

User Guide

C30e Compact crane



Original instructions

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PREFACE

Thank you for buying the Hoeflon C30e Compact crane. We hope that you enjoy using it and that you will enjoy using it for many years to come.

This user manual contains the operating instructions for the Hoeflon C30e Compact crane. In this user manual we will refer to it as the compact crane.

Read this user manual carefully to familiarize yourself with the correct operation and maintenance of the compact crane. The figures in this document are for illustration purposes only and can be different from the compact crane in your situation.

Hoeflon International B.V. recommends that you keep the original copy of this user manual, including all the annexes, in a safe, central place. Keep a copy of this user manual near the machine at the workplace.

General terms & conditions

In all cases, Hoeflon International B.V. delivers the machine exclusively according to the General Terms and Conditions applicable at the time of purchase. These General Terms and Conditions can be found on the website www.hoeflon.com.

Although Hoeflon International B.V. has made every reasonable effort to make sure that this user manual is as accurate and helpful as possible, Hoeflon International B.V. does not provide any guarantees with regard to the accuracy or completeness of the information provided herein.

Hoeflon International B.V. is committed to keeping the information in this user manual complete, accurate and up to date. Hoeflon International B.V. accepts no liability for the consequences of errors, except in the case of willful intent or deliberate recklessness on the part of Hoeflon International B.V..

Hoeflon International B.V. continuously develops and improves its products, we reserve the right to make changes to the technical design at any time without prior notice.

For technical support, please speak to your Hoeflon dealer or to Hoeflon Support B.V..

Warranty and liability

The Hoeflon C30e Compact crane conforms to the applicable basic safety and health requirements of the EU directives. It has been carefully tested for trouble-free use at the factory. If the compact crane does have problems stop using the compact crane and speak to your Hoeflon dealer or to Hoeflon Support B.V. immediately.

Use the compact crane only for lifting loads as told in this user manual. Do not use the compact crane in any other way.

Do not use the compact crane if:

- it is damaged,
- there is an error,
- if there is a warning.

Repair the compact crane first.

Hoeflon International B.V. is not liable for any damage or injury resulting from:

- not obeying the instructions in this user manual,
- exceeding the factory specifications,
- not obeying the legal requirements.

Do not:

- modify the compact crane,
- repair the compact crane yourself,
- use unauthorized replacement parts.

Make sure that you maintain the compact crane correctly as described in this user manual.

Target audience

This user guide is intended for everyone who works with or on the compact crane.

Only use the compact crane if you are sufficiently trained and fully know how to use the compact crane. Obey your local laws on training and equipment competence. Hoeflon International B.V. can give training on how to use the compact crane

Always stay safe in familiar and unfamiliar situations.

Warning icons

The instructions, recommendations and warnings in this user manual are accompanied by the following terms and pictograms. Read these instructions carefully.



Danger

Identifies a very dangerous situation which, if not prevented, can result in death or very bad injury.



Warning

Identifies a dangerous situation where there is a risk of bad injury.



Caution

Identifies a situation where equipment or property can be damaged; or if there is a risk of injury.



Note

Identifies important information to help you understand or adjust the equipment.

Structure of the user manual

Preface describes the purpose of the manual, general terms and conditions, warranty and liability, target audience and notes for the reader.

Introduction includes an introduction to the compact crane.

Safety lists all the points the user needs to know to work safely with the compact crane.

Technical data gives the dimensions and specifications of the compact crane.

Description describes the main components of the compact crane and the operation of its various components.

Installation gives information on attaching each component.

Operation gives operating instructions for the intended use of the compact crane.

Maintenance gives information on the necessary maintenance.

Troubleshooting lists possible faults and how to solve them.

Transport and storage gives recommendations for transporting and putting the compact crane in storage.

Disposal gives instructions for the disposal of the compact crane.

1.

Introduction

1.1 Intended use



Use the compact crane to lift loads such as heavy building materials and glass sheets in a limited space. The compact crane is powered by an electric motor and controlled via a radio remote control. The electric drive makes the compact crane suitable for working indoors.

The compact crane is designed so that charging and working can be done at the same time by connecting the compact crane to mains power at the workplace.

Only use the compact crane as intended and as described in this manual.

1.2 EC Declaration

Hoeflon International B.V. declares that the compact crane conforms with the applicable European Directives. The EC Declaration of Conformity is part of the documentation which is supplied with the compact crane.

1.3 Type plate

A type plate containing data for the compact crane is attached to the left side of the column. This type plate may not be removed. The CE mark indicates that the compact crane conforms to the applicable standards for the European Economic Area.



Type	The type of compact crane
Model	The brand of the compact crane
Serial no.	The serial number of the compact crane
Year	The year the compact crane was built
Weight	The weight of the compact crane
Max. capacity	Maximum working load

2.

Safety

2.1 Introduction

Make sure that you have read the manual of the compact crane and that you fully understand its contents.

Make sure that you understand and obey all applicable legal requirements on using the compact crane before you start work.

When using the compact crane:

- Obey all warnings and regulations.
- Obey all applicable national regulations about:
 - working with the compact crane,
 - working conditions,
 - work safety.

Make sure that all lifting equipment is correctly rated, approved and not damaged.



WARNING

Stop work immediately if you find any hydraulic leaks. Repair a leak immediately.

Hydraulic oil under pressure can penetrate the skin.

Obey the general safety precautions in this chapter when using the compact crane.

Always be aware of the weight of the components and the loads.

Only use the correct tools.

Keep the compact crane clean.

2.2 Notes on the safety features



Warning

Do not remove, bypass or disable safety equipment.

2.2.1 General

If a sensor does not give an indication, speak to your Hoeflon dealer or to Hoeflon Support B.V. immediately.

Do not:

- continue working.
- remove, bypass or disable safety equipment.
- remove, bypass or disable a sensor.
- change the pressure settings.
- change the motor speed.

Changing safety equipment, sensors, settings or speeds can lead to dangerous situations and damage to the crane. Any such changes will void the warranty immediately.

2.2.2 110% button

Use the 110% button only to return the crane to a safe situation (see 5.2.3 110% button)

Do not:

- use the 110% button to increase the crane's outreach.
- use the 110% button to continue lifting.

2.3 Personnel



Note

Make sure that all personnel that works with the crane has the necessary licenses and work permits as specified by your local laws on training and equipment competence.



Caution

Always use approved Personal Protective Equipment (PPE).

- Hardhat
- Safety shoes
- Gloves
- Safety glasses

All operating personnel must:

- be fit to do the task.
- stay out of the operating radius of the crane.
- fully know the content of the user manual of the compact crane.
- be familiar with all the functions and attachments associated with the equipment.
- be at least 18 years of age.

Do not:

- be under the influence of narcotics or alcohol.
- go near or climb on the compact crane when it is being used or when it is moving.
- go near or climb on the load when it is being lifted or when it is moving.
- use the compact crane to transport or lift people.

2.4 Work environment

Make sure that the environmental and operational conditions are safe and within limits before using the compact crane.

Put barriers and safety warnings around the perimeter of the work area. Do not let unauthorized people in the work area.

Use extra light in dark areas.

Do not smoke or make fire in the work area.

Use communication equipment and a spotter if you cannot fully view the entire work area.

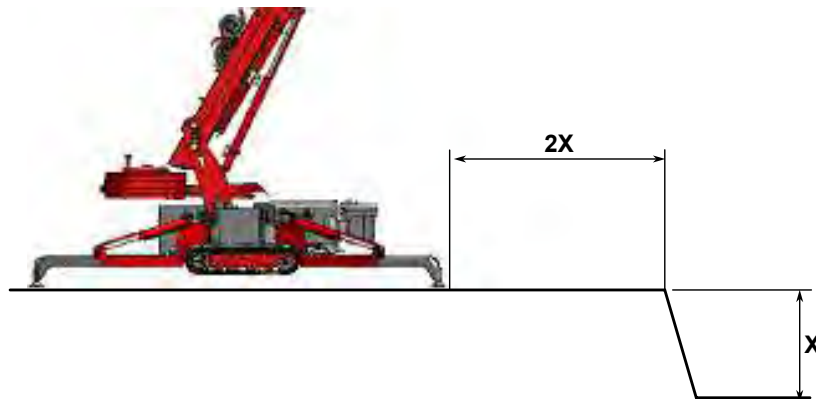
Obeys the height restriction in covered areas.

Do not use the compact crane:

- if it is not safe,
- near high voltage cables,
- during lightning storms,
- in an explosive environment.

Do not put the compact crane on, in or adjacent to holes.

2.5 During setup



When the crane is near a ditch or slope, make sure that the distance from the outrigger to the edge is at least twice the depth of the ditch.

Look at the active outrigger during extension or retraction.

Stay away from the active outrigger during extension or retraction.

Make sure that the ground is stable and has sufficient load bearing capacity.

Make sure that the counterweight cannot touch the outriggers during slewing.

2.6 While working



Caution

If you use the crane incorrectly, incorrect and high forces can permanently damage or shorten the life of the crane.



Warning

Stop work and move the compact crane into a safe position if a safety feature stops working or becomes damaged.

Fully prepare the task.

Continuously monitor the work area.

Continuously monitor the tip of the boom or the tip of the jib and the load. Make sure that the boom, the jib and the load do not hit anything.

Do not let unauthorized people in the work area.

**Caution**

Do not use the compact crane to:

- drag loads,
- winch loads at an angle,
- pull loads free (such as pulling out poles),
- push loads.

Prevent dangerous situations between:

- the compact crane,
- the operator,
- other people,
- the load,
- the surroundings,
- the ground.

Do not:

- enter the work area during operation of the compact crane,
- let anybody enter the work area during operation of the compact crane,
- move a load over people,
- touch rotating parts,
- touch moving parts.
- put anything on the compact crane.

The lifting point on top of the jib is only intended for lifting the jib when it is removed from the crane. Do not use this lifting point for lifting a load or for securing the crane.

2.7 During lifting

**Caution**

The boom is flexible and bends when lifting the load. The boom will spring back when the load is put down.

Always:

- Use low gear and low speed when handling a load. The LED must be OFF.
- Lift a load at its center of gravity.
- Attach the load correctly.



Do not:

- Use the crane with a damaged or weakened hook, cable or other lifting equipment.
- Lift heavier loads than the maximum permitted workload according to the load chart.

Only move loads that:

- can move freely from the surface,
- are directly beneath the hook,
- are stable.

Make sure that there are no loose objects on:

- the crane,
- the load.

2.8 Working with long loads

Be careful when you move a long load.



Caution

The ends of a long load can move very fast.

The ends of a long load can still move even though the crane has stopped moving.

The ends can hit something and can cause dangerous situations.

2.9 Moving the crane

Before moving the crane:

- Put the tracks in the "extended" position (if possible).
 - Be careful if you move the crane while the tracks are retracted.
- Retract the jib and fold it in.
- Retract and lower the boom.
- Retract the counterweight.
- Raise and retract the outriggers.

Do not:

- lock a lever on the remote control,
- drive the crane if it is connected to the power grid,
- drive through water if the depth is more than 10 cm,
- drive the compact crane on public roads.

Make sure that you have a good view of the surrounding area.

When you drive the crane on soft or sloping ground, keep the outriggers 10 cm above the ground to decrease the risk of tipping over.

2.10 Electrical

Use a suitable connection to the mains supply. An unsuitable connection may cause a fuse to fail.

When the crane is connected to the mains supply, do not use the crane in:

- the rain,
- snow,
- wet grass,
- or on a wet floor with puddles.

Charge the battery at the end of each day to keep them balanced and in good condition:

- Use an earthed mains supply for charging.
- Put the main switch at the rear of the compact crane in position **0**.
- Do not push the emergency stop buttons.

Do not:

- do any work on the electrical system,
- remove or open the HV box,
- open or disassemble the battery / batteries or charger.

2.11 After work

- Remove all attachments.
- Put the crane in transport position , (see 11.1.1 Put the crane in transport position).
- Remove the key before leaving the crane unattended.
- Do not transport the crane unless the crane, outriggers and counterweight are completely retracted, stowed and locked.
- Remove all safety barriers and warning signs.

2.12 Emergency stop

The emergency stop button is:

- At the rear of the crane.
- On the remote control.



Caution

ONLY use in an emergency.

Do not use this button for ANY other reason.

Do not use the emergency stop to normally stop the crane.



Caution

Make sure that it is safe to start the compact crane.

2.13 Rated Capacity Limiter (RCL)

The RCL protects the compact crane from overloading.

When the crane is raised on the outriggers and the superstructure is active, the compact crane knows how the weight is applied on the outriggers. The compact crane knows how much weight it can lift in any situation.

The compact crane also knows how much weight it can lift in any situation when it is in "Pick and Carry" mode (see 8.11 "Pick and Carry" mode).

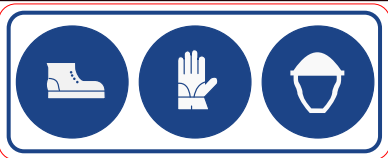




If the compact crane enters the range in which it is no longer allowed to lift the load, it will automatically stop increasing the outreach. The red lamp in the stack light comes ON and the acoustic signal operates.


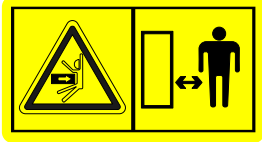
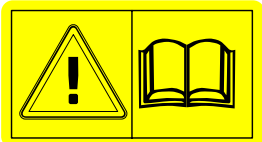


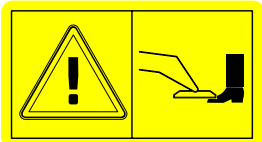



At this time the compact crane can only move the load so that it goes back into the safe range. The outreach is reduced.

When the RCL is active.	
You can:	You cannot
<ul style="list-style-type: none"> • Unwind the lifting cable • Lower the boom • Retract the boom • Lower the jib • Retract the jib 	<ul style="list-style-type: none"> • Extend the boom, • Raise the boom, • Extend the jib, • Raise the jib, • Wind the lifting cable, • Slew the superstructure, • Retract the counterweight.

2.14 Pictograms

The pictograms used are shown below. Do not remove these pictograms. Replace missing or damaged pictograms immediately.

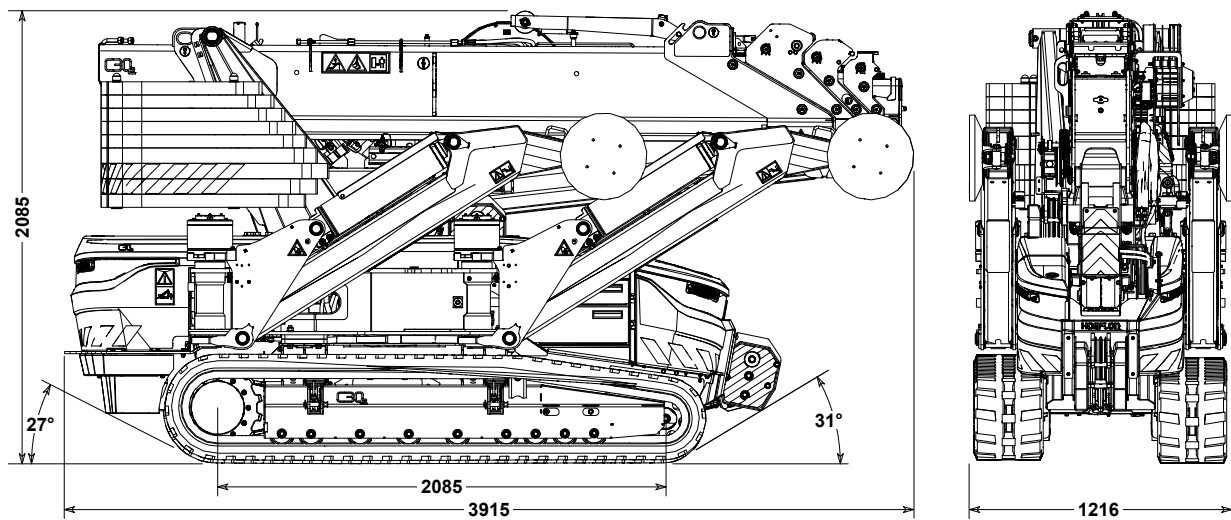
Pictogram	Meaning	Location
	<ul style="list-style-type: none"> • Foot protection is mandatory • Hand protection is mandatory • Head protection is mandatory 	On the cover at the rear of the undercarriage.
	Lifting point for lifting crane and jib	On the left and right sides of the boom and the jib.
	Center of Gravity	On the left and right sides of the boom and the jib.
	Lashing point	On the four corners of the undercarriage frame.
	Charge indicator for the 80 V battery	On the support for the attachments.

Pictogram	Meaning	Location
	<ul style="list-style-type: none"> Stay away from high-voltage cables Warning for hanging loads Stay away from the crane 	On the two sides of boom and the jib.
	<p>Danger of crushing when operating the counterweight</p> <p>Stay away from the counterweight</p>	On the cover at the rear of the undercarriage.
	Read the manual before operating the crane	On the cover at the rear of the undercarriage.
	Stay away from the work area of the crane	On the two sides of the cover at the rear of the undercarriage.
	Label that shows when annual inspection is due (Netherlands only)	On the right side of the cover of the rear cabinet.
	Risk of entrapment when setting the outriggers	On the outriggers.
	Warning for entrapment hazard	On the crane at pivot points and on the outriggers at the cylinders.
	Warning for electrical voltage	<ul style="list-style-type: none"> On the HV box. On the housing of the motor controller.
	Warning for non-ionising radiation	On the left side of the boom near the receiver.

3.

Technical data

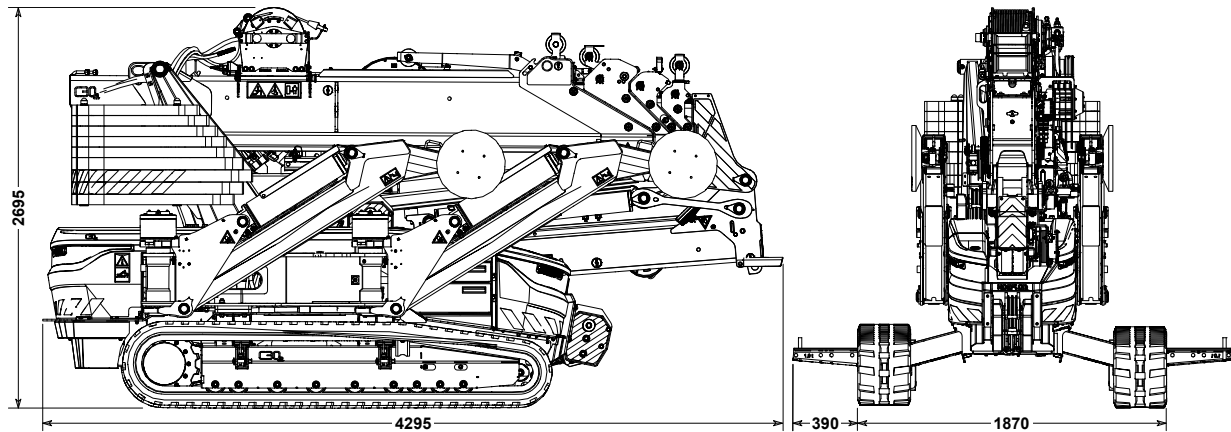
3.1 Dimensions



Note

The dimensions are:

- without the jib.
- with the tracks retracted.
- with the winch turned down next to the boom (see 8.12.1 Turn the winch down next to the boom)

**Note**

The dimensions are:

- with the jib attached.
- with the tracks and the carrier arms extended.
- with the winch in the upright position on the boom (see 8.12.1 Turn the winch down next to the boom)

**Note**

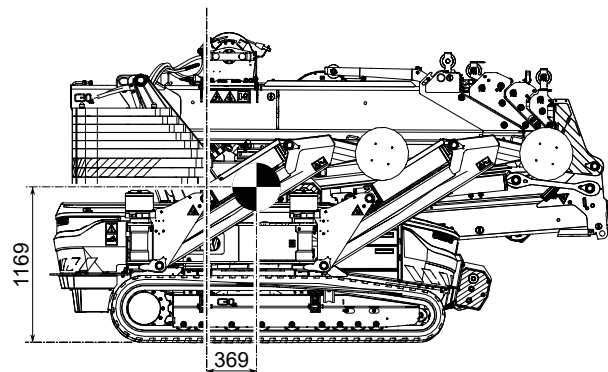
The width of the crawler tracks can be set independently.

3.2 Center of gravity

3.2.1 With jib

Measured from:

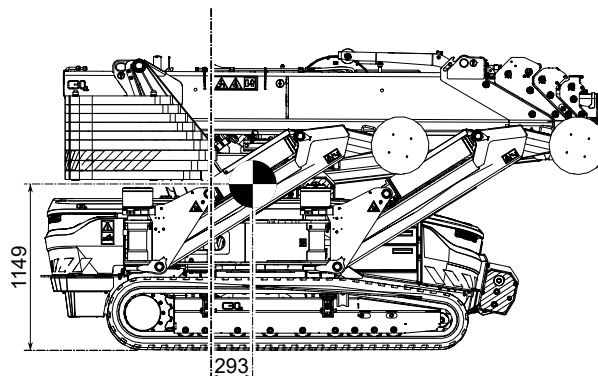
- the center line of the slewing ring,
- The bottom of the tracks when they are fully retracted.



3.2.2 No jib

Measured from:

- the center line of the slewing ring,
- The bottom of the tracks when they are fully retracted.



3.3 Specifications

3.3.1 Basic data

Machine brand	Hoeflon
Max. working load and lifting point of crane	See the load charts in the appendix
Slewing range	Infinite rotation

3.3.2 Crane and component weights

Total - including jib and any counterweight	8650 kg
Jib	570 kg
Counterweight	2160 kg
Winch head	13 kg
Hook block	80 kg
Lift hook adapter	4 kg
Angle adapter	10 kg
Searcher hook	7 kg

3.3.3 Maximum loads

See the load charts for the maximum loads (see Appendix)

3.3.4 Maximum lean angles

Max. lean angle with outriggers extended	
Maximum lean angle	10°
Maximum lean angle Pick & Carry	10°

3.3.5 Fly jib

Weight	570 kg
Maximum capacity	3000 kg
Maximum lifting range with the jib	20 m

3.3.6 Winch

Maximum winch load	1600 kg
Length of the Cable	95 m
Maximum winch speed	20 m / min
Maximum load when reeving	1x reeving 3200 kg 2x reeving 6400 kg

3.3.7 Environmental conditions

Ambient temperature	-10 to 40 °C
Maximum wind speed	10.8 m/s (6 Beaufort)

3.3.8 Undercarriage

Driving speed	1st gear: 0,75 km/uur 2nd gear: 1,5 km/uur
Tracks	Non marking
Pulling force	500 kg
Maximum slope angle (to the side)	15°
Maximum slope angle (forward)	15°
Maximum slope angle (rearward)	23°
Clearance angle	20°
Maximum outrigger pressure per outrigger	8650 kg
Maximum angle from horizontal during lifting	5°
Transport position ground pressure	0.76 kg/cm ²
Ground clearance	200 mm (with retracted tracks) 325 mm (with extended tracks)

3.3.9 Electrical system

System voltage (battery)	24 V (2x 12 V, 18 Ah)
Drive system voltage	80 Vdc
Electric motor power	15.5 kW
Battery pack data	Voltage: 76.8 V Capacity: 163 Ah Type: LiFePO4
Charging	Charging voltage: 230 Vac Maximum charging capacity: 2.3 kW Charging voltage: 400 Vac Maximum charging capacity: 6.9 kW
Charging time (5 tot 95% SOC)	± 3,5 hours @400 V ± 11 hours @230 V
Capacity	± 8 hours of work @ 60% duty cycle

3.3.10 Hydraulic system

Volume of hydraulic tank	85 liter
Pump type	Gear pump
Maximum pump pressure	265 bar

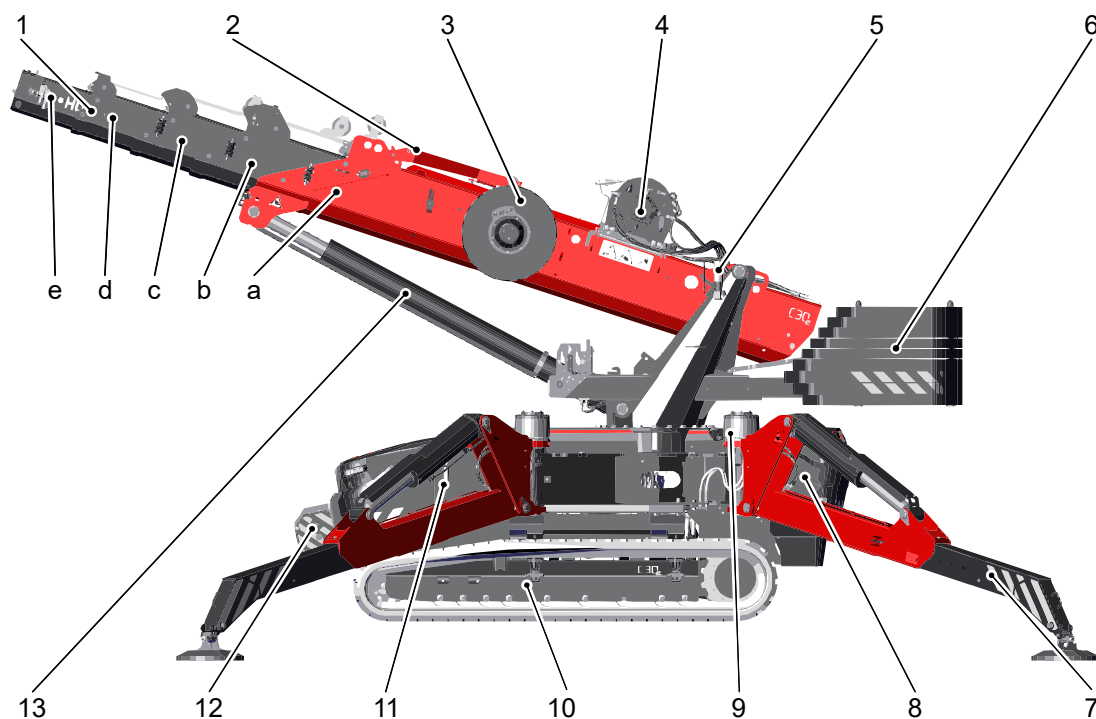
3.3.11 Remote control

Frequency	434 MHz
Range	250 m
Display	3-inch TFT LCD
Battery	Exchangeable
Portability	Hip or shoulder strap
Control	Accurate proportional control

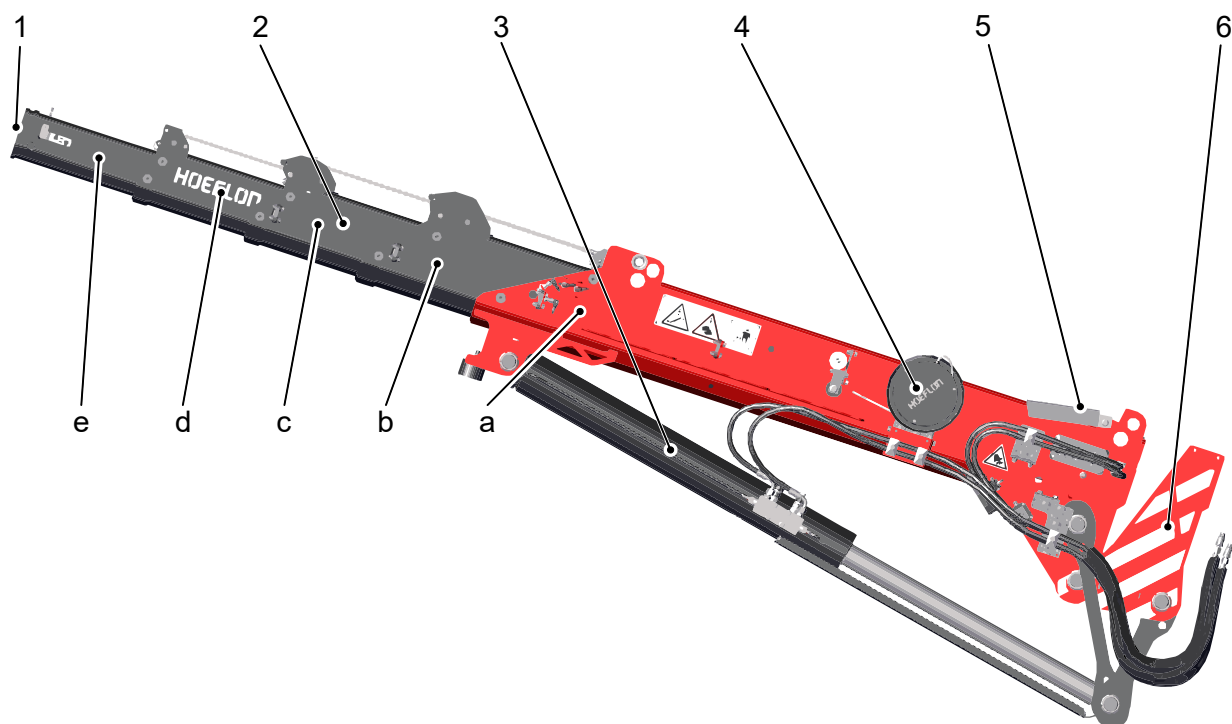
4.

