
4 CONTROLS AND INDICATORS

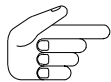
General

The BAUER Cutter and the HTS operated by means of the control elements arranged in the cabin of the base machine.

The operator must be thoroughly familiar with the control elements already before assembling is started.

Information and description of operational procedures in this section are limited to a basic outline of the most important aspects for operation.

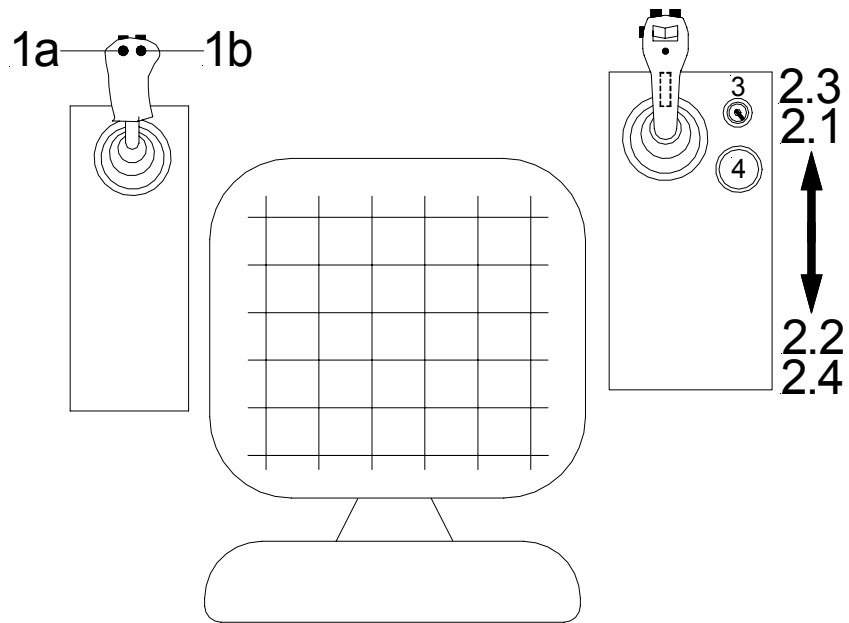
On-site experience and practical application will develop the operator's skills to use the machine to full capacity.



NOTE

For description of the controls and indicators of the base machine refer to the instruction manual of the base machine.

4.1 OPERATOR'S CAB

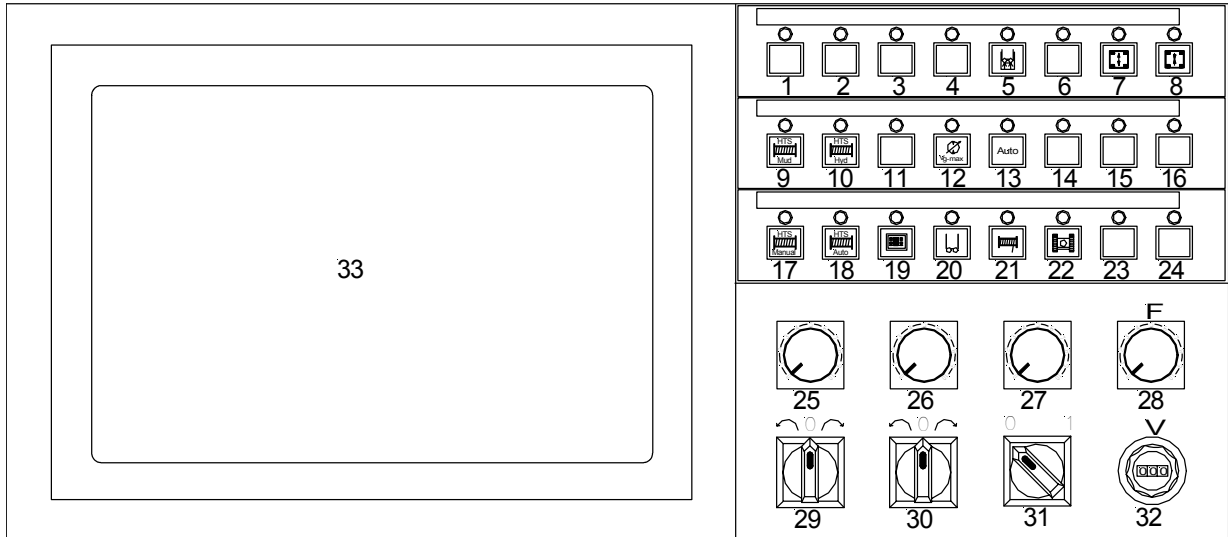


LH187322500.wmf

Depending on the selections made on the cutter control panel, the operator's left and right controls are as follows:

- 1a/1b "Rigging" by-pass button
- 2.1 Cutter winch "down" in manual mode
- 2.2 Cutter winch "up" in manual mode
- 2.3 Selected hose tension winch "down" in manual mode
- 2.4 Selected hose tension winch "up" in manual mode
- 3 Engine ignition lock
- 4 Emergency STOP button

