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# LOADER'S OPERATOR MANUAL

**LX85**

[www.summittractors.com](http://www.summittractors.com)



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# 1. INTRODUCTION

## 1.1. General information

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**! WARNING:**  
**Careless or incorrect use of the loader/implement may result in serious injury or death for the driver or others. Observe the safety instructions.**

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This user manual describes the operation and maintenance of a compact loader, consisting of a subframe and a front loader, including a control system, which can handle different types of implements. The information in the operator's manual was correct at the time of printing. Please visit your authorised Summit service dealer if there is something in the operator's manual that you do not understand.

An operator's manual is supplied with every machine in order to show the operator how it should be operated and maintained. Read and use the information so that you can use the machine in a safe manner. 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 operator, study the operator's manual and ask an experienced operator to explain things to you. Keep this operator's manual readily available, preferably inside the tractor. Get a replacement manual if the original operator's manual is damaged or missing.

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**! WARNING:**  
**Read through the entire operator's manual before using the product. It contains important safety information.**

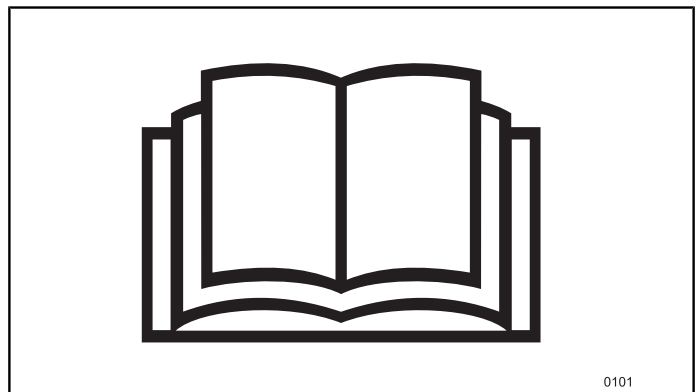
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We reserve the right to introduce changes to the design and specification, or improvements at any time, without prior notice or commitment.

**IMPORTANT:** The loader and loader subframe combination is designed for a specific tractor model. Contact [summittractors.com](http://summittractors.com) for the correct combination for a specific tractor model. Do not install incorrect combinations.

**IMPORTANT:** Do not install third party implements without making sure they have been approved for the application by Summit Tractors.

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



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

## 1.2. Identification

### 1.2.1. Model and serial number

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

The plate specifies:

- Product: Machine name
- Type: Type/model
- Ref. No.: Reference number for loader
- Serial No.: Serial number for loader
- Weight: Loader weight without implements, according to the factory delivery specification.
- EC number: Loader, EC number

The operator's manual is valid for the front loader models listed in this manual, see front page, within the serial number ranges (101164400000 to 101229999999); (101174400000 to 101229999999); (114174400000 to 114229999999); (116174400000 to 116229999999) or within EC-number range (EC-3000 to EC-3099).

Always provide: Type (A) and serial number (B) for service issues or spare parts needs.

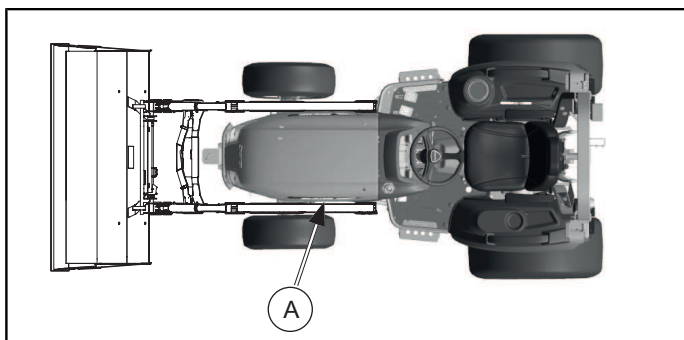


Fig. 2 Location of identification plate.

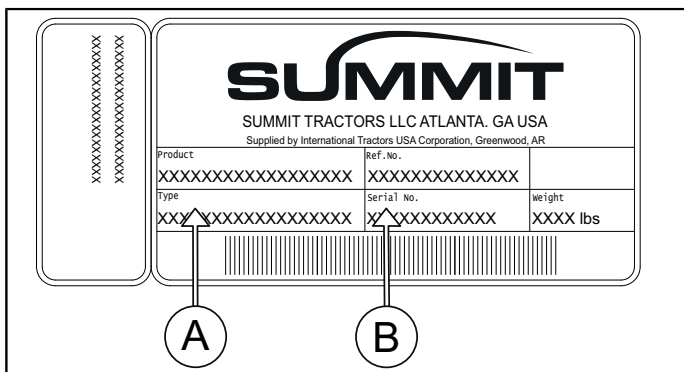


Fig. 3 Machine sign.

Fill in the loader's identification:

- A. Type-model:.....
- B. Serial number:.....

### 1.2.2. Component identification

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

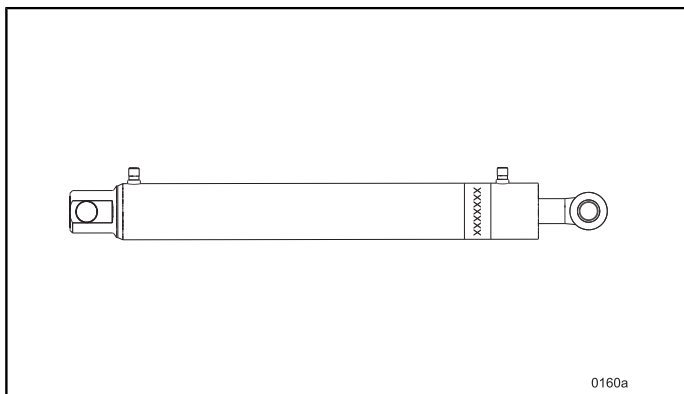
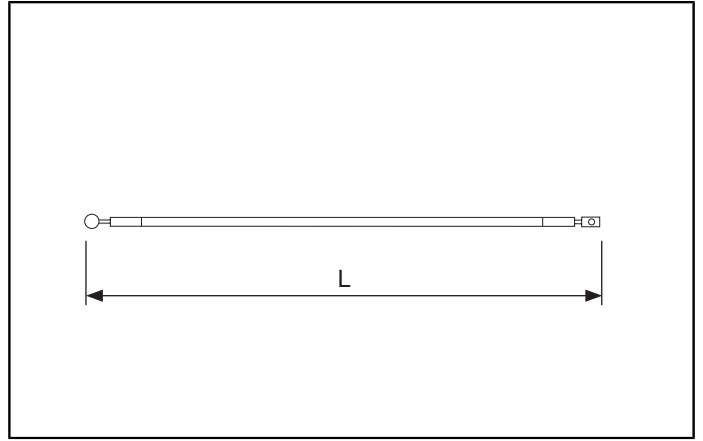


Fig. 4 Marking of components, e.g., cylinder.

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

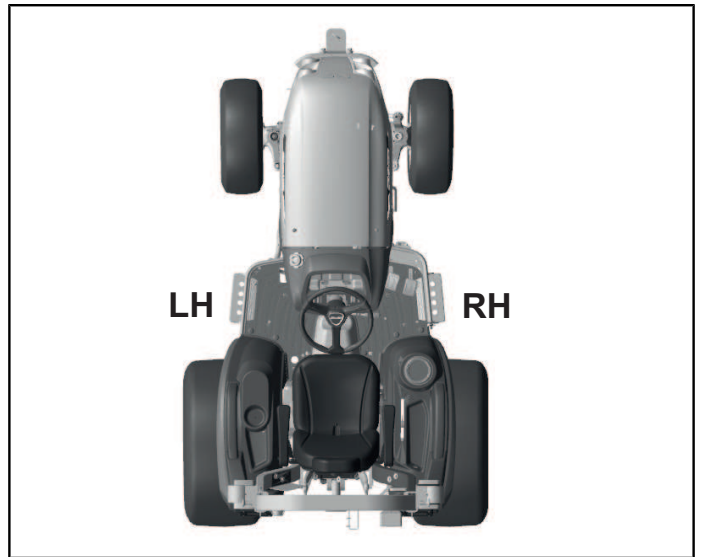


*Fig. 5 Indicate length when ordering control cable.*

### **1.3. Alignment reference**

The references throughout this operator's manual to left (LH) and right (RH) are based on looking forward from the driver's seat with the operating controls to the right of the driver's seat.

*NOTE:* Some illustrations in this operator's manual may show a different model of tractor or loader, compared with your loader. However, the same information will apply to your equipment unless otherwise specified.



*Fig. 6 Alignment reference*

## 2. DESCRIPTION AND DEFINITIONS

### 2.1. Description

Front loader is suitable for:

- be installed on wheeled compact tractors.
- Handle various certified implements for lifting, carrying, cutting, scraping, grading and plowing.



**WARNING:**

**Risk of crushing, pinching, tipping. In the event that one of the loader's hoses ruptures, the loader/implement/load can fall in an uncontrolled manner. If a hose ruptures, correct the problem immediately according to section 5. *Maintenance*. When replacing parts, only use original spare parts in order to restore the machine to its original design. Decontaminate the ground according to applicable requirements/legislation for the country or area where you are located.**

**IMPORTANT:** Failure of the power supply to the loader's electrical and/or hydraulic system may cause certain functions not to be activated. For example: Raising the loader, angling the implement up, third hydraulic function etc.

### 2.2. Definitions

#### 2.2.1. Subframe

The subframe is fitted to the tractor to allow connection of the front loader.

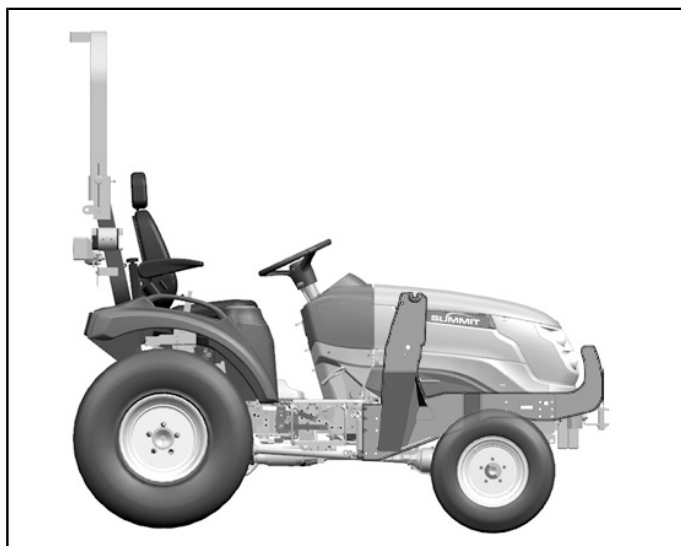


Fig. 7 Example image, subframe to compact loader

### 2.2.2. Third hydraulic function

The loader is equipped with a third hydraulic function (1) for operating hydraulic implements.

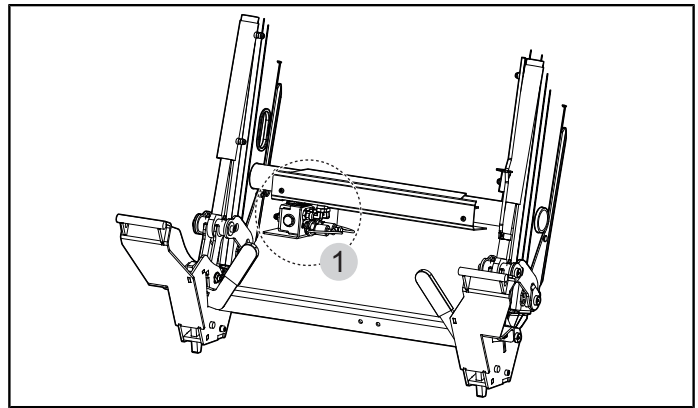


Fig. 8 Third hydraulic function

### 2.2.3. Implement lock

The loader is equipped with a mechanical implement lock.

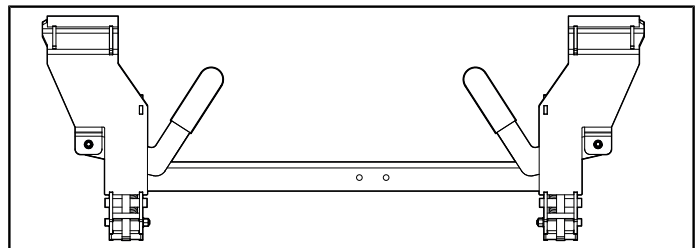


Fig. 9 Implement lock

### 2.2.4. Level indicator

The level indicator shows the angle of the implement relative to the ground.

The indicator holder (A) can be adjusted as necessary depending on the implement in use or the desired indication angle.

**IMPORTANT:** Incorrect installation/adjustment of the level indicator can cause damage to the indicator holders (A) and (A1) and the indicator rod (C) when the loader is used.

**IMPORTANT:** If the measurement (D) is exceeded, the level indicator and the cylinder piston rod may be damaged. See *Measurement table*.

#### Measurement table

Model	Max measurement (D)
LX85	4 inches

#### Installation of level indicator

- Adjust the indicator holder (A) so that the indicator rod (C) is positioned parallel to the cylinder.
- Check that the indicator (B) on the indicator rod can pass the indicator holder (A1) without striking it.

#### Adjustment of indication angle

- Position the implement parallel to the ground or at the desired angle.
- Adjust the indicator holder (A) along the piston rod until the indicator holder (A1) is opposite the indicator (B).

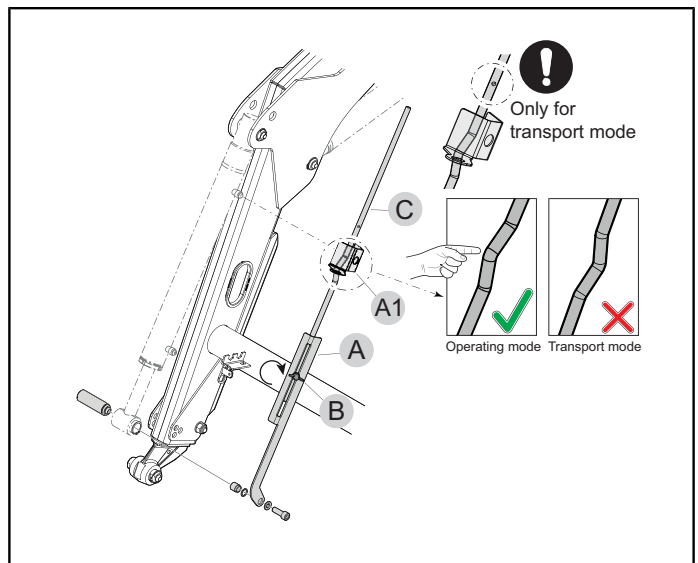


Fig. 10 Level indicator



*NOTE:* The maximum measurement (D) according to **Measurement table** must not be exceeded.

- Check that the indicator (B) can pass the indicator holder (A1) without striking it.

### 2.2.5. Loader control system

The loader control system consists of:

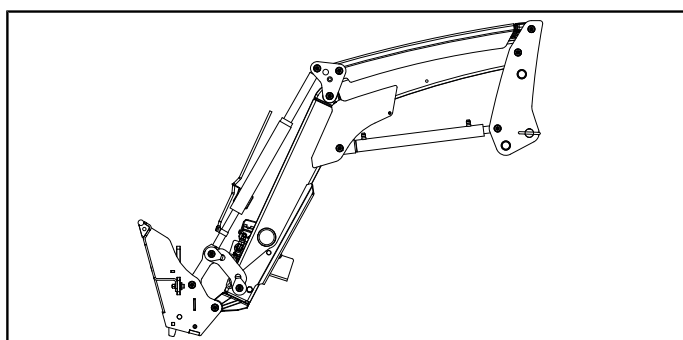
- Option 1: Joystick Directional Control Valve with buttons.
- Option 2: Hose kit for the tractor's own control valve/ joystick.

### 2.2.6. Hose kit

Hoses and hydraulic components for connecting the loader to the tractor's own control valve/joystick.

### 2.2.7. Mechanical Self Levelling loader, MSL

Mechanical Self Levelling loaders improve safety, precision and operating speed. The parallel links keep the implement at the same angle relative to the ground throughout raising and lowering.



*Fig. 11 Mechanical self-leveling loader MSL (Mechanical Self Levelling), Skidsteer quick attach*

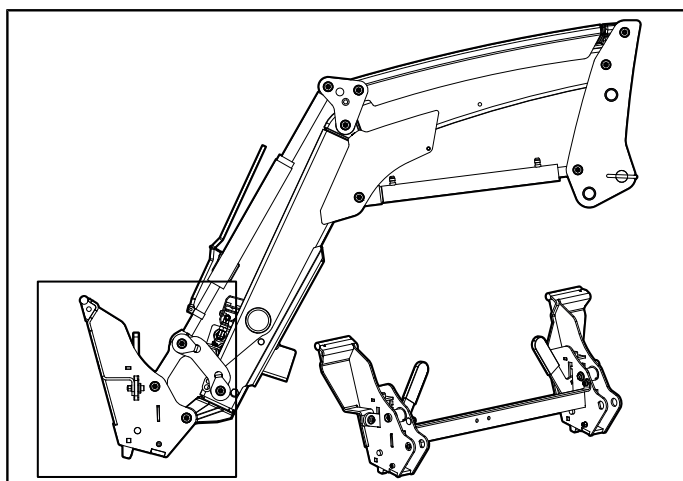
### 2.2.8. Skidsteer quick attach

The loader is equipped with Skidsteer quick attach system.

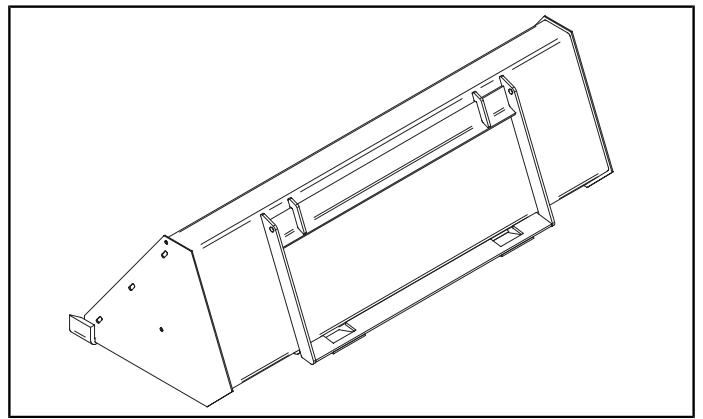
The implement is locked manually, by two levers, to the Skidsteer quick attach.

Only use implements that are suitable for the loader and its Skidsteer quick attach system.

**IMPORTANT:** Incorrectly designed implements may cause personal injury and damage to the loader. For this reason, do not install third party implements without making sure they have been approved by Summit Tractors.



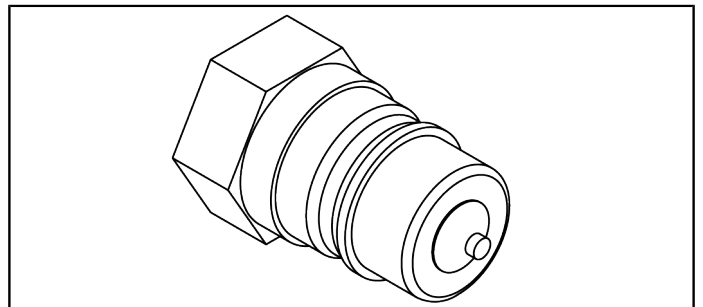
*Fig. 12 Skidsteer quick attach*



*Fig. 13 Skidsteer quick attach locking plate*

### 2.2.9. Single couplers

Connection and disconnection of the loader's hydraulics to the control valve using single ISO-A couplers (ISO 5675 3/8").



*Fig. 14 Single couplers: ISO-A, 3/8"*

## 3. SAFETY INSTRUCTIONS

### 3.1. General information

Driver safety is one of the most important considerations when designing a new loader. As many safety features as possible are incorporated into the design. More than a few accidents occur every year that could be avoided by a few moments' reflection and more careful operation of the tractor loader or implement.

To 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.

**IMPORTANT:** Incorrectly designed implements may cause personal injury and damage to the loader. Therefore, do not install implements of the wrong size or unknown make.

Contact [summittractors.com](http://summittractors.com) for a recommendation of the correct implement type and model.

#### 3.1.1. Front grill guard

This operator's manual contains a number of illustrations which show the front grill guards removed to provide a better overview. Never use the machine with the front grill guards removed. If a front grill guard has been removed for service/repairs, reinstall the front grill guard before starting to use the machine again.

#### 3.1.2. Warning, prohibition and information decals

Safety signs are located in various places on the loader. Locate, read and find out what the safety signs mean before using the loader and implement. See section 3.8. *Location of safety signs (warning, prohibition and information decals)*.

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

Make sure that all safety signs are clean and visible

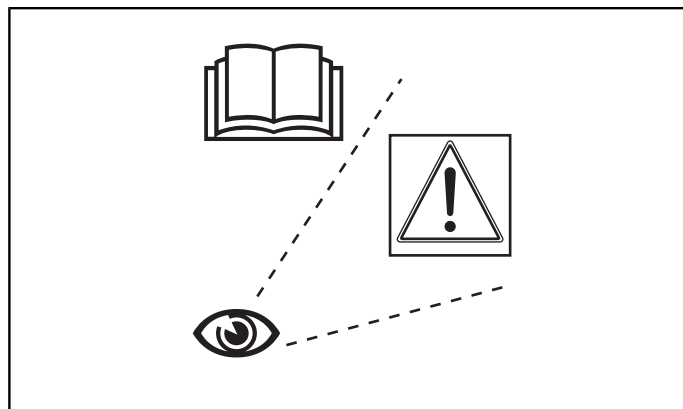


Fig. 15 Locate, read and find out what the safety signs mean before using the loader and implement.

#### 3.1.3. Explanation of warning levels


When you see the safety symbol and the signal word on decals or in the user manual, the instructions **MUST** be followed since they concern your own and others' personal safety.




**DANGER:**  
Indicates an imminently hazardous situation which, if not avoided, will result in **DEATH OR SERIOUS INJURY**.