Description

4.1 Main components



- | | |
|-------------------------------------|-----------------------------------|
| 1. Boom sections | 7. Outrigger |
| a. Main section 1 | 8. Rear compartment |
| b. Section 2 | 9. Socket for the battery charger |
| c. Section 3 | 10. Tracks |
| d. Section 4 | 11. Front compartment |
| e. Section 5 | • battery, |
| 2. Arm to remove the counter weight | • motor controller, |
| 3. Hydraulic / electric reel | • tank for hydraulic oil, |
| 4. Winch | • view glass for hydraulic oil. |
| 5. Stack lights | 12. hook block |
| 6. Counterweight | 13. Lift cylinder for the boom |



1. RFID sensor and locking pin
2. Jib sections
 - a. Main section 1
 - b. Section 2
 - c. Section 3
 - d. Section 4
 - e. Section 5
3. Lift cylinder for the jib
4. Electric reel for the jib
5. Support leg for the jib
6. Quick connect of the boom

4.1.1 Boom

The boom:

- consists of five sections fitted one inside the other.
- is very compact.
- extends or retracts with a hydraulic cylinder.

4.1.2 Counterweight

The counterweight:

- gives balance and stability to the compact crane during lifting.
- is hydraulically extended,
- can be removed without any additional lifting facilities.

4.1.3 Outriggers

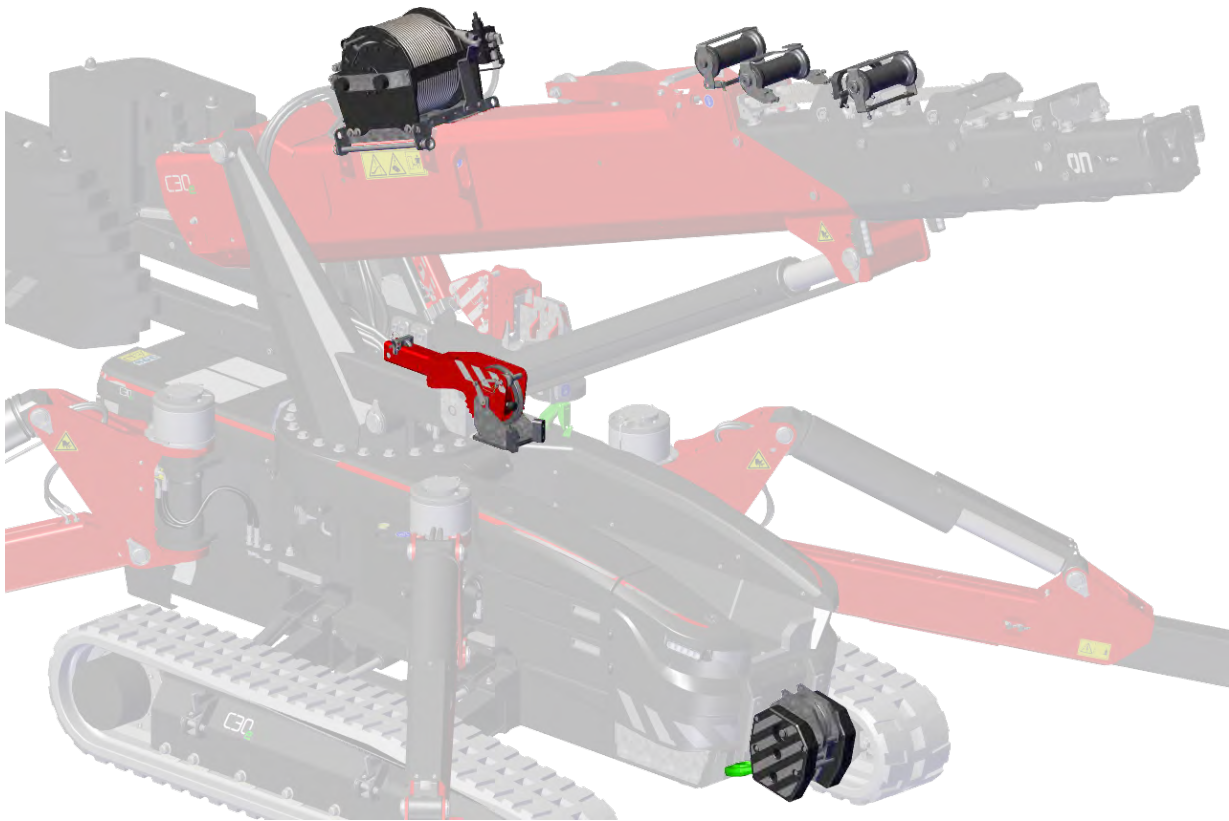


The C30e Compact crane has outriggers to offset the load weight and to increase stability when the crane is in use. The outriggers are heavy beams that extend from the chassis and use a flat pad to evenly distribute the crane's load. A flat surface is necessary for the outriggers to function properly.

Use the remote control to hydraulically extend and retract each outrigger. The outriggers can be turned to any position.

4.2 Accessories

4.2.1 Winch



The winch makes it possible to lift loads with minimal movement of the boom or the jib. A repetitive lift becomes easier if you use the winch.

Use the winch if you need to lift a load behind a wall or into a cellar or a well

Only use the winch in combination with a jib, the winch head, the hook block and the hook.



Caution

The winch cable will become tangled if you do not use the hook block.

The hook block is kept at the front of the C30e Compact crane.

4.2.2 Fly jib



A fly jib increases the lifting height and working radius of your C30e Compact crane.

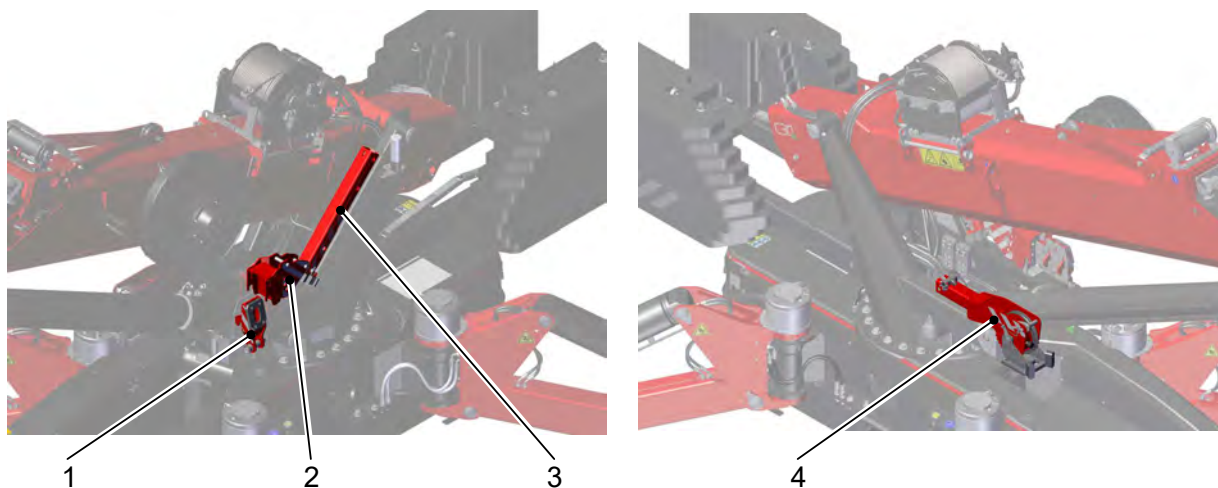
It also gives extra reach to access difficult areas on site such as over rooftops or high balustrades.

The fly jib has five sections, four of these sections extend (or retract) hydraulically.

The C30e Compact crane can be used with or without the jib, depending on the lift (see 8.2 Different ways to lift a load) Put the jib on the transport trolley or in a safe place on the floor when it is not used (see 7.9.2 Removing the Jib)

4.3 Lifting attachments

Keep the lifting attachments on the brackets on the column.



1. Lifting adapter
2. Angle adapter
3. Searcher hook
4. Winch head

The C30e Compact crane detects the lifting adapter and the angle adapter automatically.

4.3.1 Lifting adapter and hook



Use the lifting adapter and the hook to lift a load directly with the boom or the jib.

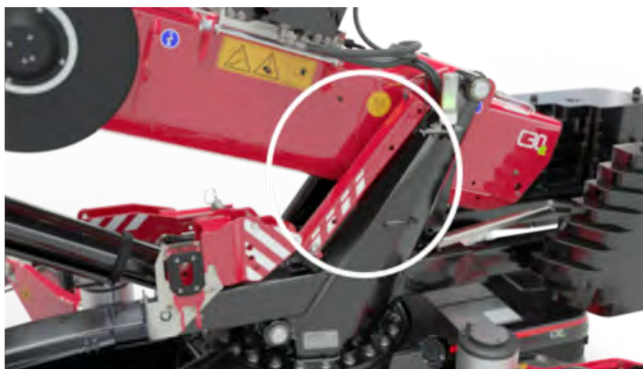
The rubber ring protects the load and the crane during lifting.

4.3.2 Angle adapter



Use the angle adapter to install a searcher hook or winch head at 30°, 15°, 0° or -30° to the jib.

4.3.3 Searcher hook



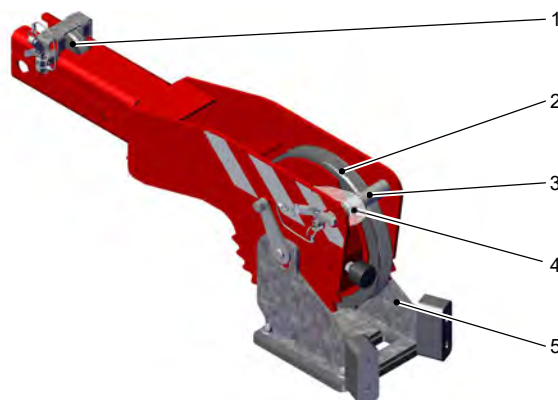
Use the searcher hook:

- to lift in areas where there is low headroom,
- to install a load close to a ceiling,
- to install a load under an overhead obstacle (such as a soffit or a balcony).

Install the searcher hook on the angle adapter (see 7.10.3 Searcher hook).

4.3.4 Winch head

1. Winch cable pulley - Only use at 30° setting.
2. Reeving pulley - One groove.
3. Locking pin - To secure cable from moving off the pulley.
4. Reeved cable - Secured to locking pin.
5. Winch stop.

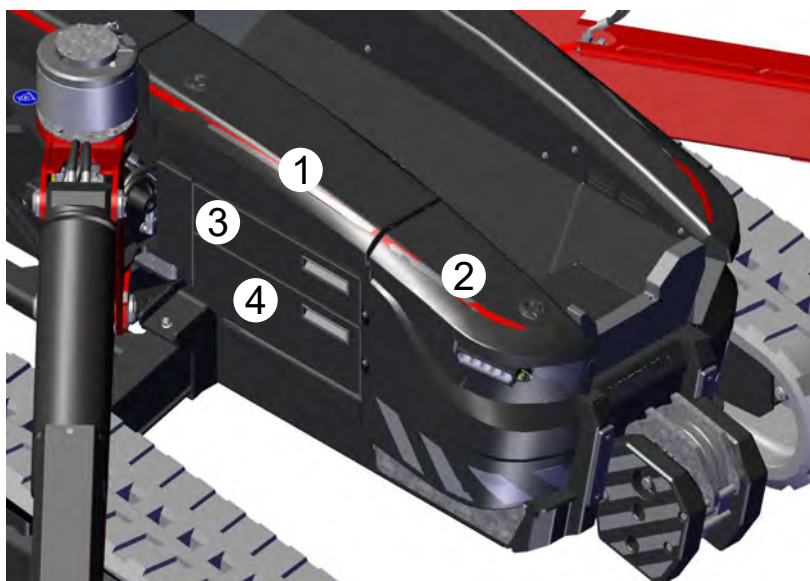




Only use the winch head in combination with a jib, the winch, the hook block and hook. Install the winch head on the angle adapter (see 7.10.4 Winch head)

The winch head lets you reeve the cable one time, this increases the lifting capacity two times.



4.4 Storage compartments



Compartment	Contents of compartment
1	<ul style="list-style-type: none"> • Charging cable 230 V • Charging cable 400 V • Hardhat and safety vest
2	<ul style="list-style-type: none"> • Remote control • Charging point for the remote control • Bridging switch • Diagnostic plug for laptop connection
3	<ul style="list-style-type: none"> • Lifting hook 4 ton • Lifting hook 10 ton • Rubber protection ring • Bag with paint and fuses
4	<ul style="list-style-type: none"> • Cable for counter weight removal • Chain for counter weight removal • Two shackles - 3250 kg • Four pins to prevent a load moving off the carrier arms (see 4.8 Carrier arms).

4.5 Charging cables

The crane has two charging cables. Keep them in compartment 1 (see 4.4 Storage compartments).

220V	380V
	
<p>Use with 220V power supply Charges the crane with one charger - slow</p>	<p>Use with 380 power supply Charges the crane with all three chargers - fast</p>




Note

Do not interchange the cables.

4.6 Controls

The start / stop key switch and the emergency stop are at the rear of the crane.



	Description	Function
1	Main switch	0: Crane OFF 1: Crane ON
2	Emergency stop button	Push the emergency stop button to stop the crane immediately.  Caution ONLY use in an emergency. Do not use this button for ANY other reason.

4.7 Rear compartment

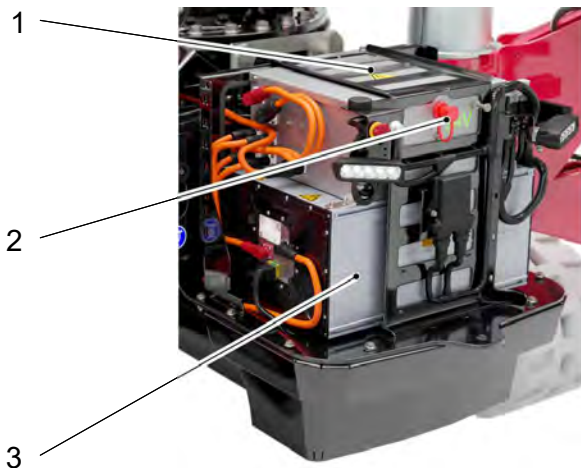
4.7.1 Remove the cover of the compartment at the rear of the crane

Remove the cover of the compartment at the rear of the crane to get access to the components.

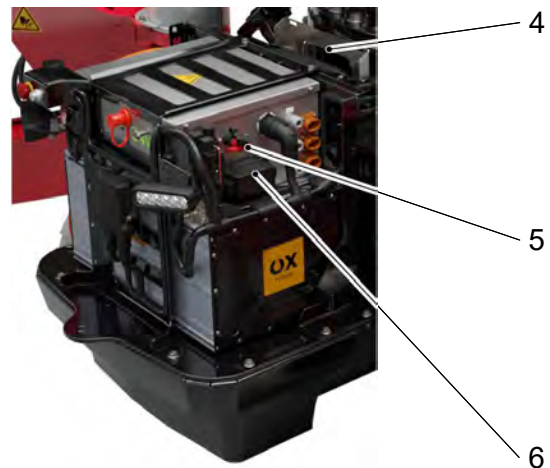
1. Remove the bolts at the two sides of the cover at the front of the cover.
2. Pull the cover to the rear.



4.7.2 Overview



- 1. HV box,
- 2. 24V connector for starting aid,
- 3. OX battery pack,

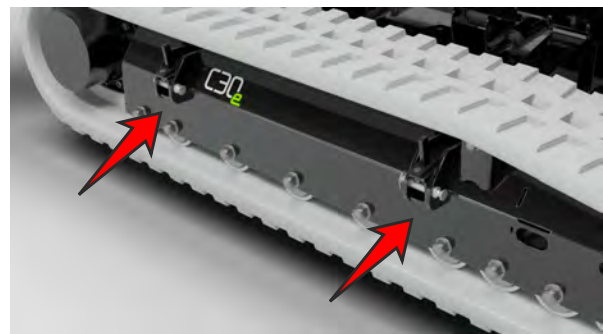


- 4. Charger battery pack,
- 5. Main switch,
- 6. Fuse box.

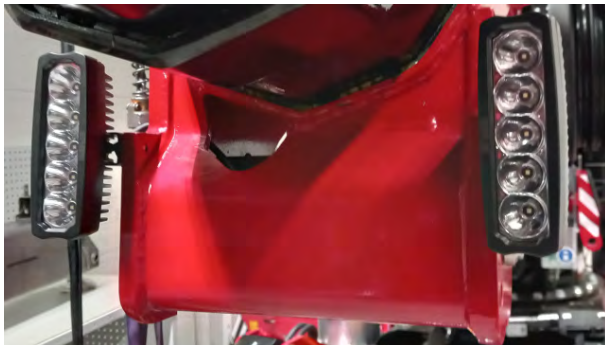
4.8 Carrier arms

The C30e Compact crane has four carrier arms. You can transport steel beams or similar items on these carrier arms. The carrier arms are kept in the tracks on the two sides of the crane.

The load capacity of the arms is 2000 kg per side of the compact crane (1000 kg per carrier arm).

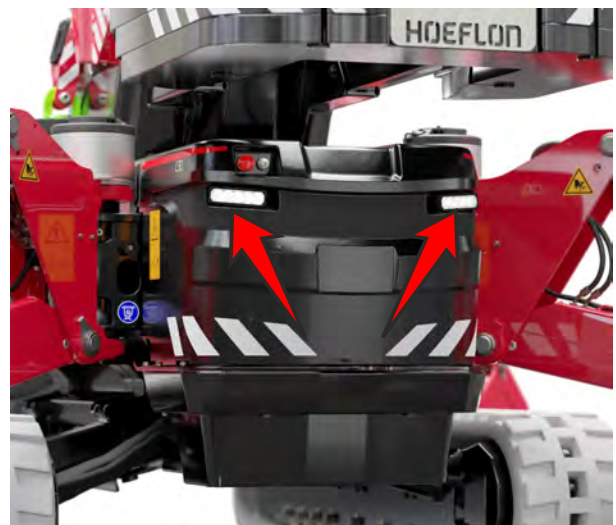
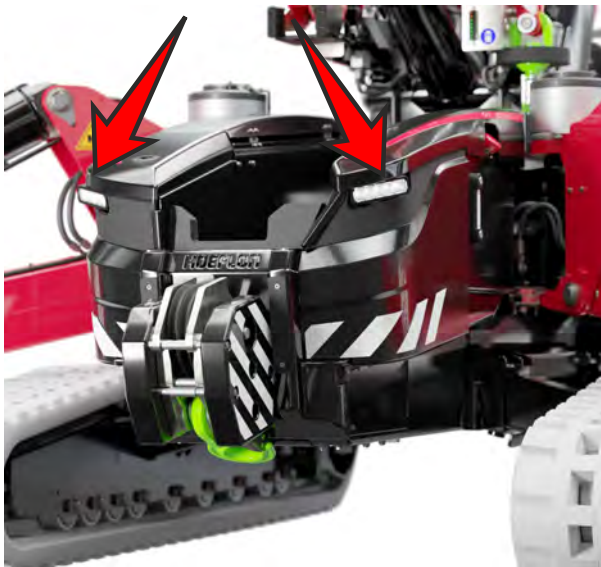


4.9 Work lights



The superstructure of the crane has four work lights:


- two are on the boom next to the support for the lifting cylinder,
- two are on the jib on the first segment.



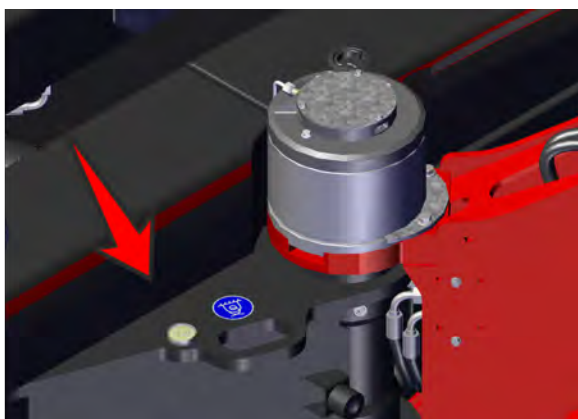
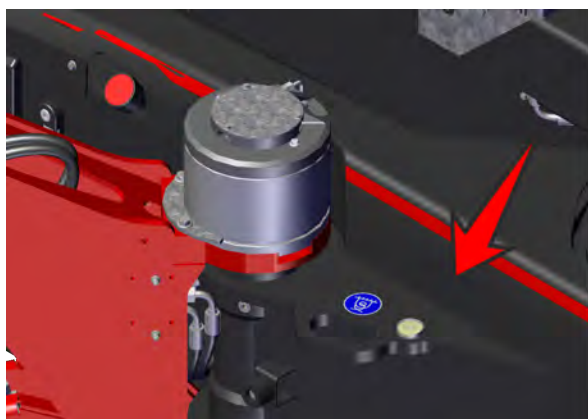
The undercarriage has two work lights on the front and two work lights on the rear.

4.10 Stack lights

Light	Sound	Explanation
		Crane controls active
		Driving
		90% to 100% load
		100% load
		Override 100% to 110% (with the button on the remote control)
		Override without protection (see 8.4 Bridging device)



4.11 Spirit levels



A spirit level is installed on the chassis on the two sides of the crane.

Use them to make sure that the crane is level.

5.

Remote control

5.1 Introduction



Use the remote control to operate the C30e Compact crane.

Wear the remote control using the belt or shoulder strap.

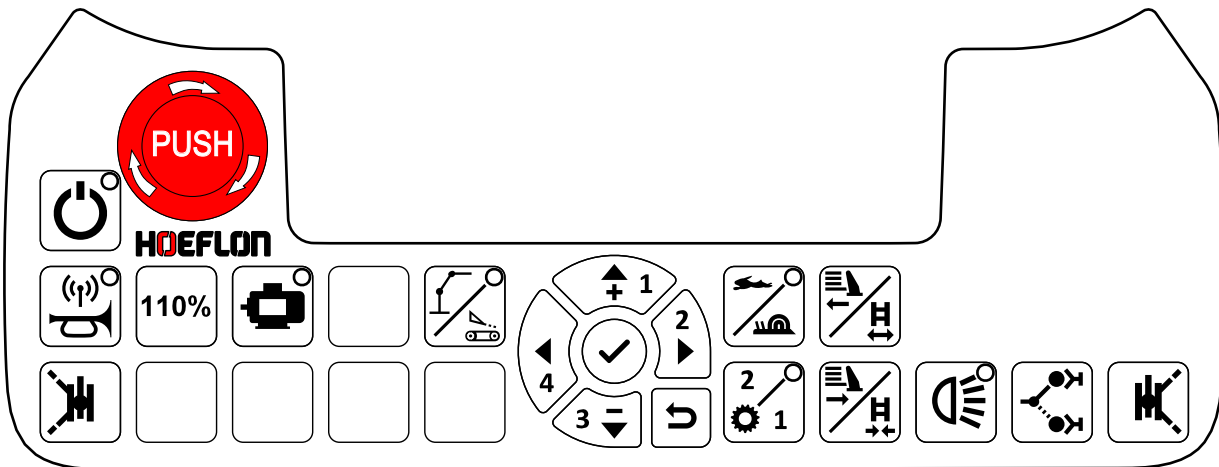
Always have a second battery in the charger.

- Keep the remote control clean.
- Make sure that you can read the pictograms and the display.

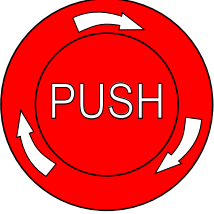





The remote control is sealed against splashed water and rain.









- Do not clean the remote control or the receiver with high pressure
- Do not soak the remote control or the receiver in liquid.

5.2 Buttons



5.2.1 Control buttons for the compact crane

Button	Function	Explanation
	Emergency stop	Immediately stops all functions of the crane. Caution ONLY use in an emergency. Do not use this button for ANY other reason.
	On/Off	Start and stop the remote control. The remote control is ON when the LED is ON.
	Connect remote control and crane / operate horn	Push once to connect the remote control with the crane. The remote control is connected to a crane when the LED is ON. This button operates the horn when the crane is connected.
	Temporarily increase RCL	(see 5.2.3 110% button)
	Electric motor	Start and stop the electric motor. The electric motor is ON when the LED is ON.
	Undercarriage / superstructure toggle	LED OFF: undercarriage (driving) LED ON: superstructure (lifting)

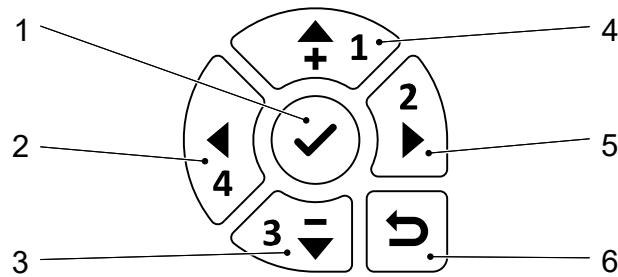
Button	Function	Explanation
	Release left outriggers	<p>Push one of the buttons to unlock the outriggers on one of the two sides of the crane. When the outriggers are unlocked you can turn them to the correct position.</p> <p>Push one of the buttons and use an outrigger lever to extend or retract the outrigger(see 5.3 Levers).</p> <p>If none of these buttons are pushed then the outrigger legs are locked in position and cannot move.</p>
	Release right outriggers	
	Crane speed	<p>Toggle between fast and slow precise crane movements.</p> <p>The crane is in fast moving mode when the LED is ON.</p>
	Driving speed	<p>Toggle between LOW and HIGH gear(see 5.2.4 Driving speed).</p> <p>The crane is in HIGH gear when the LED is ON.</p>
	Extend crawler tracks / counterweight	<p>Extend crawler tracks in undercarriage mode.</p> <p>You can extend both crawler tracks at the same time or you can extend the left or the right crawler track separately. (see 7.3.1 Setting the Track state).</p>
		<p>Extend counterweight in superstructure mode.</p>
	Retract crawler tracks / counterweight	<p>Retract crawler tracks in undercarriage mode.</p> <p>You can retract both crawler tracks at the same time or you can retract the left or the right crawler track separately. (see 7.3.1 Setting the Track state).</p>
		<p>Retract counterweight in superstructure mode.</p>
	Work light	(see 5.2.6 Work light)
	Lock/unlock multitool	This button controls the multitool. Refer to the manual of the multitool for more information.



Note

If a LED is lit, the function is active.

5.2.2 Navigation panel



- | | |
|---------------------------|----------------------------|
| 1. Confirm / go into menu | 4. Up |
| 2. Left | 5. Right |
| 3. Down | 6. Return to previous menu |

Use the navigation panel on the remote control:

- to calibrate the levers (see 5.3.2 Calibration)
- to set the lever configuration (see 5.3.3 Function mapping)

5.2.3 110% button

The Rated Capacity Limiter (RCL) is increased to 110% while you push the button.

Only use this function to move the compact crane back to safety from an unsafe situation.

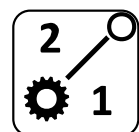
Do not use this function to increase the outreach of the compact crane or to continue winching.



5.2.4 Driving speed


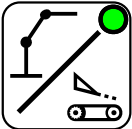
The crane is in LOW gear by default. The crane has low speed but high torque.

Push the button to enter HIGH gear. The LED will go ON. The crane has a higher speed but a lower torque.



The crane has an automatic gear shift in HIGH gear. If the hydraulic pressure gets too high (for example: when turning) the compact crane automatically switches to LOW gear. When the hydraulic pressure decreases again the compact crane will shift back to HIGH gear.

5.2.5 Undercarriage / Superstructure toggle button

LED status		
	OFF	The levers operate the undercarriage of the crane: <ul style="list-style-type: none"> • Outriggers • Crawler tracks
	ON	The levers operate the superstructure of the crane: <ul style="list-style-type: none"> • Boom • Jib • Winch



Note

This button only works if no lever or button has been operated for at least two seconds.

After pressing the button, the crane's mode of operation changes and the information on the display changes.

5.2.6 Work light

Pressing the "Work light" button starts or stops the work lamp.

The LED is ON if a (any) lamp is ON.



Operating the lights on the undercarriage

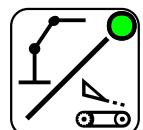
Make sure that the undercarriage is active (LED is OFF).



Push button one time	All work lights on the undercarriage go ON.
Push button two times	All work lights on the undercarriage go OFF.

Operating the lights on the superstructure

Make sure that the superstructure is active (LED is ON).

