



STOLL

Software manual

ISOBUSConnected



FS IB+, FZ IB+ front loaders

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The original instructions were written in the German language.

Instructions in other languages were translated from German.

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1 Regarding this software manual

1.1 Use and purpose of the software manual

This software manual contains important information on the safe operation and for faultless, proper and economical operation of the ISOBUSConnected software for front loaders from Wilhelm STOLL Maschinenfabrik GmbH. It is intended for the operator and user of front loader and should help to prevent risks, damage and downtimes as well as ensure and increase the service life of the front loader.

Before start-up of the front loader, the software manual must be read and understood.

For better readability, Wilhelm STOLL Maschinenfabrik GmbH will be called "STOLL" in the following.

Directions refer to the forward direction of travel, unless otherwise specified.

1.2 Validity of the software manual

The software manual is valid only for the ISOBUSConnected software for STOLL ProfiLine ISOBUSConnected front loaders, called "front loader" in the following or "FS IB+" or "FZ IB+" as the special versions. The front loader type can be found on the rating plate.

The software manual covers all of the software functions and applies for the following version:

Software version:	2
Software vision:	3182 or later



The software version and revision are shown on the diagnosis pages (see 5.1 *Diagnosis pages*).

1.3 Storage of the documents

The manual is part of the machine. The entire documentation, consisting of this manual as well as all other additional instructions supplied, must always be kept accessible, safe and dry on or in the vehicle. When lending or selling the front loader, the entire documentation must also be handed over.

1.4 Other applicable documents

In conjunction with this software manual, the following additional documents also apply:

- Operating instructions of the front loader
- Operating instructions of the tractor
- Operating instructions for the respective implements
- Installation instructions for the respective mounting kit and front loader additional equipment

When handling the front loader and for all service work, please also observe:

- The recognised technical regulations for safe and professional work,
- The legal regulations for accident prevention,
- The legal regulations for health and environmental protection,
- The national regulations that apply in the country of the operator / user of the front loader,
- The specifications that are relevant for the status of the technology,
- The road traffic regulations.

2 Software structure

2.1 Menu navigation

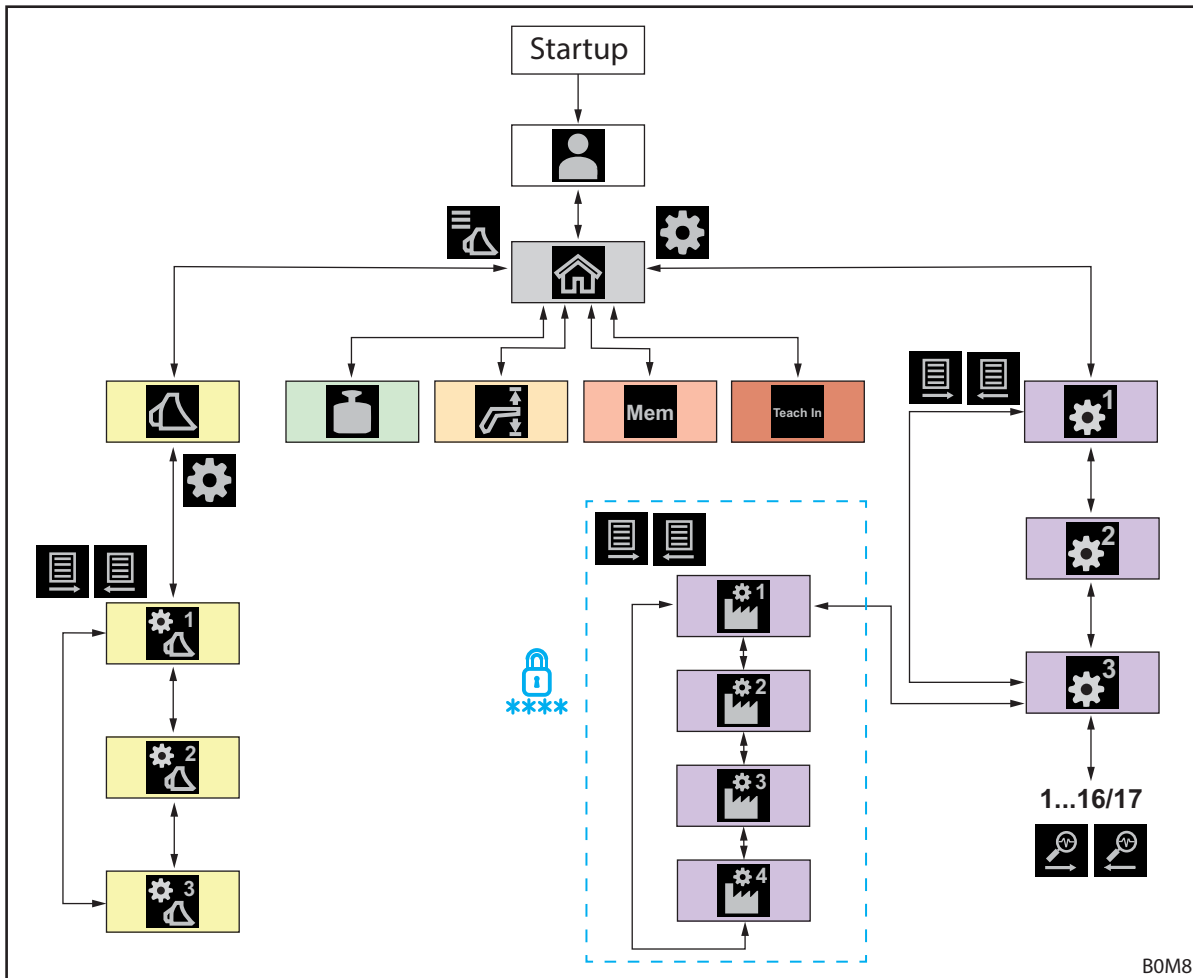


Fig. 1 Menu navigation overview

Symbol	Menu page	What can I do here?
	Profile selection (4.2 "Profile selection" page)	- Select a profile. - Assign profile permanently. - Activate/deactivate "Easy mode".
	Main page (4.3 Main page)	- Activate/deactivate the front loader operation. - Depressurise the 3rd control circuit. - Operate the hydraulic implement locking mechanism. - Read the current position of the lifting arm / implement. The following functions can be activated/deactivated: - Vibration damping or Comfort Drive - Slow mode - Electronic parallel levelling
	Implement selection (3.2 Creating and configuring implements)	Scroll between implements and select an implement for operation.

Symbol	Menu page	What can I do here?
	Implement settings - page 1 (3.2 <i>Creating and configuring implements</i>)	- Define implement types (symbol). - Define implement name. - Set the zero position. - Set and activate implement-specific working ranges. - Reset the implement settings to the factory settings. - Change the assignment of the joystick buttons T1-T6. The following functions can be activated/deactivated: - End position damping - Load-independent lowering speed - Electric flow sharing
	Implement settings - page 2 (3.2 <i>Creating and configuring implements</i>)	Calibrate the implement.
	Implement settings - page 3 (3.2 <i>Creating and configuring implements</i>)	- Define the pressure regulation and pressure control. - Release the 3rd and 4th control circuit. - Define the scaling level for the 3rd/4th control circuit. - Define the volume flow and prioritisation for Continuous mode. The following functions can be activated/deactivated: - Fine control (40 %) for 3rd/4th control circuit - Pressure control - Continuous mode
	Weighing (4.4 <i>"Weighing" page</i>)	- Perform weighing procedure. - Add up the results from the weighing procedures. - Delete weighing procedures. - Save weighing data. - Use tare function.
	Working range (4.5 <i>"Working range" page</i>)	- Set implement upper/lower working range for the lifting arm / implement. - Activate/deactivate the working ranges for the lifting arm / implement.
	Return to position (4.6 <i>"Return to position" page</i>)	- Set memory positions for the lifting arm / implement. - Activate/deactivate memory positions for the lifting arm / implement. - Activate/deactivate Linked mode.
	Teach In (4.7 <i>"Teach in" page</i>)	Record, play and delete programs.
	Settings - page 1 (4.9 <i>"End position damping and adjustable response behaviour" page</i>)	End position damping and adjustable response behaviour: - Define level for end position damping. - Define level for scaling. - Define level for start and stop ramps. - Activate/deactivate fine control (40 %) for lifting arm and implement.
	Settings - page 2 (4.8 <i>"Emergency operation" page</i>)	Emergency operation: Operate front loader using the display (lifting, lowering, dumping, scooping, actuating the 3rd control circuit).
	Settings - page 3 (5.1 <i>Diagnosis pages</i>)	Diagnosis: - Release float position for lifting arm and implement. - Reset driver profile settings. - Define unit for weighing procedures. - View technical data for sensors. - View joystick data. - View fault messages. - View software and hardware version. - View the front loader type, bracket jaw opening, pump size and gear factor.



The , ,  and  pages are password-protected and are only accessible to service technicians and specialist workshops.

2.2 Page layout

Legend	Notes
1	Status bar Specific active functions are shown on the status bar (see 2.3). Active functions are highlighted green.
2	Softkey bar The displayed softkeys depend on the active menu. Depending on the tractor terminal, up to 12 softkeys can be displayed.
3	Function softkeys Functions can be activated and deactivated by pressing the softkeys.
4	Menu softkeys The softkeys are used to access the corresponding menu pages.
5	Display field for active menu The currently active page is shown here.
6	Display field for current button assignment Depending on the selected implement
7	Activity display Depending on the active menu

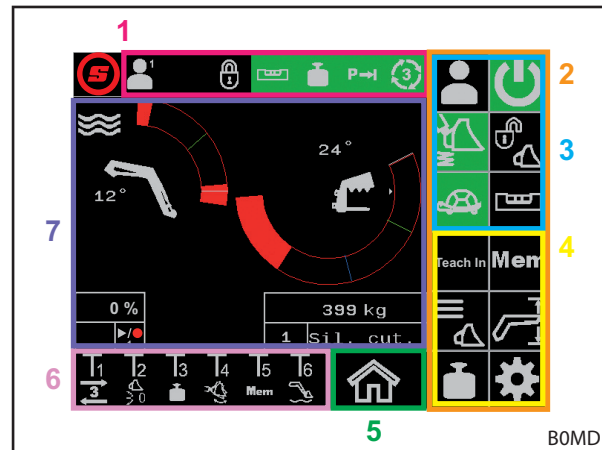


Fig. 2 Page layout

2.3 Symbols

Symbols in the status bar

Symbol	Meaning	Symbol	Meaning
	Active driver profile		Hydraulic implement locking mechanism, Hydro-Lock (different colours and representations are possible, see 4.3 Main page)
			Weighing (different colours are possible, see 4.4 "Weighing" page)
			Pressure control for 3rd control circuit active
			Continuous mode released
	Electronic parallel levelling active		Tip-over protection active

Symbols for button assignment

Symbol	Meaning	Symbol	Meaning
	Activate weighing.		Activate/deactivate float position.
	Activate Return to position.		Activate quick emptying (deactivate load-independent lowering speed for the implement).

Symbol	Meaning	Symbol	Meaning
	Activate bucket shake.		Deactivate electronic parallel levelling.
	Move implement to zero position.		Activate REAL ³ (open the implement).
	Activate 3rd control circuit.		Activate REAL ³ (close the implement).
	Activate 4th control circuit.		Save position. / Start program. / Stop program.

3 Start-up

3.1 Start-up procedure

To be able to work with the front loader, the start-up procedure must be performed each time the tractor is started. The start-up procedure can differ greatly from one tractor to another, because the procedure depends on the tractor manufacturer and on the installed terminal. The exact procedure is described in the manual for the tractor terminal. In the following, the start-up procedure is described based on the example of a Deutz with iMonitor.



On our YouTube channel, you will find various explanatory videos on the topic of ISOBUSConnected, also on starting up ISOBUS:

www.youtube.com/STOLLFrontloader

Example for start-up procedure

Perform the start-up procedure:

- (1) Activate AUX-N (OFF --> ON).
- (2) Acknowledge the appearing AUX-N message with "Yes".
- (3) Press the  icon.
 - ✓ The  page (profile selection) is opened.



Fig. 3 Start screen

- (4) Maximise the open page.
- (5) Press on the desired driver profile ( ,  ,  or ).

 If the driver profile highlighted green is already correct, press the  softkey.

For more information on the profiles and the  page, see 4.2 "Profile selection" page.

- ✓ The selected driver profile is highlighted green and the saving window is opened.
- (6) Press the  softkey.
 - ✓ An acoustic signal is issued, indicating successful saving of the data.
 - ✓ All changes that are made on the next pages will be stored under the selected driver profile. Exception: implement settings are stored for all profiles.
 - ✓ The  page (main page) is opened.

 The selected profile is shown at the top left in the status bar.

- (7) Press the  softkey to activate front loader operation.
 - ✓ The softkey is highlighted green.

 **Revision note for 3191 and later:**

The front loader can only be activated when at least 1 AUX-N function has been assigned.