Fig. 16 Safety alert symbol

 **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate 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 operating or serving the machine.

**IMPORTANT:** Indicates a special instruction or procedure which, if not strictly followed, may result in damage to, or destruction of, the machine, the process, or surroundings.

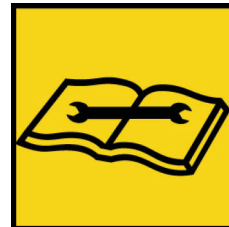
*NOTE:* Indicates additional information about a subject or procedure for more efficient or convenient repair or operation.

### 3.1.4. Explanation of symbols

Operator's manual. Read through the entire operator's manual before using the product. It contains important safety information.



Maintenance section of the Operator's Manual. It contains important information for your safety.



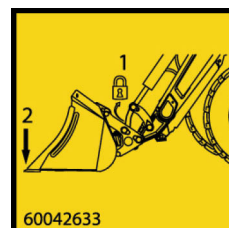
Safety alert symbol. Information in combination with this symbol must be complied with. It concerns your personal safety and other persons present in the vicinity of the tractor.



Crushing risk. Objects, the load/implement, may fall or roll backwards onto the operator or onlookers when the loader is raised.



Implement lock. ALWAYS make sure connected implements are locked in place.



Entrapment risk. NEVER stand between the front of the tractor and the loader. DO NOT stand, walk or work under or at a raised loader. Be sure to keep all individuals, especially children, and animals away from the work area.



Falling hazard. Do NOT use the loader to lift or transport people. Do NOT use the loader or the implement as a working platform.



Electric shock. Be on the lookout for power lines and other obstacles. If the tractor or loader becomes electrified by a power line, it may lead to injury or death. DO NOT TOUCH the ground and the tractor/loader/implement simultaneously.



Overhead Power lines. Be aware and keep away from overhead power lines and other obstructions.



Crushing risk. Objects, can fall or roll backwards onto the operator or bystanders when the loader is raised.



ALWAYS use an implement that can secure the load and is approved for that specific load handling.



Crush and pinch hazard.  
Risk of loader movement when connecting load dampening.



Warning for pressurized hydraulic fluid. Always assume that pressurized hydraulic fluid remains in the hydraulic system. To avoid serious accidents that can lead to death, repairs to the hydraulic system must be carried out by an experienced hydraulics and engineering service technician.



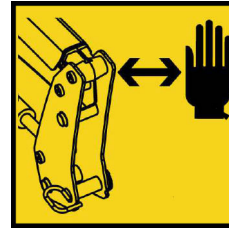
Overturning risk. The tractor can overturn and cause injury.



Pinch risk. Risk that the operator crushes his/her fingers when raising or lowering the loader.



NEVER place your hands on the bearing box.



### 3.1.5. Responsibility

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**CAUTION:**  
Always keep this operator's manual and the tractor operator's manual in the tractor.

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- If there is no operator's manual included with the tractor/loader, one can be downloaded from [summittractor.com](http://summittractor.com).
- Read through all material carefully and learn how to operate the equipment in a safe and correct manner.
- Only allow qualified individuals may operate the tractor/loader/implement.

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**WARNING:**  
Only use the loader and implement for their intended use.

---

### 3.2. Installing the loader

---

**WARNING:**  
Working with the loader requires the operator's full attention.

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---

**CAUTION:**  
Pressurized hydraulic fluid.  
The tractor and loader use hydraulic fluid under high pressure when operating. Check all hydraulic components and keep them in good condition.  
Make sure that no hydraulic components, especially hoses, are damaged or in contact with moving components.

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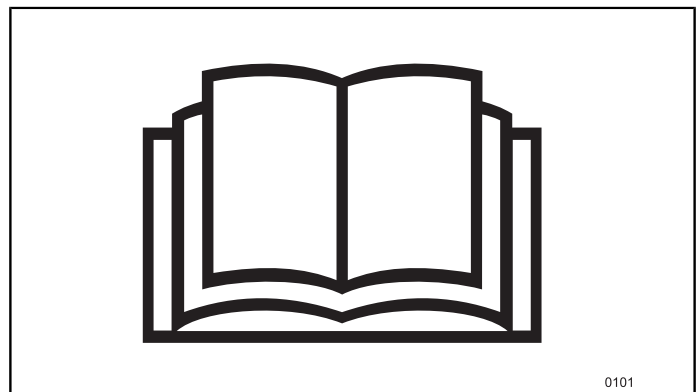


Fig. 17 Keep this operator's manual as well as the tractor operator's manual readily available, preferably with in the tractor.



**CAUTION:**  
**Pressurized hydraulic fluid.**

The tractor and loader use fluids that are under high pressure during operation. Check all components and maintain them in good condition.

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

Hydraulic fluid 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 similar materials for leakage detection. If hydraulic fluid has penetrated the skin, it **MUST** be removed immediately by a doctor who can treat this type of injury. Seek medical attention immediately if hydraulic fluid penetrates your skin. Serious reactions and/or infections can rapidly occur if the hydraulic fluid is not surgically removed at once.



Fig. 18 NEVER use fingers or hands to detect leaks.

Connecting/locking the loader in place on the subframe of the tractor; see section 4.5. *Connecting and disconnecting a loader.*

**IMPORTANT:** Incorrect installation or adjustment of the level indicator may cause damage to the level indicator holder when the loader is operated; see 2.2.4. *Level indicator.*

### 3.2.1. Checklist - Installation of the loader:

When the loader has been installed - check carefully that everything works before it is taken into service. Check the following and take the necessary measures.

1. Check that everything has been installed in accordance with the installation instructions.
2. Check that the required counterweight is fitted with respect to the implement and application.
3. Check that all screws are tightened.
4. Make sure no retaining ring is missing on any of the pivots.
5. Make sure that the front wheels clear the loader and the subframe when there is full wheel lock and swing — if this is not the case, the tractor's track width must be adjusted and/or axle swing stops or steering lock limiters must be installed.
6. Make sure the loader is locked in place on the subframe.
  - Check that the pin protrudes on the inside of the bearing box.
  - Check that the locking pin is secured in place by a linch pin.

7. Check that the level indicator is correctly adjusted; see section 2.2.4. *Level indicator*.
8. Lubricate all pivot points and locking pins according to section 5.1. *Lubrication*.
9. Check that no hydraulic oil leakage occurs.
10. Operate all loader functions several times to remove air from the system. Check that no hydraulic oil leakage occurs.
11. Check the tractor hydraulic fluid level - top up as necessary.
12. Check that the implement lock pins engage when connecting an implement by pressing the front section of the implement against the ground.
13. Hold to run. Check the hold-to-run function.
14. Check that the loader does not have any visible defects.

**IMPORTANT:** Check that no hydraulic hoses are closer than 1 meter from the driver in the normal driving position. If there are hydraulic hoses closer than 1 meter, use the "Hose protection" accessory. Contact your authorised Summit service dealer for more information.

**IMPORTANT:**

Hydraulic circuits (connected in series), loader - tractor, can cause unexpected movement when the loader's joystick is actuated. It is not permitted for both the loader and other hydraulic equipment on the tractor to move simultaneously.

Should this occur, you **MUST** immediately: Park the machine as described in section 4.5.3. *Uncoupling the loader* or deactivate the hydraulic function that moves simultaneously with the loader.

### 3.3. Hold to run - function



**WARNING:**

**Automatic loader movements may only be performed using a hold to run function. If the joystick's hold to run function is not working, shut down the tractor immediately. Remedy the fault before using the tractor again.**

The hold to run function means that an activated loader function is stopped when the joystick is released and it returns to its neutral position.

**IMPORTANT:** The activated float position does not automatically return to the neutral position, it requires deactivation.

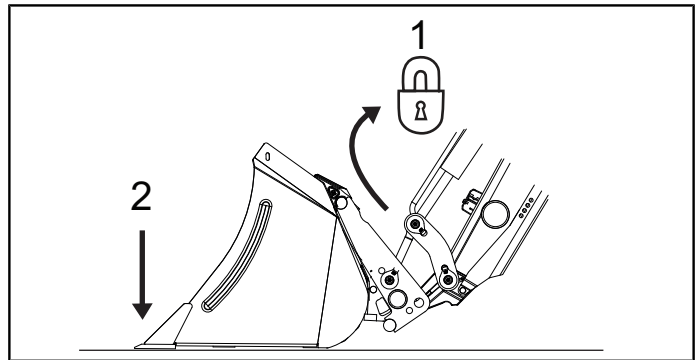


Fig. 19 Check that the implement is secured by pressing its front end against the ground.

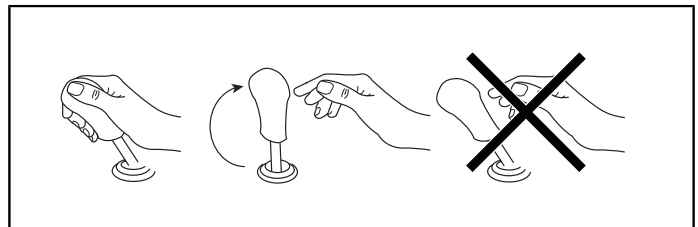


Fig. 20 The joystick must return to the neutral position when released.



### 3.4. Protection equipment

#### 3.4.1. Safety belt

**WARNING:**  
A safety belt must be used and properly adjusted during work. Replace a damaged safety belt before using the machine.

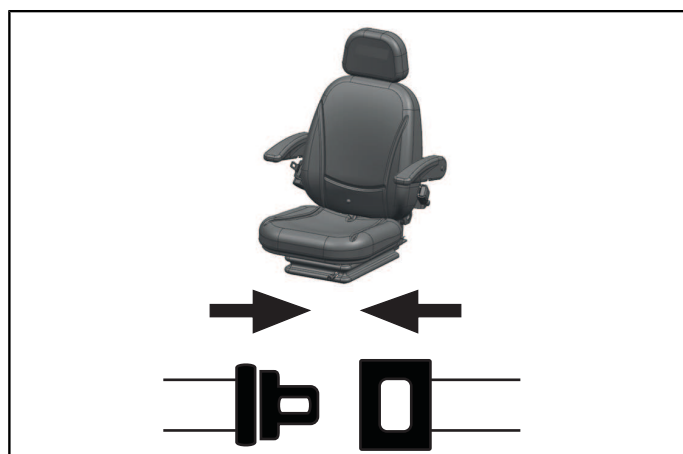


Fig. 21 Wear the seat belt when operating the machine.

#### 3.4.2. ROPS, Rollover protection structure

The tractor must at least be equipped with a roll-over protection structure (ROPS) - frame or cab.

**WARNING:**  
Only use the loader only on a tractor with the ROPS installed. Whenever possible, operate the tractor and loader with the ROPS in the upright and locked position and the safety belt fastened and correctly adjusted. When operating in restricted overhead environment with the ROPS folded down, do not wear the safety belt. ALWAYS return the ROPS to the upright and locked position as soon as operating conditions permit.

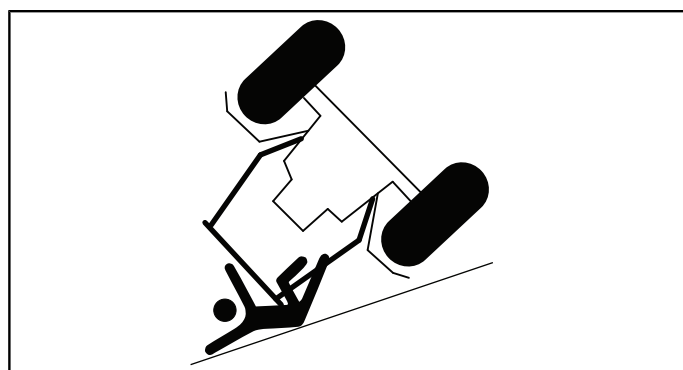


Fig. 22 Rollover risk - wear the seatbelt.

### 3.5. Operation

#### 3.5.1. Before work

Familiarize yourself with the working area and terrain. ALWAYS inspect the work area before starting work. Look out for holes in the ground, stones and other hazards.

- Do NOT drive a machine that is damaged or missing components. Make sure the recommended maintenance work has been done before the machine is used.
- Check all controls regularly and adjust as necessary. Make sure that the tractor's brakes are adjusted correctly.
- Check all bolts and nuts regularly for tightening, especially tractor wheel fasteners and subframe fasteners. See section 5. *Maintenance*. Maintenance for information regarding tightening torque for the loader and the loader subframe.
- Make sure that the loader is correctly mounted to the tractor, and that all pins are secured.
- Make sure pivot points are greased.
- Change worn components before using the machine.

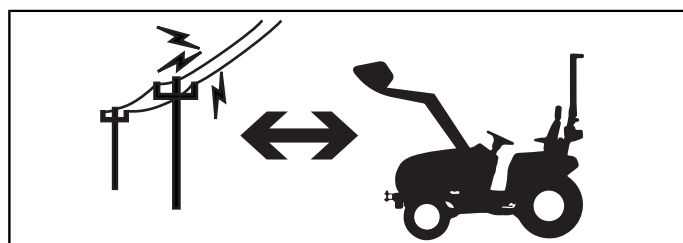


Fig. 23 Get to know the working area before starting. Keep a safe distance from power lines and other obstacles.

### 3.5.2. Operator/driver location



**CAUTION:**  
Only operate the machine when sitting in the operator's seat.

- Drive carefully and think about safety.
- Always adjust the speed to prevailing conditions. Never drive so fast that you cannot stop quickly in an emergency situation.



Fig. 24 Only operate the machine when sitting in the operator's seat.

### 3.5.3. Connecting implement

#### 3.5.3.1. Skidsteer quick attach



**WARNING:**  
Risk of crush, pinch injuries and overturning. Incorrectly locked implements can come loose. The lock lever/levers must be back in its/their locked position (1). ALWAYS make sure the connected implement is locked in place by pressing the front of the implement against the ground (2).

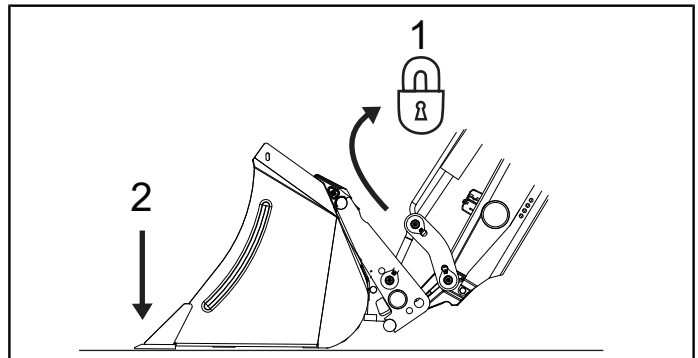


Fig. 25 Check that the implement is secured by pressing its front end against the ground.

Skidsteer quick attach - ensure that both levers are in locked position before operation.

Use the following checklist to make sure the implement is correctly locked onto the skidsteer quick attach:

- Visually check that the locking lever indicates locked implement, *position 1*.
- Visually check that the Skidsteer quick attach locking pins are in the locked position.
- Make sure the implement is locked in place on the Skidsteer quick attach by pressing the front of the implement against the ground.

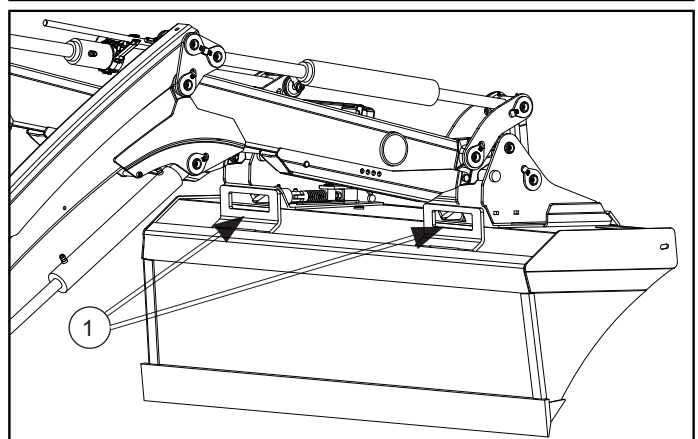
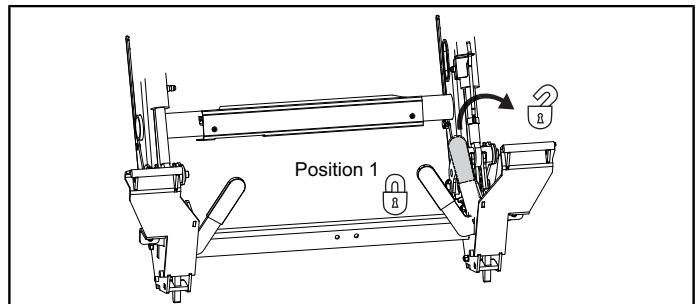


Fig. 26 Visually check that the locking pins (1) on the Skidsteer quick attach are engaged and locked onto the implement's contact surface.

### 3.5.4. Workplace

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



**WARNING:**

**Risk of crushing and pinching**

Make sure that nobody is in the vicinity of the tractor when work starts and is in progress. Only operate the tractor when sitting in the operator's seat.

If your tractor is equipped with cab: You may not hear warning cries from individuals on the outside when you are sitting in the cab with the door closed.

Learn the working area and terrain before beginning work. Pay attention to vertical clearance and limitations that arise due to the increased reach.



**WARNING:**

**Risk of electric shock, crushing and pinching.**

When driving with the loader raised, ensure that there is sufficient distance between the loader/ implement and, for example, power lines and barn roofs. To prevent personal injury or death, do NOT leave the driver's seat if any part of the tractor/loader/implement comes into contact with a live electric cable.

**Driver and/or bystanders: Do NOT touch the tractor/loader/implement and the ground at the same time. The driver must back-up the tractor away from the live electric cable or wait until the live cable is without power.**



**WARNING:**

**Electric shock.** Before digging, check that there are no hidden live electrical cables. To prevent bodily injury or death, do NOT leave the driver's seat if any part of the tractor/loader/implement comes into contact with a live electric cable.

**Driver and/or bystanders: Do NOT touch the tractor/loader/implement and the ground at the same time. The driver must back-up the tractor away from the live electric cable or wait until the live cable is without power.**

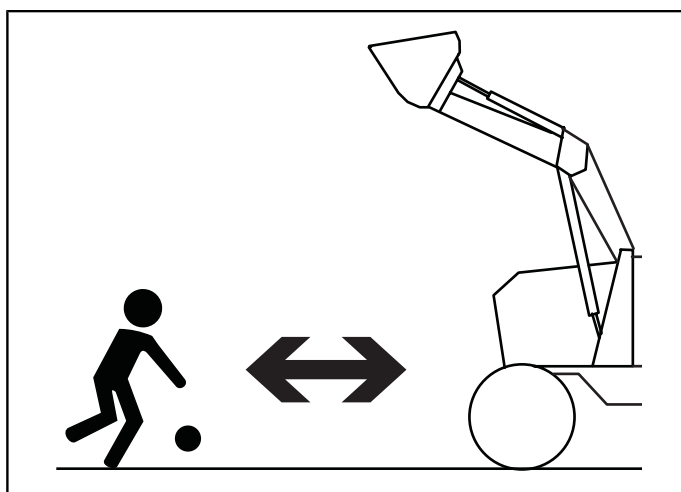


Fig. 27 Before starting, make sure nobody is in the vicinity of the machine.

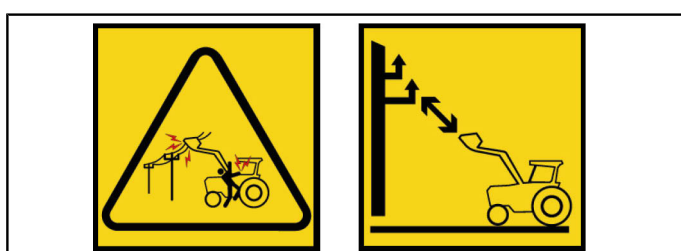


Fig. 28 Get to know the working area before starting. Keep a safe distance from power lines and other obstacles.

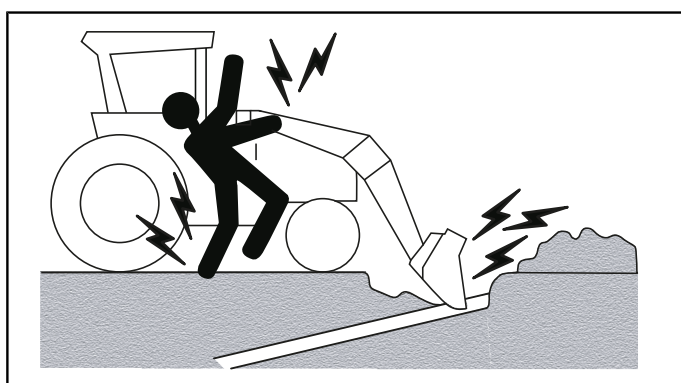


Fig. 29 When excavating, make sure there are no hidden power lines



**WARNING:**

**Risk of falling.**

**Do NOT use the loader or the implement as a working platform.**



**WARNING:**

**Risk of falling.**

**Do NOT use the loader or implement to lift or transport people.**



*Fig. 30 Do NOT use the loader or the implement to lift or transport people.*



**WARNING:**

**Risk of pinching.**

**Entrapment risk. Do NOT stand, walk or work under or beside a raised loader. Make sure you keep everybody, especially children and animals, away from the work area.**



*Fig. 31 Do NOT stand, walk or work under a raised loader.*

### 3.5.5. Stability

#### 3.5.5.1. Load stability



**WARNING:**

**Crushing risk.**

**Be aware of position of the loader and implement. Objects, the load/implement, may fall or roll backwards onto the operator or onlookers when the loader is raised.**

**ALWAYS use an implement that can secure the load and is approved for the specific load handling.**



*Fig. 32 Keep your eye on the implement, objects may fall backwards onto the operator.*



**WARNING:**

**The tractor is only equipped with Roll Over Protective Structure (ROPS), and does not have a Falling Objects Protective Structure (FOPS), and there is only limited protection against falling loads. The operator risks injury if the load falls when the loader is operated while raised.**

**FOPS is not intended to protect against falling loads. Therefore, it is important to use an implement that can secure the load and is approved for that specific load handling.**

**Exercise caution when working with raised loads.**

**The tractor should not be driven on a public road with a load in the implement.**

- Only use implements that are approved for the specific load handling.
- Make sure that the load is positioned securely in the implement. When it comes to loose material, the implement must not be overfilled, and for solid material, the load must not stick up above the rear of the implement.

