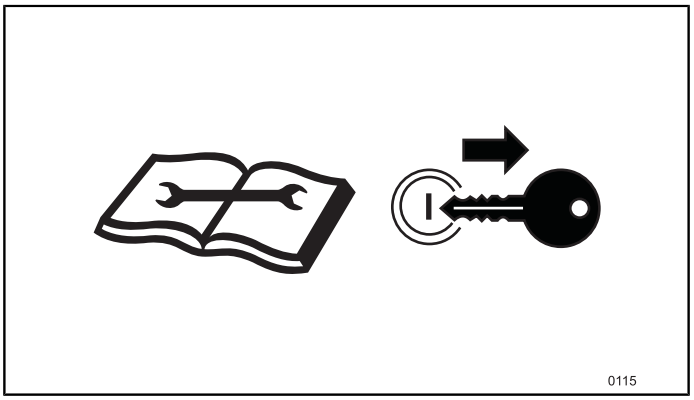


Fig.36 Before service, read the instructions and remove the ignition key.

Caution!
Watch out for pressurised hydraulic fluid.

NEVER use fingers or hands for leakage detection. The fluid which flows out from small holes can be almost invisible. Use a piece of wood or cardboard instead.

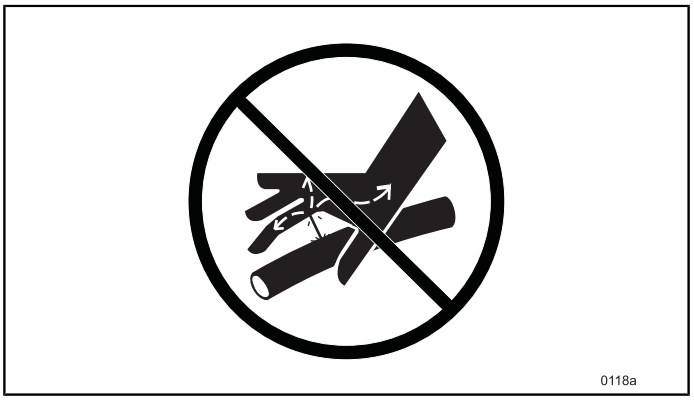


Fig.37 NEVER use fingers or hands for leakage detection.

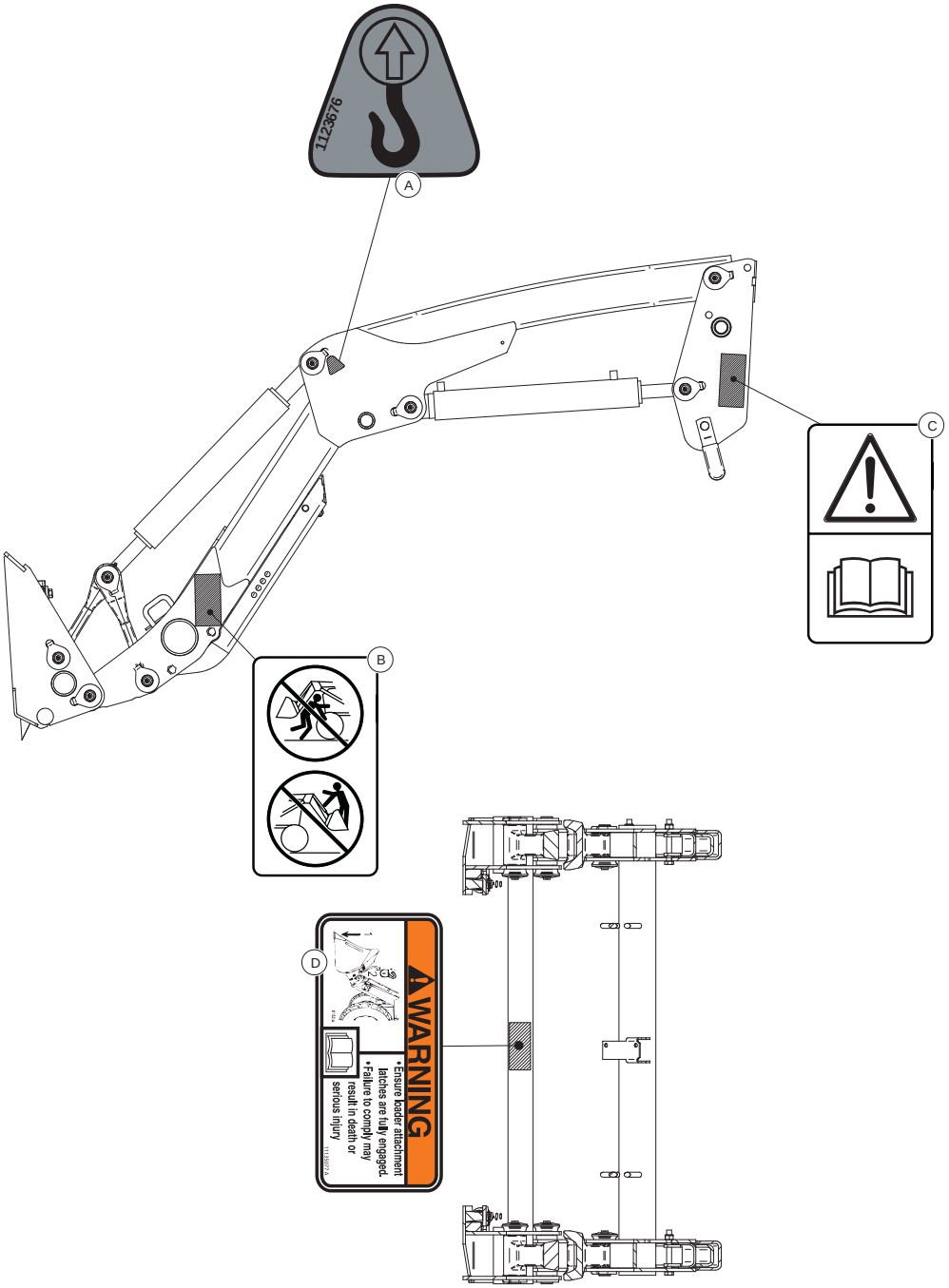
- Undo hydraulic couplings slowly. Keep your hands and fingers away from loosened couplings.
- Get medical attention at once if fluid penetrates your skin. Serious reactions and/or infections can rapidly occur if the oil is not removed at once by surgical operation.

3.7.2 Spare parts

When a spare part is needed for periodic maintenance or service, use only genuine, original equipment spare parts to restore your equipment to original specifications.

The manufacturer is not responsible for damages that may occur due to installation of non-approved parts and/or accessories.

3.8 Position of warning decals



A. Warning decal on loader beam, 2 pcs. (located on the inside)

(Art. no. 1123676)

B. Warning decal on lower part of loader on right and left side, 2 pcs.

(Art. no. 1123673)

C. Warning decal on bearing box, 1 pcs.

(Art. no. 1123674)

D. Warning decal on cross tube, 1 pcs. (not applicable to Pin-on)

(Art. no. 11135077)

4 DRIVING INSTRUCTIONS

4.1 General information

4.1.1 Counterweight

Caution!
Overturning and slipping risk. The tractor can overturn or start slipping and thus cause personal injury. Check that a counterweight is fitted which is suitable for the implement and working space.

The size of the counterweight varies with its placement and the tractor's equipment (model, rim and tyre combination, etc.). Check that the required counterweight is in place so that the tractor does not overturn and loses traction when the brakes are suddenly applied with a fully loaded implement. Please read the tractor's operator's manual or contact your dealer.

A 4-wheel drive tractor has the advantage of traction from the front axle. Use the counterweight at the rear to maintain the correct front/rear axle loading and avoid abnormally large stresses on the front axle when the loader is used.

Recommended allocation of gross weight (with empty implement) on the tractor's front and rear axles:

Tractor	Front axle	Back axle
4WD	40%	60%

4.1.2 Track

Caution!
Overturning risk. The tractor can overturn if its track is too narrow. Increase to maximum track for best stability.

To increase stability, the tractor's track must be as wide as possible. Maximum width (A) across front wheels.

Install the rear tyres and adjust the rear wheels to the maximum recommended track (B).

Study the tractor's operator's manual for information about recommended tyres, track and adjustment.

For tractors/loaders with a high centre of gravity or an unusual configuration, a wider minimum track width may be needed to achieve the same stability.

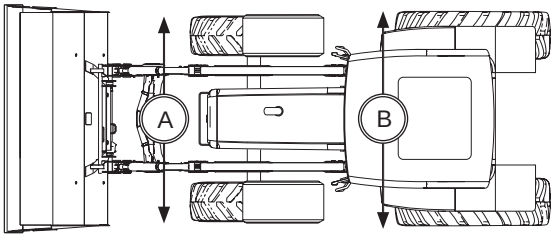


Fig.38 Increase to maximum track for best stability.

4.1.3 Track

Caution!
Overturning risk. The tractor can overturn if its track is too narrow. Increase to maximum track for best stability.

The tractor's track must be as wide as possible for the location in which it is used.

Minimum tread settings recommended provide static stability on a side slope of 15 degrees with loader positioned just off the ground.

Unless otherwise stated by the tractor manufacturer, the minimum track width should be selected from the table.

For tractors/loaders with a high centre of gravity or an unusual configuration, a wider minimum track width may be needed to achieve the same stability.

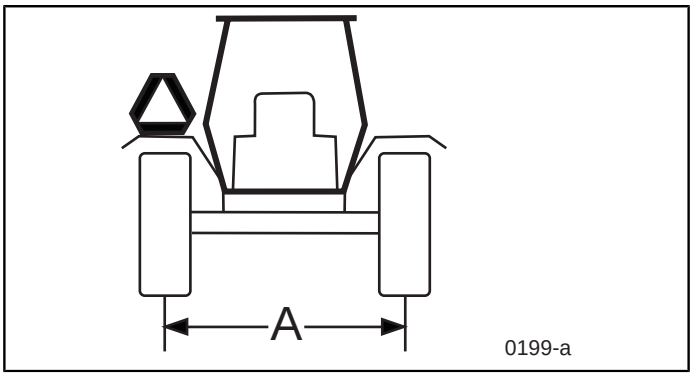


Fig.39 Track

TRACTOR MASS (weight)		MINIMUM REAR TREAD SETTING (A)	
kg	pounds	mm	inches
Less than 2,250	Less than 4,960	1,575	62,.0
2,250–3,650	4,950–8,030	1,675	65.9
More than 3,650	More than 8,030	1,825	71.8

4.1.4 Joystick operation

Warning!
The loader must not be operated with a programmable joystick or other equipment that enables automatic loader movements.

If the loader is connected to a tractor valve with a programmable joystick, see the tractor's user manual for information on how the programmable function can be inactivated.

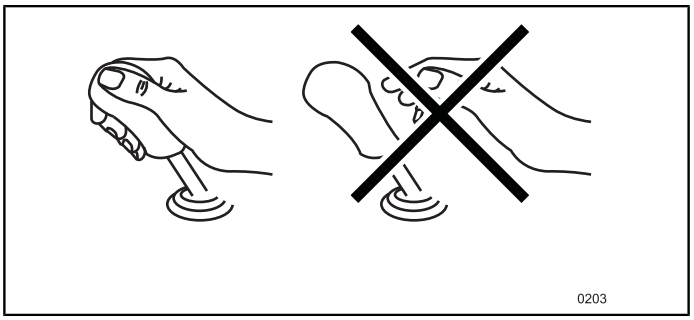


Fig.40 The loader must not be operated with a programmable joystick or other equipment that enables automatic loader movements.

4.2 Tractor/loader hydraulic controls

The loader's hydraulic system can be connected to the tractor hydraulic system in two ways.

Using option 1, the tractor hydraulic system is connected to the loader control valve.

Option 2 involves using the tractor's mid-mounted hydraulic valve to control the loader's movement.

The loader is equipped with a third hydraulic function (1). If the rear part of the tool is more than 15cm above the ground, there is the risk of the houses coming loose during disconnection.

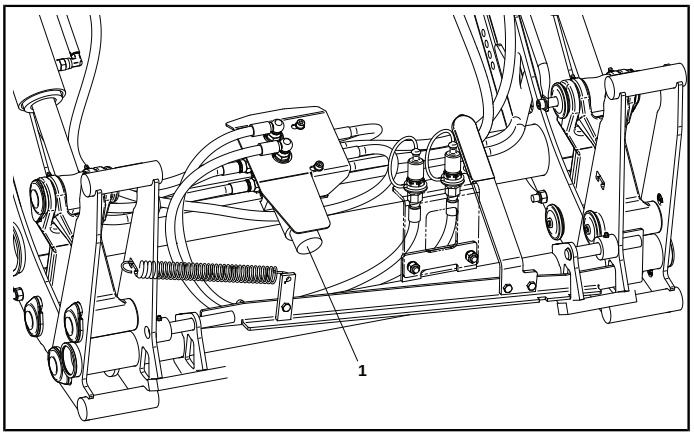


Fig.41 Extra hydraulic function for implements.

