

CCS Training driver



Training Objectives

Objectives	Actions
Know the CCS system	<ul style="list-style-type: none">• Overview of the system
Know the CAN network	<ul style="list-style-type: none">• Visualization of the architecture of a CAN network
Know how to use driving menus	<ul style="list-style-type: none">• Presentation• Handling on the CCS bench

Sommaire

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Crane Control System

New management system of the crane.



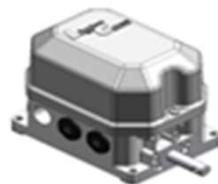
Computer



Color screen



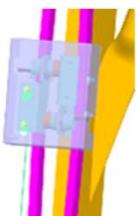
Joysticks and
jog dial



Encoders



Load pin

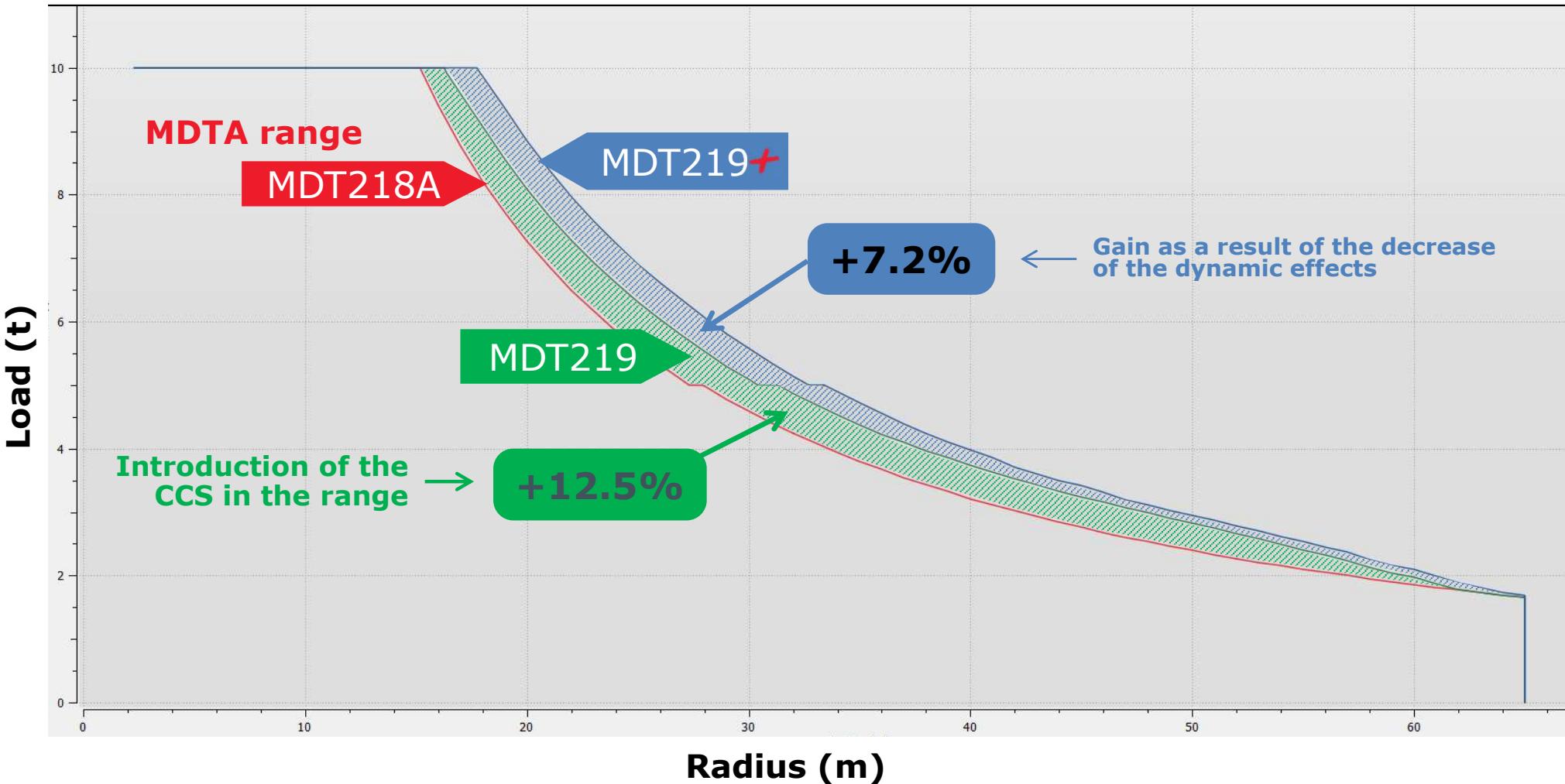


