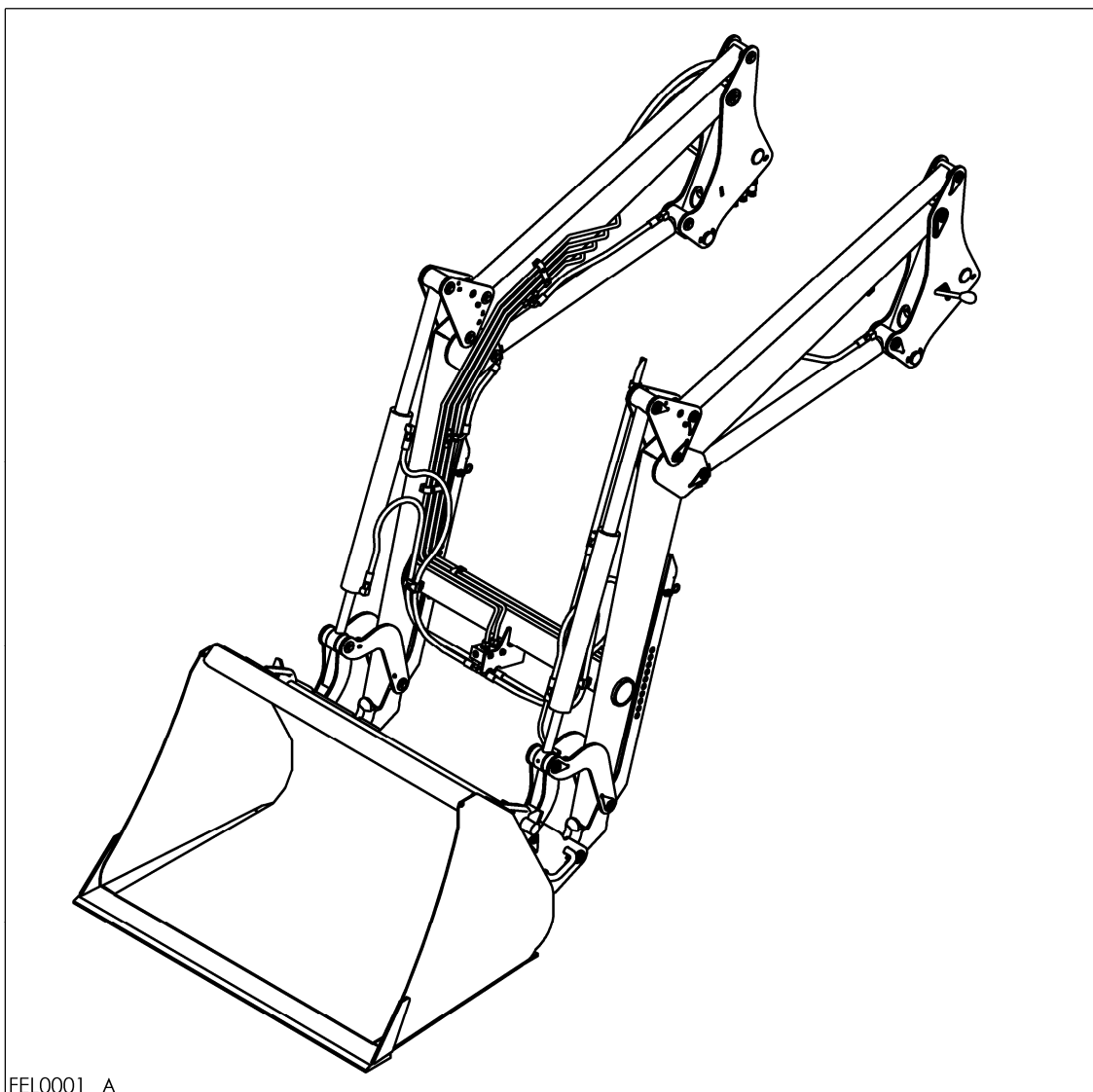


STOLL

Operating Manual

Frontloader

FE EcoLine



FEL0001 A



▲ Danger ▲

Read the entire operating manual before using the front loader.

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1 Introduction

Dear customer,

We thank you for purchasing a front loader from our company.

To ensure long-term satisfaction with this product please read this manual carefully and familiarize yourself with its contents.

Thank you.

The employees and management of Wilhelm Stoll Maschinenfabrik GmbH

1.1 Using the operating manual



▲ Danger ▲

Read the entire operating manual before using the front loader.

Operation and service of the front loader are described in this operating manual.

If you have questions concerning the operating manual, contact your dealer.

An operating manual is supplied with each machine. It is a component of the front loader and must be kept in the tractor so that the driver or service personnel have immediate access to it for review purposes, if necessary.

Obtain a new operating manual immediately if the old manual is damaged or lost.

This manual contains information concerning the state of the technology that was valid at the time of delivery.

We reserve the right to make changes in the design and specifications of the loader and its components in the course of further technical development.

Direction information:

The direction information **right** and **left** used in this operating manual is always based on the driver's perspective.

1.2 Warning symbols

Warnings are used in this manual to protect you from injury and to protect the machine from damage. Always read and comply with these warnings. Warnings are shown in **bold** font. Warnings are introduced with the words **▲ Danger ▲** or **▲ Caution ▲**.

The two warning levels have the following meaning:

▲ Danger ▲

If the warning is ignored, there is danger of death, severe injury or significant machine damage.

▲ Caution ▲

If the warning is ignored there is danger of injury or machine damage.

Supplemental comments begin with the word

Comment

These comments facilitate understanding or execution of a certain procedure.

1.3 Intended use of the front loader

The front loader has been built exclusively for agricultural and forestry loading tasks.

It should only be used with the implements provided by STOLL.

It should only be attached to those tractors for which STOLL designed it to be attached, and for which it is offered by STOLL.

The front loader must only be operated from the driver seat of the tractor.

The front loader and its tools must never be hydraulically operated together with other devices at the same time.

The Frontloader may not be used for lifting operations that require the presence of a person close to the lifted load. There is a risk that persons are squeezed between load and or ground on failure of the hydraulic components. For possible works with such tools the Frontloader is to be equipped with security equipment and to activate this.

▲ Danger ▲

Any use extending beyond intended use is non-intended use. The manufacturer, STOLL, assumes no liability for damage resulting from non-intended use. This risk is borne solely by the user.

Intended use also includes compliance with the operating and service instructions prescribed by the manufacturer.

The front loader should only be used and maintained by persons who are familiar with the contents of the operating manual through appropriate reading and instruction, and who have been particularly instructed concerning the dangers associated with operation of the front loader.

1.4 Description of the front loader

The Stoll front loader is a loading device that is mounted on a tractor. It is used for lifting and moving loads.

The front loader and the implements are activated via hydraulic cylinders.

The front loader is powered by the tractor's hydraulic system, and is controlled from the driver's seat.

The front loader is attached to the tractor and detached from the tractor quickly and effortlessly via the STOLL drive-in system.

The support legs ensure that the detached front loader is stable.

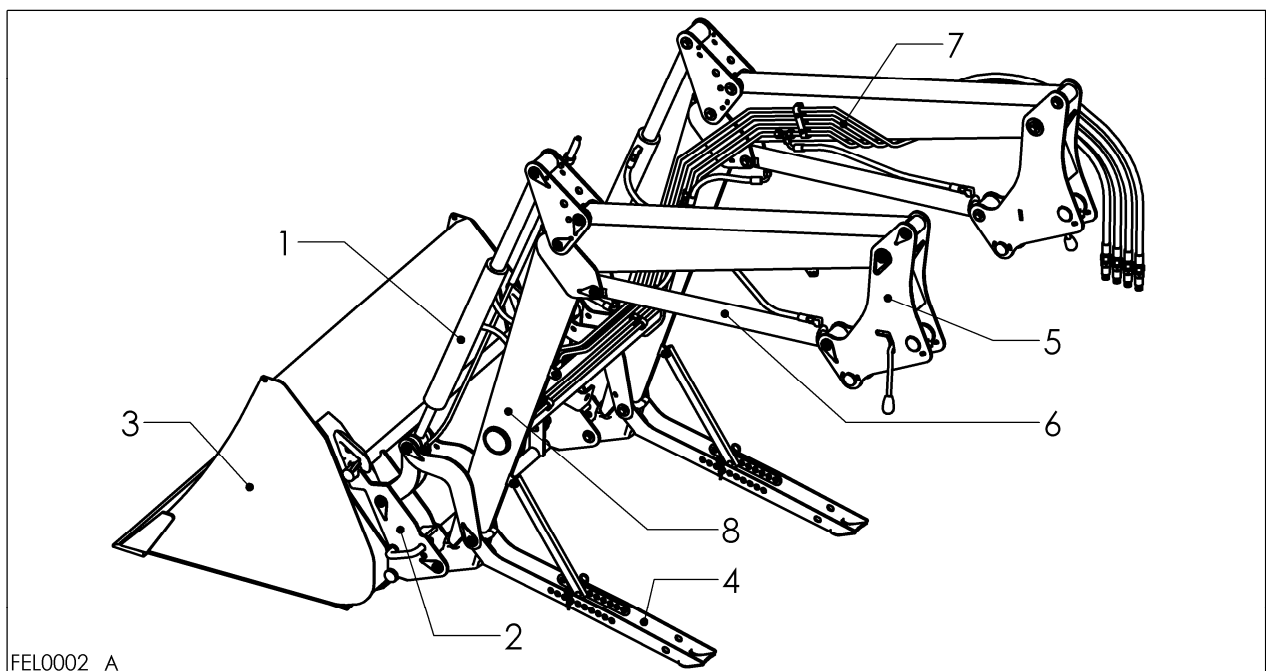
The implements are connected to the front loader via the change frame. The change frame enables fast and safe implement change.

The front loader consists of:

1. Implement cylinder
2. Change frame
3. Implement (e.g. bucket)
4. Support legs
5. Column (drive-in system)
6. Lifting cylinders
7. Hydraulic pipes
8. Lifting arm

Parts that are permanently mounted on the tractor

- Add-on parts
- Front protection
- Hydraulic pipes



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1.5 Frontloader types

All front loader types are factory equipped with hydraulic implement activation and double-acting lifting cylinders.

The p type front loader differs from the H front loader in that the P front loader has a mechanical parallel guide for the implement.

2 Safetyinstructions

2.1 General



Read and comply with the following safety instructions before operating or servicing the front loader. By doing so you will prevent accidents.

If you have questions concerning the operating manual, contact your dealer.

Affix the safety stickers shown in the manual where they are easily visible to the driver.

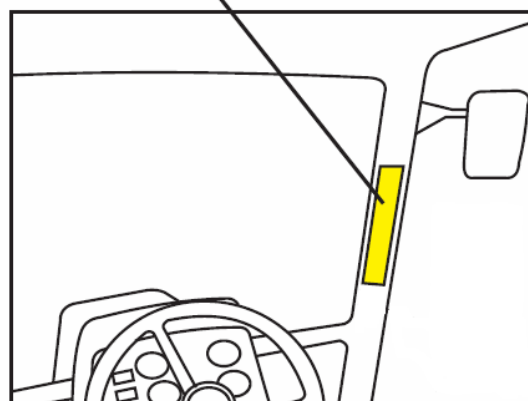
▲ Danger ▲

Comply with the accident prevention regulations as well as the technical safety, occupational health, and road traffic regulations of the country where the front loader is used.

▲ Danger ▲

Unauthorized changes to the front loader and to the implements exclude liability on the part of the manufacturer for resulting damage.

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2.2 Before work

⚠ Danger ⚠

Before work check the tractor and the front loader:

- Ensure that all components are firmly attached.
- Repair or replace damaged, excessively worn, or missing parts.
- Ensure that protective devices and covers are in good condition and properly mounted.
- Make all the required adjustments on the tractor and on the front loader.
- Regularly check the tightening torque of all bolts and nuts (section , 6.3, p. 31).
- Ensure that all components are lubricated regularly (sec. 6.2, p. 31).

⚠ Caution ⚠

If equipment is installed on the tractor that could collide with the front loader or the implement, then remove this equipment before starting the load work.

⚠ Danger ⚠

Arrest the hydraulics when driving on the road, or parking the tractor.

Frontloaders may only be attached to tractors, which have a lockable neutral position hydraulic, failing that, a shut-off-valve can be installed.

The used hydraulic control devices shall not engage in the actuated position (exempt float), otherwise the locking have to be cancelled.

⚠ Danger ⚠

The used hydraulic control devices must never be operable from outside the driver cabin, in particular not from the external controls of the front linkage. If this cannot be guaranteed, the additional controls have to be reprogrammed or permanently disabled.

⚠ Danger ⚠

Tractor and front loader work with hydraulic oil that is under high pressure in operation.

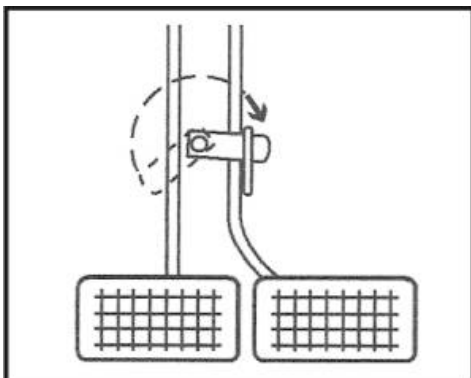
Maximum allowable pressure in the hydraulic system is 205 bar.

