

Display formats available:

Variable	Display format
Time format	<ul style="list-style-type: none"> <li>• 12 h</li> <li>• 24 h</li> </ul>
Date format	<ul style="list-style-type: none"> <li>• ttmmjjjj</li> <li>• ttjjjjmm</li> <li>• mmjjjjtt</li> <li>• mmttjjjj</li> <li>• jjjjmmtt</li> <li>• jjjjttmm</li> </ul>
Length unit	<ul style="list-style-type: none"> <li>• metric</li> <li>• imperial</li> </ul>
Area unit	<ul style="list-style-type: none"> <li>• metric</li> <li>• imperial</li> </ul>
Volume unit	<ul style="list-style-type: none"> <li>• metric</li> <li>• imperial</li> <li>• US</li> </ul>
Weight unit	<ul style="list-style-type: none"> <li>• metric</li> <li>• imperial</li> <li>• tons / pounds</li> </ul>

tt = day, mm = month, jjjj = year

Return to the submenu:



– Press the button.

The item frame disappears. Returns to the submenu.

150180-001

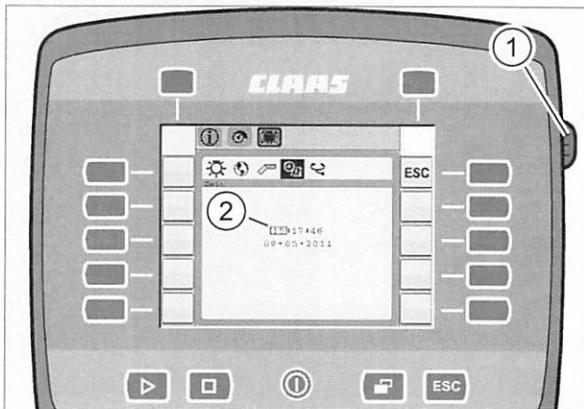
#### 7.5.4 Setting the date/time

– Select menu item.



The screen shown here appears.





166282-001

- Press the select wheel (1).

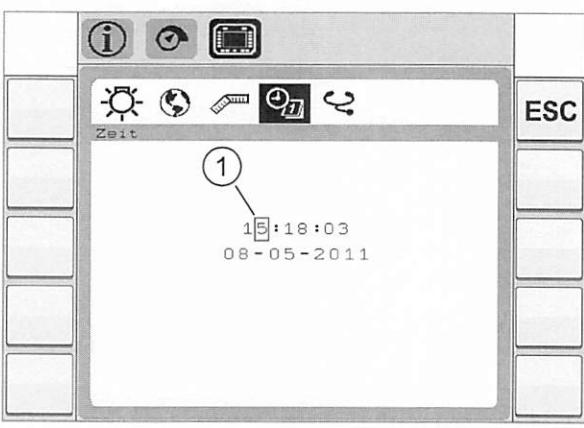
*The item frame (2) appears.*

- Turn the select wheel until the desired item is in the item frame.

*The position frame moves to the left or right.*

- Press the select wheel.

113



168112-001

*The item frame (1) becomes red, and is around the last digit.*

- Turn the select wheel.

*The digit changes.*

- Press the select wheel.

*The red item frame moves to the next digit.*

- Turn the select wheel.

*The digit changes.*

- Press the select wheel.

*The item frame changes from red to grey. The number is adopted.*

114

#### To change another item:

- Repeat the process.

**Return to the submenu:**

**ESC**

- Press the button.

*The item frame disappears. Returns to the submenu.*

160256-001

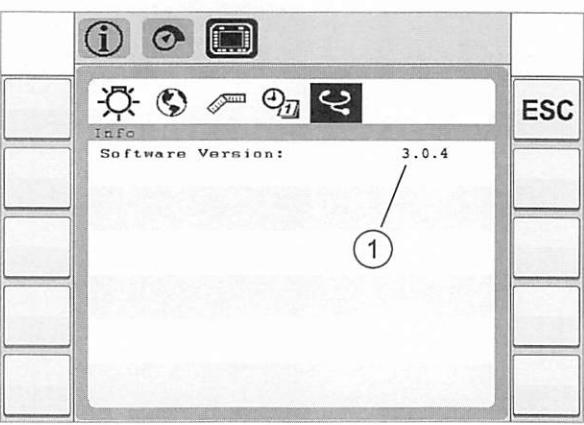
#### 7.5.5 Displaying the COMMUNICATOR II software version

- Select a menu item.



*The monitor mask is displayed.*

(1) = Software version of terminal program



166287-001

115

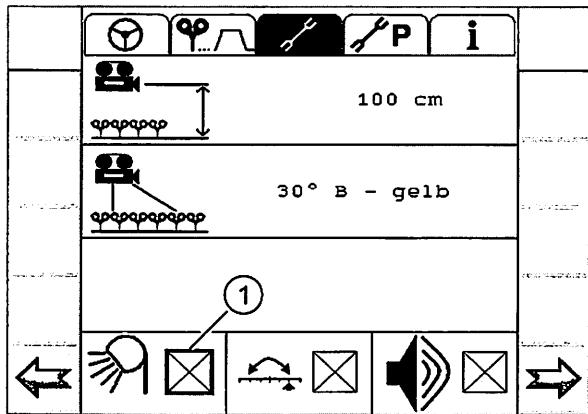
## 7.6 Fieldwork

151645-001

### 7.6.1 General settings

#### Xenon light

The Xenon light is an optional equipment. This function may not be available.