Moment bar

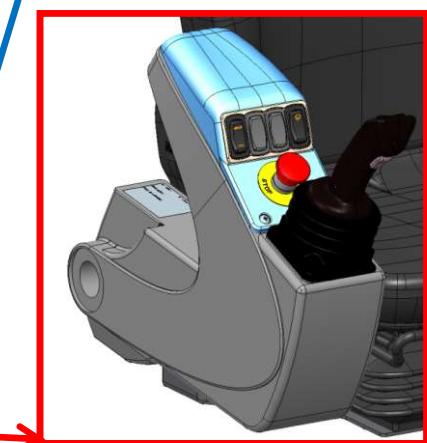
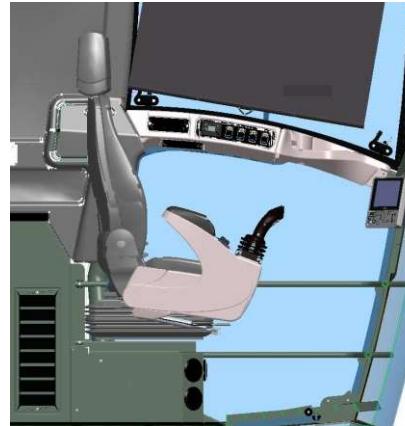
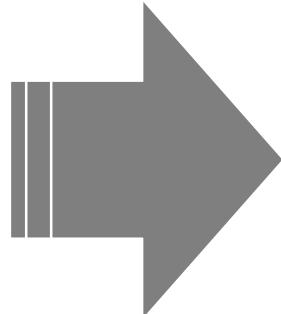
- Improved performance
- New marketing names
- New safety management
- Driving aid
- Diagnostics help
- Centralized crane settings

Improved performance

MDT219 – 65 m jib – SM/DM

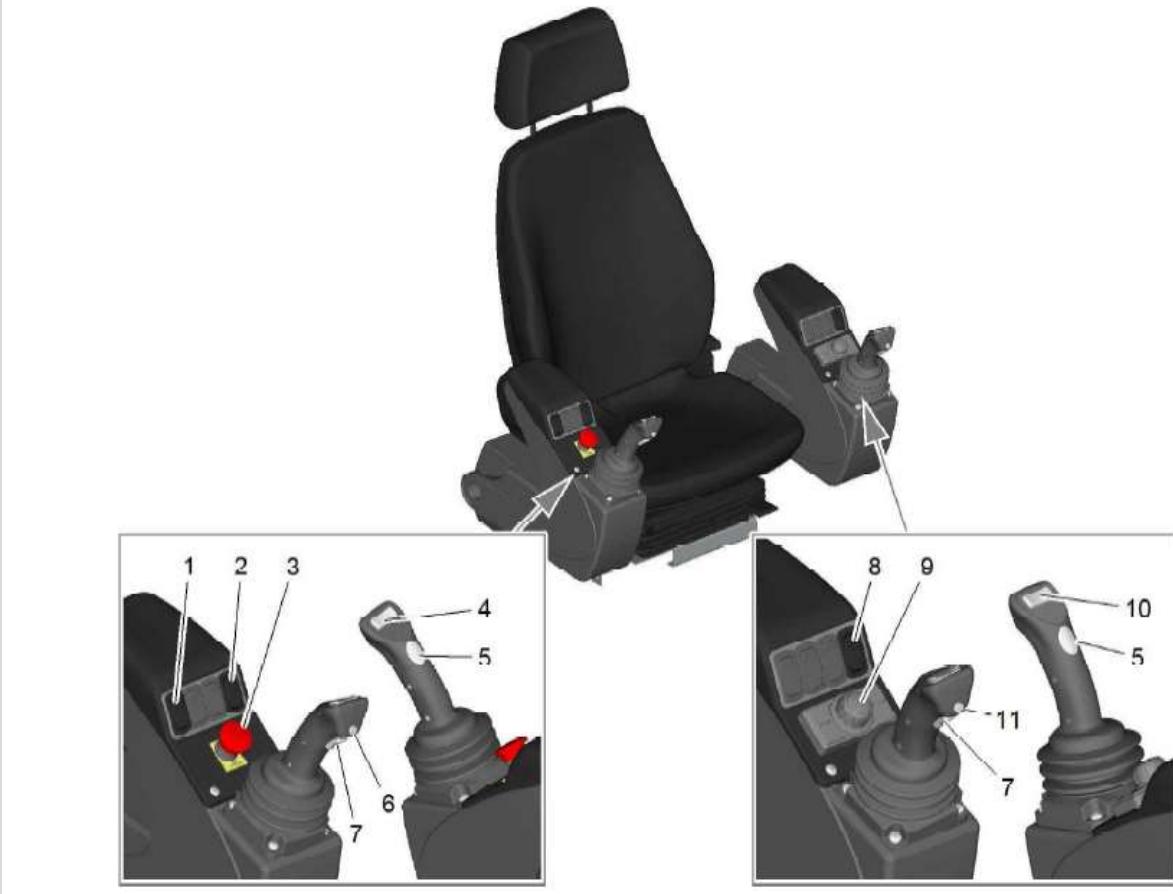


Driver's stand



Driver's stand

- The ergonomic features of the driver's stands and the controls have been significantly improved
- Functions already existing in the Potain cranes have been brought together
- New functions have been integrated
- Both joysticks are interchangeable. A single reference for the 2