Check all hydraulic components and keep them in good condition.

Ensure that hydraulic components - particularly hoses - cannot be damaged by moving parts.

⚠ Caution ⚠

If you use the front loader at low outdoor temperatures, bring the hydraulic system up to working temperature beforehand. To do this, completely extend and retract all hydraulic cylinders several times.



⚠ Danger ⚠

Connect the brake pedals of the tractor together. Never use separated brakes if a front loader is mounted.

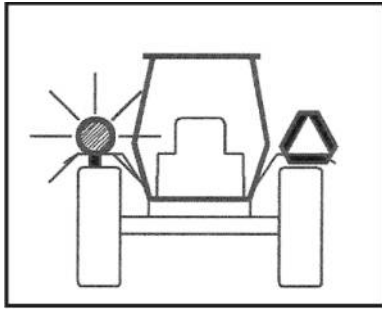
⚠ Danger ⚠

Ensure that the front tyres are inflated to the prescribed pressure for load operation as specified in the operating manual of the tractor.

⚠ Danger ⚠

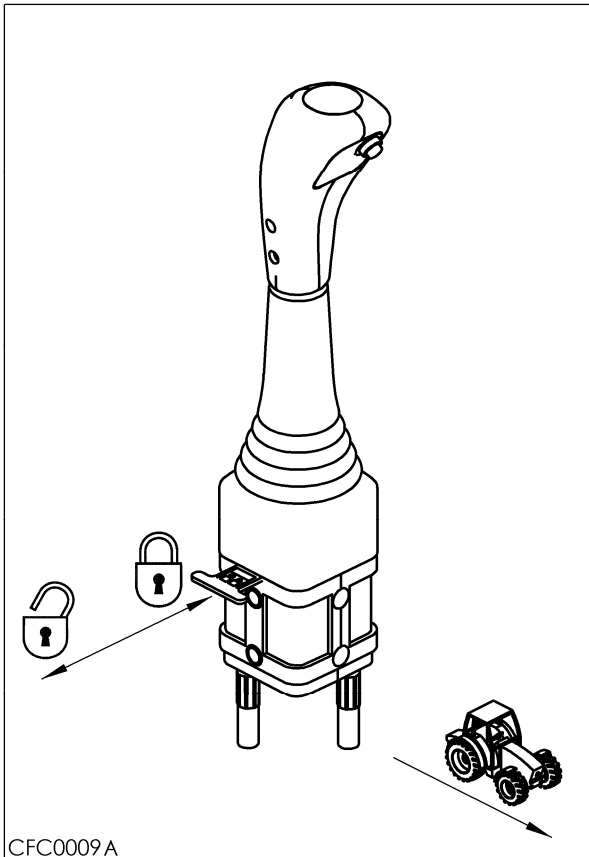
If the tractor has a seat belt, fasten the seat belt when driving.

2.3 Driving on roads



⚠ Danger ⚠

Ensure that the lights and reflectors of the tractor are not covered by the front loader when driving on public roads.



⚠ Danger ⚠

When driving on roads, lock the tractor hydraulics so that the front loader cannot lower.

To do this, for a single-lever control unit, switch the catch lever to lock position.

Switch off Loader function on Tractor Joystick.

If using a front loader with built-in shut-off valve, close the shut-off valve.

⚠ Danger ⚠

Do not drive on public roads with loaded implement.

⚠ Danger ⚠

The implement must be at least 2 metres above the road surface.

Comply with country-specific guidelines for positioning the front loader when driving on roads.

The horizontal distance between the front end of the front loader and the middle of the steering wheel should not be more than 3.5 m. It may be necessary to remove the implement.

⚠ Danger ⚠

If necessary, reduce the lift height when driving under bridges or overhead lines.

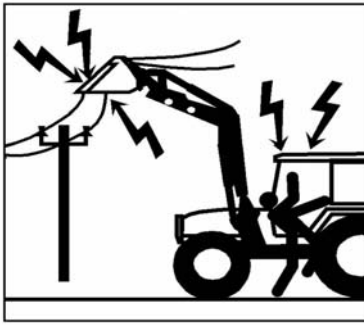
⚠ Danger ⚠

Consider the greater length and higher weight of the tractor when driving on curves and for braking manoeuvres.

⚠ Danger ⚠

The maximum speed with front loader and attached implement is 25 km/h for road driving and 10 km/h for load work.

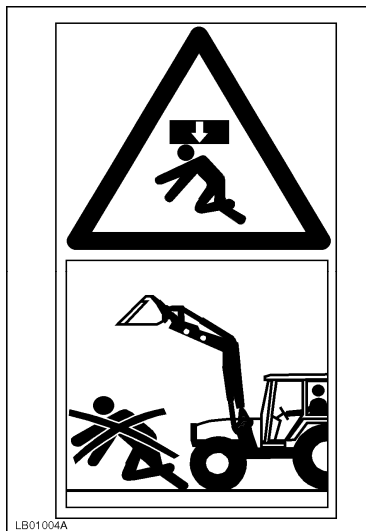
2.4 When working



⚠ Danger ⚠

Familiarise yourself with the work area and the terrain. Keep a safe distance away from electrical lines.

Only execute front loader work if the visibility conditions are adequate. Ensure that the work area is adequately illuminated. Keep the cab windshield clean.



⚠ Danger ⚠

Do not position yourself in the vicinity of raised front loaders or in the vicinity of an unsecured load.

Ensure that no one is positioned in the danger zone of the front loader.



⚠ Danger ⚠

Constantly observe your work area. Ensure that people or animals do not obstruct the work area.



⚠ Danger ⚠

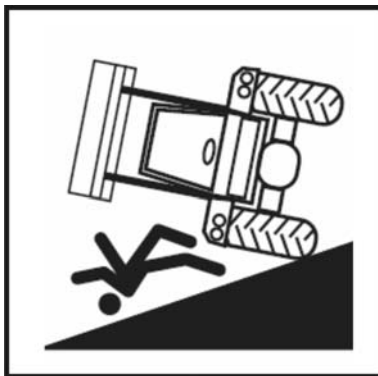
Only control the machine from the driver's seat.



⚠ Danger ⚠
Do not lift or carry persons.

⚠ Danger ⚠
Use extreme caution when working on a slope. The danger exists that you and the tractor will tip over.
Do not drive transverse to the slope with a raised load.
Push the load material together downhill. Scoop up the material in the depression at the bottom of the incline.

Extend the wheel track of the tractor.
Even with an adjustable axle do not work under the normal track width.



⚠ Danger ⚠
Use extreme caution when working on a slope. Raised loads can fall on the slopes!
Check at work on a slope, the tool inclination.
Reduce the load and lower the tool on a slope.

⚠ Danger ⚠
When driving on curves reduce the speed and lower the load.

⚠ Danger ⚠
Do not drive the tractor in a jerky manner if the front loader is in the highest load position and fully loaded.

⚠ Danger ⚠
Raised loads, in particular bales and loads on pallets, can fall on you.

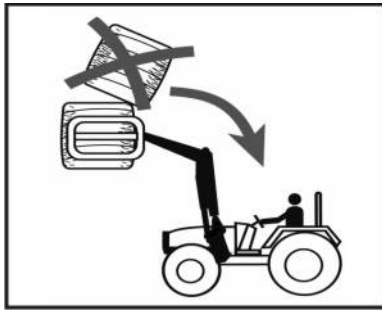
Care for sure hold of the load!

Additional protection is only possible through the use of working tools which are designed to prevent the falling of loads on the driver's seat. The roll-over protection device protects only partially against falling loads.

The lifting and stacking of large items, as well as their storage or removal from storage (bails, wooden logs, boxes, etc.) is dangerous. Never lift the front loader above the height of the linkage pivoting point with tractors, which don't have an enclosed driver cabin or a 4-column ROPS (roll-over protective structure) when carrying out this type of work!
Adhere to the country-specific accident prevention regulations!

Install additional protective devices on tractors without any enclosed driver cabin or 4-column ROPS.



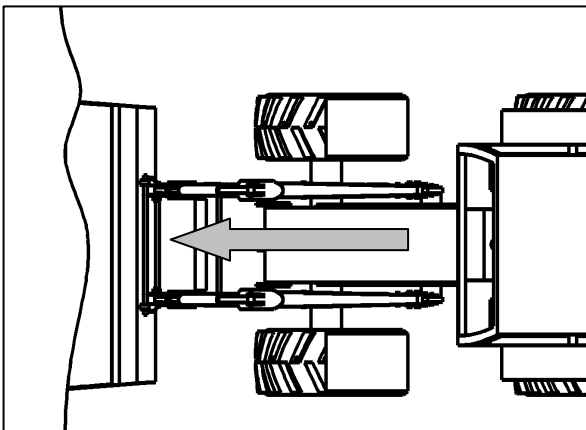


⚠ Danger ⚠
 Never stack multiple loads (bales, pallets) on top of each other. The upper loads can fall on you.

⚠ Danger ⚠
 Check the implement tilt when lifting the front loader.
 Raised loads can fall on you if you scoop the implement too far.



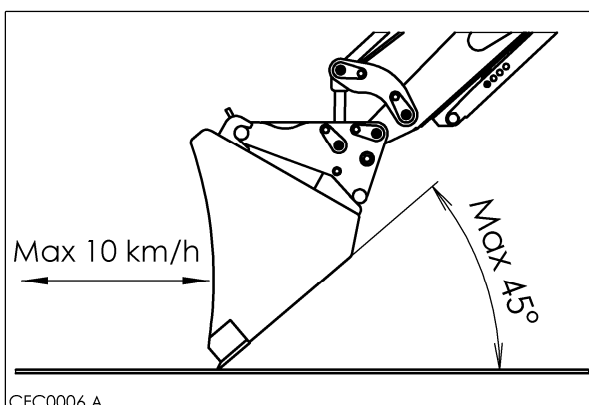
⚠ Danger ⚠
 During lifting with H Frontloaders the tool angle increase and the load can fall on you.
 You must compensate for the angle increase by dumping the tool.
 Preferably use P front loader on tractors without cab.
 Here, the risk of falling loads is lower, as when lifting the loader, the tool's angle remains constant and the scooping is limited.



⚠ Danger ⚠
 When driving on curves reduce the speed and lower the load.

⚠ Danger ⚠
 Do not drive the tractor in a jerky manner if the front loader is in the highest load position and fully loaded.

⚠ Caution ⚠
 Drive straight into the load material. Do not execute any steering movement in this process.

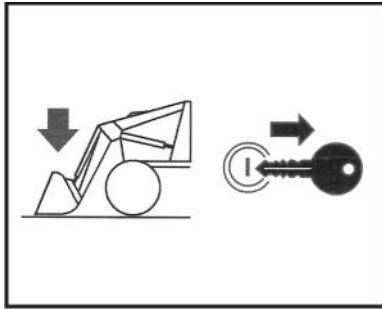


⚠ Danger ⚠
 When levelling do not drive faster than 10 km/h. In this process tilt the implement a maximum of 45°.

⚠ Caution ⚠
 Switch off the front axle suspension of the tractor.

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2.5 After work



⚠ Danger ⚠

The following applies when you leave the driver seat:

- Lower the front loader onto the ground.
- Arrest the tractor hydraulics
- Engage the parking brake
- Move the gear shift into park position
- Turn off the engine
- Remove the key

⚠ Danger ⚠

Comply with the following when removing the front loader:

Set the front loader only with attached tool, at least 70 kilos heavy tool, on a solid surface.

Ensure that the support legs are securely positioned.

Only the operator should attach and remove the front loader and the implements.

2.6 Maintenance



▲ Danger ▲

Before starting maintenance work, put on your protective equipment (protective coveralls, gloves, protective goggles, safety footwear).

▲ Danger ▲

Lower the front loader onto the ground. Depressurize the hydraulics and the hydraulic connections.

Leave the front loader coupled to the tractor. Let the machine temperature cool to below 55°C. Ensure good lighting.

▲ Danger ▲

NEVER stand between the front of the tractor and the transverse pipe of the front loader.



Never carry out any repair or maintenance works if the front loader is lifted.

Lower the front loader onto the ground. For repair or maintenance, detach the front loader from the tractor.

▲ Danger ▲

Never search for leaks with your fingers. Use suitable aids (a piece of wood or cardboard). Hydraulic oil escaping under high pressure can penetrate the skin and cause severe injury. If injured, consult a physician immediately.



▲ Danger ▲

Hydraulic system with high pressure accumulator when equipped with "Comfort Drive".