- (8) Check whether the implement shown on the screen corresponds to the mounted implement.
- (9) If necessary, select or create the implement in the software (see 3.2 *Creating and configuring implements*).

 STOLL recommends that all implements that will be used with the front loader be mounted one time and configured during initial operation (see 3.2 *Creating and configuring implements*).

- ✓ The start-up procedure is complete.

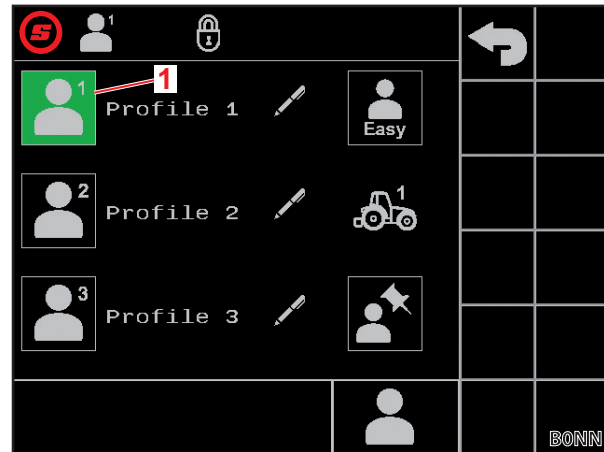


Fig. 4 "Profile selection" page

Legend

- 1 Active driver profile

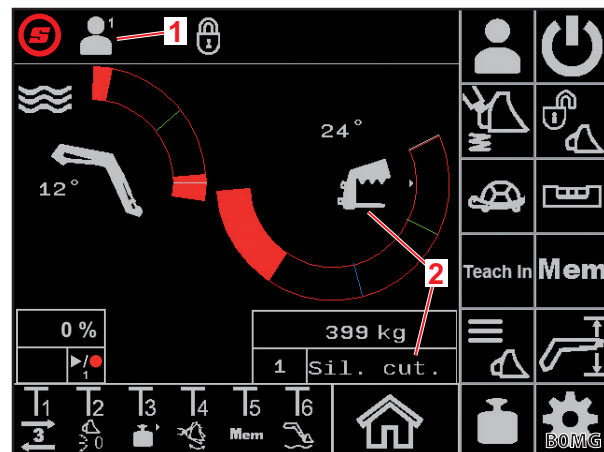


Fig. 5 Main page

Legend

- 1 Active driver profile
- 2 Selected implement

3.2 Creating and configuring implements

Up to 10 implements can be created.

The following table lists all of the implements that are preconfigured in the software along with their default settings. Except for the number, all of the settings listed below can be changed.

Available implements			Factory settings									
No.	Type	Intended for	Target value for pressure regulation [bar]	End position damping	Load-independent lowering	Electric flow sharing	Volume flow for Continuous mode [%]	Priority for volume flow for continuous mode	3rd control circuit	4th control circuit	Pressure regulation	Continuous mode
1		Cutters / bale cutters	185				0	--		--	--	--
2		Bale grippers	100				0	--		--		--
3		Pallet forks	185				0	--	--	--	--	--
4		Log forks	185		--		0	--		--	--	--
5		Bucket with grab	185	--	--		0	--		--	--	--
6		Buckets	185	--	--		0	--	--	--	--	--
7		Manure forks	185	--	--		0	--	--	--	--	--
8		Load lifters	185				0	--	--	--	--	--
9		Universal / third-party implements	185	--	--		0	--	--	--	--	--
10		Universal / third-party implements	185	--	--		0	--	--	--	--	--

 = activated

 All of the settings that must be entered for every implement to ensure optimal operation are marked with an exclamation mark (!) behind the action heading.

Select implement:

- ➔ The implement is mounted on the tractor (refer to the operating instructions of the front loader for description).

 Installation of the hydraulic implement locking mechanism is described in this document in chapter 4.3 *Main page*.

- (1) On the  page (main page), press on the  softkey.
 - ✓ The  page (implement selection) is opened.
- (2) Navigate to the desired implement with the  and  softkeys.
- (3) Select the implement and exit the page.
 - Press the  softkey.
 - ✓ The Save window is opened.
 - Press the  softkey.
 - ✓ An acoustic signal is issued, indicating successful saving of the data. The  page (main page) is opened.

Or:

- (4) Call up the implement settings.
 - Press the  softkey.
 - ✓ The  page (implement settings - page 1) is opened for the implement that was previously selected.

 On the implement settings pages, the factory settings for the implement can be adjusted or the factory settings can be restored.

Implement settings - page 1

Displayed softkeys					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Reset implement settings.		Activate/deactivate end position damping for lifting arm and implement (see also 4.9).		Set the top end position (current position will be adopted).
	Set the zero position (current position will be adopted).		Activate/deactivate load-independent lowering speed.		Set the bottom end position (current position will be adopted).
	Activate/deactivate implement-specific working range.		Activate/deactivate electric flow sharing.		

Implement-specific working range: the implement-specific working range should only be activated when implement-specific problems can occur. The end positions must be set for this. The implement-specific working range overrides the general range settings (see 4.5 *"Working range" page*).

 **Revision note for 3182:** On FS IB+ front loaders, the function is deactivated by pressing the activated softkey  and the set end positions are deleted. On FZ IB+ front loaders, the function cannot be deactivated, but the set end positions can be deleted by pressing the activated softkey .

Revision note for 3191 and later: On FS IB+ and FZ IB+ front loaders, the function can be activated and deactivated. The set end positions are not deleted by pressing the activated softkey .

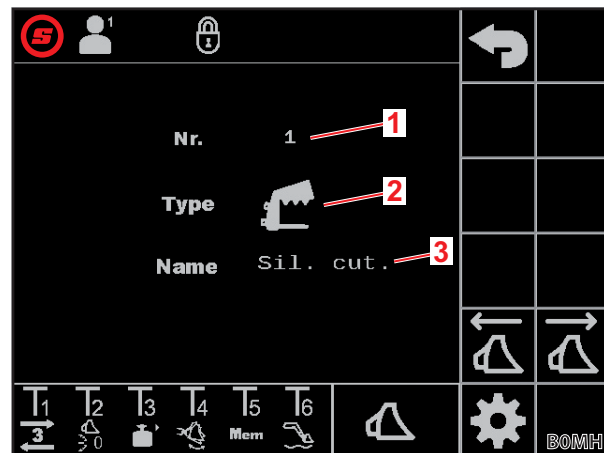


Fig. 6 "Implement selection" page

Legend

- 1 Implement no.
- 2 Implement type
- 3 Implement name

Load-independent lowering speed: this function enables a stable lowering speed for the lifting arm and implement, regardless of the load. The speed itself is determined by moving the joystick.

Electric flow sharing: this function enables simultaneous actuation of the lifting arm, implement and 3rd/4th control circuit depending on the joystick movement, without a function being disadvantaged, e.g. by a high load, and then lagging behind.

Change implement type:

- (5) Tap on the input box beside "Type".
 - ✓ A list is opened.
- (6) Press on the desired symbol.
- (7) Confirm the selection.
 - ✓ The implement type was changed.

Change implement name:

- (8) Tap on the input box beside "Name".
 - ✓ A text box is opened.
- (9) Enter the desired name.

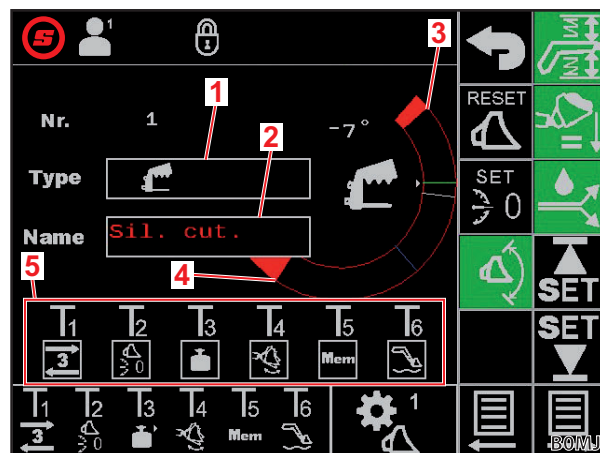


Fig. 7 Implement settings - page 1

 Max. 10 characters available.

- (10) Confirm entry.
 - ✓ The implement name was changed.

Change button assignment:

- (11) Tap on the field underneath T1.
 - ✓ A list is opened.
- (12) Press on the desired function.
- (13) Confirm the selection.
 - ✓ The button assignment was changed.
- (14) Proceed in the same way for buttons T2-T6.

Legend

- 1 Implement type
- 2 Implement name
- 3 Current top end position
- 4 Current bottom end position
- 5 Implement-specific button assignment

 Assign only as many buttons as are available on the joystick. Assign an empty field to non-existing buttons.

Set end positions for implement-specific working range:

 The end positions should be set in cases where a collision between the implement components and the front loader or the tractor can occur or also to rule out any undesired positions of the implement (e.g. strongly scooped position for a pallet fork).

- (15) Press the  softkey.
 - ✓ The softkey is highlighted green.

 **Revision note for 3182:**
The function is already activated on FZ IB+ front loaders.

- (16) Move the implement to the top end position.
- (17) Press the  softkey.
 - ✓ The current position will be adopted as the top end position for the implement.

(18) Move the implement to the bottom end position.

(19) Press the  softkey.

✓ The current position will be adopted as the bottom end position for the implement.

Setting the zero position:

 The zero position does not need to be the horizontal position, rather it can be any standard working position that the operator wants to return to repeatedly.

(20) Move the implement to the zero position.

(21) Press the  softkey.

✓ The current position will be adopted as the zero position for the implement.

(22) Press the  softkey.

✓ The  page (implement settings - page 2) is opened.

Implement settings - page 2

Displayed softkeys			
Symbol	Meaning	Symbol	Meaning
	Set the weighing range (current position will be adopted).		Start the calibration procedure.

 The weighing range spread is always 10° and cannot be changed, i.e. the weighing range stretches from the lower limit to 10° further up.

Calibrate the implement (!):

➔ The hydraulic oil has reached the normal operating temperature.

(23) Move the lifting arm and the implement to the position in which weighing should be performed.

 STOLL recommends 20° for the position of the lifting arm, so that the weighing range is between 20° and 30°. The position of the implement must be min. 10° below the physical stop of the implement.

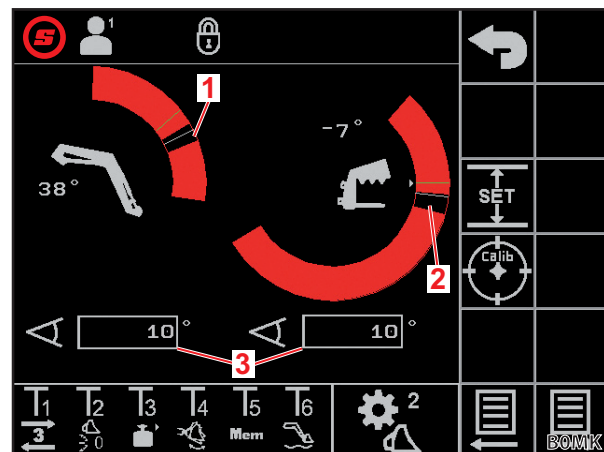


Fig. 8 Implement settings - page 2

Legend

- 1 Lifting arm weighing range
- 2 Implement weighing range
- 3 Weighing range spread

(24) Press the  softkey.

✓ The current positions will be adopted as the lower limit for the respective weighing range.

(25) Press the  softkey.

✓ The softkey flashes green.

(26) Move the joystick in the *lifting* position and hold it during the entire calibration procedure.

✓ The calibration procedure starts. The front loader moves during the procedure. The procedure can take up to 2 minutes.

✓ The calibration procedure is finished when the  softkey is constantly green.

✓ On the  page (weighing), the  icon is shown in the activity display beside the implement (see 4.4 "Weighing" page).

(27) Move joystick to the neutral position.

(28) Press the  softkey.

✓ The  page (implement settings - page 3) is opened.

Implement settings - page 3

 The  page only exists if the front loader is equipped with a 3rd control circuit.

Displayed softkeys					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Adopt the current pressure as the pressure limit. ¹		Activate/deactivate the pressure control. ^{1,2}		Release/lock 3rd control circuit. ^{1,4}
	Activate/deactivate fine control (see also 4.9) for 3rd/4th control circuit with fixed pre-set value (40 %). ¹		Release/lock Continuous mode. ^{1,3}		Release/lock 4th control circuit. ^{1,4,5}

¹Additional option available for a fee

²Only possible with released 3rd control circuit

³Only possible with activated pressure control and released 3rd control circuit

⁴The control circuit can be activated and deactivated using the button on the joystick only if it was released here.

⁵This softkey is visible as soon as the 3rd control circuit was activated in the Option management, but is without function when a 4th control circuit is not installed in the front loader.