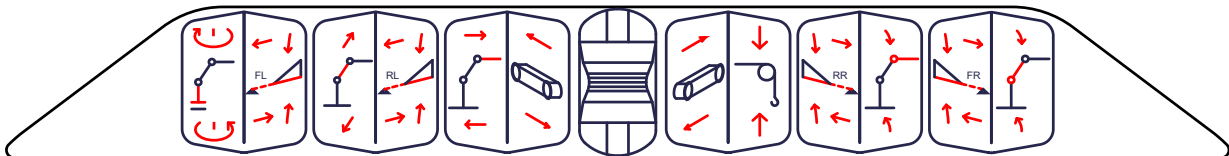


Push button one time	The work light on the boom goes ON.
Push button two times	The work light on the jib goes ON.
	The work light on the boom goes OFF.

Push button three times	All work lights on the superstructure go ON.
Push button four times	All work lights on the superstructure go OFF.

5.3 Levers

5.3.1 Default configuration



Undercarriage

If the LED on button is OFF, the levers operate the undercarriage of the crane.

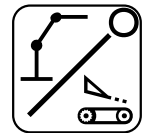


Image	Function	Pull the lever rearward	Push the lever forward
	Lower / raise outrigger (FL– front left)	Up	Down
	Extend / retract outrigger (FL– front left)	Retract	Extend
	Lower / raise outrigger (RL – rear left)	Up	Down

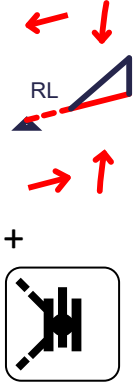


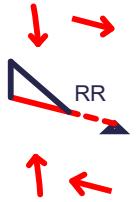
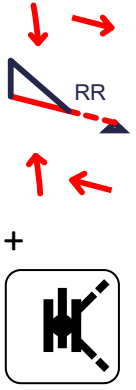
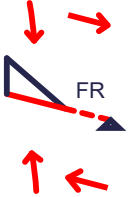
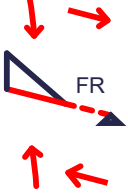

Image	Function	Pull the lever rearward	Push the lever forward
	<p>Extend / retract outtrigger (RL – rear left)</p>	<p>Retract</p>	<p>Extend</p>
	<p>Operate crawler track (L – left)</p>	<p>Backwards</p>	<p>Forwards</p>
	<p>Operate crawler track (R – right)</p>	<p>Backwards</p>	<p>Forwards</p>
	<p>Lower / raise outtrigger (RR – rear right)</p>	<p>Up</p>	<p>Down</p>
	<p>Extend / retract outtrigger (RR – rear right)</p>	<p>Retract</p>	<p>Extend</p>

Image	Function	Pull the lever rearward	Push the lever forward
	Lower / raise outrigger (RF – front right)	Up	Down
 + 	Extend / retract outrigger (RF – front right)	Retract	Extend

Superstructure

If the LED on button is ON, the levers operate the superstructure of the crane.

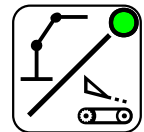


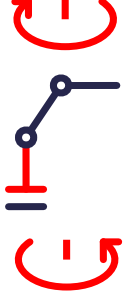
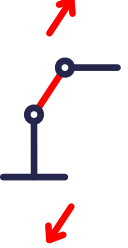
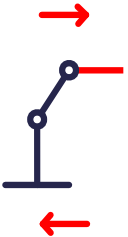



Image	Function	Pull the lever rearward	Push the lever forward
	Slew boom	Left	Right
	Extend / retract boom	Retract	Extend

Image	Function	Pull the lever rearward	Push the lever forward
	Extend / retract jib	Retract	Extend
	Winch in / out	In	Out
	Lift / lower jib	Lift	Lower
	Lift / lower boom	Lift	Lower

5.3.2 Calibration

Inspect the lever calibration

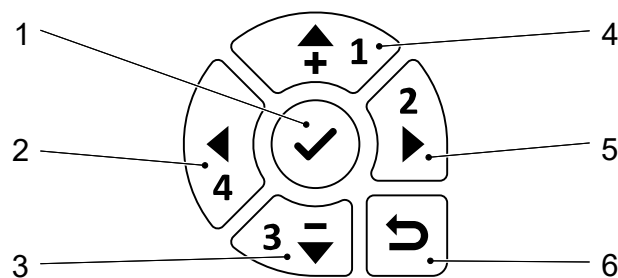
Calibrate the levers if:

- the levers of the remote control do not respond over the entire range of movement.
- the remote control cannot connect to the crane.



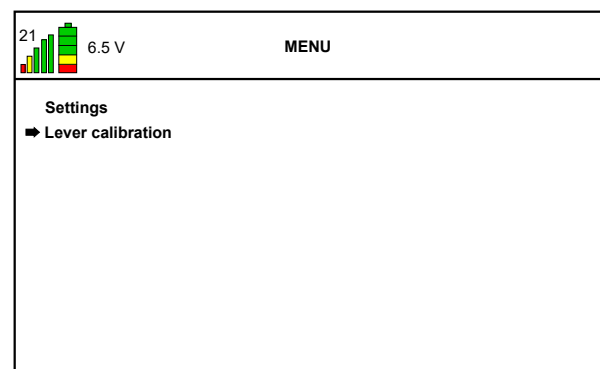
Note

If the levers are in the central position but the remote control gives a "out of center" response then the remote control cannot connect to the crane.

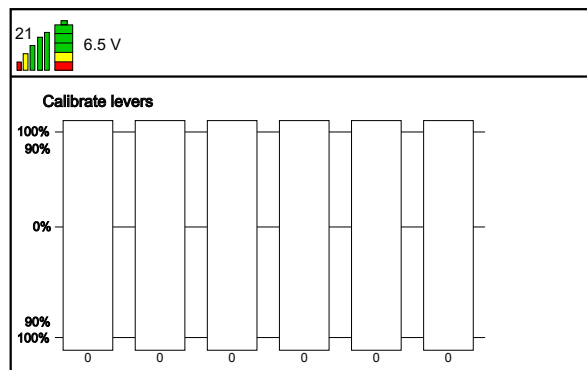


- | | |
|---------------------------|----------------------------|
| 1. Confirm / go into menu | 4. Up |
| 2. Left | 5. Right |
| 3. Down | 6. Return to previous menu |

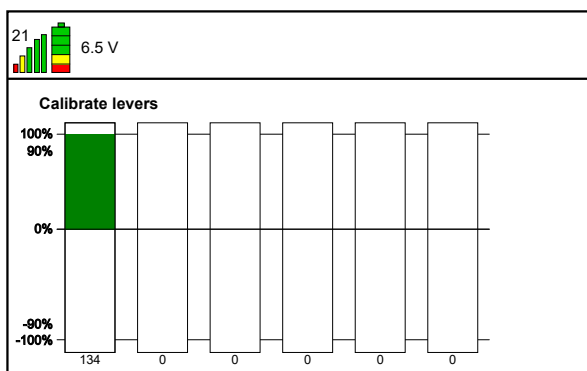
1. Start the remote control.
2. Push the **Confirm** button (1) to go into the *remote control menu*.
3. Push the **Down arrow** to move the arrow in the display until it points to *Lever calibration*.



4. Push the **Confirm** button (1) to go into the *Lever calibration* menu.



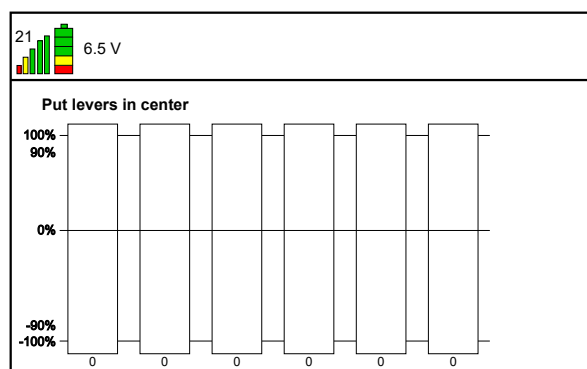
5. When you operate a lever the related bar must turn green.
6. Fully push the lever.
 - The green bar must be at 134.
 - Recalibrate the lever if the green bar is at 134 before fully pushing the lever.
 - Recalibrate the lever if the green bar is not at 134.



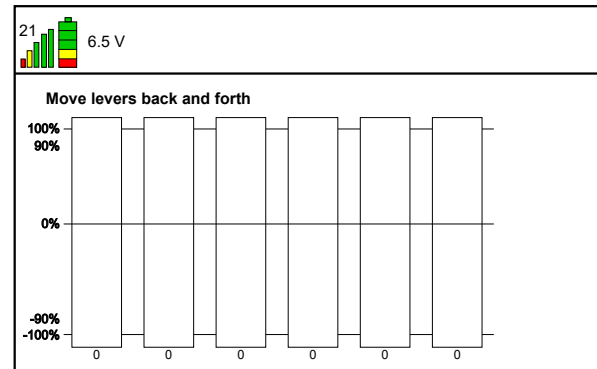
7. Fully pull the lever.
 - The green bar must be at -134.
 - Recalibrate the lever if the green bar is at -134 before fully pulling the lever.
 - Recalibrate the lever if the green bar is not at -134.
8. Do steps 6 and 7 again for the remaining levers.

Calibrate the levers:

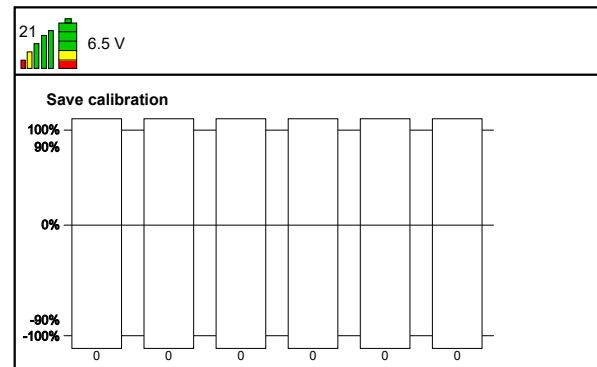
1. Push the **Confirm** button (1). The text *Put levers in center* is now displayed.
2. Make sure that all the levers are in the center position.



3. Push the **Confirm** button (1). The text *Move levers back and forth* is now displayed.
4. Slowly move the levers one at a time, from all the way back to all the way forward.



5. Push the **Confirm** button (1). The text *Save calibration* is now displayed.
6. Move the levers one after the other. Move the levers all the way in both directions.
7. Make sure that each bar becomes fully green.
8. Push the **Confirm** button (1). The settings are saved
9. Push the **Back** button (6) two times to go back to the home screen.

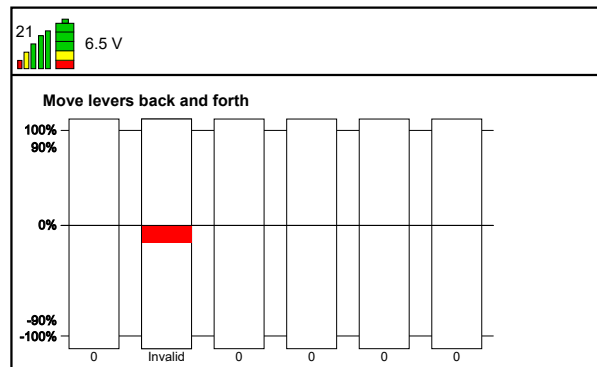


Incorrect calibration

This screen is shown if a lever does not operate correctly.

Do not use the compact crane.

Speak to your your Hoeflon dealer.



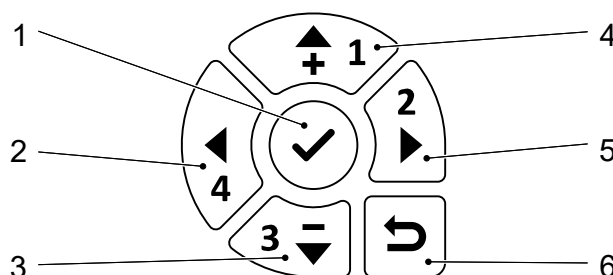
5.3.3 Function mapping

The default lever configuration is set by Hoeflon. You can change the configuration so that the C30e Compact crane is operated in the same way as many truck-mounted cranes.

You can only change the lever configuration for the superstructure. You cannot change the lever configuration of the undercarriage.

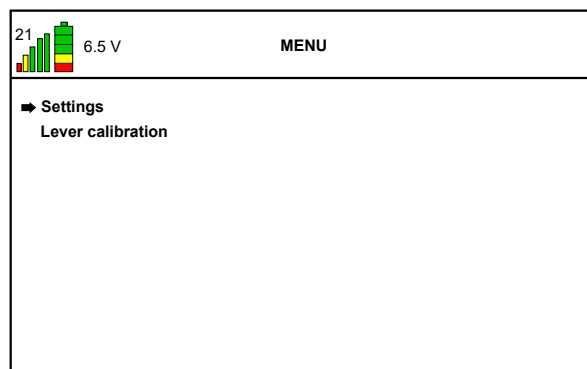
Speak to your your Hoeflon dealer if you want to make a different lever configuration.

Set the lever configuration to "custom"

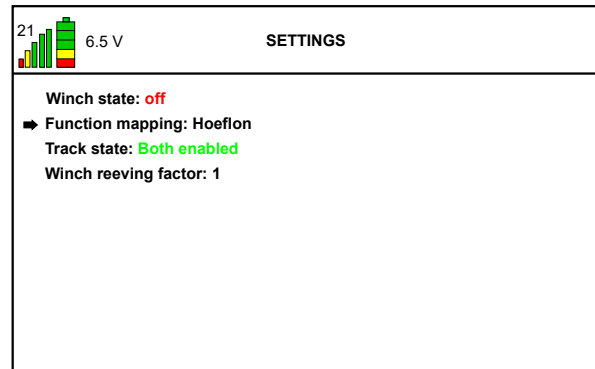


- | | |
|---------------------------|----------------------------|
| 1. Confirm / go into menu | 4. Up |
| 2. Left | 5. Right |
| 3. Down | 6. Return to previous menu |

1. Start the remote control.
2. Push the **Confirm** button (1) to go into the *Remote control menu*.
3. Make sure that the arrow in the display points to *Settings*.
 - Push the **Up arrow** or the **Down arrow** to move the arrow in the display until it points to *Settings*.
4. Push the **Confirm** button (1) to go into the *Settings menu*.





5. Push the **Down arrow** (3) to move the arrow in the display until it points to *Function mapping: Hoeflon*.
6. Push the **Right arrow** (5).
 - The Function mapping toggles between "Hoeflon" and "Custom"
7. Select the configuration that you want.
8. Push the **Back** button (6) two times to go back to the home screen.



Custom configuration

Image	Function	Lever backwards	Lever forwards
	Slew main boom	Left	Right
	Boom up and down	Boom up	Boom down
	Extend/retract main boom	Retract	Extend
	Jib up and down	Up	Down

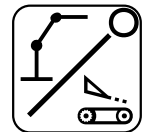
Image	Function	Lever backwards	Lever forwards
	Extend/retract jib	Retract	Extend
	Raise and lower winch	Raise	Lower

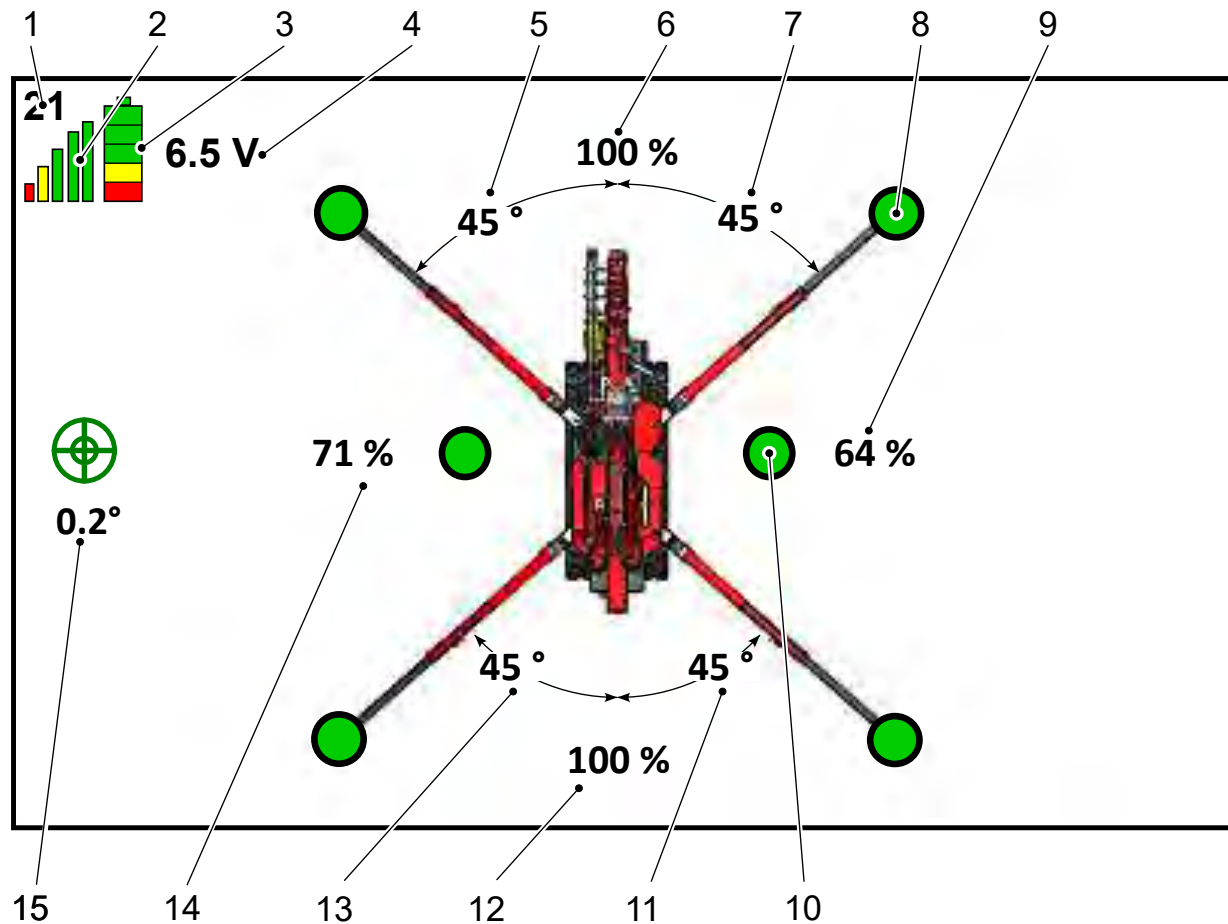
5.4 Display

5.4.1 While controlling the undercarriage

If the LED on button is OFF, the levers operate the undercarriage of the crane.

The following display is shown.





No.	Function	Explanation
1	Channel	The communication channel that is used. This may change when you start the remote control again.
2	Signal strength	More bars > Better signal Stop and start the remote control to select a different channel if the signal is too weak.
3	State of charge of remote control battery	More bars > More charge. Replace the battery when only the red bar shows (see 5.6 Replacing and charging the remote control battery)
4	Voltage	The battery voltage of the remote control.
5	Outrigger angle - Left Front	The angle between the outrigger and the centerline of the crane.
6	Lifting capacity - Front	The permitted lifting capacity in percent. This value is determined by: <ul style="list-style-type: none"> • The angles of the outriggers. • The current Outreach radius. • The value given by the load chart (see Appendix)

No.	Function	Explanation
7	Outrigger angle - Right Front	The angle between the outrigger and the centerline of the crane.
8	Outrigger is set correctly	A green circle shows that the outrigger is correctly loaded.
9	Lifting capacity - Right	The permitted lifting capacity in percent. This value is determined by: <ul style="list-style-type: none"> • The angles of the outriggers. • The current Outreach radius. • The value given by the load chart (see Appendix)
10	Track is extended	A green circle shows that a track is fully extended
11	Outrigger angle - Right Rear	The angle between the outrigger and the centerline of the crane.
12	Lifting capacity - Rear	The permitted lifting capacity in percent. This value is determined by: <ul style="list-style-type: none"> • The angles of the outriggers. • The current Outreach radius. • The value given by the load chart (see Appendix)
13	Outrigger angle - Left Rear	The angle between the outrigger and the centerline of the crane.
14	Lifting capacity - Left	The permitted lifting capacity in percent. This value is determined by: <ul style="list-style-type: none"> • The angles of the outriggers. • The current Outreach radius. • The value given by the load chart (see Appendix)
15	Digital bubble level	The green circles indicate if the crane is level. The number of degrees shows the tilt of the crane. Use the spirit level on the crane to determine which direction the crane is leaning.

5.4.2 Pick up mode

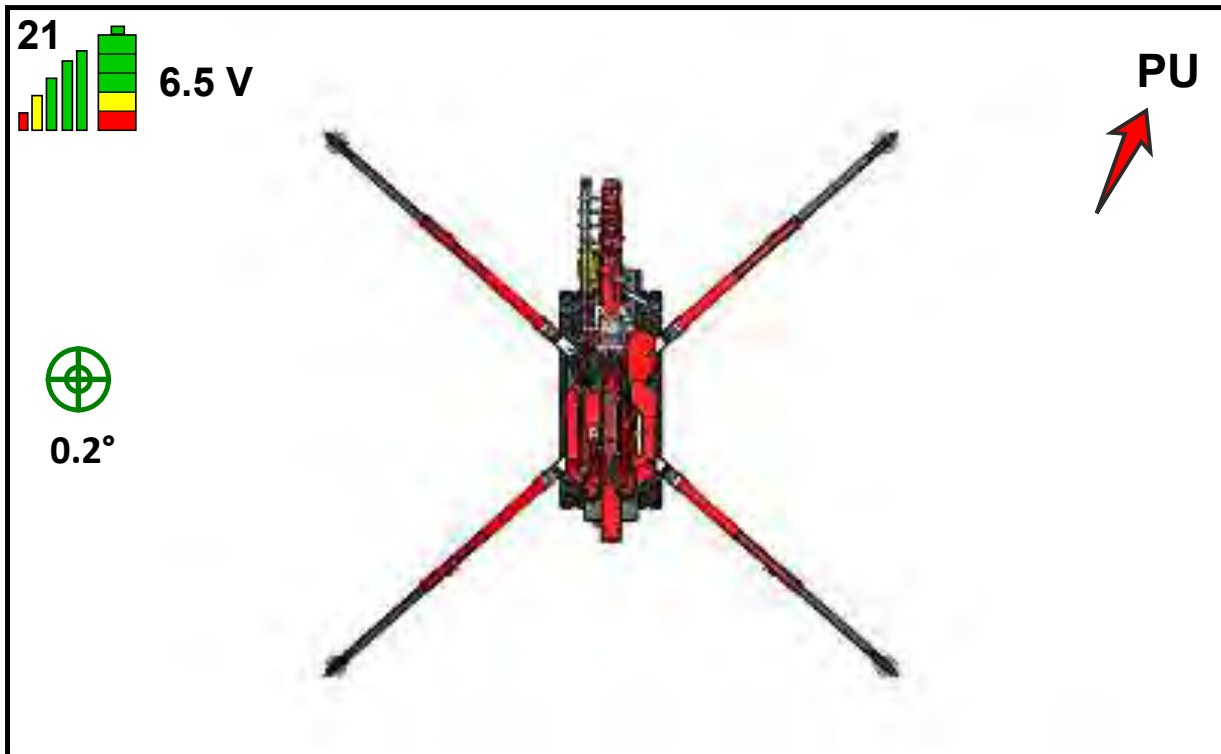
When the crane is in Pick up mode the letters PU are displayed in the top right corner of the display



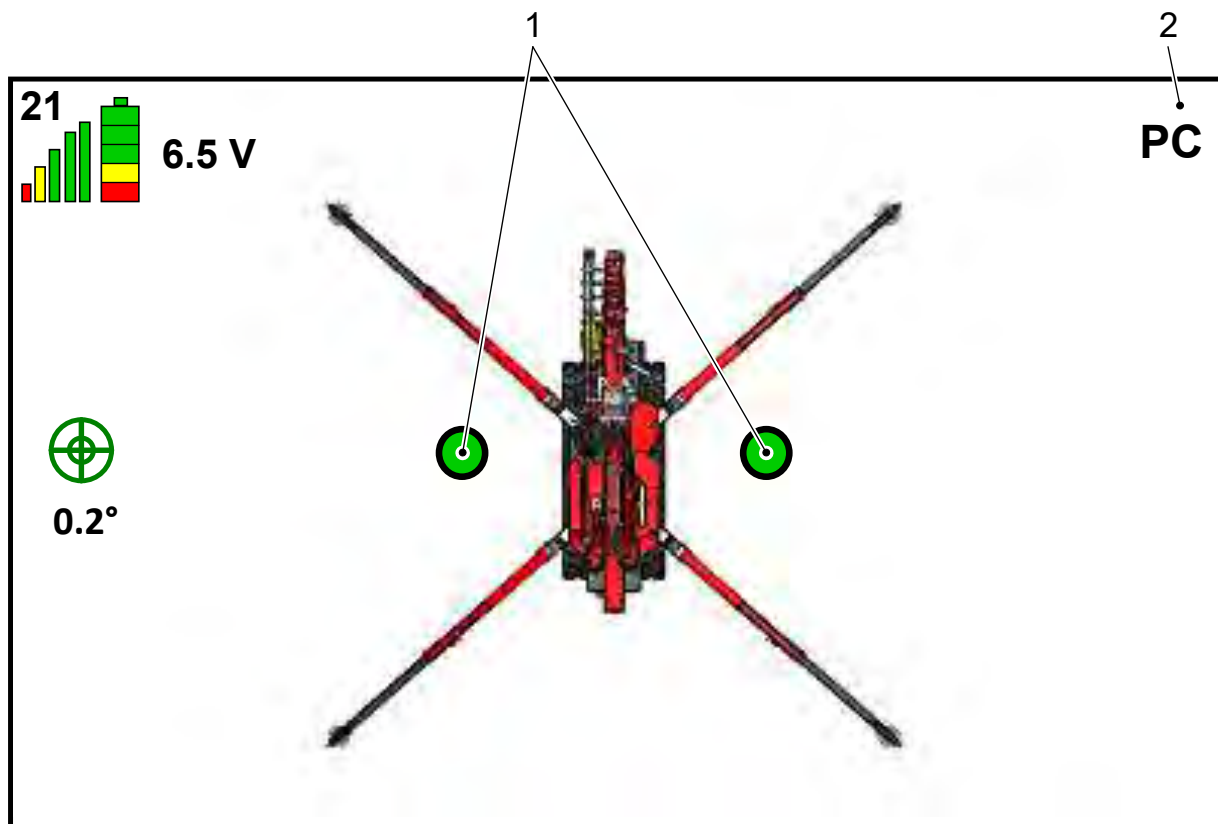
Note

If no accessories or lifting attachments are installed then the crane is in "Pick up mode"

When the crane is in Pick Up mode it cannot lift or register a load.



5.4.3 Pick and carry mode



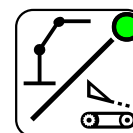
No.	Function	Explanation
1	Crawler track is fully extended.	A green circle shows that the crawler track is fully extended.
2	Indicator for pick and carry mode.	Tells the operator that the crane is in "Pick and carry" mode.

The outriggers are not set in pick and carry mode.

5.4.4 While controlling the superstructure

If the LED on button is ON, the levers operate the superstructure of the crane.

The display that is shown has information on:



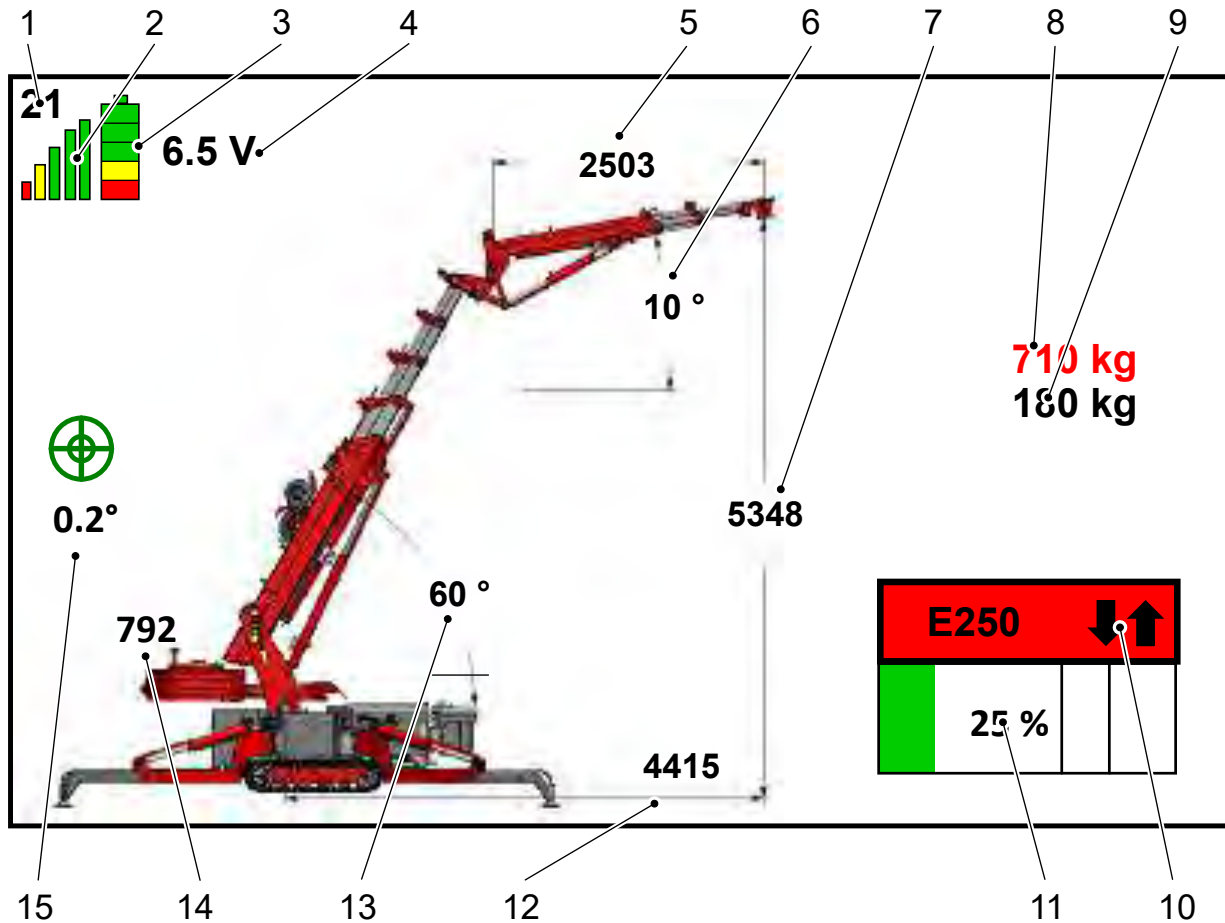
- the boom
- the jib.
- the counterweight.