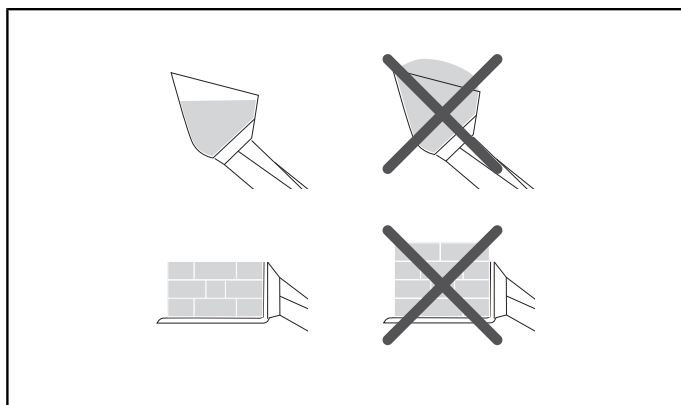


Fig. 33 Only lift loads which can be contained in, and are intended for, the specific implement.

- Adjust the tilt angle of the implement when the load is raised so that the load is not directed towards the operator.

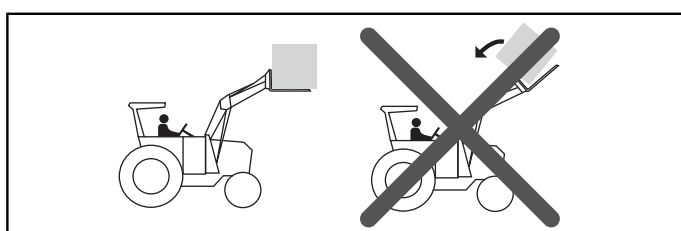


Fig. 34 Exercise caution when working with raised loads.

### 3.5.5.2. Tractor stability

#### To improve loader stability:

- Use a counterweight suitable for the tractor. See section 4.2. Counterweight.



**CAUTION:** Check that the machine has the necessary counterweight at the rear to stabilize the machine's load-carrying ability. The counterweight is essential for maintaining control of the machine.



**WARNING:** Overturning risk. To increase lateral stability, the tractor's track must be as wide as possible.



**CAUTION:** Overturning risk. Do not grip objects that significantly shift the center of gravity outwards. This may lead to instability.



**WARNING:** Overturning risk. Do NOT work on or close to steep slopes. The distance from the slope must be equal to or greater than the height of the slope.



Fig. 35 Crushing and overturning risk



**WARNING:**  
**Overturning risk.**

**Reduce speed before cornering to avoid overturning the tractor.**

**Avoid sudden turns when driving down steep slopes.**



**CAUTION:**  
**Overturning risk.**

**Always drive at a reduced speed with the load in the implement. Adjust the speed according to the terrain, the weight of the load and the center of gravity for the load.**

- Do not allow the tractor to freewheel. Use the same gear while driving downhill as when driving uphill.
- If you work with the loader on an uphill slope, drive straight upwards, fill the bucket and reverse downhill. Lower the loader as far as possible. Driving along the side of a slope can result in overturning.



**CAUTION:**  
**Overturning risk.**

**Lower the loader as far as possible when traveling/working. Slow down to a speed appropriate to the circumstances. When handling raised loads, there is an increased risk of the tractor tipping. Be alert; if the tractor feels unstable, lower the load to increase stability.**

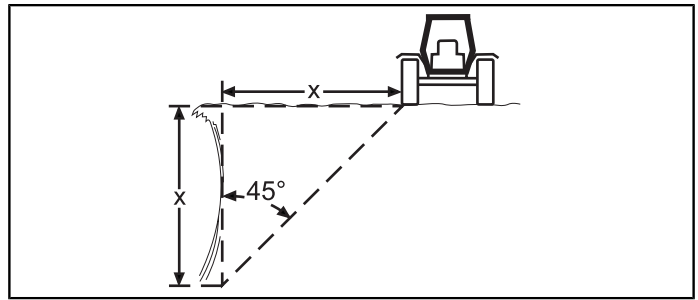


Fig. 36 Keep at a distance when working near slopes.

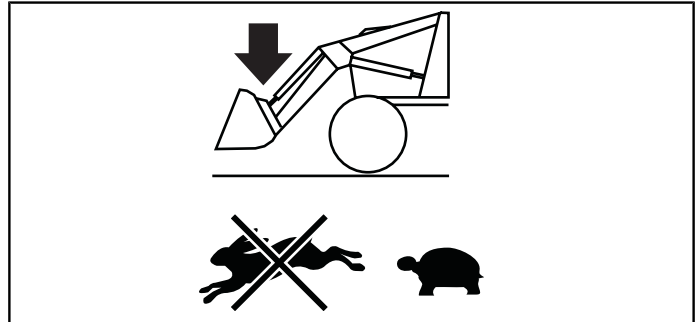


Fig. 37 When cornering, lower the loader and reduce speed.

### 3.6. Risk factors

#### 3.6.1. During transport and work

**IMPORTANT:** Follow national road traffic regulations when driving on highways.



**CAUTION:**  
**When transporting the machinery on public roadways or performing work, make sure that the tractor's headlights, indicator lights and reflectors are visible.**

Check that any signs or lights are not hidden. Use extra warning equipment if needed.

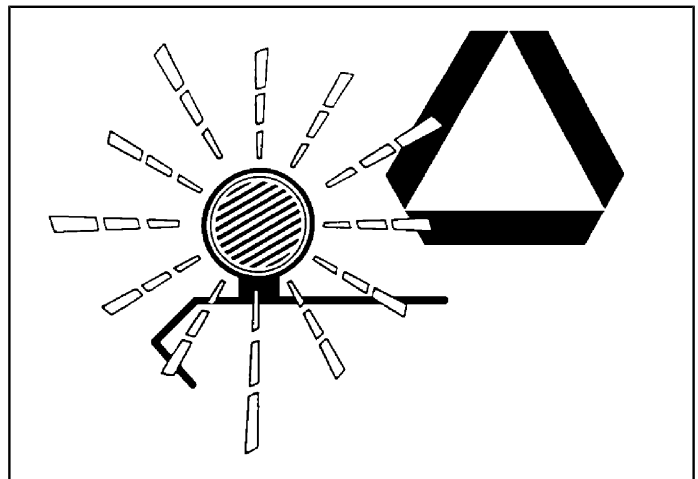


Fig. 38 During transport

When driving either with or without a load, always lower the loader as far as possible to provide maximum visibility and avoid obstructing lights.

**CAUTION:**  
Overturning risk.

Always drive at a reduced speed with the load in the implement. Adjust the speed according to the terrain, the weight of the load and the center of gravity for the load.

- Remove or tilt the implement upwards to minimize the risk of damage in the event of collision.
- Make allowances for the extra length and weight of the vehicle when cornering, braking etc.
- Make sure that lamps and reflector are visible during road transport and are not obscured by the implement.

**WARNING:**  
The loader may not be operated during transport. When driving on roads, the joystick must be locked mechanically in the neutral position. See section 4. *Driving instructions*.

**WARNING:**  
Overturning risk.  
Do not grip objects that significantly shift the center of gravity outwards. This may lead to instability.

**WARNING:**  
Crushing risk.  
ALWAYS use an implement that can secure the load and is approved for the specific load handling. Be aware of position of the loader and implement. Objects, the load/implement, may fall or roll backwards onto the operator or onlookers when the loader is raised. ALWAYS use an implement that can secure the load and is approved for the specific load handling

**CAUTION:**  
Thermal shock. If the loader continues to move after the operating controls have been released:  
- switch off the tractor's engine.  
- wait until the oil temperature has decreased  
- start the tractor and perform a function test to ensure that the loader functions normally before use.

When outdoor temperatures are low, cold hydraulic fluid from the loader can meet hot hydraulic fluid from the tractor. In unfavorable conditions, thermal shock may occur in the loader's control valve. The loader may then continue to move after the joystick is released.

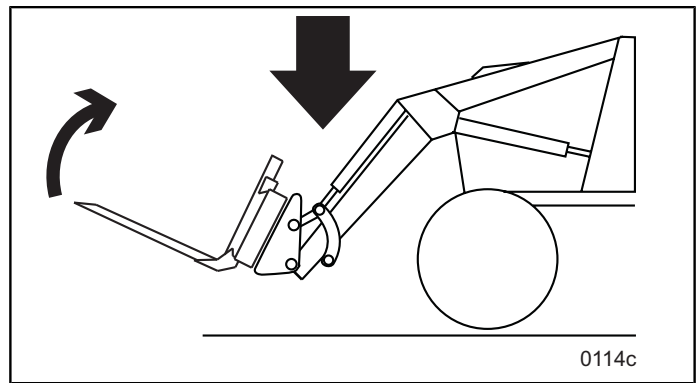


Fig. 39 Lower the loader to obtain maximum visibility.

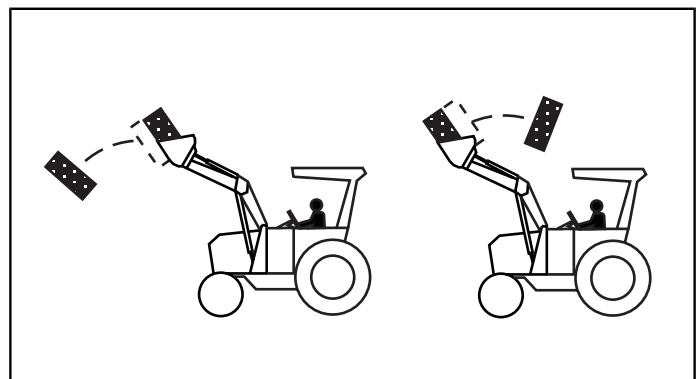


Fig. 40 Always look at the implement. Objects can fall or roll backwards onto the driver.



Fig. 41 Only lift loads which can be contained in, and are intended for, the specific implement.



**CAUTION:**

**Risk of crushing and pinching**

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

### 3.6.2. During service

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



**CAUTION:**

**Burn injuries.** Valves, connections and hoses can get very hot when the tractor and loader have been used even for a short period of time. Switch off the tractor and allow the hydraulic components to cool before touching them.



**CAUTION:**

**Risk of crushing and pinching**

All maintenance must be done when:

1. The loader is fitted to the tractor.
2. The loader is lowered to the ground.
3. The loader is pressure-relieved, see section 4.4.3. *Depressurization*.

- When working on the loader's hydraulic system, relieve hydraulic pressure. See sections:
  - 4.4.3. *Depressurization*
- Do NOT use the loader to lift the tractor when servicing the tractor or the loader.



**WARNING:**

**Watch out for pressurized hydraulic fluid.**

**NEVER use fingers or hands during leak tracing.** Fluid flowing out of small holes can be almost invisible. Use a piece of cardboard or similar for leak tracing.

- Undo hydraulic couplings slowly. Keep your hands and fingers away from loosened couplings. Always wear protective gloves while working with hydraulic couplings.
- If hydraulic fluid penetrates the skin it can cause serious reactions or infections. Seek medical attention immediately.

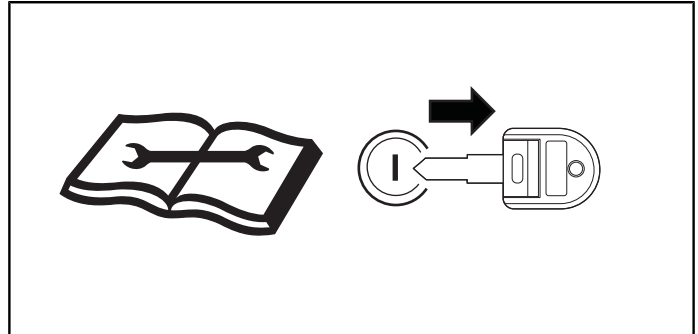


Fig. 42 Before service, read the Maintenance section and remove the ignition key.



Fig. 43 NEVER use fingers or hands to detect leaks.

0118a



### 3.6.2.1. Hydraulic loader beam lock



**WARNING:**

The hydraulic loader beam lock must be used during servicing if the loader has to be lifted off the ground.

This loader beam lock must NOT be used when working on the loader's hydraulics or related wiring. In such cases, the loader must be lowered to ground level. Switch off the tractor's engine and depressurize the loader according to the loader's operator's manual before any servicing of the loader's hydraulics is performed.

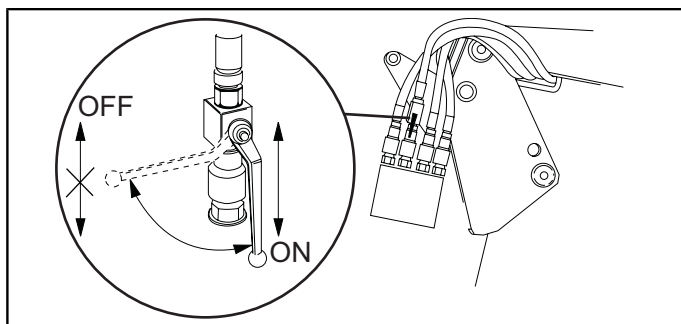


Fig. 44 Turn the stopcock to the OFF position during service and maintenance.

The loader boom lock can be used with or without implement.

Make sure that the implement is locked.

The loader stop mechanism must be turned to the OFF position during servicing.

### 3.6.3. After work

Before leaving the operator's seat:

1. Park the tractor on a flat, firm surface.
2. Lower the loader and implement to the ground.
3. Apply the parking brake securely.
4. Move the gearshift to the neutral or park position.
5. Relieve the hydraulic pressure; see section
  - 4.4.3. Depressurization
6. Shut the engine off.
7. Remove the ignition key.
8. Switch off the tractor at the main power switch if the machine is left unattended.

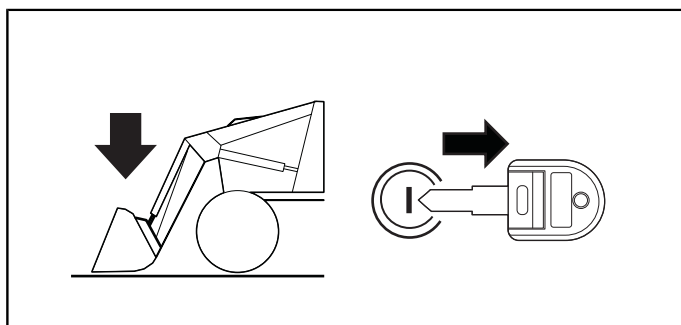


Fig. 45 Lower the loader and remove the ignition key.



**WARNING:**

To prevent unintentional operation of the loader/ implement: Leave the control lever in neutral.

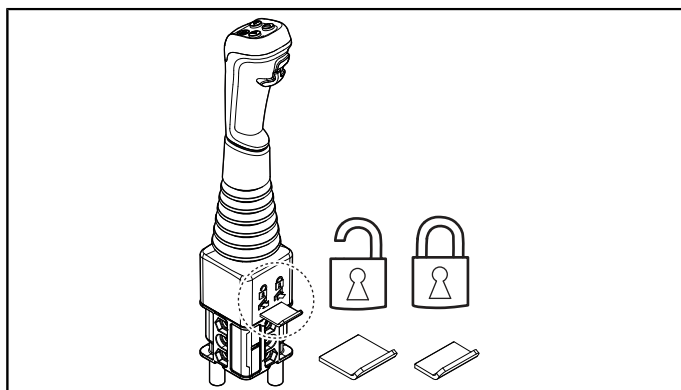


Fig. 46 Lock the control lever in neutral



**WARNING:**

Pinch risk. Do NOT stand, walk or work under or beside a raised loader.



Fig. 47 Never stand between the front of the tractor and the loader.

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### 3.7. Replacement parts

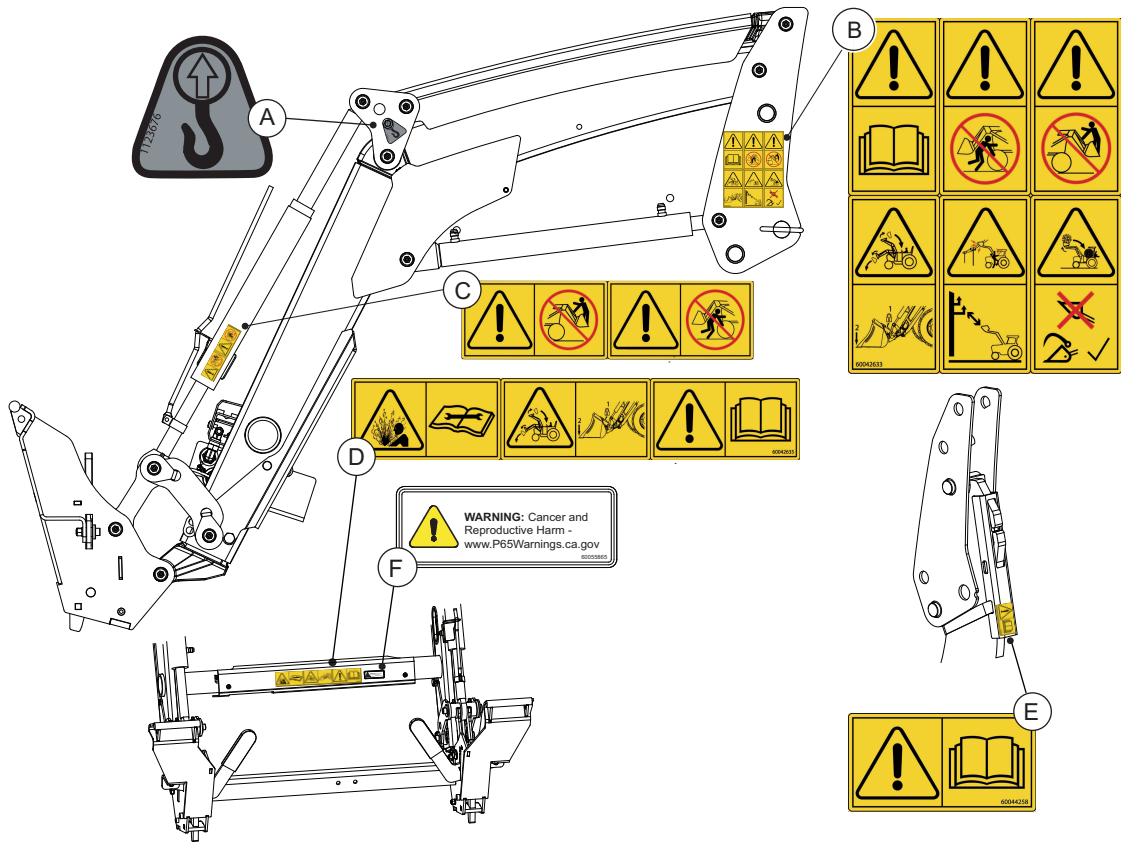
When a replacement part is needed for periodic maintenance or service, use only genuine, original equipment replacement parts to restore your equipment to original specifications.

Applies especially to valves, hydraulic hoses and adapters. See the published spare parts sheets.

Summit Tractors is not responsible for damage that may arise due to the use of non-approved parts or accessories.

### 3.8. Location of safety signs (warning, prohibition and information decals)

#### 3.8.1. Mechanical Self Levelling loader, MSL



- A Information decal on loader beam, 2 x (placed on the inside)  
(Part no. 1123676)
- B Warning and prohibition decal on bearing box, 1 x  
(Art. No 60042633)
- C Prohibition decal on the tilt cylinder, 2 x  
(Art. No 60042634)

- D Warning decal on cross tube, 1 x  
(Part no. 60042635)
- E Warning decal on mechanical loader beam lock, 1 x  
(Part no. 60044258)
- F Warning decal, 1 pc.  
(Art No. 60055865)

## 4. DRIVING INSTRUCTIONS

### 4.1. Description

The front loader is suitable for:

- be installed on wheeled compact tractors.
- Handle various certified implements for lifting, carrying, scraping and grading.



#### WARNING:

**Risk of crushing, pinching, tipping. In the event that one of the loader's hoses ruptures, the loader/implement/load can fall in an uncontrolled manner. If a hose ruptures, correct the problem immediately according to section 5. Maintenance. When replacing parts, only use original spare parts in order to restore the machine to its original design. Decontaminate the ground according to applicable requirements/legislation for the country or area where you are located.**

**IMPORTANT:** Failure of the power supply to the loader's electrical and/or hydraulic system may cause certain functions not to be activated. For example: Raising the loader, angling the implement, third hydraulic function etc.

### 4.2. Counterweight

To increase tractor stability, a counterweight can be mounted on the back of the tractor.



#### DANGER:

**Overturning risk. The tractor can overturn and thus cause personal injury. Make sure a counterweight is fitted, which is suitable for the tool and working range.**

#### 4.2.1. Counterweight - calculation NA

Using the counterweight, a mass corresponding to the lifting capacity for maximum lifting height is placed in the loader bucket, the loader is raised until the implement pivot is the same distance from the ground as the loader pivot (the outermost position of the implement).

The reaction force of the rear axle and the gross weight reaction force of the machine must be measured on a hard surface ( $\pm 1$  degree) in these circumstances. See sample image for a machine configuration.

- Add weight to the rear wheels and/or counterweight so that the rear axle's reaction force on even ground is at least 25% of the machine's total reaction force. The weight added via the counterweight should be kept as low as possible.
- Alternatively, when a loader is used for a dedicated task, an operator can determine an appropriate counterweight based on the maximum load that the loader/implement will handle.