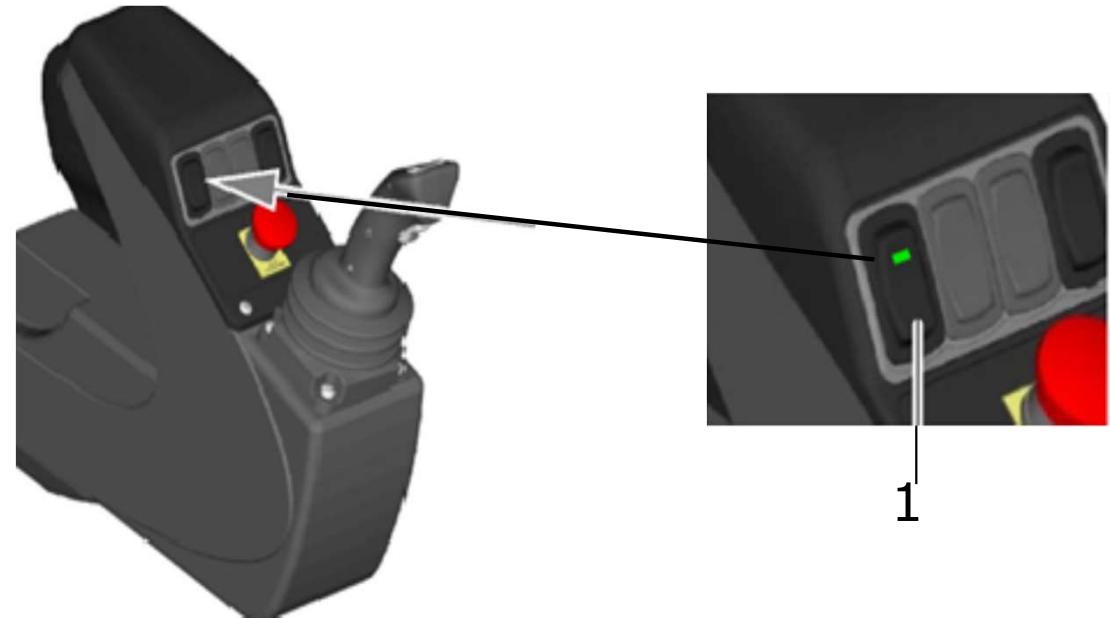
- | | |
|--------------------------------|---------------------------|
| 1 Power button | 7 Dead man / Confirmation |
| 2 Sleep mode button | 8 Reeling change |
| 3 Emergency stop | 9 Jog Dial |
| 4 Speed limiting | 10 Load curve « PLUS » |
| 5 Vibrator of validation alarm | 11 Slewing break |
| 6 Horn | |

Driver's stand

Starting

The button (1) for starting has an indicator light :

- Not lit when the crane is off.
- Flashes green when the crane is in standby.
- Continuously lit in green when the crane is in operation.



To start, pull out the emergency stop button and press button 1

Confirmation

This function's purpose is to avoid any accidental operation of the controls.

If confirmation has not been performed, the control switches vibrate when a movement is requested.

To operate a movement, the crane driver must:

- Press one of the two confirmation buttons (7) at the time of operating one of the movements



Seat contact

If the seat contact is activated, the driver only needs to do this confirmation for the first movement or after the driver leaves the seat

Automatic stand by

The crane gets in sleepy mode :

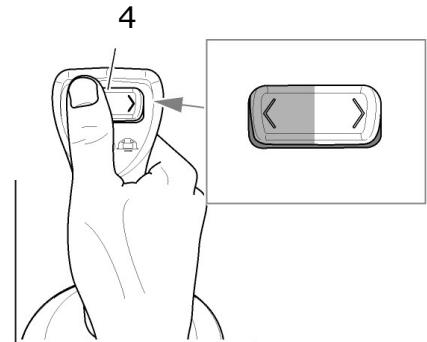
- *After no control has been operated for 5 minutes (this setting can be modified)*

Speed limiting

Function allowing the driver to limit the maximum speed of the crane's movements.

Speed limiting is done on all the movements at the same time.

This function allows the crane driver to control the crane with greater precision.



The speed limiting is adjusted using the **right** control switch key (4).



There is an icon on the status bar on the screen. It tells the crane driver the speed limitation value.

It is possible to limit the maximum speed by increments of 25%.



The speed is not limited = 100% of the maximum speed.



The speed is limited to 75% of the maximum speed.



The speed is limited to 50% of the maximum speed.



The speed is limited to 25% of the maximum speed.

Load curve P+

P+ activated

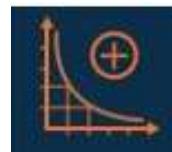
→ work on micro speed
to increase the crane
performance in load and
moment

This function depends on the
crane configuration (base,
hook height, wind zone, etc.)

**Technician carrying out
adjustments of the crane
must refer to the manual** in
order to check if the
availability of the Plus option
for crane drivers is authorized.



In the cab, the plus curve is
activated by pressing on the upper
button on the **left** control switch.