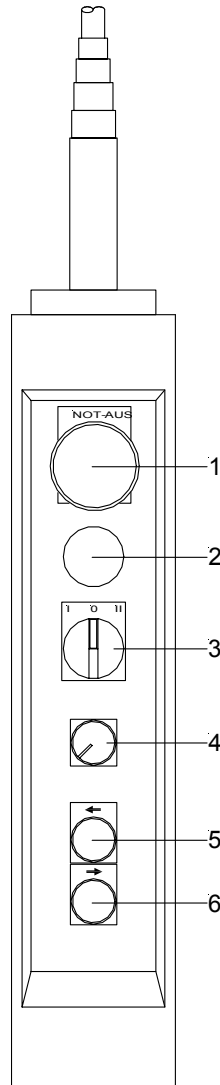
4.2 CONTROL AND MONITORING UNIT



FC056504.wmf

- | | |
|---|---|
| 1 Not used | 17 Select HTS manual mode |
| 2 Not used | 18 Select HTS automatic mode |
| 3 Not used | 19 Computer control On / Off |
| 4 Not used | 20 Select cutting mode |
| 5 Lift cutter by approx. 20 cm | 21 Select winch manual mode |
| 6 Not used | 22 Select crawler mode |
| 7 Clamp guide frame | 23 Not used |
| 8 Unclamp guide frame | 24 Not used |
| 9 Select mud hose tension winch in manual mode | 25 Left cutter wheel speed adjustment |
| 10 Select hydraulic hose tension winch in manual mode | 26 Right cutter wheel speed adjustment |
| 11 Not used | 27 Mud pump speed adjustment |
| 12 Select max. torque on cutter wheels | 28 Crowd force adjustment |
| 13 Select winch automatic mode | 29 Select sense of rotation of left cutter wheel |
| 14 Not used | 30 Select sense of rotation of right cutter wheel |
| 15 Not used | 31 Mud pump On / Off |
| 16 Not used | 32 Crowd speed adjustment |

4.3 PORTABLE CONTROL OF CUTTER WHEELS

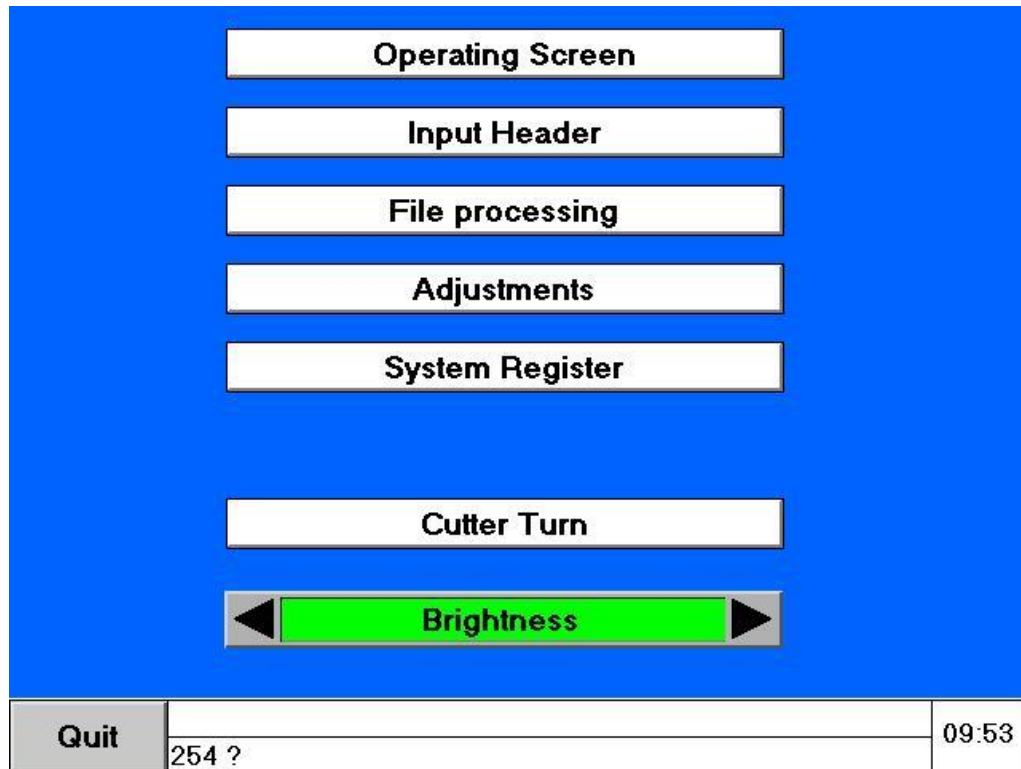


FH003505.wmf

- 1 Cutter wheels Emergency STOP
- 2 Emergency STOP indicating lamp
- 3 Selector: Left wheel (I) / 0 / right wheel (II)
- 4 Speed adjustment of selected cutter wheel
- 5 Counterclockwise rotation of selected cutter wheel
- 6 Clockwise rotation of selected cutter wheel

4.4 COMPUTER PROGRAM AND DISPLAY DESCRIPTION

4.4.1 Main Menu



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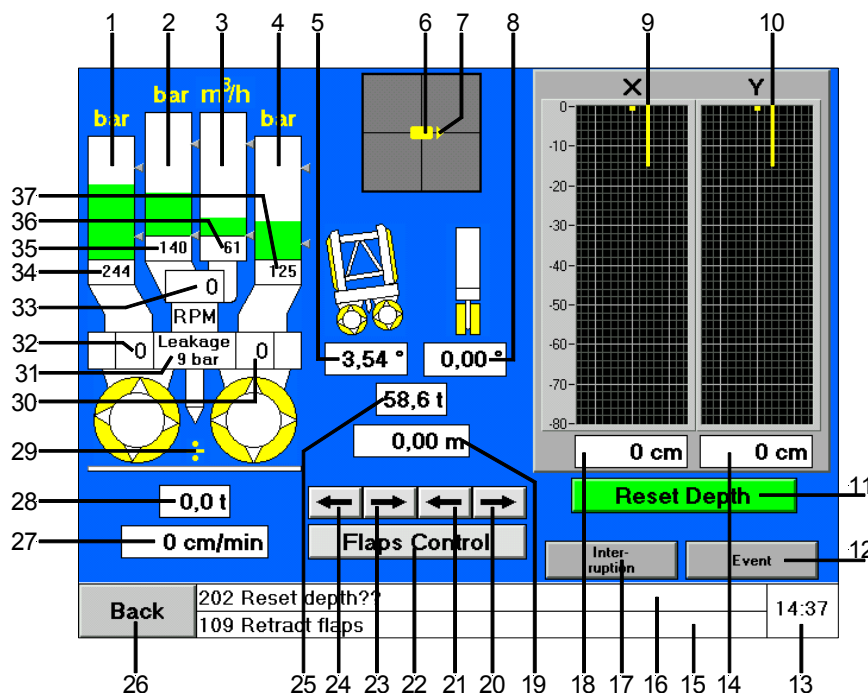
The main menu appears when the equipment has started up.