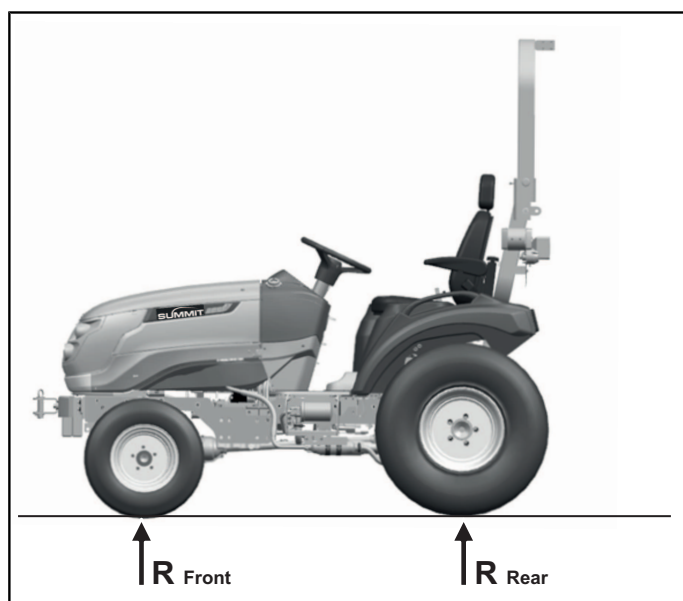


Fig. 48 Example image: The tractor must be on a level surface when the axle load is measured.

### 4.3. Connecting the loader's hydraulics

The loader's control valve is connected to the tractor's hydraulic system. The following type is described in this user manual:

- Wire operated control valve

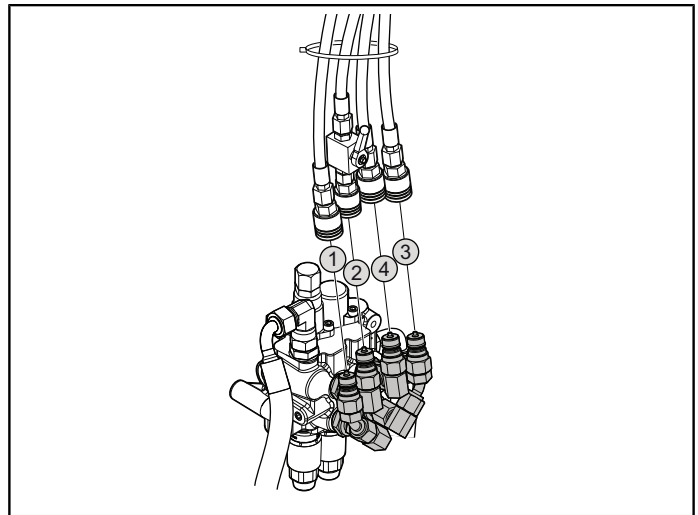


Fig. 49 Connecting the loader's hydraulics

### 4.4. Joystick

On or near the joystick there is a decal describing the loader's basic functions: Raise/lower, empty/open and float position. If symbols on the joystick become illegible, replace the decal.

The joystick's activated function reverts to its neutral position; when the joystick is released, the activated function will cease.





**NOTE:**

Activated functions that do not return to their neutral position:

- Float position, lower

#### 4.4.1. Raising, lowering, emptying and opening the implement

See Fig. 50.

-  To raise the implement, move the control lever backwards.
-  To lower the implement, move the control lever forwards
-  To empty the implement, move the control lever to the right.
-  To open the implement, move the control lever to the left.

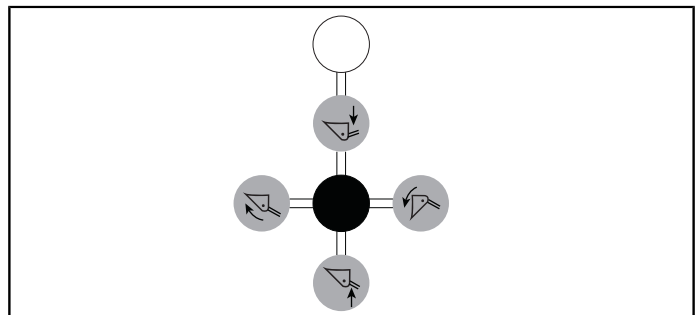


Fig. 50 Raising, lowering, emptying and opening the implement



**CAUTION:**

**The implement may be lowered or emptied under its own weight even if the engine is switched off. For parking an implement, loader or tractor; see section 3.6.3. After work.**

### 4.4.2. Transport mode

Lock the control lever in neutral to prevent unintentional operation.

**WARNING:**  
**To prevent unintentional operation of the loader/ implement: Leave the control lever in neutral.**

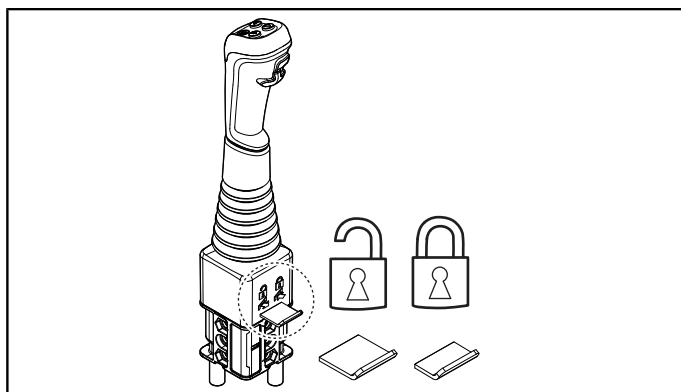


Fig. 51 Lock the control lever in neutral

### 4.4.3. Depressurization

**WARNING:**  
**Risk of crushing and pinching**  
**When relieving pressure, ALWAYS lower the loader/implement to the ground before pressure relief.**

Shut the engine off.

Move the joystick to all end positions.

If the loader is equipped with a third hydraulic function, activate the function in connection with the end position to empty and open the implement.

*NOTE:* Hold the control lever/function button in place at each end position for approx 3 seconds to ensure pressure relief.

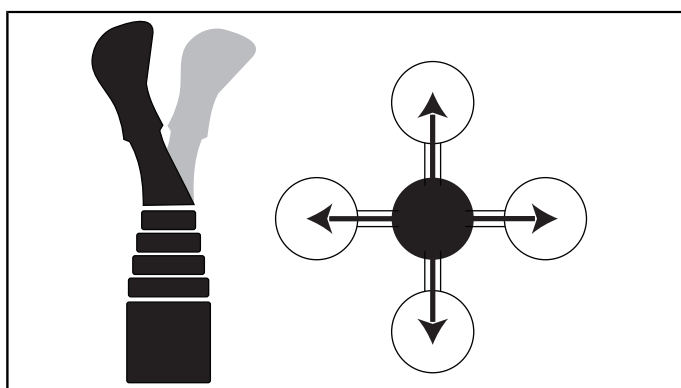


Fig. 52 Move the joystick to all end positions.

### 4.4.4. Float position, lower

**CAUTION:**  
**Float position lower may only be used at low speeds in conjunction with bucket or implement operation.**

Used for tasks where the implement must follow ground contours at low speed.

**Activating float position**  
 Move the control lever forward to the float position and release the control lever. The lever stays in forward position. See Fig. 53.

**Deactivating float position**  
 Move the control lever backwards (out of float position) and release the control lever.

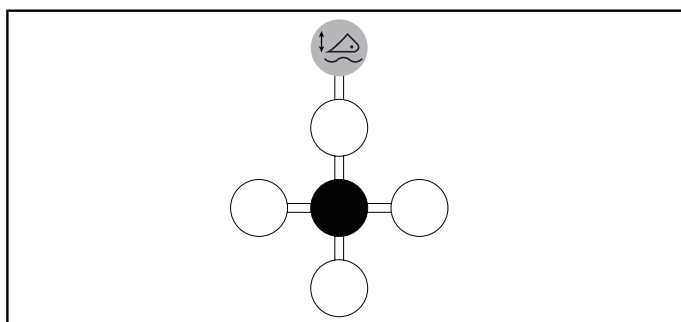






Fig. 53 Float position lowering.

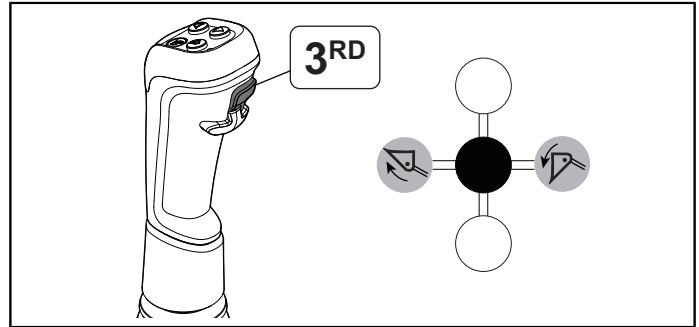
## 4.4.5. Button functions

### 4.4.5.1. Third hydraulic function

Hydraulic implement functions are controlled by the third hydraulic function. See *Fig. 54*.

Activate the 3rd function by holding the 3rd function button  and move the lever left  or right  to open or close the implement.

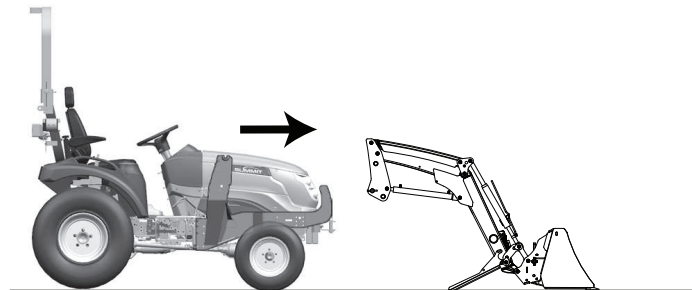
**IMPORTANT:** When the hydraulic function button  is released, third hydraulic function operation will immediately cease. The standard joystick functions would be reactivated.



*Fig. 54 Third hydraulic function*

## 4.5. Connecting and disconnecting a loader

### 4.5.1. Connecting a parked loader



**CAUTION:**  
Risk of crushing and pinching. Air in hydraulic hoses and cylinders can cause jerky, unexpected movement. 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 pinching. Keep hands and feet away from moving components. Do NOT use your fingers to check components or the alignment of holes/pins, use a mandrel or a steel rod.



**CAUTION:**  
Risk of crushing and pinching. If the loader valve is in a depressurized or float position then sudden and unforeseen movements may occur when the hydraulics are connected.



**CAUTION:**  
Coupling a parked loader: The loader may fall. Make sure that the hoses are not pinched or interfering with the tractor while connecting the front loader to the tractor.

**IMPORTANT:** Incorrect installation or adjustment of the level indicator may cause damage to the level indicator holder when the loader is operated; see 2.2.4. *Level indicator*.

**IMPORTANT:** If you are carrying out any work in steps 1-9 and you are in the vicinity of the loader/tractor, switch off the engine, remove the ignition key and lock the joystick in the neutral position.

#### Connecting loader to the subframe (Steps 1-3)

1. Place the hoses over the loader arm.

**IMPORTANT:** Make sure the hoses do not interfere with the tractor when the front loader is connected to the subframe uprights.

2. Make sure the lock pins are removed from the bearing box. 1) Remove the lynch pins from the lock pins. 2) Remove the lock pins from the bearing boxes.
3. Drive the tractor slowly forwards until the front wheels is near by the support legs.

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**Connecting the hydraulics (Step 4-9)**

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**CAUTION:**

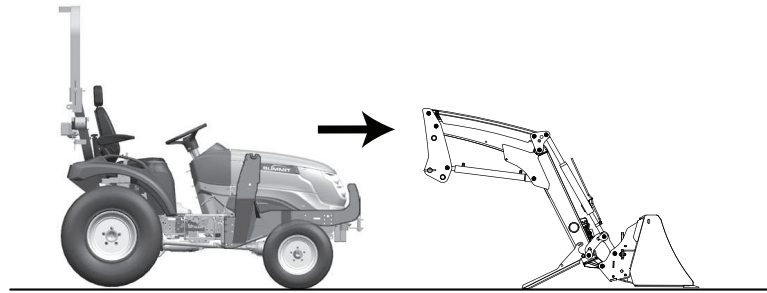
**Make sure the loader's control valve is correctly connected to the loader. The hose markings must be connected as per each valve marking.**

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**Important!** If the loader is standing in direct sunlight and the hydraulic fluid is heated, connecting the loader's single-couplers may become difficult. To facilitate coupling, park the loader with its hydraulic fluid at operating temperature.

4. Depressurize the system. If there is any difficulty in connecting the single or multi-couplings, it is because hydraulic oil pressure has not been eliminated. Relieve the hydraulic pressure; see section 4.4.3. *Depressurization*.
5. Connect the couplers to hydraulic valve.
- 6A) Angle the implement down so that the bearing box almost docks into the subframe upright. (Move the joystick to the right, empty implement).
- 6B) Drive the tractor slowly forwards until the subframe upright slowly enters the bearing box.
- 6C) Angle the implement down so that the bearing box docks into the subframe upright. (Move the joystick to the right, empty implement).
7. Raise the loader so the bearing box stop lug rest against the upright. Position the bucket 12-16 inches above the ground. Stop the engine and remove the key
8. Insert the lock pin correctly into the bearing box; secure the lock pin with the linch pin.
9. Fold the support legs against the loader boom and secure them with the pins.

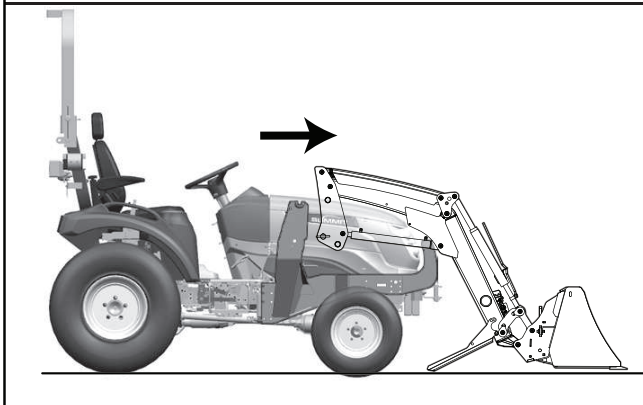
**Important!** After installing/connecting a new loader, see 3.2.1. **Checklist - Installation of the loader:**



**1** Single-coupling

A technical drawing showing a hydraulic hose being inserted into a coupling on a loader's hydraulic arm.

**2** Bearing box

A technical drawing of a bearing box component with various bolts and a roller wheel.

**3**

A technical drawing showing a tire being slid onto the axle of the loader's bucket.

**4**

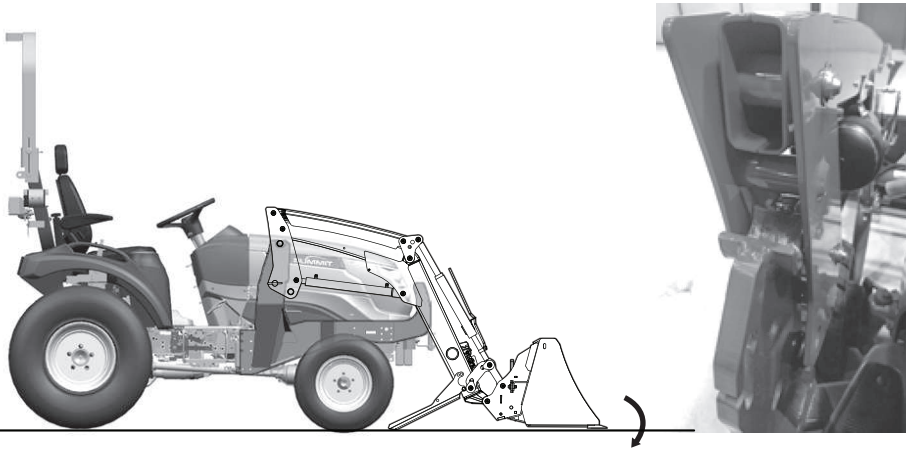
A hydraulic pump symbol with arrows indicating flow direction and a pressure gauge with a needle pointing to zero. The text "P=0" is written below the gauge.

**5**

A technical drawing of multiple hydraulic hoses with numbered connections (1, 2, 3, 4) and a small inset diagram showing a different view of the same connections.



6A



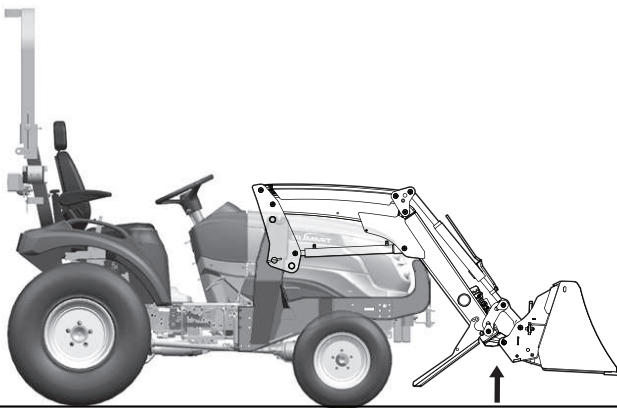
6B



6C



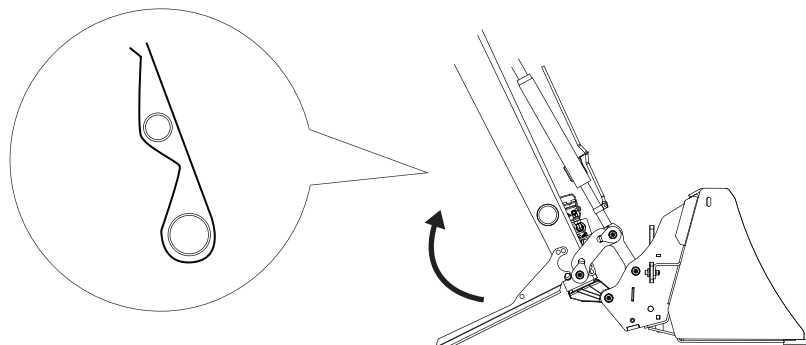
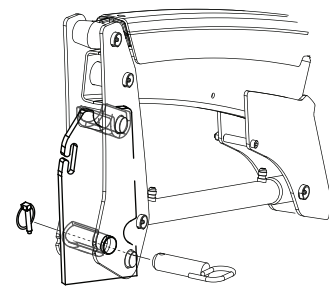
7



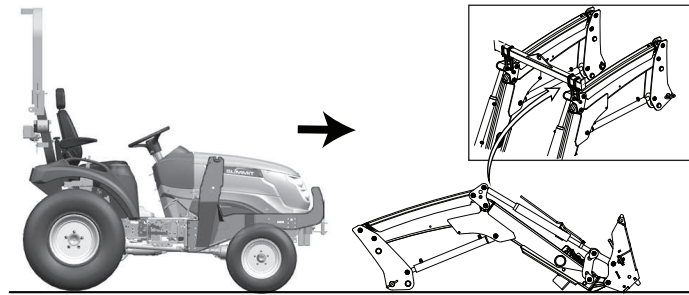
12-16 inches

8

Bearing box



## 4.5.2. Connecting the loader using lifting equipment



**CAUTION:**  
Risk of crushing and pinching. Air in hydraulic hoses and cylinders can cause jerky, unexpected movement. 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 pinching. Keep hands and feet away from moving components. Do NOT use your fingers to check components or the alignment of holes/pins, use a mandrel or a steel rod.

**CAUTION:**  
Risk of crushing and pinching. If the loader valve is in a depressurized or float position then sudden and unforeseen movements may occur when the hydraulics are connected.

**CAUTION:**  
Connecting the loader using lifting equipment: The loader may fall. Make sure that the hoses are not pinched or interfering with the tractor while connecting the front loader to the tractor.

**IMPORTANT:** Incorrect installation or adjustment of the level indicator may cause damage to the level indicator holder when the loader is operated; see 2.2.4. *Level indicator*.

**IMPORTANT:** If you are carrying out any work in steps 1-7 and you are in the vicinity of the loader/tractor: Switch off the motor remove the ignition key and lock the joystick in the neutral position.

### Connecting loader to the subframe (Steps 1-5)

1. Place the hoses over the loader arm.

**IMPORTANT:** Make sure the hoses do not interfere with the tractor when the front loader is connected to the subframe uprights.

2. Make sure the lock pins are removed from the bearing box. 1) Remove the linch pins from the lock pins. 2) Remove the lock pins from the bearing boxes.
3. Lift the loader. Use the lifting holes marked with decals on the inboard sides of the arm. Depending on the loader model and how much extra equipment the loader has, it may be preferable to lift according to alternative 3B.
4. Lower the loader until the bearing boxes dock in the subframe uprights and the bearing box stop lug rests against the upright.
5. Insert the lock pin into the bearing box; secure the lock pin with the linchpin.

### Connecting hydraulics (Step 6-7)

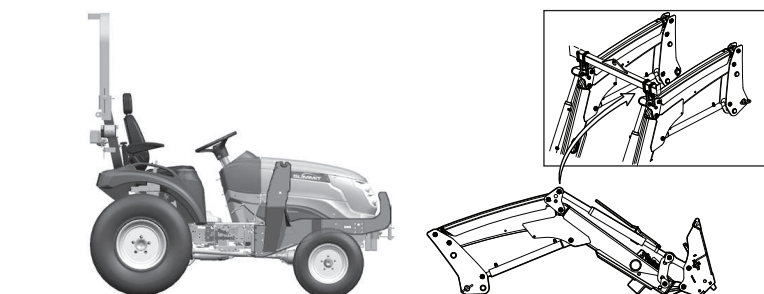
**CAUTION:**  
Make sure the loader's control valve is correctly connected to the loader. The hose markings must be connected as per each valve marking.