116

181995-001

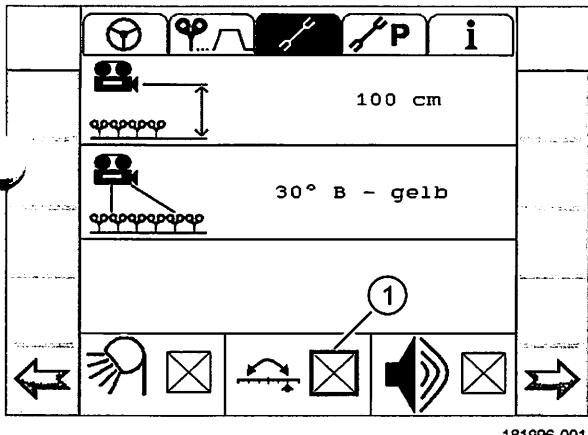
- Select the General settings.



- Turn the rotary control until box (1) next to the Xenon light symbol is selected.
- Press the rotary control.

*When the Xenon light is activated, this condition is indicated by a cross in box (1).*

Activating the Xenon light at this point does not mean that it is already switched on. It rather means that the function in the "Automatic control" menu is available.



117

181996-001

#### Dual offset

- Select the General settings.



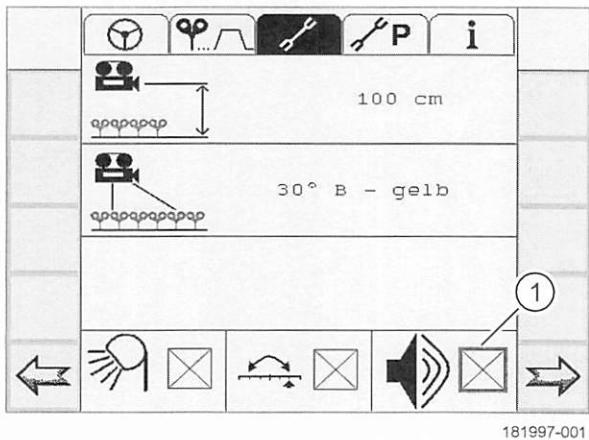
- Turn the rotary control until box (1) next to the Dual offset function symbol is selected.
- Press the rotary control.

*When the Dual offset function is activated, this condition is indicated by a cross in box (1) next to the symbol.*

When the function is activated at this point, it is available in the Automatic control menu.

#### Tone

Only the tone signalling the falling short of the signal quality threshold value can be deactivated. All other tones cannot be switched off.



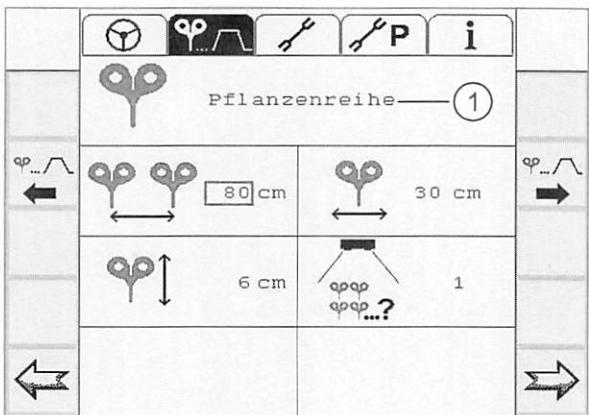
181997-001

118

- Select the General settings.

- 
- Turn the rotary control until box (1) next to the tone symbol is selected.
  - Press the rotary control.

*When the tone is set to on, this condition is indicated by a cross in box (1) next to the symbol.*



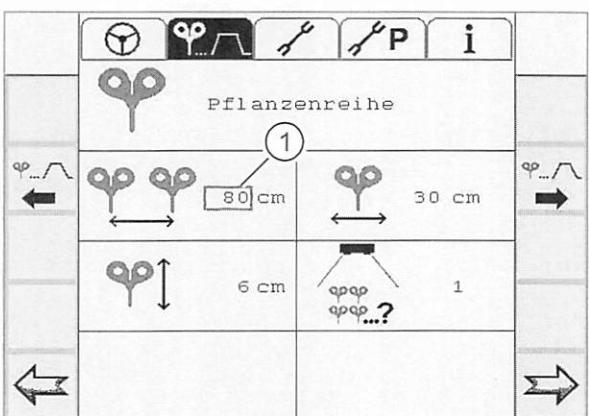
181710-001

119

- Select application settings.

- 
- Press the key several times or
  - Press the key several times until the desired application (1) is selected.