4.3 Installing the loader

Warning!
The loader must not be connected in series with any of the tractor's functions. Working with the loader requires the operator's full attention.

Caution!
Risk of crushing and jamming Air in hydraulic hoses and cylinders can cause jerky, unexpected movement. Use all controls carefully at low engine speed.

Caution!
Risk of crushing and jamming Keep hands and feet away from moving components. Do NOT use your fingers to check components or to tend to holes/pins — use a mandrel or a steel rod.

Lift the loader up onto the base. Holes for attaching the lifting hooks are found on the inside of the knee plates.

*Note.*Ensure that the loader's locking pins are removed from the bearing box before fitting the subframe to the loader.

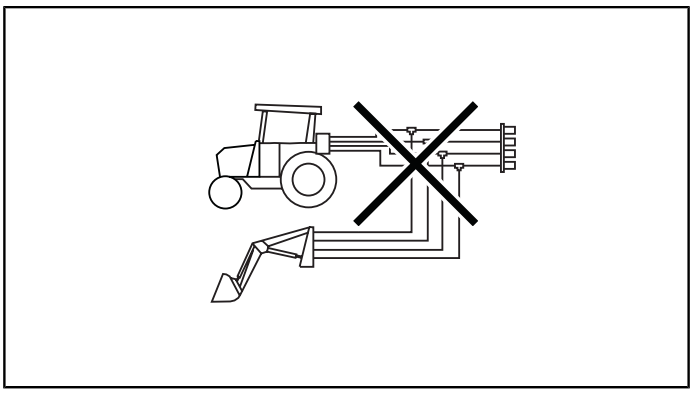


Fig.42 The loader must not be connected in series with any of the tractor's functions.

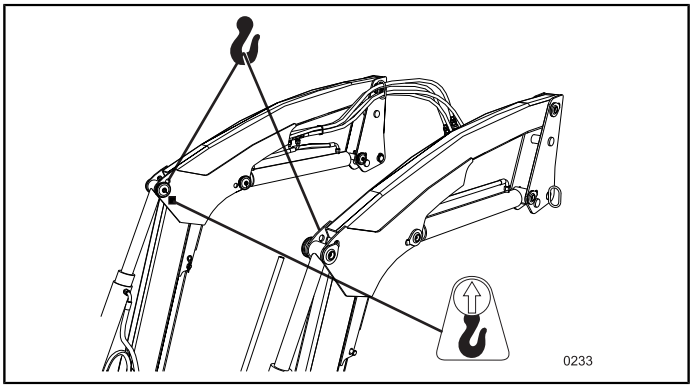


Fig.43 Hole for attachment of lift hooks.

Connect the hoses to the valve in accordance with the marking.

1. Lifting cylinder, piston rod - yellow
2. Lifting cylinder, base - green
3. Bucket cylinder, base - blue
4. Bucket cylinder, piston rod - red

Before installation, depressurise the hydraulic system.

Warning!
The control valve must be connected to a oil return. This oil return may never be pressureised since that will damage the control valve.

The valve's joystick control must be connected to the valve so that the loader is lifted when the lever is moved backwards.

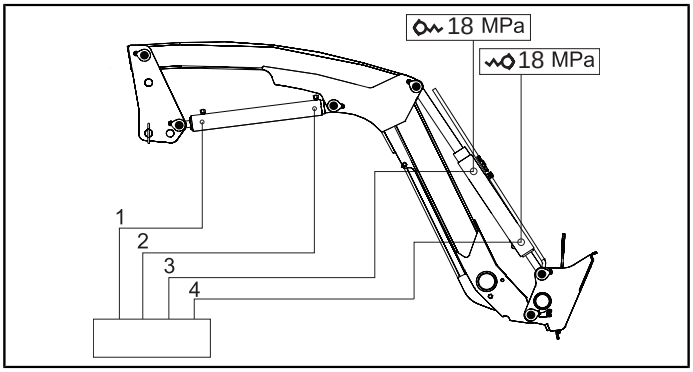


Fig.44 Connect hoses to valve.

4.3.1 Fitting the bucket (Not applicable to models 160c and 180c)

Using the locking pins, fit the bucket when the loader is fitted to the tractor. The locking pins must be placed in the holes on the bucket as shown.

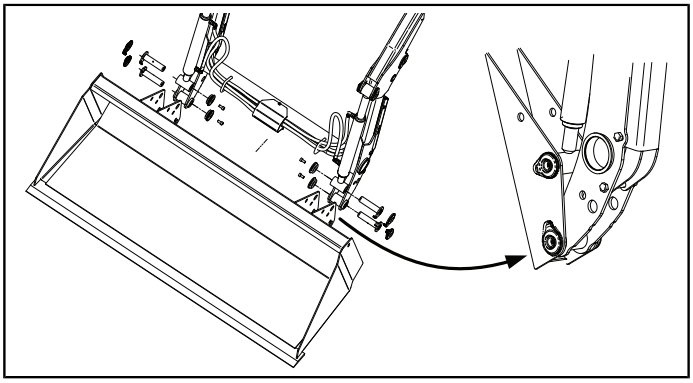


Fig.45 Fitting the bucket (Not applicable to models 160c and 180c)

4.3.2 Fitting the position indicator (Only applicable to models 160c-180c)

The position indicator can be mounted on the left or right tilt cylinder.

Set the implement in a horizontal position and adjust the reference point (A) to indicator (B) on the indicator rod (C). Make sure that the indicator rod runs freely in the guides and adjust as needed. Incorrect installation can cause damage to the indicator.

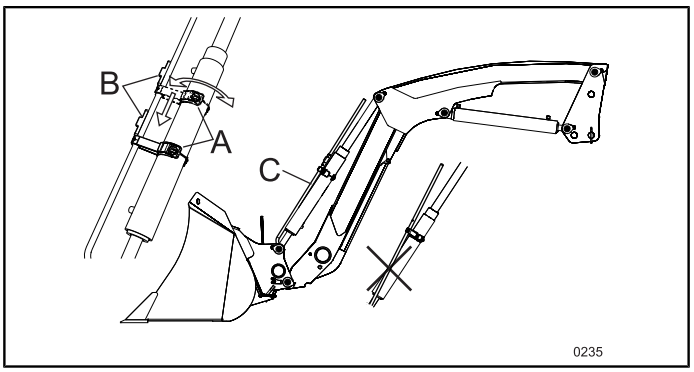


Fig.46 Install the position indicator on the tilt cylinder.

4.3.3 Check list

When the loader has been installed - check carefully that everything works before it is taken into service. The following points must always be checked. Mark them off and make the adjustments where necessary.

1. Check that everything has been installed in accordance with the installation instructions.
2. Check that the necessary counterweight is fitted with regard to the implements and application area.
3. Check that all screws are tightened.
4. Check that the locking pins are secured. Test loader operation.
5. Make sure that the front wheels clear the loader and subframe there is full wheel lock and oscillation — if this is not the case, oscillation stops or limitation of steering lock must be installed.
6. Check that no oil leakage occurs.
7. Operate all loader functions several times to remove air from the system.
8. Check the tractor oil level - top up as necessary.
9. Check that the lock pins engage when an implement is connected.
10. Check that the loader does not have any visible defects.

4.4 Disconnecting the loader

Caution!
Risk of crushing and jamming

The loader may fall downwards.

Always fit the bucket to the loader before the loader is disconnected from the tractor.

Park the tractor and the loader on flat, firm ground.

Tilt the implement forwards and lower the loader so that the rear part of the implement is 10 - 15 cm above the ground.

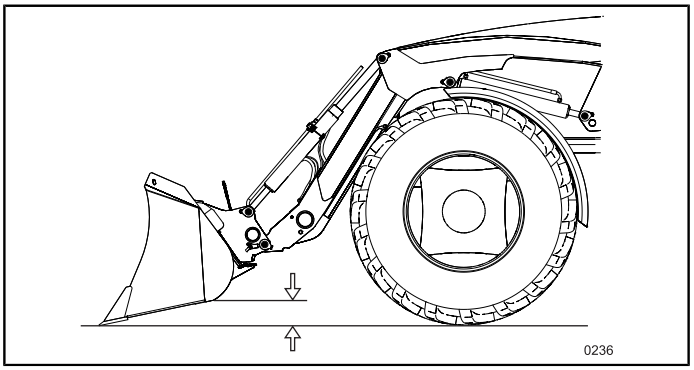


Fig.47 Tilt the implement forward.

Caution!
If the rear section of the implement is more that 15 cm above the ground then there is risk that hoses may become worn during uncoupling. 100 series

Fold the parking stands down to the ground. The parking stands are installed in the front part of the loader.

Fix the stay in each parking stand.

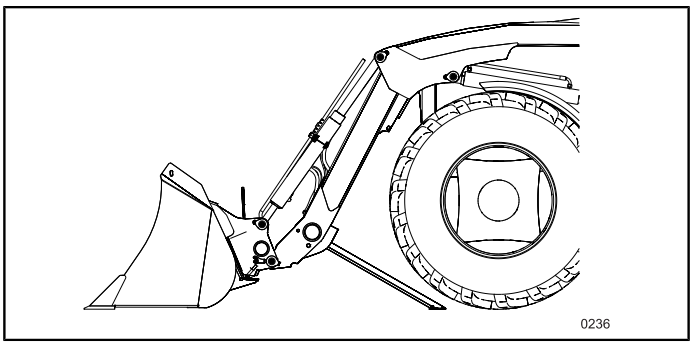


Fig.48 Lower the parking stands.

Remove the securing pin from locking pin (E) and remove locking pin (E) from the subframe on the left/right bearing boxes.

During operation:

- Release the parking brake and remove foot from accelerator pedal.
- Move the control handle to the lowering position, so that the lifting cylinders are completely compressed.

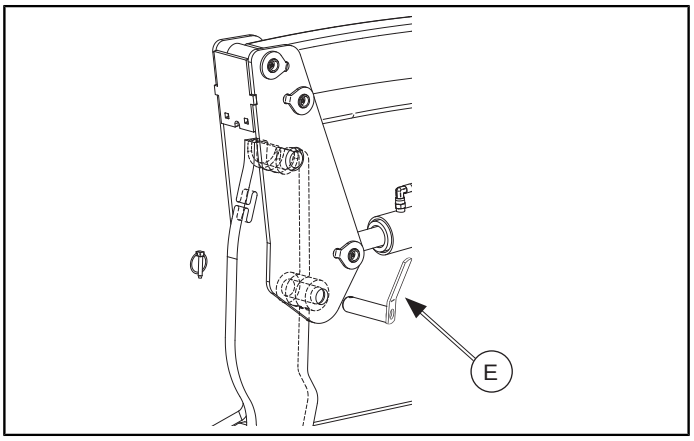


Fig.49 Remove the locking pin.

Carefully fold the implement upwards. This will make the rear of the loader lift, and come loose from the base.

- Stop the tractor and eliminate the oil pressure to the loader cylinders using the control valve.
- Disconnect the hoses and install dust guards on the quick release couplings.
- Reverse the tractor carefully until it is completely free from the loader.
- Refit the locking pins and locking cotters on both sides.

Important!Make sure that you position the hoses so that they do not catch on the tractor.

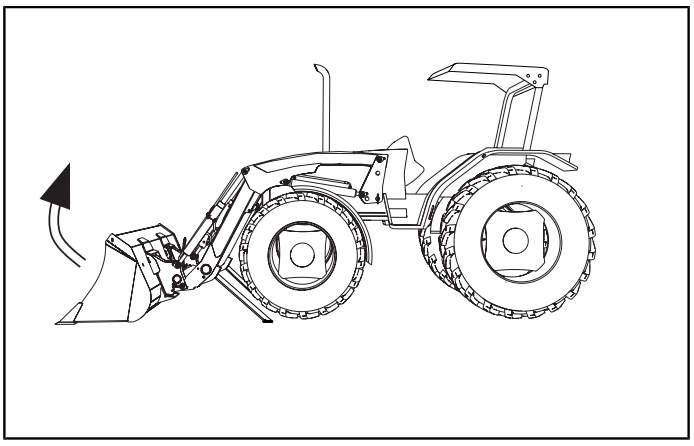


Fig.50 Carefully tilt the implement upwards.

4.5 Coupling the loader.

Caution!
Risk of crushing and jamming

Air in hydraulic hoses and cylinders can cause erratic operation.

Run the engine at low speed and make slow movements with the joystick to purge any air from the hydraulic system.

Caution!
Risk of crushing and jamming

Keep hands and feet away from moving components. Do NOT use your fingers to check the alignment of holes or pins — use a mandrel or a steel rod.