Pressure control: The function enables individual limitation of the clamping force of the implement or prevents overloading of the hydraulic drive for oil motors, provided that a pressure limit was set.

Continuous mode: The function enables continuous execution of the 3rd control circuit, provided that a volume flow above 0 is set.

Set the pressure limit:

(29) Tap on the input box beside "SET P" and enter the desired value and confirm.

Or:

(30) Generate the desired pressure and press the  softkey.

✓ The current pressure will be entered as the pressure limit in the input box beside "SET P".

Define the volume flow for Continuous mode:

(31) Tap on the input box beside "SET Q" and enter the desired value and confirm.

 The default value here for all implements is 0 %. STOLL recommends starting with a low value and then slowly increasing it until the desired speed is reached.

✓ The volume flow is defined.

 By activating the box beside "Prio Q", the Continuous mode is prioritised in terms of the hydraulic oil flow compared to the other functions.

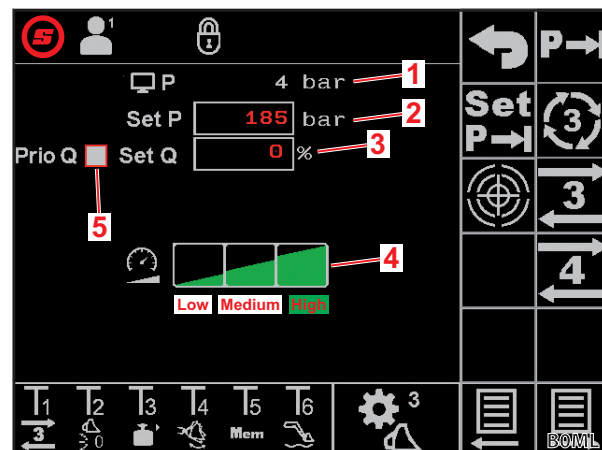


Fig. 9 Implement settings - page 3

Legend

- 1 Current pressure
- 2 Set pressure limit
- 3 Volume flow in % for Continuous mode
- 4 Scaling levels for 3rd/4th control circuit
- 5 Activation box for prioritisation of Continuous mode

Define the scaling for the 3rd/4th control circuit:

(32) Tap on the desired scaling level (low, medium, high).

- ✓ The boxes for the levels are coloured green up to the selected level. The scaling is defined.

	Low	Medium	High
Scaling	25 %	45 %	100 % ¹

¹Factory setting



With the scaling, the overall speed for the 3rd/4th control circuit can be reduced. A value of 100 means a speed of 100 % for 100 % joystick movement.



The value set here is only active when Slow mode was activated on the main page using the  softkey.

Exception: if the pressure control is activated, the speed selected in the scaling is automatically used, regardless of whether Slow mode is activated or not.

Exit the setting pages:

(33) Press the  softkey.

- ✓ The Save window is opened.

(34) Press the  softkey.

- ✓ An acoustic signal is issued, indicating successful saving of the data.
- ✓ The  page (main page) is opened.

3.3 Check before each start-up

- Before each start-up, check all of the points on the checklist.
- Fix any observed defects in a safe position and location.
- Only use the front loader if proper and safe operation is ensured.

Checks	See also	Completed
Does the implement selected in the software match the implement that is actually mounted?	3.2 <i>Creating and configuring implements</i>	
Is the correct driver profile selected?	4.2 <i>"Profile selection" page</i>	

4 Operation

4.1 General operating instructions

Save data

- (1) Press the  softkey.
 - ✓ The Save window is opened.
- (2) Press the  softkey.
 - ✓ An acoustic signal is issued, indicating successful saving of the data.

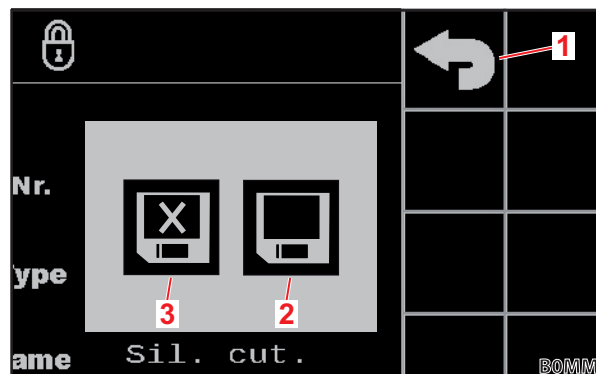


Fig. 10 Save window

Legend

- 1 "Back" softkey
- 2 "Save changes" softkey
- 3 "Exit without saving" softkey

Activating/deactivating functions

Symbol	Meaning	Procedure
	Function activated	<i>Activate the function:</i> ➤ Press the softkey. ✓ The softkey is continuously lit green. ✓ The function is activated.
	Function deactivated	<i>Deactivate the function:</i> ➤ Press the softkey. ✓ The softkey is highlighted black. ✓ The function is deactivated.

Input boxes

All values in red lettering can be changed:

- (1) Tap on the input box.
 - ✓ A text box is opened.
- (2) Enter the desired value or text.
- (3) Confirm entry.



Fig. 11 Example for value in red lettering

4.2 "Profile selection" page

Displayed softkeys					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Activate/deactivate driver profile 1, 2 or 3.		Activate/deactivate Easy mode.		Pin the selected driver profile.
			Current tractor profile (for information only, no softkey)		
					

Change the driver profile name:

(1) Press the  softkey.

✓ A text box is opened.

(2) Enter the desired name.

 Max. 10 characters available.

(3) Confirm entry.

✓ The driver profile name was changed.

Select the driver profile:

(1) If desired, press the  softkey.

 TIP: with the  softkey, the selected driver profile is pinned and the  page will be skipped in the future when starting the system.

(2) Press on the desired driver profile (, ,  or .

✓ The selected driver profile is highlighted green and the saving window is opened.

(3) Press the  softkey.

✓ All changes that are made on the next pages will be stored under the selected driver profile. Exception: implement settings are stored for all profiles.

✓ The  page (main page) is opened.

 Reset driver profile settings: see 5.1 *Diagnosis pages*.

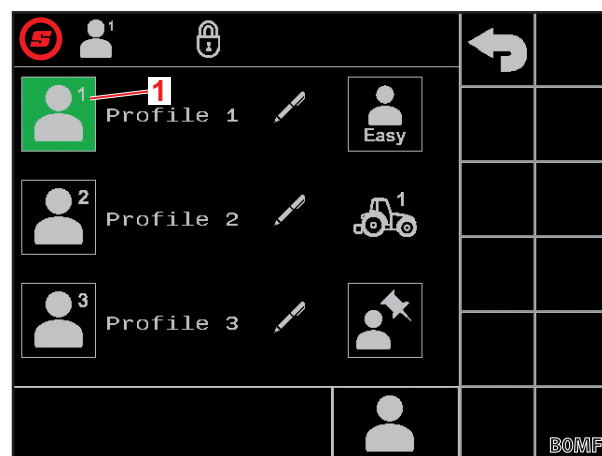


Fig. 12 "Profile selection" page

Legend

1 Active driver profile

Easy mode

In Easy mode, only a limited menu selection is available. Implements cannot be defined and fixed values are set for the ramps, scaling, fine controls and end position damping. The previously used implement is shown as the implement. When the software is used for the first time, implement no. 1 is shown.



Fig. 13 Main page in Easy mode

Tractor profiles

2 tractor profiles are available, so that the front loader can be used with 2 tractors. The required tractor profile will be automatically detected. If the front loader is used on other tractors, the respectively older tractor profile will always be overwritten and the basic settings in the STOLL software (pump capacity, joystick values for the float position, bracket jaw opening) as well as on the tractor terminal must be re-entered by a specialist workshop.

4.3 Main page

Displayed softkeys					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Call up the "Profile selection" page.		Activate/deactivate the front loader operation.		Depressurise the 3rd control circuit. ¹
	Activate/deactivate the vibration damping or Comfort Drive.		Activate/deactivate electronic parallel levelling.		Open/close the hydraulic implement locking mechanism ² (Hydro-Lock).
	Activate/deactivate the scaling for the lifting arm, implement and 3rd control circuit (Slow mode, see also 3.2 and 4.9).				

¹This softkey is only available as of software revision 3191.

²This softkey is only available when the additional option Hydro-Lock was purchased for a fee and replaces the  softkey.

 On FZ IB+ front loaders, the electronic parallel levelling can optimise the mechanical parallel levelling.

Legend	
1	Top end position
2	Status of the hydraulic implement locking mechanism
3	Memory position M1 (blue line, see 4.6)
4	Memory position M2 (green line, see 4.6)
5	Bottom end position
6	Deviation from the horizontal position
7	Current position (white line)
8	Current position in degrees
9	Results from the last weighing procedure
10	Selected implement with implement no.
11	Teach in: program progress in %
12	Teach in: status display

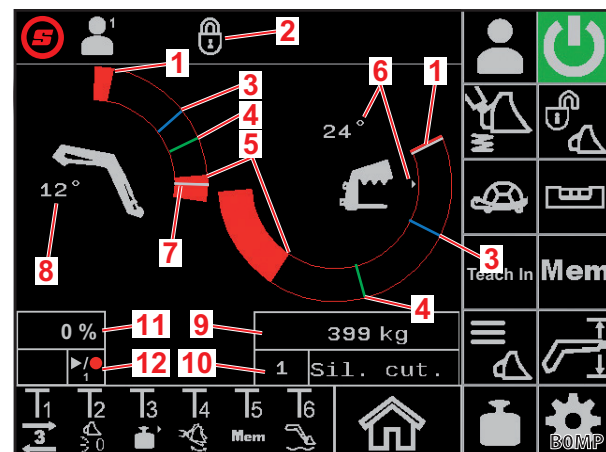


Fig. 14 Main page

Using the vibration damping

Revision note for 3182:

Operating the vibration damping is the same as operating the Comfort Drive with piston-type accumulator (see below). There is no automatic activation or deactivation.

Possible displays	Meaning
Softkey	
	Vibration damping deactivated
	Vibration damping released, but not activated
	Vibration damping activated

The vibration damping is automatically activated when the tractor is driving faster than 3 km/h (softkey is then highlighted green, ).

In the following cases, the vibration damping is automatically deactivated again (softkey is highlighted orange, ):

- The tractor is driving slower than 3 km/h.



Deactivation takes place with a delay of 2 seconds.

- The position of the lifting arm is $> 85^\circ$.

Using Comfort Drive (with piston-type accumulator)



This function is an additional option available for a fee.

Symbol	Meaning	Procedure
	Function activated	<i>Activate the function:</i> ➤ Press the softkey. ✓ The softkey is continuously lit green. ✓ The function is activated.
	Function deactivated	<i>Deactivate the function:</i> ➤ Press the softkey. ✓ The softkey is highlighted black. ✓ The function is deactivated.

Depressurising the 3rd control circuit



For a change frame with mechanical implement locking mechanism, the 3rd control circuit must be depressurised to be able to couple or uncouple the hydraulic couplings on the change frame (see operating instructions for the front loader, chapter "Using the hydraulic couplings").

Possible displays	Meaning
Softkey	
	3rd control circuit is not relieved
	3rd control circuit ready to be relieved
	3rd control circuit is relieved

Depressurise the 3rd control circuit:

➔ The current position of the lifting arm is $< 25^\circ$.

(1) Press the  softkey.

✓ The softkey will be highlighted blue after approx. 2 seconds (.



The softkey is highlighted blue for an actuation time of 5 seconds. It turns black again (inactive) when this time expires.

(2) Press the  softkey.

✓ The softkey is highlighted orange (.

✓ The 3rd control circuit is automatically depressurised by the system.

Operating the hydraulic implement locking mechanism



This function is an additional option available for a fee.

Possible displays		Meaning
Softkey	Status bar	
		Implement locking mechanism closed
		Implement locking mechanism ready for opening
		Implement locking mechanism is open

Opening the implement locking mechanism:

→ The current position of the lifting arm is $< 25^\circ$.

(1) Press the  softkey.

- ✓ The softkey will be highlighted blue after approx. 2 seconds (). The  icon appears in the status bar.



The softkey is highlighted blue for an actuation time of 5 seconds. It turns black again (inactive) when this time expires.

(2) Press the  softkey.

- ✓ The softkey is highlighted orange (). The  icon appears in the status bar.
- ✓ The implement locking mechanism is open. The 3rd control circuit is automatically depressurised by the system.

Closing the implement locking mechanism:

(3) Press the  softkey.

- ✓ The softkey is highlighted black (). The  icon appears in the status bar. The implement locking mechanism is closed.
- ✓ The  page (implement selection) is opened.

(4) Check that both the locking pins of the change frame engage correctly in the eyelets of the implement.

(5) Press the implement with the tip on the ground.

- ✓ When locked correctly, the implement remains on the change frame.

(6) Select the implement and adjust if necessary (see 3.2 *Creating and configuring implements*).

4.4 "Weighing" page

Displayed softkeys					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Save weighing data.		Use the last weighing result as a tare value.		Delete the last weighing procedure.
	Add up the results from the weighing procedures.		Delete the sum of the weighing procedures.		Start the weighing procedure.