*Now the settings can be made.*



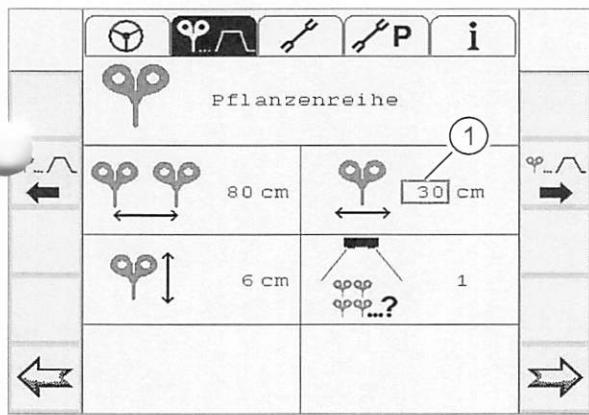
181757-001

120

### Row of plants

- Turn the rotary control until the row spacing (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The row spacing value is now stored.*

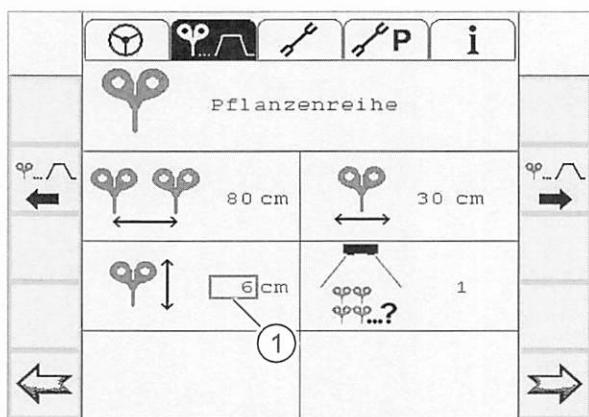


181770-001

121

- Turn the rotary control until the plant row width (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The plant row width value is now stored.*

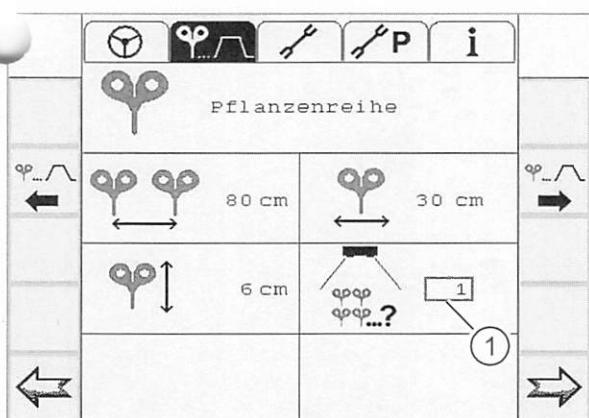


181771-001

122

- Turn the rotary control until the plant height (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The plant height value is now stored.*



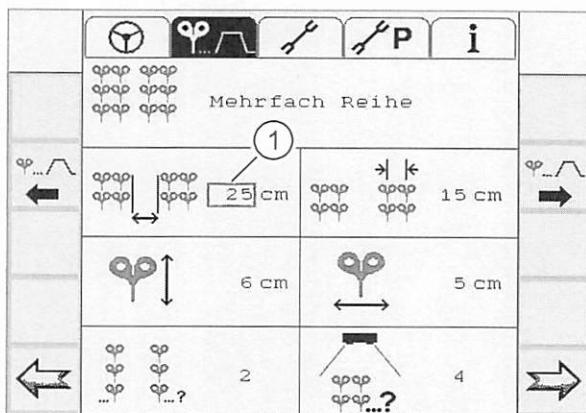
181772-001

123

"Plant rows per track" means the number of plant rows to be detected simultaneously by the camera.

- Turn the rotary control until plant rows per track (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The plant rows per track value is now stored.*



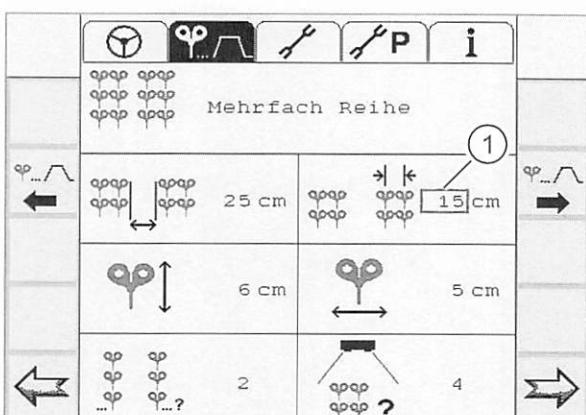
181801-001

**Multiple row**

- Turn the rotary control until the spacing of multiple rows (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The multiple row spacing value is now stored.*

124

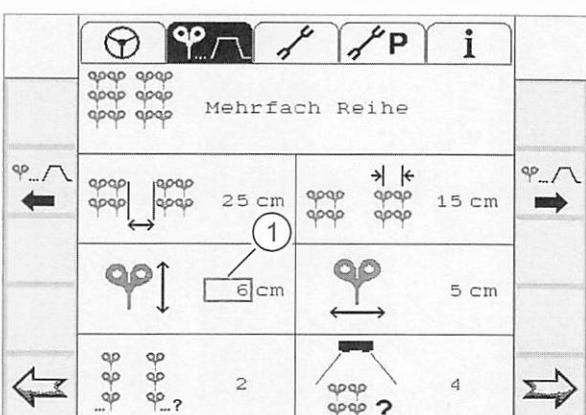


181804-001

- Turn the rotary control until the spacing within the multiple rows (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The spacing value within the multiple rows is now stored.*