Caution!
Risk of crushing and jamming

If the loader valve is in a depressurised or float position then sudden and unforeseen movements may occur when the hydraulics are connected.

Important!Make sure that the hoses are positioned on the loader so that they do not catch on the tractor. Ensure that the locking pins are removed from the loader's bearing boxes.

Drive the tractor forwards carefully until the subframe upright slowly enters the bearing box.

Connect the hydraulics. If there is any difficulty in coupling the quick release couplings, this will be because the oil pressure has not been eliminated. Depressurise the system.

Important!Never use force on quick release couplings by striking the valve ball. This may mean that it is damaged in such a way that the coupling does not open when compressed (the oil can only pass in one direction). Ensure that none of the hoses are interchanged — follow markings 1-4.

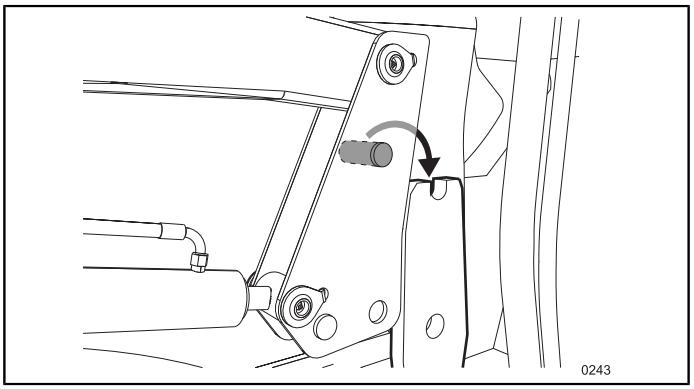


Fig.51 The subframe upright enters the bearing box.

Tilt the implement downward in order to securely settle the bearing box in the subframe upright.

Carefully raise the loader so that the radius at the front of the bearing boxes meets the sleeve on the subframe.

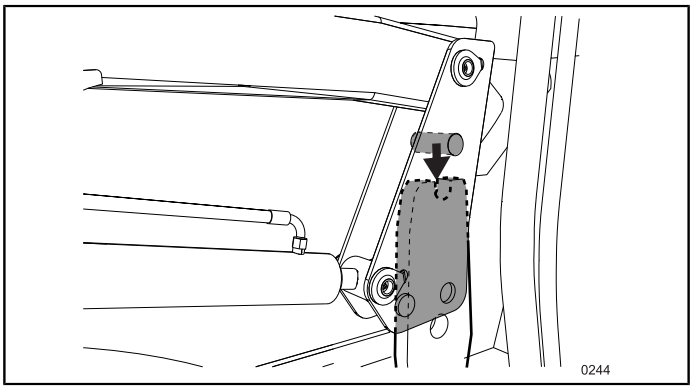


Fig.52 Bearing box pin enters saddle in subframe upright.

Lift the loader, install the locking cotter and the locking pin (E), one on each side.

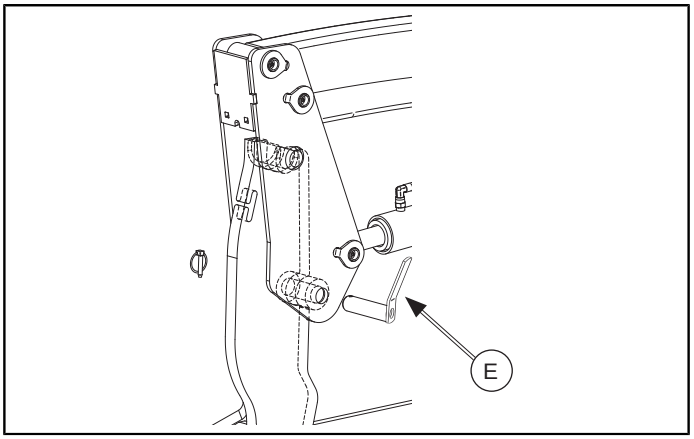


Fig.53 Fit locking pin.

Fold the parking stands in to the storage position.

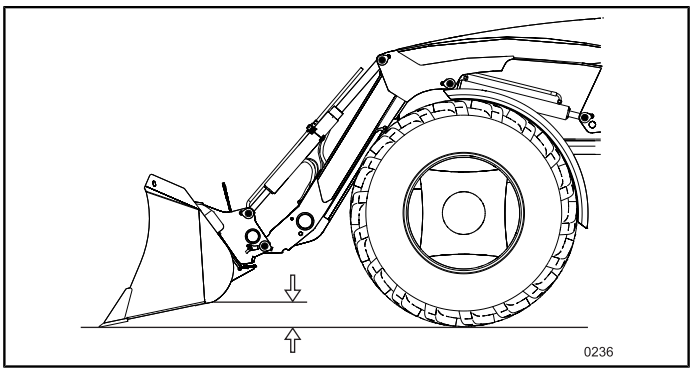


Fig.54 Fold the parking stands in to the storage position.

4.6 Tractor/loader hydraulic controls

The loader's hydraulic system can be connected to the tractor hydraulic system in two ways.

Using alternative 1, the tractor hydraulic system is connected to the loader control valve. With this alternative, there are the following variants:

- Directly-operated control valve
- ErgoDrive

Option 2 involves using the tractor's mid-mounted hydraulic valve to control the loader's movement.

The loader can be equipped with a third (1) hydraulic function for the implement.

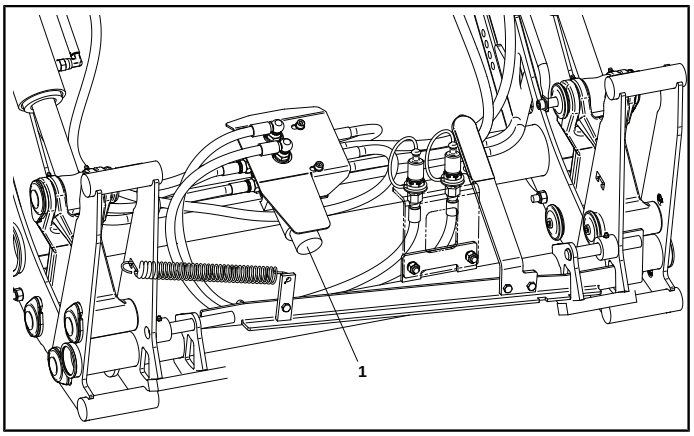


Fig.55 Extra hydraulic function for implements.

4.7 Operation of the loader

Caution!
Only manoeuvre the machine from the driver's seat.

Warning!
The loader may not be moved during transport. When transporting on public roads, the control lever must be locked in neutral.

Warning!
If the tractor is equipped with a seatbelt, it must be used and be correctly adjusted during work. Change damaged seat belts before the machine is used.

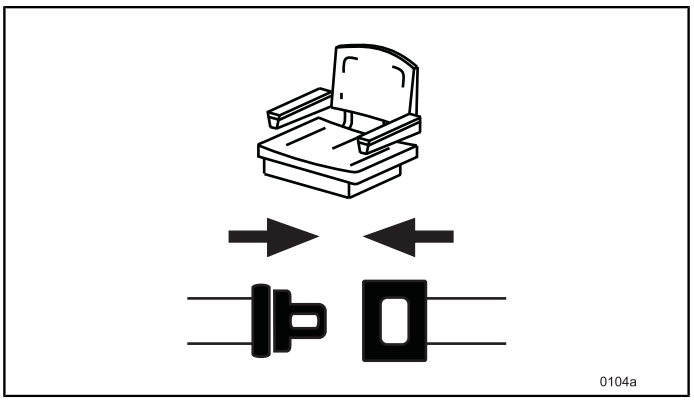


Fig.56 Wear the seat belt when working.

4.7.1 Directly-operated control valve

If the joystick is released when the float position for lowering is selected, the function continues to be active. In all other positions, if the joystick is released, it returns to the neutral position and the functions are deactivated.

4.7.2 ErgoDrive Cable Operated

If the joystick is released when the float position for lowering is selected, the function continues to be active. In all other positions, if the joystick is released, it returns to the neutral position and the functions are deactivated.

4.7.3 Loader with parallel linkage (optional)

The loaders may be equipped with mechanical self-leveling. Parallel links keep the implement in the same angular position during the entire lifting/lowering movement.

4.7.4 Loader without mechanical self-levelling

The implement changes its angle in relation to the ground during the entire lift/lowering movement. See section *8 Specifications*.

4.7.5 Directly-operated control valve

Control valve, mechanically operated.

The control valve is equipped with a control lever of joystick type, located by the operator's seat. The lever is directly connected to the hydraulic control valve.

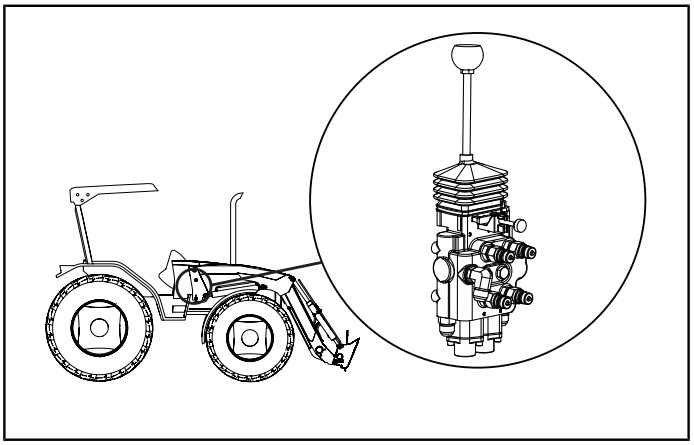


Fig.57 Control valve, mechanically operated.

The control valve can be locked in neutral position to stop unintentional loader movements. To lock the control lever, pull out the lock pin to the locked position. Check that the control lever is locked by trying to move it in all directions. If the lever does not lock, contact your dealer.

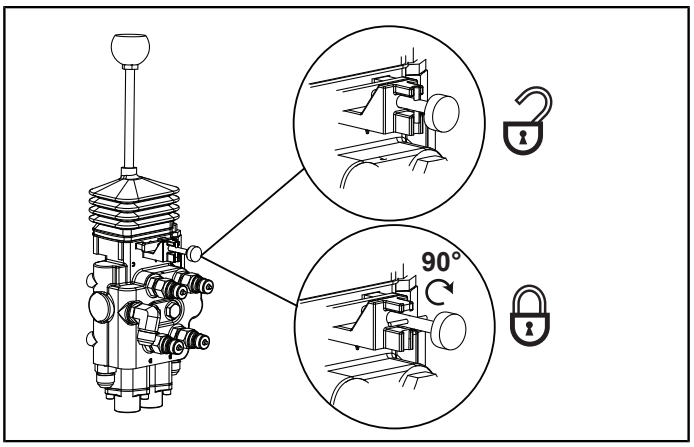


Fig.58 Control lever.

4.7.6 Operation of the loader

4.7.6.1 Raise/lower the loader

Move the lever backwards (1) to lift the loader.

Move the lever forwards (2) to lower the loader.

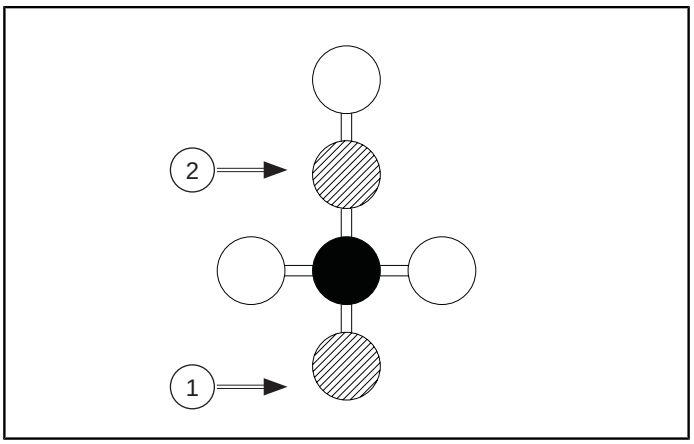


Fig.59 Raise/lower the loader.

4.7.6.2 Loader's float position

Caution!
The float position in combination with bucket work or implement work may only be used at low speeds.

Move the lever forwards into the float position (3) and release the lever to lower the loader without any downward force.

To cancel the float function, move the lever backwards slightly (out of the float position) and release it.

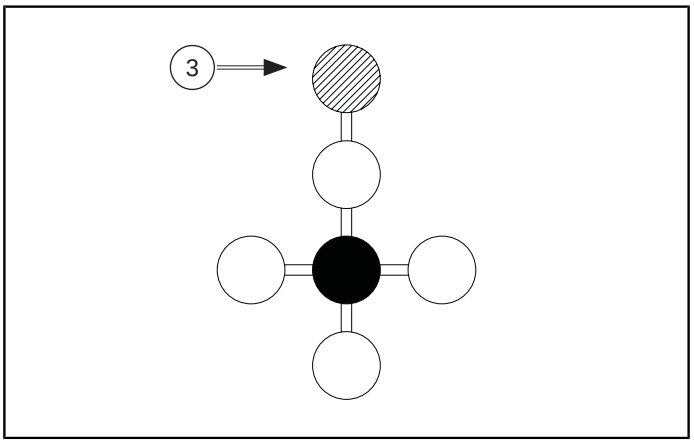


Fig.60 Float position lowering.