Legend	
1	Icon for calibrated implement
2	Sum of weighing procedures
3	Number of weighing procedures
4	Target weight
5	Difference from the target weight
6	Results from the last weighing procedure

 On the  page (diagnosis pages), the unit can be changed between kg and lbs (see 5.1 *Diagnosis pages*).

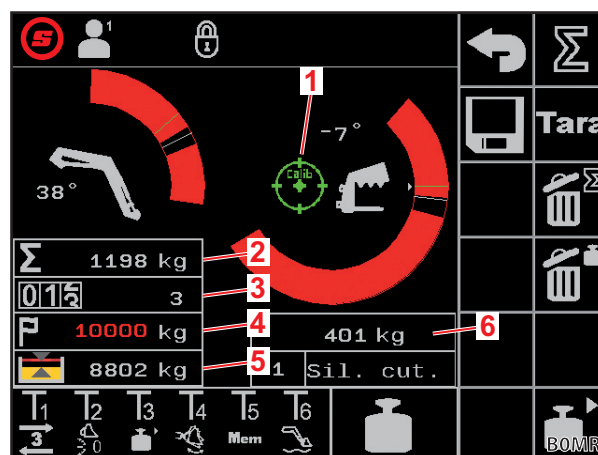


Fig. 15 "Weighing" page

Possible displays in the status bar	Meaning
	Flashing Continuously lit
	Flashing (for 5 seconds) Continuously lit (for 5 seconds)
	Waiting for joystick movement. / Lifting arm and implement move to the weighing position. Weighing in progress. The implement is not calibrated. Weighing procedure aborted. Or: An error occurred during the weighing procedure.

➤ Observe the following weighing tolerances during the weighing procedure:

Weighing range	Tolerance
0-450 kg (0-992 lbs)	± 30 kg (66 lbs)
450-1000 kg (992-2205 lbs)	± 45 kg (99 lbs)
1000-3000 kg (2205-6614 lbs)	± 60 kg (132 lbs)

Perform the weighing procedure:

- The implement is calibrated (see 3.2 *Creating and configuring implements*).
- The tractor is standing on level ground.
- The tractor is standing still.
- The hydraulic oil has reached the normal operating temperature.

- (1) Press the  softkey or the Tx button () on the joystick.



Which button needs to be pressed depends on the respective button assignment. In *Fig. 15*, for example, it is the T3 button.

- ✓ The  icon appears on the status bar and flashes green.
- (2) Move the joystick in the *lifting* position and hold it.
 - ✓ Move the lifting arm and implement to the weighing position.
 - ✓ The weighing procedure begins when the  icon is constantly lit green in the status bar. The weighing procedure is complete when the  icon disappears from the status bar. An acoustic signal is issued, indicating that the weighing procedure was successful. The weighing result will be automatically saved and displayed.

Add up the results from the weighing procedures:



This function can be helpful, for example, when a vehicle/trailer should only be loaded with a specific load.

- (1) Press the  softkey.
 - ✓ The softkey is highlighted green.
- (2) If desired, enter the target weight.
- (3) Pick up the load with the implement.
- (4) Perform the weighing procedure.
 - ✓ The weighing result, the sum of the weighing procedures and the difference from the target weight will be automatically saved and displayed. The counter for the number of weighing procedures shows 1.
- (5) Unload the load.
- (6) Pick up the load with the implement.
- (7) Perform the weighing procedure.
 - ✓ The weighing result, the sum of the weighing procedures and the difference from the target weight will be automatically adjusted and displayed. The counter for the number of weighing procedures shows 2.
- (8) Repeat the procedure as often as necessary.
- (9) When finished, press the  softkey.
 - ✓ The softkey is highlighted black.

Save the weighing data to a USB flash drive:

➔ The ISOBUS file server is activated (not required for all terminals, refer to the instructions for the tractor terminal).

(1) Insert the USB flash drive into the ISOBUS terminal.

i TIP: with some ISOBUS file server systems, an internal memory is also used. This can cause problems with the selection of the storage medium. In this case, it can help to create an empty log.ini file on the USB flash drive. The log.ini file defines the uniqueness of the storage medium and the internal memory is not used.

(2) Press the  softkey.

✓ The softkey is highlighted green.

✓ A text box is opened.

(3) Enter the desired file name extension and confirm.

✓ A csv file will be automatically created on the ISOBUS file server.

i The entered extension will be integrated in the file name. The file name then has the following structure: YYMMDD_hhmmss_<file name extension>_P<user index>.csv. If the terminal does not provide the date and time, the operating hours counter of the control unit is used instead. With each activation of the  softkey, a new file is started.

(4) Perform the weighing procedures.

✓ Every weighing procedure and every deletion of a weighing procedure / sum, every use of the tare function, etc. will be stored in the file (see Fig. 16).

(5) When all of the procedures that should be stored have been performed, press the  softkey.

✓ The softkey is highlighted black.

(6) Eject the USB flash drive via the ISOBUS file server.

i With some ISOBUS file servers, there is the option to eject the USB flash drive after finishing saving. This should always be done to ensure data integrity, provided that this feature is available.

(7) If desired, remove the USB flash drive from the ISOBUS terminal.

Legend	
No.	Action number
HH-MM-SS	Time of saving (hour-minute-second)
W[kg]	Previously weighed weight
S[kg]	Sum of weighing procedures
WCtr	Number of weighing procedures
T[kg]	Target weight
R[kg]	Difference from the target weight
A[kg]	Tare
TNr	Number of the utilised implement
TName	Implement name

User Nr 2, user name Profile 1									
Nr.	HH-MM-SS	W[kg]	S[kg]	WCtr	T[kg]	R[kg]	A[kg]	TNr	TName
1	10-30-43	1209	1209	1	10000	8791	0	6	Bucket
2	10-31-33	1356	2565	2	10000	7435	0	6	Bucket
3	10-32-01	1187	3752	3	10000	6248	0	6	Bucket
4	10-35-23	1425	5177	4	10000	4823	0	6	Bucket
5	10-35-56	1078	6255	5	10000	3745	0	6	Bucket
6	10-50-17	0	0	0	0	0	0	6	Bucket
7	11-24-57	125	0	0	0	0	0	6	Bucket
8	11-27-58	0	0	0	0	0	125	6	Bucket
9	11-29-06	589	0	0	0	0	0	6	Bucket
10	11-31-39	785	0	0	0	0	0	6	Bucket

BONK

Fig. 16 Example of a weighing file

4.5 "Working range" page

Displayed softkeys			
Symbol	Meaning	Symbol	Meaning
	Activate/deactivate the lifting arm working range.		Set the upper limit for the working range (current position will be adopted).
	Activate/deactivate the implement working range.		Set the lower limit for the working range (current position will be adopted).

 The working range for the implement can only be deactivated when no implement-specific working range is active in the implement settings (see 3.2 *Creating and configuring implements*).

Revision note for 3182: On FS IB+ front loaders, the function is deactivated by pressing the activated softkey () and the set working range positions is deleted. On FZ IB+ front loaders, the function is not deactivated by pressing the activated softkey () but the set working range is deleted. The working range set for the lifting arm is maintained even after the function is deactivated.

Revision note for 3191 and later: On FS IB+ and FZ IB+ front loaders, the function can be activated and deactivated. The set working range is not deleted by pressing the activated softkey ()

Set the working range:

- (1) Press the  or  softkey.
- ✓ The softkey is highlighted green.

 **Revision note for 3182:** For FZ IB+ front loaders, the  softkey is already activated.

- (2) Move the lifting arm or implement to the upper limit of the working range.
- (3) Press the  softkey.
- ✓ The current position will be adopted as the upper limit. In the activity display, the working range is adjusted accordingly.
- (4) Move the lifting arm or implement to the lower limit of the working range.
- (5) Press the  softkey.
- ✓ The current position will be adopted as the lower limit. In the activity display, the working range is adjusted accordingly.

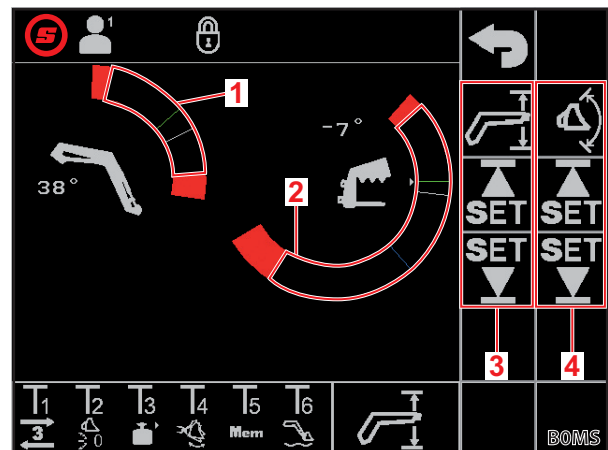


Fig. 17 "Working range" page

Legend

- 1 Lifting arm working range
- 2 Implement working range
- 3 Softkeys for lifting arm
- 4 Softkeys for implement

 It is not mandatory to set an upper and lower limit. One limit is also sufficient.

Active working ranges for the lifting arm and implement can also be overridden (does not apply for implement-specific working ranges, see 3.2 *Creating and configuring implements*):

- (1) Move the joystick to the limit of the working range.
- (2) Move joystick to the neutral position.
- (3) Move the joystick back to the limit of the working range.
- ✓ The working range will be overridden.

4.6 "Return to position" page

Displayed softkeys					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Activate/deactivate memory positions for the lifting arm.		Activate/deactivate Linked mode for position M2.		Set memory position M1 (current position of the active function will be adopted).
	Activate/deactivate Linked mode for position M1.		Activate/deactivate memory positions for the implement.		Set memory position M2 (current position of the active function will be adopted).

2 positions can be stored for the lifting arm and implement, respectively:

- One upper position (M1)
- One lower position (M2)

Legend	
1	Memory position M1 for the lifting arm
2	Memory position M1 for the implement
3	Memory position M2 for the implement
4	Memory position M2 for the lifting arm

Set memory position M1:

- Press the  softkey (for lifting arm) and/or  (for implement).
✓ The softkey is highlighted green.
- Move the lifting arm and/or the implement to the desired position.
- Press the  softkey.
✓ The current position will be adopted as M1. On the main page, M1 is shown with a blue line in the working range of the lifting arm or the implement (see Fig. 19).

Set memory position M2:

- Press the  softkey (for lifting arm) and/or  (for implement).
✓ The softkey is highlighted green.
- Move the lifting arm and/or the implement to the desired position.
- Press the  softkey.
✓ The current position will be adopted as M2. On the main page, M2 is shown with a green line in the working range of the lifting arm or the implement (see Fig. 19).

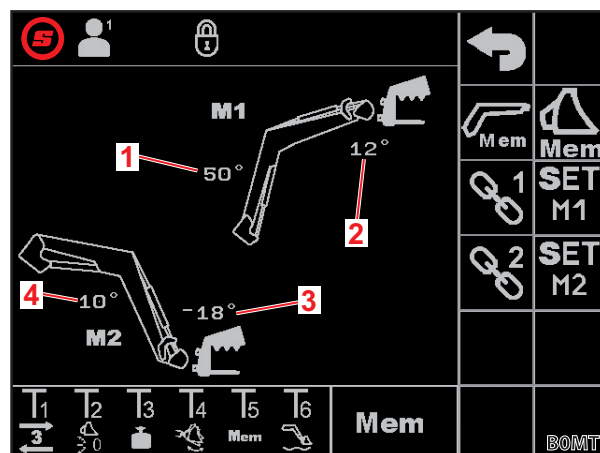


Fig. 18 "Return to position" page

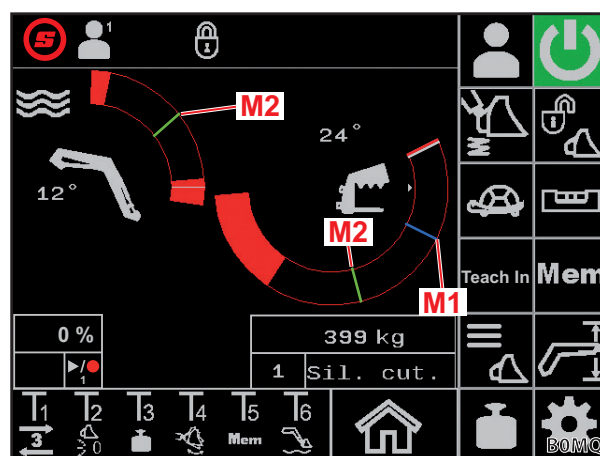


Fig. 19 Representation of memory positions M1 and M2 on the main page

Approaching memory positions individually:

→ The memory position to be reached has been set.

- (1) Press the Tx button (Mem) on the joystick and simultaneously move the joystick towards the desired position and hold it.



Which button needs to be pressed depends on the respective button assignment. In Fig. 18, for example, it is the T5 button.