Note

You will see a different screen when you use a different crane configuration.

- if you have not installed a jib then: the jib, the jib extension and the jib angle are not displayed.
- If the counterweight is not installed then: the counterweight and the counterweight position are not displayed

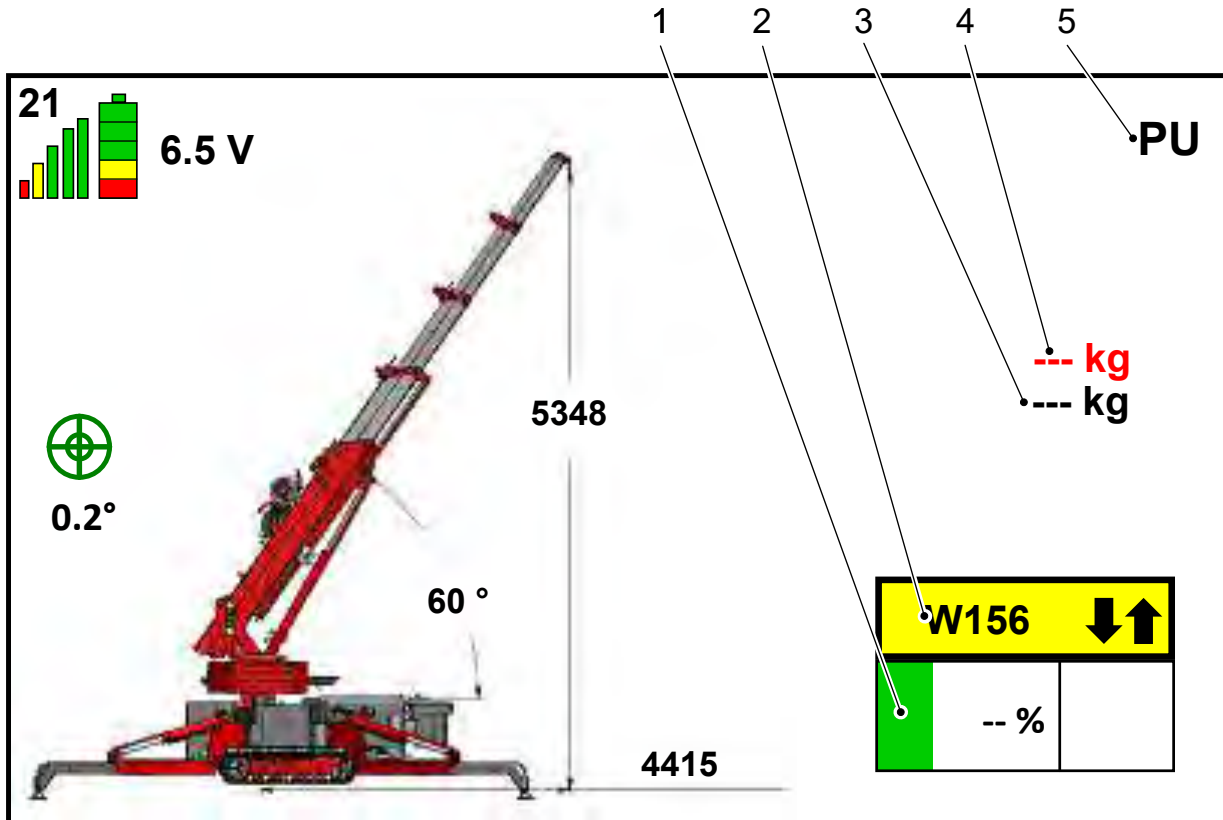


No.	Function	Explanation
1	Channel	The communication channel that is used. This may change when you start the remote control again.
2	Signal strength	More bars > Better signal Stop and start the remote control to select a different channel if the signal is too weak.
3	State of charge of remote control battery	More bars > More charge. Replace the battery when only the red bar shows (see 5.6 Replacing and charging the remote control battery)
4	Voltage	The battery voltage of the remote control.

No.	Function	Explanation									
5	Outreach of jib	<p>The length of the jib.</p>  <p>Note Only shown if the jib is installed.</p>									
6	Angle of jib	<p>The angle between the jib and the horizontal.</p>  <p>Note Only shown if the jib is installed.</p>									
7	Hoisting height	Total height of the hook above the bottom of the tracks.									
8	Maximum load	The maximum load that the crane can lift at this outreach and angle.									
9	Load weight	The current load hanging from the lifting hook.									
10	Errors and warnings	<p>All errors and warnings are displayed here. An error has a red background, a warning has a yellow background.</p>  <p>Caution The crane will not continue with an error, you must move the crane back to safety before you can continue.</p>  <p>Note Use the UP/DOWN arrow keys on the controller to scroll between messages. Use the LEFT/RIGHT arrow keys on the controller for more information</p>									
11	Load percentage	<p>(Current load / maximum load) x 100%</p> <table border="1"> <tbody> <tr> <td>Green</td> <td>0 -90%</td> <td>Safe working load.</td> </tr> <tr> <td>Yellow</td> <td>90 - 100%</td> <td>Safe working load. The crane speed decreases.</td> </tr> <tr> <td>Red</td> <td>Above 100%</td> <td>The load is more than the safe working load of the crane. Do not continue working. You must move the crane back to safety immediately.</td> </tr> </tbody> </table>	Green	0 -90%	Safe working load.	Yellow	90 - 100%	Safe working load. The crane speed decreases.	Red	Above 100%	The load is more than the safe working load of the crane. Do not continue working. You must move the crane back to safety immediately.
Green	0 -90%	Safe working load.									
Yellow	90 - 100%	Safe working load. The crane speed decreases.									
Red	Above 100%	The load is more than the safe working load of the crane. Do not continue working. You must move the crane back to safety immediately.									
12	Outreach radius	The horizontal distance between the center of the slewing ring and the tip of the jib.									
13	Angle of boom	The angle between the boom and the horizontal.									
14	Counterweight position	<p>The extended position of the counterweight in mm.</p>  <p>Note Only shown if the counterweight is installed.</p>									

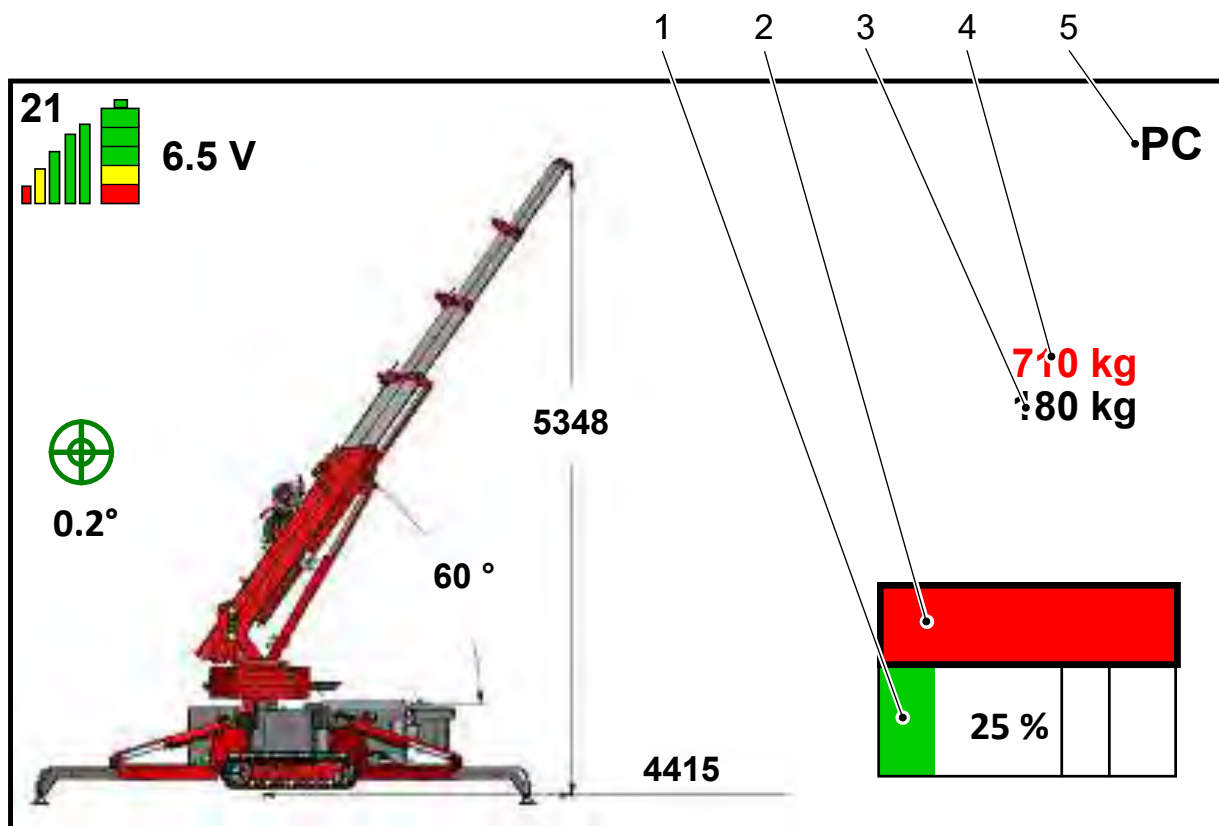
No.	Function	Explanation
15	Digital bubble level	The green circles indicate if the crane is level. The number of degrees shows the tilt of the crane. Use the spirit level on the crane to determine which direction the crane is leaning.

5.4.5 Pick up mode





No.	Function	Explanation
1	Load percentage	Dashes - Load is not registered in pick up mode.
2	Warning W156	No lifting attachment attached.
3	Load weight	Dashes - Weight is not registered in pick up mode.
4	Maximum load	Dashes - Maximum load is not registered in pick up mode.
5	Indicator for pick up mode.	Tells the operator that the crane is in "Pick up" mode.

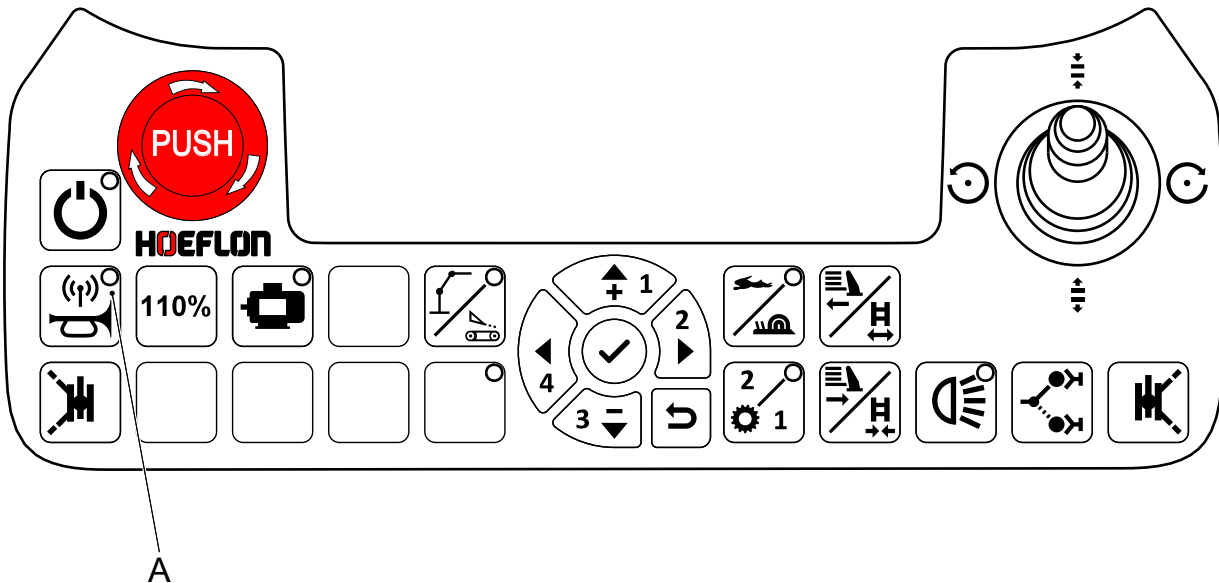
5.4.6 Pick and carry mode



No.	Function	Explanation									
1	Load percentage	<p>(Current load / maximum load) x 100%</p> <table border="1"> <tr> <td>Green</td> <td>0 - 100%</td> <td>Safe working load</td> </tr> <tr> <td>Yellow</td> <td>100 - 110%</td> <td>You have temporarily increased the RCL. Do not continue working. You must move the crane back to safety immediately.</td> </tr> <tr> <td>Red</td> <td>Above 110%</td> <td>The load is more than the safe working load of the crane. You must move the crane back to safety immediately.</td> </tr> </table>	Green	0 - 100%	Safe working load	Yellow	100 - 110%	You have temporarily increased the RCL. Do not continue working. You must move the crane back to safety immediately.	Red	Above 110%	The load is more than the safe working load of the crane. You must move the crane back to safety immediately.
Green	0 - 100%	Safe working load									
Yellow	100 - 110%	You have temporarily increased the RCL. Do not continue working. You must move the crane back to safety immediately.									
Red	Above 110%	The load is more than the safe working load of the crane. You must move the crane back to safety immediately.									

No.	Function	Explanation
2	Errors and warnings	<p>All errors and warnings are displayed here. An error has a red background, a warning has a yellow background.</p> <p> Caution The crane will not continue with an error, you must move the crane back to safety before you can continue.</p> <p> Note Use the UP/DOWN arrow keys on the controller to scroll between messages. Use the LEFT/RIGHT arrow keys on the controller for more information</p>
3	Maximum load	The maximum load that the crane can lift at this outreach and angle.
4	Load weight	The current load hanging from the lifting hook.
5	Indicator for pick and carry mode.	Tells the operator that the crane is in "Pick and carry" mode.

5.5 Connect with the crane



1. Start the crane and the remote control.
2. Make sure that the LED on button A is OFF.



Note

The remote control is already connected to a crane if the LED is ON.

3. Push the **Connect** button (A).
4. Look if the LED on the button flashes.
 - If the LED flashes the RC6 is trying to connect to the crane.
 - If the LED does not flash, then there is a problem with the RC6.
 - When the light is ON, the RC6 is connected to the crane.
 - If the LED goes OFF, the RC6 cannot connect.

5.5.1 The LED does not flash

There is a problem with the RC6.

1. Make sure that all the levers are in the central position.
2. Calibrate the RC6 if all the levers are in the central position (see 5.3.2 Calibration)
3. Do an inspection of the **Connect** button (A).
4. Speak to your your Hoeflon dealer if you still cannot connect.

5.5.2 The LED stops flashing and goes OFF

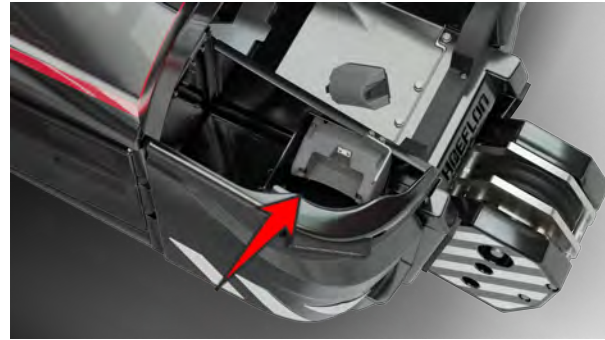
There is a problem with the compact crane. Speak to your Hoeflon dealer. Do not continue working.

5.6 Replacing and charging the remote control battery

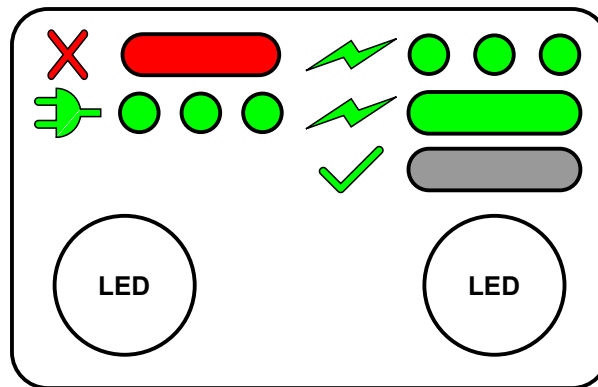
1. Push in the two clips (1) on the remote control next to the battery (2).
2. Remove the discharged battery (2) from the remote control.
3. Push the charged battery in position.
 - The clips lock in position, listen for the "click"



4. Put the discharged battery (2) in the battery charger.
 - The battery only charges if the main switch is in position 1.
 - The battery charger is in the front right compartment.
5. Start the remote control and make contact with the crane again.



The display on the battery charger gives information about the battery charger and the battery.



Left LED		Right LED	
Charger status & faults		Battery status	
Short green flash every 5 seconds	24V connected	LED off	Battery fully charged or Battery not connected
Continuous red	Fault	LED continuous green	Battery charging 1 A
		LED flashing green	Charging 0.3 A
		LED continuous red	Fault in the battery

6.

Care of the battery pack

6.1 Introduction

Do not open or disassemble the battery pack or the charger.

Use a cable with a minimum conductor cross-sectional area of 2.5 mm² and a maximum length of 25 m when you charge the crane.

Charge the battery pack at the end of each day. This keeps it balanced and in a good condition.

Make sure that the emergency stop button is OUT.



Caution

Do not use the emergency stop button to stop the compact crane during normal operation.

ONLY use the emergency stop button in an emergency.

Reset the emergency stop button as soon as it is safe to do so.

If the crane's key switch is OFF, the battery pack will charge normally.

If the crane's key switch is ON:

- Most of the charge goes to operating the crane.
- The battery pack will continue to charge.
- Lower charging efficiency.
- Longer charging time.

Fully charge the battery once a week. This maximizes the battery's performance.

6.2 Charge indicator

The C30e Compact crane has a charge indicator that shows the State Of Charge (SOC) and the charging mode (M) of the battery pack. The indicator is on the front of the left accessory bracket.

The charge indicator is ON when the charger is connected and / or when the compact crane is ON.

The state of charge is displayed on the left LED bar. The charging mode is shown on the right LED bar.

	<p>The following LEDs light up to indicate the corresponding state of charge (SOC):</p> <p>LED 8: 88%</p> <p>LED 7: 76%</p> <p>LED 6: 65%</p> <p>LED 5: 53%</p> <p>LED 4: 42%</p> <p>LED 3: 30%</p> <p>LED 2: 19%</p> <p>LED 1: 7%</p>
--	--

The following table shows the different modes:

Charging mode indicator	Charging mode
The right column of the charge indicator fills every 4 seconds (fast)	Rapid charging (>2 A)
The right column of the charge indicator fills every 16 seconds (slow)	Balance charging: The voltages of the cells in the battery pack are equalized. This extends the life of the battery pack life and increases its capacity.
All the LED segments in both columns are on continuously.	The charging process is complete.

6.3 Charging the battery pack

1. Set the main switch on the electrical cabinet to position **0**.
2. Use the charging cable from the top drawer on the front right of the compact crane.
3. Make sure that the charging cable plugs are clean and dry.
4. Connect the plug to the charging socket on the undercarriage.
5. Connect the plug to the power grid.
 - Charging starts automatically.
6. During charging, the charge indicator fills up.
 - When the state of charge is above 88%, all LEDs in the SOC column are lit.
 - When the battery is fully charged, all the charging mode LEDs are continuously ON.



7. Disconnect the charging cable from the crane and the power grid.
8. Put the charging cable back in its storage drawer in the C30e Compact crane.

7.

Installation

7.1 Daily inspection (inspection before use)

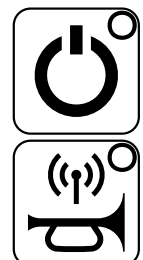
1. Make sure that the compact crane is in transport position:
 - the outriggers are UP,
 - the jib is retracted and under the boom,
 - the boom is down,
 - the counterweight is retracted.
2. Make sure that the compact crane is OFF.
3. Remove the key.
4. Do a visual inspection of the crane. Make sure that:
 - there are no oil leaks,
 - there is enough oil in the hydraulic tank, fill if necessary, (see 9.5.3 Fill the oil tank).
 - there are no loose connections,
 - there is no damage,
 - all protective caps and covers are in position and installed correctly,
 - all nuts and bolts are in position and tight,
 - all pins are in position and installed correctly.
 - all loose parts are correctly secured,
5. Do a visual inspection of the tension and condition of the crawler tracks (see 9.9.1 Inspect the tension)
 - If the tension is not correct tighten or loosen the track (see 9.9.3 Tighten a crawler track) or (see 9.9.2 Loosen a crawler track)
 - Speak to your Hoeflon dealer if a track is damaged. Do not continue working.
6. Start the crane (see 7.2.1 Starting the crane).

7. Make sure that:
 - the lights on the sensors for the boom and jib go ON and OFF when you extend and retract the boom and the jib
 - the control levers return to the center position automatically,
 - the manual outrigger controls are automatically locked,
 - the emergency stop button operates correctly,
 - all rotating and moving parts are not worn or damaged,
 - the chains are not worn or damaged,
 - the lifting cable, hook and other lifting accessories are not worn or damaged.
8. Speak to your Hoeflon dealer if you find any:
 - damage ,
 - leaks,
 - worn parts,
 - broken parts.

7.2 Starting and stopping the crane

7.2.1 Starting the crane

1. Make sure that:
 - all emergency stop buttons are pulled out.
 - the charging cable is removed.
 - all levers of the remote control are in the center position. If one or more levers are not in the center position, the remote control cannot connect to the crane.
2. Use the key to start the compact crane.
3. Start the remote control with the **On/off** button.
4. Connect the remote control to the crane with the **Link remote control and crane** button.



7.2.2 Stopping the crane



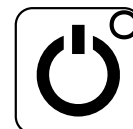
Caution

Do not use the emergency stop button to stop the compact crane during normal operation.

ONLY use the emergency stop button in an emergency.

Reset the emergency stop button as soon as it is safe to do so.

1. Stop the remote control.
 - Use the On/Off button on the remote control.
2. Stop the crane.
 - Turn the key to position **0**.
3. Connect the crane to the mains supply if it is necessary to charge the batteries.



7.3 Setting the width of the crawler track



Caution

Always use maximum track width when you move the crane.

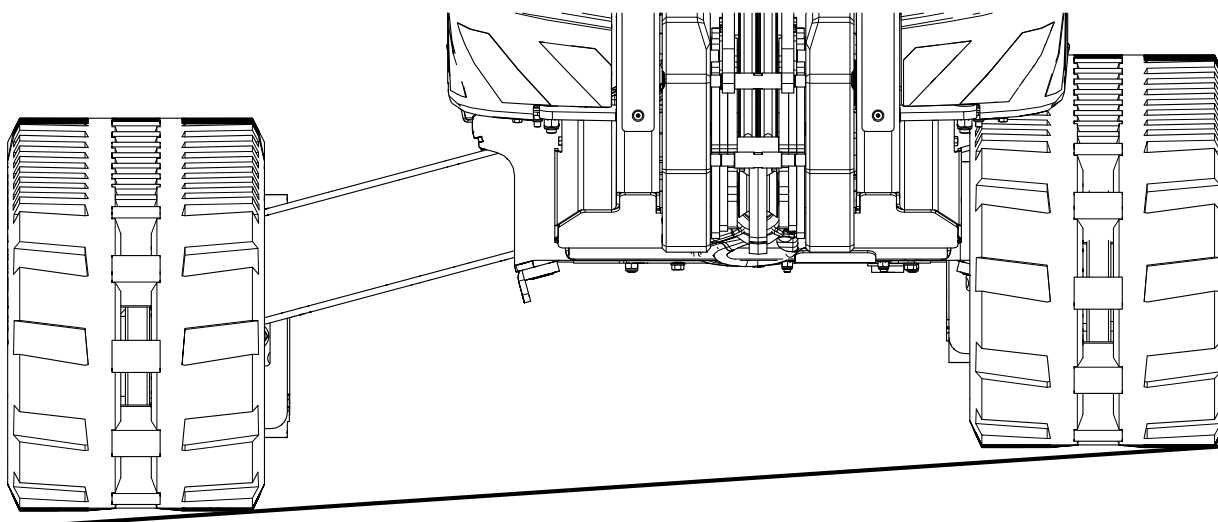
Only retract the tracks if it is really necessary.



Note

You can set the track width when the crane is standing still or moving.

It is recommended, but not necessary, to raise the crane on the outriggers first.

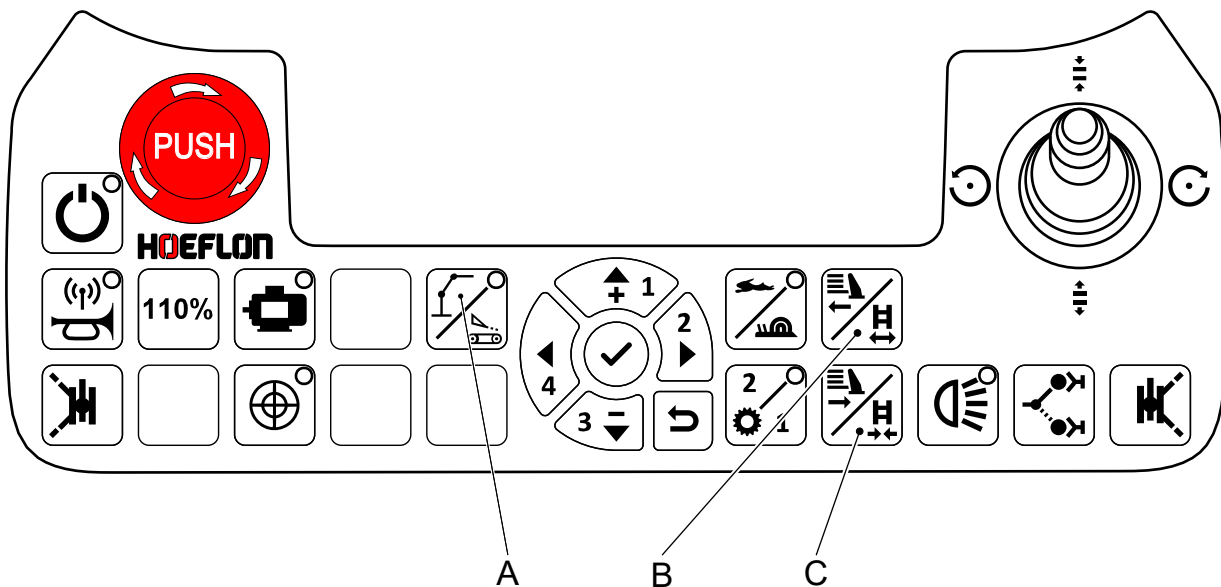


**Note**

If the ground on one side of the crane is higher than the ground on the other side:

- Set the track on the high side closer to the crane.
- Set the track on the low side further from the crane.

Set the *Track state* in the remote control first (see 7.3.1 Setting the Track state)



1. Make sure that the green LED on button **A** is OFF.
2. Push button **B Extend tracks/counterweight** on the remote control to extend the tracks.
3. Push button **C Extend tracks/counterweight** on the remote control to retract the tracks.