In the main register, the individual screens for operating, adjusting or service can be selected by touching the corresponding fields with a finger.

The main menu also offers control of the brightness of the screen.

4.4.2 Operating Screen

In the Main Menu, touching the field "Operating Screen" makes the following display appear:

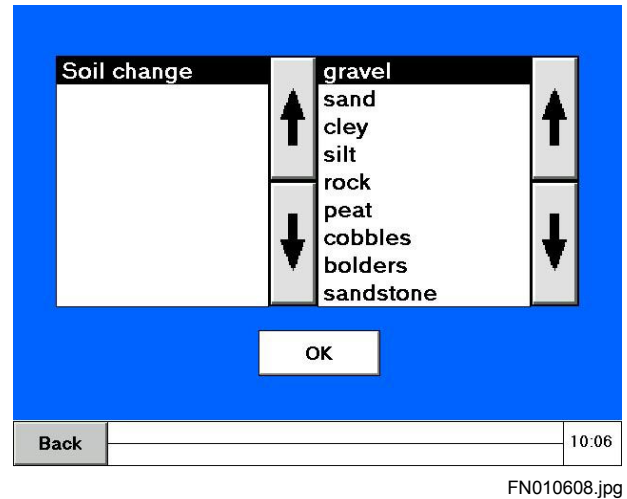
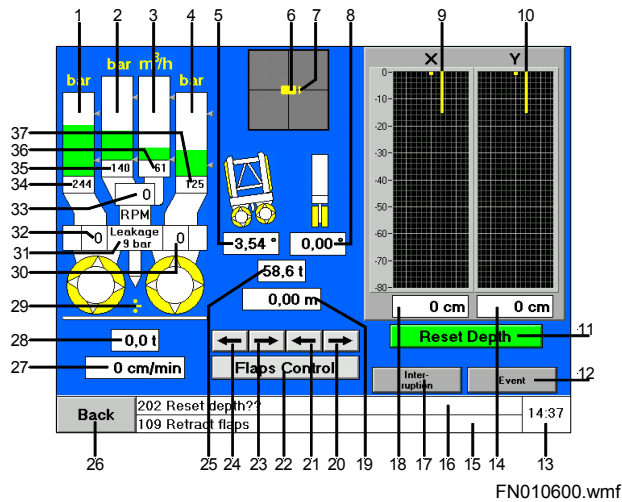


FN010600.wmf

- | | |
|---------------------------------------|--|
| 1 Oil pressure on left cutter wheel | 20 Automatic operation of steering flaps |
| 2 Oil pressure on mud pump | 21 Automatic operation of steering flaps |
| 3 Flow rate on mud pump | 22 Manual operation of steering flaps |
| 4 Oil pressure on right cutter wheel | 23 Automatic operation of steering flaps |
| 5 Cutter inclination in X-direction | 24 Automatic operation of steering flaps |
| 6 Cursor for cutter misalignment | 25 Load on cutter winch |
| 7 Arrow for cutter direction | 26 "Back" to main register |
| 8 Cutter inclination in Y-direction | 27 Cutting progress |
| 9 Cutter misalignment in X-direction | 28 Surcharge |
| 10 Cutter misalignment in Y-direction | 29 Direction of cutter movement |
| 11 Reset depth | 30 Speed of right cutting wheel |
| 12 Event menu | 31 Leak oil pressure of mud pump |
| 13 Time | 32 Speed of left cutting wheel |
| 14 Cutter misalignment in Y-direction | 33 Speed of mud pump |
| 15 Notes for operation | 34 Oil pressure on left cutting wheel |
| 16 Fault messages | 35 Oil pressure on mud pump |
| 17 Cutting interruption | 36 Flow rate on mud pump |
| 18 Cutter misalignment in X-direction | 37 Oil pressure on right cutting wheel |
| 19 Cutting depth | |

4.4.2.1 Event Menu

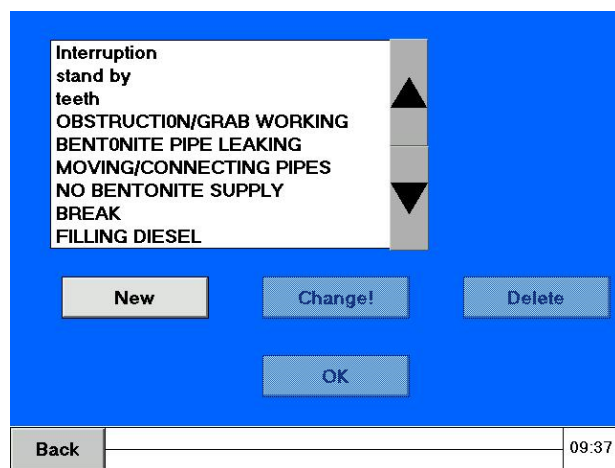
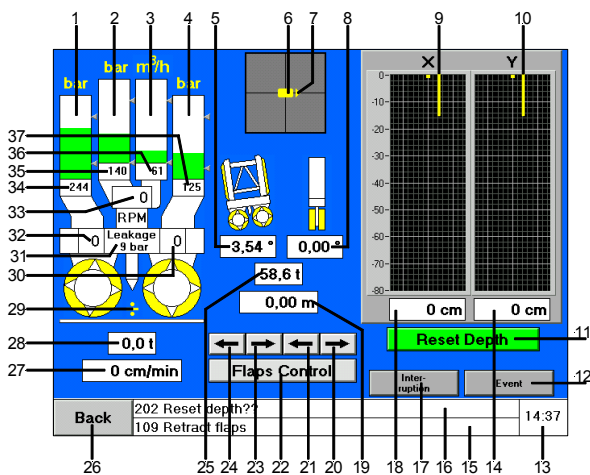
On the Operating Screen, touching the field "Event" (12) makes the following display appear:



- From the list, select the applicable option:
Touch the text until it is highlighted in black and then confirm with "OK".
- Touch "Back".
- The Operating Screen reappears.