- Pressing on the right side of the button activates the function
- Pressing on the left side of the button deactivates the function
- Screen icon to show P+ is active

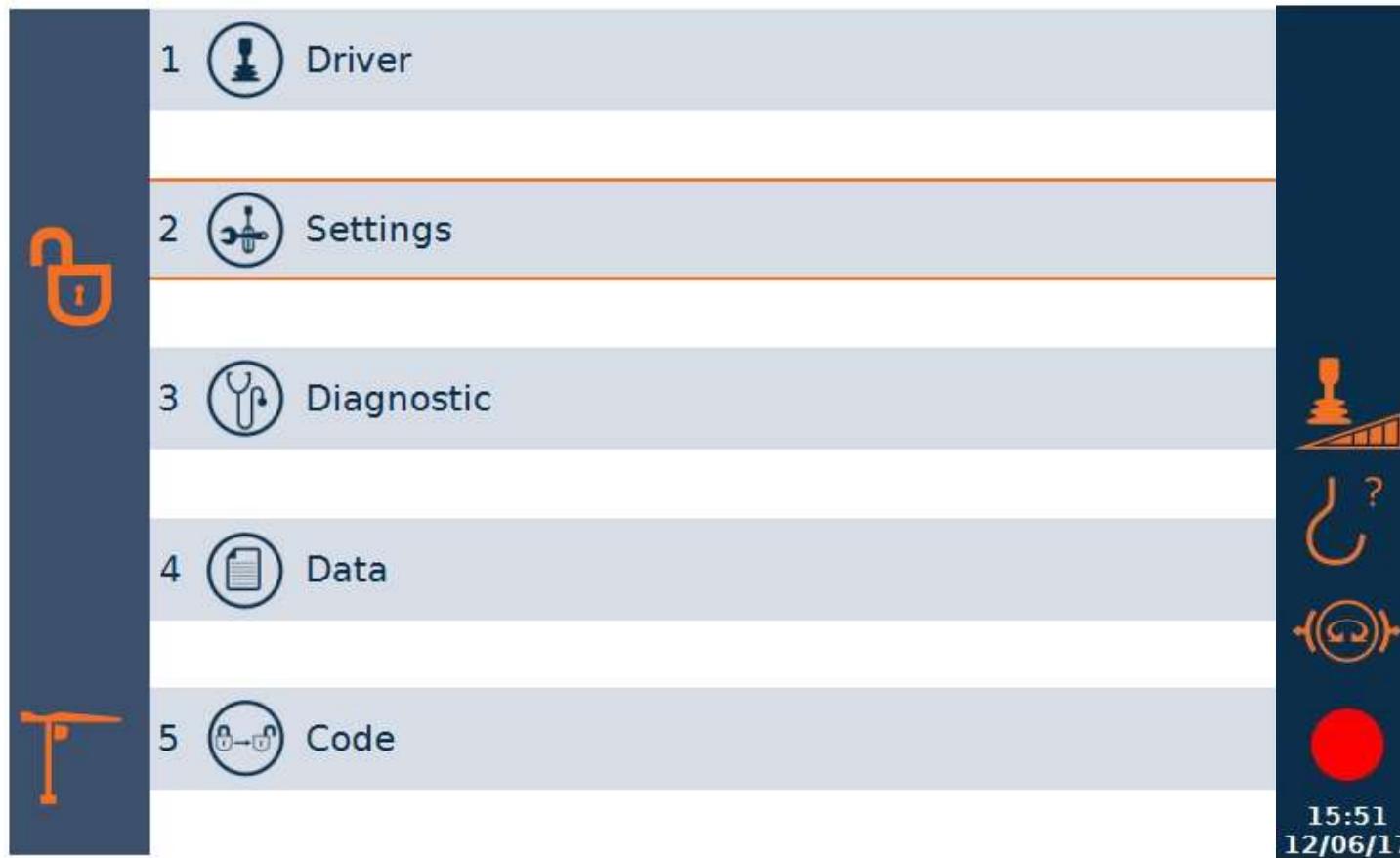
Driver's stand

CCS screen

- Option of navigating through the menus with the arrows or with the jog dial
- More functions for the crane driver
- Visualization of alerts
- Highly resistant technology



CCS menus



Menu 2-Settings appears only if it has been unlocked by the technician code in Menu 5.