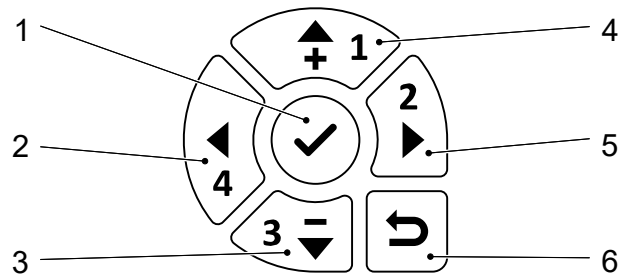
7.3.1 Setting the Track state

Set the track state so that you can:

- extend both crawler tracks at the same time (*Both enabled*)

or

- extend the left or the right crawler track separately (*Left enabled* or *Right enabled*).

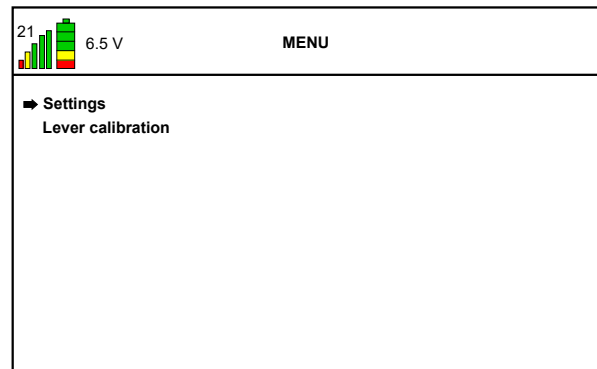


- | | |
|---------------------------|----------------------------|
| 1. Confirm / go into menu | 4. Up |
| 2. Left | 5. Right |
| 3. Down | 6. Return to previous menu |

1. Start the remote control.
2. Push the **Confirm** button (1) to go into the *Remote control menu*.
3. Make sure that the arrow in the display points to *Settings*.

- Push the **Up arrow** or the **Down arrow** to move the arrow in the display until it points to *Settings*.

4. Push the **Confirm** button (1) to go into the *Settings menu*.



5. Push the **Down arrow** (3) to move the arrow in the display until it points to *Track state: Both enabled*.
6. Push the **Right arrow** (5).
 - The Function mapping toggles between "Both enabled" and "Left enabled" and "Right enabled"
7. Select the track state that you want.
8. Push the **Back** button (6) two times to go back to the home screen.

7.4 Moving the crane

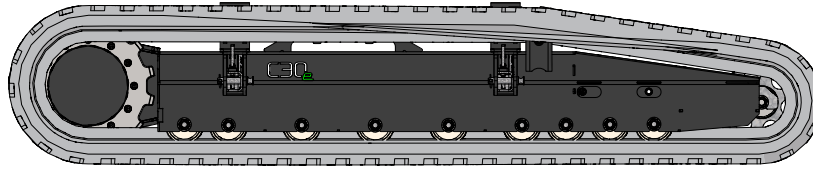
7.4.1 Using the controls



Caution

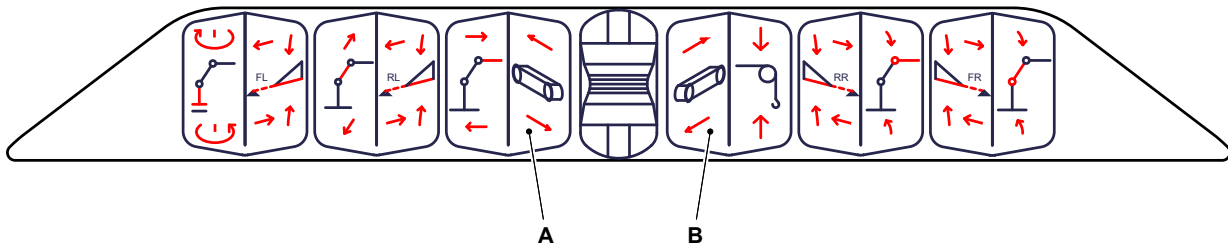
Always use maximum track width when you move the crane.

Only retract the tracks if it is really necessary.

**Note**

The slope is at the front.

1. Start the crane (see 7.2.1 Starting the crane).
2. Connect to the remote control (see 5.5 Connect with the crane)
3. Make sure that:
 - the crane is folded in,
 - the counterweight is retracted,
 - the outriggers are UP.
 - the tracks are fully extended.
4. Select "Undercarriage control" (see 5.2.5 Undercarriage / Superstructure toggle button).



5. Operate levers A and B on the remote control simultaneously forwards or backwards to move in a straight line.
6. Operate one of the two levers to change direction.
7. Release the levers to stop the crane.
 - The levers return to the center position automatically.

7.4.2 Maximum slope angles when moving the crane

Direction of movement	Maximum slope angle
Forwards	15°
Backwards	23°
Sideways – crawler tracks retracted	15°
Sideways – crawler tracks extended	23°

**Note**

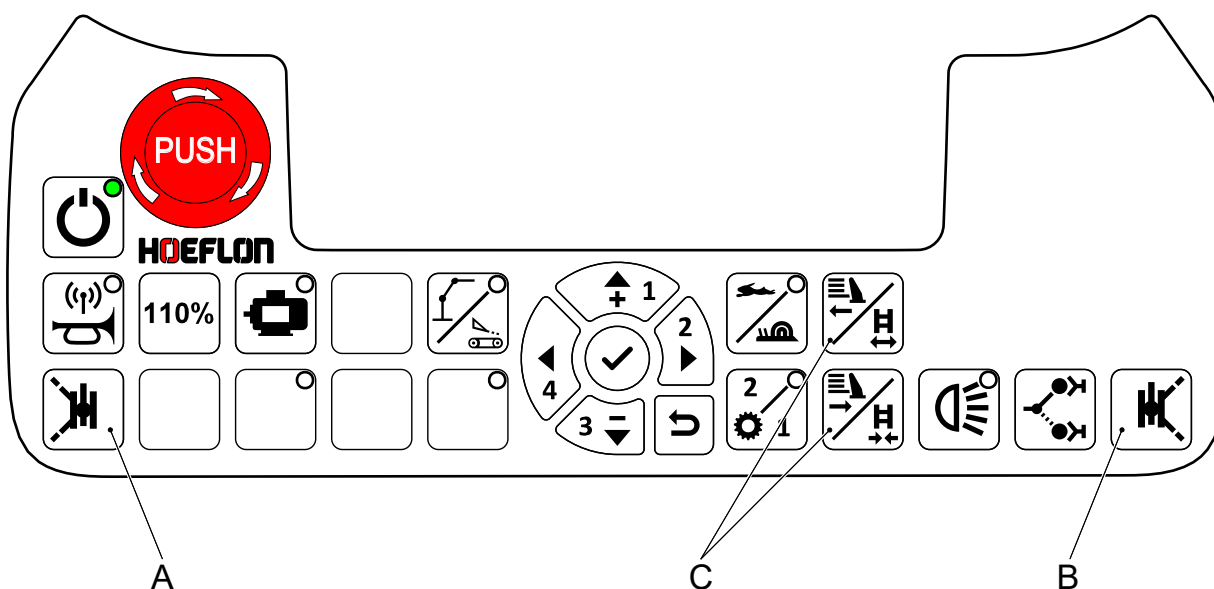
When moving the compact crane on a slope (e.g. up loading ramps onto a transport vehicle), extend the outriggers on the LOW side to stop the crane from tilting (see 7.3 Setting the width of the crawler track).

7.5 Setting the outriggers

7.5.1 Preparation

1. Do an inspection of the ground near the crane, Make sure that:
 - the ground is even
 - there is no loose material or rocks
 - the ground does not slope
 - there are no other issues may affect the stability of the crane.
2. Start the crane, (see 7.2.1 Starting the crane)
3. Connect to the remote control (see 5.5 Connect with the crane)
4. Make sure that:
 - the crane is folded in,
 - that the counterweight is retracted,
 - the outriggers are UP.
 - The under carriage is active (see 5.2.5 Undercarriage / Superstructure toggle button).

7.5.2 How to set the outriggers



1. Release the outrigger that you want to set.
 - Push and hold button "A" to release the two outriggers on the left of the crane.
 - Push and hold button "B" to release the two outriggers on the right of the crane.

- Turn the outriggers with your hand to the correct position.

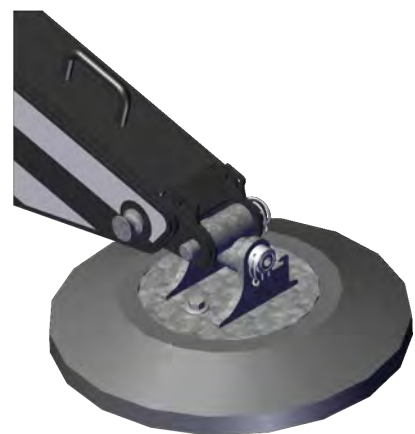
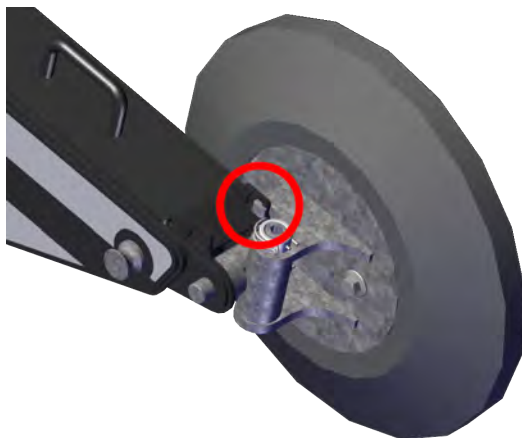
**Note**

If possible, turn each outrigger to 47° (look at the display). This gives maximum stability and support.

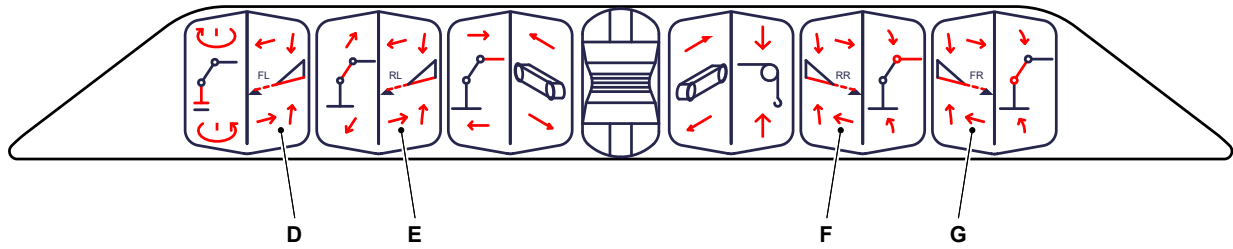
**Danger**

Do not put all of the outriggers in line with the crane (< 5°). The crane will topple very easily.

- Release the button (A or B) to lock the outriggers.
- Make sure that each outrigger angle is the same as the angle that is displayed on the remote control.



- Turn the foot so that the locking lug is free.
- Turn the foot so that it is loose.



7. Lower the outriggers with the levers of the remote control until each outrigger is horizontal (see 5.3 Levers).
8. Fully extend each outrigger. The white stripe must be visible.
 - Push button A or B **and** use lever D, E, F or G to extend an outrigger.
9. Lower each outrigger until it is immediately above the ground. Monitor the outrigger.
 - Only use the lever to lower an outrigger.
10. Fully lower the outriggers onto the ground.
11. Operate the two outriggers at the front until the front of the crane is immediately above the ground.
12. Operate the two outriggers at the rear until the rear of the crane is immediately above the ground.
13. Operate the outriggers independently to make the crane level.
14. Do not lift the crane higher on the outriggers than necessary; it is sufficient when the crawler tracks do not touch the ground.



Note

Look at the spirit level on the crane. The bubble must be in the middle of the circle.
There is a spirit level on each side of the chassis.

15. Make sure that all the outriggers fully rest on the ground after they have been set.



Caution

Make sure that the ballast does not touch an outrigger when you turn the superstructure.

7.6 Using the outrigger extensions



1. Remove the clip and the locking pin.
2. Pull the extension out to the end stop.

3. Lower the extension.
4. Insert the locking pin and the clip

7.7 Setting the counterweight

7.7.1 Preparation

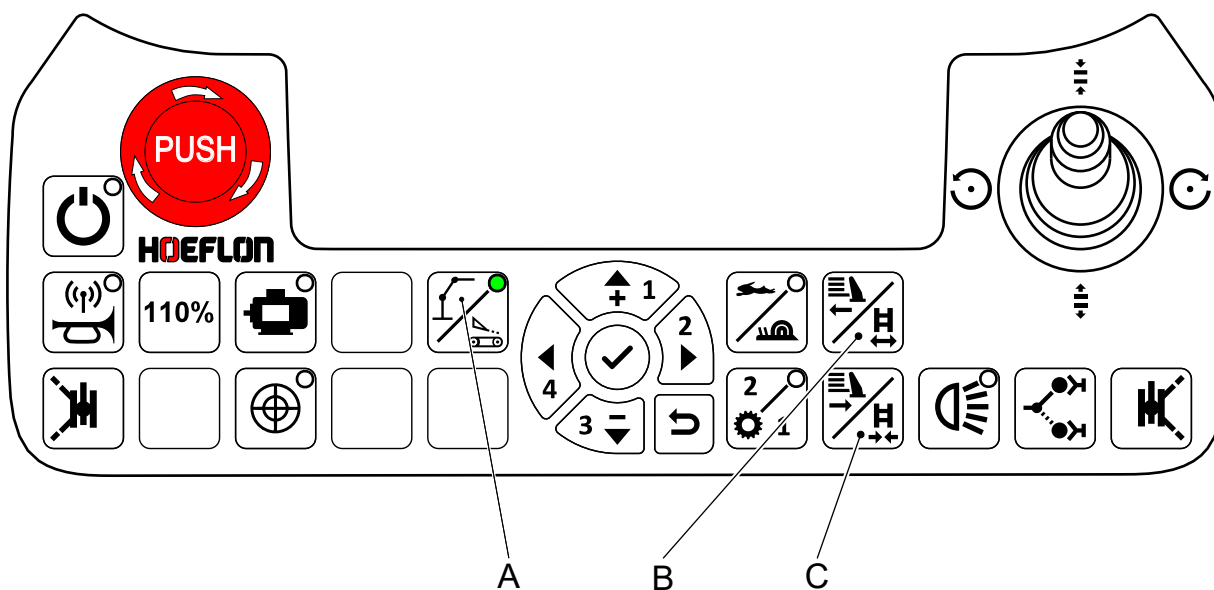
1. Start the crane, (see 7.2.1 Starting the crane)
2. Connect to the remote control (see 5.5 Connect with the crane)
3. Lift the crane on the outriggers, (see 7.5.2 How to set the outriggers).



Caution

Make sure that the counterweight will not touch the outriggers when it is extended.

7.7.2 How to set the counterweight



1. Make sure that the green LED on button **A** is ON.
2. Push button **B Extend tracks / counterweight** on the remote control to extend the counterweight.
3. Push button **C Retract tracks / counterweight** on the remote control to retract the counterweight.

7.8 Pick up mode



Note

If no accessories or lifting attachments are installed then the crane is in "Pick up mode"

When the crane is in Pick Up mode it cannot lift or register a load.

The C30 automatically detects attachments. This makes sure that the maximum (safe) lifting capacity can be used with each attachment.

Each attachment (including the jib) has an RFID tag. A sensor is placed in the end of the boom and in the end of the jib.

The "Pick up" mode is active if the crane does not have a lifting attachment attached.

For more information on the display on the remote control (see 5.4.5 Pick up mode)

7.9 The jib

7.9.1 Installing the jib

1. Fully retract the boom.
2. Align the crane with the jib.
3. Raise the crane on the outriggers.
4. Adjust the crane with the outriggers so that the boom points towards the connection plate on the jib.
5. Push the lever on the top of the boom back.
 - Lock the lever by pushing it to the side.
6. Make sure that the locking pin is fully retracted.



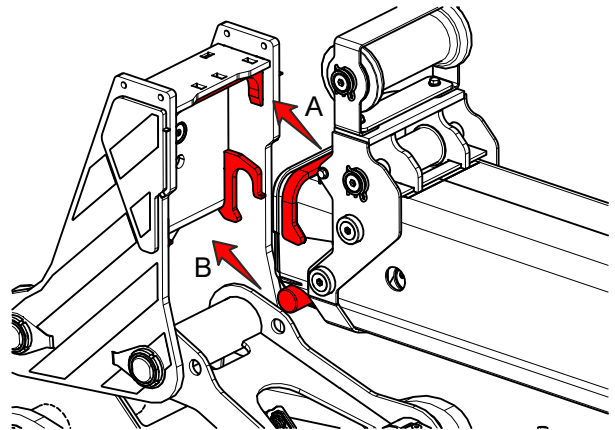


7. Slowly extend the boom until the end of the boom touches the connector plate of the jib.
8. Connect the hydraulic hoses and the power plug.

- You can move the connector plate of the jib with a small amount if it does not fully align with the boom.

9. Make sure that:

- the strip on the top of the boom engages into the slot in the top of the jib (A).
- the pins on the side of the boom engage with the slots in the side of the jib (B).



10. Slowly move the boom UP.
 - Make sure that the jib doesn't fall.
 - Make sure that the hoses or the cable don't catch.
11. Lift the jib of the ground.



12. Unlock the lever on the top of the boom and push it towards the jib.
13. Make sure that the locking pin is fully engaged in the jib.

7.9.2 Removing the Jib



1. Move the jib into its transport position.
2. Fully extend the boom.
3. Pull the release on the boom to the back (a).
4. Push the release to the side to lock it (b).
5. Adjust the crane with the outriggers so that the jib is put on the ground.
6. Adjust the connector plate of the jib so that the boom can move out of the plate.



Note

Put the jib on the two supports.



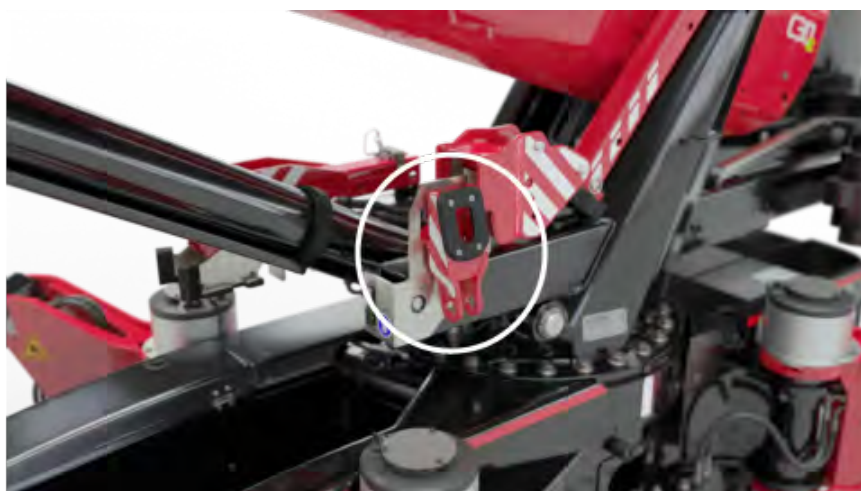
7. Slowly move the boom DOWN.
 - Make sure that the jib doesn't fall.
 - Make sure that the hoses or the cable don't catch.
8. Disconnect the hydraulic hoses and the power plug.
9. Move the hydraulic hoses and the power cable to a safe position.



10. Fully retract the boom.

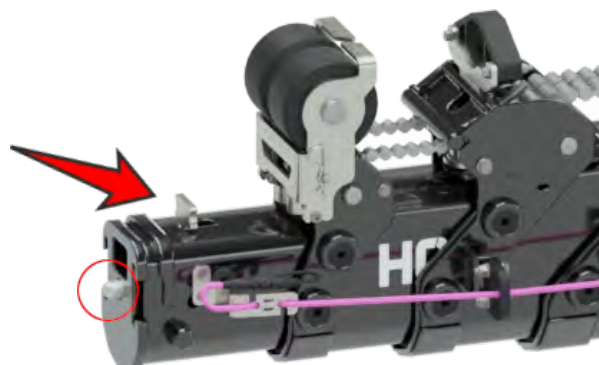
7.10 Attaching an attachment

7.10.1 Lifting adapter and hook



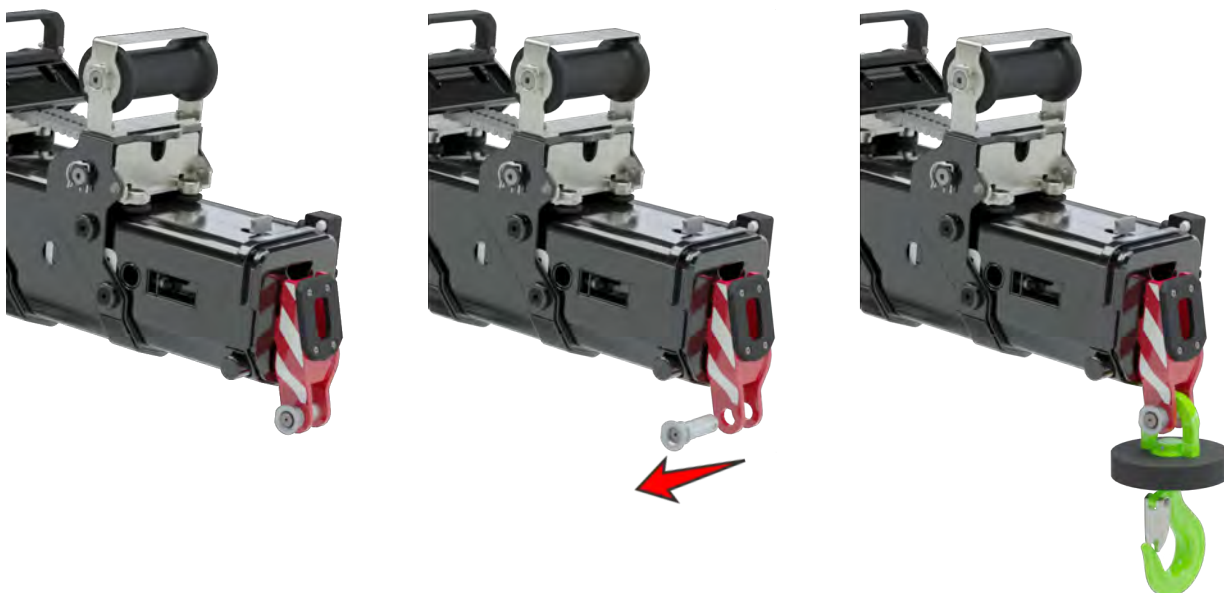
Attach the lifting adapter to the boom or the jib. Attach the 10 ton hook to the lifting adapter.

1. Push the lever on the top of the jib back.
 - Lock the lever by pushing it to the side.
2. Make sure that the locking pin is fully retracted.

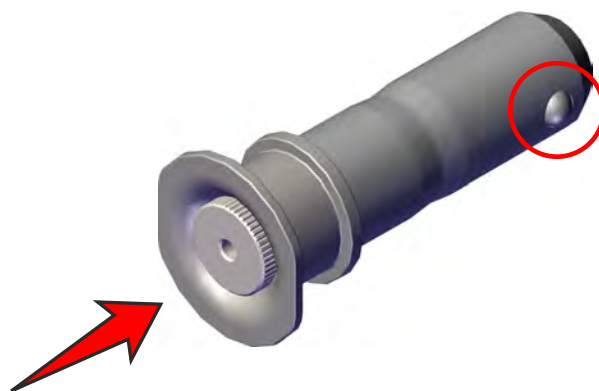




1. Move the lifting adapter fully against the jib
2. Push the lifting adapter down. Make sure that:
 - the hooks on the lifting adapter fully engage,
 - the locking pin is fully engaged in the opening of the lifting adapter.



1. Push the inner button into the pin.
2. The steel balls at the other end retract.



3. Remove the pin.
4. If necessary, put the rubber protection ring on the hook.
 - Push the rubber ring on the hook from the top.
5. Put the hook in the adapter.
6. Put the pin through the adapter and the hook

**Caution**

Make sure that the pin between the hook and the adapter is correctly installed.
 Make sure that the steel balls are locked and cannot be pushed in.

**Note**

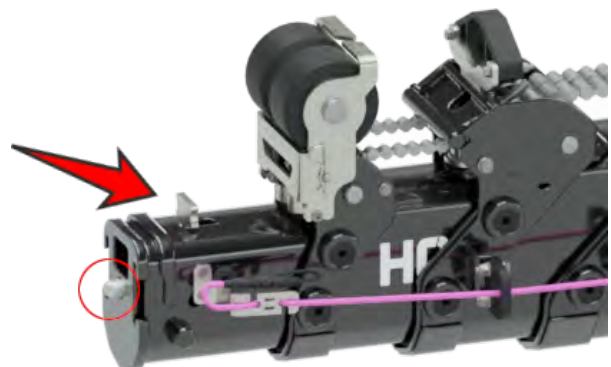
The rubber ring protects the load and the crane during lifting.

7.10.2 Angle adapter

**Note**

The angle adapter can only be installed on the jib. it does not go on the boom.

1. Push the lever on the top of the jib back.
 - Lock the lever by pushing it to the side.
2. Make sure that the locking pin is fully retracted.



3. Put the angle adapter fully against the jib
4. Push the angle adapter down. Make sure that:
 - the lugs on the side of the jib fully engage,
 - the locking pin is fully engaged in the opening of the angle adapter.

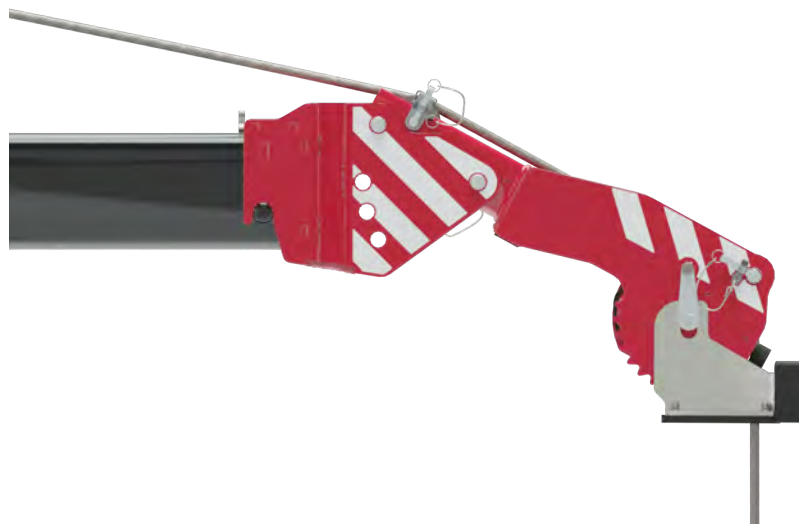
7.10.3 Searcher hook



Attach the searcher hook to the angle adapter.

1. Unlock and remove the pins.
2. Move the searcher hook into the angle adapter.
 - Make sure that the searcher hook is turned to the correct angle.
3. Insert the pins and lock them.

7.10.4 Winch head



Attach the winch head to the angle adapter (at an angle of -30°).

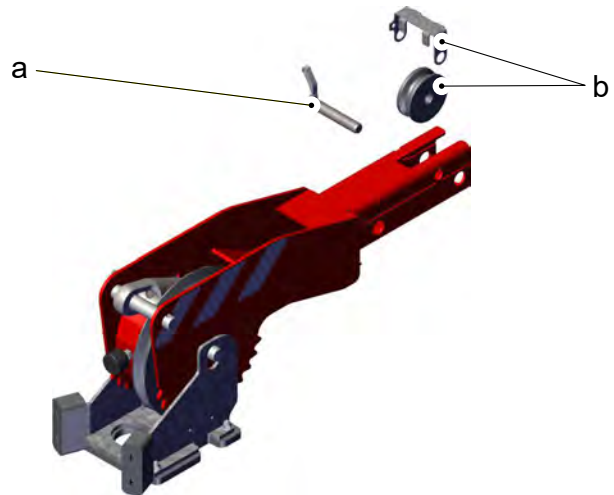
1. Unlock and remove the pins.
2. Move the winch head into the angle adapter.
 - Make sure that the winch head is turned to the correct angle.
3. Insert the pins and lock them.

**Note**

In this description the winch head is installed at an angle of -30° .

If it is necessary to install the winch head with a different angle (0° , 15° or 30°) then you must remove the roll which is identified by the arrow.

- a. Unlock and remove the pin.
- b. Remove the roll and the bracket.
- c. Put the roll, the pin and the bracket in the top drawer at the front of the crane.
- d. Attach the winch head to the angle adapter as specified above.



7.11 Prepare the crane for use with the winch

**Caution**

Do not use the winch without the hook block.

**Note**

Reeve the lifting cable if the mass of the load exceeds the capacity of the winch.

- Use one sheave in the hook block for 2 x reeving,
- Use two sheaves in the hook block for 4 x reeving (jib 5 and jib 9 only).

**Note**

Install a jib first if you want to use the winch on the C30e Compact crane (see 7.9 The jib)

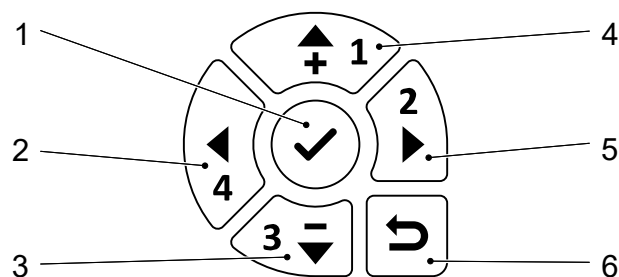
Always use the winch together with a jib.