4.4.2.2 Interruption Menu

On the Operating Screen, touching the field "Interruption" (17) makes the following display appear:



FN010600.wmf

FN010607.jpg

- From the list, select the applicable option:
Touch the text until it is highlighted in black and then confirm with "OK".
- The Operating Screen reappears. The field "Interruption" (17) is highlighted in red. Interruption is active.
- Touching the red "Interruption" field deactivates the interruption.

After which the cause of the interruption and the time at which it begun will be registered.

Further options:

"New"

- If none of the provided texts is applicable, touch "New" and a keyboard appears. Using the keyboard, enter a suitable definition for the interruption and then confirm with "OK".

"Change!"

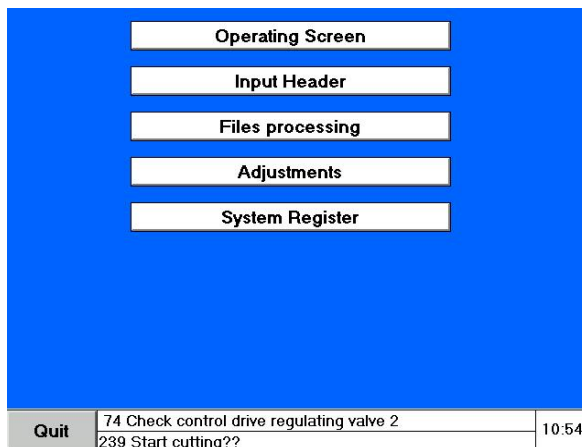
- If it is desired to alter a provided text, highlight the text and then touch "Change!", and a keyboard appears. Using the keyboard, alter the text and then confirm with "OK".

"Delete"

- If is desired to remove a text from the list, highlight the text and then touch "Delete" and confirm with "OK".



4.4.3 File Processing



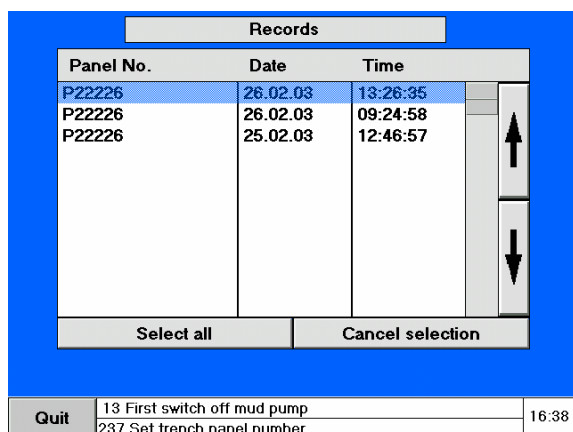
FK004600.jpg

- In the Main Menu (see above), touch "Files processing", and the following display appears:

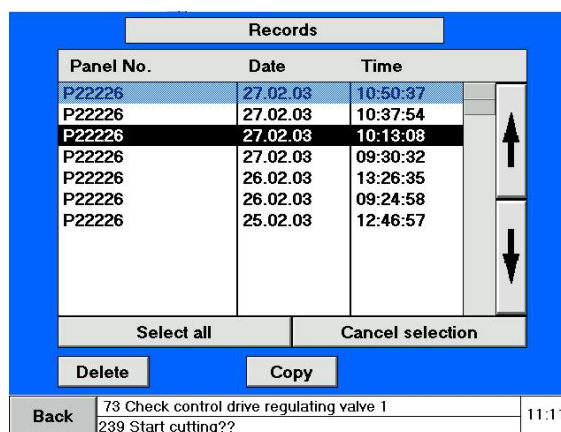
1.

2.

After selection of a panel, the two options "Delete" and "Copy" will appear:



FK004605.jpg



FK004601.jpg

- Touch "Panel No." or "Select all", and the selected panel(s) will be highlighted in black.
- Or, touch "Cancel selection", and the selection will be cancelled.
- Touch "Delete", if it is desired to delete the file of the selected panel.
- Or touch "Copy", if it is desired to store the file on a memory card (PCMCIA).
- After successful data transfer to the memory card, the Main Menu will reappear automatically.

Function: The file processing administration saves all recorded data

4.4.3.1 To Copy Data Records

The card to use for the copying is a "Memory Card". It must be inserted into the PCMCIA unit installed in the operator's cab, as follows.



AE000407.jpg

1. Find the card box of the unit



AE000408.jpg

2. Push (1) and lift (2) to open



AE000409.jpg

3. Open the lid



AE000410.jpg

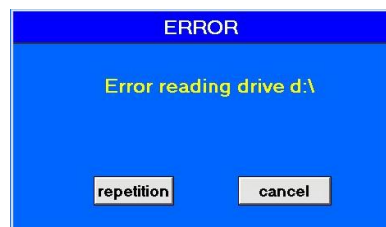
4. Insert the card (3)

As soon as the data has been transmitted to the card, the Main Menu will reappear.

If, however, there is an interference in the transmission, the following message will appear on the screen:

"Error reading drive D".

In that case, it is recommendable to repeat the procedure of the copying with a new Memory Card.