6. Depressurize the hydraulic system. If there is any difficulty in coupling the quick release couplings, this will be because the oil pressure has not been eliminated. Relieve the hydraulic pressure:

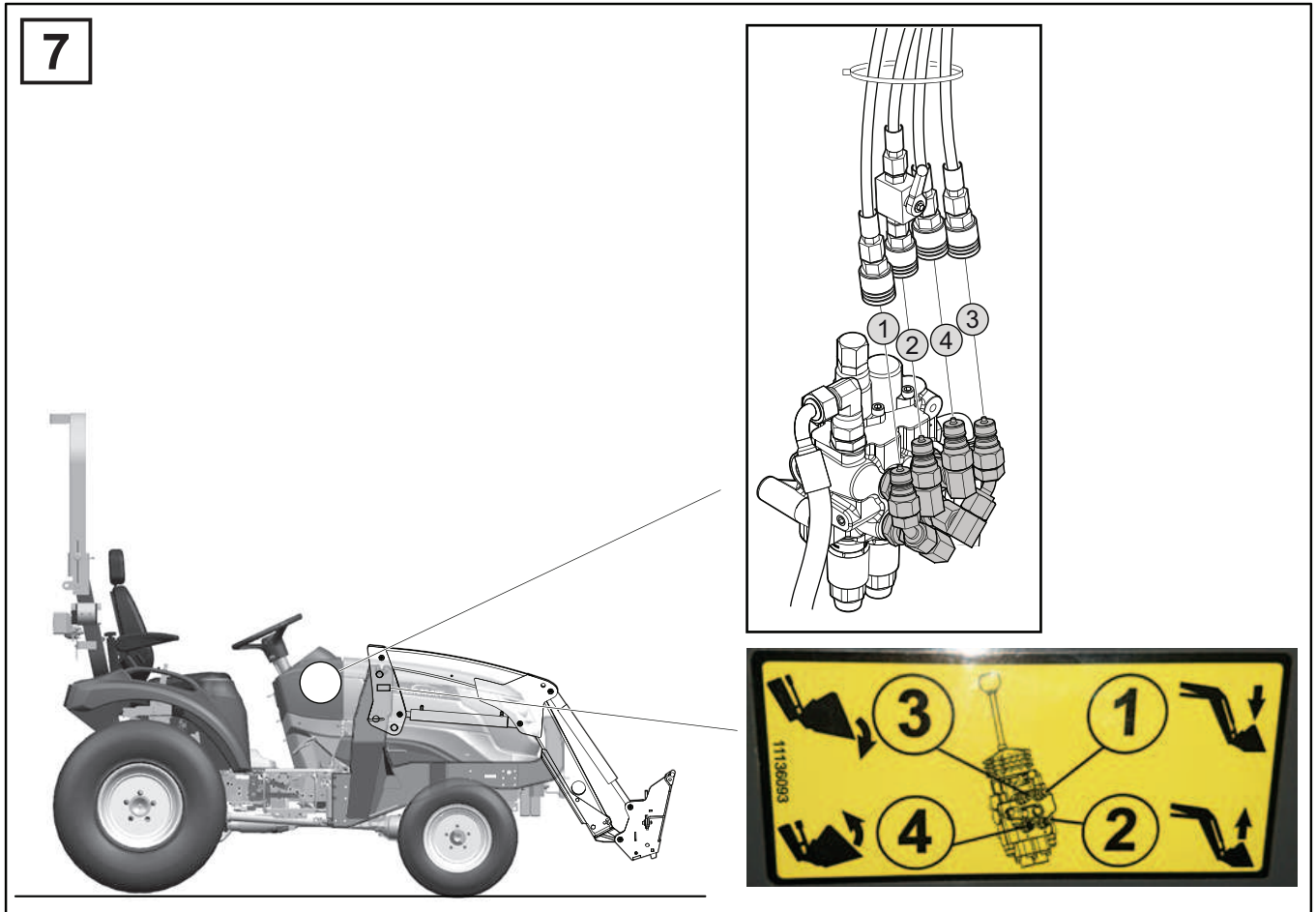
Turn off the engine. Move the joystick to all end positions. Hold the joystick in place at each end position for around 3 seconds.

7. Connect the couplers to hydraulic valve.

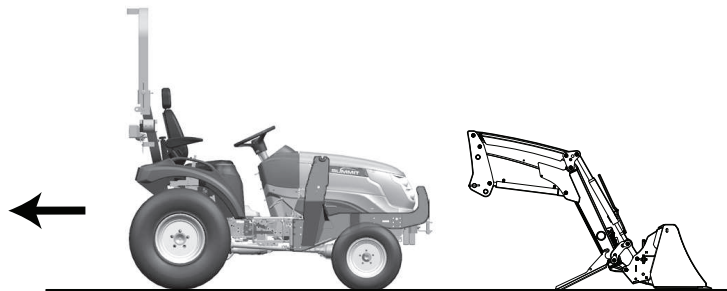
**Important!** After installing/connecting a new loader, see 3.2.1. *Checklist - Installation of the loader:*



<p><b>1</b></p> <p>Single-coupling</p>	<p><b>2</b></p> <p>Bearing box</p>	
<p><b>3</b></p>	<p><b>3B</b></p>	
<p><b>4</b></p>	<p><b>5</b></p> <p>Bearing box</p>	<p><b>6</b></p> <p><b>P=0</b></p>



**4.5.3. Uncoupling the loader**



**CAUTION:**  
 Risk of crushing and pinching  
 When depressurizing, sudden unforeseen movements may occur.

**CAUTION:**  
 Burn injuries. When the tractor and loader are used, valves, connections and hoses can get very hot. Switch off the tractor and allow the hydraulic components to cool before touching them.

**CAUTION:**  
 Risk of crushing and pinching  
 The loader may fall downwards.  
 Always install a bucket or other suitable implement on the loader before the loader is disconnected from the tractor.

**CAUTION:**  
 If the rear section of the implement is more than 6–8 inches above the ground there is risk that hoses may be ripped off during disconnection.

**Important!** If the loader is standing in direct sunlight and the hydraulic fluid is heated, connecting the loader's single-couplers may become difficult. To facilitate coupling, park the loader with its hydraulic fluid at operating temperature.

**IMPORTANT:** If you carry out any part of steps 1-9 and you are in the vicinity of the loader or tractor, switch off the engine, remove the ignition key and lock the joystick in the neutral position.

**Disconnecting a loader from the subframe (Steps 1-5)**

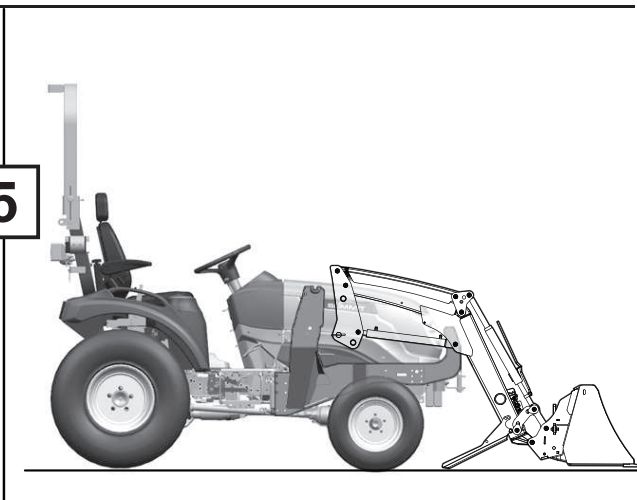
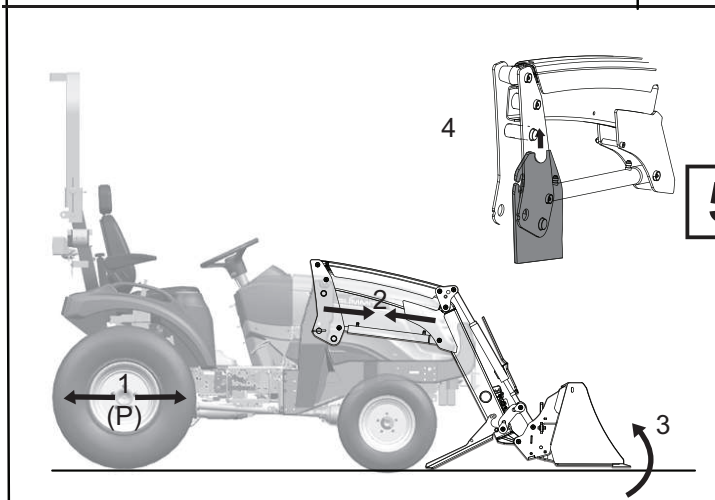
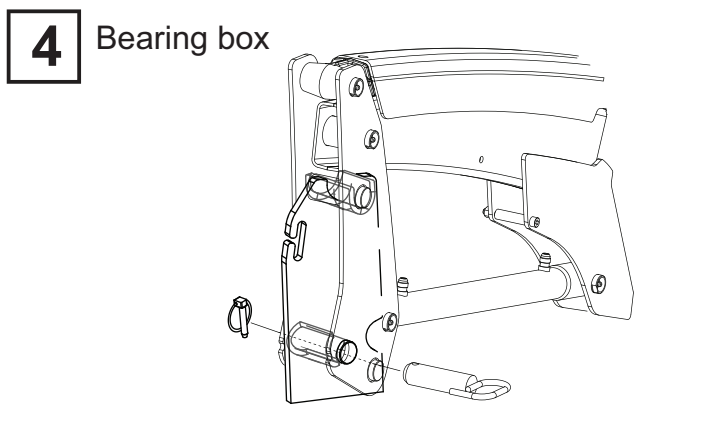
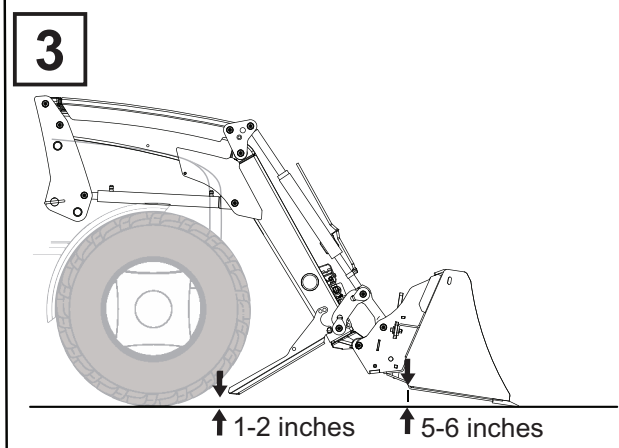
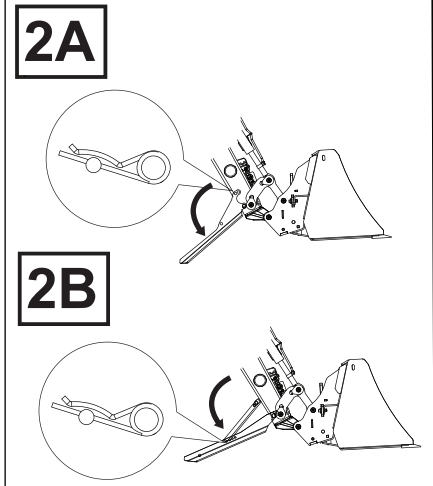
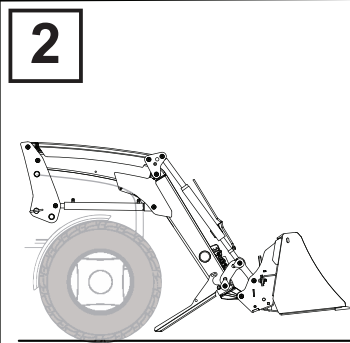
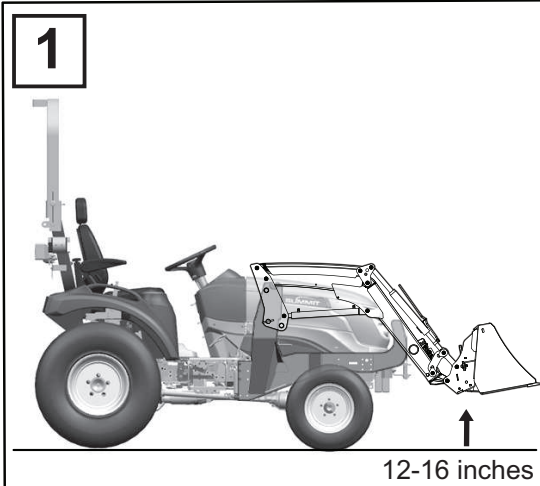
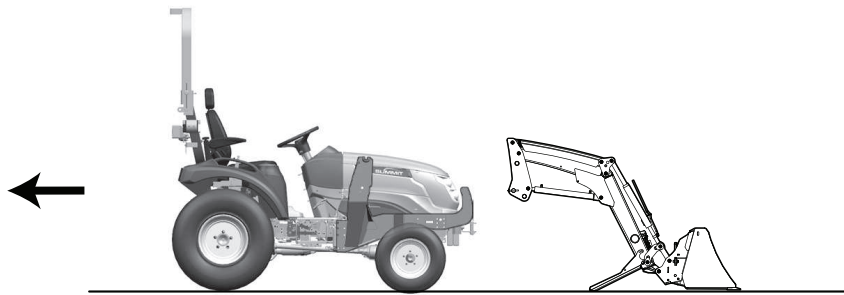
1. **Important!** Position the tractor on a flat, firm surface. Lift the loader so that the bucket is 12-16 inches above the ground. If the loader is fitted with load damping, activate it before you disconnect the loader.
2. Release the support leg by removing the locking pin. Extend the support leg; adjust support leg height by inserting the locking pin in position 1, 2 or 3. We recommend beginning with position 2.
3. Angle the implement forwards and lower the loader beam until the rear of the implement is around 5-6 inches above the ground while the front part is touching the ground and the support leg pads are 1-2 inches above the ground.
4. 1) Remove the lynch pins from the lock pins. 2) Remove the lock pins from the bearing boxes.
5. Release the brakes and lower the loader beam so that the lift cylinders are fully retracted. (Move the joystick forwards, lower the loader). Carefully tilt the implement upwards; the rear of the loader is raised and released from the subframe. (Move the joystick to the left, roll back the implement). Allow the implement to rest flat on the ground/surface.

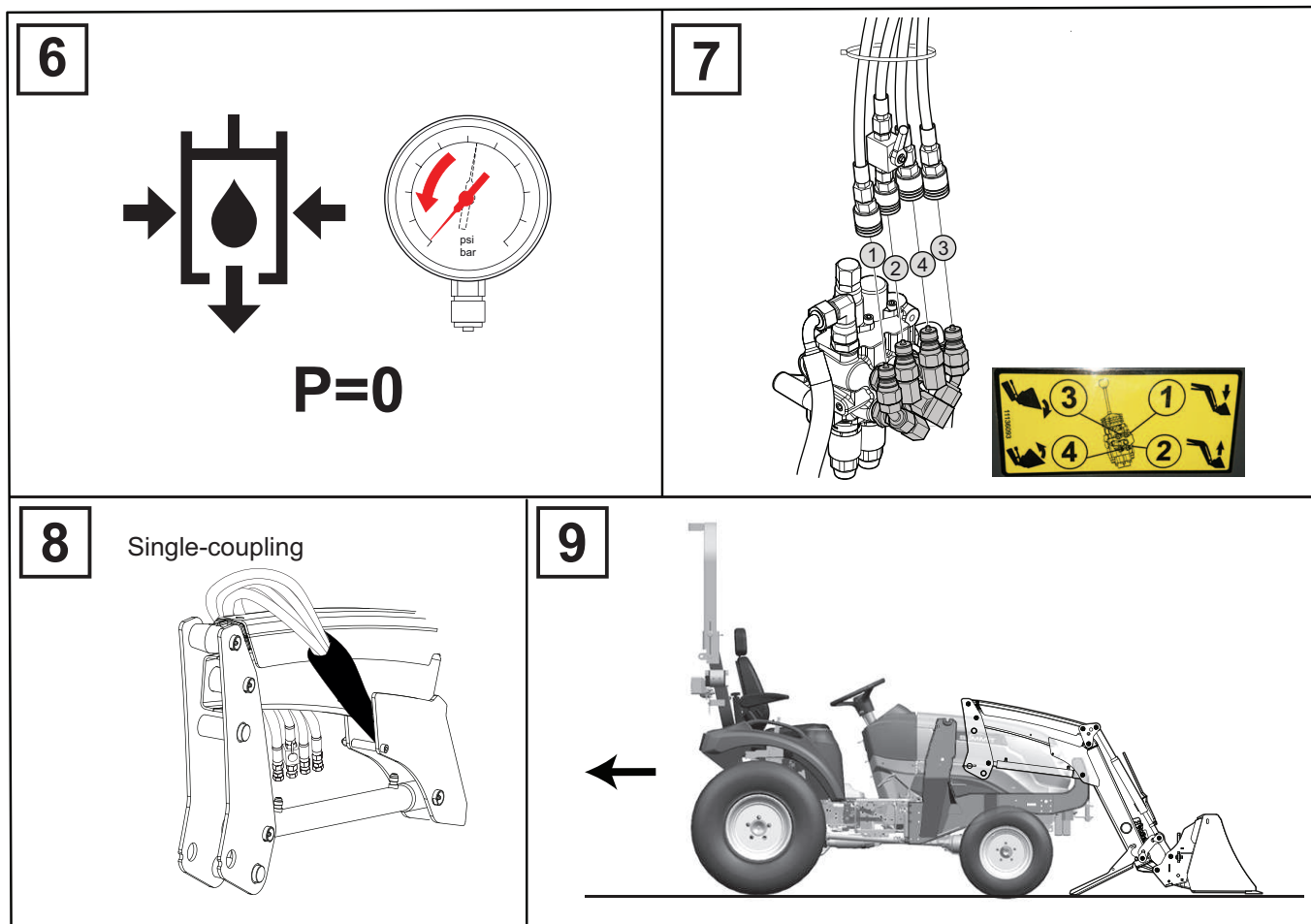
**Disconnect the hydraulics (steps 6-9)**

6. Stop the tractor's engine. Depressurize the lift cylinders by moving the joystick to the raise and lower end positions. Hold in place for three seconds.
7. Disconnect the hydraulic couplings.
8. Place the hoses over the loader arm.

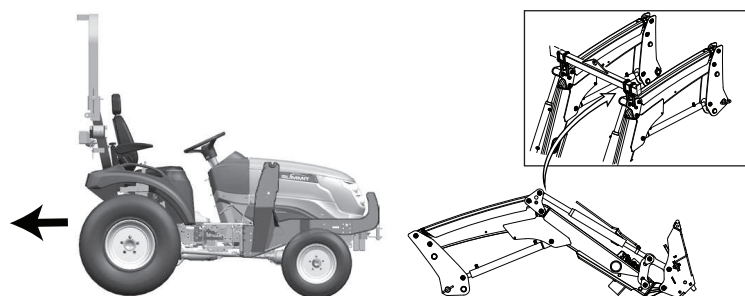
**IMPORTANT:** Make sure the hoses do not pinch or interfere with the tractor when the front loader is disconnected from the subframe uprights.

9. Reverse the tractor carefully until it is completely free from the loader.





#### 4.5.4. Disconnecting the loader using lifting equipment



**CAUTION:**  
**Burn injuries.** Valves, connections and hoses can get very hot, even when the tractor and loader have only been used for a short time. Switch off the tractor and allow the hydraulic components to cool before touching them.

**CAUTION:**  
**The loader may fall.** Make sure the hoses are not pinched or interfere with the tractor when the front loader is disconnected from the subframe uprights.

**CAUTION:**  
**Risk of crushing and pinching**  
 If the loader valve is in a depressurized or float position, sudden and unforeseen actions may occur when the hydraulics are disconnected.

**Important!** If the loader is standing in direct sunlight and the hydraulic fluid is heated, connecting the loader's single-couplers may become difficult. To facilitate coupling, park the loader with its hydraulic fluid at operating temperature.

**Important!** Park the tractor on a flat, firm surface.

**IMPORTANT:** If you are carrying out any work in steps 1-7 and you are in the vicinity of the loader/tractor: Switch off the motor remove the ignition key and lock the joystick in the neutral position.

**Disconnecting the loader from the subframe (Steps 1-2)**

1. Lower the loader boom so that the lift cylinders are fully floated. (Move the joystick forward, lower the loader).
2. 1) Remove the linch pins from the lock pins. 2) Remove the lock pins from the bearing boxes.