Module versions

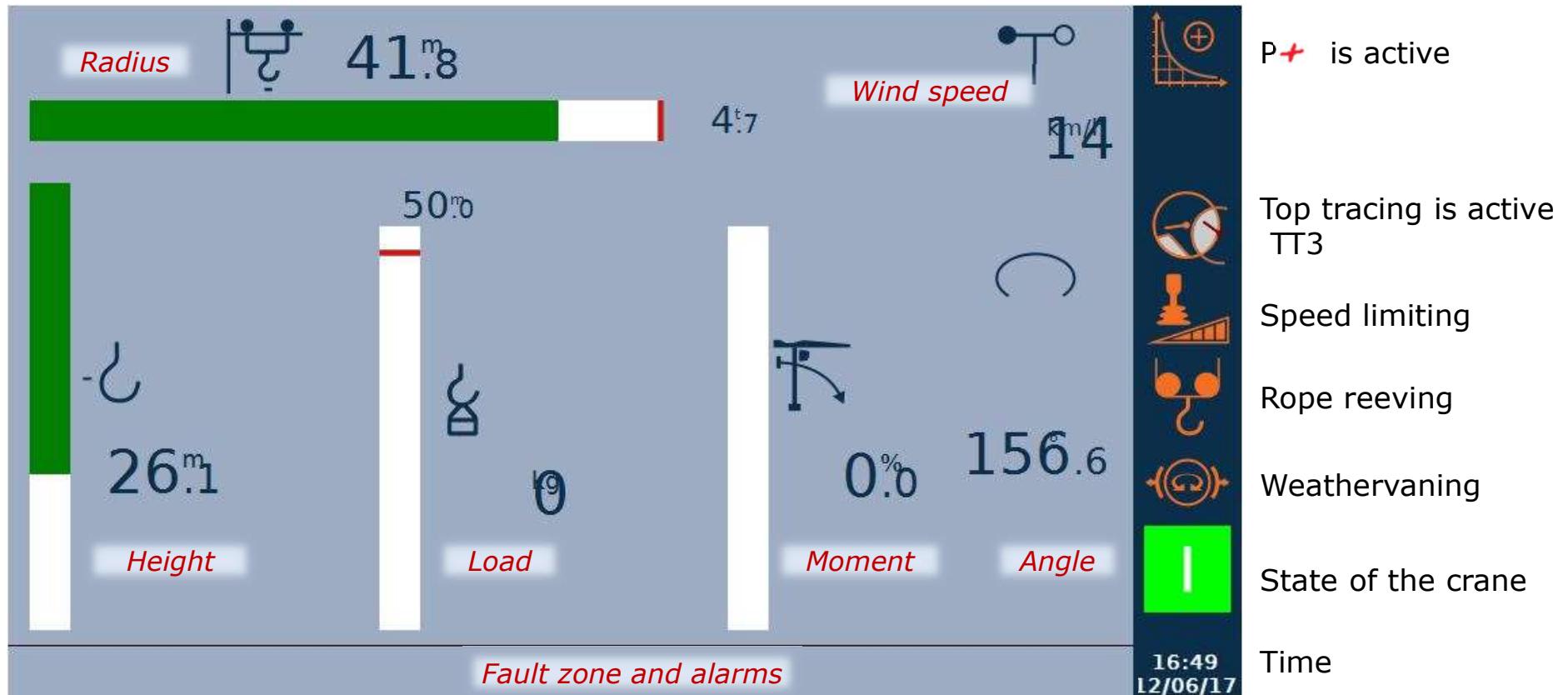
For a support request,
the following must be
given:

- Display software version (screen)
- SCM software version
- CCT software version