125

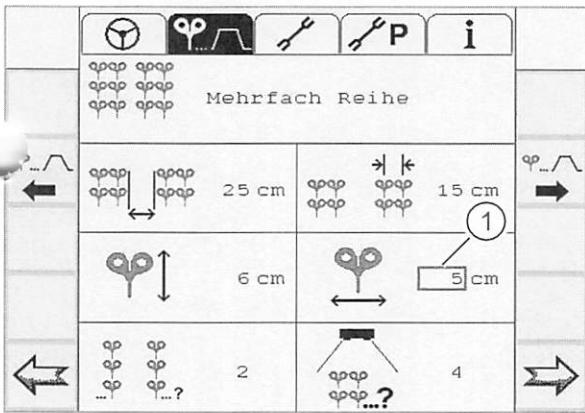


181805-001

- Turn the rotary control until the plant height (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The plant height value is now stored.*

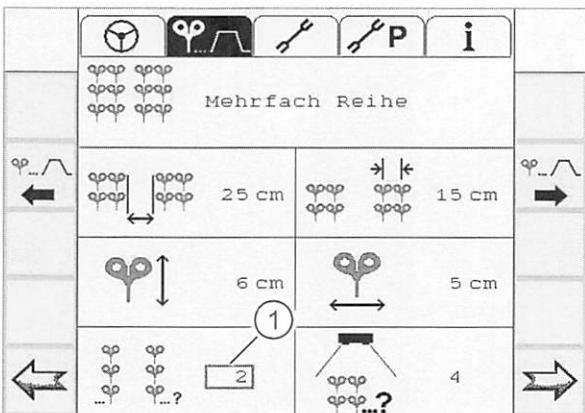
126



181807-001

127

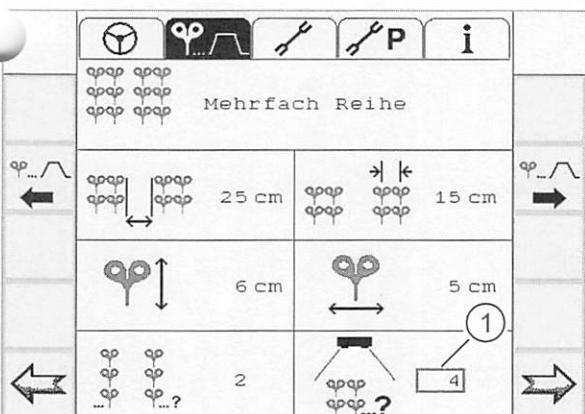
- Turn the rotary control until the plant width (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The plant width value is now stored.*

181809-001

128

- Turn the rotary control until the number of plant rows per multiple row (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The number of plant rows per multiple row value is now stored.*

181811-001

129

Here the number of all plant rows in one track must be added, not only the number of multiple rows. When a multiple row comprises three plant rows and one track comprises two multiple rows, this makes  $3 \times 2 = 6$  plant rows.

One track is the area viewed by the camera.

- Turn the rotary control until the number of plant rows per track (1) is selected.
- Press the rotary control.
- Turn the rotary control until the actual value is set.
- Press the rotary control.

*The value of the number of plant rows per track is saved.*

You can check the settings with the optional "Video monitor" feature.

☞ Page 47

### 7.6.3 Automatic control

3810-001



#### DANGER!

Persons are in the driving range of the machine.

Death or serious injury.

- Before and while driving, ensure that there are no persons or objects in the driving range.
- Do not carry any persons outside of the cab.

For the automatic control to function correctly, all setting and calibration steps must be carried out before.

In addition, the driver has different options of intervening and making corrections, even while driving.

#### Activating automatic control

- Drive the vehicle manually over the desired plant rows in accordance with the pre-set application.



- Press the key.

A beep sounds. Automatic control is activated.

The display (1) shows the status of the automatic control unit:



Implement raised and/or travel speed too slow. [Page 111](#).



Implement in working position and travel speed in permitted range.

130

Display (2) shows if the implement is in working position or raised:

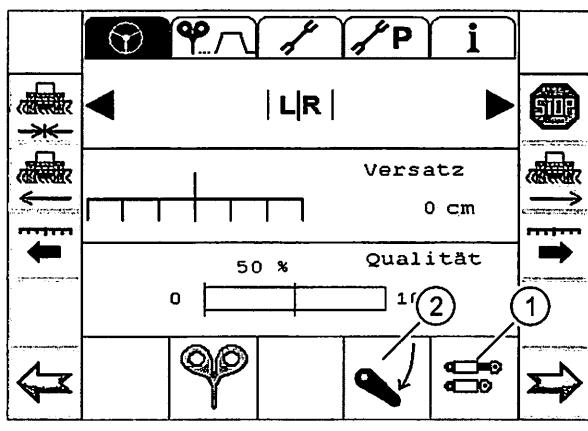


Implement raised.