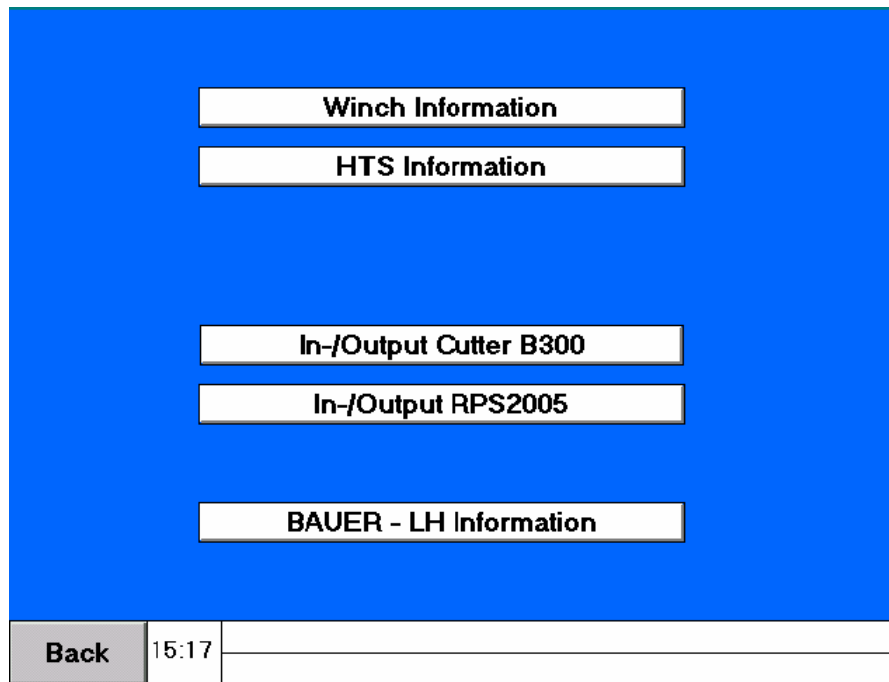


FN010600.jpg

- When the transmission of the data is completed (i.e. when the Main Menu has reappeared), the Memory Card will be removed from the PCMCIA unit and brought to the BAUER Measured Data Acquisition system "MEDEF" for evaluation.

4.4.4 System Register

Touching the field "System Register" in the Main Menu, makes the following display appear:

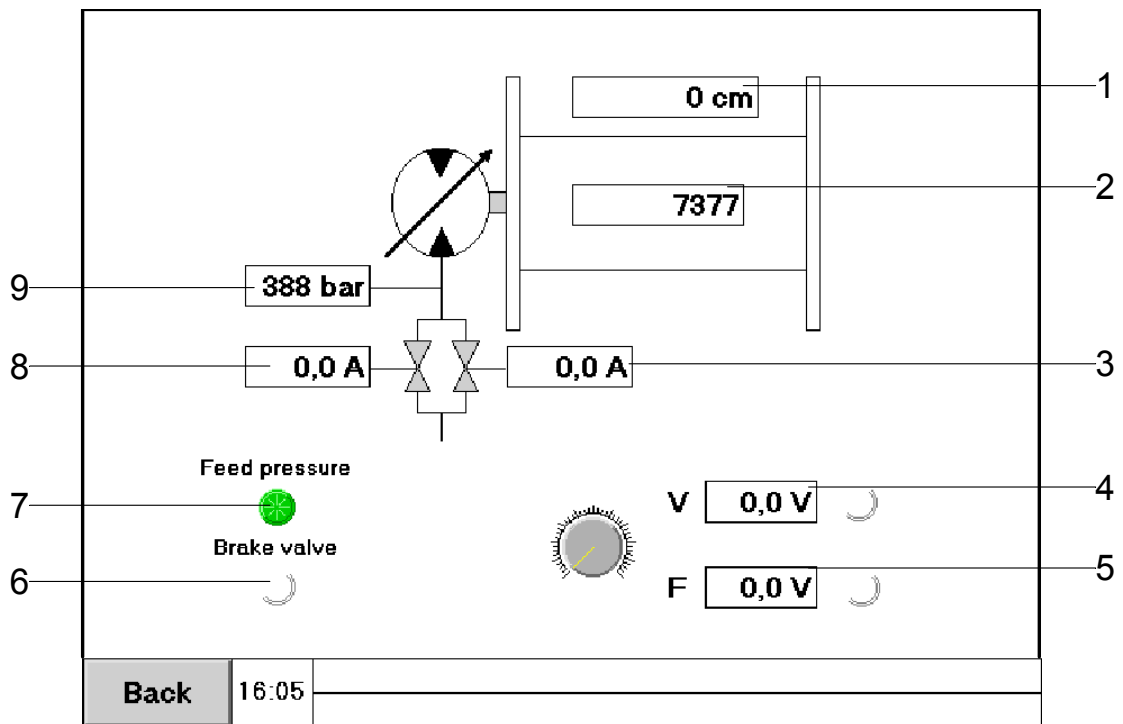


FC032602.wmf

- Touching the field "Winch Information" opens screen for operating data of cutter winch.
- Touching the field "HTS Information" opens screen for operating data of HTS-system.
- Touching the field "In-/Output Cutter B 300" opens screen for checking the Inputs and Outputs of the cutter control B 300 (informative for qualified personal only).
- Touching the field "In-/Output RPS 2005" opens screen for checking the Inputs and Outputs of the main control RPS 2005 in the base machine (informative for qualified personal only).
- Touching the field "BAUER-LH Information" opens screen for checking the signals between BAUER attachment and base machine.

4.4.4.1 Winch Information

After touching the field "Winch Information" in the system register, the monitor shows the screen for the cutter winch operating data.