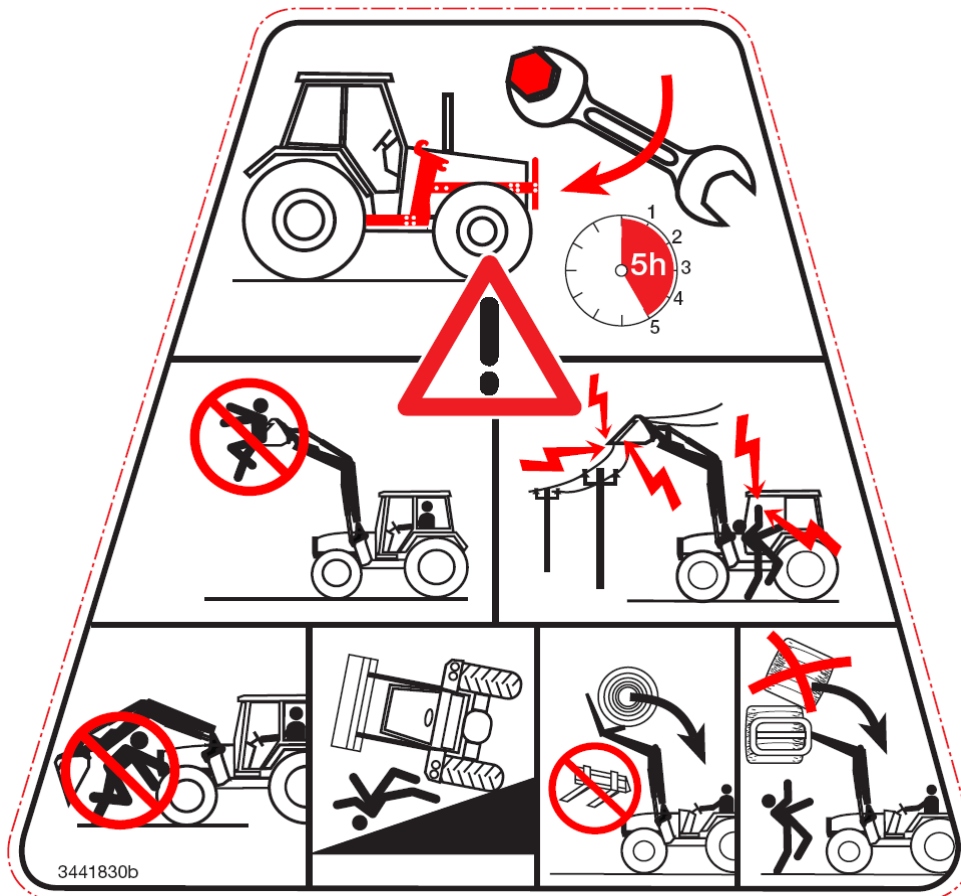
Relieve pressure before working: Drain with lowered Frontloader by activating "LOWER" function and open shut-off-valve.



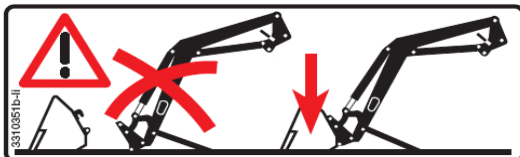
Order no.: 1432670

2.7 Safety stickers - meaning, order numbers, placement

If a sticker should get damaged or lost, obtain a replacement without delay.

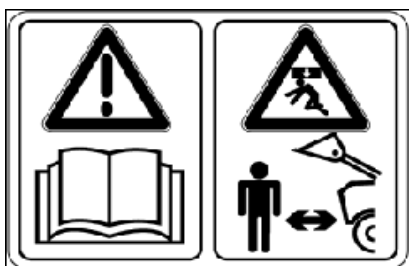


Order no.: 3441830



Order no.: 3310350

⚠ Danger ⚠
Only park the front loader with attached implement.



Order no.: 3431550

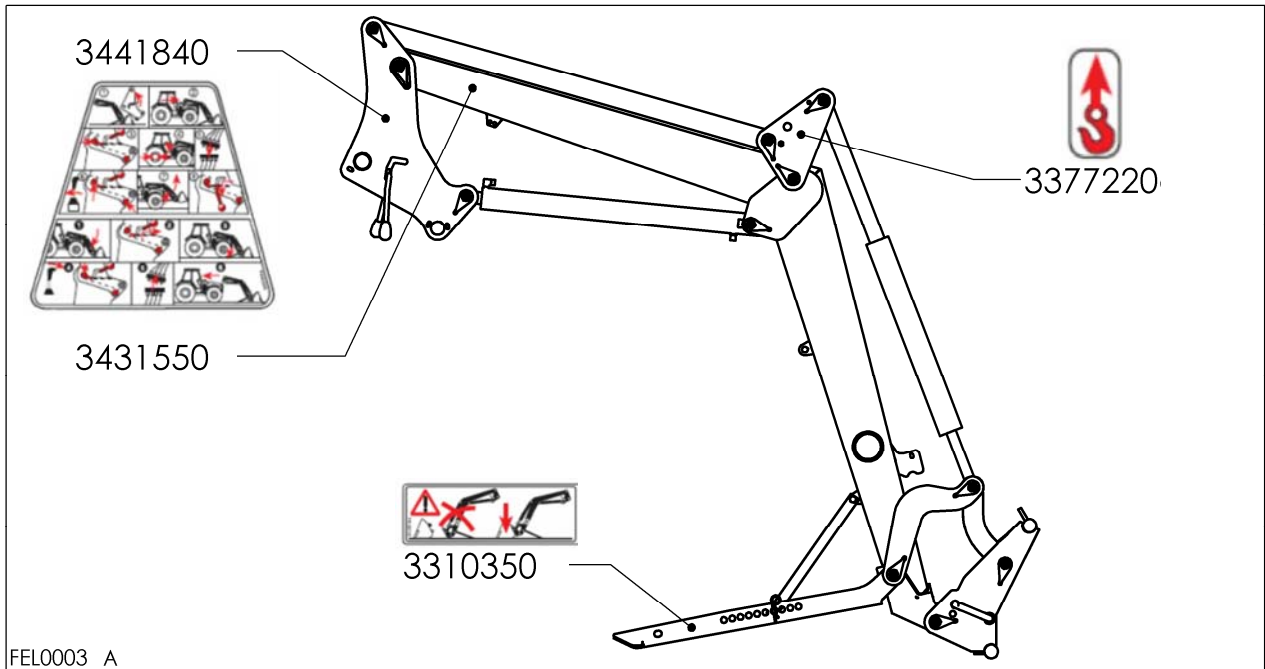
⚠ Danger ⚠
Ensure that no one is positioned in the work area of the front loader.



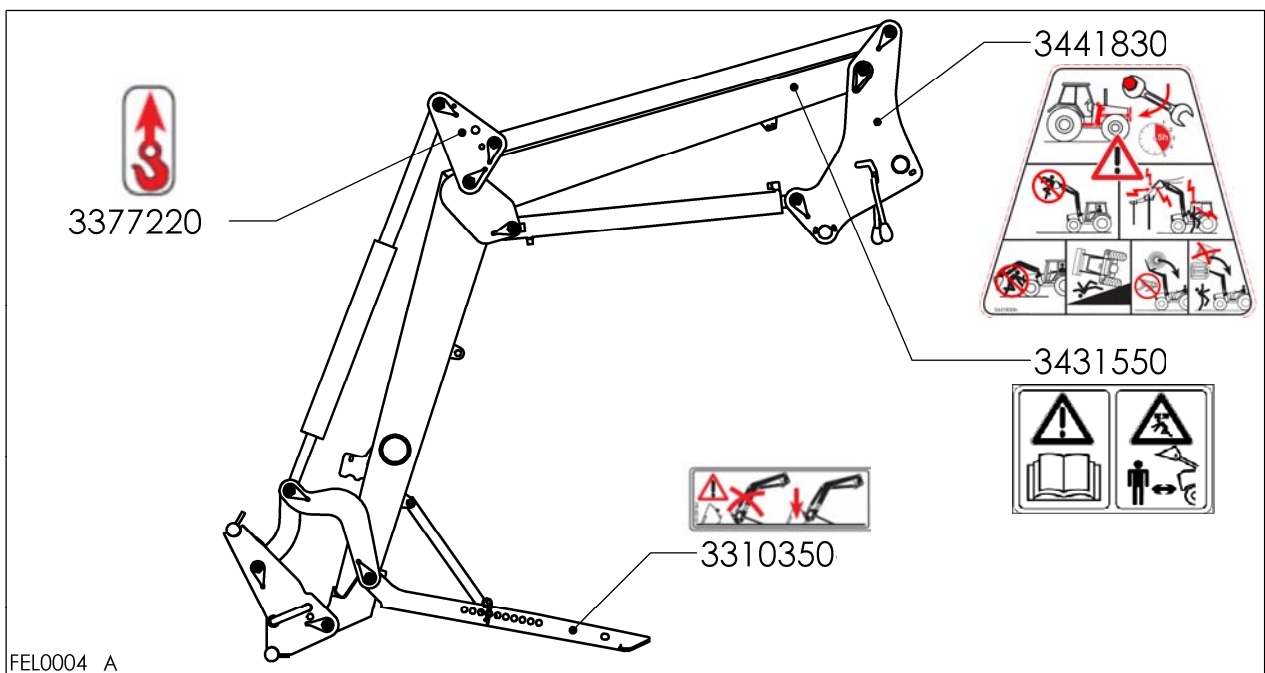
Order no.: 3377220

Markings for the lift points.
Lugs for lifting the front loader without implement.

Right side of the front loader



Left side of the front loader



▲ Danger ▲
 Lower the front loader onto the ground, before switching on the Comfort Drive. Otherwise the front loader will lower itself uncontrolled.

Order no.: 3533120

3 Frontloader

Comply with the safety instructions in section 2 for all activities with the front loader.

3.1 Preparations for use

The front loader is delivered completely assembled and ready for connection.

▲ Danger ▲

Hydraulic lines and threaded connections that hydraulically connect the front loader and tractor, are loosely pre-mounted in the factory.

After final routing of the lines firmly tighten all threaded connections. After 5 operating hours re-tighten all threaded unions.

The required tightening torques are specified in section 6.3 on page 31.

▲ Caution ▲

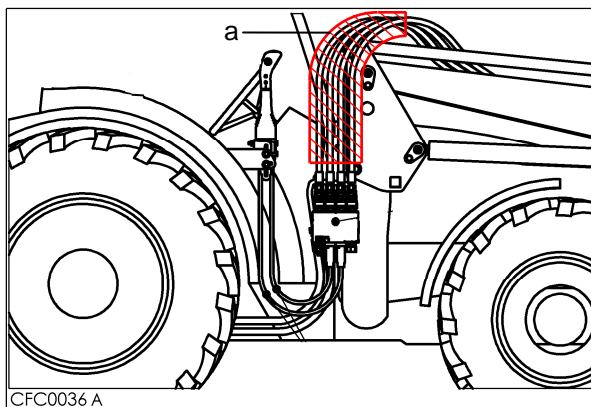
If equipment is installed on the tractor that could collide with the front loader or the implement, then remove this equipment.

▲ Caution ▲

After attaching the front loader check the fender position and the left/right steering lock. There must be clearance of at least 20 mm between the add-on part + front loader and front tyres + fenders.

You can enlarge the clearance with the following measures:

- Changing the fender position.
- Reducing the left/right steering lock.
- Installing an oscillation restriction mechanism for the front axle.



▲ Danger ▲

Mount with tractors without closed operator's cab splash hoses (a)

STOLL-order-no.: 3527720.

3.2 Ballasting the tractor

▲ Danger ▲

Always use a counterweight in the rear of the tractor for front loader work.

This is necessary for operational safety reasons and road safety reasons.

Ensure that steerability remains intact and that the minimum braking distance is also ensured for front loader work (as specified in the German road traffic regulations (StVZO)).

Remove the front weights for front loader work.

However, to exclude the possibility of tractor overload, the rear weight should not be selected too heavy. Comply with the values specified in the table.

Tractor power		Frontloader Size	Maximum ballast weight / kg (1.1m behind the rear axle)
KW	HP		
35 – 50	45 – 65	650	400 - 600
40 – 60	55 – 80	750	
50 – 75	65 – 100	850	600 - 800
55 - 80	75 - 110	950	

▲ Danger ▲

At least 20% of the total weight (tractor, front loader, implement, load, and counterweight) must be on the rear axle, to ensure stability.