Implement in working position.

The implement is automatically centred as soon as it is raised.



## Deactivating automatic control



- Press the key.

Automatic control is now deactivated. Display (1) is empty when the control unit is deactivated.

The following circumstances result in immediate **automatic deactivation** of automatic control:

- Exceeding a travel speed of 25 km/h. ☞ Page 111
- Steering angle sensor fault. ☞ Page 111
- No connection with camera. ☞ Page 111

A drop of signal quality (2) below the pre-set threshold value will not cause deactivation of the automatic control unit. In that case, the implement remains in the current position until the signal quality is sufficient again. A drop of signal quality below the pre-set threshold value is signalled by two consecutive signal tones.

### Side shifting

Display (1) shows by how much and in which direction the implement is currently shifted.

In order to remain within the control range, the driver may have to countersteer manually if necessary.



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182251-001



132

182233-001

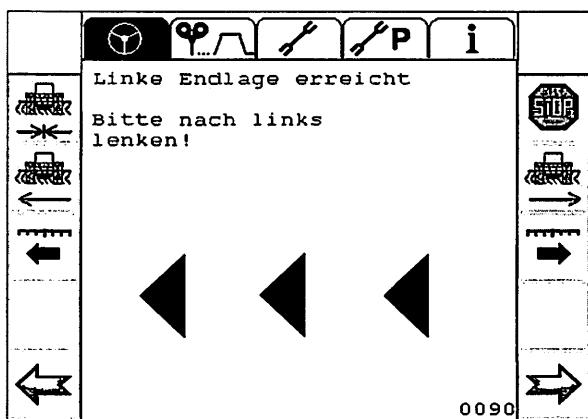


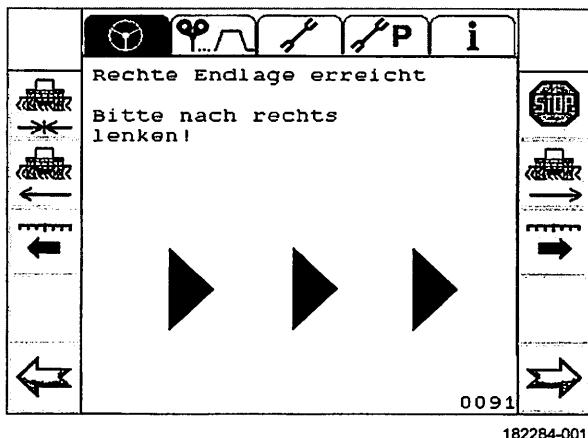
133

182283-001

When the screen shown here appears, the left end position of the implement has been reached according to the calibration.

- Steer the vehicle to the left.

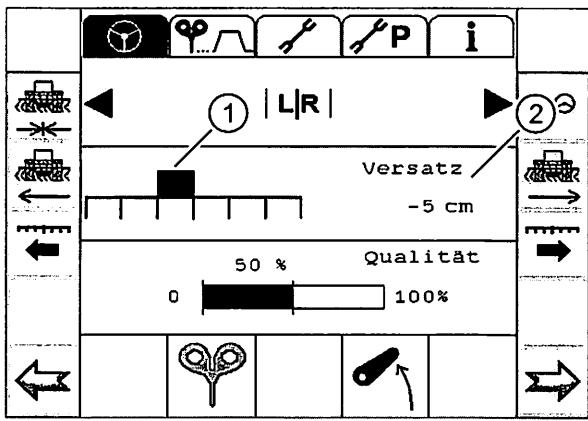




When the screen shown here appears, the right end position of the implement has been reached according to the calibration.

- Steer the vehicle to the right.

134



### Offset

The driver has the option to react to external influences by manually setting an offset value. External influences may include slopes or strong winds (depending on the plant height).



- Press the key,  
if necessary press several times.

*The offset to the left is set.*



- Press the key,  
if necessary press several times.

*The offset to the right is set.*

135

The set offset is displayed graphically (1) on the terminal and as a measure in cm (2).

### Dual offset

The Dual offset function enables the driver to switch back and forth between the two last offset values set.

This may be a benefit when turning on the turning area and slope or wind are virtually reversed.

Dual offset is available only if the function was previously activated in the "General settings" menu.  
☞ Page 102

- Setting the first offset ☞ Page 109.



- Press the key.

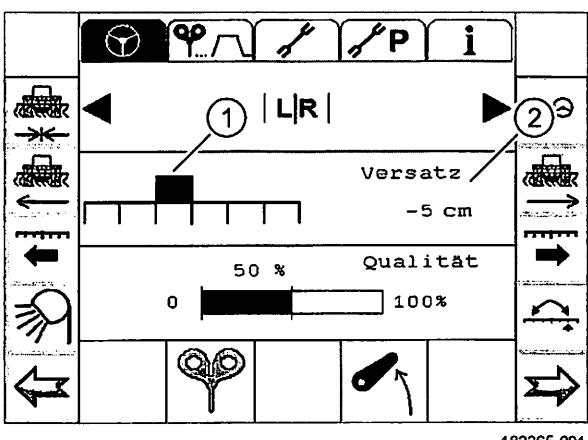
- Setting the second offset ☞ Page 109.