1. Install the angle adapter(see 7.10.2 Angle adapter)
2. Install the winch head (see 7.10.4 Winch head)
3. Put the crane in the correct position to attach the hook block.



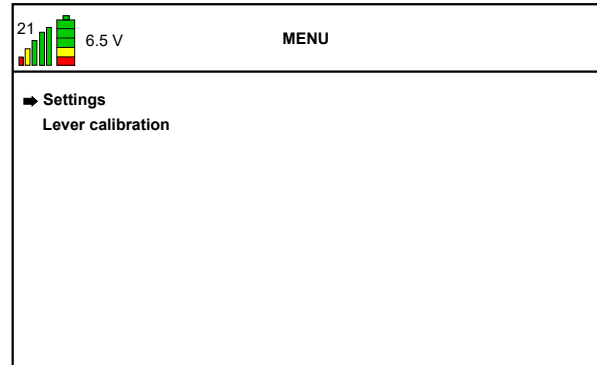
7.11.1 Identify the winch



- | | |
|---------------------------|----------------------------|
| 1. Confirm / go into menu | 4. Up |
| 2. Left | 5. Right |
| 3. Down | 6. Return to previous menu |

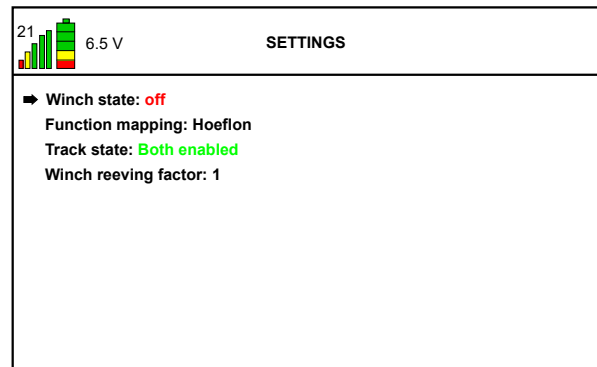
1. Start the remote control.
2. Push the **Confirm** button (1) to go into the *remote control menu*.
3. Make sure that the arrow in the display points to *Settings*.

- Push the **Up arrow** (4) or the **Down arrow** (3) to move the arrow in the display until it points to *Settings*.



4. Push the **Confirm** button (1) to go into the *Settings* menu.
5. Make sure that the arrow in the display is next to the *Winch state* menu.

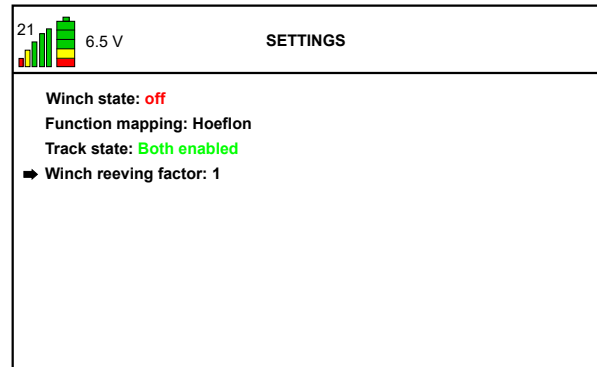
- Push the **Up arrow** (3) or the **Down arrow** (4) to move the arrow in the display until it points to *Winch state*.



6. Push the **Right arrow** (5) to toggle between *off*, *on* and *Autoroll*.

- In *Autoroll* mode the distance of the load to the end of the jib stays approximately the same.

7. Select the winch state that you want.
8. Push the **Down arrow** (3) three times to go to the *Winch reeving factor*.



9. Push the **Right arrow** (5) to toggle between 1, 2 and 4 times.

10. Select the reeving factor that you want.



Caution

Do not use the winch without the hook block.



Note

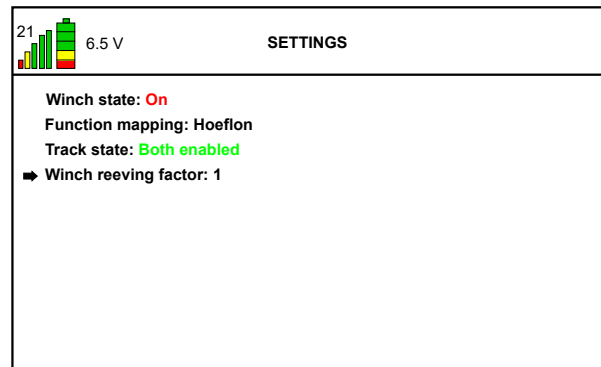
You cannot reeve four times on a standard C30.

If you want to use this feature you must use a Jib 9.

11. Push the **Back button** (6) two times to go back to the *Settings* menu.
12. The winch is now identified.

7.11.2 Move the winch cable in position

1. Set the remote control to use the winch (see 7.11.1 Identify the winch).
2. Set the *Winch reeving factor* to 1.
3. Pull the cable while slowly unwinding the cable at the same time



Caution

Make sure that there is ALWAYS tension in the winch cable.

Pull the cable tight with your hand when wind or unwind the cable.



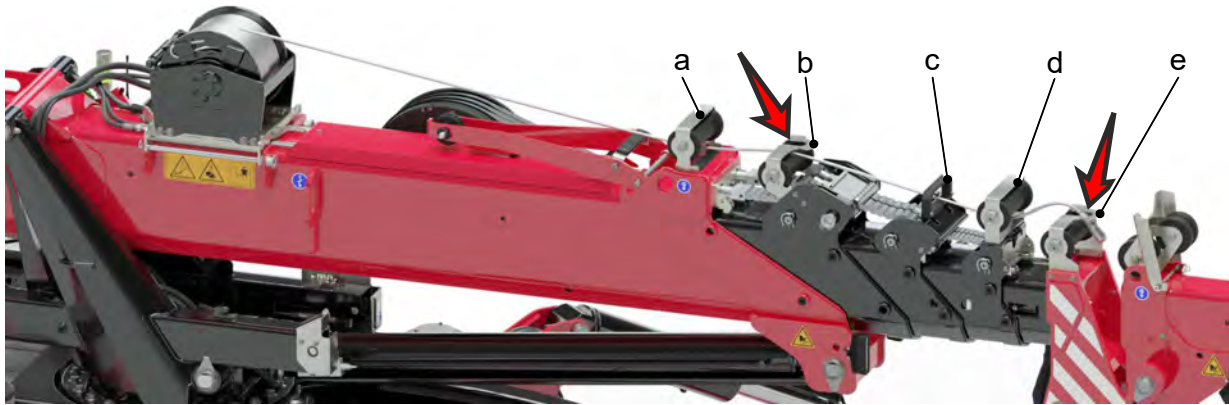
Caution

Be very careful that your hand does not get caught when you wind or unwind the cable.



Caution

Use gloves when you pull the winch cable.



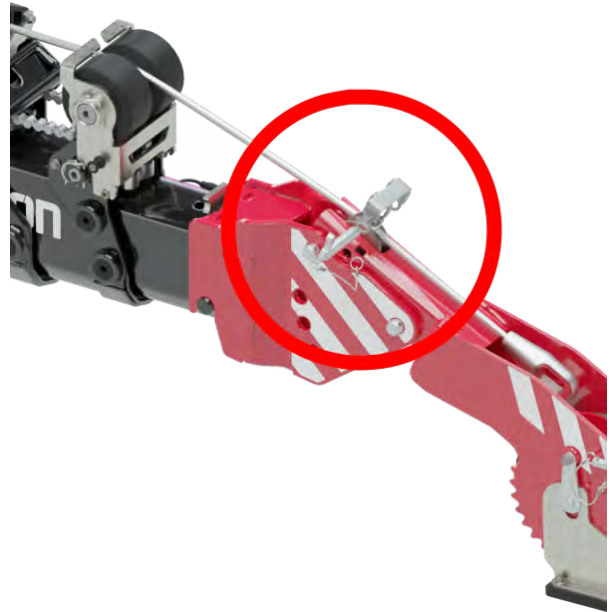
1. Pull the cable over the lifting bar of the counterweight.
2. Pull the cable through the guides in the boom.
 - a. Under the first roll,
 - b. Over the second roll, move the cable through the slot in the bracket first,
 - c. Through the bracket
 - d. Under the fourth roll
 - e. Over the last roll, move the cable through the slot in the bracket first.
3. Pull the cable through the rollers in the jib.



4. Pull the cable through the brackets on the jib.
5. Move the cable over the roller at the end of the jib.



6. If you have the angle adapter set at -30° .
 1. Remove the pin and the bracket.
 2. Move the winch cable over the roll.
 3. Put the pins and the bracket back in position.



7. Remove the pins and move the cable over roll in the winch head.
8. Put the pin back in position.
9. You can now use the winch without reeving.



7.11.3 Attaching the hook block

1. Prepare the crane (see 7.11 Prepare the crane for use with the winch).
2. Set the remote control to use the winch (see 7.11.1 Identify the winch).
 - Set the *Winch reeving factor* to 1.

3. Move the winch cable in position (see 7.11.2 Move the winch cable in position).
4. Pull the cable while slowly unwinding the cable at the same time.

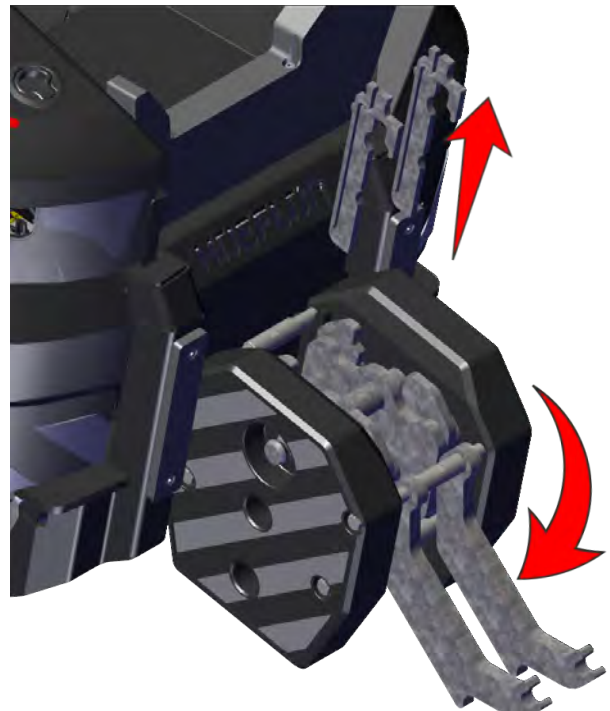
**Note**

Make sure that there is always tension in the winch cable. If you don't then the cable will tangle,

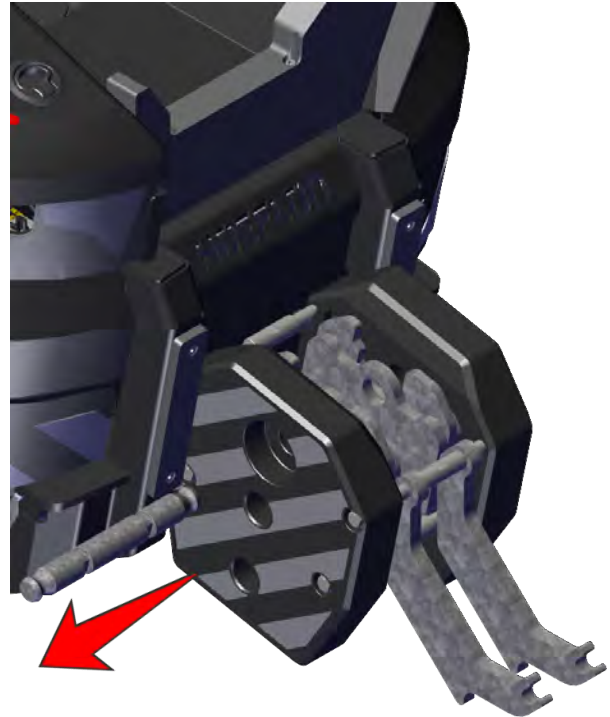
**Caution**

Use gloves when you pull the winch cable.

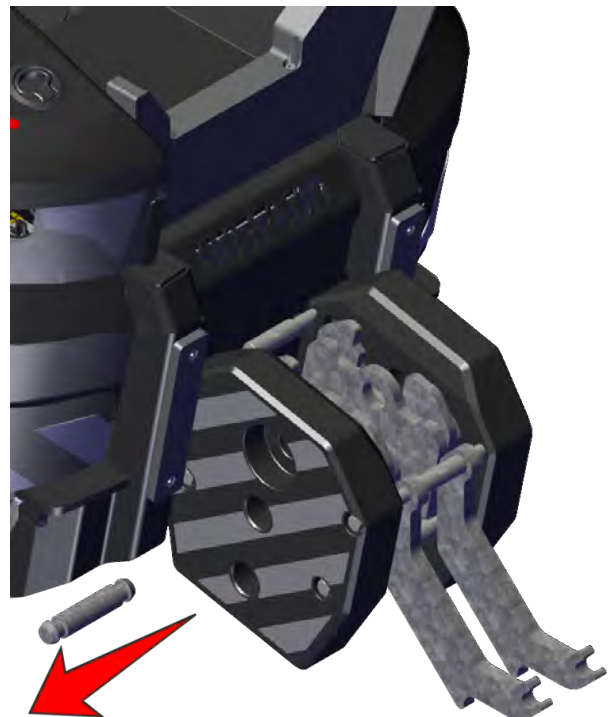
5. Turn the stop plates of the winch out of the way.
6. Push the forks of the clamp keys together and pull the clamp keys out.



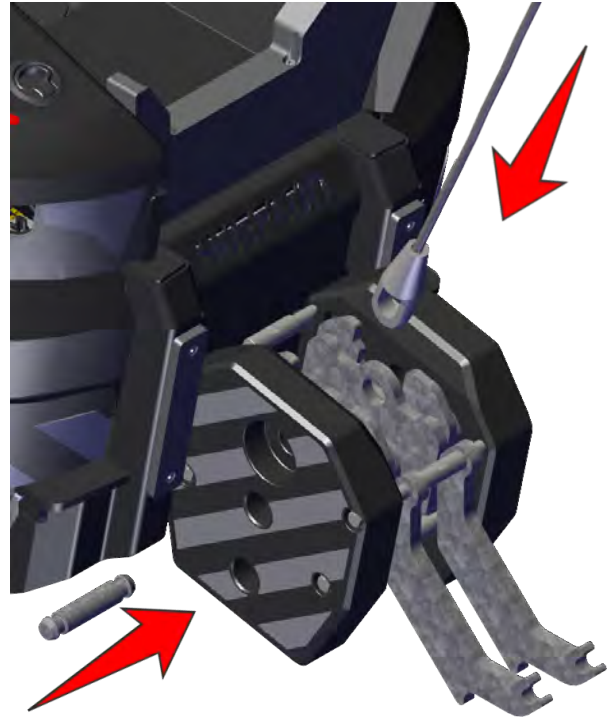
7. Remove the large shaft from the hook block.
 - This is the TOP shaft in the hook block.
 - Put the shaft in a drawer in the crane.



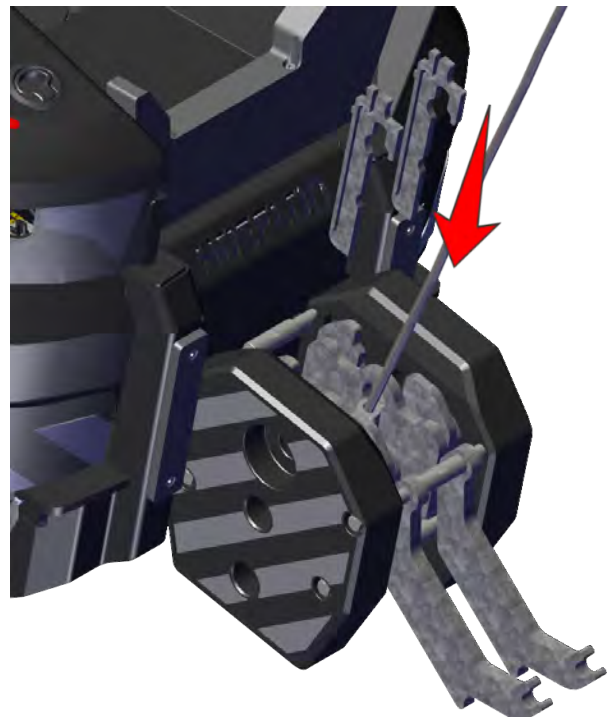
8. Remove the small shaft from the hook block.
 - This is the shaft in the center of hook block.
9. Pull the cable while slowly unwinding the cable at the same time



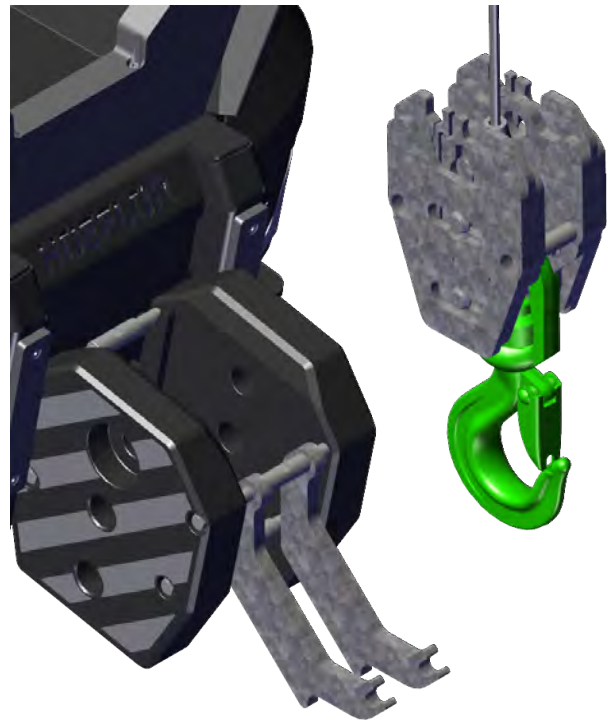
10. Move the cable into the hook block.
11. Align the eye in the cable central hole in the hook block.
12. Push the small shaft back into the central hole in the hook block and through the eye of the cable.



13. Push the forks of the clamp keys together and push the clamp keys back in.
14. Release the forks.
15. Make sure that the clamp keys are inserted and locked correctly.



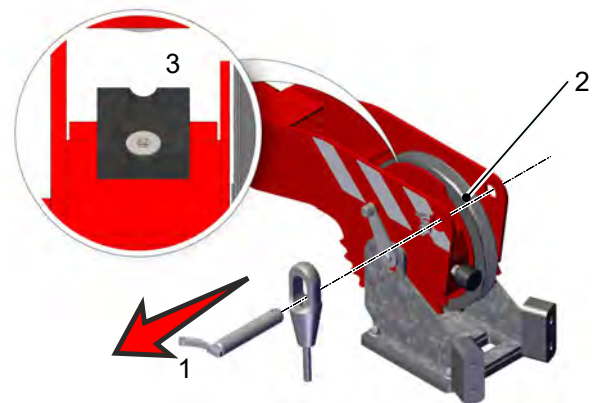
16. Pull the small hook block out of the large hook block.
 - You only use the small hook block during lifting with the winch without reeving.



7.11.4 Reeving with the winch head

Connect the winch cable to the winch head

1. Prepare the crane (see 7.11 Prepare the crane for use with the winch).
2. Move the winch cable in position (see 7.11.2 Move the winch cable in position).
3. Set the remote control to use the winch (see 7.11.1 Identify the winch).
4. Set the *Winch reeving factor* to 2.
5. Remove the pin (1).
6. Pull the winch cable out.
7. Put the winch cable over the cable sheave (2).
8. Attach the hook block (see 7.11.5 Attaching the hook block with 2 x reeving).
9. Put the cable over the wear plate (3).



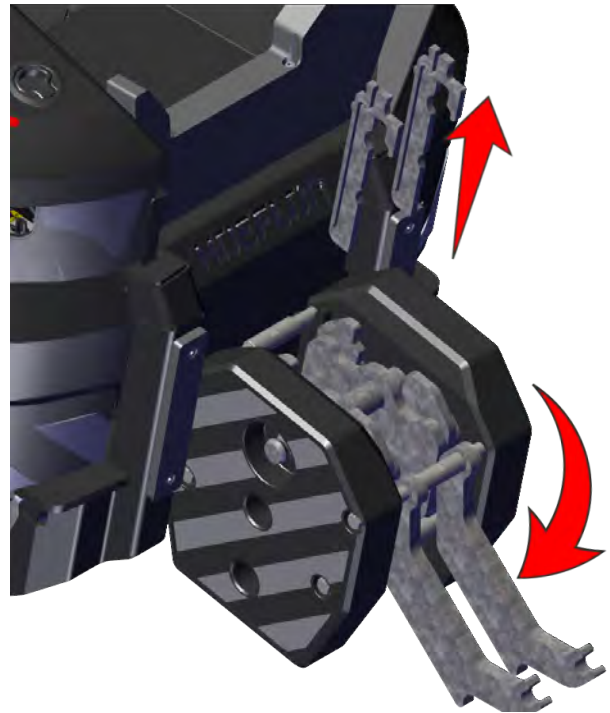
Note

Align the eye in the cable with the hole that the pin goes through.

10. Push the pin back into the weight head and through the eye of the cable.
11. Safety the pin.

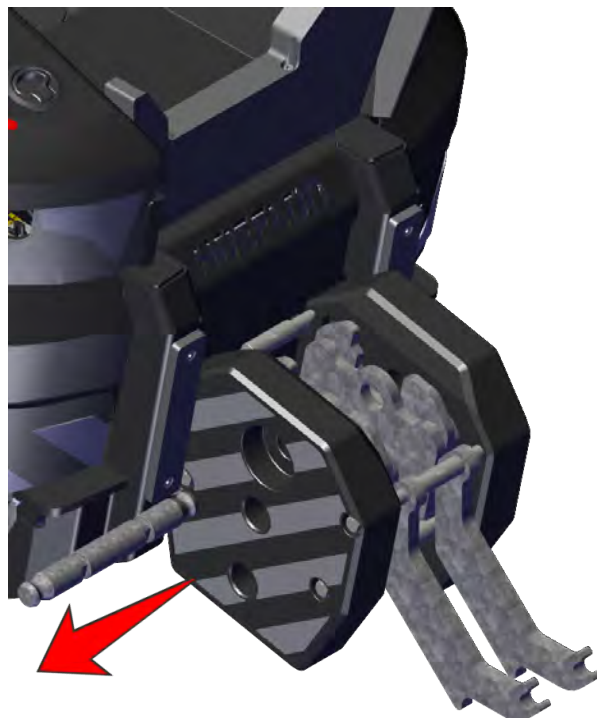
7.11.5 Attaching the hook block with 2 x reeving

1. Prepare the crane (see 7.11 Prepare the crane for use with the winch).
2. Set the remote control to use the winch (see 7.11.1 Identify the winch).
 - Set the *Winch reeving factor* to 2.
3. Move the winch cable in position (see 7.11.2 Move the winch cable in position).
4. Pull the cable while slowly unwinding the cable at the same time
5. Turn the holding plates out of the way.
6. Push the forks of the clamp keys together and pull the clamp keys out.



7. Remove the large shaft from the hook block.

- This is the TOP shaft in the hook block.

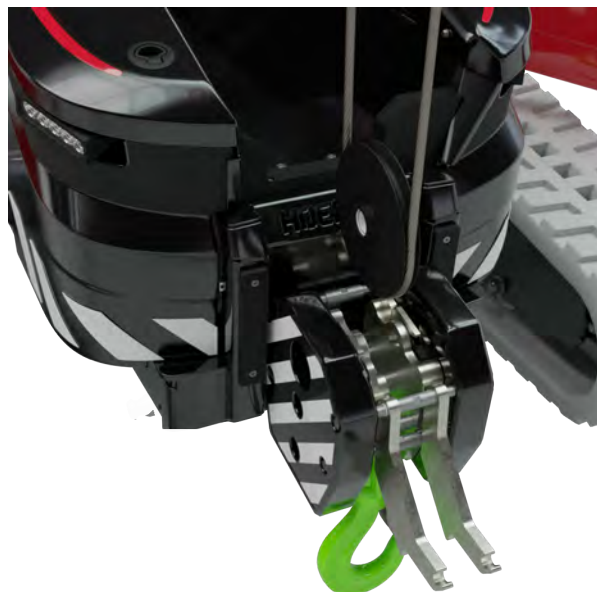


8. Remove the small shaft from the hook block.

- This is the shaft in the center of hook block.
- Put the shaft in a drawer in the crane.



- Put the winch cable around the single cable sheave.

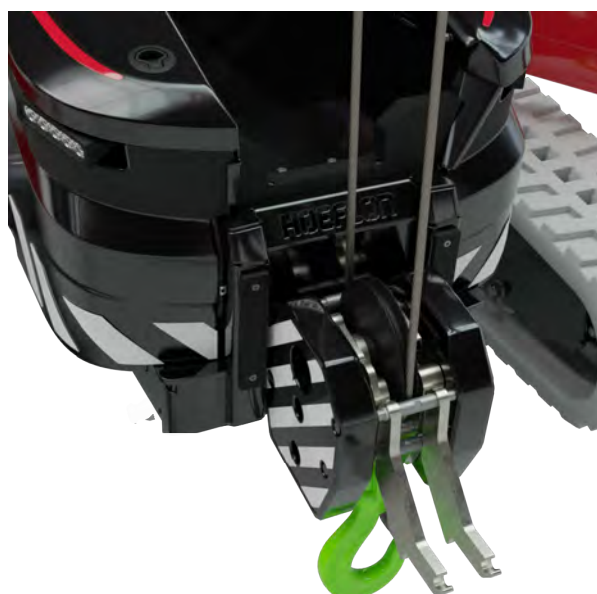


Single cable sheave

- One disk only.
- Wide hub.



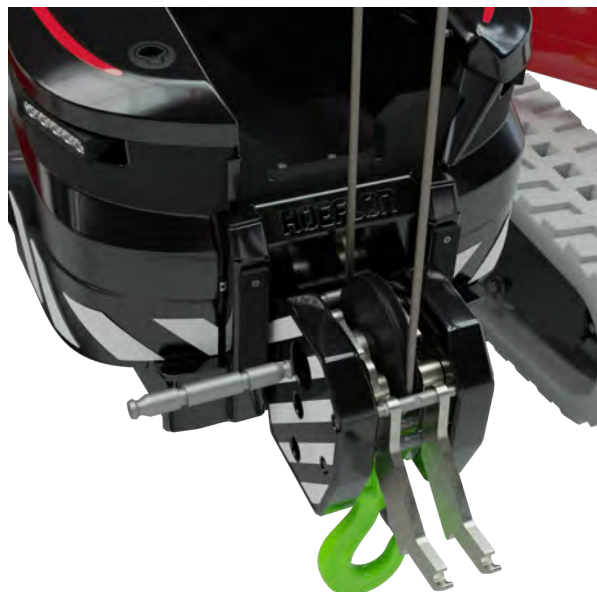
- Put the cable sheave in the hook block.



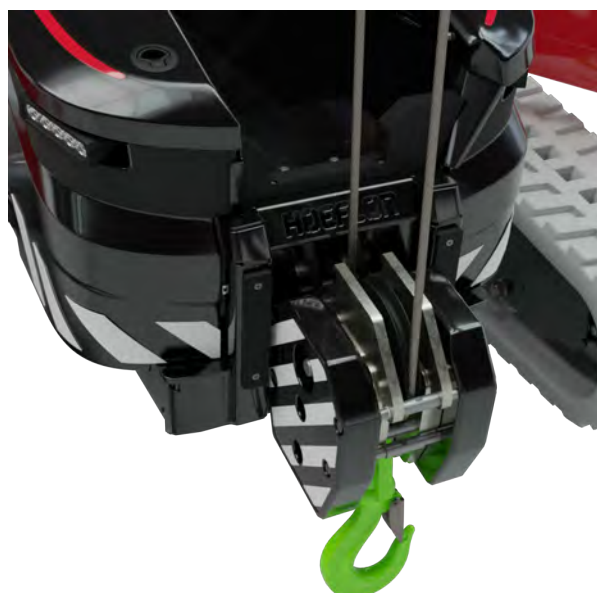
Note

Align the hole in the cable sheave with the top hole in the hook block.

11. Push the **long** shaft back into the top hole in the hook block and through the hole in the cable sheave.
 - The full hook block will be lifted.
12. Push the forks of the clamp keys together and push the clamp keys back in.
13. Release the forks.
14. Make sure that the clamp keys are inserted and locked correctly.



15. Turn the stop plates back in position.



16. Pull the large hook block out of its storage position.
 - You use the large hook block during lifting with 2x reeving.