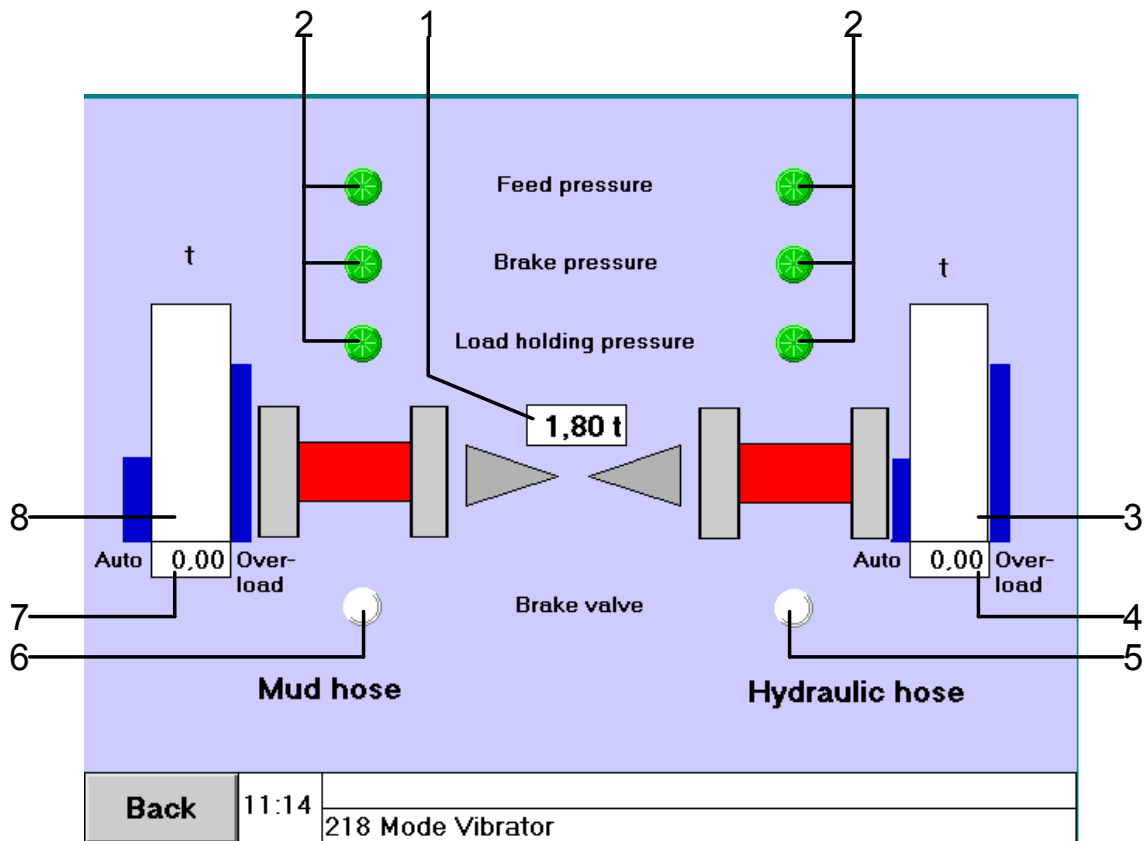


FHAMA018.wmf

- 1 Rope speed [cm/min]
- 2 Number of impulses of winch speed transducer
- 3 Control current intensity [A] on 1st winch control valve
- 4 Output voltage [V] on crowd load control potentiometer
- 5 Output voltage [V] on crowd speed control potentiometer
- 6 ○ is green: brake valve is open
○ is white: brake valve is closed
- 7 ○ is green: feed pressure is correct
○ is white: feed pressure is too low
- 8 Control current intensity [A] on 2nd winch control valve (optional)
- 9 Oil pressure on drive motor

4.4.4.2 HTS Information

After touching the field "HTS Information" in the system register, the monitor shows the screen for the HTS operating data.

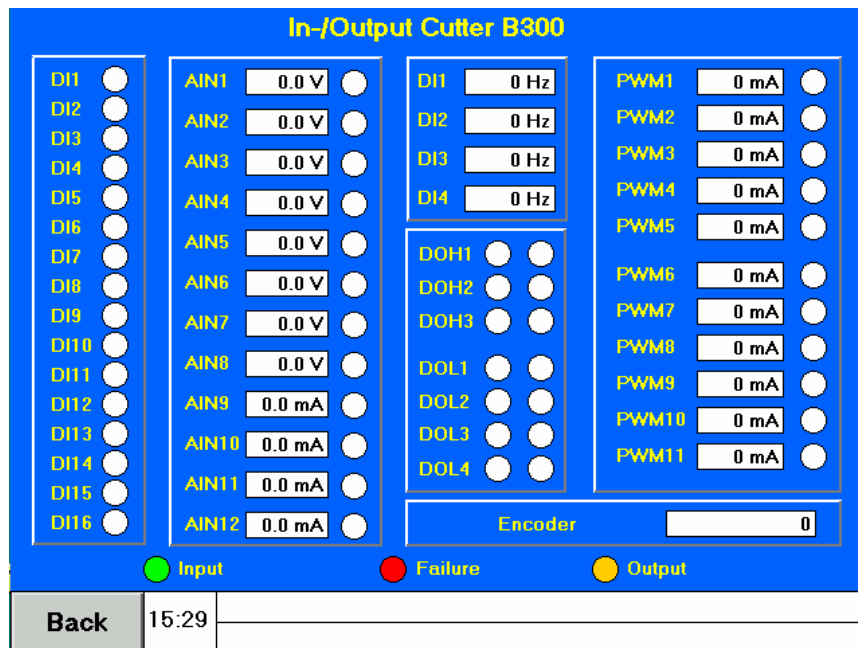


LE017601.wmf

- 1 Load difference indication between the hose tension winches
- 2 Symbols for mud hose tension winch and hydraulic hose tension winch
 - Feed pressure: ○ is green for correct feed pressure
 - Brake pressure: ○ is green for correct brake pressure
 - Load holding pressure: ○ is green for correct load holding pressure
 - Control brake: ○ is green for correct functioning of the control brake
- 3 Hydraulic hose tension winch load indication
- 4 Hydraulic hose tension winch load value
- 5/6 Brake valve: ○ is green for correct functioning of the brake valve
- 7 Mud hose tension winch load value
- 8 Mud hose tension winch load indication

4.4.4.3 In- and Outputs of Cutter B 300

After touching the field "In-/Output Cutter B 300" in the system register, the monitor shows the screen for the control B 300 of the cutter.