4.7.6.3 Emptying/opening up the implement

Right-hand fitting: Move the lever to the left (4) to open up the attachment.

Move the lever to the right (5) to angle the implement downward.

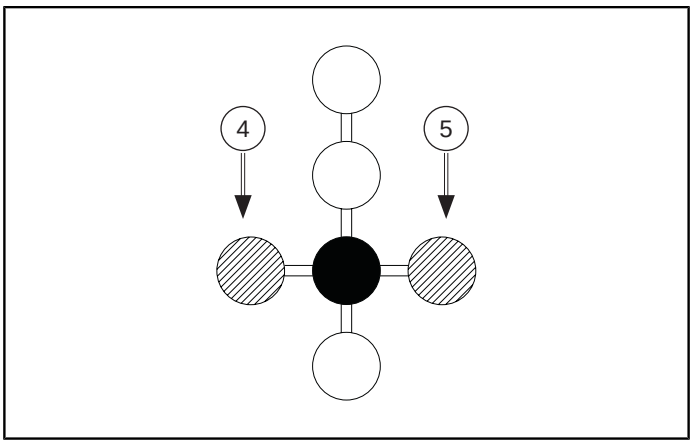


Fig.61 Empty/angle implement upwards.

4.7.6.4 Third hydraulic function (optional)

The third hydraulic function is controlled with a switch (A) which can be fitted to the front of the joystick control.

When the switch for the third hydraulic function is released, the joystick immediately returns to controlling the implement.

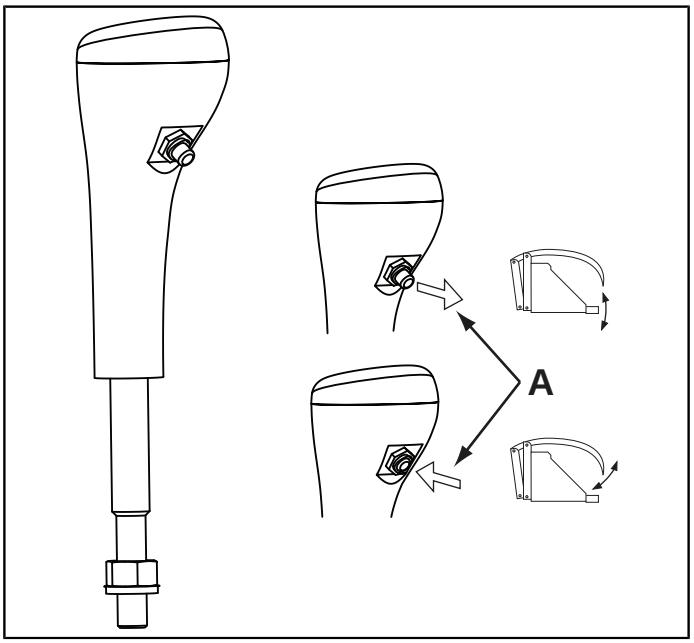


Fig.62 Switch for third hydraulic function.

4.7.7 ErgoDrive Cable Operated

Control valve, mechanically operated.

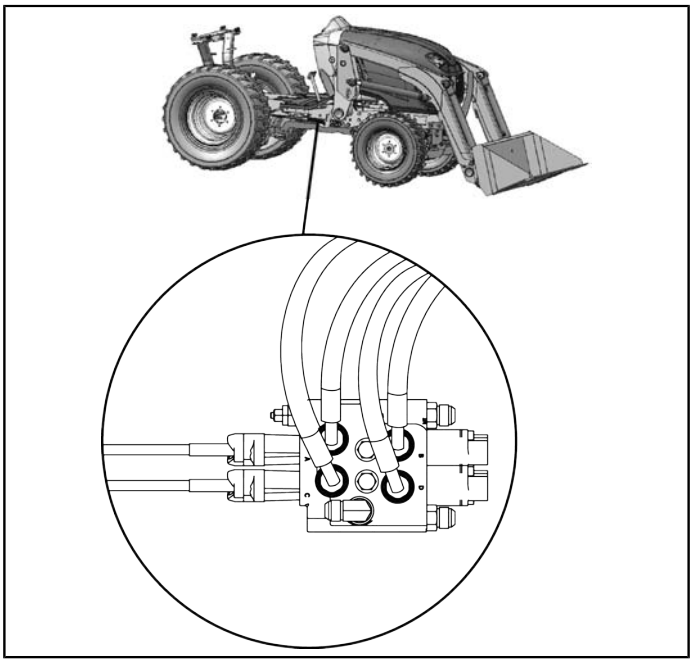


Fig.63 Mechanical control valve

The control valve is equipped with a control lever of joystick type, located by the operator's seat. The lever is connected to the hydraulic control valve via two control cables. The joystick can be locked in neutral to prevent inadvertent operation of the loader.

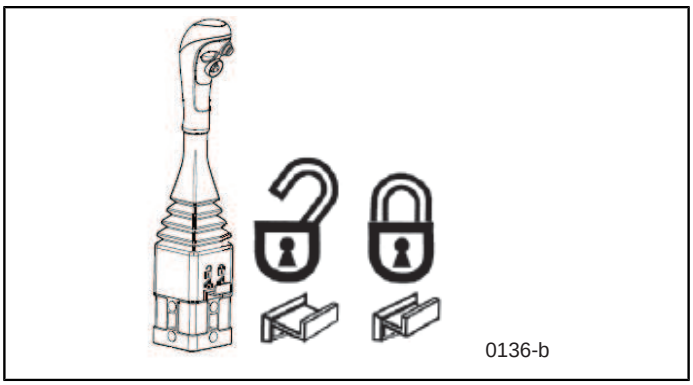


Fig.64 Control lever of joystick type, ErgoDrive.

4.7.7.1 Operation of the loader

4.7.7.2 Raise/lower the loader

Move the lever backwards (1) to lift the loader.

Move the lever forwards (2) to lower the loader.

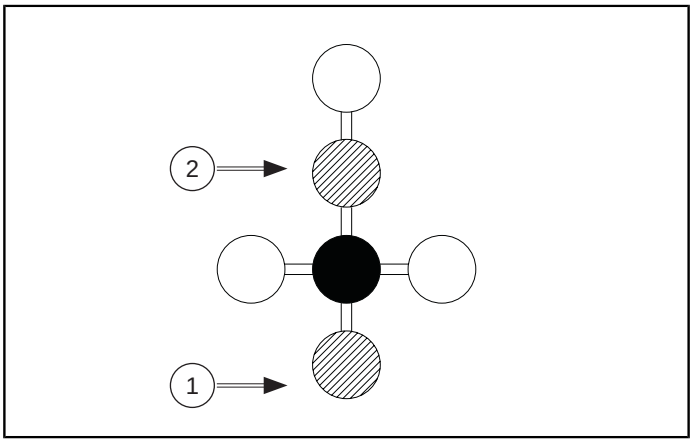


Fig.65 Raise/lower the loader.

4.7.7.3 Loader's float position

Caution!
The float position in combination with bucket work or implement work may only be used at low speeds.

Move the lever forwards into the float position (3) and release the lever to lower the loader without any downward force.

To cancel the float function, move the lever backwards slightly (out of the float position) and release it.

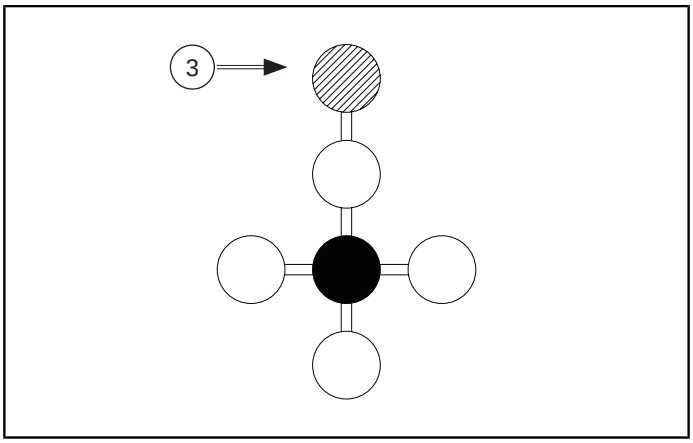


Fig.66 Loader's float position.

4.7.7.4 Emptying/opening up the implement

Right-hand fitting: Move the lever to the left (4) to open up the attachment.

Move the lever to the right (5) to angle the implement downward.

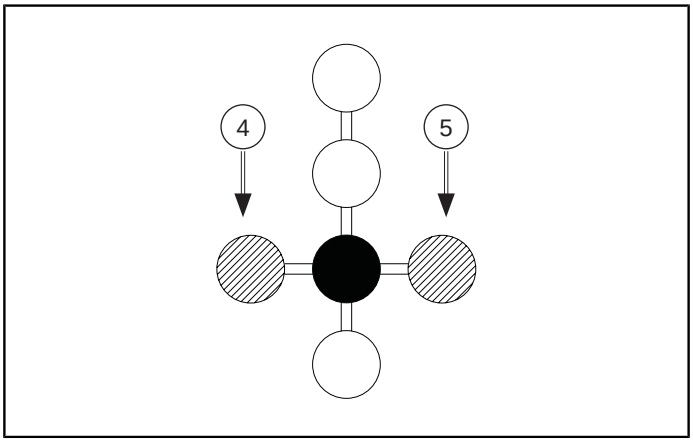


Fig.67 Empty/angle implement upwards.

4.7.7.5 Third hydraulic function (optional)

The third hydraulic function is controlled with a switch (A) on the front of the joystick control, combined with movement of the joystick to the left or right.

When the switch for the third hydraulic function is released, the joystick immediately returns to controlling the implement.

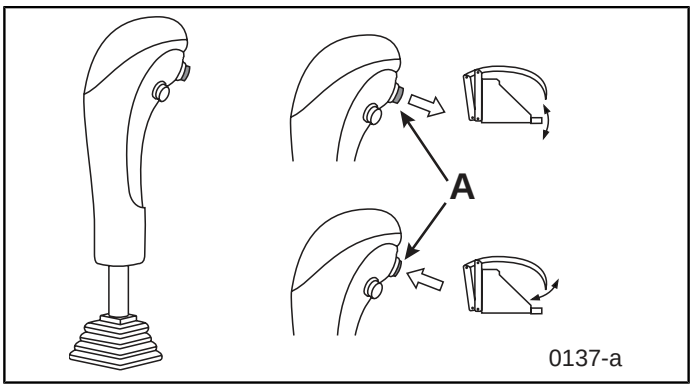


Fig.68 Switch for third hydraulic function.

4.8 SoftDrive (optional) (Not applicable to model 100c)

SoftDrive can be engaged during most applications, but can be disengaged using the shut-off valve (2) when careful operation with accurate control of the loader is required.

Caution!
Risk of jamming.

Risk of crushing/pinching when you connect the hydraulic system.

Lower the bucket to the ground, turn off engine and remove the pressure in the hydraulic system by moving the control lever to all control positions before connecting or disconnecting the system.

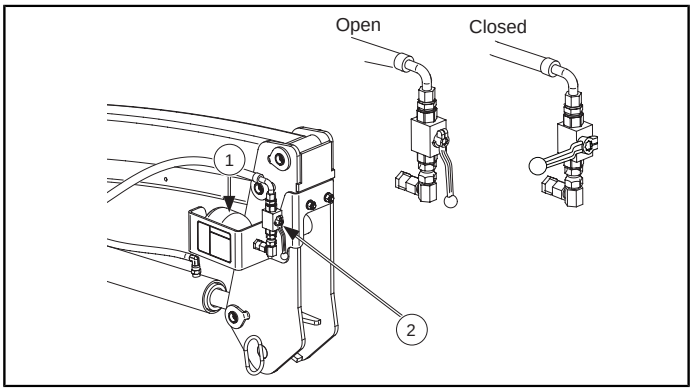


Fig.69 Mechanical deactivation of boom suspension.

4.8.1 Description

This equipment damps the vertical movements of the loader when driving on uneven ground.

*Note.*The accumulator (1) used in the SoftDrive system is pre-charged and cannot be re-charged. Contact your dealer for service.

Caution!
The accumulator (1) is pressurised. Repair, maintenance and commissioning must only be done by authorised personnel.

Warning!
Do not open the accumulator before the gas and oil side is depressurised. The cylinder contains nitrogen, which can cause a risk of suffocation.