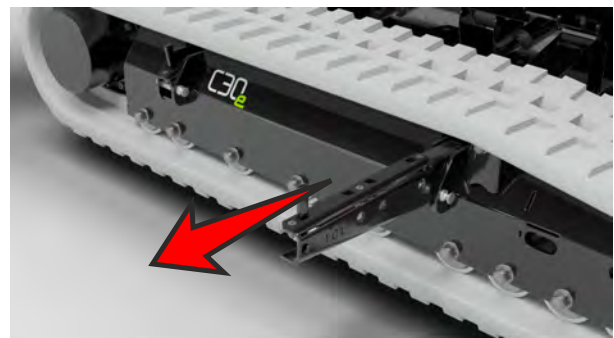
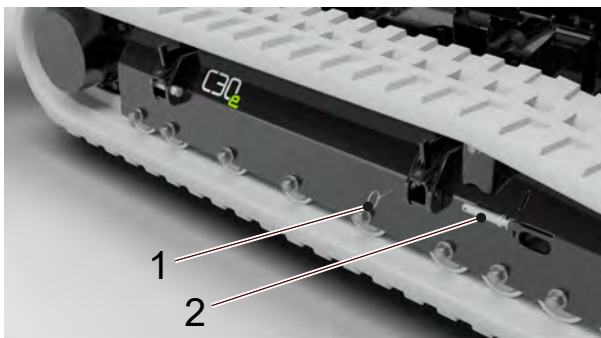
Attaching the hook block with 4 x reeving



Note

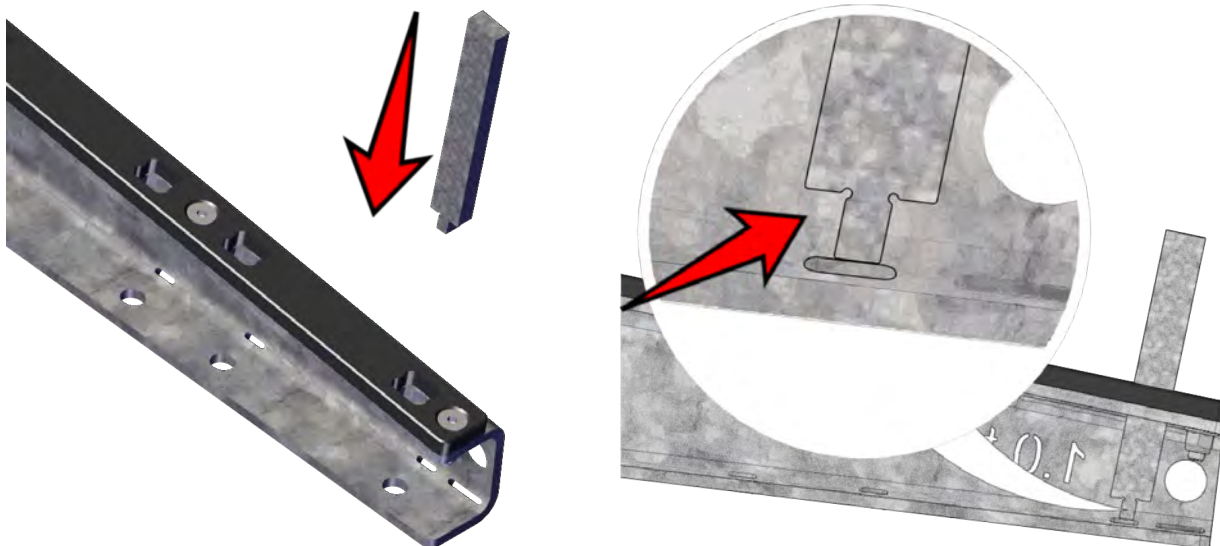
Reeving four times is only possible with the jib 9.
See the jib 9 manual for more information.

7.12 Extending a carrier arm



1. Remove the clip.
2. Remove the pin

3. Extend the carrier arm to the necessary length.
4. Align the holes
5. Install the pin
6. Install the clip.



7. Get the roll-off protection pins from the top drawer.
8. Put one in each carrier arm.
 - Make sure that the bottom of the pin is flush with the bottom of the carrier arm.



Note

Put the holding pins close to where you expect the side of the load to be.



Note

Do the procedure in reverse to put the carrier arms in storage.

Fully push the carrier arm in when not in use.

Put the roll-off protection pins back in the drawer.

8.

Operation

8.1 Planning the lift

Record:

- the weight of the load,
- the location of the load's center of gravity,
- the overall maximum dimensions of the load,
- the location and quantity of approved lifting lugs or lifting points on the load,
- the slings and chains that are used,
- any height restrictions,
- the ambient temperature,
- The wind speed,
- Do a risk assessment.



Caution

Plan your lift and lift your plan.

8.2 Different ways to lift a load

A C30e Compact crane has several options to get the best results of your compact crane.

Boom only	Boom and jib	Boom, winch and jib
Easy / quick setup		
Easy control		Most complex controls
Heaviest lift	Light lift	Light lift
Minimum repeatability		High repeatability

Boom only	Boom and jib	Boom, winch and jib
Minimum flexibility	Flexibility	Highest flexibility
Reach under	Reach under	Reach under
	Reach over	Reach over
	Long reach	Long reach

8.3 Guiding the load

Obey the following rules when guiding a load:

- Use guide ropes.
- Never go under a load or between a load and surrounding obstacles.
- Always stand behind a load when it moves horizontally.
- Make sure that the operator and all personnel:
 - can always see each other.
 - always have open channels of communication
- Make sure that there is a clear escape route to safety.

8.4 Bridging device

The bridging device is a key switch. It is located in the compartment for the remote control at the right of the front of the compact crane.

The bridging device overrides all sensors.



Only use the bridging device:

- if the compact crane has stopped because of a broken or damaged sensor.
- To move the compact crane back to a safe situation from an unsafe situation.

Do not use this function to increase the outreach of the C30e Compact crane or to continue winching.

8.5 Emergency stop

8.5.1 Location

The emergency stop button is:

- At the rear of the crane.
- On the remote control.

8.5.2 Operation

Push the emergency stop to stop the crane immediately.



Caution

ONLY use in an emergency.

Do not use this button for ANY other reason.

Do not use the emergency stop to normally stop the crane.

8.5.3 Error codes

The following error codes are shown when the crane is stopped with the emergency stop.

- E110,
- E250,
- E015,
- E014

8.5.4 Restart the crane after an emergency stop.



Caution

Make sure that it is safe to start the compact crane.

1. Reset the emergency stop.
2. Move a lever.
3. The crane starts.

8.6 Boom and jib section interlock

The C30 boom and the optional jib 3 have a section interlock system.



Without the section interlock system the boom (or jib) extends proportionally.



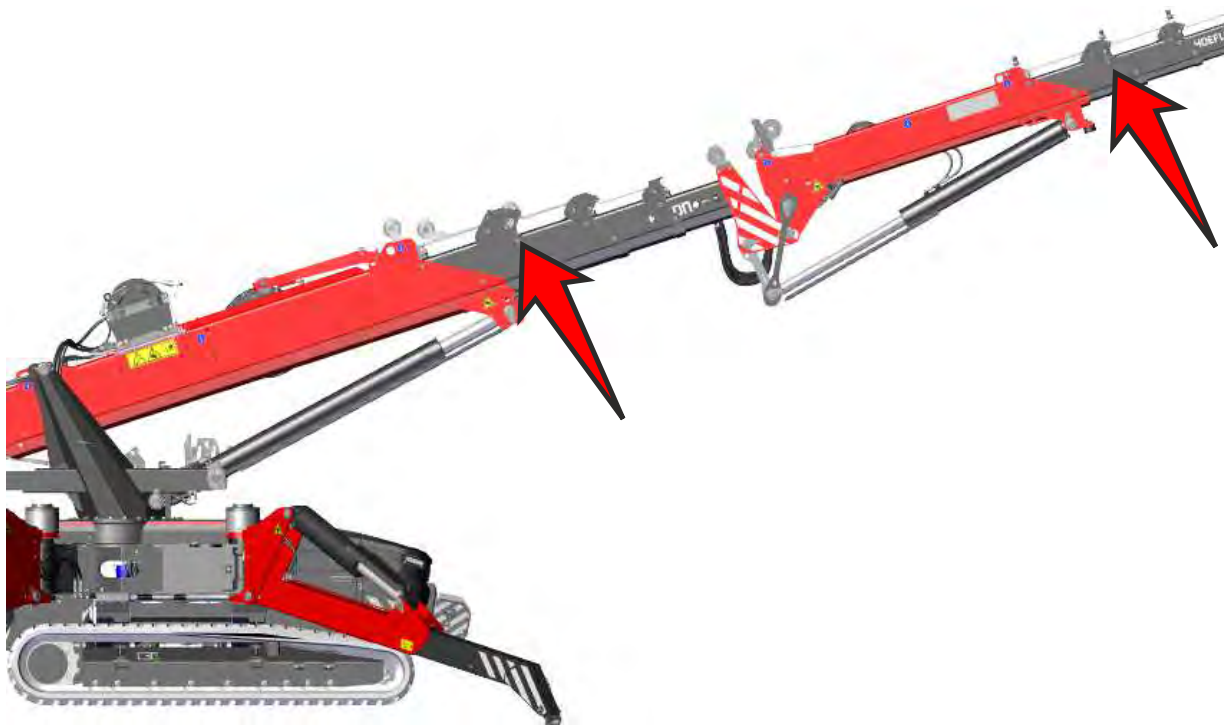
With the section interlock system you can stop sections 4 and 5 of the boom (or jib) from extending. Because only the first sections extend, you get a stronger boom than if you have a proportional extension of the entire boom.

The jib can lift 3000 kg in any position when you use the jib section interlock.

You get a higher lifting capacity within a relatively short lifting range (see 13.3 Load chart with boom and jib section interlocks)

When you use the jib 9 with the boom section interlock the maximum permitted load increases because the jib 9 has a higher rating than an extended boom.

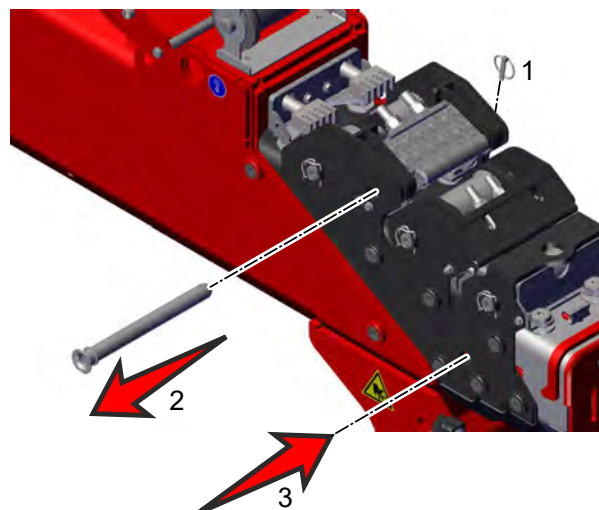
8.6.1 Activating the boom section interlock



The boom and jib interlocks are located :

- at the end of the second section of the boom,
- at the end of the second section of the jib.

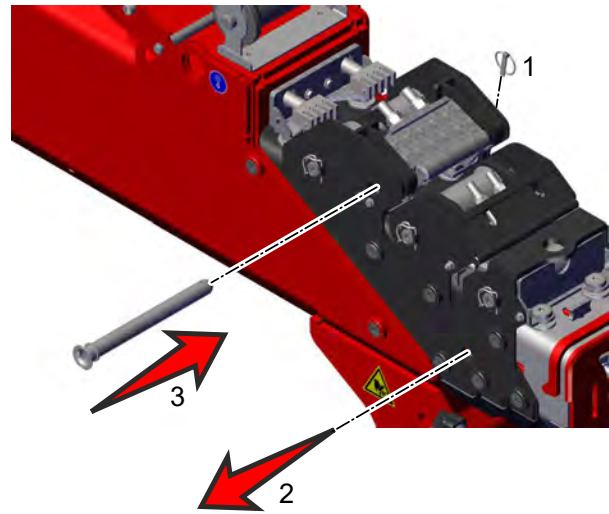
1. Make sure that the interlock pin is loose.
 - Set the remote control to slow precise movements (see 5.2 Buttons)
 - Slowly move the boom and feel if the pin is loose at the same time.
 - Stop moving the boom when you feel that the pin is loose.
2. Remove the clip (1).
3. Pull the pin out of the hole at section 2 (2).
4. Slowly move the boom so that the holes at (3) align.
5. Push the pin in the hole in section 3 (3) and lock it with the clip.



The chain moves with section 3 and does not extract section 3 when you extend the boom.

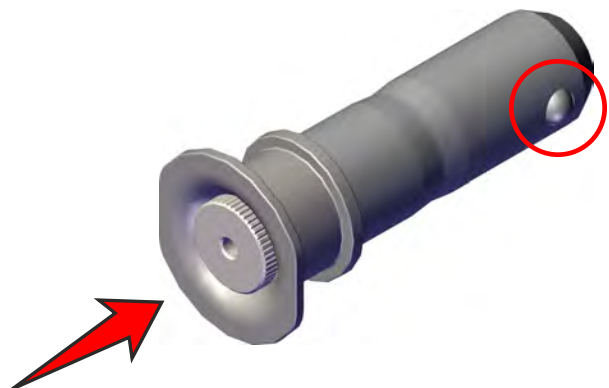
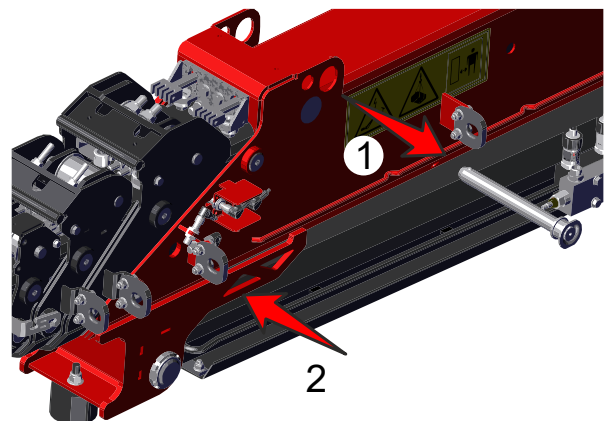
8.6.2 Removing the boom section interlock

1. Fully retract the boom.
2. Make sure that the interlock pin is loose.
 - Set the remote control to slow precise movements (see 5.2 Buttons)
 - Slowly move the boom and feel if the pin is loose at the same time.
 - Stop moving the boom when you feel that the pin is loose.
3. Remove the clip (1).
4. Pull the pin out of the hole at section 3 (2).
5. Slowly move the boom so that the holes at (3) align.
6. Push the pin in the hole in section 2 (3) and lock it with the clip.



8.6.3 Activating the jib section interlock

1. Align the holes in section 1 (2).
 - Set the remote control to slow precise movements (see 5.2 Buttons)
 - Slowly move the jib so that the holes at (2) align.
2. Push the inner button into the pin.
3. The steel balls at the other end retract.
4. Pull the pin out of its storage position (1).
5. Push the pin in the hole in section 1 (2).

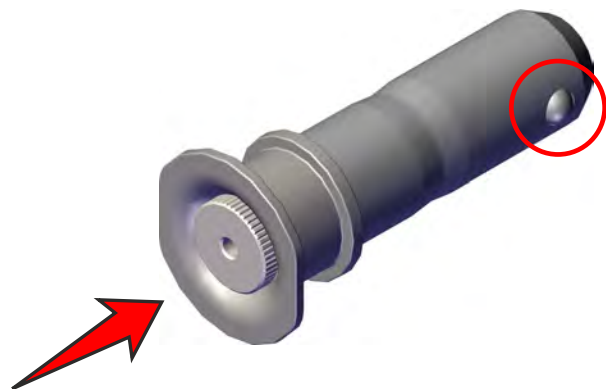
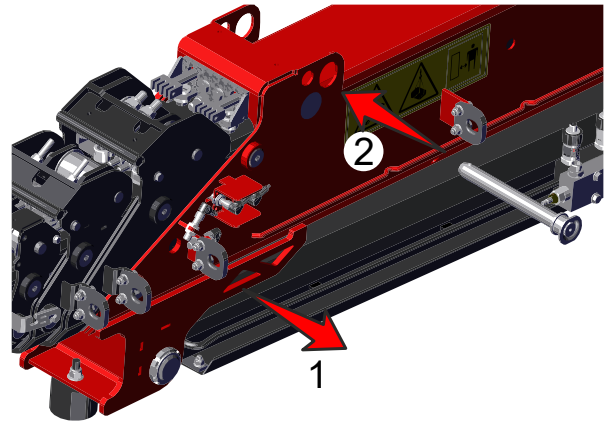


Sensors in the jib sense the pin.

- The sensors stop the hydraulics the extension cylinder of the jib.
- The pin stops the movement of the jib sections.

8.6.4 Removing the jib section interlock

1. Switch the bridging device ON (see 8.4 Bridging device)
 - This overrides the sensors so that you can move the jib.
2. Make sure that the interlock pin is loose.
 - Set the remote control to slow precise movements(see 5.2 Buttons)
 - Slowly move the boom and feel if the pin is loose at the same time.
 - Stop moving the boom when you feel that the pin is loose.



3. Push the inner button into the pin.
4. The steel balls at the other end retract.
5. Pull the pin out of section 1 (1).
6. Push the pin in its storage position (2).
7. Switch the bridging device OFF.



Caution

Do not forget to switch the bridging device OFF. Keeping the bridging device ON may lead to dangerous situations.

8.7 Lifting the load with the boom

The crane lifts with maximum capacity when you lift with only the boom(see 13.1 Load chart - Counterweight).

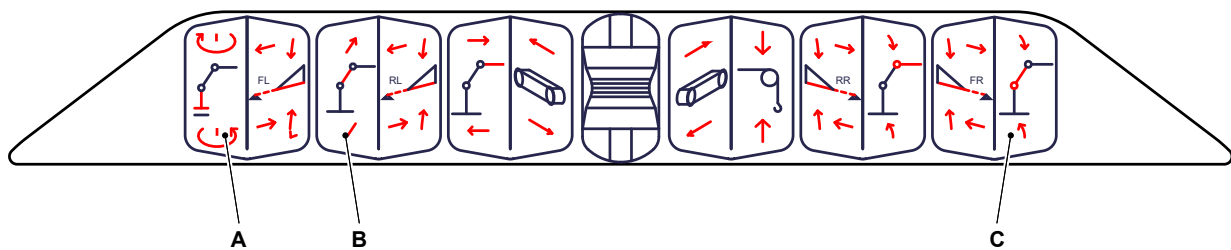
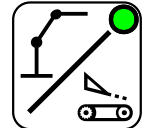
Only use the boom for a lift if:

- you are lifting a heavy load,
- it is a relatively simple lift.

Use the lifting adapter and hook when you do a lift with the boom (see 4.3.1 Lifting adapter and hook)

8.7.1 Controls

Make sure that the superstructure is active (LED is ON).



- Rotate boom,
- Extend / Retract boom,
- Raise / lower boom.

(see 5.3.1 Default configuration)

8.7.2 Maximum angle of the boom when lifting with the hook

The maximum angle of the boom when you lift with the hook is 65°



8.8 Lifting with the jib

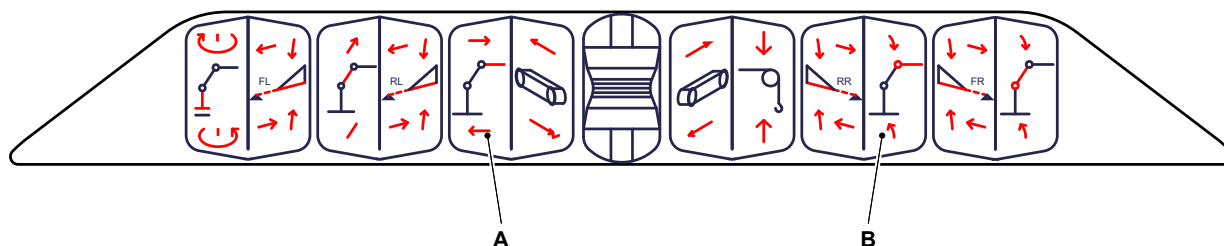
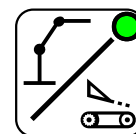
Use the jib for a lift if:

- the load is not too heavy (see Appendix),
- you need to repeat the same lift many times,
- you need a high versatility, i.e. you need to lift:
 - over things (walls, embankments)
 - under things (ceilings, balconies, soffits)
- you need a long reach.

For more information on how to install a jib (see 7.9.1 Installing the jib).

8.8.1 Controls

Make sure that the superstructure is active (LED is ON).



A. Extend / Retract jib,

B. Lower / raise jib.

(see 5.3.1 Default configuration)

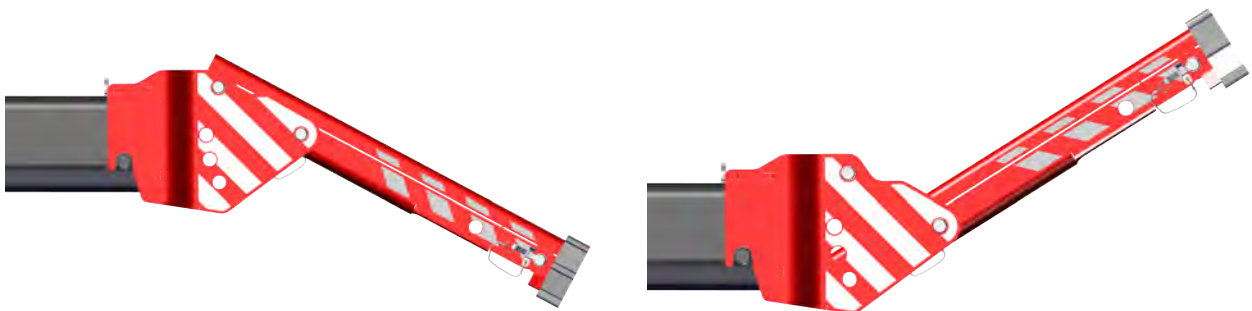
8.8.2 Maximum angle of the jib when lifting with the hook

The maximum angle of the jib when you lift with the hook is 60°



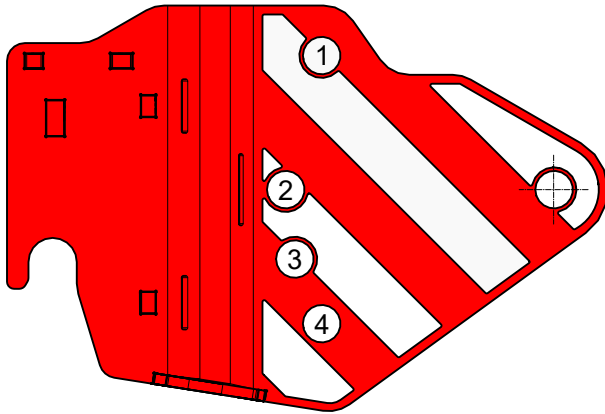
8.8.3 Searcher hook positions in the angle adapter

The maximum angle of the jib is limited when you install the searcher hook in the angle adapter. If the angle becomes more than this maximum angle the hook will touch the jib.



Lower position of the searcher hook in the adjustable section (Position 1)

Upper position of the searcher hook in the adjustable section (position 4)



Install the winch head (or searcher hook) in one of the following positions.

- Position 1 @ -30°
- Position 2 @ 0°
- Position 3 @ 15°
- Position 4 @ 30°

8.8.4 Maximum angle of the jib with the searcher hook

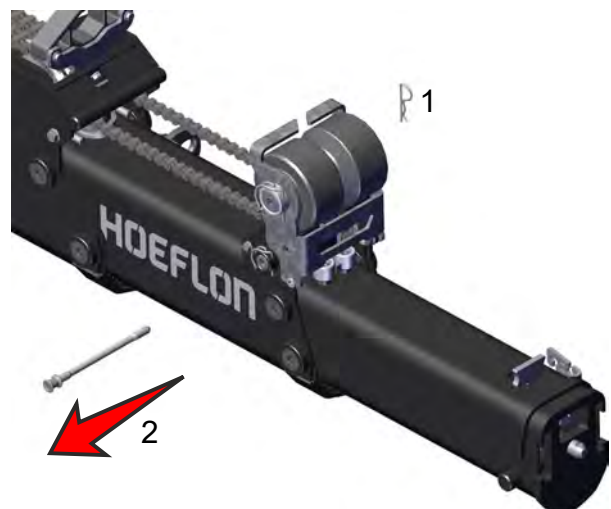
Searcher hook position	Min. jib angle to horizontal	Max. jib angle to horizontal
Installed in the adjustable section with the searcher hook in the lower position (1)	-25°	90°
Searcher hook in position 2	-55°	60°
Searcher hook in position 3	-70°	45°
Installed in the adjustable section with the searcher hook in the upper position (4)	-85°	30°

8.9 Remove the winch roll

Remove the winch roll if you want to reduce the height of the jib.

1. Remove the clip.
2. Pull the pin out of the roll.
3. Remove the roll.
4. Put the pin back into the roll.
5. Put the roll in a storage bin at the front of the crane.

Do steps 1 to 5 in the reverse order to put the winch roll back.



8.10 Lifting with the jib and the winch



Caution

Look at the winch cable when you unwind the winch. Make sure that the cable is not damaged. Stop work if the winch cable is damaged. Speak to your Hoeflon dealer before you continue working.

Install the jib if you want to use the maximum lifting capacity of the winch.

Use the winch and the jib for a lift if:

- it is a complex lift and you need to adapt your crane to the situation.
- you need to repeat the same complex lift many times.
- you need a high versatility, i.e. you need to lift:
 - over things (walls, embankments)
- you need a long reach.

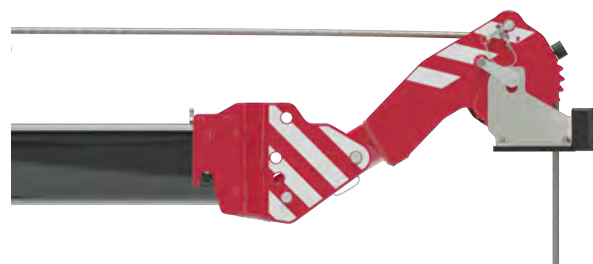
The jib is protected with a winch stop. If the hook or the hook block touches the winch stop the crane will stop winching.

8.10.1 Winch head positions in the angle adapter

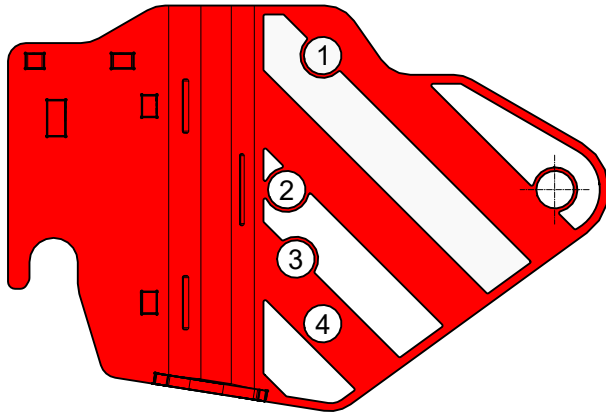
The maximum angle of the jib is limited when you install the winch head in the angle adapter. If the angle becomes more than this maximum angle the hook block will touch the jib.



Lower position of the winch head in the adjustable section (Position 1)



Upper position of the winch head in the adjustable section (position 4)



Install the winch head in one of the following positions.

Position 1 @ -30°

Position 2 @ 0°

Position 3 @ 15°

Position 4 @ 30°

8.10.2 Maximum angle of the jib with the angle adapter

Winch head position	Number of reevings	Min. jib angle to horizontal	Max. jib angle to horizontal
Installed in the adjustable section with the winch head in the lower position (1)	0	-25°	60°
	1	-25°	60°
Winch head in position 2	0	-55°	55°
	1	-55°	50°
Winch head in position 3	0	-70°	40°
	1	-70°	35°
Installed in the adjustable section with the winch head in the upper position (4)	0	-85°	25°
	1	-85°	20°

8.11 "Pick and Carry" mode

In "Pick and carry" mode you can:

- lift a load without setting the outriggers.
- move the crane while lifting a load.



Caution

The crane only knows that the outriggers are UP, it does not know their position.

Make sure that the ballast does not touch an outrigger leg when turning the superstructure.



Note

When the tracks are retracted the crane can only carry a load at the front .

You can only turn the superstructure while lifting a load if the two tracks are fully extended.

The maximum load in "Pick and carry" is smaller than during normal use, (see 13.2 Load chart - Pick and carry)

The RCL is automatically adjusted in "Pick and Carry" mode (see 2.13 Rated Capacity Limiter (RCL)).

The crane switches to "Lifting" mode if the outriggers are lowered and the crane stands on the outriggers correctly.

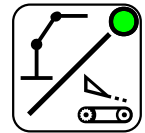
8.11.1 Enter "Pick and Carry" mode without lifting a load

The compact crane will automatically enter "Pick and Carry" mode if:

- the compact crane has a lifting adapter attached to the boom,
- the outriggers are raised off the ground.