Direction	Position to be reached
Lifting	Position M1 for the lifting arm
Lowering	Position M2 for the lifting arm
Scooping	Position M1 for the implement
Dumping	Position M2 for the implement

- ✓ The Mem softkey on the Home page (main page) flashes green. The memory position will be approached. The button can be released. Hold the joystick until the memory position is reached.

Approaching linked memory positions:

→ The memory position to be approached has been set.

WARNING

Possible risk of injury due to uncontrolled lowering!

Execution of the *Return to position* function in the Linked mode can cause the implement to collide with the ground when the lifting height is too low (less than half the lifting height). This can cause accidents and people can be severely injured.

- ▶ Make sure that the front loader is sufficiently lifted (at least half the lifting height), before the *Return to position* function is executed in the Linked mode.

- (1) On the Mem page (Return to position), press the Mem and Mem softkeys.

- ✓ The softkeys will be highlighted green.

- (2) On the Mem page (Return to position), press the 1 and/or 2 softkey.

- ✓ The softkey is highlighted green.

- (3) Press the Tx button (Mem) on the joystick and simultaneously move the joystick towards the desired position and hold it.



Which button needs to be pressed depends on the respective button assignment. In Fig. 18, for example, it is the T5 button.

Direction	Position to be reached
Lifting	Position M1 for the lifting arm and implement
Lowering	Position M2 for the lifting arm and implement

- ✓ The Mem softkey on the Home page (main page) flashes green. The memory positions will be approached. The button can be released. Hold the joystick until the memory positions are reached.

4.7 "Teach in" page

Displayed softkeys			
Symbol	Meaning	Symbol	Meaning
	Save position. / Start program. / Pause program.		Stop recording and save. / Stop program.
	Start recording.		Delete program.

In principle, the "Teach in" function is an extension of the "Return to position" function. Several positions for the lifting arm and implement can be saved, which are then approached consecutively. The "Weighing" function can also be integrated in the sequence. Up to 3 programs can be saved.

Legend	
1	Softkeys for program selection
2	Display of the program size in the memory
3	Program progress in %
4	Status display

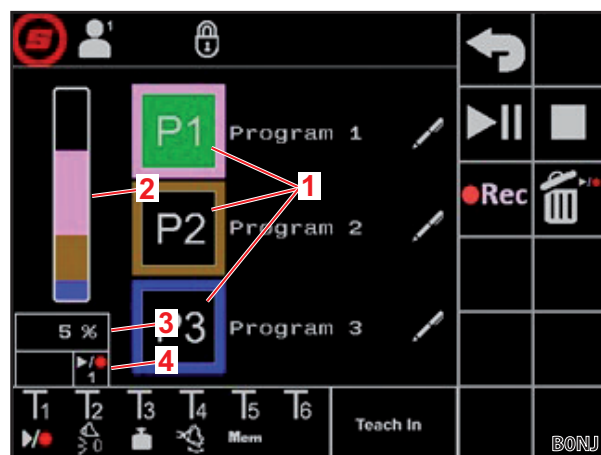


Fig. 20 "Teach in" page

Possible displays				Meaning
Softkey	Status display			
				Continuously lit Program 1/2/3 selected
				Continuously lit A valid program has not yet been saved for this program slot
				Softkey is continuously lit Status display flashing Ready for recording
				Continuously lit Program 1/2/3 selected and ready to be played
				Continuously lit The front loader moves to the start position for the selected program
				Continuously lit Program 1/2/3 in progress
				Flashing Program 1/2/3 was stopped (Move the joystick in the <i>Lifting</i> direction to resume the program.)
				Continuously lit Program 1/2/3 paused. The lifting arm and the implement can now be moved normally. (Press the softkey to resume the program.)

Record program:

- (1) Press the **P1**, **P2** or **P3** softkey.
 - ✓ The softkey is highlighted green.
 - ✓ The softkey is highlighted orange if a valid program has not yet be saved for this program slot.
- (2) Press the **Rec** softkey.



One of the already stored programs will be deleted.

- ✓ The recording starts. The softkey is highlighted green. The status display flashes green.
- (3) Move to the first position.
 - (4) Press the **▶||** softkey or the Tx button (**▶/●**) on the joystick.



Which button needs to be pressed depends on the respective button assignment. In *Fig. 20*, for example, it is the T1 button.

- ✓ The position will be saved. An acoustic signal is issued, indicating successful saving of the data.
- (5) Move to all of the desired positions in the desired sequence and save in the same way.



If a weighing procedure is performed during the program recording (see 4.4 "Weighing" page), it is automatically saved in the program sequence, and then when playing the program, a weighing procedure will always be performed at this point in the program.

- (6) Press the **■** softkey.
 - ✓ The recording will be stopped and saved. An acoustic signal is issued, indicating successful saving of the data. The **Rec** softkey and the status display are highlighted black.
- (7) If desired, assign a program name.
 - Press the **✎** softkey.
 - ✓ A text box is opened.
 - Enter the desired name.



Max. 10 characters available.

- Confirm entry.
- ✓ The program name has been changed.

Start program:

➔ A program is saved for the program slot.

- (1) Press the **P1**, **P2** or **P3** softkey.
 - ✓ The softkey is highlighted green. The **▶/●₁**, **▶/●₂** or **▶/●₃** icon appears in the status display.
- (2) Press the **▶||** softkey and move the joystick in the *Lifting* direction and hold it there.

Or:

Press the Tx button (**▶/●**) on the joystick and move the joystick in the *Lifting* direction and hold it there.



Which button needs to be pressed depends on the respective button assignment. In *Fig. 20*, for example, it is the T1 button.

- ✓ The softkey and the status display are highlighted orange. The front loader moves to the start position of the selected program.
- ✓ When the start position has been reached, the softkey and the status display are highlighted green. The front loader now moves to the saved positions consecutively. The program is finished when the softkey and the status display are highlighted black.

Stop running program:

- (1) Move joystick to the neutral position.
 - ✓ The program is stopped. The status display flashes blue.
- (2) Move the joystick in the *lifting* position and hold it.
 - ✓ The program will be resumed.

Pause running program:

- (1) Press the  softkey.
 - ✓ The program is paused. The softkey and the status display will be highlighted blue. The lifting arm and the implement can now be moved normally.
- (2) Press the  softkey.
 - ✓ The program will be resumed.

Abort running program:

- Press the  softkey or the Tx button () on the joystick.



Which button needs to be pressed depends on the respective button assignment. In Fig. 20, for example, it is the T1 button.

- ✓ The program will be aborted. The status display will be highlighted black.

4.8 "Emergency operation" page

Displayed softkeys					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Lift the lifting arm.		Scoop with the implement.		Actuate the 3rd control circuit (close implement).
	Lower the lifting arm.		Dump with the implement.		Actuate the 3rd control circuit (open implement).

On this page, the lifting arm, the implement and the 3rd control circuit can still be operated in case of failure of the physical operating elements in the tractor, e.g. the joystick, or if the angle sensors do not work properly.



Fig. 21 "Emergency operation" page

4.9 "End position damping and adjustable response behaviour" page

Displayed symbols					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Activate/deactivate fine control (40 %) for lifting arm and implement.		Adjustable response behaviour (ramps)		Implement start ramp
	End position damping for lifting arm and implement		Lifting arm start ramp		Implement stop ramp
	Scaling for lifting arm and implement		Lifting arm stop ramp		

	Low	Medium	High
End position damping	8°	15°	25° ¹
Scaling	25 %	45 %	65 % ¹
Start/stop ramp	200 ms	600 ms	1000 ms ¹

¹Factory setting

Define level:

- Tap on the desired scaling level (low, medium, high).
- ✓ The boxes for the levels are coloured green up to the selected level.

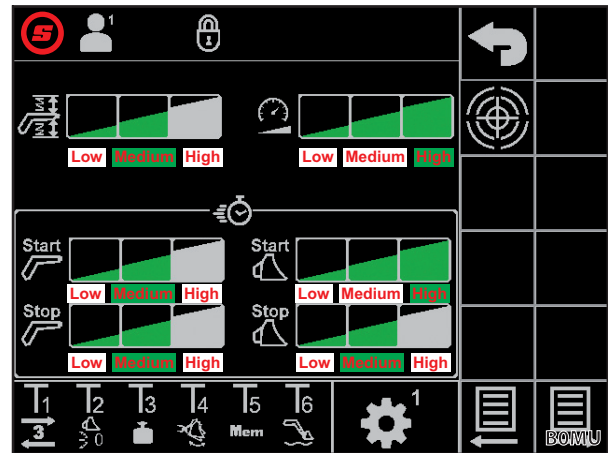


Fig. 22 "End position damping and adjustable response behaviour" page

End position damping

End position damping enables gentle movement to the end positions. The speed is automatically progressively reduced just before reaching the mechanical end position, until the end position is reached. The beginning of the braking procedure can be selected with the Low, Medium, High levels.

Example: with the Low level, the braking procedure begins max. 8° before reaching the mechanical end position, depending on the joystick movement (100 % joystick movement = 8°, 50 % joystick movement = 4°, 25 % joystick movement = 2° etc.).

Scaling

With the scaling, the speed can be reduced across the entire range. A value of 65 (High level) means a speed of 65 % for 100 % joystick movement.

i The value set here is only active when Slow mode was activated on the main page using the  softkey (see 4.3 Main page).

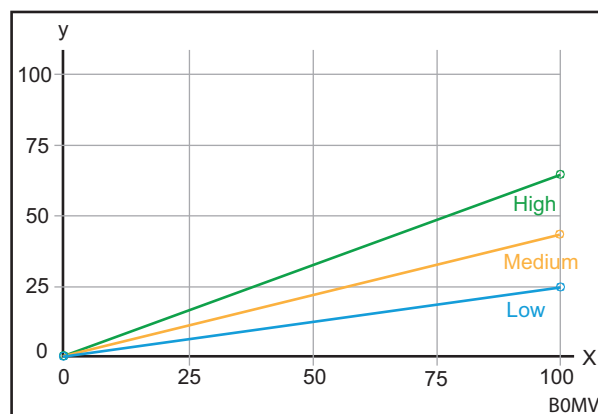


Fig. 23 Scaling graph

Legend

x Actuation (%)
y Speed (%)

Start/stop ramps (adjustable response behaviour)

The ramps can be used to define the response behaviour of the joystick. The response behaviour defines the time from the joystick movement to the full movement of the control piston. A low set time means a rapid reaction when starting and stopping front loader movement as a function of the joystick movement. A high set time means a delayed reaction when starting and stopping front loader movement as a function of the joystick movement.

Example: with a time of 600 ms (Medium level), the control signal reaches the maximum value for the control at 100 % joystick movement after 600 ms.

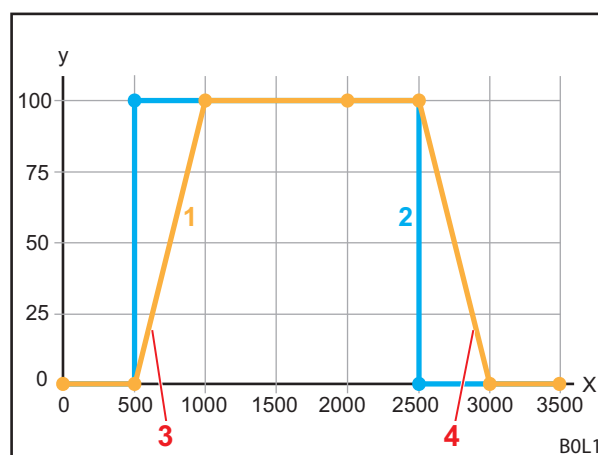


Fig. 24 Adjustable response behaviour graph

Legend

1 Front loader movement
2 Joystick movement
3 Start ramp
4 Stop ramp
X Time (ms)
Y Actuation

Fine control

With the fine control, the valve movement can be reduced in the lower range of the joystick movement and therefore increase the resolution of the joystick in the lower range. 100 % speed is always reached at the maximum joystick movement. When fine control is activated, the control in the lower range of the joystick movement is finer.

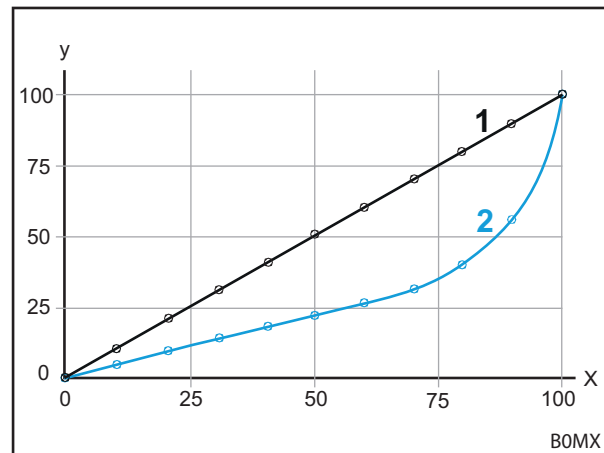


Fig. 25 Fine control graph

Legend

- 1 Normal curve (fine control deactivated)
- 2 Curve when fine control is activated

4.10 Operating functions with joystick buttons

4.10.1 Operating the 3rd control circuit



This function is an additional option available for a fee.