3 Diagnostic

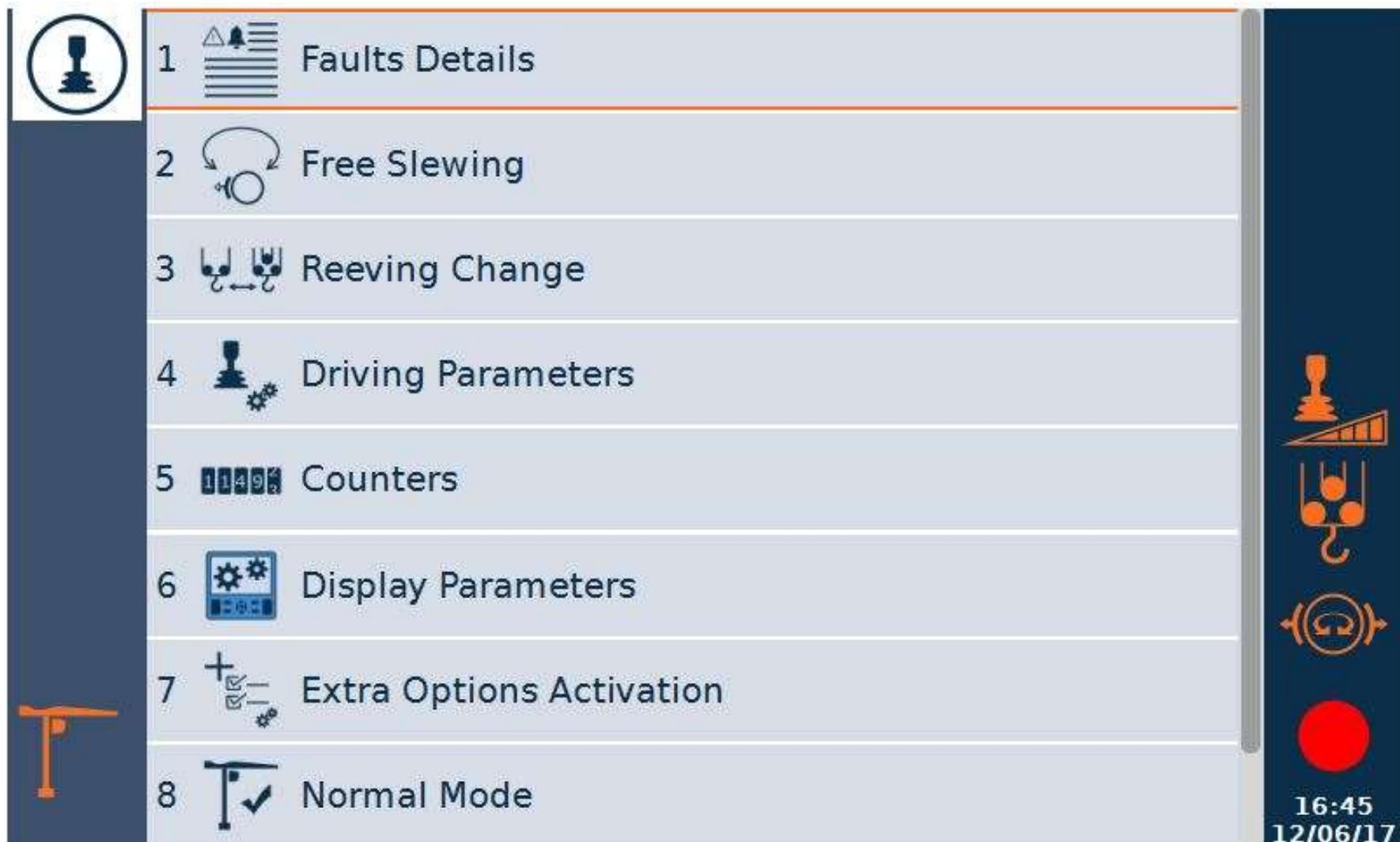


CCS menus - Driving



State of the crane		Fixed red	Emergency stop engaged
		Green cercle	Crane not started without emergency stop engaged
		Flashing green	Starting the drives
		Square green	Crane started and inverters started: Ready to work

CCS menus - Driving

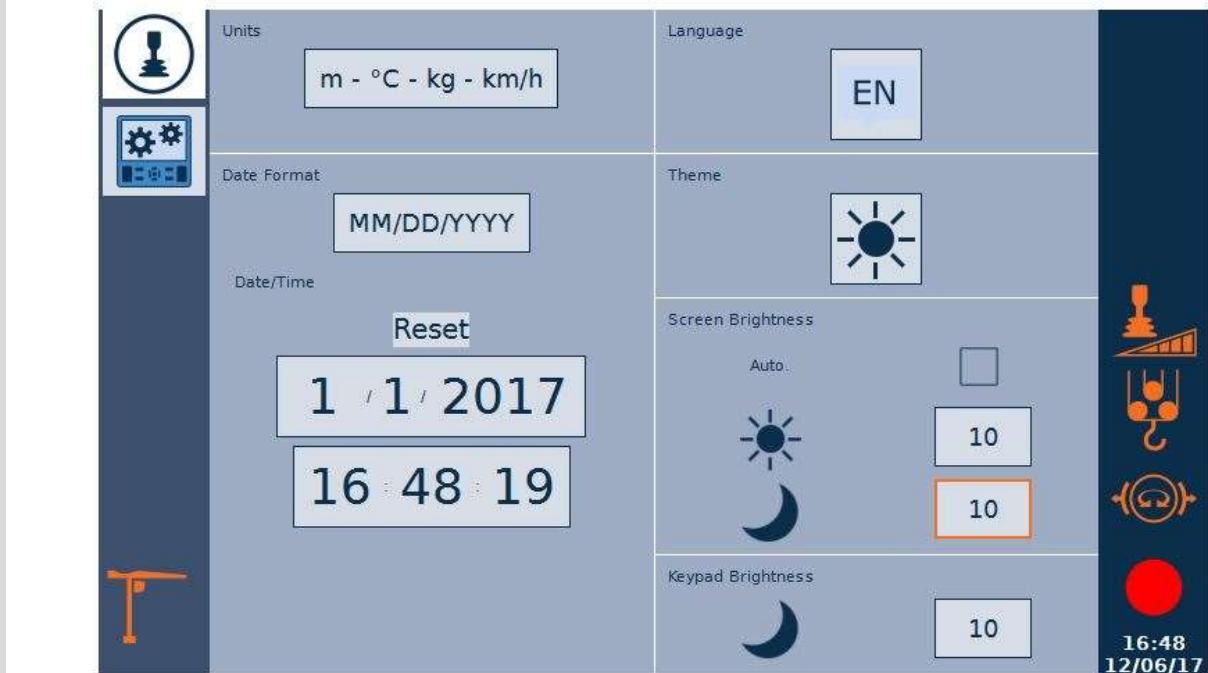


CCS menus - Driving

Display Parameters

Ability to adjust :

- Language
- Units
- Date and time value
- Brightness
- Day or night mode



Night mode →



CCS menus - Driving

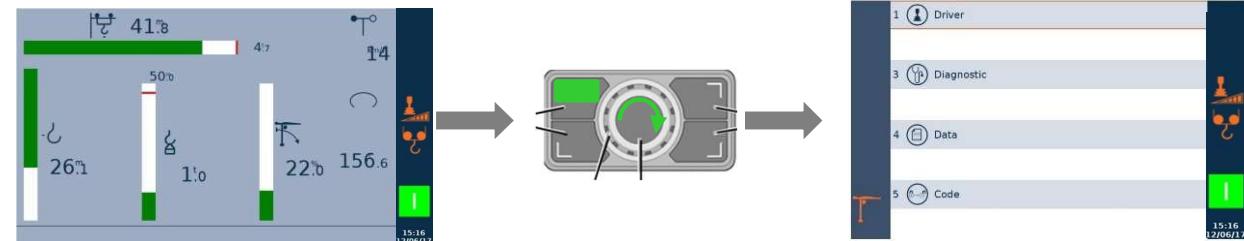
Weathervaning

Electric weathervaning of the crane is currently done on the CCS screen.