- Press key to change over between the two offset values.

*The offset set in each case is displayed in displays (1) and (2).*

136

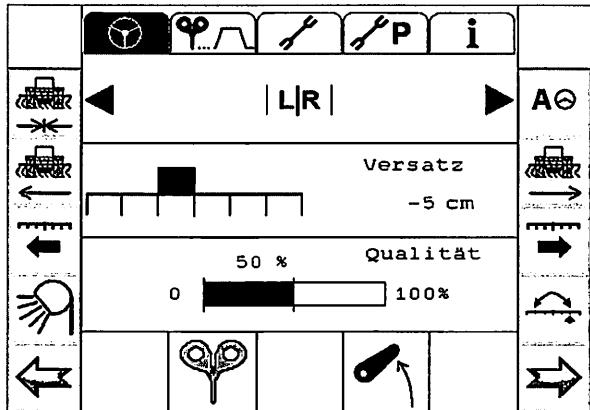


### Xenon light

To allow work to be carried out in the dark, two Xenon lights can be installed to illuminate the camera area.

The Xenon light is an equipment option and may therefore not be available.

To enable switching the lights on and off on the "Automatic control" menu card, this option must be activated on the "General settings" menu card. > Page 102.



137

182269-001



– Press the key.

*The Xenon light is ON.*

## 8 Faults and remedies

### 8.1 Overview of faults

#### 8.1.1 CULTI CAM fault table

151757-001

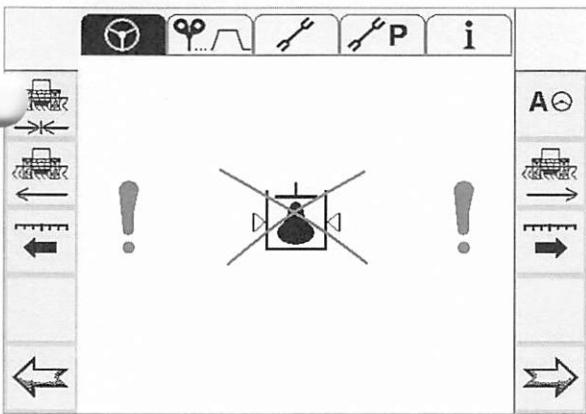
Fault	Display	Possible cause, remedy
No signal from the camera.		<p>The camera is not connected:</p> <ul style="list-style-type: none"> <li>– Connect the camera.</li> </ul> <p>No power supply:</p> <ul style="list-style-type: none"> <li>– Check 12 V power supply on the operating terminal and on the camera.</li> </ul> <p>Damaged cable:</p> <ul style="list-style-type: none"> <li>– Check the connecting cable and replace if necessary.</li> </ul> <p>Camera software not active:</p> <ul style="list-style-type: none"> <li>– Restart the camera.</li> </ul>
Low signal quality		<p>Insufficient visibility of field structure:</p> <ul style="list-style-type: none"> <li>– Missing plants.</li> <li>– Heavy weed infestation.</li> </ul> <p>Wrong camera adjustment:</p> <ul style="list-style-type: none"> <li>– Check camera height and angle.</li> <li>– Check the entered camera values.</li> </ul> <p>Wrong settings for the application:</p> <ul style="list-style-type: none"> <li>– Check the application setting and compare with the conditions on the field.  Page 47 and  Page 103</li> </ul> <p>Wrong application selected:</p> <ul style="list-style-type: none"> <li>– Check the selected application.  Page 103</li> </ul>
No signal from the steering angle sensor.		<p>Steering angle sensor not correctly connected:</p> <ul style="list-style-type: none"> <li>– Check connecting cable and connector.</li> </ul> <p>Invalid value (valid values are between 0.5 V and 4.5 V):</p> <ul style="list-style-type: none"> <li>– Check the steering angle sensor power supply.</li> </ul>
Automatic control unit deactivates itself independently.	 	<p>Maximum travel speed exceeded:</p> <ul style="list-style-type: none"> <li>– Reduce the travel speed to below 25 km/h.</li> </ul> <p>Travel speed below minimum travel speed:</p> <ul style="list-style-type: none"> <li>– Increase travel speed to above 0.05 km/h.</li> </ul>

## Hydraulic system fault

The message shown in the figure indicates a hydraulic system problem.

Reason: Not enough hydraulic oil

- Check the hydraulic oil level and top up if necessary.
- Check the hydraulic lines and connections.