Operate the 3rd control circuit:

→ The 3rd control circuit is released on the  page using the  softkey (see 3.2 Creating and configuring implements).

- (1) Press the Tx button () on the joystick and simultaneously move the implement axis towards the desired function with the joystick.



Which button needs to be pressed depends on the respective button assignment. In Fig. 26, for example, it is the T1 button.



Fig. 26 Example for button assignment

Direction	Function
Scooping	Close the implement
Dumping	Open the implement

✓ The 3rd control circuit will be operated.

- (2) To deactivate, release the Tx button () on the joystick.

4.10.2 Operating REAL³

 This function is an additional option available for a fee.

Operate REAL³:

➔ The 3rd control circuit is released on the  page using the  softkey (see 3.2 *Creating and configuring implements*).

(1) Press and hold the Tx button ( or ) on the joystick.

 Which button needs to be pressed depends on the respective button assignment. In *Fig. 27*, for example, it is the T1 or T2 button.

If scaling is not activated (Slow mode , see 4.3 *Main page*), pressing the button always corresponds to 100 % joystick movement.



Fig. 27 Example for button assignment

✓ The REAL³-control circuit is operated until the respective button is pressed.

Button	Function
	Open the implement
	Close the implement

 On some tractors, operation of the REAL³ can also be assigned to the rocker switch on the joystick, if the rocker switch is linked to F3 in the AUX-N assignment (). In this case, operation takes place using the rocker switch:

Rocker switch up = open implement

Rocker switch down = close implement

If the assignment was inversed using the  button during the AUX-N assignment, the functions (open/close implement) are inversed accordingly.

4.10.2.1 Operating Continuous mode



This function is an additional option available for a fee.

Operate Continuous mode:

- ➔ The 3rd control circuit is released on the  page using the  softkey (see 3.2 Creating and configuring implements).
- ➔ The pressure control is activated on the  page using the  softkey (see 3.2 Creating and configuring implements). The  icon is shown in the status bar.
- ➔ Continuous mode is released on the  page using the  softkey (see 3.2 Creating and configuring implements). The  icon is shown in the status bar.
- ➔ For the volume flow (SET Q), a value greater than 0 % is entered on the  page (see 3.2 Creating and configuring implements).

Version 1:

- (1) Press the Tx button () on the joystick.



Which button needs to be pressed depends on the respective button assignment. In Fig. 28, for example, it is the T2 button.

- ✓ The  icon flashes in the status bar. Continuous mode is activated. The value defined for the volume flow determines the speed of movement.



Fig. 28 Example for button assignment

- (2) To deactivate, press the Tx button ( or ) on the joystick.
- ✓ The  icon is constantly lit green in the status bar.

Version 2:

- If the rocker switch on the joystick is assigned to the 3rd control circuit, the function can also be activated using the rocker switch (rocker switch in "Close implement" direction) instead of using the button (see version 1). To do so, the rocker switch must be linked with F3 () during the AUX-N assignment. The remaining operation corresponds to version 1. To deactivate the function, move the rocker switch up or down.

Version 3:

- (1) Press the Tx button () on the joystick and move the joystick in the *Scooping* direction.



Which button needs to be pressed depends on the respective button assignment. In Fig. 29, for example, it is the T1 button.

- ✓ The  icon flashes in the status bar. Continuous mode is activated. The value defined for the volume flow determines the speed of movement.



Fig. 29 Example for button assignment

- (2) To deactivate, press the Tx button () on the joystick again.
- ✓ The  icon is constantly lit green in the status bar.



If Continuous mode is no longer required, lock the function to prevent incorrect operation (see 3.2 Creating and configuring implements).

4.10.3 Operating the 4th control circuit

 This function is an additional option available for a fee.

Operate the 4th control circuit:

➔ The 4th control circuit is released on the  page using the  softkey (see 3.2 Creating and configuring implements).

- (1) Press the Tx button () on the joystick and simultaneously move the implement axis towards the desired function with the joystick.

 Which button needs to be pressed depends on the respective button assignment. In Fig. 30, for example, it is the T1 button.

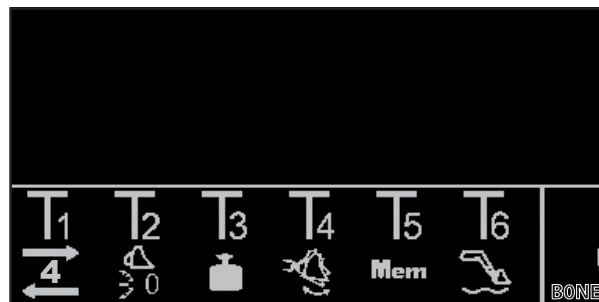


Fig. 30 Example for button assignment

Direction	Function
Scooping	Close the implement
Dumping	Open the implement

✓ The 4th control circuit will be operated.

- (2) To deactivate, release the Tx button () on the joystick.

 When the 4th control circuit is activated while continuous mode is active (see 4.10.2.1 Operating Continuous mode), continuous mode is automatically deactivated. After deactivating the 4th control circuit, continuous mode is not automatically reactivated.

4.10.4 Operating the float position

WARNING

Possible risk of injury due to unexpected movement!

If the front loader is not completely lowered, a vacuum may form in the hydraulic cylinders during the float position. This causes uncontrolled lowering of the front loader at a later time. This can cause persons to be injured or crushed.

- ▶ Only use the float position when the front loader is completely lowered.
- ▶ Do not use the float position with implements that require the presence of other persons!
- ▶ Only use the float position if nobody is in the danger zone.
- ▶ Do not scoop while in float position.

WARNING

Possible risk of injury due to accidental movement of the front loader!

Accidental activation of the float position can cause unexpected and uncontrolled movements of the front loader. This can cause persons to be injured or crushed.

- ▶ The float position must distinguished from the lowering position by a clearly perceptible resistance or other barrier. If this is not the case, contact the specialist workshop to have the float position deactivated. The front loader may only be used again when the float position has been deactivated.

 With self-locking operating levers, the operating lever only needs to be pushed all the way to the front or right until it locks into place to activate the float position (see operating instructions for the front loader, chapter "Basic control with levers"). A button does not need to be assigned for this.

Activate the float position:

- The float position is released on the  page using the  and  softkeys (see 5.1 *Diagnosis pages*).
- For lifting arm float position: the current position of the lifting arm is $< 40^\circ$.
- For implement float position: the current position of the lifting arm is $< 50^\circ$.

- (1) Press the Tx button () on the joystick.

 Which button needs to be pressed depends on the respective button assignment. In Fig. 31, for example, it is the T6 button.

- (2) Move the joystick in the *Lowering* (lifting arm float position) or *Dumping* (implement float position) direction.
- ✓ The float position is activated. The  icon appears on the activity display on the main page, on the left beside the lifting arm or the implement.

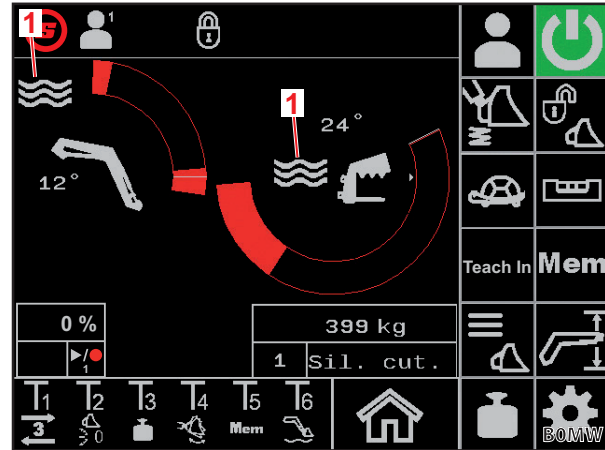


Fig. 31 Main page

Legend

- 1 Float position active

Deactivate the float position:

- (3) Press the Tx button () on the joystick again.
- Or:
Move the joystick in the opposite direction.
- ✓ The float position is deactivated. The  icon disappears from the activity display.

4.10.5 Moving to zero position

Move to zero position:

- The zero position set for the implement (see 3.2 *Creating and configuring implements*).

- (1) Press and hold the Tx button () on the joystick.

 Which button needs to be pressed depends on the respective button assignment. In Fig. 32, for example, it is the T2 button.



Fig. 32 Example for button assignment

- ✓ The implement moves to the zero position.
- (2) Release the Tx button () as soon as the zero position is reached.

4.10.6 Operating the "Bucket shake" function

Shake the implement:

- (1) Press the Tx button  on the joystick and simultaneously move the joystick in the *Dumping* direction.

 Which button needs to be pressed depends on the respective button assignment. In *Fig. 33*, for example, it is the T4 button.

- ✓ The implement is moved horizontally and is then moved rapidly back and forth.

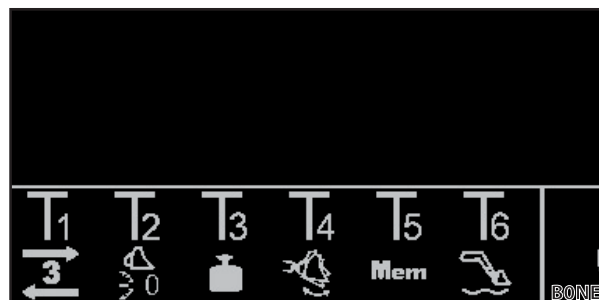


Fig. 33 Example for button assignment

 The frequency of movement is determined by moving the joystick. Stronger movement means a higher frequency, softer movement means a lower frequency.

- (2) To deactivate, release the Tx button  on the joystick.

4.10.7 Operating the "Weighing" function

- see 4.4 "Weighing" page

4.10.8 Operating the "Return to position" function

- see 4.6 "Return to position" page

4.10.9 Operating the "Teach in" function

- see 4.7 "Teach in" page

4.10.10 Deactivating the "Electronic parallel motion" function

Deactivate the function:

- ➔ The function is activated on the  page using the  softkey (see 4.3 *Main page*). The  icon is shown in the status bar.

- (1) Press and hold the Tx button  on the joystick.

 Which button needs to be pressed depends on the respective button assignment. In *Fig. 34*, for example, it is the T2 button.

- ✓ The  softkey is highlighted black and the  icon disappears from the status bar. The function is deactivated as long as the button is pressed. When the button is released, the softkey is highlighted green again and the icon reappears in the status bar.

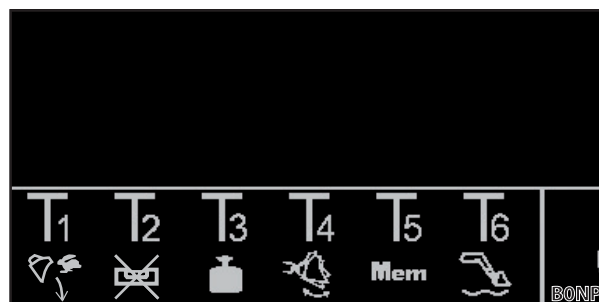


Fig. 34 Example for button assignment

4.10.11 Operating the quick emptying

 For quick emptying, the "Load-independent lowering speed" function is briefly deactivated for the implement.

Operate the quick emptying:

→ The "Load-independent lowering speed" function is activated on the  page using the  softkey (see 3.2 *Creating and configuring implements*).

(1) Move the joystick in the *Dumping* direction and press and hold the Tx button () on the joystick.

 Which button needs to be pressed depends on the respective button assignment. In Fig. 35, for example, it is the T1 button.

- ✓ The quick emptying is activated as long as the button is pressed. When the button is released, the "Load-independent lowering speed" function is reactivated and the implement dumps load-independently.



Fig. 35 Example for button assignment

4.11 Tip-over protection

The  symbol (tip-over protection) appears in the status bar when one of the following conditions is met:

- Only for FS IB+ front loaders: the angle of the lifting arm is greater than the lifting arm angle set for the tip-over protection and the total angle was reached or exceeded. The implement then cannot be scooped any further.

 The total angle consists of the angle of the lifting arm and the angle of the implements. The total angle determines the maximum lifting height. The limitation of the lifting height caused by the total angle aims to prevent hazards to the operator, e.g. by dumping the load on the tractor. The total angle is defined by the specialist workshop during initial operation.