Use the equation below to calculate stability. If the equation is satisfied, stability is achieved.

$$\frac{G \cdot L2 + M(L1 + L2) - N \cdot b}{L2} \geq \frac{P + N + M}{5} \quad (20\%)$$

P...mass of tractor and front loader without counterweight and without implement

G...rear axle load of the tractor with front loader without counterweight and without implement

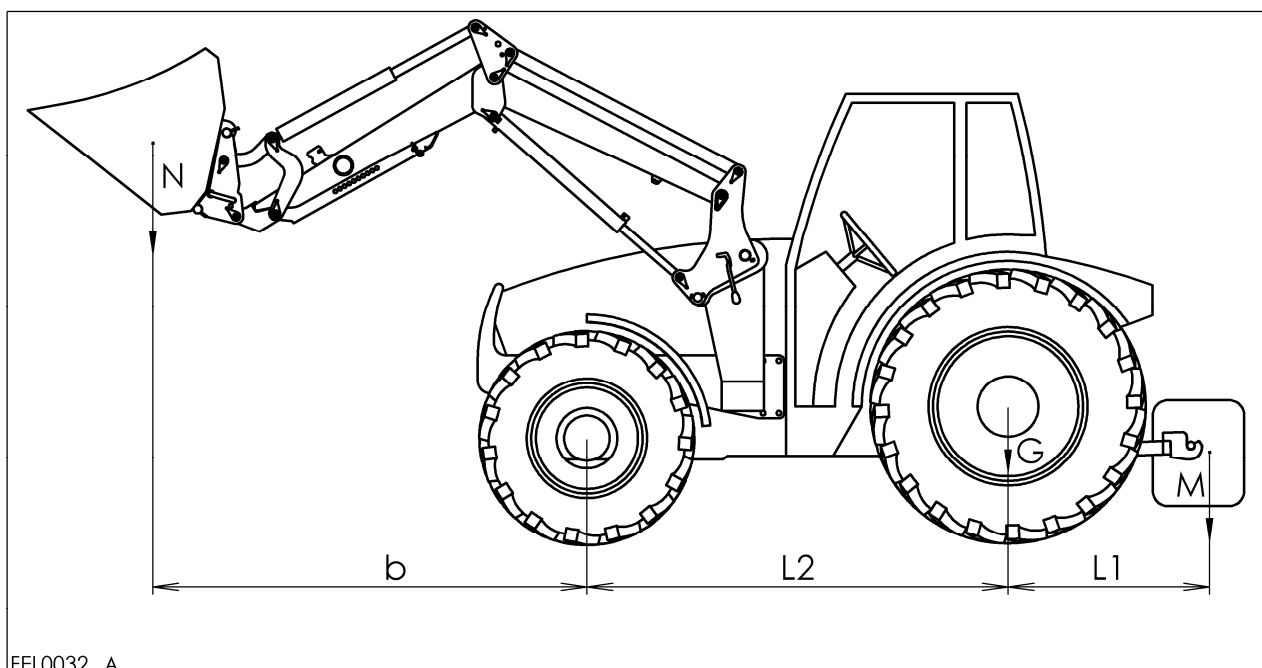
M...mass of the counterweight

N...mass of the maximum permissible load including the implement

b...horizontal distance between front axle and centre of gravity of the load

L1...horizontal distance between rear axle and centre of gravity of the counterweight

L2...wheelbase of the tractor



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3.3 Operation of the front loader

The front loader is operated via two supplemental hydraulic control devices of the tractor. Four hydraulic lines connect the tractor hydraulics directly with the front loader.

Please identify the couplings in such a way that the float position follows "Lower implement" in the operating direction when directly connected with additional controllers by using hose connections.

Shut the front lifting equipment and any coupled implement off before starting work by closing the shut-off valve or disconnecting the hose couplings.

▲ Gefahr ▲

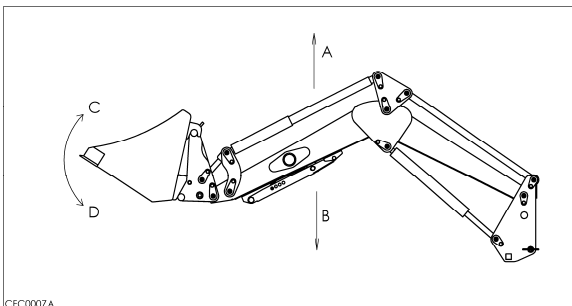
The front loader must not be controlled by any sequential programme. Adhere to the tractor manufacturer's instruction manual!

▲ Gefahr ▲

The used hydraulic control devices must never be operable from outside the driver cabin, in particular not from the external controls of the front linkage.

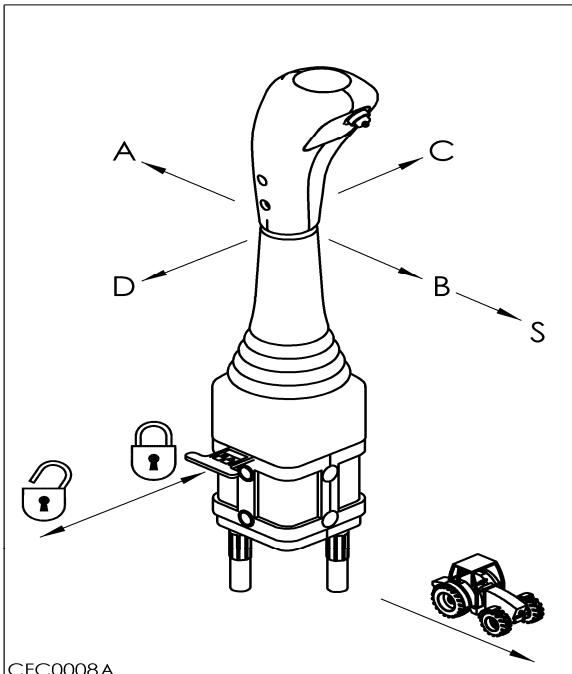
If this cannot be guaranteed, the additional controls have to be reprogrammed or permanently disabled.

Installation is described in the tractor-specific installation instructions.



CFC0007A

- A...front loader - lifting
- B...Front loader - lowering
- C...Implement - scooping
- D...Implement - dumping
- S...Front loader - float position



CFC0008A

Lifting:

Pull the operating lever back to lift the front loader (A).

Lowering:

Move the operating lever forward to lower the front loader (B).

Scooping:

Move the operating lever to the left to scoop the implement (C).

Dumping:

Move the operating lever to the right to dump the implement (D).

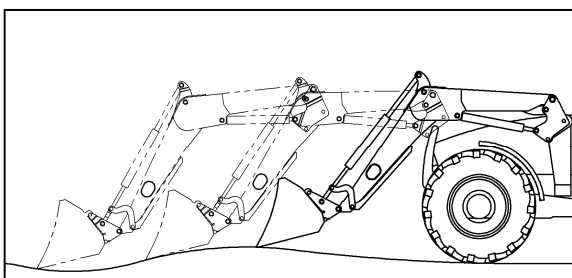
Floating position:

If you push the operating lever all the way forward, the operating lever will lock in float position (S).

In float position the front loader lowers to ground level.

When driving with float position the front loader adjusts to ground level.

Deactivate float position by pulling the operating lever back into neutral position.



3.3.1 Operation via tractor hydraulics

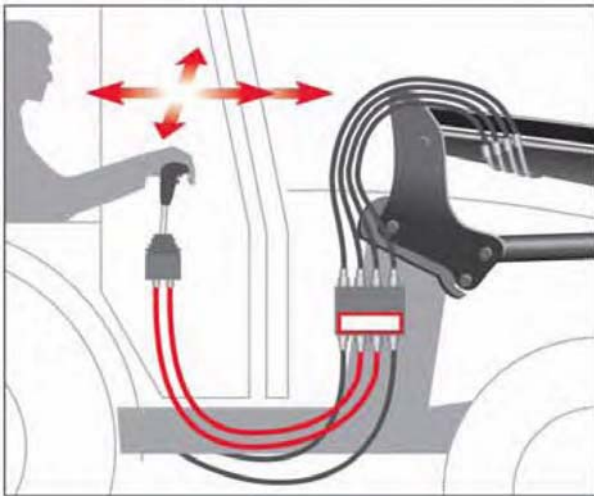
The front loader is operated via two supplemental hydraulic control devices of the tractor. Four hydraulic lines connect the tractor hydraulics directly with the front loader.

Almost all tractors with supplemental electro-hydraulic control units have a joystick located to the right of the driver seat. This joystick enables convenient loader guidance.

The joystick may not engage in deflected position (exempt float), otherwise the locking have to be cancelled!

Installation is described in the tractor-specific installation instructions.

3.3.2 Operating the single-lever control unit (EHS)

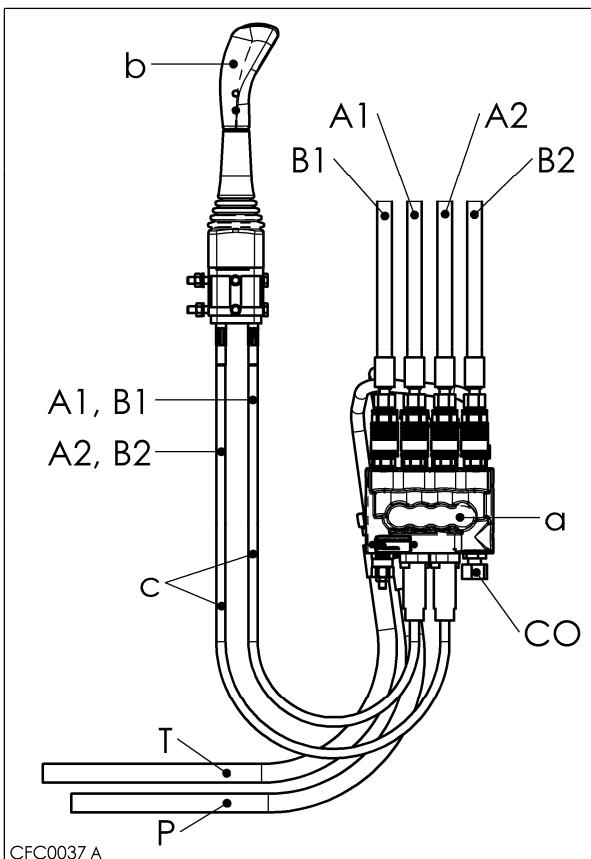


The tractor is equipped with a mechanical control block (a) on the add-on part. The operating lever (b) is installed in the tractor cab.

The operating lever is connected to the control block via two Bowden cables (c).

The EHS enables easy, precise, and safe loader guidance.

Installation of the EHS is described in the installation instructions A 874 (order no.:2360630).



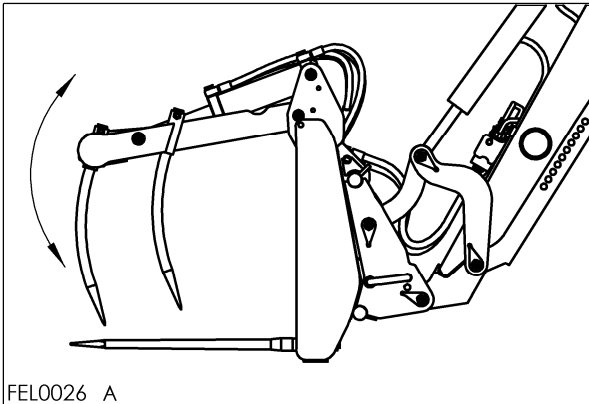
The following table assigns the hydraulic wires.

Function	Marking	
	Mark	Plug-in connector
Lifting	A1	yellow
Lowering	B1	black
Scooping	A2	blue
Dumping	B2	red
pump	P	
tank	T	
Unload pressure point	CO	

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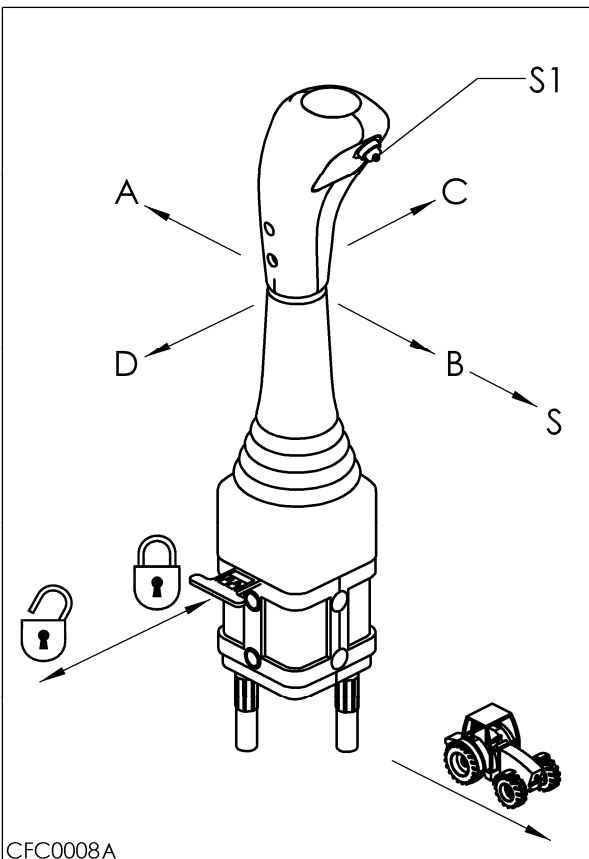
3.4 Supplemental operating functions

3.4.1 3rd Control circuit



The 3rd control circuit is additional double action oil circuit on the front loader. With this circuit you control the additional hydraulic function of the implement.

Implements with additional hydraulic functions are silage grippers, bale grippers.



The supplemental function is activated via the implement activation (scooping, dumping) On the operating lever press button S1 and simultaneously move the control lever to the right or left.

This de-activates implement activation. Release the button to operate the implement again.