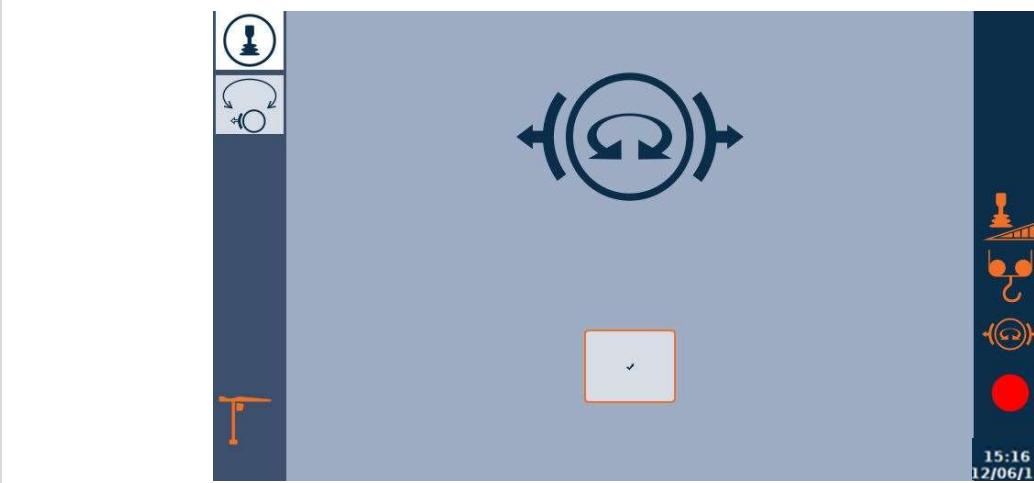
A menu is provided there.

Weathervaning is engaged only if the emergency stop is engaged

An icon appears to confirm weathervaning



→ Emergency stop



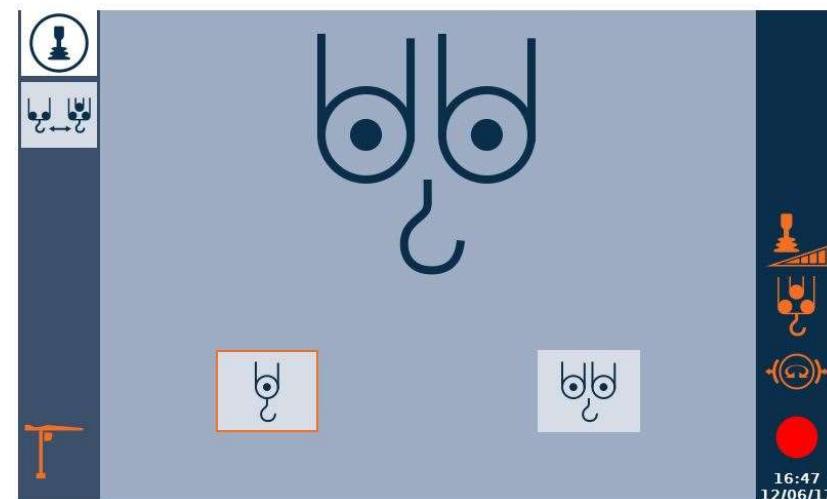
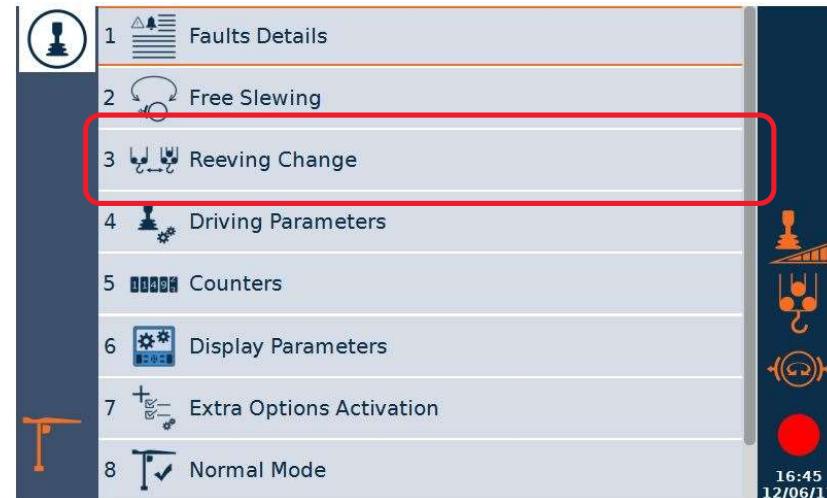
CCS menus - Driving

Reeving Change

Menu for declaring the change of rope reeving

The declaration can also be done with the button on the left side of the control unit

The action on this control allows all movements to make the change of rope reeving (rear trolley to the stops, ...)