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186144-001

161543-001

### 8.1.2 Questions and answers

Questions	Answers
Why does the COMMUNICATOR II not react to being switched on?	<ul style="list-style-type: none"> <li>• The 7.5 A fuse in the wiring loom is defective.</li> <li>• The D-sub connector on the COMMUNICATOR II has come loose.</li> <li>• The COMMUNICATOR II has no sufficient battery power.</li> <li>• The relay is wrongly connected and does not switch upon switching-on.</li> </ul>
Why can automatic steering not be activated?	<ul style="list-style-type: none"> <li>• The steering angle sensor is broken and no longer works properly.</li> <li>• The steering angle sensor is not supplied with operating voltage or the earth connection is interrupted.</li> <li>• The mechanics on the steering angle sensor is not calibrated. ☺ Page 82</li> <li>• The position switch was installed in an unfavourable way.</li> <li>• The position switch does not work properly.</li> <li>• The camera is not connected.</li> <li>• The camera signal quality is not sufficient. ☺ Page 111</li> <li>• The software on the module is not compatible with the camera software.</li> </ul>
Why does automatic steering drift off to one side?	<ul style="list-style-type: none"> <li>• The camera signal quality is not sufficient or below the threshold value. ☺ Page 111</li> <li>• The steering valve restrictor is open and hurried movements become visible as track errors. ☺ Page 84</li> <li>• The steering valve restrictor is closed and the steering movement reacts too slowly. ☺ Page 84</li> <li>• The camera is calibrated to one single row, but is used in multiple rows. ☺ Page 103</li> <li>• The hydraulic system does not have enough oil available. ☺ Page 112</li> <li>• The plants are too small or not green enough, e.g. in red cabbage. ☺ Page 31</li> </ul>

Questions	Answers
Why is steering possible on one side only?	<ul style="list-style-type: none"> <li>The valve connections are not properly fixed.</li> <li>The hydraulic cylinder has not been adjusted in the steering system.</li> <li>The connection of the hydraulic system is inverted.</li> </ul>
Why does the travel speed sensor not deliver any speed-dependent pulses?	<ul style="list-style-type: none"> <li>The sensor is not supplied with operating voltage or the earth connection is interrupted.</li> <li>The travel speed sensor does not generate a pulse because it was not precisely fitted.</li> <li>The metal-free zone to surround the sensor was not respected.</li> <li>The extension cable is not a 1:1 extension.</li> </ul>

## 9 Maintenance

### 9.1 General Information

124700-002

#### 9.1.1 General warnings

The following sections of this chapter contain instructions referring to the following general warning information.

168-002



#### DANGER!

Always stop the engine before carrying out any work on the machine.

Moving machine parts and / or unexpected machine movement.

Death or serious injury.

- Diesel engine OFF.
- Engage the parking brake.
- Remove the ignition key.
- Remove the key of the battery isolating switch.
- Wait until machine parts which continue rotating have come to a complete halt.
- Secure machine using wheel chocks.
- Ensure that the machine cannot be started by any third persons.

## 9.2 Maintenance Information

151759-002

### 9.2.1 Maintenance intervals

Maintenance operations	Maintenance intervals in operating hours							
	Every				Daily	Monthly	Annually	As required
	15	100	200	500				
<b>Electronic components</b>								
Area surrounding connectors of individual components	Clean							•
Strain relief of all connectors	Check					•		
<b>Steering angle sensor</b>								
Area surrounding steering angle sensor	Clean							•
Stability of clamp for steering angle sensor on piston rod of steering cylinder (not present on all implements)	Check	•						
Function of mechanical components on steering angle sensor	Check	•						
<b>Hydraulic system</b>								
Area surrounding and connector of steering valve	Clean		•					•
Leaktightness of all hydraulic threaded connections	Check				•			
Stability of all threaded connections	Check		•				•	
<b>Camera</b>								
Glass and connectors	Clean				•			•
<b>Controls and displays</b>								
COMMUNICATOR II terminal	Clean							•
Monitor	Clean							•

Use a slightly moist and soft cloth exclusively for cleaning the displays and controls.

Do not use any high-pressure cleaner, aggressive cleaning agents and no abrasive or scratching aids.

# 10 Service

## 10.1 General Information

133025-003

### 10.1.1 Spare parts and technical questions

Please indicate the identification number of the part in question for all spare part orders and technical questions:

- Machine
- Subassembly  
and/or
- Software version / versions

This is necessary as otherwise wrong spare parts may be delivered.

The identification number can be found on the respective identification plate.

The identification number / numbers of the software can be found in the respective menu.

162365-001

### 10.1.2 Service and warranty

The implement manufacturer is the first contact in service issues. If the implement manufacturer cannot find a solution for a problem or in case the warranty applies, he is allowed to contact CLAAS Agrosystems.

#### Warranty handling

When the warranty applies, proceed as follows:

- Call the Technical Support Centre and provide information regarding the component in question, the part number, quantity, invoice number and claim for damages.