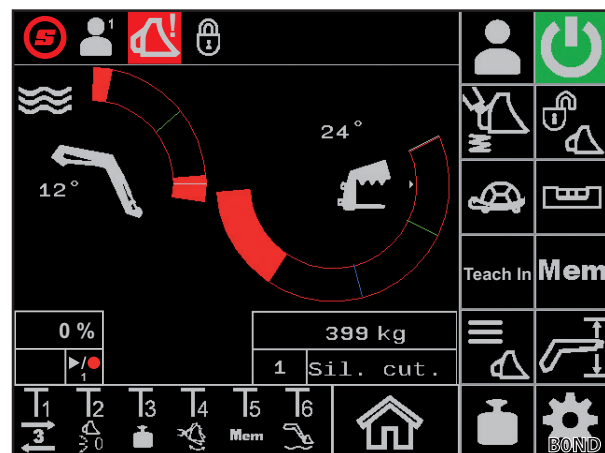


Fig. 36 Tip-over protection display

- Only for FZ IB+ front loaders: the implement is at the upper mechanical stop. The lifting arm then cannot be lowered any further.
- The implement type or name was changed in a different driver profile. The symbol disappears again after switching to the  page (Implement selection).

5 Troubleshooting

5.1 Diagnosis pages

The diagnosis pages () are used in cases of malfunctions to localise the troubleshooting and possibly identify the fault.

Utilised softkeys					
Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Access to the service settings (password-protected) ¹		Define unit (kg or lbs).		Scroll back in the diagnosis pages.
	Release the float position for the lifting arm.				Scroll forward in the diagnosis pages.
	Release float position for implement.		Reset the driver profile settings.		

¹Access only for service technicians and specialist workshops

Change unit:

(1) Press the **kg** or **lbs** softkey.

✓ The softkey changes from **kg** to **lbs** or **lbs** to **kg**. The displayed unit corresponds to the utilised unit.

Angle sensors for lifting arm and implement

Legend	
1	Lifting arm angle in degrees
2	Implement angle in degrees
3	Lifting arm angle sensor
4	Implement angle sensor

 The value for the angle sensors must be between 500 mV and 4500 mV.

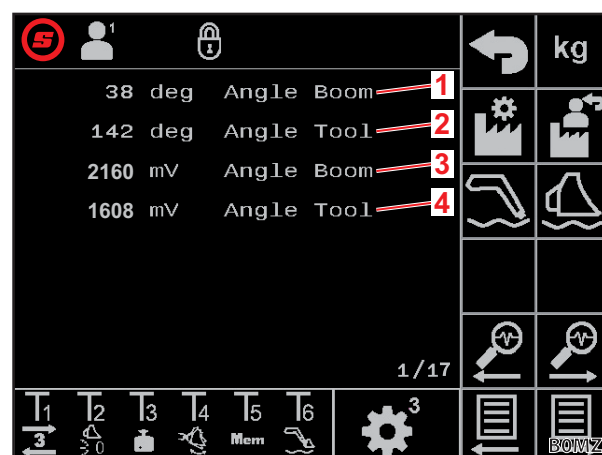


Fig. 37 Angle sensors for lifting arm and implement

Pressure sensors for lifting arm

Legend	
1	Pressure on the piston side
2	Pressure on the rod side
3	Raw data for pressure sensor on the piston side
4	Raw data for pressure sensor on the rod side

 The value for the pressure sensors must be between 500 mV and 4500 mV.

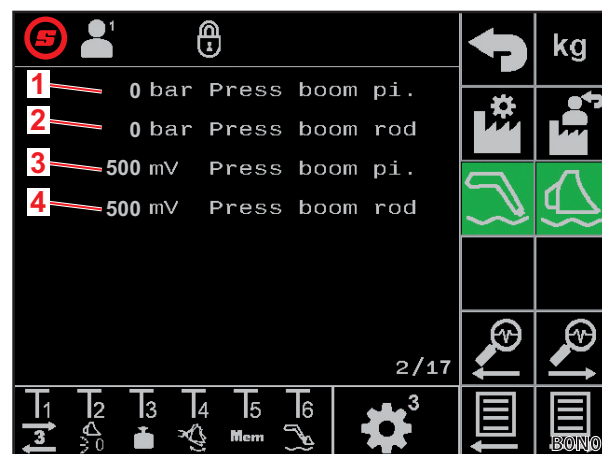


Fig. 38 Pressure sensors for lifting arm

Pressure sensors for implement

Legend	
1	Pressure on the piston side
2	Pressure on the rod side
3	Raw data for pressure sensor on the piston side
4	Raw data for pressure sensor on the rod side

i The value for the pressure sensors must be between 500 mV and 4500 mV.

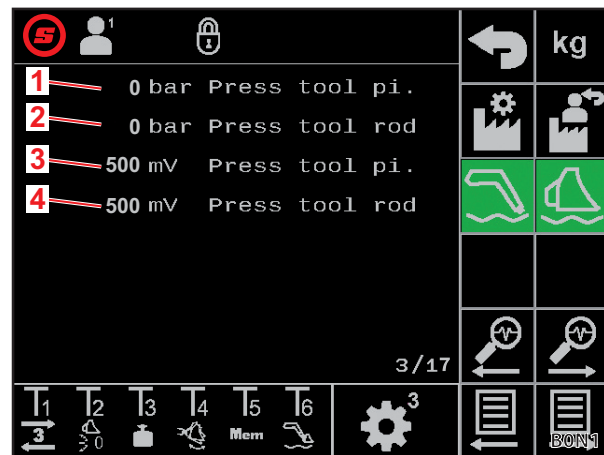


Fig. 39 Pressure sensors for implement

Pressure sensor in 3rd control circuit

Legend	
1	Pressure in 3rd control circuit
2	Raw data for pressure in 3rd control circuit

i The value for the pressure sensors must be between 500 mV and 4500 mV.



Fig. 40 Pressure sensor in 3rd control circuit

Debug values — for internal diagnosis purposes

Legend	
1	Debug value 1
2	Debug value 2
3	Debug value 3

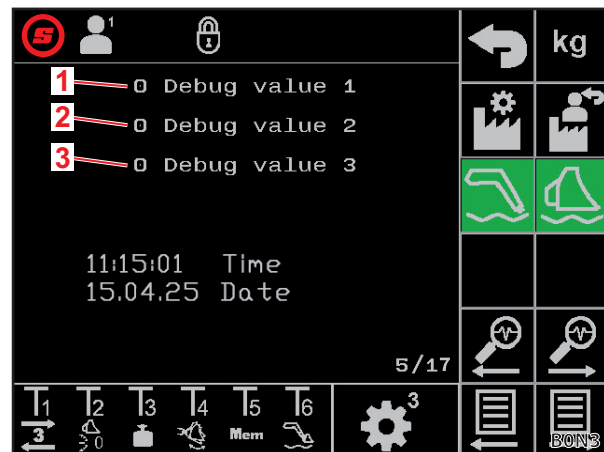


Fig. 41 Debug values

Speed

Legend	
1	Engine speed
2	Wheel-based speed

 The wheel-based speed is only available from software revision 3191 onwards.



Fig. 42 Speed

Joystick diagnosis — joystick movement

Legend	
1	Joystick movement in %
2	Joystick raw data
X	Implement
Y	Lifting arm
Z	Axle 3, if equipped

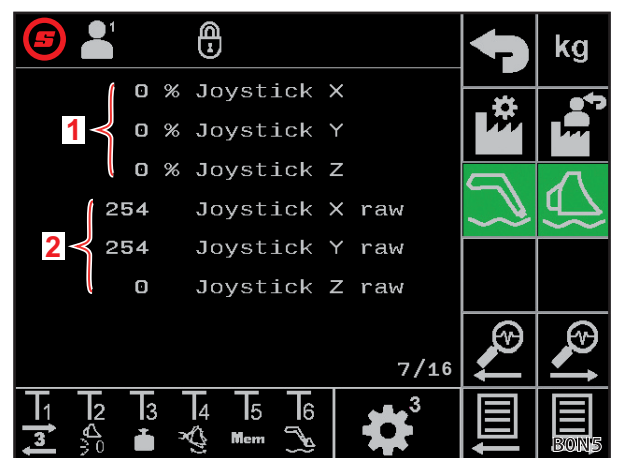


Fig. 43 Data on joystick movement

Joystick diagnosis — AUX-N values

Legend	
1	AUX-N ID
2	AUX-N value 1
3	AUX-N value 2
4	Joystick raw data
X	Implement
Y	Lifting arm
Z	Axle 3, if equipped

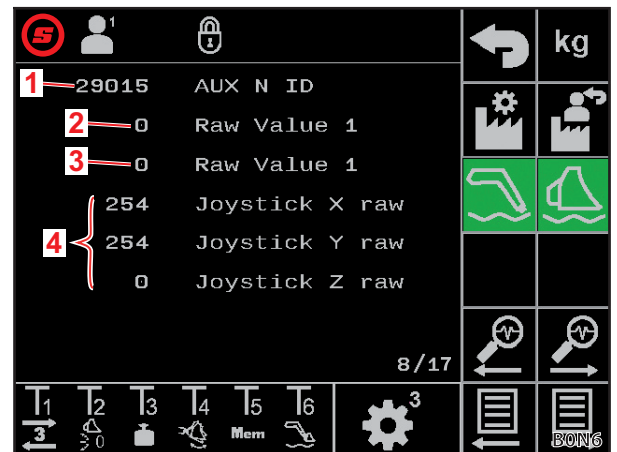


Fig. 44 AUX-N values

Joystick diagnosis — variables

Legend	
1	Ctrl variable 1
2	Ctrl variable 2
3	Status variable 1
4	Status variable 2

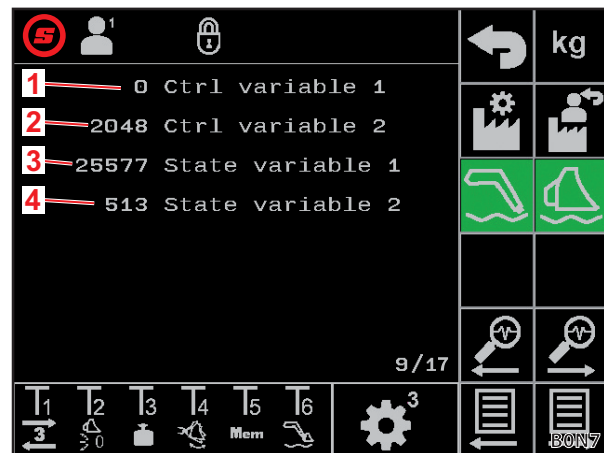


Fig. 45 Variables

Output diagnosis

Legend	
1	Lifting arm valve target value
2	Implement valve target value
3	3rd control circuit valve target value
4	4th control circuit changeover switch target value
5	Hydro-Lock target value
6	Vibration damping target value

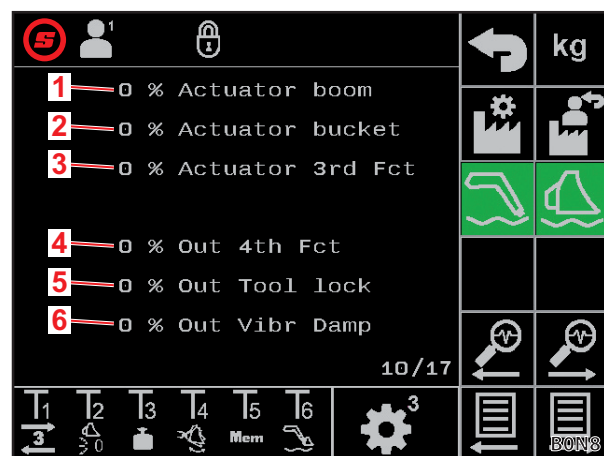


Fig. 46 Output diagnosis

Diagnosis — Miscellaneous

 Available only from software revision 3191 onwards.

Legend	
1	Type of the front loader
2	Bone dimension
3	Pump size
4	Gear factor

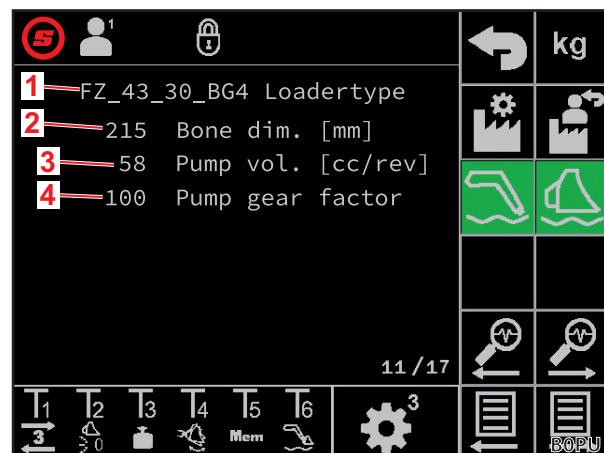


Fig. 47 Miscellaneous

Error display — current error

Legend	
1	Current error

 The meaning of the error codes, sources and groups is described in the workshop information (available only for service technicians and specialist workshops).



Fig. 48 Error display

Error display — error list

Legend	
1	Display of most recently occurred errors

 The last 10 errors are shown.