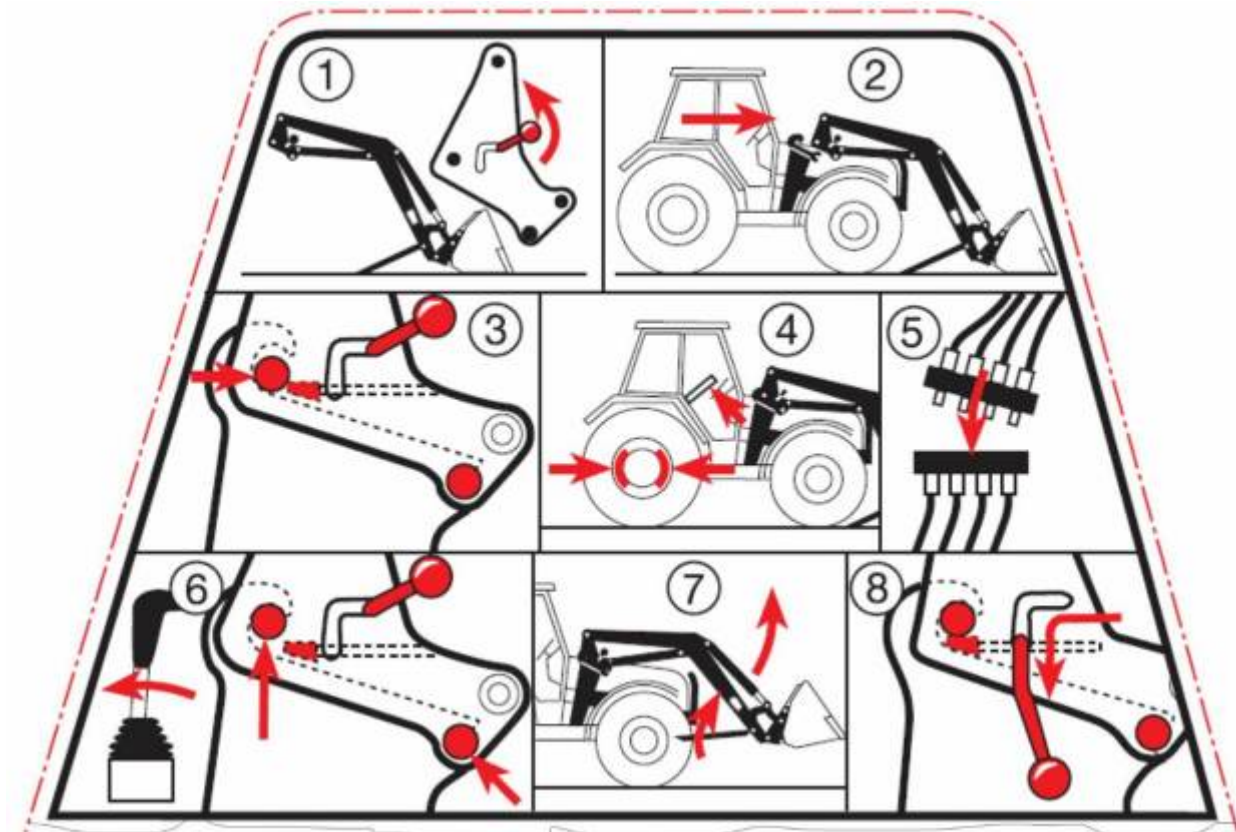
3.5 Attachment and removal of the front loader

The front loader is connected to the add-on parts bolted onto the tractor via a wedge locking mechanism. It takes one person about 2 to 4 minutes to attach or remove the front loader.

Attachment:

Only the operator should attach and detach the front loader.

The sticker shown below is affixed to the outside of the right column. Replace the sticker if it is damaged or lost.

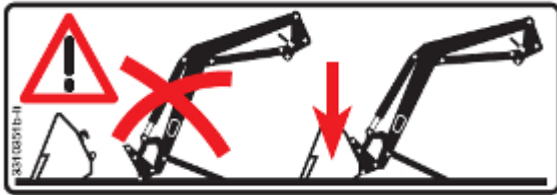


Order no.: 3441840

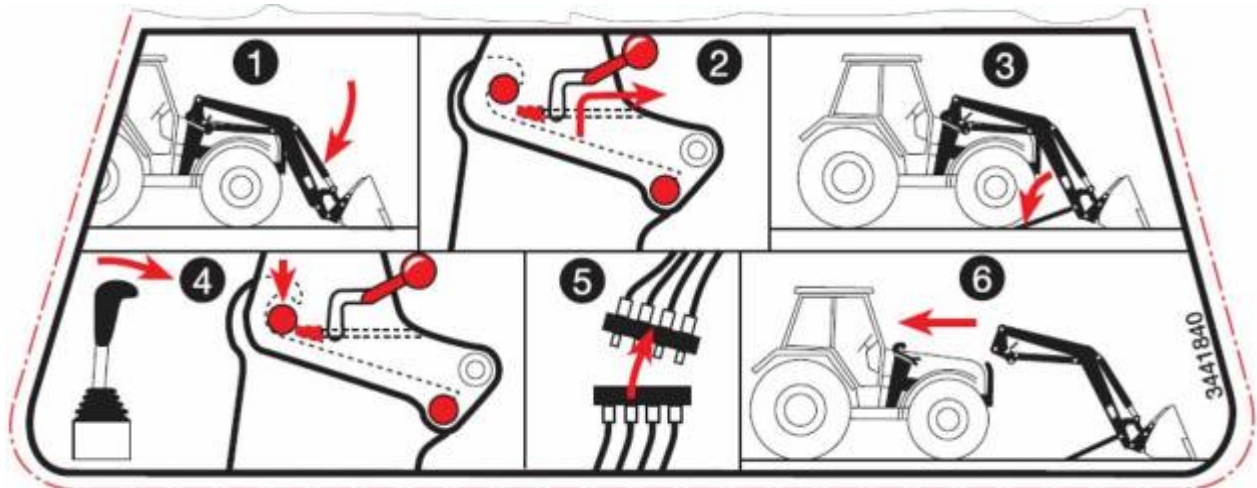
1. Loosen the clamping lever.
2. Move tractor forward...
3. ...until both locking pins contact the slide rails and the catch hooks.
4. Engage the parking brake and switch off the engine.
5. Depressurize the hydraulic system and connect hydraulic lines and electrical cables.
6. Lift the front loader until the locking pins of the front loader are arrested in the catch hooks.
Attention! Do not activate the implement cylinder until the front loader is arrested in place.
7. Lift the front loader off the ground and swing in the support legs.
8. Move the clamping lever downward in arrest position.

After attaching the hydraulic cylinder, vent the hydraulics by lifting and lowering the front loader several times.

Removal:

**▲ Danger ▲**

Set the Frontloader only with attached, at least 70 kg heavy tools and on solid ground. Otherwise, the Frontloader could tip over. Ensure that you park on a stable substrate.

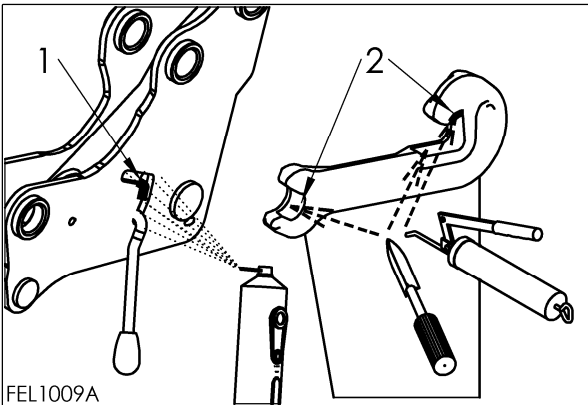


1. Engage the parking brake and lower the front loader onto the ground.
2. Unlock clamping lever.
3. Swing the support legs downward.
4. Lower the front loader further until the rear locking pins rest on the slide rails.
5. Release oil pressure in hydraulic systems, disconnect the hydraulic lines and electrical cable and install protective cap.
6. Drive the tractor in reverse out of the front loader.

Comment

The clamping lever can be more easily loosened if the front loader is loaded in the implement and slightly lifted, and the slide rail is well greased.

3.5.1 Adjusting the locking mechanism

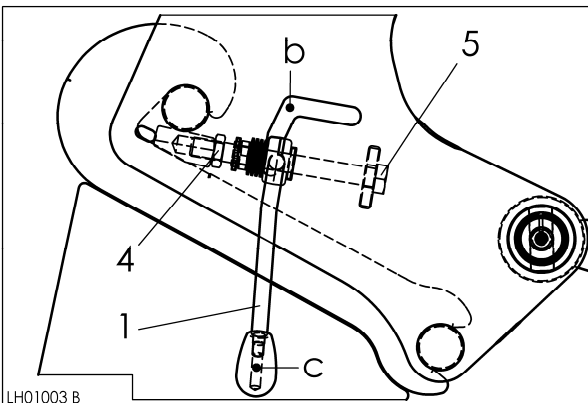


▲ Danger ▲

You must check and correct the adjustment of the locking mechanism when attaching and removing.

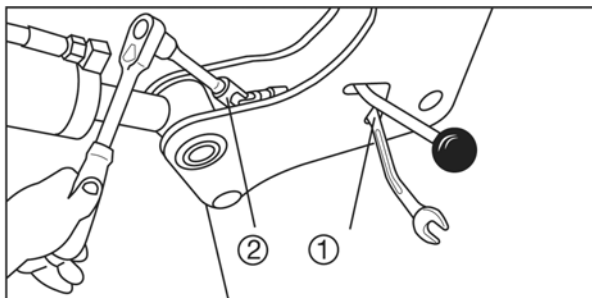
If the front loader remains on the tractor for an extended period of time, then the locking mechanism must be checked and corrected from time to time.

Clean the hook (2). Lubricate the lock (1) and the hook (2).



After first mounting adjust the locking mechanism as follows:

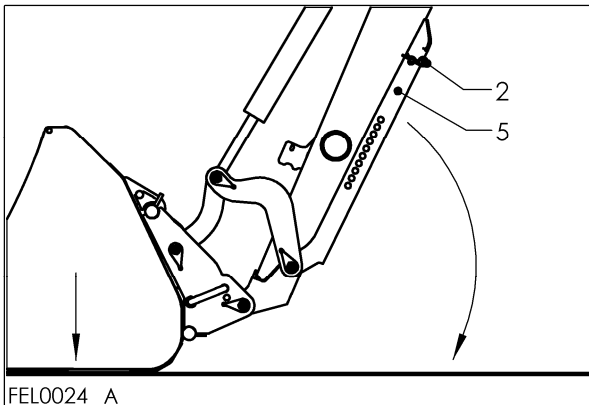
- Loosen nut (4).
- Adjust bolt (5) so that the clamping process of the clamping lever starts in position (b) and the lever is noticeably tensioned in position (c).
- Counter nut (4).



During the adjustment process leave the open-jaw spanner (1) on the nut.

Use a socket spanner with joint (2) to adjust the bolt.

3.5.2 Swinging the support legs in and out



Swinging out:

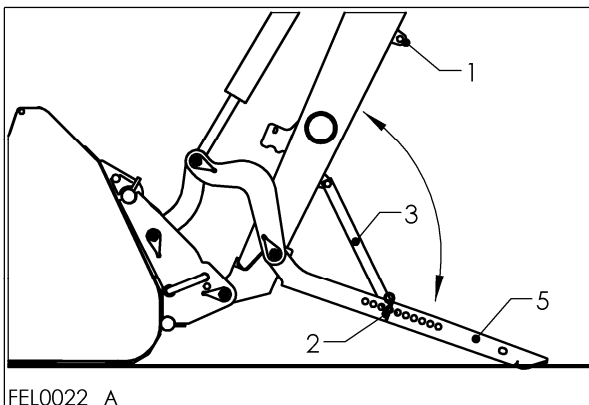
▲ Danger ▲
Ensure that you park on a stable substrate.

Lower the front loader onto the ground without pressure.

Remove the axle (2) from the upper part of the stand (5).

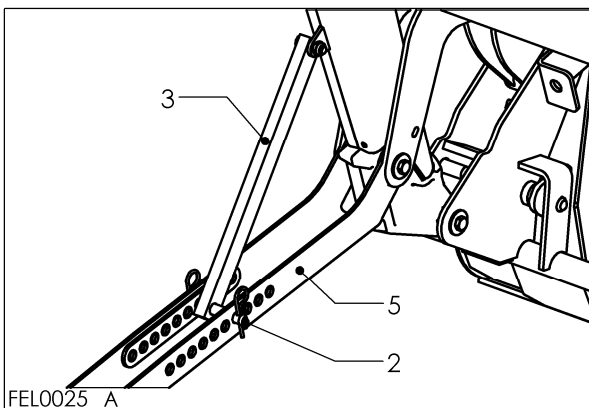
Swing the support leg down until it reaches the ground.

Position the lock bar (3) close to the stand. Fit the axle (2) in order to lock the stand with the bar. Lock the stand in order that it touches lightly the ground.



Swinging in:

Remove the bolt (2). Lift the lock bar and the stand. Lay the stand to the arm in order to lock it and fit the axle in the hook (1).

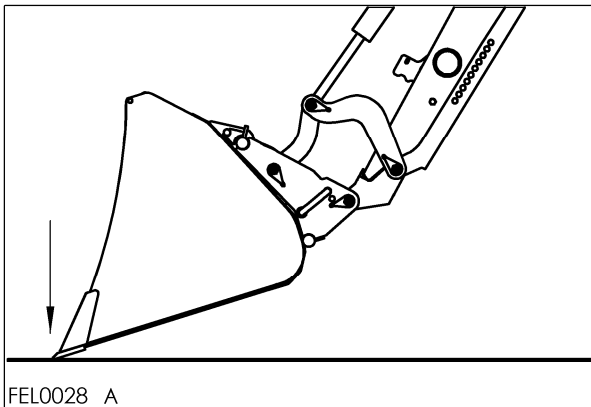


▲ Danger ▲

Danger of crushing injury when swinging in the support leg.