No work may be done on the pressure vessel. Welding, drilling or opening the tank by force is not allowed.

4.9 Working with the loader

Warning!
Risk of electric shock, crushing and jamming.

When driving with the loader lifted, make sure that there is enough room between the loader and power lines, barn roofs, etc.

Caution!
Risk of crushing and jamming

People can be inside the working area.

Make sure that nobody is close to the tractor when work starts. Only operate the tractor when sitting in the intended place in the driver's seat.

Caution!
Risk of crushing and jamming

Lower the tool to the ground, lock the brakes and shut the engine off before you climb off of the tractor. Remove the ignition key if the machine is left without supervision.

If you work with the loader on an uphill slope, drive straight upwards, fill the bucket and reverse downhill. Driving along the side of a slope can cause overturning.

Warning!
Do NOT use the loader or the bucket as a working platform.

Fig.70 Do NOT use the loader or the bucket as a working platform.

Warning!
Do NOT use the loader to lift or transport people.

Fig.71 Do NOT use the loader to lift or transport people.

DO NOT ALLOW people who are not trained or otherwise qualified to drive the machine.

4.9.1 Counterweight and tread width

Caution!
Check that the machine has ballast (counterweight) at the rear to stabilise the machine's load-carrying ability. The counterweight is essential for maintaining control of the machine.

- Move the tyres to the widest recommended setting to increase stability.
- Read section *4 Driving instructions* in the operator's manual for information about the counterweight and track width. Also read the tractor operator's manual for further information.

Important!Incorrectly designed implements can damage the loader. For this reason, do not install third party implements without making sure that it has been approved by the loader manufacturer.

Make sure that the bucket or other implement is correctly fastened on the tool carrier and that the pins are in the locked position. Press the tip of the implement against the ground (1) to make sure that the implement is firmly fixed.

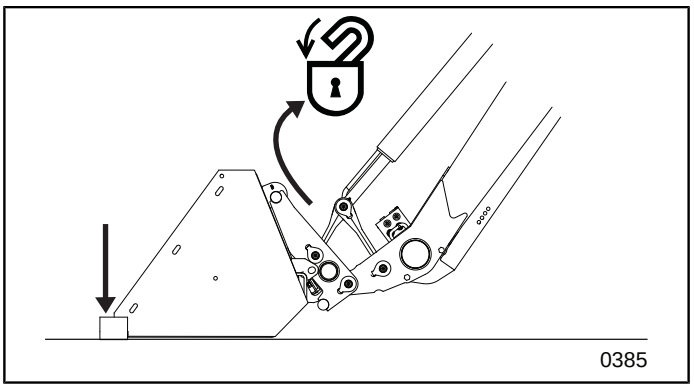


Fig.72 Make sure that the implement is secured by pressing its front end against the ground.

Warning!
Do NOT stand, walk or work under a lifted loader. Make sure that you keep people, especially children and animals, away from the working area.

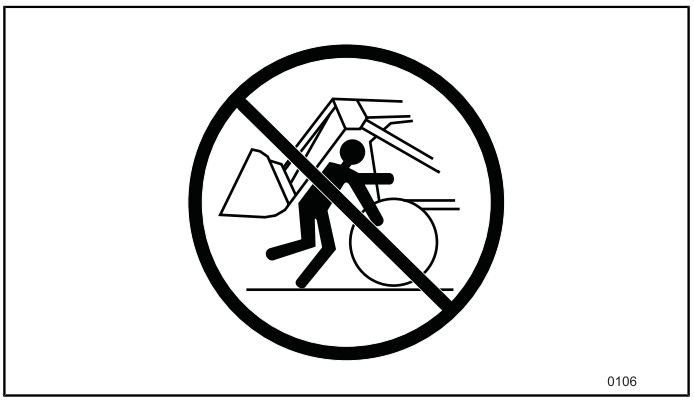


Fig.73 Do NOT stand, walk or work under a lifted loader.

4.9.2 Load stability

Warning!
Always look at the implement. Objects can fall or roll backwards onto the driver when the loader is raised.

Only lift loads which can be contained in, and are intended for, the specific implement.

Some implements should be equipped with a collapse protector.

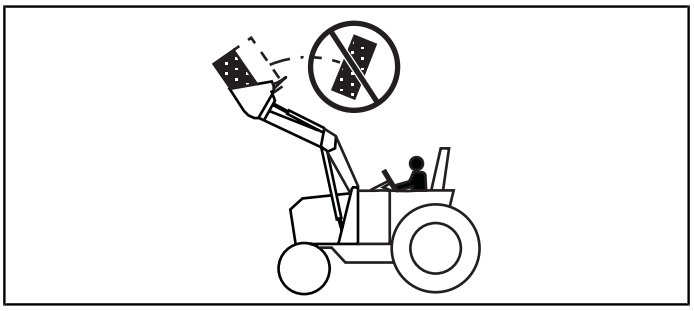


Fig.74 Pay attention to the implement, objects may fall off.

Warning!
If the tractor is only equipped with Roll Over Protective Structure (ROPS), and does not have a Falling Objects Protective Structure (FOPS), there is only limited protection against falling loads. The driver risks injury if the load falls when the loader is operated at height.

FOPS is not designed to protect against all falling loads. It is therefore critical to use an implement that prevents the load from falling.

Exercise caution when working with raised loads.

The tractor should not be operated on public roads with a load in the implement.

- Only use implements that are approved for the relevant application.

- Make sure that the load is positioned securely in the implement. In terms of loose material, the implement must not be overfilled, and for solid material, the load must not stick up above the rear of the implement.

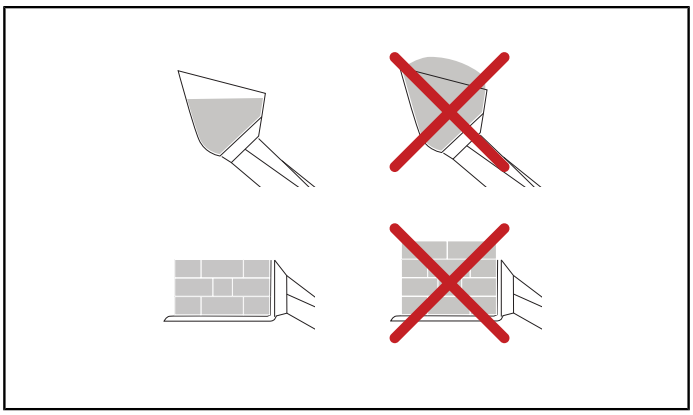


Fig.75 Only lift loads which can be contained in, and are intended for, the specific implement.

- Adjust the tilt angle of the implement when the load is raised so that the load is not aimed at the driver

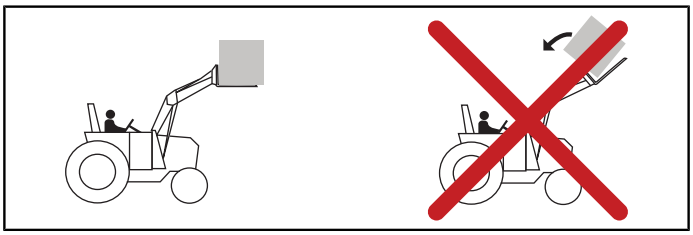


Fig.76 Exercise caution when working with raised loads.

4.9.2.1 Machine stability

Warning!
Do not work on or near steep slopes.

The tractor must always be kept a distance from the edge that is equal to or greater than the height of the bank or ditch.

- Drive straight up or down slopes (not horizontally). Avoid braking sharply or driving away at speed. Lower the loader as far as possible.
- Drive the tractor forwards up slopes with an empty bucket. Fill the bucket and then reverse slowly down the slope.

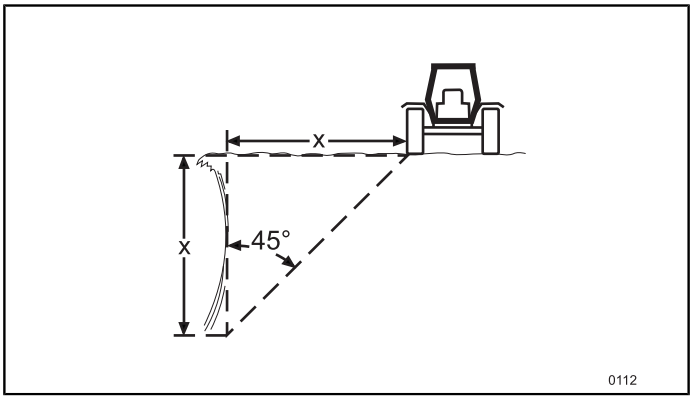


Fig.77 Keep at a distance when working near slopes.

Warning!
Reduce speed before cornering to avoid overturning the machine.

Avoid sudden turns when driving down slopes.

- Always leave the engine in gear to obtain engine braking when driving downhill. Do not allow the tractor to roll freely. Use the same gear when driving downhill as when driving uphill.
- Lower the loader as far as possible when moving. Keep in mind that the higher you lift the loader, the higher the centre of gravity, resulting in increased risk of the tractor overturning.

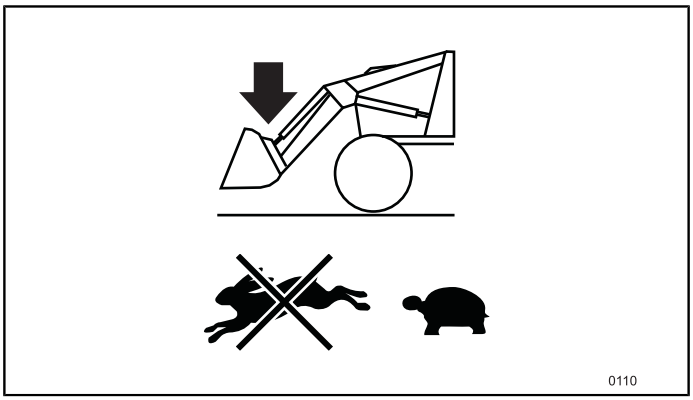


Fig.78 Lower the load and reduce the speed when cornering.

The most effective way to fill the bucket is to drive straight into the mound with the bucket horizontal. Raise the loader slightly once the bucket is forced into the mound, to facilitate filling. Then angle the bucket backward to retain the load in the bucket.

*Note.*Remove material from the top first when working in deep material.

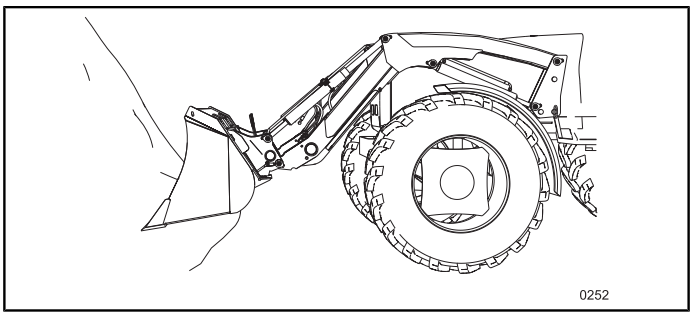


Fig.79 Drive straight in, lift the load and tilt the bucket backwards.

Reverse away from the mound. Lower the bucket slowly. Sudden stops when lowering the bucket quickly can damage the loader's and/or tractor's hydraulic system.

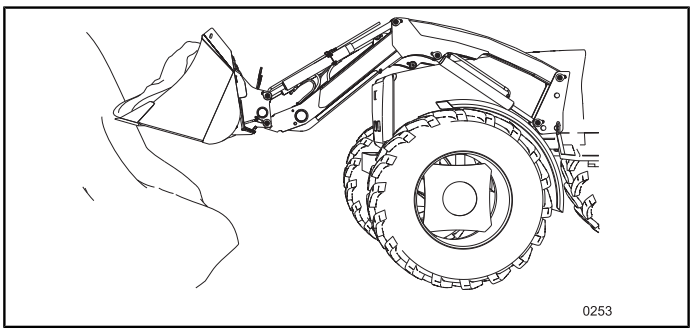


Fig.80 Reverse, lower the loader slowly.

During grading work, angle the bucket downwards, so that the cutting edge on the bucket comes into contact with the ground, to avoid damage to the bottom of the bucket.

Important!To avoid damage to the loader, do not angle the bucket back fully when grading. The bucket floor should not be angled more than 45° from the ground.

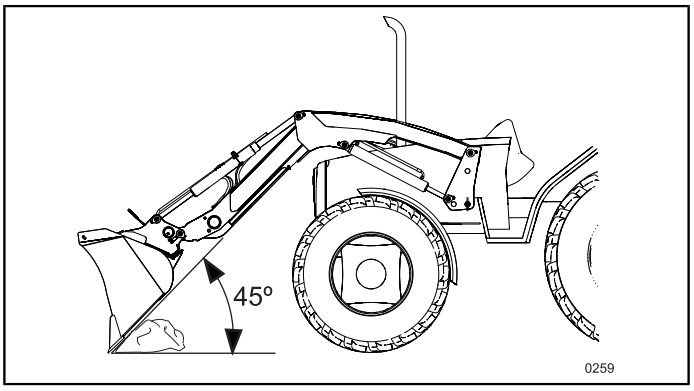


Fig.81 Operating technique when grading

4.10 Coupling and uncoupling tools

4.10.1 Disconnecting the tool, Euro 8 tool carrier (Only applicable to models 160c-180c)

Raise the loader about 1 meter off the ground and position the implement level to the ground.