FH003602.wpg

- DI = Digital input
- AIN = Analog input
- DI = Frequency input
- DOH = Digital output (4 A)
- DOL = Digital output (2.5 A)
- PWM = Pulse-widths modulated output

At digital inputs the voltage of the inputs are monitored:

- Green indication** = In order
- White indication** = Not used

At analog inputs the voltage of the inputs are monitored:

- Green indication** = In order
- White indication** = Not used

At analog outputs the current of the inputs are monitored:

- White indication** = Not order
- Red indication** = Faulty or not used

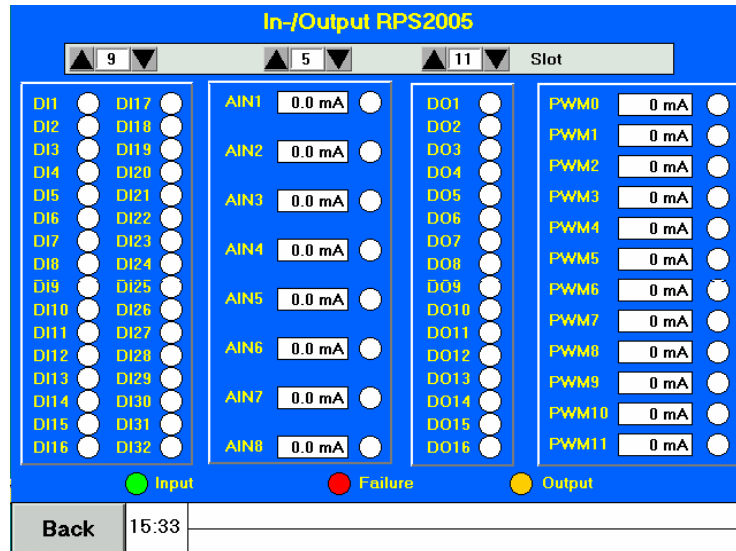
At digital and analog outputs the voltage and the current of the outputs are monitored.

- Orange indication** = In order
- White indication** = Not used
- Red indication** = Faulty

"Encoder" indication gives the number of bits of the incremental sender belonging to the measuring of the distance made by the crowd cylinder. Touching the "Quit" makes the program return to the "Information Selection" menu.

4.4.4.4 In- and Outputs of RPS 2005

After touching the field "In-/Output RPS 2005" in the system register, the monitor shows the screen for the control RPS 2005 of the base machine.



FH003603.wpg

- DI = Digital input
- AIN = Analog input
- DI = Frequency input
- DOH = Digital output (4 A)
- DOL = Digital output (2.5 A)
- PWM = Puls-width modulated output

At digital inputs the voltage of the inputs are monitored:

- Green indication** = In order
- White indication** = Not used

At analog inputs the voltage of the inputs are monitored:

- Green indication** = In order
- White indication** = Not used

At analog outputs the current of the inputs are monitored:

- White indication** = Not order
- Red indication** = Faulty or not used

At digital and analog outputs the voltage and the current of the outputs are monitored.

- Orange indication** = In order
- White indication** = Not used
- Red indication** = Faulty

"Encoder" indication gives the number of bits of the incremental sender belonging to the measuring of the distance made by the crowd cylinder. Touching the "Quit" makes the program return to the "Information Selection" menu.