Do not grasp between support leg and swing bar.

3.6 Attachment and removal of the implements



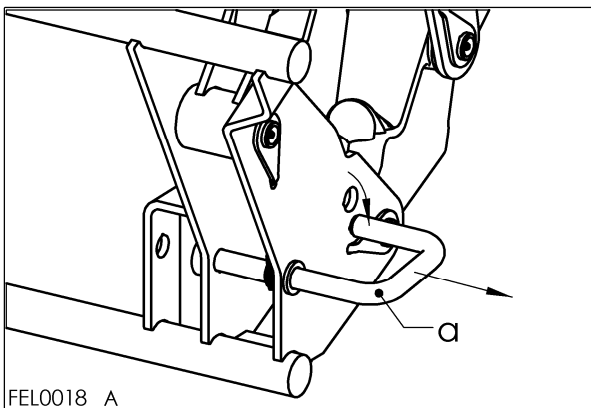
Only the operator should attach and remove the implements.

▲ Danger ▲

At each use, check that the tool's locking system is lock.

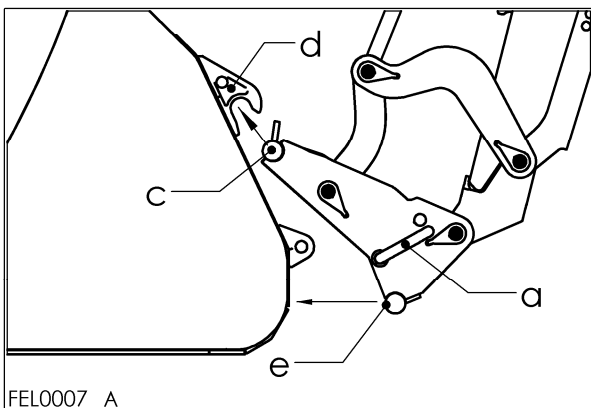
Press the tip of the implement onto the ground. This checks the safe fastening of the implement on the front loader.

3.6.1 Euro Change frame



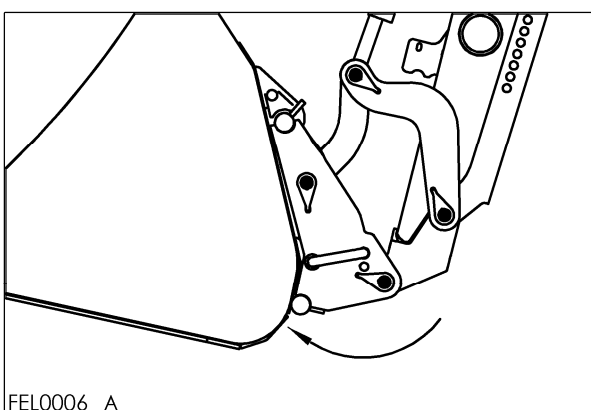
Attachment

Take out the locking axles (a) of every sides of the tool's frame and turn them to the down. This opens the implement locking mechanism.

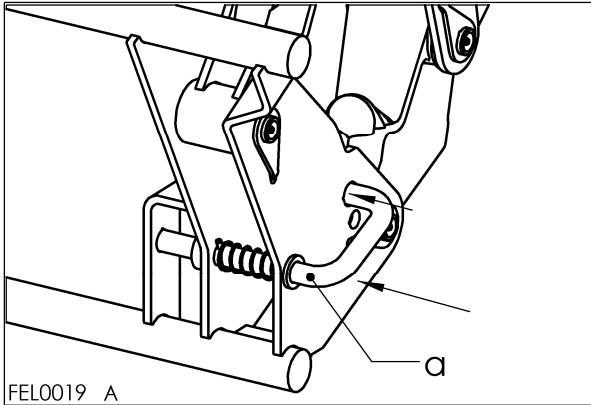


Bend the tool up to 30 degrees. With the front loader attached drive straight onto the implement.

Drive with the upper shaft of the change frame (c) under the hooks of the implement (d).



Lift and scoop the implement until it rests on the change frame (e).



Turn the locking axes (a) of every sides of the tool's frame to the top in order to lock the tool. Now, the tool's locking system is locked.

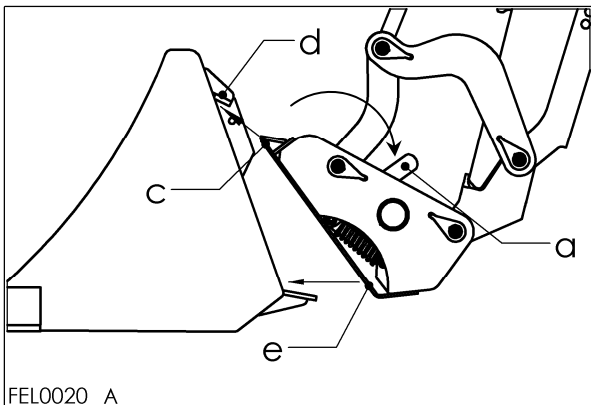
The implement is now firmly connected with the front loader.

Removal

Implements are removed in the reverse sequence.



3.6.2 Skid Steer change frame



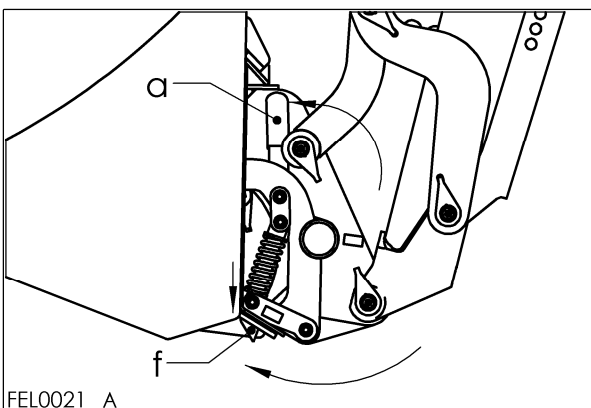
Attachmen

Turn the lever (a) of every sides of the tool's frame to the back until the mark. This opens the implement locking mechanism.

Bend the tool up to 30 degrees. With the front loader attached drive straight onto the implement.

Drive with the upper shaft of the change frame (c) under the hooks of the implement (d).

Lift and scoop the implement until it rests on the change frame (e).



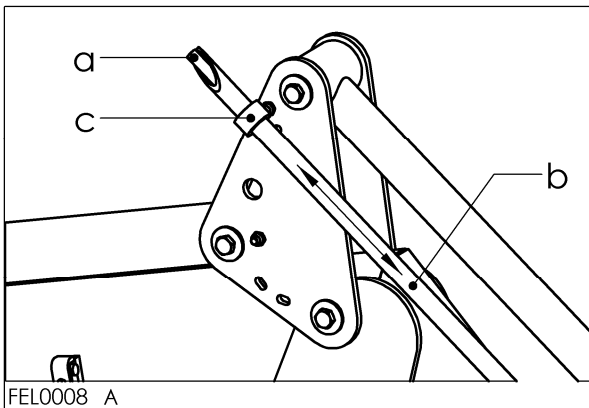
Turn the lever (a) of every sides of the tool's frame to the front until the mark. So, the tool is lock. Now, the tool's locking system is locked.

The implement is now firmly connected with the front loader.

Removal

Implements are removed in the reverse sequence.

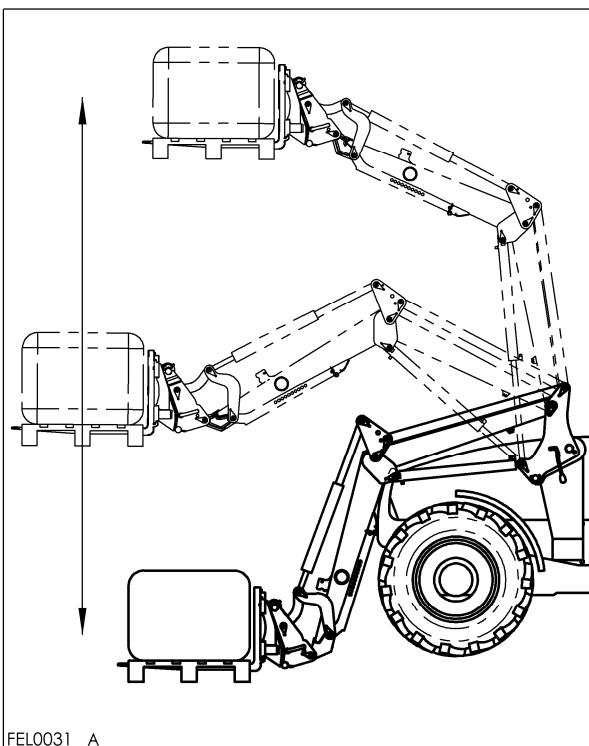
3.7 Level display



Check the horizontal implement position via the level indicator.

Place the implement in a horizontal position. Unscrew the ring (c). Change the position of the tube (b) in order that the top of it and of the shaft coincide. Screw the ring.

3.8 Mechanical parallel motion (P)



When lifting and lowering the front loader the implement is guided parallel through the guide linkage. This keeps the incline of the implement constant when lifting and lowering.

The mechanical parallel guide is helpful for all load tasks. This function is particularly important when loading pallets and for stacking bales.

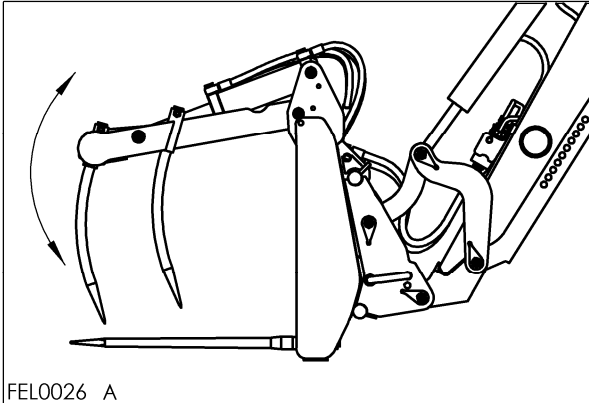
Comment

The parallel guidance is particularly effective with an implement that is horizontal or scooped. It does not function with an implement that is tilted out.

Check the horizontal implement position via the level indicator (Section 3.7).

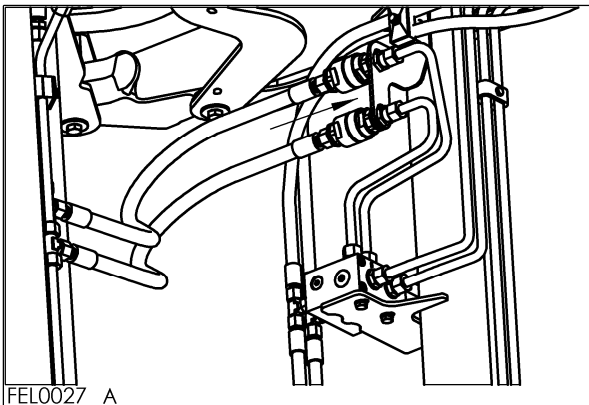
4 Supplemental equipment

4.1 3rd Control circuit



The 3rd control circuit is additional double action oil circuit on the front loader. With this circuit you control the additional hydraulic function of the implement.

Implements with additional hydraulic functions, are silage grippers, bale grippers and bale lifters.



The hydraulic couplings for the 3rd control circuit are on the cross tube.

Engage the parking brake and turn the engine off.
Depressurize the hydraulic system.
Remove the plastic cap of the hydraulic block.
Clean connections.

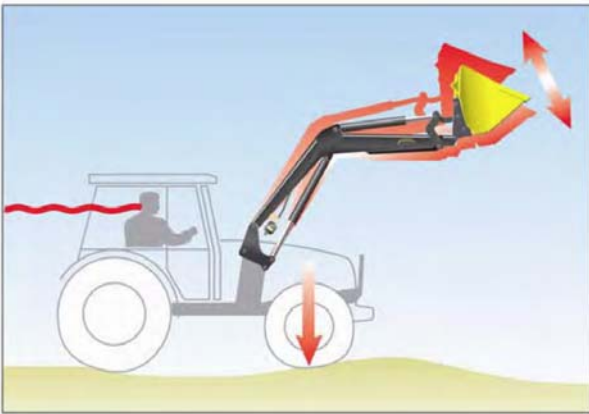
Connect the hydraulic lines.

▲ Caution ▲

For all coupling processes depressurize the hydraulic system. Otherwise seals can be damaged. Prior to coupling clean the coupling connectors and muffs.

Operation of the 3rd control circuit is described in section 3.4.1.