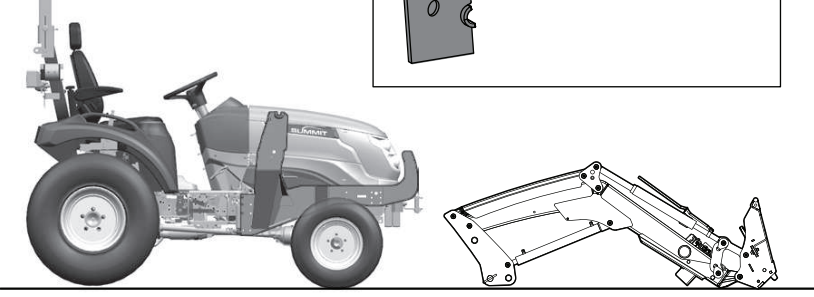
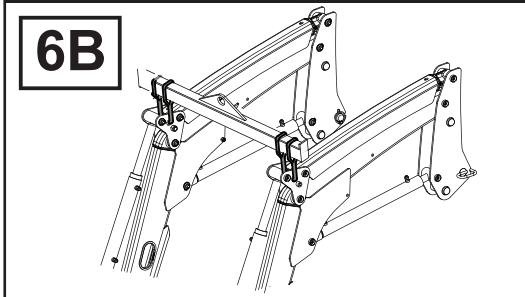
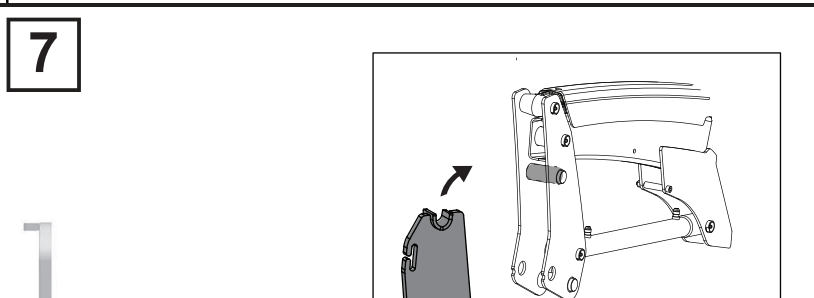
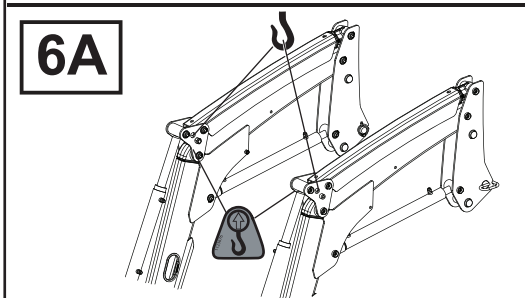
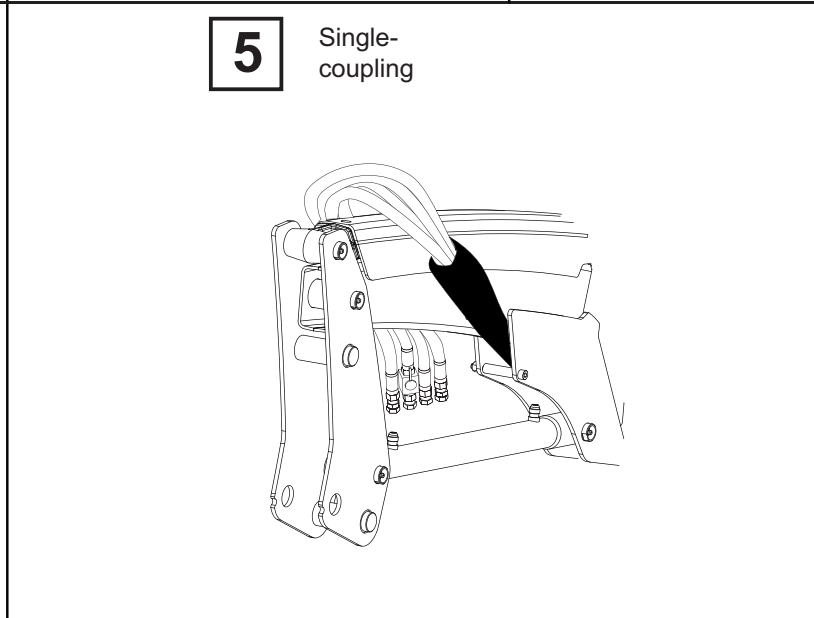
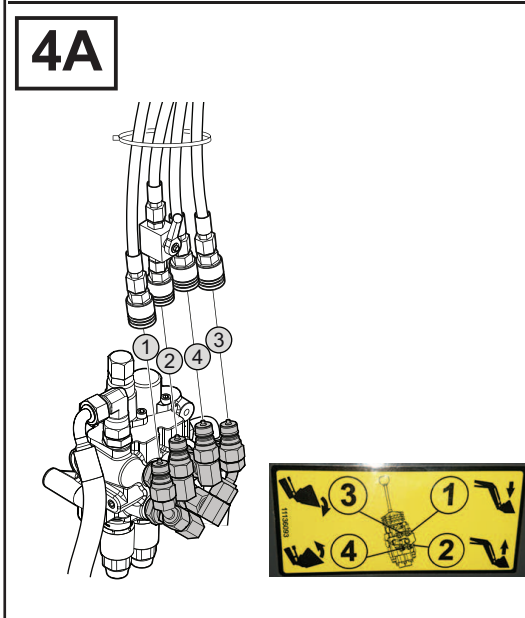
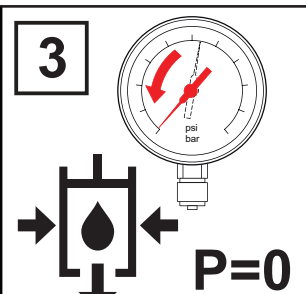
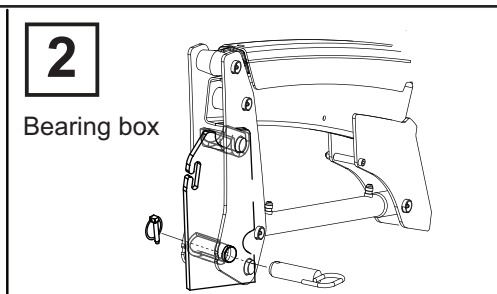
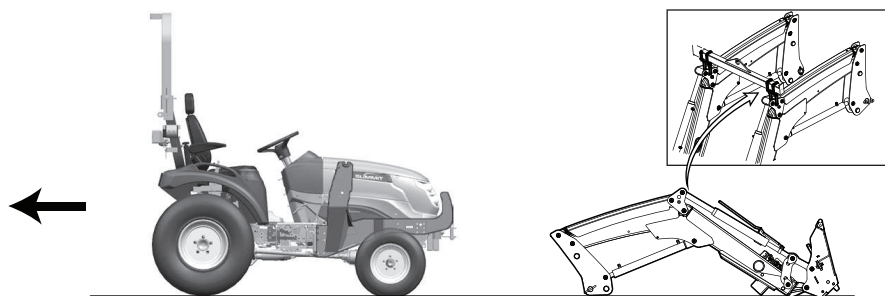
**Disconnect hydraulics (steps 3-7).**

3. Stop the tractor's engine. Depressurize the lift cylinders by moving the joystick to the raise and lower end positions. Hold in place for three seconds.
4. Disconnect the hydraulic couplings.
5. Place the hoses over the loader arm.

**IMPORTANT:** Make sure the hoses do not pinch or interfere with the tractor when the front loader is disconnected from the subframe uprights.

6. Use the lifting holes marked with decals on the inboard sides of the beams. Depending on the loader model and how much extra equipment the loader has, it may be preferable to lift according to alternative 6B.
7. Lift the loader until it clears the subframe uprights. Park the loader on a flat, firm surface. Insert the lock pin into the bearing box; secure the lock pin with the linch pin.





## 4.6. Connect and disconnect implements

### 4.6.1. Connecting implements, Skid Steer quick attach

**IMPORTANT:** When connecting the implement to the tractor/loader for the first time, make sure no interference can occur between the implement and the loader. Both when connecting and operating the implement.

Do not stand on the implement when setting the lever in the unlocked position.

**IMPORTANT:** To ensure trouble-free function of the lock mechanism, the area around the lock mechanism and contact surface on the implement must be kept free of dirt and foreign objects.

1. Open the left and right lock handles, 1, before starting the tractor.

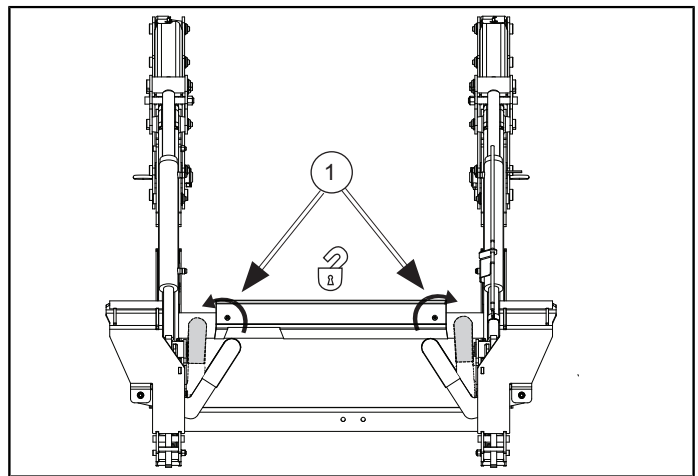


Fig. 55 Lock handles

2. Lower the loader with the Skidsteer quick attach (1) positioned under the bucket plates (2), and tilted slightly frontward (use the bucket position indicator as a reference).
3. Raise the loader slightly so that the Skidsteer quick attach (1) hooks into the implement's upper plates (2).
4. With the Skidsteer quick attach fixed in the upper plates, tilt the implement backwards so that the Skidsteer quick attach moves forward and is connected onto the implement.
5. Shut the engine off and lock the loader's joystick in neutral.

Apply the parking brake.

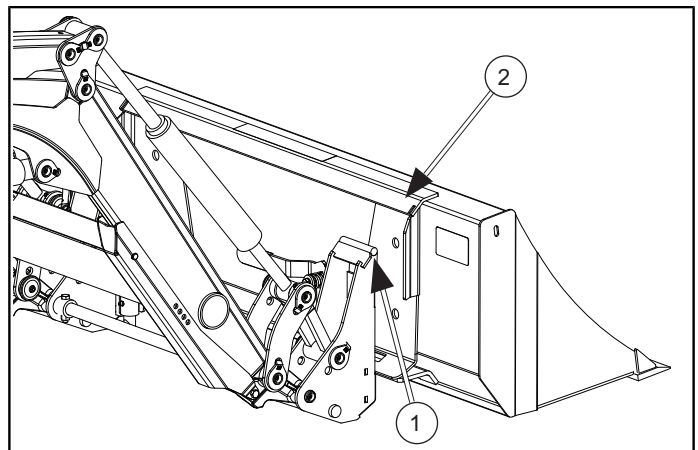


Fig. 56 Lower the loader

6. With the Skidsteer quick attach connected to the implement, press the left and right lock handles (1) into the locked position. *Position 1*.
7. Raise the loader until the Skidsteer quick attach is clearly visible from the operator's seat; place the implement horizontally on the ground.

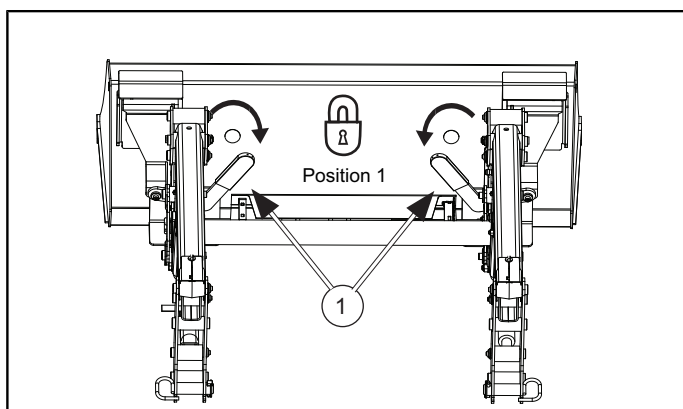


Fig. 57 Lock handles

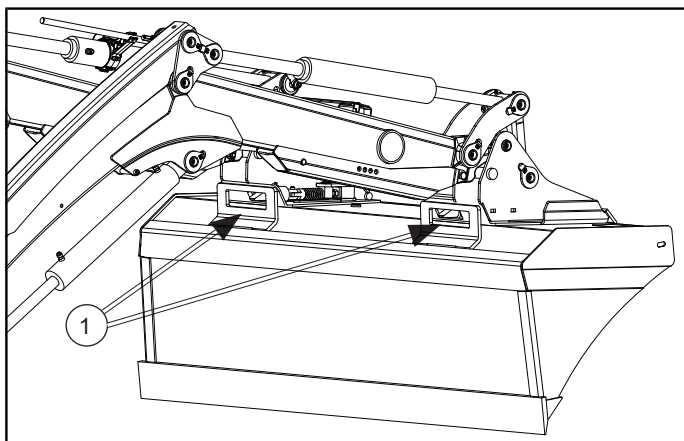


Fig. 58 Perform a visual check that the locking pins (1) on the skidsteer quick attach are fixed and locked onto the implement's contact surface.

Read this before using the loader/implement:

**Use the following checklist to make sure the implement is correctly locked onto the loader's implement carrier:**

- Visually check that the locking lever indicates locked implement.
- Visually check that the implement carrier locking pins are in the locked position.
- Make sure the implement is locked in place on the implement carrier by pressing the front of the implement against the ground.

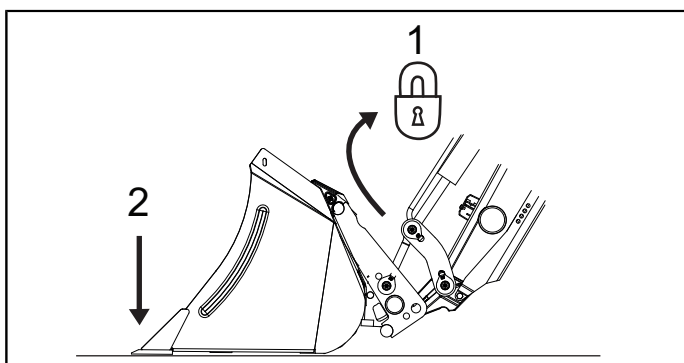


Fig. 59 Check that the implement is secured by pressing its front end against the ground.

*NOTE:* Carefully check that the implement cannot interfere with the loader in any position.






**WARNING:**

**Risk of crush, pinch injuries and overturning.**  
**Incorrectly locked implements can come loose.**  
**The lock lever/levers must be back in its/their locked position (1). ALWAYS make sure the connected implement is locked in place by pressing the front of the implement against the ground (2).**

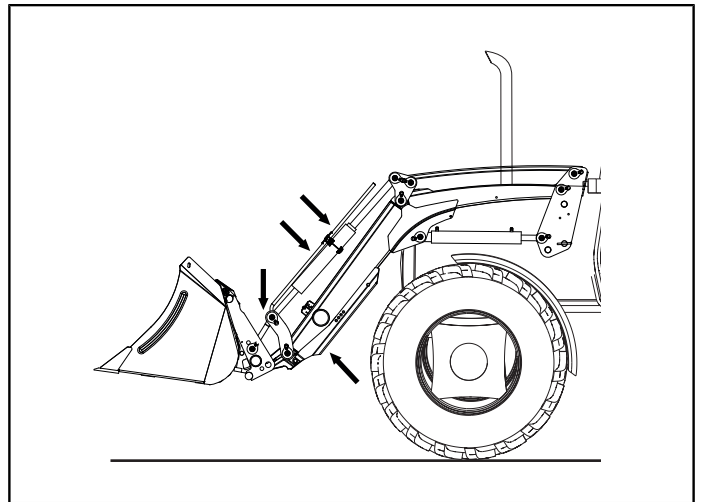


**CAUTION:**

**When connecting hydraulic implements that use the third hydraulic function, make sure implement movements take place according to the following configuration:**

**Activate the 3rd function by holding the 3rd function button  and move the lever left  or right  to open or close the implement.**

**An incorrect movement configuration may lead to a dropped load. Correct the fault immediately.**



*Fig. 60 Carefully check that the implement cannot interfere with the loader in any position.*

### 4.6.2. Disconnecting implements, Skidsteer quick attach

**IMPORTANT:** Do not place the loader's control valve in the float position until you have disconnected the implement. Do not stand on the implement when setting the lever in the unlocked position.

Position the implement a few inches above the ground and place it horizontally against the ground.

1. Shut the engine off and lock the loader's joystick in neutral.

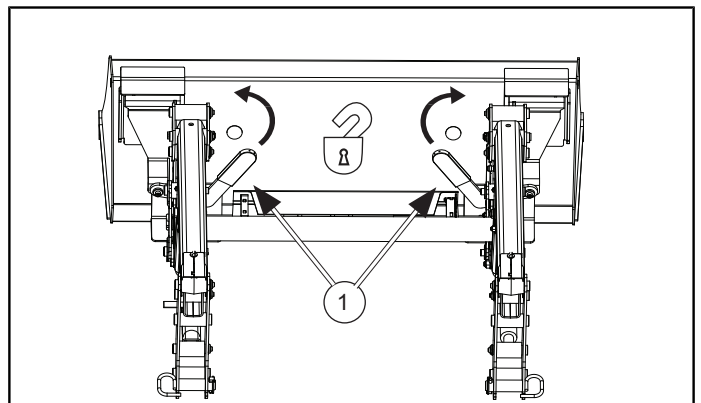
Apply the parking brake.

Open the left and right lock handles, 1, so that the Skidsteer quick attach is disconnected from the implement.



**WARNING:**

**Stand to the side of the implement and keep your feet away from the loader and implement when setting the lock handles in the unlocked position.**



*Fig. 61 Pull out the lock handles.*

4. Start the engine and lower the loader while carefully tipping the implement forwards until the Skidsteer quick attach (1) disengages from the bucket's plates (2).
5. Back tractor/loader away from the implement.

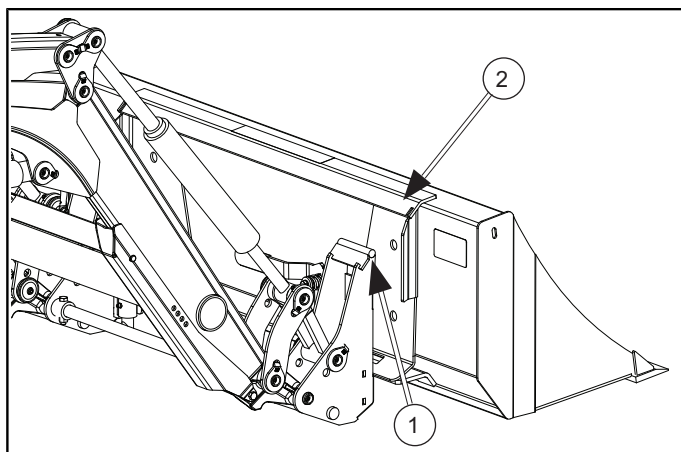


Fig. 62 Skidsteer quick attach

## 4.7. Working with the loader

Only allow qualified personnel to operate the tractor/loader/ implement.



**WARNING:**

**Risk of crushing and pinching**

**NEVER** place your hands on the bearing box when the loader is operated.

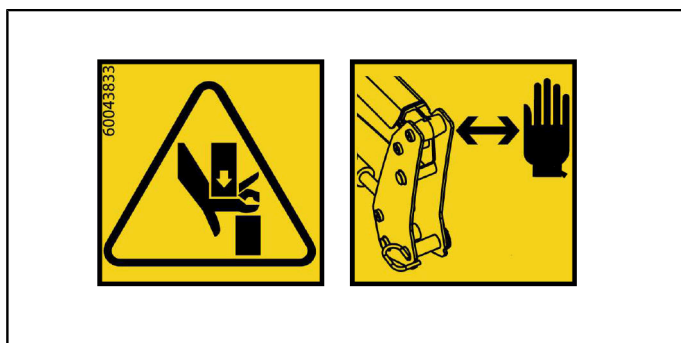


Fig. 63 Risk of crushing and trapping



**WARNING:**

**Risk of crush, pinch injuries and overturning.**

Incorrectly locked implements can come loose.

The lock lever/levers must be back in its/their locked position (1). **ALWAYS** make sure the connected implement is locked in place by pressing the front of the implement against the ground (2).

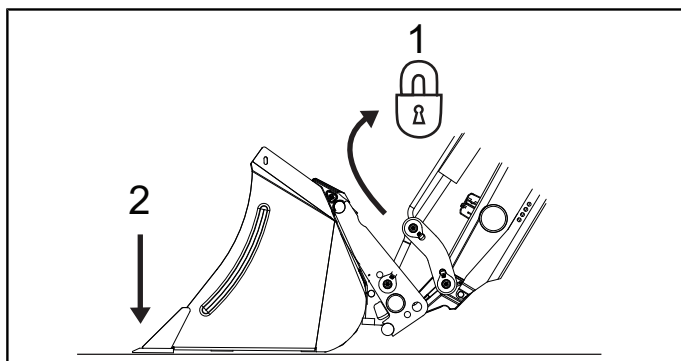


Fig. 64 Check that the implement is secured by pressing its front end against the ground.



**WARNING:**

**Risk of electric shock, crushing and pinching.**

When driving with the loader raised, ensure that there is sufficient distance between the loader/ implement and, for example, power lines and barn roofs. To prevent personal injury or death, do **NOT** leave the driver's seat if any part of the tractor/loader/implement comes into contact with a live electric cable.

Driver and/or bystanders: Do **NOT** touch the tractor/loader/implement and the ground at the same time. The driver must back-up the tractor away from the live electric cable or wait until the live cable is without power.

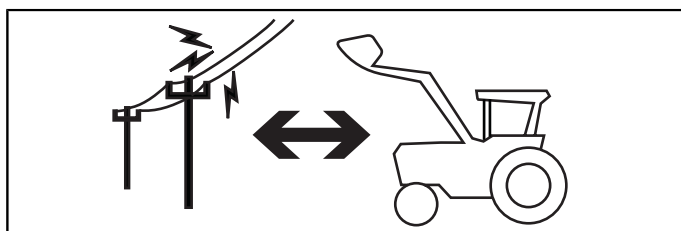


Fig. 65 Keep a safe distance from power lines and other obstacles.



**WARNING:**

Electric shock. Before digging, check that there are no hidden live electrical cables. To prevent bodily injury or death, do NOT leave the driver's seat if any part of the tractor/loader/implement comes into contact with a live electric cable.

Driver and/or bystanders: Do NOT touch the tractor/loader/implement and the ground at the same time. The driver must back-up the tractor away from the live electric cable or wait until the live cable is without power.

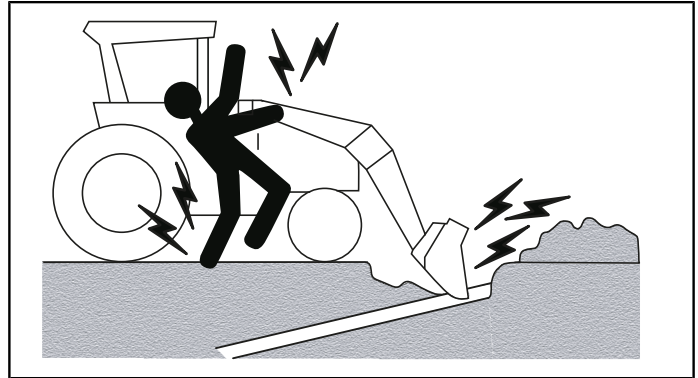


Fig. 66 When excavating, make sure there are no hidden power lines



**WARNING:**

**Risk of crushing and pinching**

Make sure that nobody is in the vicinity of the tractor when work starts and is in progress. Only operate the tractor when sitting in the operator's seat.



**WARNING:**

Do NOT use the loader or the implement as a working platform.



**WARNING:**

Do NOT use the loader or the implement to lift or transport people.



Fig. 67 Do NOT use the loader or the implement to lift or transport people.



**WARNING:**

**Risk of pinching.**

Entrapment risk. Do NOT stand, walk or work under or beside a raised loader. Make sure you keep everybody, especially children and animals, away from the work area.