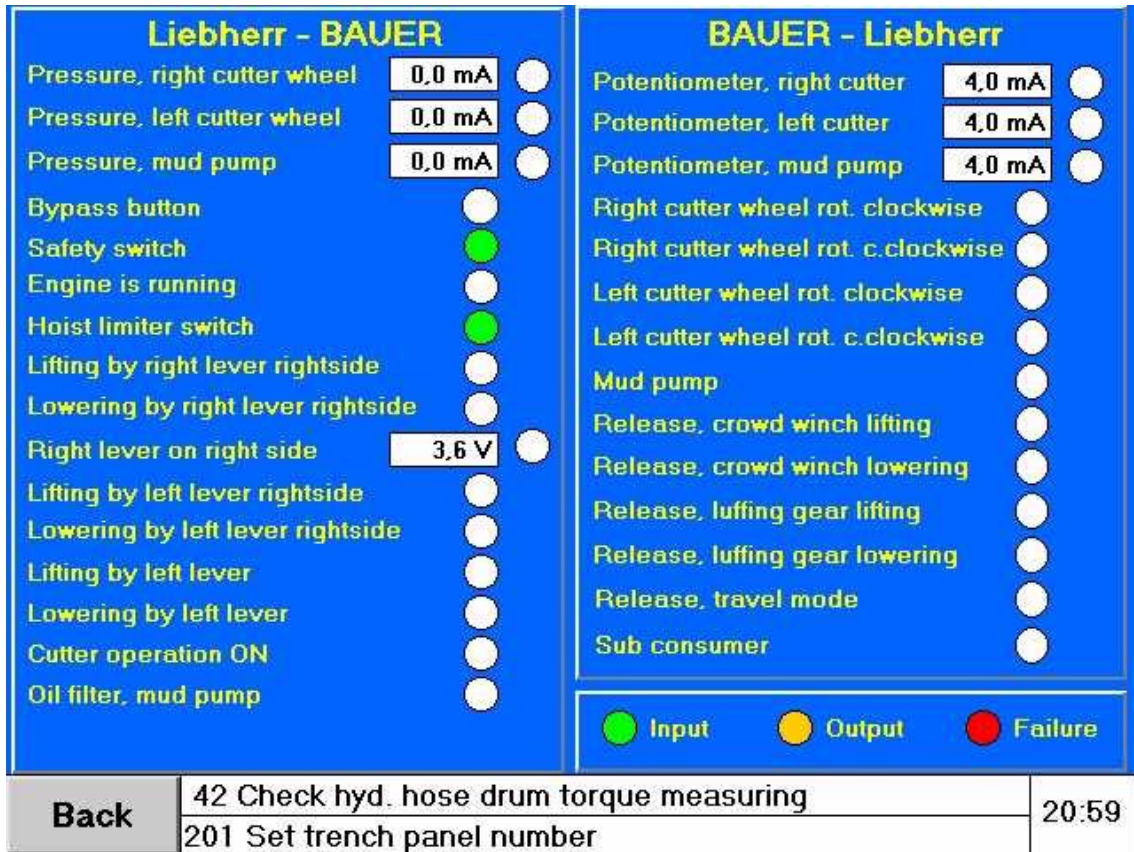


NOTE

With the "arrow" fields you can select the corresponding slot card of the RPS 2005 control in the base machine.

4.4.4.5 BAUER-LH Information

After touching the field "BAUER-LH Information" in the System register, the monitor shows the screen for the interface situation between BAUER and Liebherr.



AE006011.jpg

Left side on monitor
Inputs to BAUER:

- At analog inputs the current of the inputs are monitored.
- At digital inputs colors are monitored:

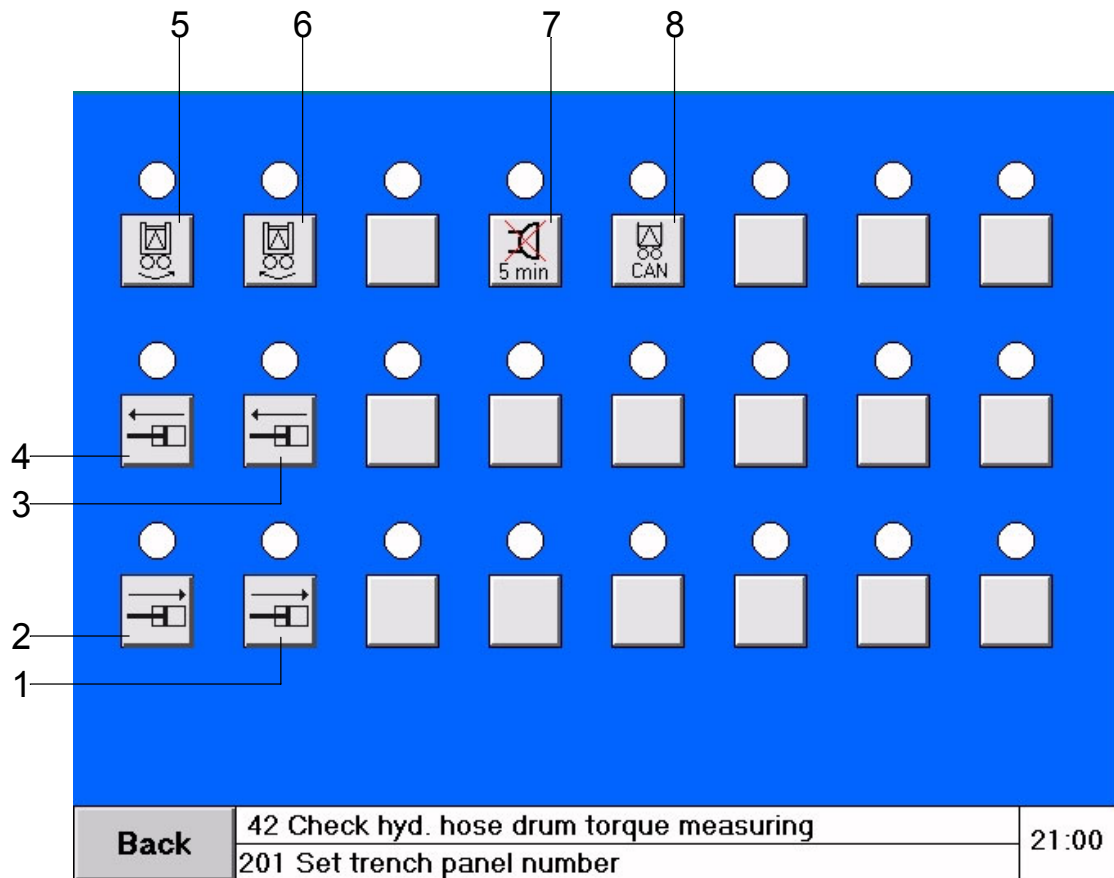
green indication = in order
white indication = not used
red indication = faulty

Rightside on monitor
Outputs from BAUER:

- At analog outputs the current of the outputs are monitored.
- At digital outputs colors are monitored:

orange indication = in order
white indication = not used
red indication = faulty

4.4.4.6 Additional Keyboard (optional)



LH028501.wmf

- 1 Hydraulic hose guide wheel turn to the rear
- 2 Mud hose guide wheel turn to the front
- 3 Hydraulic hose guide wheel turn to the front
- 4 Mud hose guide wheel turn to the rear
- 5 Cutter turn counterclockwise
- 6 Cutter turn clockwise
- 7 Switch off the buzzer for about 5 minutes during a fault message
- 8 Delete fault message "Processing error, cutter"