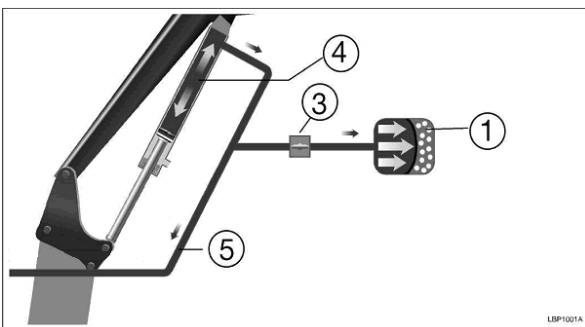
4.2 Comfort – Drive



Comfort Drive is a gas-hydraulic vibration damper. It damps the impact stress originating in the front loader.

Use Comfort Drive for road travel and for longer drives on poorer stretches.

By doing so you protect yourself, the tractor and the front loader from impact load.

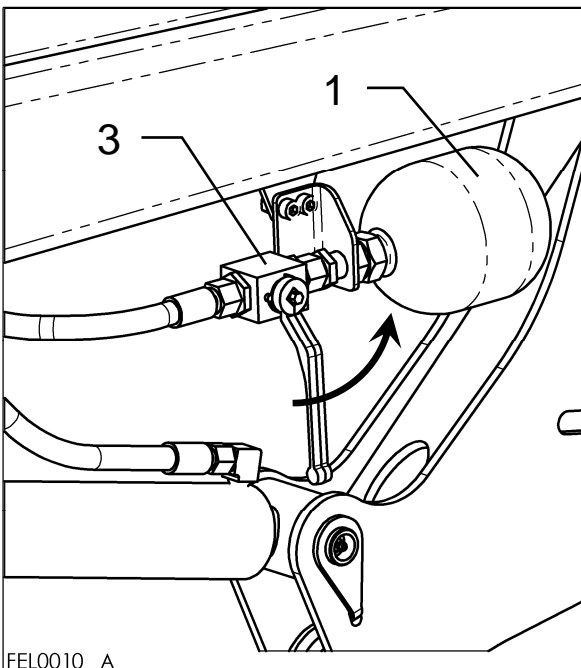


Comfort Drive - mode of operation

- 1 Gas pressure in the piston-type accumulator
- 3 Shut-off valve open
- 4 Pressure fluctuations due to road travel
- 5 to the tractor control valve

Lower the front loader onto the ground.

Activate Comfort Drive by opening the shut-off valve (3).



⚠ Danger ⚠

Lower the front loader onto the ground, before switching on the Comfort Drive. Otherwise the front loader will lower itself uncontrolled.

⚠ Caution ⚠

Switch the Comfort Drive off for difficult load work (e.g. excavating or working with the pallet fork). This prevents overload of the Comfort Drive.

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5 Implements

The operating manual for the different implements is not a component of this operating manual.

▲ Danger ▲

Only use implements specified by STOLL.

With other tools in raise function the tools can dump unintentional as a result of gravity point lying in front.

Incorrectly designed implements from other manufacturers can damage the front loader.

▲ Danger ▲

Only use implement sizes that are approved for the size of your front loader. Otherwise tractor, front loader, or implement can be damaged.

Ask your dealer about the suitable implement size.

▲ Danger ▲

Follow the safety instructions in the manual of the tool.

▲ Caution ▲

Work only with mounted and locked tool.

6 Maintenance

For maintenance work follow the instructions provided in the safety information in section 2.6 on page 13.

The owner or the user of the front loader is responsible for regular maintenance.

Clean the front loader before performing maintenance tasks. This applies particularly when maintaining the hydraulic system.

▲ Danger ▲

Only use spare parts that are approved by the manufacturer.

The maintenance intervals are specified in effective operating hours of the tractor with front loader.

The maintenance intervals apply for normal work conditions. Shorten the maintenance intervals if there are difficult work conditions.

6.1 Hydraulic system

The instructions and guidelines provided for the tractor hydraulics apply for maintenance of the hydraulic system. Gear the maintenance intervals up to those specified for comparable components of the tractor.

▲ Danger ▲

Ensure cleanliness when working on the hydraulic system. Clean hydraulic oil is required for trouble-free function.

▲ Danger ▲

Hydraulic system with high pressure accumulator when equipped with "Comfort Drive".

Relieve pressure before working: Drain with lowered Frontloader by activating "LOWER" function and open shut-off-valve. **Never open accumulator, do not refill gas!**

Let exchange faulty pressure accumulator by your dealer.

Operate the shut-off valve approx. once per month in order to avoid stiffness.

▲ Danger ▲

**Check hydraulic lines and connections for wear and leaks.
Replace worn, outdated or leaking hydraulic lines.**

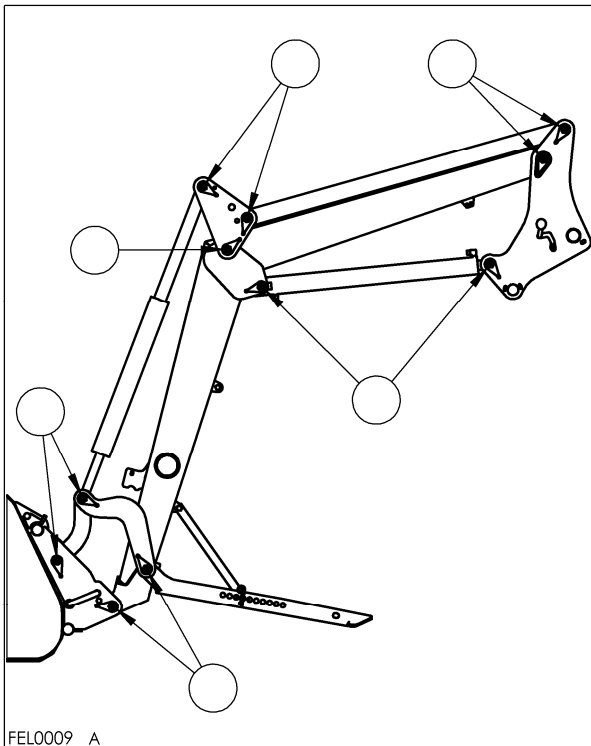
▲ Danger ▲

Repair or replace leaky hydraulic cylinders.

You will need special tools to repair the hydraulic cylinders.

Have defective cylinders repaired by your authorized dealer.

6.2 Bearing points

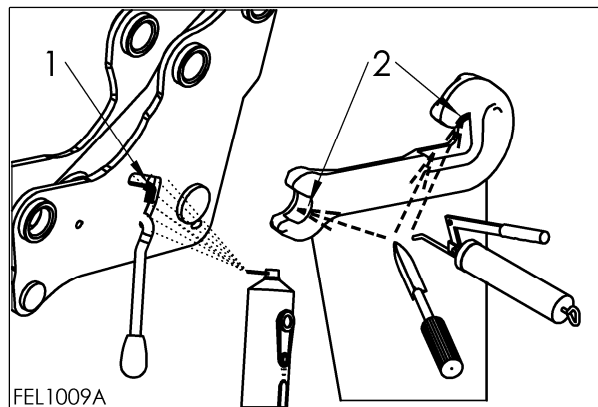


▲ Caution ▲

Lubricate all bearing points after every 20 operating hours.
Also lubricate the bearing points on the implements.

Prior to lubricating, offload the bearing points by lowering the implement to the ground.

Grease the locking system (1) and the hooks (2) every 100 work hours.



6.3 Threaded connections

▲ Danger ▲

Re-tighten all threaded connections after 5 operating hours.

▲ Danger ▲

Check the threaded connections for firm seat every additional 100 operating hours. Re-tighten threaded connections as needed.

Anzugsmomente für Schrauben			Anzugsmomente für Schrauben		
Schraube	Klasse		Schraube	Klasse	
	8.8	10.9		8.8	10.9
	Nm (lb-ft)	Nm (lb-ft)		Nm (lb-ft)	Nm (lb-ft)
M8	23 (17)	33 (24)	M20	380 (280)	530 (391)
M8x1	25 (18)	35 (26)	M20x2	400 (295)	560 (413)
M10	46 (34)	65 (48)	M20x1,5	420 (310)	590 (435)
M10x1,25	49 (36)	69 (51)	M22	510 (376)	720 (531)
M12	80 (59)	110 (81)	M22x2	540 (398)	750 (553)
M12x1,5	84 (62)	118 (87)	M22x1,5	560 (413)	790 (582)
M12x1,25	88 (65)	123 (91)	M24	630 (464)	890 (656)
M14	130 (96)	180 (133)	M24x2	680 (501)	950 (700)
M14x1,5	138 (102)	190 (140)	M27	930 (686)	1310 (966)
M16	190 (140)	270 (199)	M27x2	995 (733)	1400 (1032)
M16x1,5	210 (155)	290 (214)	M30	1260 (929)	1770 (1305)
M18	270 (199)	380 (280)	M30x2	1370 (1010)	1930 (1423)
M18x2	280 (206)	400 (295)			
M18x1,5	300 (221)	420 (310)	5/8"UNC (normal)	175 (129)	245 (180)
			5/8"UNF (fein)	200 (147)	280 (206)
			3/4"UNC (normal)	380 (280)	530 (391)
			3/4"UNF (fein)	420 (310)	590 (435)

6.4 Troubleshooting

Faults on the front loader are frequently caused by factors that are not due to a front loader malfunction. Many problems can be avoided through regular maintenance.

If there are faults, please check the following first:

- Is there sufficient oil in the tractor's hydraulic oil tank?
- Are you using the right oil? Only use oil as specified by the operating manual of the tractor. The wrong oil can cause foaming and leaks.
- Is the hydraulic oil clean and free of moisture? Replace oil and filter if necessary.
- Are hoses correctly mounted?. The connections must be locked in place.
- Are hoses and connections damaged, jammed, or twisted?
- Were the cylinders of the front loader moved into their end positions several times to get the air out of lines and cylinders?
- Have you taken low outside temperature into account? Has the oil reached operating temperature?

If the measures described above are unsuccessful, the following table may help you to localise and correct the fault.

If you require support, contact your dealer.

Fault description	Cause	Fault correction
a) Low lifting and tearing forces.	Insufficient oil pressure.	Check the tractor hydraulics.
b) Operating lever difficult to move.	Bowden cables are difficult to move.	Check the routing and ease of movement of the Bowden cables. Oil or replace the Bowden cables.
c) Front loader and implement move too slowly or do not move at all.	1) Insufficient oil in the hydraulic system. 2) Hydraulic couplings incorrectly connected. 3) Hydraulic coupling defective. 4) Oil flow too low. 5) Pressure control valve of the loader jams in open position.	Check oil level and top off if necessary. Check connections. Check couplings, replace if necessary. Check the tractor hydraulics. Check the pressure in the hydraulic system.
d) Front loader and/or implement work in the wrong direction relative to the operating lever.	1) Hydraulic connection incorrectly connected. 2) Bowden cables incorrectly mounted.	Check the hydraulic connections, correct if necessary. Check the Bowden cable connection, correct if necessary.
e) Slow or uneven lifting of the front loader.	1) Insufficient oil in the hydraulic system. 2) Insufficient engine rpm. 3) Hydraulic fluid too cold. 4) Excessive load in the vehicle. 5) Hydraulic coupling defective. 6) Internal leakage in the hydraulic cylinder. 7) Pressure control valve set incorrectly. 8) Interior leakage in the control block.	Check oil level and top off if necessary. Increase engine rpm. Warm hydraulic system to working temperature. Decrease load. Check couplings, replace if necessary. Check the cylinders, repair or replace defective cylinders. Check the setting of the pressure control valve. Check control block, replace if necessary.