Turn off the tractor engine and lock the loader control lever in the neutral position.

Apply the parking brake.

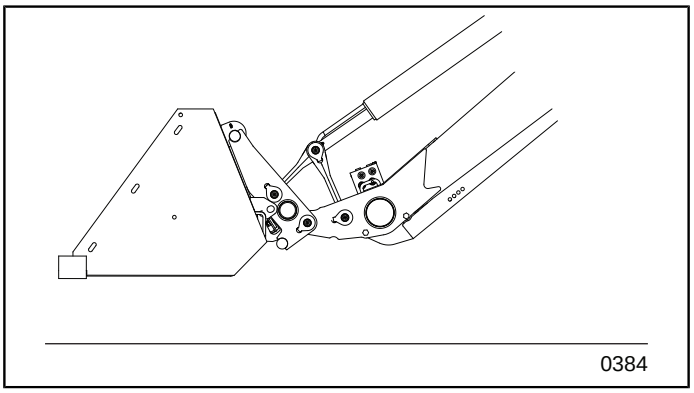


Fig.82 Lift the load horizontal to the ground, turn off the engine, lock control lever in neutral position.

Move the locking lever to the disengaged position (position 1).

*Note.*It is easiest to move the locking lever to the open position if the loader has been lifted by about 1 metre.

Caution!
Risk of jamming.
The lock lever is spring loaded in position 1.

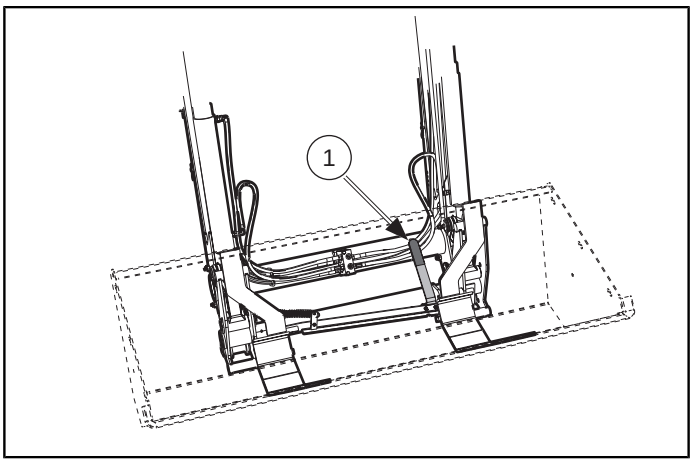


Fig.83 Move the locking lever to the disengaged position (position 1).

Lower the loader to the ground and continue lowering the loader until the implement is disconnected from the loader's tool carrier.

Reverse away from the implement.

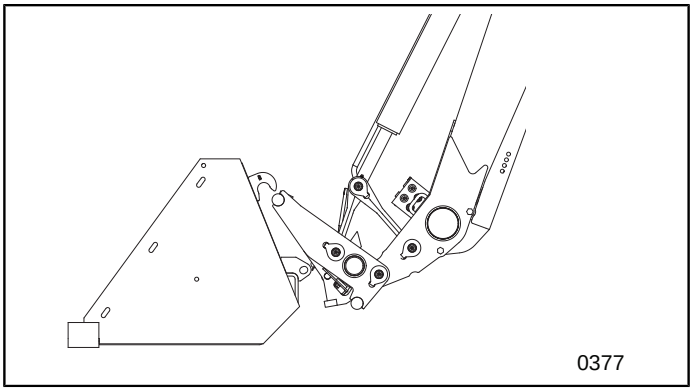


Fig.84 Lower the loader until the tool is loose.

If no implement is coupled to the tool carrier, the mechanism should be put into the closed position, position 2.

To put the locking lever into the closed position, angle the tool carrier up, or close the locking lever manually. Check the locking.

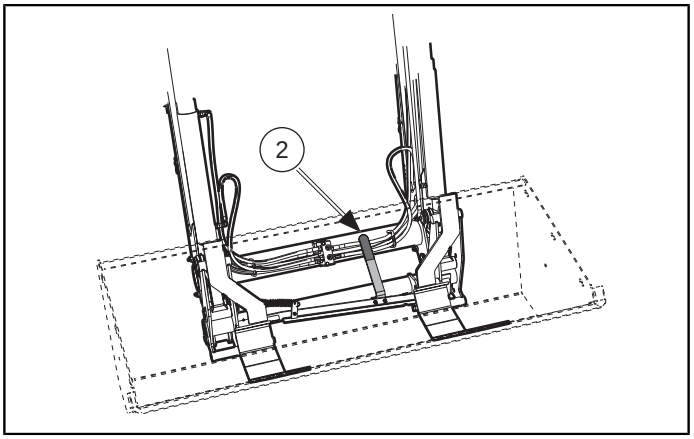


Fig.85 Locking lever in closed position, position 2.

4.10.2 Connecting the tool, Euro 8 tool carrier (Only applicable to models 160c-180c)

Move the locking lever to the disengaged position (position 1).

It is easiest to move the locking lever to the open position if the loader has been lifted by about 1 metre.

Caution!
Risk of jamming.
The lock lever is spring loaded in position 1.

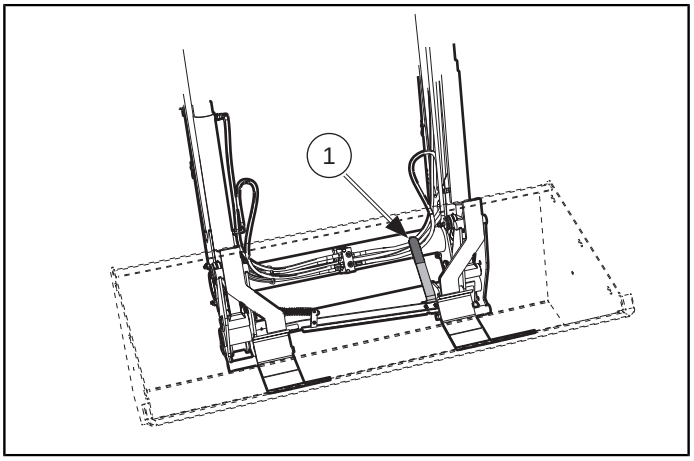


Fig.86 Move the locking lever to the disengaged position (position 1).

Angle up the tool carrier. Raise/lower the loader sufficiently so that the tool carrier can be angled forwards to its end position on the right/left side of the tool carrier, around 100mm under the hooks.

Carefully drive the tractor forwards and position the tool carrier under the implement hooks. Insert the hooks by raising the loader.

This coupling procedure must be tested in each case to make sure that there is no interference, depending on the combination of implement and accessory.

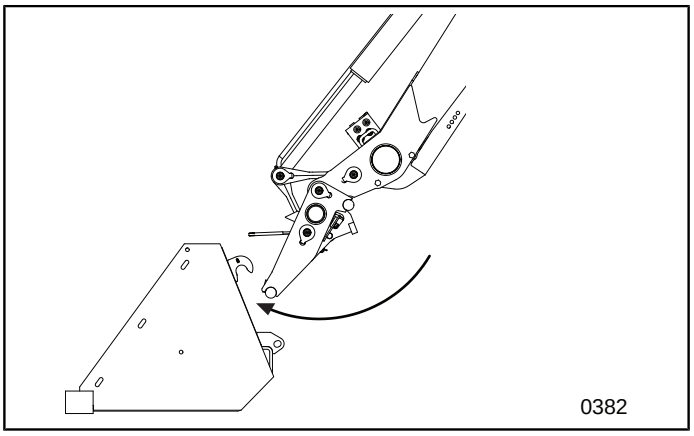


Fig.87 Angle the tool carrier

The implement should follow the tool carrier movements when it is angled upwards. If both the implement's tools are not firmly fixed in the tool carrier, the tool must be repositioned against the ground and the connection procedure must be repeated.

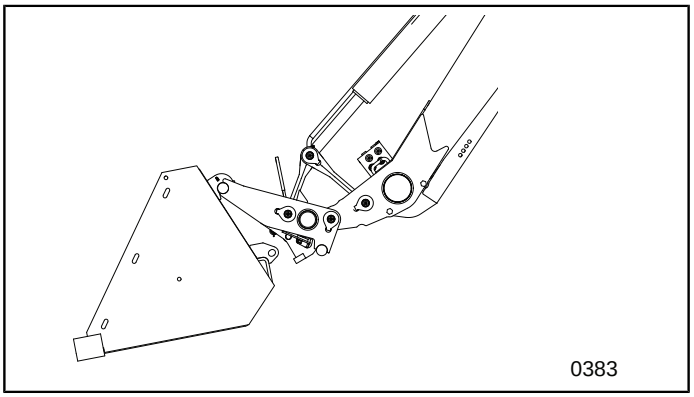


Fig.88 Position the tool carrier under the implement hooks.

Angle the implement up with the loader at a low height (100mm) above the ground to ensure safe fixing of the implement. Before beginning work, always inspect the tool carrier's locking pins to ensure correct implement fitting.

Important!Read this before operating loader:

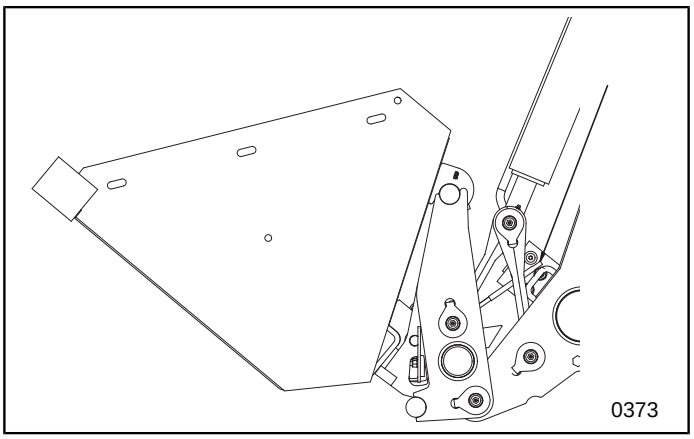


Fig.89 Angle the implement up with the loader at a low height to hook on the locking pins.

Warning!
Risk of crushing and jamming

Incorrectly locked implements can come loose.

Always check to ensure implement is locked in position by forcing the front of the implement against the ground and visually confirm that the tool carrier locking pins are in the engaged position.

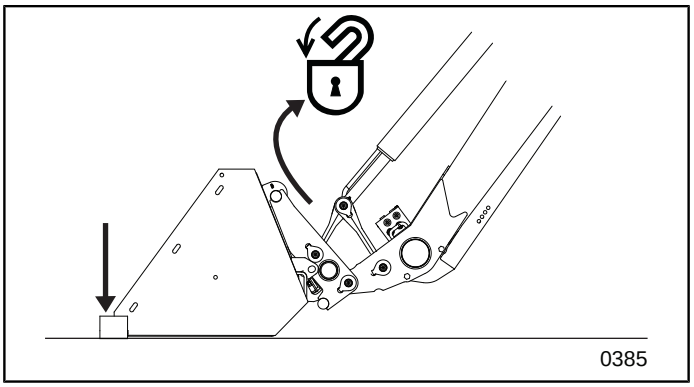


Fig.90 Make sure that the implement is secured by pressing its front end against the ground.

5 LUBRICATION AND MAINTENANCE

Warning!
Never stand between the front of the tractor and the loader's cross tube.

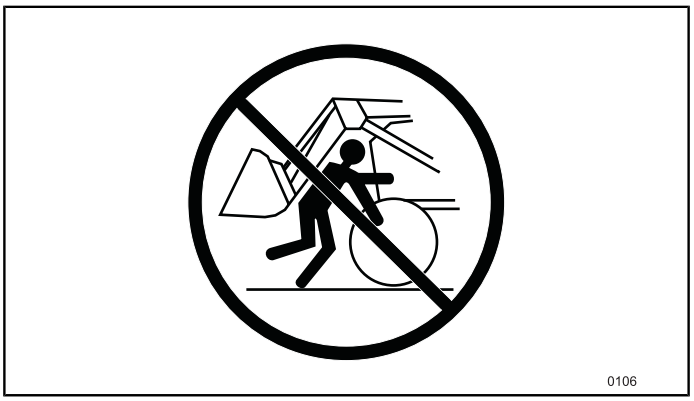


Fig.91 Never stand between the front of the tractor and the loader's cross tube.