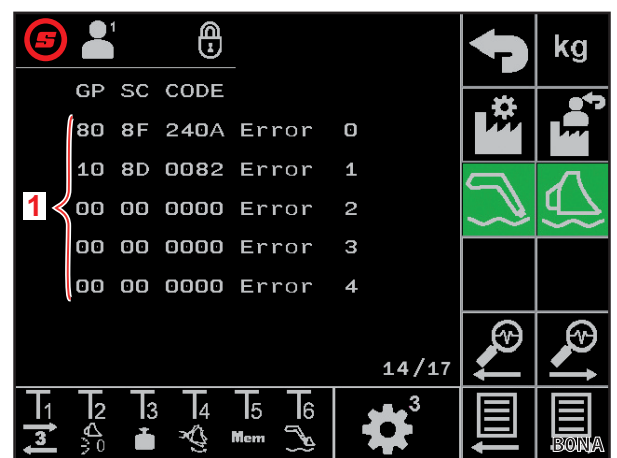


Fig. 49 Error display

Teach-in data — internal use



Fig. 50 Teach-in data

Software data for control unit

Legend	
1	Front loader software version
2	Front loader software revision
3	Application software revision
4	ISOBUS software version
5	Code for activated options

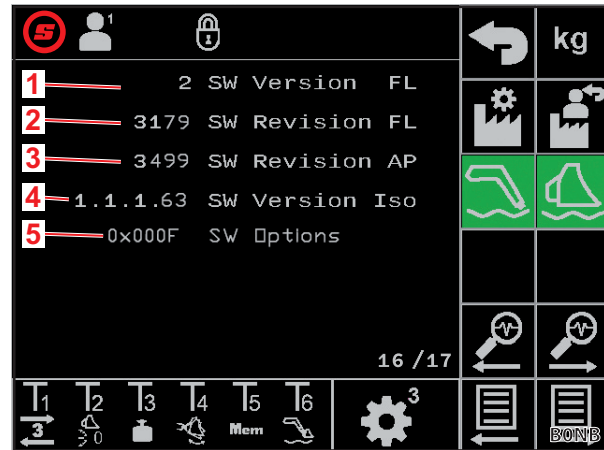


Fig. 51 Software data

Hardware data for control unit

Legend	
1	Serial number of control unit
2	Hardware version
3	Hardware revision
4	Device code
5	Part no.
6	Operating hours counter

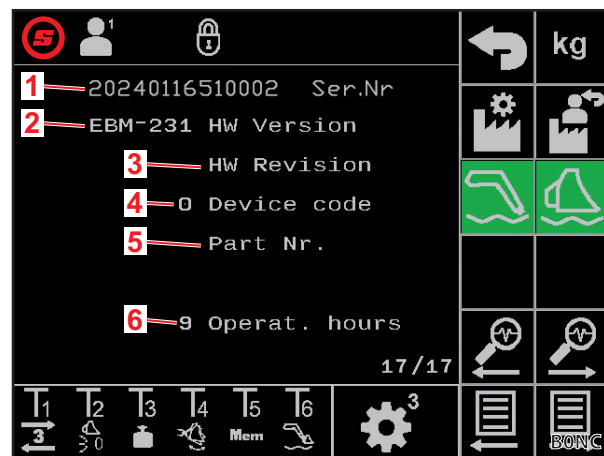


Fig. 52 Hardware data

5.2 Error list

WARNING

Mortal danger and material damage due to lack of safety!

Troubleshooting and repair work carried out incorrectly can impair the safety of the front loader.

- Necessary repair work should only be performed by an authorised specialised workshop.

This error list only refers to possible electrical causes. Other factors, such as hydraulic connections, hoses, hydraulic oil, etc. are covered in the operating instructions for the front loader.

- Before beginning with troubleshooting, make sure that the hydraulic oil has reached the normal operating temperature.
- If the points listed in the error list do not lead to a solution, please contact an authorised specialist workshop to localise and fix the fault.

Description of the fault	Determining the cause	Rectifying the fault
AUX-N assignment on the display cannot be performed.	Were the joystick axes and buttons released for basic assignment options in the AUX-N menu?	Release the joystick axes and buttons in the AUX-N menu (see instructions for the tractor terminal).
	Is the screen for the front loader software displayed?	If the screen is shown, there is a further error. Contact a specialist workshop and have it checked. If the screen is not displayed, the control unit is not being supplied with power.
	Is the +12 V fuse on the ISOBUS wiring harness in working order?	Check the fuse (see 5.2.1 <i>Check the +12 V fuse</i>).
The front loader operation cannot be activated.	Was the AUX-N assignment performed (joystick axes and joystick buttons T1-T6)?	Perform the AUX-N assignment (see instructions for the tractor terminal).
	Is the AUX-N assignment correct?	Check the AUX-N assignment (see instructions for the tractor terminal).
	Was the AUX-N assignment activated?	Activate the AUX-N assignment (see 3.1 <i>Start-up procedure</i> and instructions for the tractor terminal).
None of the front loader functions can be actuated (lifting, lowering, dumping, scooping).	Is the AUX-N assignment correct?	Check the AUX-N assignment (see instructions for the tractor terminal).
	Is the  softkey on the  page (main page) highlighted green?	Activate the front loader operation (see 3.1 <i>Start-up procedure</i>).
Only one front loader function (lifting, lowering, dumping or scooping) cannot be actuated.	Is the AUX-N assignment correct?	Check the AUX-N assignment (see instructions for the tractor terminal).
The front loader function can only be moved in one direction (lifting or lowering and dumping or scooping).	Is operation in both directions possible via the  page (emergency operation)?	If operation is possible, there is a fault in the hydraulic line connections. Contact a specialist workshop and have it checked.
	Is the  symbol (tip-over protection) shown in the status bar?	Check causes for active tip-over protection (see 4.11 <i>Tip-over protection</i>).
The hydraulic implement locking mechanism (Hydro-Lock) cannot be opened or closed.	Is the  softkey shown on the  page (main page)?	If the softkey is not shown, the option is not activated. Contact a specialist workshop and have it checked.
	Is the current position of the lifting arm < 25°?	Adjust the position of the lifting arm.
The end position damping is not working properly.	Is the function activated?	Activate the function (see 3.2 <i>Creating and configuring implements</i>).
	Is the selected level for the end position damping too low?	Adjust the level for the end position damping (see 4.9 <i>"End position damping and adjustable response behaviour" page</i>).
	Does the current angle shown on the display match the actual position of the front loader when the front loader is moved to the physical end position?	If the display does not match, there might be a sensor error. Contact a specialist workshop and have it checked.

Description of the fault	Determining the cause	Rectifying the fault
The lifting arm or implement do not move to the defined memory position.	Are the memory positions correctly set?	Set/correct the memory positions (see 4.6 "Return to position" page).
	Are the memory positions outside of the active working range?	Check the working range (see 4.5 "Working range" page).
	Is the  symbol (tip-over protection) shown in the status bar?	If the tip-over protection is active, the memory positions are in the tip-over protection range. Correct the memory positions (see 4.6 "Return to position" page).
"Return to position" does not work.	Are memory positions M1 and M2 correctly set and were not interchanged?	Set/correct the memory positions (see 4.6 "Return to position" page).
Electric flow sharing is not working properly.	Is the function activated?	Activate the function (see 3.2 Creating and configuring implements).
	Has the hydraulic oil already reached the normal operating temperature?	Wait for approx. 15 minutes and test the function again.
	Is the engine speed high enough (see 5.1 Diagnosis pages)?	Increase the engine speed to 1000 rpm.
Front loader functions (lifting, lowering, dumping, scooping) only move slowly.	Is Slow mode active? Is the  softkey highlighted green?	Deactivate Slow mode (see 4.3 Main page).
	Has the hydraulic oil already reached the normal operating temperature?	Wait for approx. 15 minutes and test the function again.
	Is the engine speed high enough (see 5.1 Diagnosis pages)?	Increase the engine speed to 1000 rpm.
Load-independent lowering speed is not working properly.	Is the function activated?	Activate the function (see 3.2 Creating and configuring implements).
	Is the engine speed high enough (see 5.1 Diagnosis pages)?	Increase the engine speed to 1000 rpm.
The electric parallel levelling is not working properly.	Is the function activated?	Activate the function (see 4.3 Main page).
	Do the active working ranges for the implement interfere with the parallel levelling function?	Check/correct or deactivate the working ranges (see 4.5 "Working range" page).
	Is the  symbol (tip-over protection) shown in the status bar?	If the tip-over protection is active, the positions for the parallel levelling are in the tip-over protection range. Check causes for active tip-over protection (see 4.11 Tip-over protection).
The "Weighing" function cannot be activated.	Is the currently selected implement calibrated? On the  page (weighing), is the  icon shown in the activity display beside the implement?	Calibrate the implement (see 3.2 Creating and configuring implements).
The displayed weight is incorrect.	Is the deviation within the weighing tolerances?	Check the weighing tolerances (see 4.4 "Weighing" page).
	Has the correct implement been selected?	Select the correct implement (see 3.2 Creating and configuring implements).
	Is the TARE function still active? Is the  softkey highlighted green?	Deactivate the function (see 4.4 "Weighing" page.)
Inaccuracy during the weighing procedure.	Is the deviation within the weighing tolerances?	Check the weighing tolerances (see 4.4 "Weighing" page).
The pressure control is not working properly.	Is the 3rd control circuit released?	Release the 3rd control circuit (see 3.2 Creating and configuring implements).
	Is the function activated?	Activate the function (see 3.2 Creating and configuring implements).
	Has a pressure limit been set (see 5.1 Diagnosis pages)?	Set the pressure limit (see 3.2 Creating and configuring implements).

Description of the fault	Determining the cause	Rectifying the fault
Continuous mode is not working properly.	Is the  softkey shown on the  page (implement settings - page 3)?	If the softkey is not shown, the option is not activated. Contact a specialist workshop and have it checked.
	Are Continuous mode and the 3rd control circuit released on the  page using the  and  softkeys?	Release Continuous mode and 3rd control circuit (see 3.2 <i>Creating and configuring implements</i>).
	Is the pressure control activated on the  page using the  softkey?	Activate the function (see 3.2 <i>Creating and configuring implements</i>).
	Has a value above 0 % been entered for the volume flow on the  page (implement settings - page 3)?	Adjust the value for volume flow (see 3.2 <i>Creating and configuring implements</i>).
The float position cannot be activated.	Is the float position released on the  page using the  and  softkeys?	Release the float position (see 5.1 <i>Diagnosis pages</i>).
	Is the current position of the lifting arm < 40° (lifting arm float position) or < 50° (implement float position)?	Adjust the position of the lifting arm.

5.2.1 Check the +12 V fuse

The +12 V fuse is on the STOLL ISOBUS wiring harness, which leads from the front loader socket on the right mounting part to the ISOBUS outer socket. The +12 V fuse is connected to the positive terminal on the battery (terminal 30).

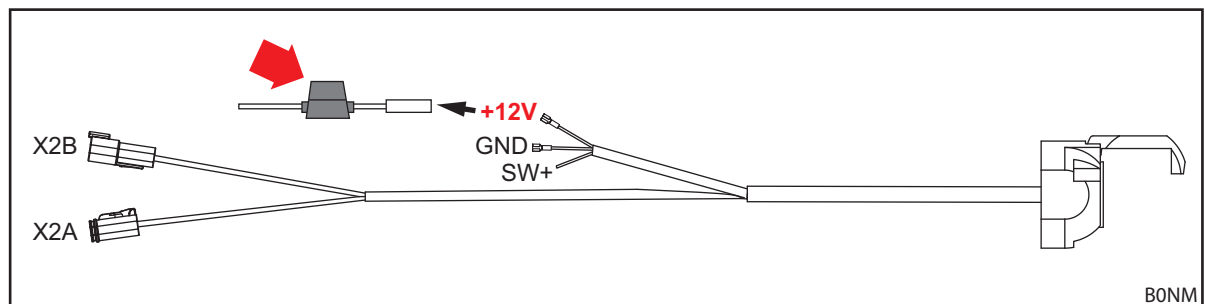


Fig. 53 STOLL ISOBUS wiring harness

Check the +12 V fuse:

- Locate and check the fuse (ID no. 0484860, see red arrow in Fig. 53):
 - Is the fuse damaged/blown? Replace the fuse.



If the fuse is not damaged, there is a further error. Contact a specialist workshop and have it checked.

6 Software updates

For questions regarding the software update, please contact your dealer.

7 Spare parts and customer service

7.1 Spare parts

WARNING

Risk of injury and material damage due to using the wrong spare parts!

The use of non-approved spare parts can impair the safety of the front loader and results in expiry of the operating permit.

- ▶ Only use original spare parts or those approved by STOLL.

Original spare parts and fitting accessories are listed in separate spare part lists.

- Download spare part lists at www.stoll-germany.com.

7.2 Customer service

For further questions regarding your front loader, please contact your dealer.

8 Technical specifications

8.1 Software version

The software version is shown on the diagnosis pages (see *5.1 Diagnosis pages*).

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Address of the dealer

Stick or write down the serial number here



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