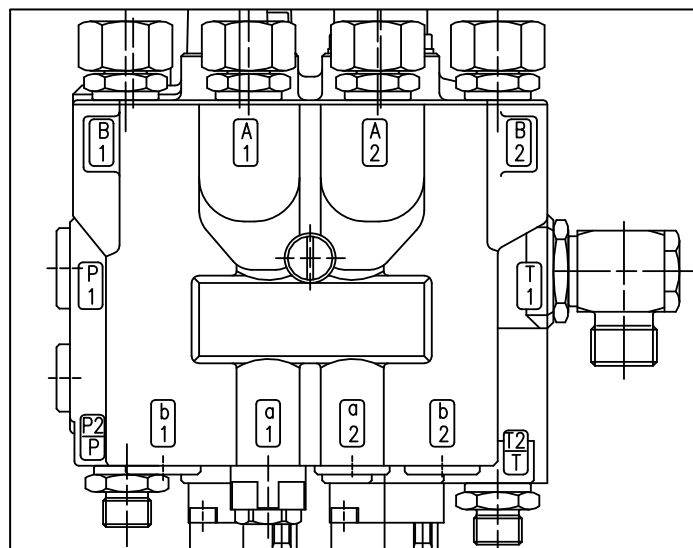
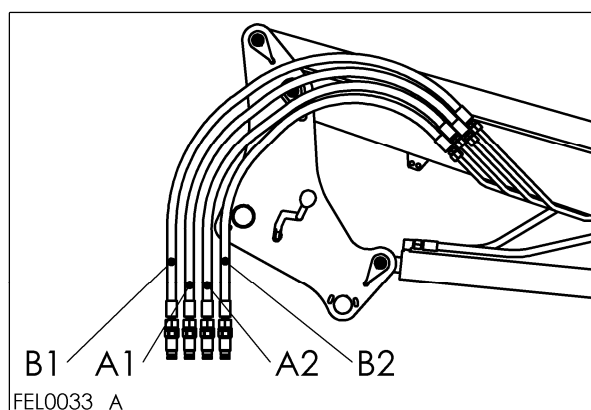
Fault description	Cause	Fault correction
f) Insufficient lifting force.	1) Internal leakage in the hydraulic cylinder. 2) Excessive load in the vehicle. 3) Pressure control valve set incorrectly. 4) Interior leakage in the control block.	Check the cylinders, repair or replace defective cylinders. Decrease load. Check the setting of the pressure control valve. Check control block, replace if necessary.
g) Air in the hydraulic system. (Indicated by the foamy hydraulic fluid.)	1) Hydraulic pump takes in air. 2) Hydraulic filter fouled.	Check the lines between hydraulic pump and tank for loose or defective connections. Check or replace hydraulic filter as necessary.
h) Leakage on the hydraulic couplings of the front loader or the 3rd control circuit.	Leak due to penetrating grime.	Clean coupling, replace if necessary. If the front loader or the 3rd control circuits are not used, seal the hydraulic couplings with the protective caps, or close the lid of the Hydro-Fix.
i) Front loader blocked during the lift or lowering movement.	1) Coupling not completely closed. 2) Coupling defective.	Check the hydraulic coupling. Replace defective coupling halves.
j) Front loader shakes when lowering loads.	Lowering speed too high.	Throttle lowering speed.
l) Implement cylinders extend, however they do not retract.	1) Piston seal in the implement cylinder is defective so that the piston and ring surface are connected to each other. 2) Seat valve does not return to start position after rapid traverse is switched-on.	Check the cylinders separately from each other for leaks, replace defective cylinders. Remove the seat valve and examine for fouling, replace if necessary.
m) Leaks on the hydraulic block	1) Threaded connections loose 2) Leakage between magnet and valve 3) Leakage between the valve flanges	Re-tighten threaded connections. Unscrew the knurled nut, remove magnet, re-tighten the magnetic core with open-jaw spanner. Re-tighten bolts or replace sealing rings.

7 Appendix

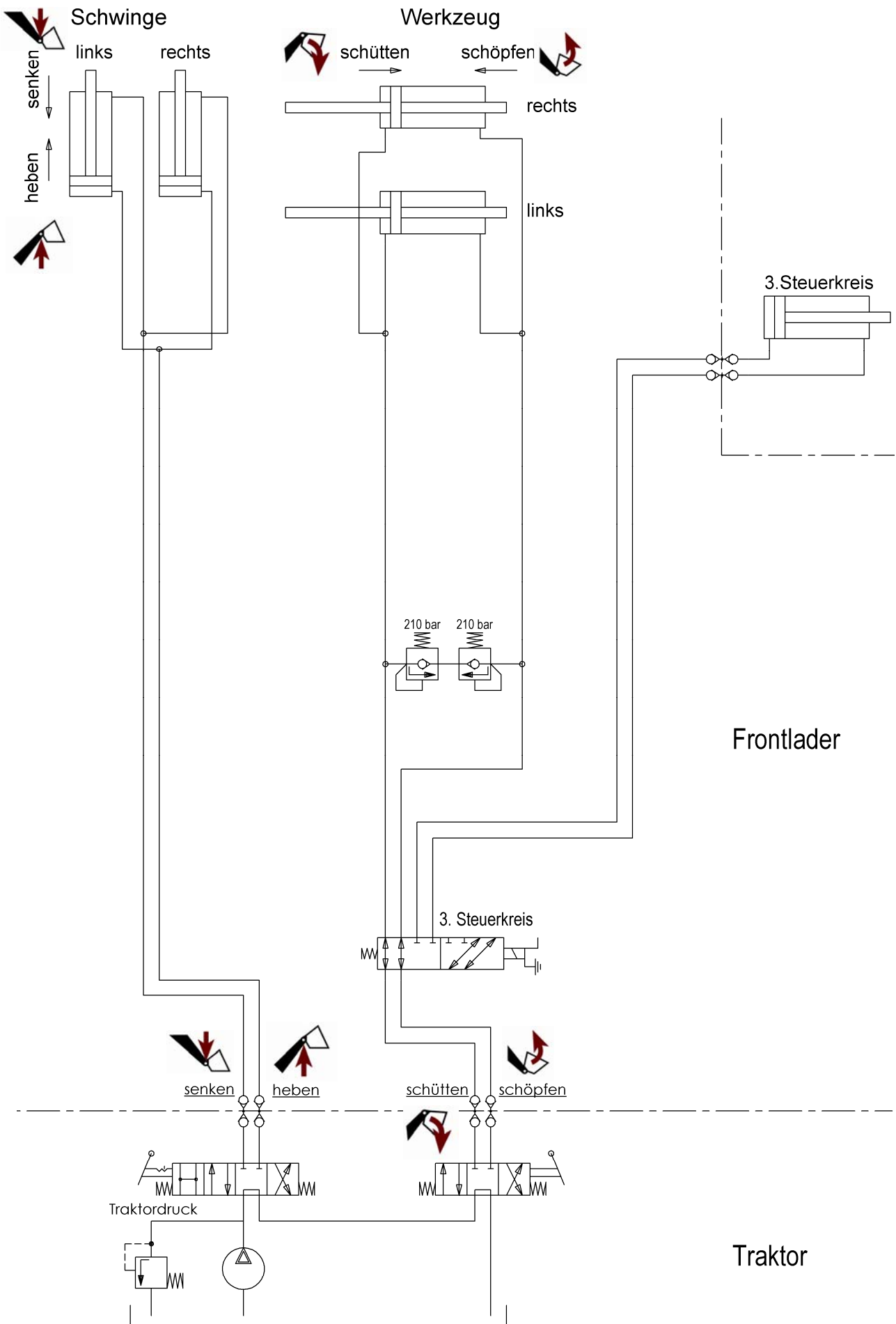
7.1 Circuit diagram - hydraulic system

Assignment of the hydraulic lines

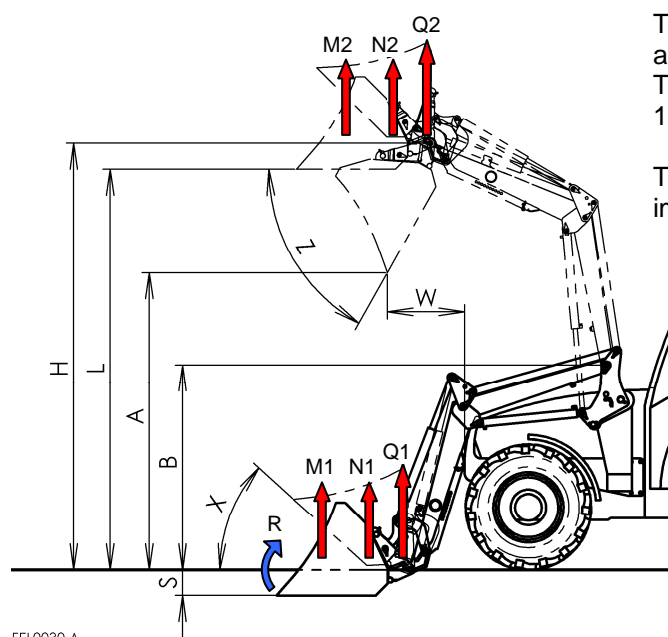
Function	Marking	
	Control block	Plug-in connector
Lifting	A1	yellow
Lowering	B1	green
Scooping	A2	blue
Dumping	B2	red



Hydraulic plan



Technical data



FEL0030 A

The technical data depends on the tractor type used and thus can vary from the specified values.

The forces are specified for an operating pressure of 185 bar.

The payload is calculated as the lifting force minus implement weight.

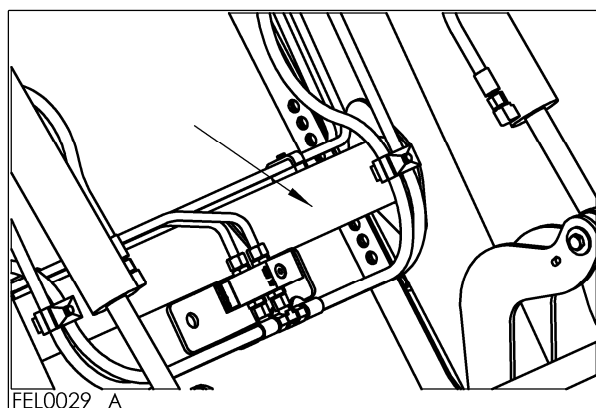
FE EcoLine	Size Type			650		750		850		950	
				H	P	H	P	H	P	H	P
Suitable for tractors with a power rating of			kW	35-50		40-60		50-75		55-80	
			HP	45-65		55-80		65-100		75-110	
Lifting force in the implement fulcrum	down	Q1	daN	1480		1720		1860		1990	
	up	Q2	daN	1160		1210		1340		1460	
Lift capacity raft (bucket) 300 mm to rotation point	down	N1	daN	1240	1480	1450	1720	1590	1860	1720	1990
	up	N2	daN	950	1160	1000	1210	1120	1340	1230	1460
Lift capacity (palette) 900 mm to rotation point	down	M1	daN	940	1480	1100	1720	1230	1860	1360	1990
	up	M2	daN	700	1160	740	1210	840	1340	940	1460
Break open force 900 mm to rotation point		R	daN	1510	1780	1490	2190	2010	2240	2010	2480
Max. lift height at the attachment pivot point		H	mm	3010		3460		3760		4080	
lift-over height		L	mm	2800		3250		3550		3870	
dump height		A	mm	2070		2540		2860		3190	
dump length		W	mm	600		650		700		785	
Scraping depth rocker fulcrum		S	mm	210		210		210		210	
tip in angle	down	X	mm	43		43		46		46	
tip out angle	up	Z	mm	63		63		58		58	
Pump capacity			l/min	50		50		50		60	
Hubzeit			sec	4		4		5		5	
Tilting time, implement	down		sec	1.5		1.5		1.5		1.5	
Tipping time, implement	up		sec	1.7		1.7		1.7		1.7	
Weight without implement			kg	275	315	290	335	315	355	345	395

7.2 Vehicle registration papers

Permanent mounting of the front loader add-on parts on the tractor changes the empty weight of the tractor. As stipulated in the German road traffic regulations (StVZO), this change requires registration.

Let the modified tractor-empty weight registered in the registration papers.

7.3 Markings on the front loader



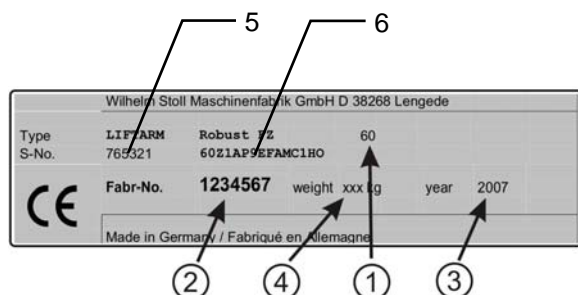
Each front loader has a type plate for unique identification. The plate is on the transverse pipe.

Data on the plate:

1. Front loader type
2. Production number
3. Year of manufacture
4. Weight of the front loader without implement
5. Serial number
6. Function code

In addition, the production number has been stamped on the transverse pipe.

Note this information on the next to last page of the operating manual.



Data for items 1-3 must be specified when ordering spare parts and additional implements.

7.4 EC Declaration of Conformity

In accordance with the EC Machinery Directive 2006/42/EC, Annex II A

The company,

Wilhelm Stoll Maschinenfabrik GmbH
Bahnhofstrasse.21
38268 Lengede, Deutschland

hereby declares that the STOLL front loader, type FE EcoLine

Production number
... see backside ...

satisfies the basic safety and health requirements set forth in the EC directive.

Applied directives:

2006/42/EC
2004/108/EC

Machinery directive

Electromagnetic compatibility

Applied standards:

EN 12525:2000, EN 12525/A1:2006
EN ISO 12100-1,-2:2003
design
ISO/DIS 14121-1: 2005
EN ISO 4254-1: 2006
EN 982:1996
DIN ISO 10448: 1994
DIN 20066: 2002
ISO 23206:2005
EN ISO 14982:1998

Front loaders - Safety

Safety of machinery - Basic concepts, general principles for

Safety of machinery - Risk judgement

Agricultural machinery - Safety - General requirements

Safety of machinery - hydraulic systems

Hydraulic power transmission for equipments

Fluid power hose assemblies

Carriers for attachments

Electromagnetic compatibility

i.V. K. Kraft

Lengede 01.11.2011 i. V. Karsten Kraft
Design

i. V. Klaus Schlag

Lengede, 01.11.2011 i.V. Klaus Schlag
Plant manager



Note the front loader data here.

In section 7.3 on page 37 there is a description of where the type plate of the front loader is located.

Frontloader	
Frontloader model	
Production number	
Year of manufacture	
Delivery list number	
Purchase date	

Note the data here for the tractor to which the front loader has been attached.

Tractor	
Tractor model	
Production number	
Year of manufacture	

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STOLL

Serial numbers 701 5000 to 709 9999