5.1 Lubrication points

Lubricate the following grease nipples with universal grease every 10 operating hours.

Warning!
Risk of crushing and jamming

The loader may fall downwards.

Lower the loader to the ground before you start greasing.

Grease nipples on every pivot pin on both sides of the loader.

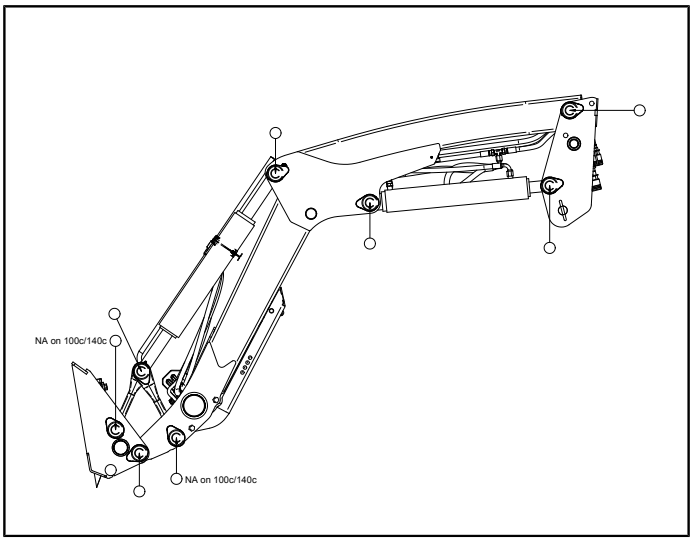


Fig.92 Grease nipples on every pivot pin on both sides of the loader.

5.2 Storage

Apply a thin layer of grease on visible piston rods in order to protect them.

5.3 Hydraulic system

Check the oil level in the tractor hydraulic oil tank regularly, with the loader lowered to the ground. Use the oil specified in the tractor's operator's manual.

5.3.1 Hoses and cylinders

Read this before checking the hydraulic system for leakage:

Warning!
Pressurised oil.

Hydraulic oil at high pressure can be injected into the body in the event of leakage and cause serious injury, blindness or fatality. Leakage may be invisible.

Use approved protective safety glasses and protect the skin using strong leather gloves for example. Use cardboard or wood for leakage detection. If fluid has entered the skin then it MUST be removed within a couple of hours by a doctor who can treat this type of injury.

Fig.93 NEVER use fingers or hands for leakage detection.

Check hoses and connections for wear and leakage at regular intervals. Ensure that hoses have sufficient clearance and do not scrape against other components. Replace damaged hoses and tighten all connections.

The cylinders are double-acting. They must always be maintained in good condition for optimal function. Leaks, internal or external, affect performance and may be dangerous.

This loader requires a hydraulic system that works at high pressure. Only use spare parts approved by the manufacturer.

5.3.2 Checking the hydraulic connections

Check that all hoses and adapters are tightened and that they do not leak.

Fig.94 NEVER use fingers or hands for leakage detection.

5.3.3 Repairing the hydraulic cylinders

The removal, repair and fitting of the hydraulic cylinders require special tools to prevent damage to internal components. We recommend you to have your cylinders repaired by an authorised dealer.

5.3.3.1 Checking the subframe screw union

Check that all screws are tightened to the specified torque, first after 10 hours of operation and then every 50 hours of operation thereafter.

5.3.3.2 Tightening torques - Screw union

Tighten all the screws on the loader and all fasteners, except in the cases where the tightening torque is specified in the assembly instructions.

The torques apply to clean, dry threads. Lubricated threads may mean that the fastener is tightened too hard. Damaged or dirty threads can cause torque values to be too low.

A torque amplifier may be needed when tightening screws to high torque values.

Tightening torques should be checked immediately after installation, and several times after a short period of use. Incorrect tightening can damage the structure of the loader and/or tractor.

Grade 5 (Class 8.8) Screw		**Grade 8 (Class 10.9) Screw**	
Diameter	Torque	Diameter	Torque
1 /4”	10 lb-ft (13.6 Nm)	1 /4”	11 lb-ft (14.9 Nm)
5/16”	20 lb-ft (27.1 Nm)	5/16”	24 lb-ft (32.5 Nm)
3/8”	35 lb-ft (47.5 Nm)	3/8”	44 lb-ft (59.7 Nm)
7/16”	55 lb-ft (75 Nm)	7/16”	71 lb-ft (96.3 Nm)
1/2”	85 lb-ft (100 Nm)	1/2”	114 lb-ft (154.6 Nm)
5/8”	170 lb-ft (230 Nm)	5/8”	222 lb-ft (301 Nm)
3/4”	300 lb-ft (405 Nm)	3/4”	325 lb-ft (440.6 Nm)
M8	27.1 Nm (20 lb-ft)	M8	32.5 Nm (24 lb-ft)
M10	54.2 Nm (40 lb-ft)	M10	63.7 Nm (47 lb-ft)
M12	94.9 Nm (70 lb-ft)	M12	108.4 Nm (80 lb-ft)
M14	119.3 Nm (88 lb-ft)	M14	176.3 Nm (130 lb-ft)
M16	189.8 Nm (140 lb-ft)	M16	271.2 Nm (200 lb-ft)
M20	385 Nm (284 lb-ft)	M20	542.3 Nm (400 lb-ft)

6 TROUBLESHOOTING

Faulty functioning of the loader is frequently caused by factors not related to the loader:

- Check the oil level in the tractor's hydraulic tank. Top up to the correct level.
- Make sure that the correct oil is used. Only use the oil specified in the tractor's operator's manual. The wrong oil can cause foaming, heating and internal leakage.
- Make sure that hoses and couplings are correctly installed and connected to the tractor. Hydraulic couplings must be fully inserted.
- Check the oil for contamination and moisture. Change the oil and filter as necessary.
- Check hoses and couplings for leakage, abrasion and twist.
- Low temperatures can cause slow movements or cause the loader to function irregularly until the normal working temperature is reached. Check whether the oil is holding its normal working temperature before testing the loader.
- When a hose kit is used, make sure that the tractor valve has been adjusted for double action. Check that the flow control has been set to the maximum value.
- Move the loader's cylinders to their end positions several times to remove air from the hoses and cylinders.

Most problems which occur with the loader are simple in nature and can be easily rectified. Use the "Troubleshooting table" on the following pages to help you localise and solve problems.

Please contact your dealer for further assistance.

Problem	Possible cause	Action
Lifting and implement cylinders do not function	Low hydraulic oil level.	Check and top up with hydraulic oil.
	Hydraulic hoses connected incorrectly.	Check and connect the hoses correctly.
	Hydraulic hoses to/from control valve are “blocked”.	Check hoses for damage (kinks, twists, etc.).).
	Loader control valve or tractor's main reduction valve has got stuck in the open position.	Contact your dealer.
	Low system pressure from pump.	Contact your dealer.
Lift or implement cylinders not working.	Break in control cables for control valve.	Inspect. Change if necessary.
	Hydraulic quick-release couplings not fully inserted.	Check the connection. Change coupling(s) if necessary.
	Blocked hydraulic hose/pipe.	Look for damage to hose/pipe which could block oil flow between cylinder and control valve.
	Piston unit damaged (does not seal).	Contact your dealer.
	Blocked control valve.	Contact your dealer.
	Damaged quick-release coupling.	Change quick-release coupling.

Problem	Possible cause	Action
Lift and/or implement cylinders working in the wrong direction compared to lever deflection.	Hydraulic hoses connected incorrectly.	Connect hydraulic hoses to correct socket.
	Control cables for single lever control connected incorrectly.	Contact your dealer.
Air in hydraulic oil (generally shown by foaming).	Low hydraulic oil level.	Check and top up with hydraulic oil to correct level.
	Air leakage in hydraulic pump suction side.	Contact your dealer.
	Foaming due to wrong type of hydraulic oil being used.	Read the tractor operator's manual and top up using the recommended type of hydraulic oil.
Slow or jerky lifting movement.	Low hydraulic oil level. Cold hydraulic oil.	Check and top up with hydraulic oil. Let the hydraulic oil warm up to working temperature.
	Engine speed too low (hydraulic pump speed is then too low).	Increase engine speed to improve loader performance.
	Too heavy load in bucket. Material weight exceeds loader's specified capacity.	Reduce the load in the bucket.
	Control valve cable system binds or is damaged.	Contact your dealer.
	Air in the hydraulic oil.	See “Air in the hydraulic oil”.
	Hydraulic quick-release couplings not fully inserted.	Check the couplings. Repair or change.
	Restriction in hydraulic hose or pipe (hoses/pipes have become twisted or crushed).	Contact your dealer.
	Lifting cylinder piston unit leaks.	Contact your dealer.
	Pressure limiting valve working irregularly or set too low.	Contact your dealer.
	Internal leakage in control valve (bypass flow in valve).	Contact your dealer.
	Inadequate capacity in hydraulic pump.	See “Inadequate pump capacity”.
Noise from the system's pressure limiting valve (squeaking)	Cold hydraulic oil.	Let the hydraulic oil warm up to working temperature.
	Too heavy load in bucket. Material weight exceeds loader's specified capacity.	Reduce the load in the bucket.
	Pressure limiting valve set lower than specification.	Contact your dealer.
	Restriction in hydraulic hose, pipe or quick-release coupling.	Contact your dealer.
Insufficient lifting capacity.	Engine speed too low.	Increase engine speed.
	Too heavy load in bucket. Material weight exceeds loader's specified capacity.	Reduce load.
	Pressure limiting valve set lower than specification.	Contact your dealer.
	Piston in lifting cylinders leaks.	Contact your dealer.
	Internal leakage in control valve.	Contact your dealer.

Problem	Possible cause	Action
	Damaged hydraulic pump.	Contact your dealer.
The load drops with the control valve's spool into neutral position. Note: Depending on the loader model, the value that the loader is allowed to sink by is between 0.5 and 1.5 mm, measured at the piston rod.	Piston in lifting cylinders leaks.	Contact your dealer.
	Internal leakage in control valve.	Contact your dealer.
	Control valve or cable system binds and prevents valve spool from returning to centre position.	Contact your dealer.
Solenoid valve spool(s) do not return to neutral position.	Control valve centring spring is damaged.	Contact your dealer.
	Control valve spool binds in its bore.	Contact your dealer.
	Control lever or cable system binds.	Find the reason for binding and repair it.
External hydraulic oil leakage.	Loose hydraulic unions.	Tighten loose connections.
	Damaged hydraulic hoses, pipes, couplings or O-rings in couplings.	Find the reason for the leakage and change the damaged component.
	Damaged O-ring in control valve.	Contact your dealer.
	Control valve spool or housing damaged and/or worn.	Contact your dealer.
	Piston rod seal in cylinder leaks.	Contact your dealer.
Inadequate pump capacity.	Cold hydraulic oil.	Let the hydraulic oil warm up to working temperature. Increase engine speed.
	Engine speed too low.	Increase engine speed.
	Low hydraulic oil flow.	Please refer to the tractor operator's manual for service recommendations.
	Restriction in hydraulic hose.	Contact your dealer.
	Fault in hydraulic pump.	Contact your dealer.
Lifting cylinder piston rods bent.	Abnormally high shock loading during lowering movement.	Contact your dealer.
Bucket cylinder piston rods are bent when bucket cylinders are extended.	Grading or excavation work with bucket cylinders fully extended.	Contact your dealer.

7 ACCESSORIES

Not all accessories fit all loaders. Please contact your dealer for information on compatibility with your loader.

7.1 3rd service

3rd service (1). The electric diverter is used for hydraulic implements.

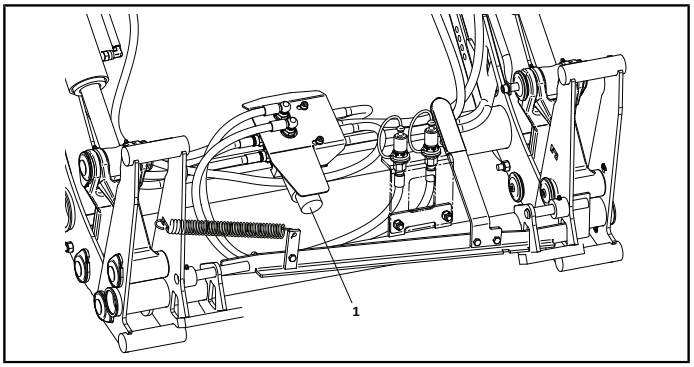


Fig.95 Extra hydraulic function.

7.2 Boom suspension, SoftDrive

Reduces stresses on tractor and loader, and improves operator comfort.