CCS menus - Driving

Fault Details

Display of the active faults in the crane

This menu gives details of the fault and its possible causes

An active fault can be cleared with a password.



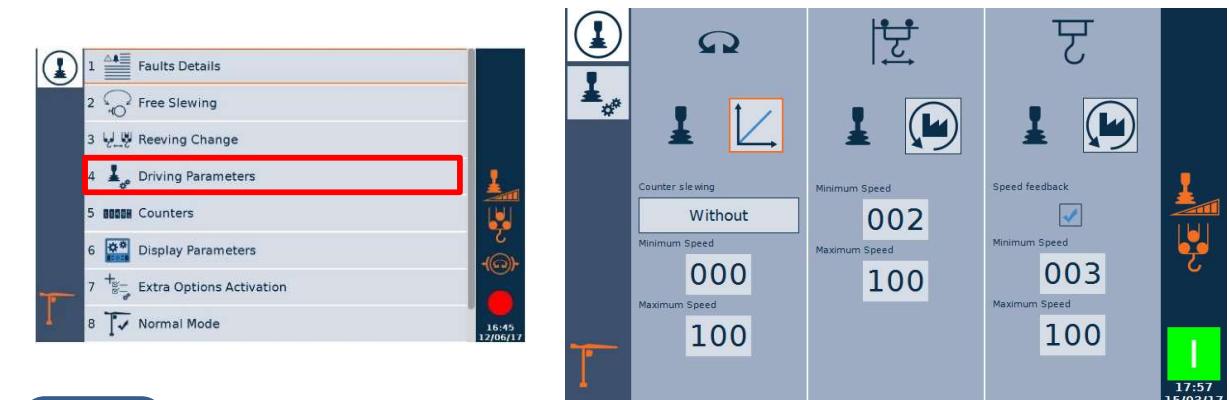
Driving parameters

Function to improve driving comfort.

For each movement, it is possible to adjust the minimum speed and the maximum speed of the controls.

Important: no change is made at the level of the variable speed drives

- 6 available modes for hoisting and trolleying
- 3 available modes for slewing: Precision, Linear and Dynamic (low, medium and high acceleration)
- Activation of the counter slewing
- Activation of speed feedback



Factory setting

Defined by Manitowoc as ideal



Preselected speeds

The equivalent of the notches in the non-CCS cranes



Linear

Speed increases as the control is activated, without incremental steps



Precision

Delinearization of the control curve. More precision for the small movements of the control switch.



Dynamic

Delinearization of the control curve to make it more dynamic



Mixed

Linearization on the first half of the range then preselected

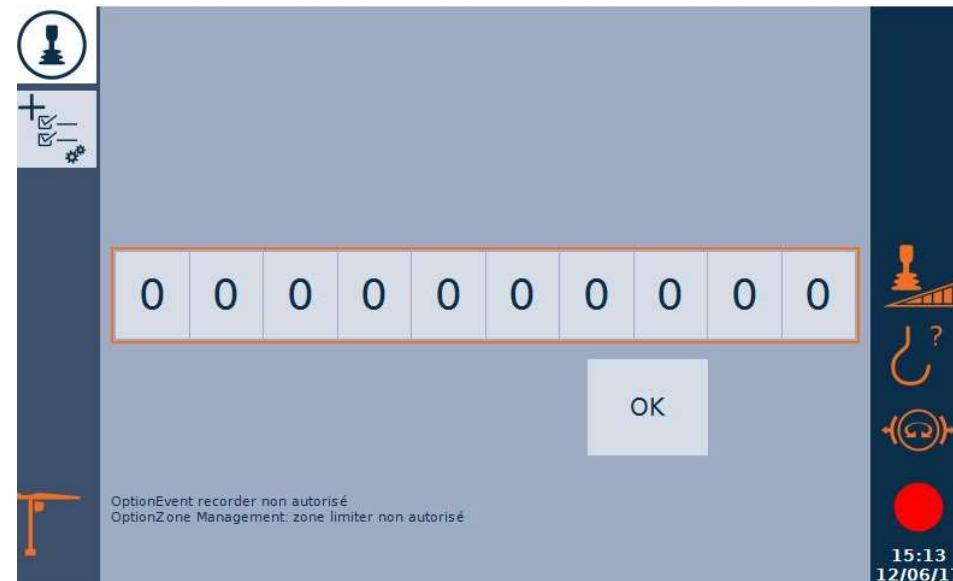
CCS menus - Driving

Extra functions activation

Activation of extra options

- Top site – forbidden areas
- Black box – Event recorder

Code of 10 digits



Remote control - Auto detection

The first control device that starts the crane takes control of the crane.

There is no need to disconnect the electric power supply to the controls.

This saves time when changing from one control unit to another.



Speed limiter
1 Lower
2 Medium
3 High

Potain+ Curve
A Activated
B inactive



Slewing brake
Shunt of back trolleying limit switch
(reeving change)



ON/OFF Horn
inactive



- Indicators
- Remote control indicators
- Crane status



- Reeving change
- Counters (no on the view)
- Actif faults
- Unit parameters