Fig. 68 Do NOT stand, walk or work under a raised loader.



**WARNING:**

Before leaving the operator's seat:

1. Park the tractor on a flat, firm surface.
2. Lower the loader and implement to the ground.
3. Apply the parking brake securely.
4. Move the gearshift to the neutral or park position.
5. Relieve the hydraulic pressure; see section  
- 4.4.3. *Depressurization*
6. Switch off the tractor's engine.
7. Remove the ignition key.
8. Switch off the tractor at the main power switch if the machine is left unattended.

### 4.7.1. Load stability



**WARNING:**  
Crushing risk.

ALWAYS use an implement that can secure the load and is approved for the specific load handling. Be aware of position of the loader and implement. Objects, the load/implement, may fall or roll backwards onto the operator or onlookers when the loader is raised. ALWAYS use an implement that can secure the load and is approved for the specific load handling



**WARNING:**  
The tractor is only equipped with Roll Over Protective Structure (ROPS), and does not have a Falling Objects Protective Structure (FOPS), and there is only limited protection against falling loads. The operator risks injury if the load falls when the loader is operated while raised.  
FOPS is not intended to protect against falling loads. Therefore, it is important to use an implement that can secure the load and is approved for that specific load handling.  
Exercise caution when working with raised loads.  
The tractor should not be driven on a public road with a load in the implement.

In order not to drop the load or implement, make sure the implement is correctly mounted on the skidsteer quick attach and that the lock pins are in the locked position, see section:

4.6.1. Connecting implements, Skid Steer quick attach.



**WARNING:**  
Risk of crush, pinch injuries and overturning.  
Incorrectly locked implements can come loose.  
The lock lever/levers must be back in its/their locked position (1). ALWAYS make sure the connected implement is locked in place by pressing the front of the implement against the ground (2).

**IMPORTANT:**

Incorrectly designed implements can cause:

- Load instability.
- Tractor instability.
- Loader damage.

For this reason, do not install third party implements without making sure they have been approved for the application by Summit Tractors.

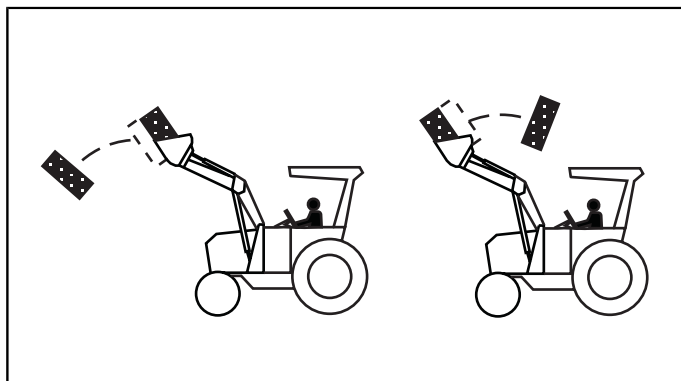


Fig. 69 Always look at the implement. Objects can fall or roll backwards onto the driver.



Fig. 70 Only lift loads which can be contained in, and are intended for, the specific implement.

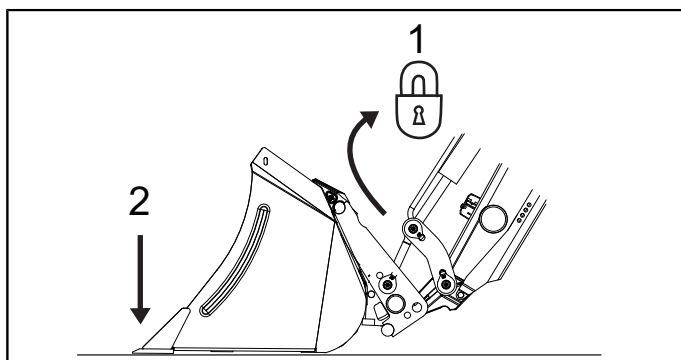


Fig. 71 Check that the implement is secured by pressing its front end against the ground.

- Make sure the load is positioned stably in the implement. In terms of loose material, the implement must not be overfilled, while for solid material the load must not stick up above the sides or the back of the implement.

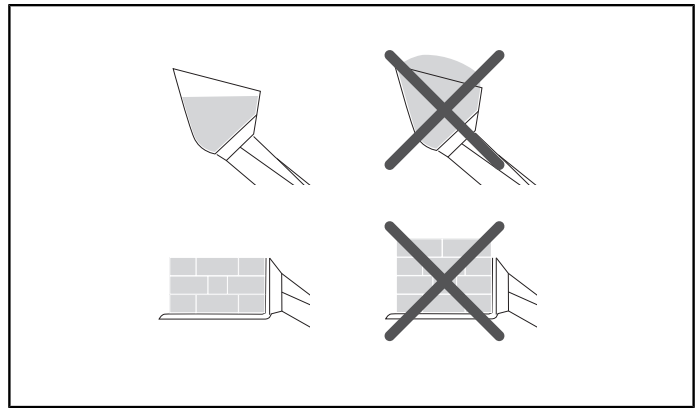


Fig. 72 Only lift loads which can be contained in, and are intended for, the specific implement.

- Adjust the tilt angle of the implement when the load is raised so that the load is not directed towards the operator.

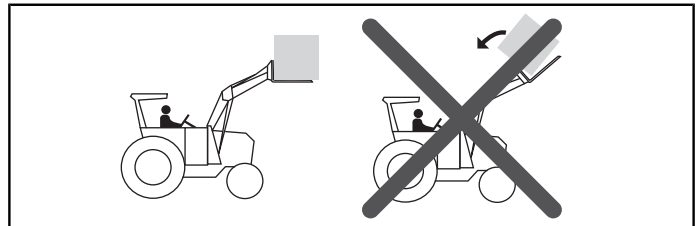


Fig. 73 Exercise caution when working with raised loads.

**4.7.2. Tractor stability**

**To improve loader stability:**

- Use a counterweight suitable for the tractor. See section 4.2. Counterweight.

**CAUTION:**  
 Check that the machine has the necessary counterweight at the rear to stabilize the machine's load-carrying ability. The counterweight is essential for maintaining control of the machine.

**CAUTION:**  
 Overturning risk. To increase lateral stability, the tractor's track must be as wide as possible.

**WARNING:**  
 Overturning risk. Do not grip objects that significantly shift the center of gravity outwards. This may lead to instability.

**WARNING:**  
 Overturning risk.  
 Do NOT work on or close to steep slopes.  
 The distance from the slope must be equal to or greater than the height of the slope.

- If you work with the loader on an uphill slope, drive straight upwards, fill the bucket and reverse downhill. Lower the loader as far as possible. Driving along the side of a slope can result in overturning.



Fig. 74 Crushing and overturning risk

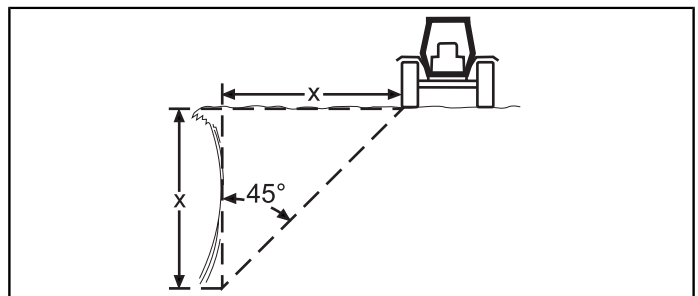


Fig. 75 Keep at a distance when working near slopes.



**WARNING:**  
**Overturning risk.**

Reduce speed before cornering to avoid overturning the tractor.

Avoid sudden turns when driving down steep slopes.

**CAUTION:**  
**Overturning risk.**

Always drive at a reduced speed with the load in the implement. Adjust the speed according to the terrain, the weight of the load and the center of gravity for the load.

- If the tractor so permits, always leave it in gear to provide engine braking when driving downhill. Do not allow the tractor to freewheel. Use the same gear when driving downhill as when driving uphill.

**CAUTION:**  
**Overturning risk.**

Lower the loader as far as possible when traveling/working. Slow down to a speed appropriate to the circumstances. When handling raised loads, there is an increased risk of the tractor tipping. Be alert; if the tractor feels unstable, lower the load to increase stability.

### 4.7.3. Driving technique

#### 4.7.3.1. Bucket

The bucket is filled most effectively by driving straight into the stock pile with the bucket level. Raise the loader slightly while forcing the bucket into the pile. Then roll the bucket back to contain material.

*NOTE:* Remove top layers first when working in deep material.

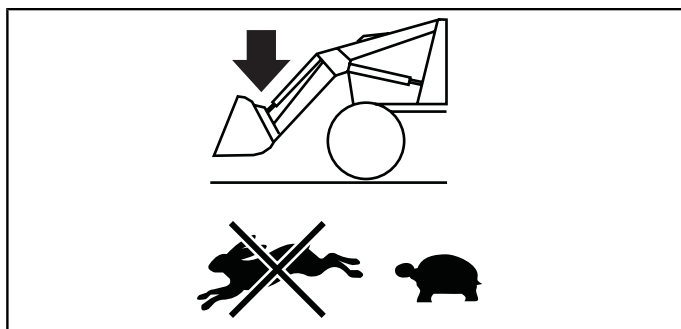


Fig. 76 When cornering, lower the loader and reduce speed.

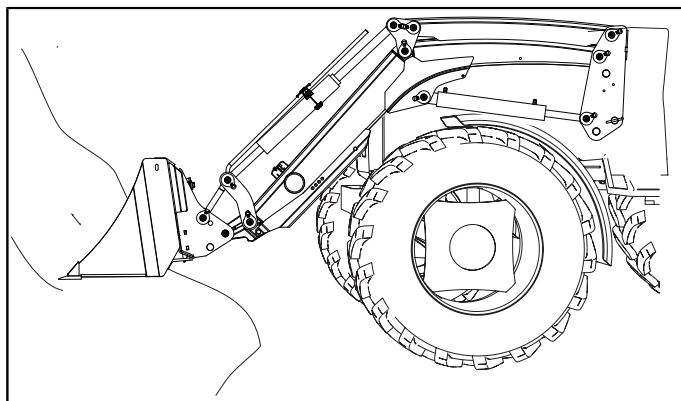
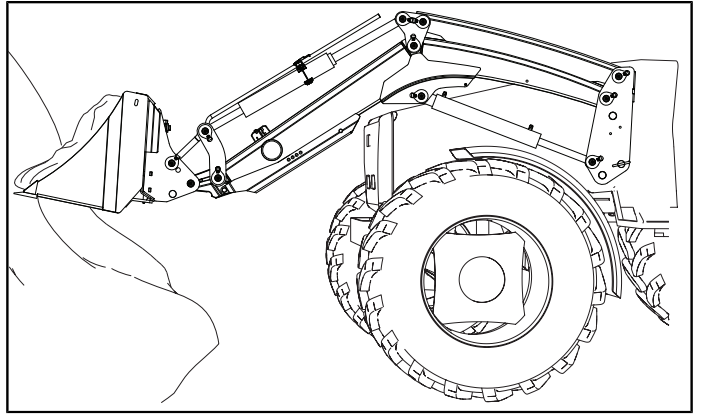


Fig. 77 Drive straight in, lift the load and tilt the bucket backwards.

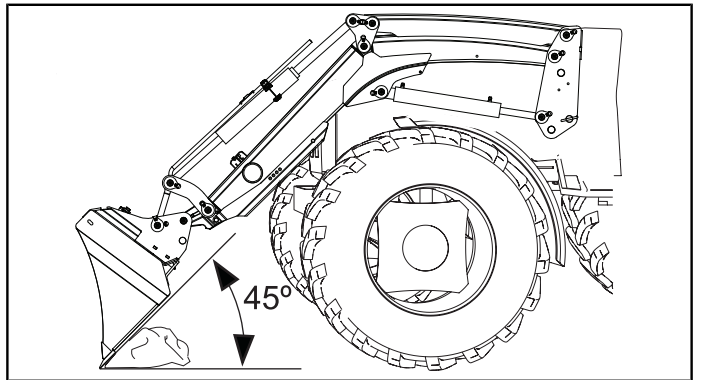
Reverse from stock pile, lowering loader slowly. Sudden stops when lowering bucket quickly can result in damage to loader and/or tractor's hydraulic system.



*Fig. 78 Reverse, lower slowly.*

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

**IMPORTANT:** To avoid damage to the loader, do not angle the bucket fully backwards when grading. The bottom of the bucket should not be angled more than 45° from the ground.



*Fig. 79 Operating technique when grading.*

## 5. MAINTENANCE



### WARNING:

Read the Maintenance chapter carefully. It contains important information for your safety and how you can keep your loader in good condition. If you are unsure of how to perform the loader's maintenance, employ experienced hydraulic and mechanical service technicians to avoid personal injury.

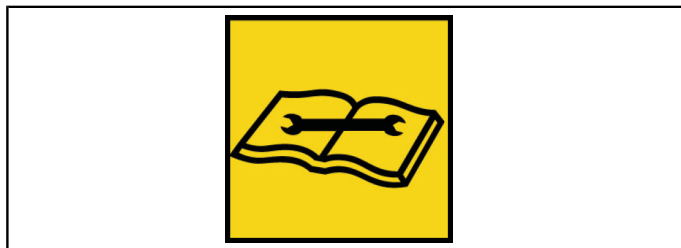


Fig. 80 Read the Maintenance chapter carefully

Be sure to use personal safety equipment during maintenance/service, such as protective clothing, protective gloves and safety glasses.

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

Summit Tractors is not responsible for damages that can occur as a result of using non-approved parts or accessories.



### WARNING:

Pinch risk. Do NOT stand, walk or work under or beside a raised loader.



### CAUTION:

Risk of crushing and pinching

All maintenance must be done when:

1. The loader is fitted to the tractor.
2. The loader is lowered to the ground.
3. The loader is pressure-relieved, see section 4.4.3. *Depressurization*.



0106

Fig. 81 Never stand between the front of the tractor and the loader.



### CAUTION:

Check the loader and the subframe for cracking, loose bolts/grooving or any other damage that may adversely affect the function and may result in personal injury. When replacing parts, use only original spare parts to restore the machine to its original design. Daily visually inspect the subframe, loose bolts for any damage or loosening. Check torque on all mounting bolts every 50 hours.



### CAUTION:

The tractor and loader use fluids under high pressure when operating. Check all components and keep them in good condition. Make sure no hydraulic components are damaged, especially the hoses. Check the hydraulic components/hoses daily.



### CAUTION:

Burn injuries. Valves, connections and hoses can get very hot when the tractor and loader have been used even for a short period of time. Switch off the tractor and allow the hydraulic components to cool before touching them.

## 5.1. Lubrication



**CAUTION:**

**Risk of crushing and pinching**

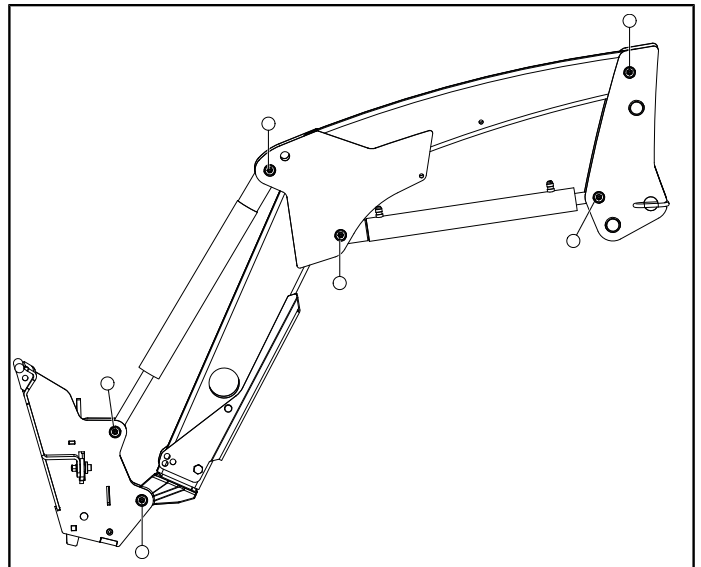
**All maintenance must be done when:**

1. **The loader is fitted to the tractor.**
2. **The loader is lowered to the ground.**
3. **The loader is pressure-relieved, see section 4.4.3. *Depressurization.***

Operating hours = the time that the loader is in motion.

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

There is a grease fitting at each pivot point.



*Fig. 82 Grease fittings on every pivot pin on both sides of the loader.*

## 5.2. Hydraulic system

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

Check the hydraulic components and hydraulic connections for leakage.



**CAUTION:**

**Risk of crushing and pinching**

**All maintenance must be done when:**

1. **The loader is fitted to the tractor.**
2. **The loader is lowered to the ground.**
3. **The loader is pressure-relieved, see section 4.4.3. *Depressurization.***



**WARNING:**

**Watch out for pressurized hydraulic fluid.**

**NEVER use fingers or hands during leak tracing. Fluid flowing out of small holes can be almost invisible. Use a piece of cardboard or similar for leak tracing.**

- **Undo hydraulic couplings slowly. Keep your hands and fingers away from loosened couplings. Always wear protective gloves while working with hydraulic couplings.**
- **If hydraulic fluid penetrates the skin it can cause serious reactions or infections. Seek medical attention immediately.**

**WARNING:**  
Pressurized oil.

Hydraulic fluid 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.

**NEVER** use fingers or hands to detect leaks.

Use approved protective safety glasses and protect the skin using strong leather gloves for example. Use cardboard or similar materials for leakage detection. If hydraulic fluid penetrates the skin it can cause serious reactions or infections. Seek medical attention immediately.



Fig. 83 NEVER use fingers or hands to detect leaks.

**CAUTION:**  
Burn injuries. Valves, connections and hoses can get very hot when the tractor and loader have been used even for a short period of time. Switch off the tractor and allow the hydraulic components to cool before touching them.

**WARNING:**  
Pressurized fluid hazard. ALWAYS assume that high pressurized fluid remains in the hydraulic system. To avoid high-pressure accident that can result in death, any repair of the hydraulic system shall be performed by experienced hydraulic- and mechanical technicians.



Fig. 84 Watch out for pressurized hydraulic fluid

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

Undo hydraulic couplings slowly. Keep your hands and fingers away from loosened couplings. Hydraulic fluid can penetrate your skin.

The cylinders must always be maintained in good condition for optimal function. Leaks, internal or external, affect performance and may be hazardous.

This loader requires a hydraulic system that works at high pressure. Only use replacement parts approved by Summit Tractors.

## 5.2.1. Repair/replacement of hydraulic components

### 5.2.1.1. Hydraulic cylinders

**CAUTION:**  
Risk of crushing and pinching

All maintenance must be done when:

1. The loader is fitted to the tractor.
2. The loader is lowered to the ground.
3. The loader is pressure-relieved, see section 4.4.3. *Depressurization*.

When removing hydraulic cylinders, the loader's hydraulic system must be depressurized.

For pressure relieving; see sections 4.4.3. *Depressurization*.

Damaged cylinders must be replaced with new ones. No repair can be done.



**CAUTION:**  
If you lack knowledge of hydraulics, engage an authorized Summit service dealer to replace damaged cylinders.

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### 5.2.1.2. Hydraulic hoses



**WARNING:**  
Pressurized oil.

Hydraulic fluid 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.

**NEVER** use fingers or hands to detect leaks.

Use approved protective safety glasses and protect the skin using strong leather gloves for example. Use cardboard or similar materials for leakage detection. If hydraulic fluid penetrates the skin it can cause serious reactions or infections. Seek medical attention immediately.

---

If a hose ruptures, correct the problem immediately. When replacing parts, only use original spare parts in order to restore the machine to its original design.



**WARNING:**  
Pressurized oil.

When replacing hoses, the loader should be mounted on the tractor and then lowered to the ground. Pressure relieve according to section 4.4.3. *Depressurization*.

---

**IMPORTANT:** After replacing the hose, perform a lifting exercise before performing a lowering exercise. Run all loader functions several times to remove air from the system. Air in the system can cause jerky motions. It can take up to 5 minutes before all air is removed.



Fig. 85 NEVER use fingers or hands to detect leaks.

## 5.3. Checking the loader and subframe bolt connections

Operating hours = the time that the loader is in motion.

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



### CAUTION:

**Risk of crushing and pinching**

**All maintenance must be done when:**

1. **The loader is fitted to the tractor.**
2. **The loader is lowered to the ground.**
3. **The loader is pressure-relieved, see section 4.4.3. *Depressurization*.**



### CAUTION:

**Check the loader and the subframe for cracking, loose bolts/grooving or any other damage that may adversely affect the function and may result in personal injury. When replacing parts, use only original spare parts to restore the machine to its original design. In continuous operation, check every 50 hours of operation.**

### 5.3.1. Tightening torques

Tighten all screwed joints on the loader and all secured components according to 5.3.1.1. *Table - Tightening torque*. If another torque is specified in the installation instructions, that torque should be used instead of the torque listed in the table.

The torques apply to clean, dry threads. Lubricated threads can lead to the joint being tightened too strongly. Damaged or dirty threads can cause torque values to be too low.

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.