*The Technical Support Centre sends you a warranty document by E-mail including the warranty counting number.*

- Print out this document, sign it and put it into the package with the defective component.
- Write a fault protocol and put it into the package with the defective component.
- Print out the invoice of the defective component and put it into the package with the defective component.
- Send the package to the address below:  
CLAAS Agrosystems KGaA mbH & Co KG  
Technical Support Centre  
Bäckerkamp 19  
D-33330 Gütersloh

# 11 Placing out of operation and disposal

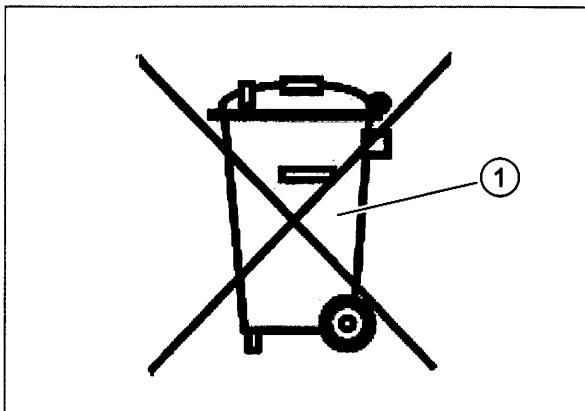
## 11.1 General Information

162364-001

### 11.1.1 Putting out of operation and disposal

When the machine or its components reach their end of use and must be scrapped, the components must be properly disposed off. In this process, the regulations issued by the local authorities in charge must be observed.

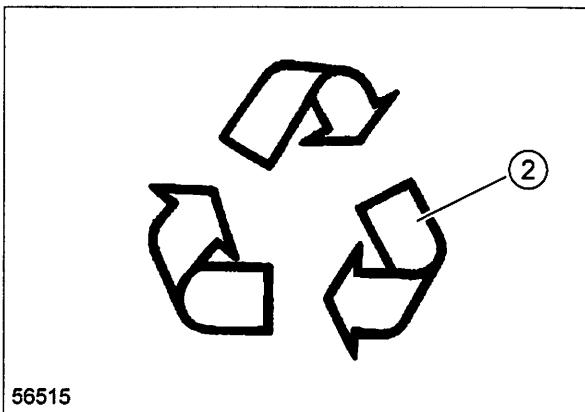
The operating media in the machine require specific disposal and must not be released into the environment. For further information regarding disposal, please contact the local authorities in charge or the implement manufacturer.



139

124657-002

- Do not throw products with symbol (1) into the household waste at the end of their service life.



140

124658-002

- Recycle the used materials marked with symbol (2) according to their marking.

- Recycle packaging materials, reuse them and do not throw them into the household waste.
- Recycle plastics marked with material details such as PP TV 20, reuse them and do not throw them into the household waste.
- Old batteries contain toxic substances and must be taken back by the seller, disposed of properly or returned to a collecting point. Do not throw old batteries into the household waste.

- Operating media such as oils, hydraulic liquids, brake liquids and fuels must be treated as special waste and disposed of properly. Always use leakproof containers when liquids are drained. Do not let any operating utilities flow on the ground, into the sewer or into any water source.
- Sort and recycle used metal so that the grades are unmixed, reuse them and do not throw them into the household waste.
- Dispose of electric and electronic components properly or hand them over to a collecting point. Do not throw electric and electronic components into the household waste.
- Observe the regulations issued by the local authorities in charge.

## 12 Technical terms and abbreviations

### 12.1 Terms and explanations

158945-001

#### 12.1.1 Units

Unit	Description
A	Ampere (unit of current intensity)
V	Volt (unit of electric voltage)
bar	bar (unit of pressure)
cm	Centimetre
g	Gram
h	Hours
kg	Kilogram
kHz	Kilohertz
kPa	Kilopascal
km	Kilometre
km/h	Kilometres per hour
m	Metre
MHz	Megahertz
mm	Millimetre
Nm	Newtonmeter
psi	pound per square inch
W	Watt
°C	degree Celsius (unit of temperature)

158944-001

#### 12.1.2 Abbreviations

Abbreviation	Description
resp.	respectively
ECU	Control unit ( <b>E</b> lectronic <b>C</b> ontrol <b>U</b> nit)
KGaA mbH	Kommanditgesellschaft auf Aktien mit beschränkter Haftung (a legal form of German companies)
e.g.	for example
CAN	Controller-Area Network
approx.	approximately
DIN	German Institute for Standardisation
EC	European Community
EN	European Standard

Abbreviation	Description
Fz-Ident-Nr.	Vehicle identification number
ISO	International Standardisation Organisation
SAE	Society of Automotive Engineers
StVZO	Straßenverkehrs-Zulassungs-Ordnung (German vehicle licensing regulations)
LWS	Steering angle sensor
ggf.	possibly
sog.	so-called
min.	Minimum

151436-001

### 12.1.3 Technical terms

Technical term	Description
Application	ISOBUS-compatible software program
"Auxiliary" function	Function of an application that can be assigned to a programmable key
Operating unit	Output device for ISOBUS commands, e.g. multi-function lever, terminal, ...
Data bus	Transmits data between the connected devices
ECU address	Control unit address ( <b>Electronic Control Unit</b> )
ECU name	Control unit name ( <b>Electronic Control Unit</b> )
ISOBUS	Standardised communication protocol for data exchange between individual components (acc. to ISO 11783)
Machine	Implement for fitting on tractor
Recycling	Re-use of used, defective or no longer-used products
Softkey	Symbol showing the function of a function key
Terminal	Device for displaying commands and command output
Working set	Program part of an application to be loaded from the machine into the terminal

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