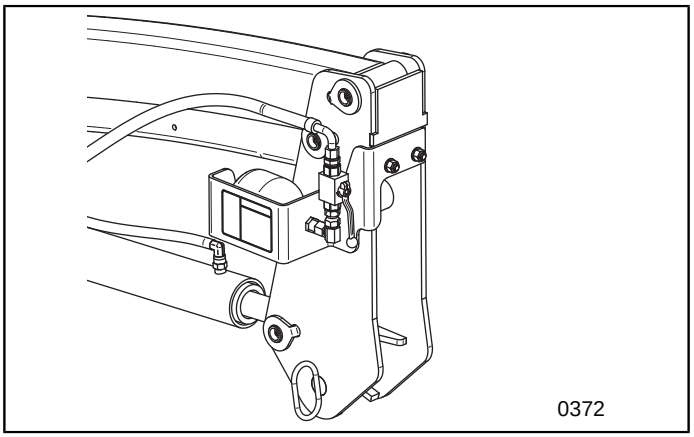


Fig.96 Boom suspension.

7.3 Parallel linkage kit

Enables the tool to maintain the same angle during the entire lifting and lowering movement.

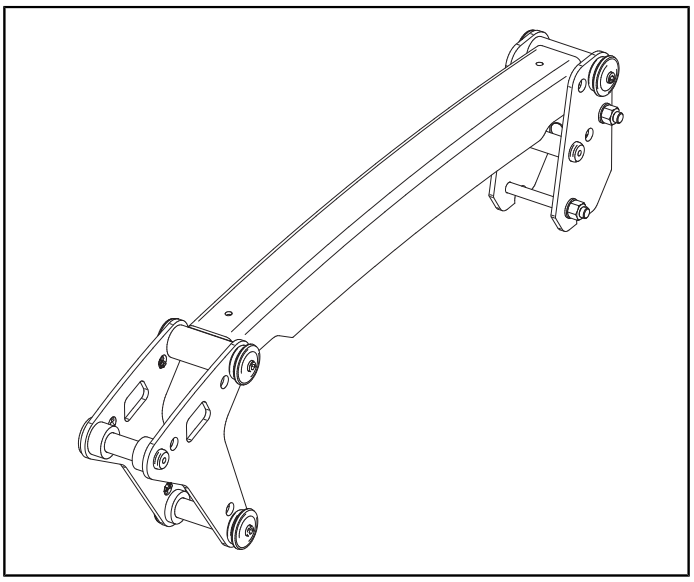
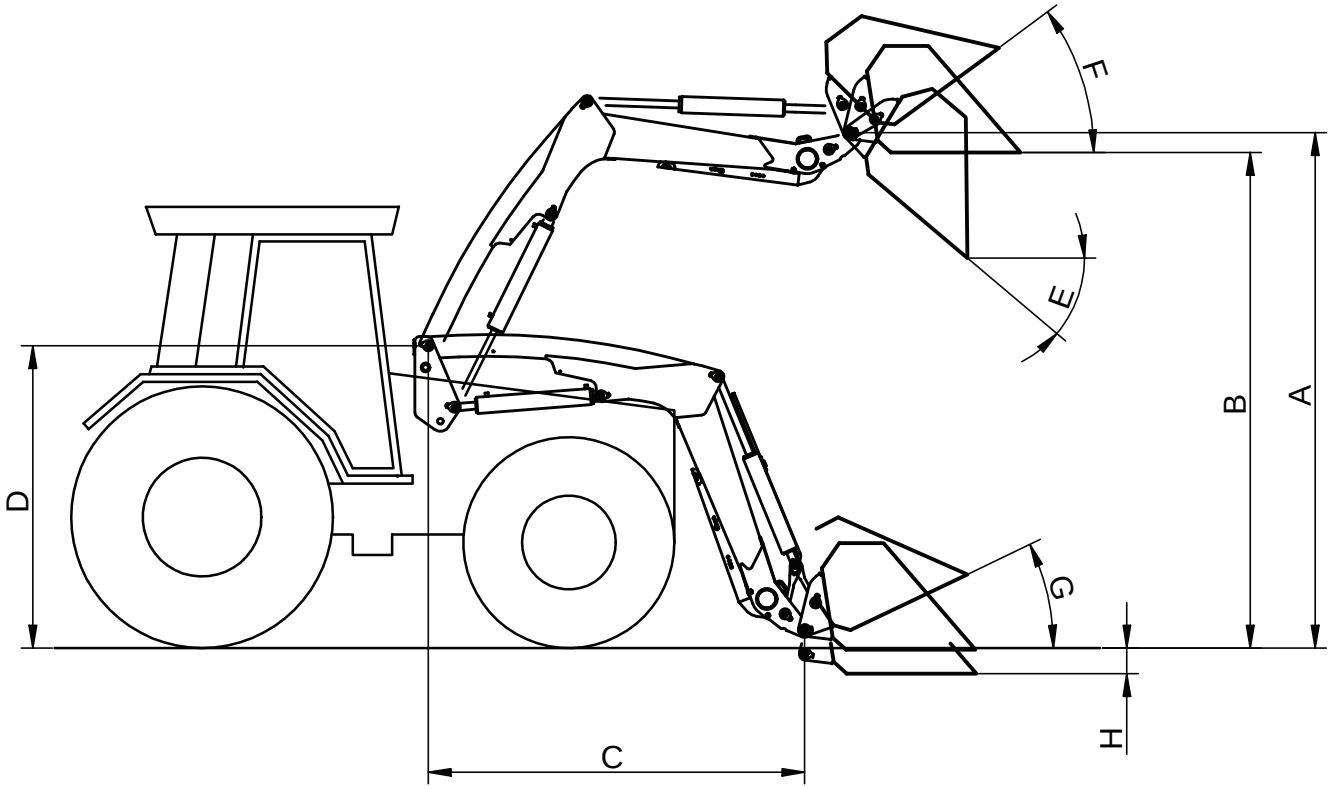


Fig.97 Parallel linkage kit

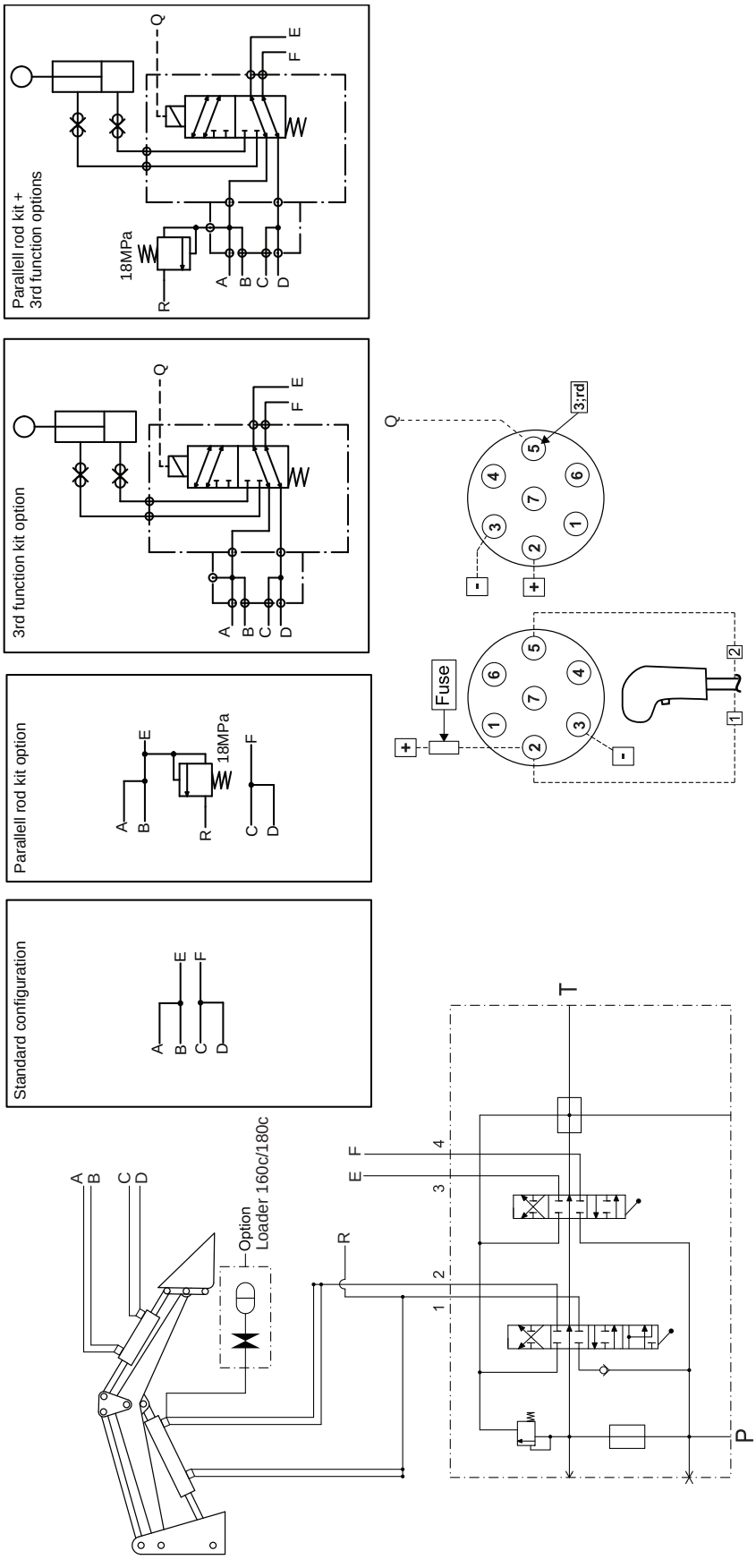
8 SPECIFICATIONS



		Parallel linkage (optional)		Non-parallel linkage			
		160c	**180c**	**100c**	**140c**	**160c**	**180c**
A	Lift height to pivot point	103/2615	111/2815	75/1900	95/2425	103/2615	111/2815
B	Lifting height below flat implement	95/2415	103/2615	69/1760	88/2230	95/2415	103/2615
C	Dimension to pivot point	56/1415	61/1550	51/1290	56/1410	56/1415	61/1550
D	Calculated height to pivot point	54/1360	56/1430	41/1035	54/1360	54/1360	56/1430
E	Tipping angle on top	52	53	51	50	52	53
F	Breaking up angle on top	47	42	98	98	123	121
G	Breaking up angle at ground level	43	40	30	23	40	38
H	Calculated undermining	80	120	120	75	80	120
	Max lifting force lb/kg (800 mm from arm centre at ground level).	2116/960	3704/1680	750/340	1124/510	1720/780	3020/1370

Technical data may vary, depending on tractor model and implement.

9 WIRING DIAGRAM



10 WARRANTY CONDITIONS

ÅLÖ AB undertakes, for a period of 12 (twelve) months from the day that the loader/equipment was delivered to the purchaser, to replace or repair components which need to be rectified due to faults in the material or manufacturing. This is on condition that the fault is immediately notified to the supplier, and that the faulty loader/component is made freely available to the supplier.

For replaced components, the warranty is valid only for the remaining duration of the original warranty.

The warranty does not cover faults caused by accidents, inadequate maintenance, modification or incorrect installation by the purchaser. When heavily worn components are replaced under warranty, the purchaser shall be charged for the time that they have been used.

No compensation will be given for personal injury, stoppage, consequential damage or other losses.

Testing or fault diagnosis at the request of the purchaser will be carried out without charge to the purchaser if defects are established in that connection.

Otherwise the purchaser is charged for all costs.

Temporary repairs or extra costs incurred since work has been done outside ordinary working hours will not be compensated.

EC DECLARATION OF CONFORMITY

(Directive 2006/42/EC, Annex 2A)

ÅLÖ AB

Brännland 300

SE-901 37 Umeå, Sweden

Tel. +46 (0)90 17 05 00

Hereby certifies that:

From January 2010, the front loader models described in this operator's manual (see front page)

A. manufactured in conformity with the provisions in the COUNCIL DIRECTIVE

   dated 17 May 2006 on mutual approximation of the laws of the Member States relating to machinery, 2006/42/EC, with special reference to Annex 1 of the Directive on essential safety and health requirements in relation to the construction and manufacture of machines.

   dated 15 December 2004 on the approximation of the laws of the Member States on electromagnetic compatibility, 2004/108/EC.

B. manufactured according to the following harmonised standards:

   EN ISO 12100-1, -2, EN ISO 4413:2010, EN ISO 14892, EN 12525:2000, EN 954-1, EN 60204-1.

SMP Svensk Maskinprovning AB, Fyrisborgsgatan 3, SE-754 50 Uppsala, Sweden, has carried out voluntary type control for ÅLÖ AB. The certificate has number: SEC/09/2050 – front loader.

The person authorised to compile technical documentation at ÅLÖ AB is Tomas Nygren, Product Development Director.

Umeå, 1 January 2010

Olle Pehrsson

Managing Director

ÅLÖ AB, SE-901 37 UMEÅ, SWEDEN
www.alo.se