#### 5.3.1.1. Table - Tightening torque

Grade 5 (Class 8.8) hardware		Grade 8 (Class 10.9) hardware	
Diameter	Torque	Diameter	Torque
1/4"	13.6 Nm (10 lb-ft)	1/4"	14.9 Nm (11 lb-ft)
5/16"	27.1 Nm (20 lb-ft)	5/16"	32.5 Nm (24 lb-ft)
3/8"	47.5 Nm (35 lb-ft)	3/8"	59.7 Nm (44 lb-ft)
7/16"	75 Nm (55 lb-ft)	7/16"	96.3 Nm (71 lb-ft)
1/2"	100 Nm (85 lb-ft)	1/2"	154.6 Nm (114 lb-ft)
5/8"	230 Nm (170 lb-ft)	5/8"	301 Nm (222 lb-ft)
3/4"	405 Nm (300 lb-ft)	3/4"	440.6 Nm (325 lb-ft)
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)

Grade 5 (Class 8.8) hardware		Grade 8 (Class 10.9) hardware	
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)

\*Tightening torque for the lock cover's M10 bolts is  $37 \pm 2$  Nm

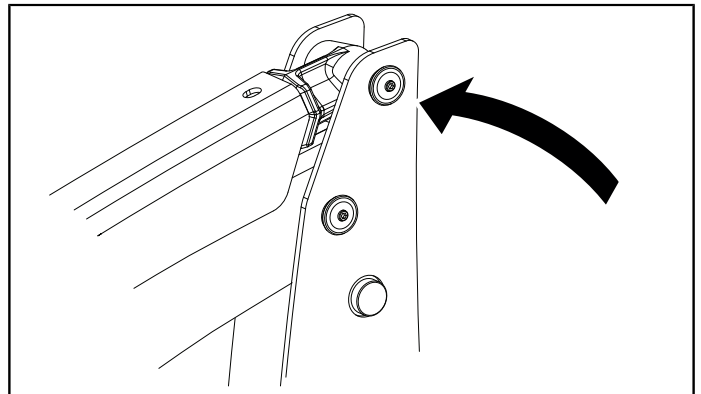


Fig. 86 \*Tightening torque for the lock cover's M10 bolts is  $27 \pm 1,5$  lb-ft

## 5.4. Storage

If the loader is not used for a long period of time, apply a thin layer of grease on any visible piston rods to help protect them.

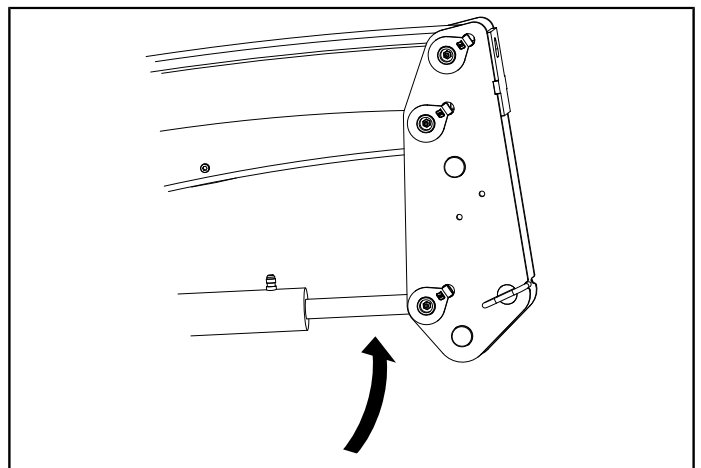


Fig. 87 Help protect visible piston rods by applying a thin layer of grease.

## 5.5. Transporting the loader

If the loader needs to be transported, e.g. for repairs, the loader should either:

1. Be transported fitted on a tractor.
2. Be transported without any implements, tied on a pallet and with retracted support legs.
3. When lifting the loader on to the transport vehicle, use the designated loader lifting points.



## 6. TROUBLESHOOTING

Loader malfunctions are frequently caused by factors not related to the loader:

- Check the hydraulic oil level in the tractor's hydraulic tank. Top up to the correct level.
- Check that the correct hydraulic oil is used. Only use the hydraulic oil specified in the tractor operator's manual. The wrong hydraulic oil can cause foaming, overheating and internal leakage.
- Make sure that hoses and couplings are correctly installed and connected to the tractor. Hydraulic couplings must be fully engaged.
- Check that the hydraulic oil is clean and free from moisture. Change the hydraulic 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 hydraulic oil maintains normal working temperature before using the loader.
- Move the loader's cylinders to their end positions several times to remove air from the hoses and cylinders.

In case of problems, use *6.1. Troubleshooting table*.

Please contact your authorised Summit service dealer for further assistance.

### 6.1. Troubleshooting table

Problem	Possible cause	Action
Lifting and implement cylinders do not function	Low hydraulic oil level.	Check and top up with hydraulic oil.
	Hydraulic hoses incorrectly connected.	Check and connect the hoses correctly.
	The hydraulic hoses to/from control valve are "blocked".	Check hoses for damage (kinks, twists, etc.).
	Loader control valve or tractor's main relief valve is stuck in the open position.	Contact your authorised Summit service dealer.
	Low system pressure from pump.	Contact your authorised Summit service dealer.
Non-functioning lift or implement cylinders	Break in control cables for control valve.	Inspect. Replace if necessary.
	Hydraulic quick-release couplings not fully engaged.	Check the connection. Replace coupling(s) if necessary.
	Blocked hydraulic hose/pipe.	Look for damage to hose/pipe that could block oil flow between cylinder and control valve.
	Piston unit damaged (does not seal).	Contact your authorised Summit service dealer.
	Blocked control valve.	Contact your authorised Summit service dealer.
	Damaged quick-release coupling.	Replace quick-release coupling.

## Troubleshooting

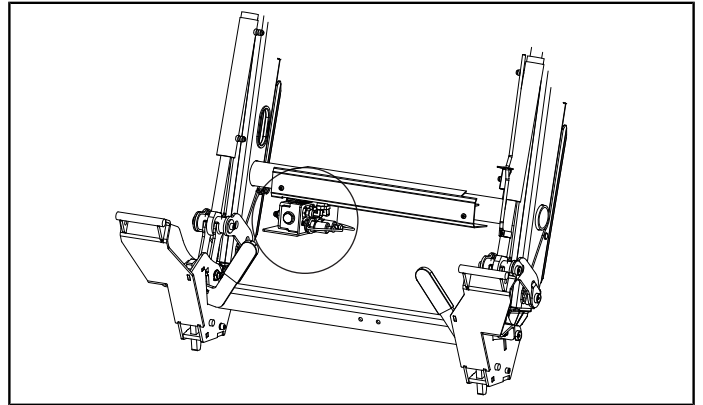
<b>Problem</b>	<b>Possible cause</b>	<b>Action</b>
Lift and/or implement cylinders working in the wrong direction compared to lever deflection.	Hydraulic hoses incorrectly connected.	Connect hydraulic hoses to correct socket.
	Control cables for single lever control incorrectly connected.	Contact your authorised Summit service 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 authorised Summit service dealer.
	Foaming due to use of wrong type of hydraulic oil.	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. Allow the hydraulic oil warm up to working temperature.
	Engine speed too low (hydraulic pump speed is subsequently too low).	Increase engine speed to improve loader performance.
	Load in bucket too heavy. Material weight exceeds loader's specified capacity.	Reduce the load in the bucket.
	Control valve cable system binds or is damaged.	Contact your authorised Summit service dealer.
	Air in the hydraulic oil.	See "Air in the hydraulic oil".
	Hydraulic quick-release couplings not fully engaged.	Check the couplings. Repair or replace.
	Restriction in hydraulic hose or pipe (hoses/pipes have become twisted or pinched).	Contact your authorised Summit service dealer.
	Lifting cylinder piston unit leaks.	Contact your authorised Summit service dealer.
	Pressure relief valve working irregularly or set too low.	Contact your authorised Summit service dealer.
Noise from the system's pressure relief valve (squeaking)	Cold hydraulic oil.	Allow the hydraulic oil warm up to working temperature.
	Load in bucket too heavy. Material weight exceeds loader's specified capacity.	Reduce the load in the bucket.
	Pressure relief valve set lower than specification.	Contact your authorised Summit service dealer.
	Restriction in hydraulic hose, pipe or quick-release coupling.	Contact your authorised Summit service dealer.
Insufficient lifting capacity.	Engine speed too low.	Increase engine speed.
	Load in bucket too heavy. Material weight exceeds loader's specified capacity.	Reduce load.
	Pressure relief valve set lower than specification.	Contact your authorised Summit service dealer.

<b>Problem</b>	<b>Possible cause</b>	<b>Action</b>
	Piston in lifting cylinders leaks.	Contact your authorised Summit service dealer.
	Internal leakage in control valve.	Contact your authorised Summit service dealer.
	Damaged hydraulic pump.	Contact your authorised Summit service dealer.
The loader drops with the control valve coil in neutral position. Note: Drop of 0.5 inches / min is normal and not counted as problem measured on the piston rod.	Piston in lifting cylinders leaks.	Contact your authorised Summit service dealer.
	Internal leakage in control valve.	Contact your authorised Summit service dealer.
	Control valve or cable system binds and prevents spool valve from returning to centre position.	Contact your authorised Summit service dealer.
Solenoid valve spool(s) does/do not return to neutral position.	Control valve centering spring is damaged.	Contact your authorised Summit service dealer.
	Control valve spool binds in its bore.	Contact your authorised Summit service 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 replace the damaged component.
	Damaged O-rings in control valve.	Contact your authorised Summit service dealer.
	Control valve spool or housing damaged and/or worn.	Contact your authorised Summit service dealer.
	Piston rod seal in cylinder leaks.	Contact your authorised Summit service dealer.
Inadequate pump capacity.	Cold hydraulic oil.	Allow 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 authorised Summit service dealer.
	Fault in hydraulic pump.	Contact your authorised Summit service dealer.
Lifting cylinder piston rods bent.	Abnormally high shock load during lowering movement.	Contact your authorised Summit service dealer.
Bucket cylinder piston rods are bent when bucket cylinders are extended.	Grading or excavation work with bucket cylinders fully extended.	Contact your authorised Summit service dealer.
Implement lock can not be locked	If the hoses are connected the wrong way, locking will not function!	Contact your authorised Summit service dealer.

## 7. ACCESSORIES

### 7.1. Third hydraulic function

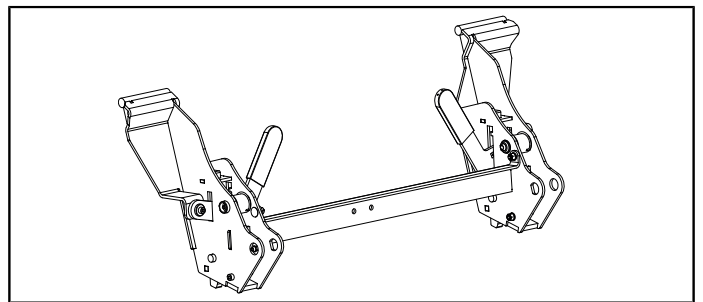
Third hydraulic function used to operate hydraulic implements.



*Fig. 88 Extra hydraulic function.*

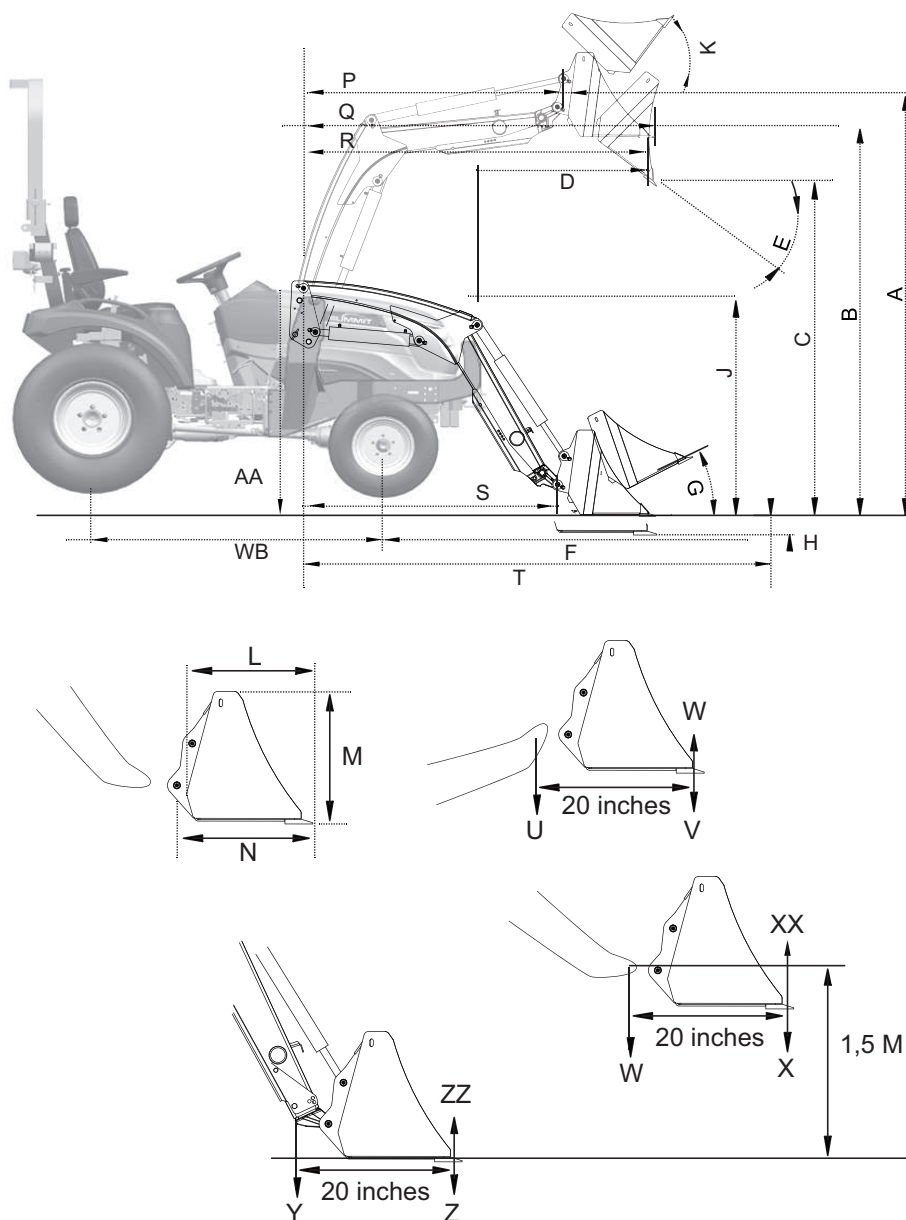
### 7.2. Skidsteer quick attach system

Compatible implements can be attached to this Skidsteer quick attach system.



*Fig. 89 Skidsteer quick attach system*

## 8. SPECIFICATIONS



<b>Loader model</b>		<b>LX85</b>	
Specified pressure for force calculations	Psi	2180	
Type		MSL	
Skidsteer quick attach system		Pin-on	
Max. working pressure	Psi	2320	
Operating temperature see note 1.	°C	-30/+50	
<b>Lift heights and Bucket angles</b>			
A	Lifting height at foremost bearing point	Inch	82
B	Lifting height under level bucket	Inch	77
E	Tipping angle at top	degrees	40
G	Crowd angle at ground level	degrees	42
K	Max opening angle at max lift height	degrees	42

## Specifications

Loader model		LX85	
<b>Loader forces - At Pivot Pin</b>			
U	Lift Capacity to Maximum Height	Lbs	930
W	Lifting capacity to a height of 1 m	Lbs	1010
Y	Breakout force	Lbs	1390
<b>Lifting force - 19,6 inch in front of the Pivot Pin</b>			
V	Lift Capacity to Maximum Height	Lbs	1030
X	Lifting capacity to a height of 1 m	Lbs	1030
Z	Breakout force	Lbs	1240
VV	Rollback Force at Maximum Height	Lbs	980
XX	Breakout force at a height of 1 m	Lbs	1360
ZZ	Rollback Force at Ground level	Lbs	1470
<b>Reach data</b>			
P	Reach at max lift height to pivot point	Inch	46
R	Reach at max lift height with bucket tipped 45°	Inch	62
S	Reach at max excavation depth to pivot point	Inch	49
C	Clearance with bucket dumped	Inch	66
J	Total height in carrier position	Inch	41
D	Reach at max. lift height	Inch	37
F	Reach with bucket on ground	Inch	60
<b>Loader position</b>			
AA	Subframe nominal height	Inch	38
H	Calculated undermining	Inch	2
<b>Bucket</b>			
L	Bucket depth	Inch	17
M	Bucket height	Inch	19
N	Bucket length to pivot point	Inch	24

Note 1: At low outdoor temperatures; the loader have a reduced functionality until the tractor's hydraulic fluid has reached its operating temperature. See the tractor's operating manual for more information.

## 8.1. Bucket Fill Factors

Fill Factor is the percentage of an available volume in a bucket that is actually used.

For example, a fill factor of 87 percent for a bucket means that 13 percent of the rated volume is not being used to carry material.

Materials	Lbs/Cubic feet	% Fill
Ashes	37.5	85
Asphalt	99.9	100
Beet pulp	37.5	85
Beet pulp (pressed)	56.2	110
Brewers grains	69.3	85
Bricks	114.2	100
Cement	55.9	100
Chalk	137.3	100
Clay (fire)	129.9	100
Clay (wet)	117.4	110
Coal (anthracite)	55.9	100
Coal (bituminous)	78.7	100
Coke (loose)	37.3	85
Coke (petroleum)	43.7	85
Copper (concentrate)	143.6	85
Earth (dry loose)	69.4	100
Earth (wet packed)	96.8	110
Fertilizer (mixed)	62.4	85
Fertilizer (nitrate)	78.03	85
Flour	27.5	85
Glass	162.3	85
Granite chippings	165.7	85
Gravel (dry)	106.1	85
Lime	53.1	100
Limestone (crushed)	95.3	100
Manure	56.2	85
Mortar	99.9	100
Oats	25.6	85
Peat	25	100
Potatoes	43.1	85
Refuse (dry)	24.8	100
Sand (dry)	96.8	100
Sand (wet)	118.6	110
Sawdust	15.6	110
Silage	45.6	110
Slate	170	100
Slurry	108.6	85
Snow (fresh)	8.8	110

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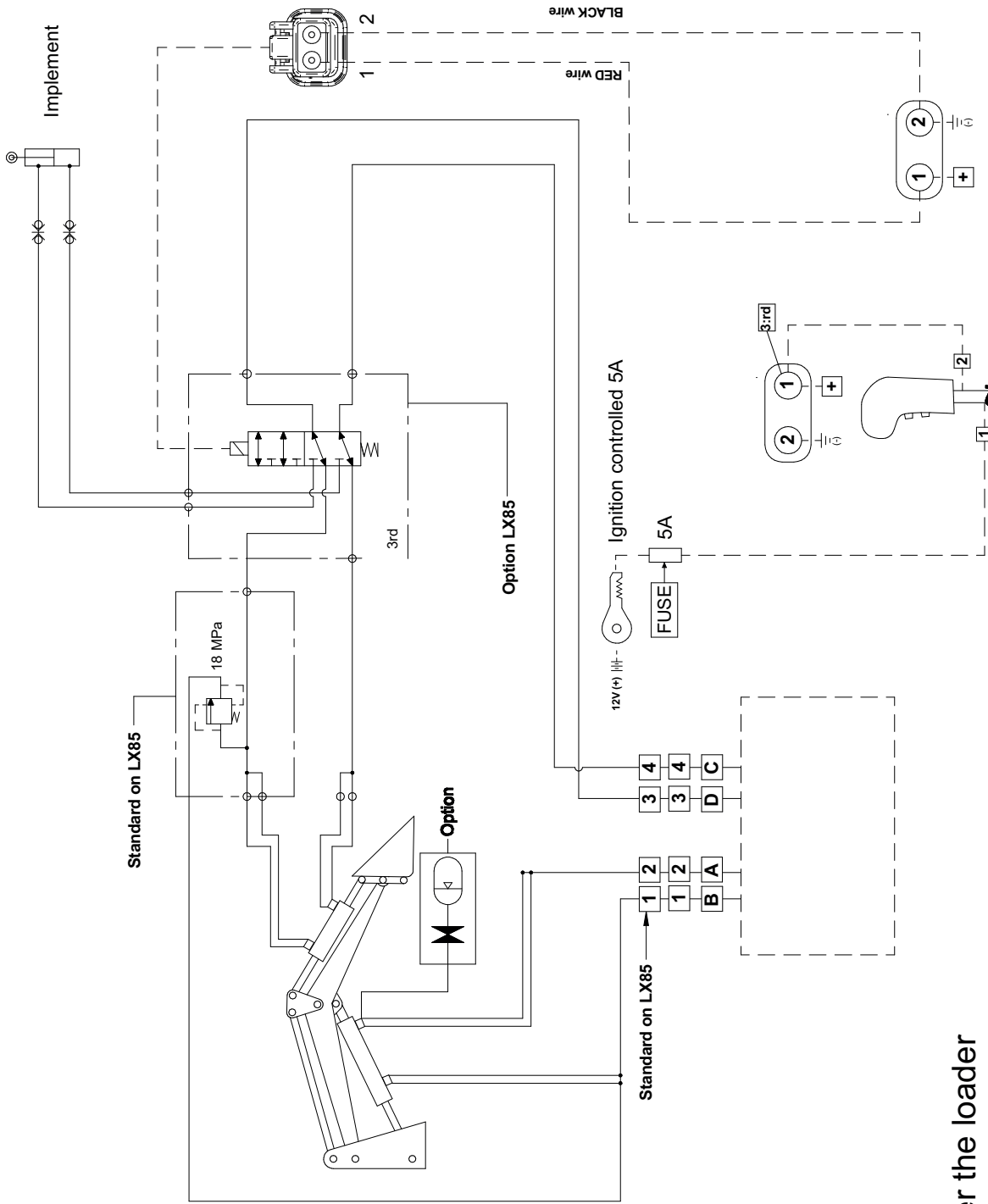
**Specifications**

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<b>Materials</b>	<b>Lbs/Cubic feet</b>	<b>% Fill</b>
Snow (wet)	32.1	110
Sodium chloride	81.2	85
Sugar beet	33.7	100
Turnips	33.7	100
Wheat	45.6	85



# 9. WIRING DIAGRAM



- B 1 Lower the loader
- A 2 Raise the loader
- D 3 Dump the implement
- C 4 Roll back the implement



The logo for Summit Tractors is centered on a light gray background. It features the word "SUMMIT" in a bold, dark teal, sans-serif font. A thin, dark teal arc curves over the top of the letters "M" and "I". Below "SUMMIT" is the word "TRACTORS" in a smaller, dark teal, sans-serif font. The word "TRACTORS" is flanked by two horizontal dark teal bars, one on each side.

**SUMMIT**<sup>™</sup>  
— TRACTORS —