8.11.2 Enter "Pick and Carry" mode while lifting

1. When you lift a load and the load goes below 90% of the "Pick and carry" limit:
 - The letters "<PC" appear in the top right corner of the display.
2. Push the "Undercarriage / superstructure" button to go into undercarriage mode.
 - The led goes OFF.
3. Raise and retract the outriggers.
 - Make sure that the ballast will not hit the outriggers.
4. Now you can move the crane while lifting.

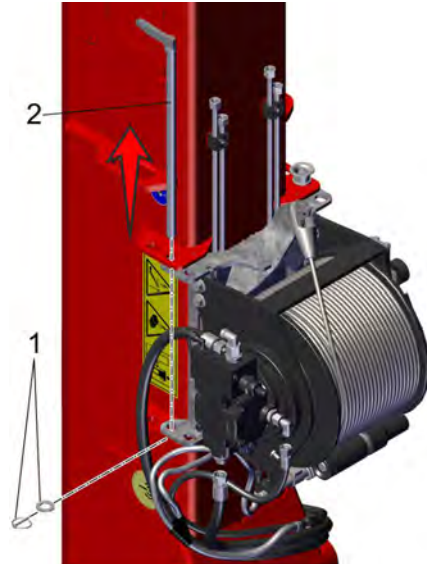


8.12 Reducing the height of the crane

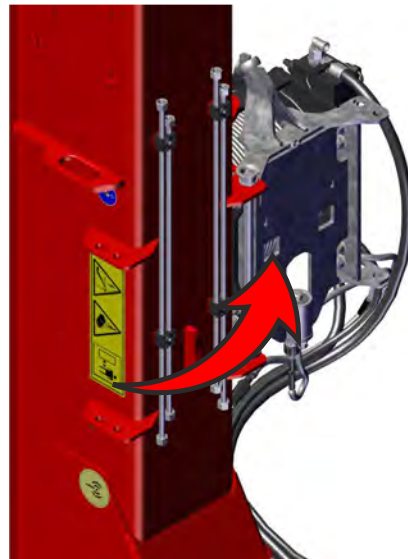
8.12.1 Turn the winch down next to the boom

Turn the winch down next to the boom if you need to reduce the height of the C30e Compact crane.

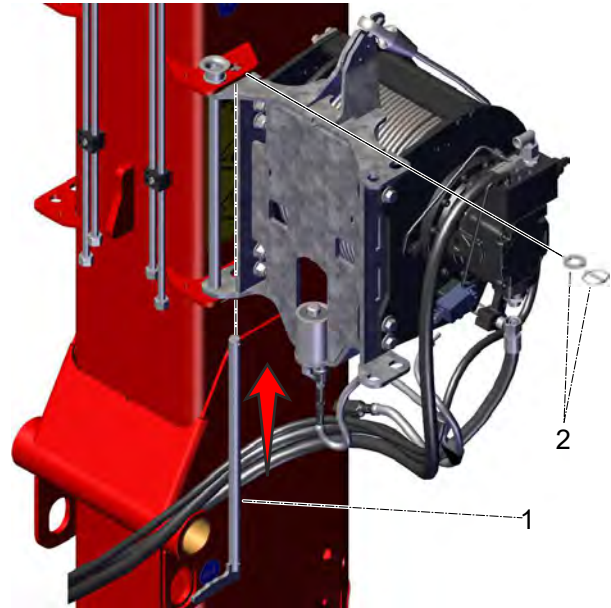
1. Put the crane on the outriggers (see 7.5 Setting the outriggers).
2. Turn the boom so that it is vertical.
3. Extend the ballast.
 - Use the ballast as a platform to stand on.
4. Remove the clip and the ring.
5. Remove the pin.



6. Turn the winch so that it is next to the boom.



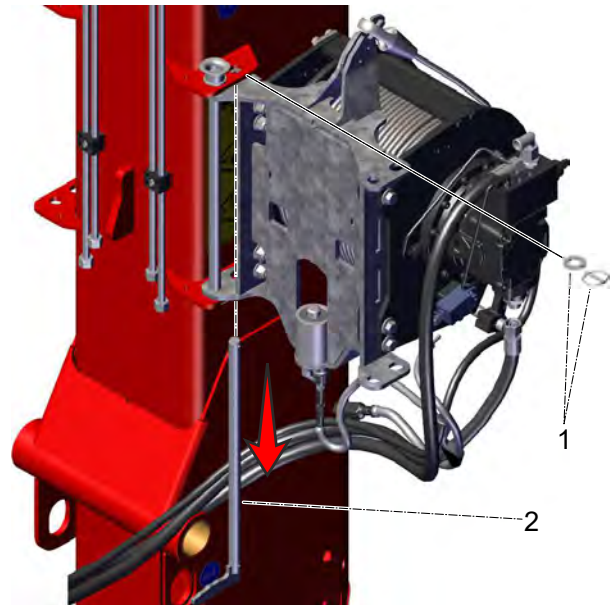
7. Go to the other side of the boom.
8. Put the pin (1) back in position.
 - The pin goes in the hole next to the turning pin.
 - Insert the pin from the bottom, be careful with the hydraulic leads.
9. Install the ring and then the clip (2 |).
10. Retract the ballast.
11. Lower the boom.
12. Retract the outriggers.



8.12.2 Turn the winch to the upright position

If the winch is in the lower position, next to the boom, you must first put it in the upright position before you can use it.

1. Put the crane on the outriggers (see 7.5 Setting the outriggers).
2. Turn the boom so that it is vertical.
3. Extend the ballast.
 - Use the ballast as a platform to stand on.
4. Remove the clip and the ring (1).
5. Remove the pin (2).
 - Be careful with the hydraulic leads when you remove the pin.

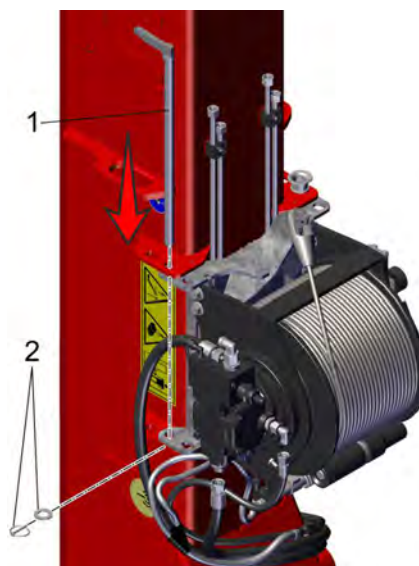


6. Turn the winch so that it is on top of the boom.



7. Go to the other side of the boom.
8. Put the pin (1) back in position.
 - Make sure that the pin goes through the plates on the boom and the plates on the winch.

9. Install the ring and then the clip (2 |).
10. Retract the ballast.
11. Lower the boom.
12. Retract the outriggers.



8.13 Removing and installing the counterweight

8.13.1 Remove the counterweight



Caution

Stay away from the counterweight during removal of the counterweight.



Note

Remove the counterweight to reduce the net weight of the crane.

Make sure that you have these tools :

- A ballast removal cable,
- Two D-shackles,
- One two leg chain sling,
 - Each leg has a minimum length of 1 meter.
- A swivel hook with latch.

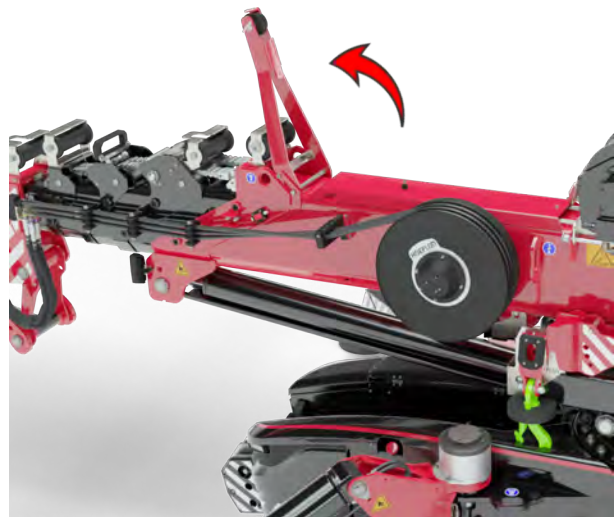
**Caution**

Make sure that all lifting equipment is correctly rated.

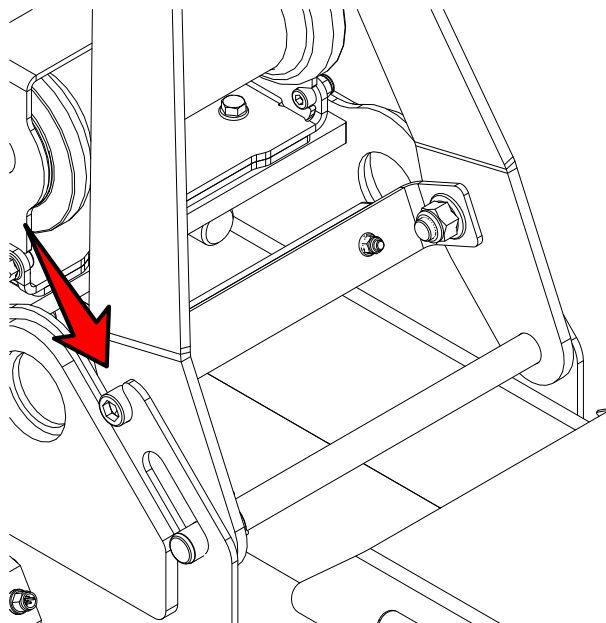
**Note**

Hoeflon has put all these tools in the top drawer of the compact crane.

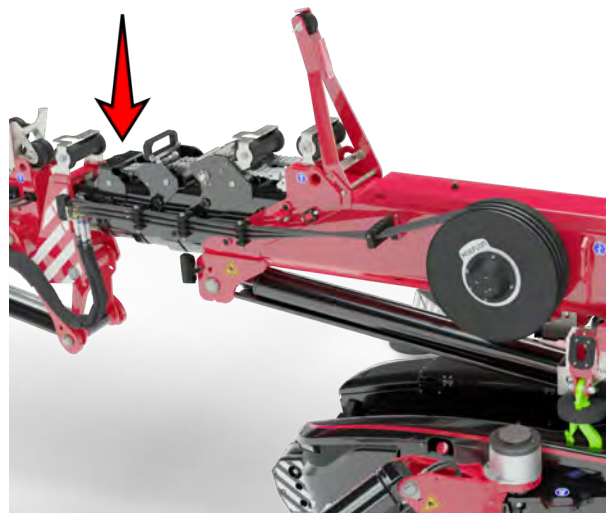
1. Put the crane on a solid floor.
2. Use the outriggers to make the crane level.
 - Set the outriggers at 47°
3. Fully retract the tracks.
4. Fully extend the counterweight.
5. Remove the nut from the counterweight lifting bar.
6. Turn the counterweight lifting bar out.



7. Push the counterweight lifting bar so that it locks in position.



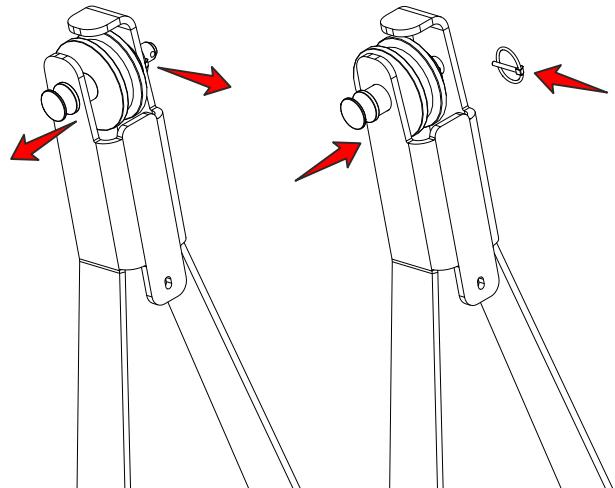
8. Remove the cable roll that is closest to the jib.
 - The cable roll can also be turned out of the way.



9. Connect the lifting cable to the boom.
 - Use a D-shackle.



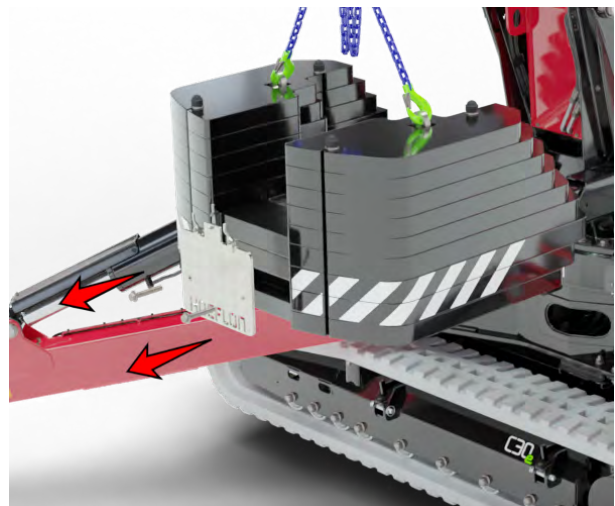
10. Put the lifting cable over the roll in the counterweight lifting bar.
 - a. Put the pin in the outer hole of the shaft.
 - b. Pull the shaft and the roll OUT.
 - c. Put the cable over the roll.
 - d. Push the shaft, the roll and the cable back IN.
 - e. Put the pin back in the inner hole of the shaft and lock it.



11. Fully raise the boom.
12. Turn the crane so that the boom is at 90° to the tracks.
13. Turn the jib so that it is horizontal.
14. Attach the two leg chain sling to the lifting cable.
 - Use a D-shackle.
15. Attach the two leg chain sling to the counterweight.
 - Attach the hooks of the two leg chain sling to the lifting eyes in the counterweight.



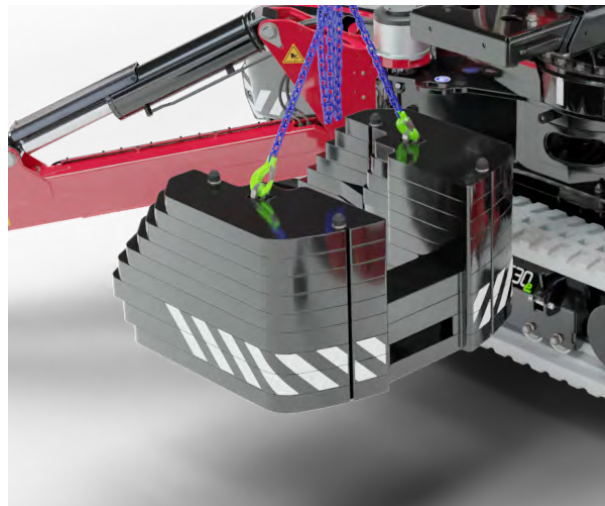
16. Remove the two bolts of the counterweight retainer plate.
17. Remove the counterweight retainer plate.
18. Extend the boom a small distance so that the counterweight hangs free.



**Caution**

Only extend the boom a small amount. You will damage the frame of the counterweight if you extend the boom too far.

19. Fully retract the frame of the counterweight.
20. Turn the boom to its farthest rearward position.
 - The counterweight is now farthest away from the crane.
21. Turn the counterweight 90° so that it is parallel to the tracks.
22. Slowly retract the boom and lower the counterweight.
23. Put the counterweight on the floor.
 - Make sure that there is no tension in the lifting cable.
24. Disconnect the counterweight.
25. Fully lower the boom.
26. Remove the two leg chain sling and the lifting cable.
 - Put them back in their drawer.
27. Turn the counterweight lifting bar back in position and lock it with the nut.
28. Put the cable roll back in position.
29. Use the bolts to attach the retainer plate back on the counterweight lifting frame.



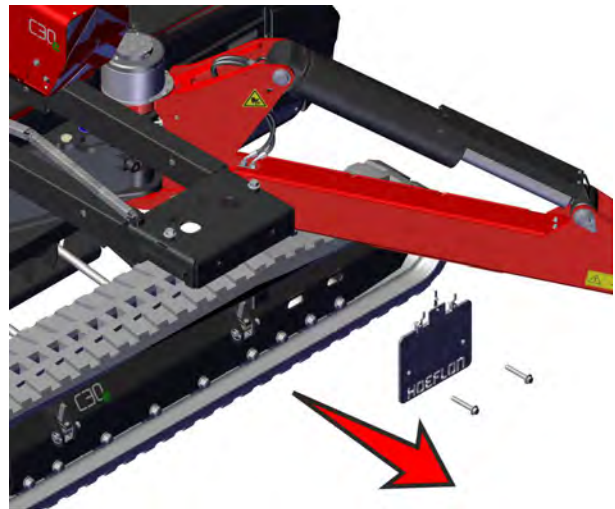
8.13.2 Install the counterweight

**Caution**

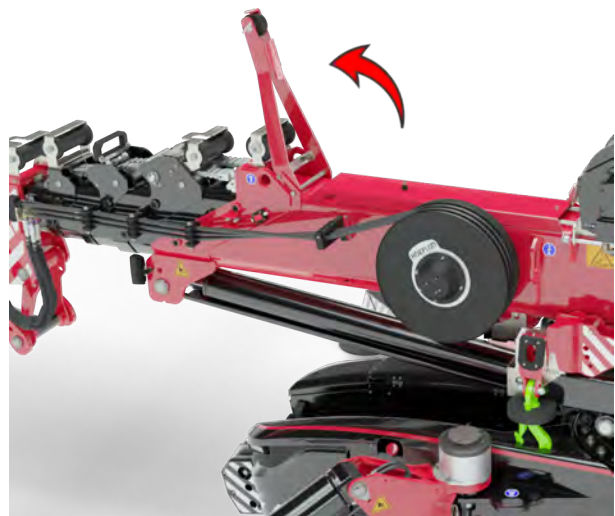
Stay away from the counterweight during installation of the counterweight.

1. Fully retract the tracks.
2. Move the crane next to the counter weight.
3. Park the crane close to the counter weight. Make sure that:
 - the counterweight is parallel to the tracks,
 - the lifting lugs on the counterweight are in line with the center of the slewing ring.
4. Set the outriggers at 47°
5. Lift the crane on the outriggers and make it level.

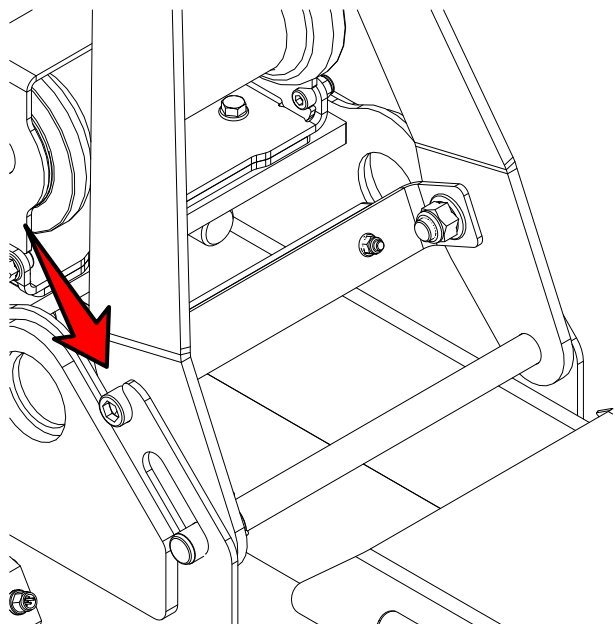
6. Remove the counterweight retainer plate.
7. Fully retract the frame of the counterweight.



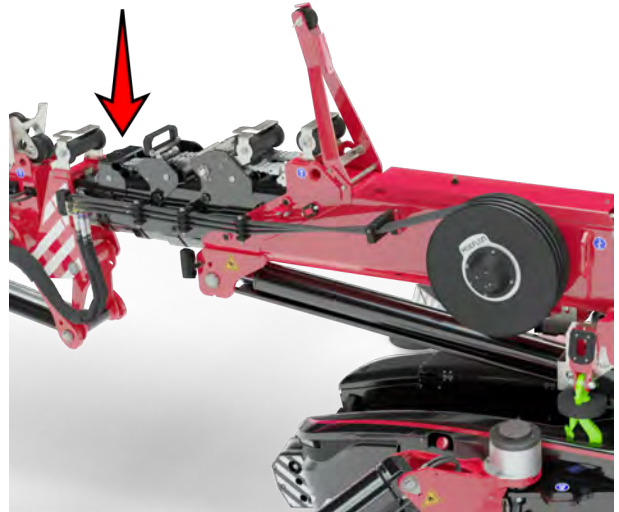
8. Remove the nut from the counterweight lifting bar.
9. Turn the counterweight lifting bar out.



10. Push the counterweight lifting bar so that it locks in position.



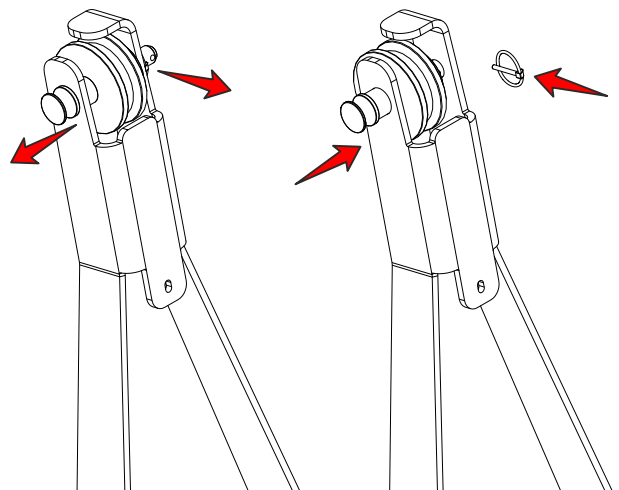
11. Remove the cable roll that is closest to the jib.



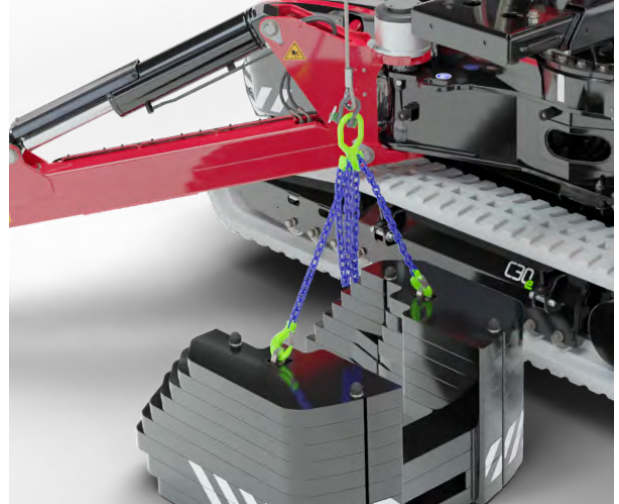
12. Connect the lifting cable to the boom.
- Use a D-shackle.



13. Put the lifting cable over the roll in the counterweight lifting bar.
- a. Put the pin in the outer hole of the shaft.
 - b. Pull the shaft and the roll OUT.
 - c. Put the cable over the roll.
 - d. Push the shaft, the roll and the cable back IN.
 - e. Put the pin back in the inner hole of the shaft.
14. Turn the boom to its farthest rearward position.
15. Turn the crane so that the boom is at 90° to the tracks.
16. Turn the jib so that it is horizontal.



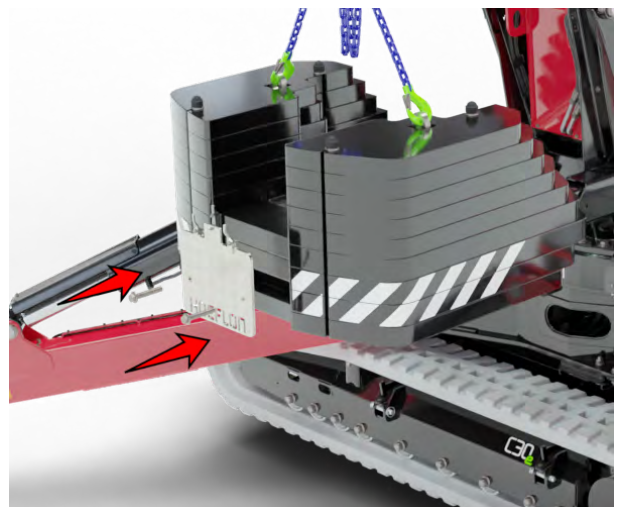
17. Attach the two leg chain sling to the lifting cable.
 - Use a D-shackle.
18. Attach the splitter cable to the counterweight.
 - Attach the hooks on the splitter cables to the lifting eyes in the counterweight.



19. Slowly extend the boom
20. When the counterweight is above the tracks:
 - Turn the counterweight so that it can move onto the counterweight frame.
21. Align the counterweight with the counterweight frame.
22. Fully extend the counterweight.



23. Connect the counterweight to the frame.
 - a. Install the counterweight retainer plate.
 - b. Torque the bolts.
24. Fully retract the boom.
25. Remove the two leg chain sling and the lifting cable.
 - Put them back in their drawer.
26. Turn the counterweight lifting bar back in position and lock it with the nut.
27. Put the cable roll back in position.



9.

Maintenance

9.1 Introduction

The maintenance intervals and tasks are shown in the maintenance schedule. The lubrication points and intervals are shown in the lubrication chart.

Obey these instructions and make sure that your equipment stays in good condition.

Unusual noises or vibrations can indicate a defect in the compact crane. Speak to your Hoeflon dealer immediately and schedule a servicing.

Hoeflon International B.V. has maintenance contracts.

9.2 Maintenance work

The risk of accidents increases during maintenance, cleaning and service. Let your Hoeflon dealer do the maintenance on the compact crane.

The lubrication and maintenance schedules show all maintenance work and intervals. Make sure that you do the maintenance on time.

In the Netherlands, a sticker gives the date when the next inspection is necessary. The sticker is on the cover at the back of the crane.

Refer to your local authorities for the rules and guidelines on the inspection of the Hoeflon C30e Compact crane.



9.2.1 First use

Make sure that you do the daily inspection before using the crane for the first time (see 7.1 Daily inspection (inspection before use)).

9.2.2 Scheduled servicing

1. The first scheduled servicing is after 2 weeks or 50 hours of use.
2. After that do the servicing of the compact crane every year or every 250 hours of operation. Whichever comes first.
3. Scheduled servicing and inspections must be done by your Hoeflon dealer or Hoeflon Support B.V. .

9.3 Safety during maintenance

Obey the maintenance safety precautions when you do maintenance on the machine.

If you do not obey these precautions you can damage the equipment or hurt yourself or someone else.

Obey all applicable legal requirements before starting maintenance work, in particular the requirements for occupational safety and accident prevention.

Your safety and the safety of others, is most important during the maintenance of equipment.

If you do not obey the safety rules in this chapter you can damage the machine, hurt or kill someone.

- When you do maintenance work on the machine make sure that:
 - the crane is stopped.
 - the key is removed from the switch.
- Do not smoke during maintenance work.
- Make sure that the tank caps and oil filler caps are closed.
- Do not wear rings, watches and jewellery while doing maintenance work.
- Tie back long hair so that it cannot get caught in equipment.
- Do not wear loose or hanging clothing.
- Never grab pressure lines with your hands when liquid comes out. Liquids (fuel or hydraulic oil) can penetrate the skin when released under high pressure. If this happens, get medical advice immediately to prevent the risk of a dangerous infection.
- Stay away from hot surfaces.
- Never work under a lifted boom, jib, counterweight, outrigger leg or other machine parts.
- Only use approved non-flammable detergents.
- Never remove warning stickers.
- Obey all warnings and safety precautions on the machine and in the user manuals.
- Discard oils, fuels and filters correctly.
- Make sure that only approved personnel is near the compact crane during repair and maintenance work.
- Use correct PPE , protective clothing, gloves and safety glasses, when you do maintenance.



9.4 Maintenance schedule

9.4.1 General

Description of maintenance	Action	Interval in hours (o = manufacturer/dealer, ● = owner)							
		Daily	First 50 hours	50	100	250	500	1000	4000
Machine	Clean			●					
Safety devices	Inspect	●							
Lifting accessories (cables, hooks etc.)	Inspect/replace	●							
Control levers	Inspect	●							
Condition and presence of pictograms	Inspect					o			
Mechanical components	Inspect	●							
Boom clearance	Inspect/adjust							o	
Slewing ring	Inspect/tighten		o				o		
	Lubricate			●					
Construction incl. pins, shafts etc.	Inspect					o			
Boom extension and retraction chains	Inspect				●				
	Lubricate				●				
Plastic slide plates on boom	Inspect					o			
	Lubricate			●					

Description of maintenance	Action	Interval in hours (o = manufacturer/dealer, ● = owner)							
		Daily	First 50 hours	50	100	250	500	1000	4000
Boom guide bolts	Inspect					o			
Pivot points and extendable sections	Lubricate			●					
Bolt connections in turn table	Tighten						o		
Boom wear parts (completely disassemble)	Replace								o

9.4.2 Crawler track undercarriage

Description of maintenance	Action	Interval in hours (o = manufacturer/dealer, ● = owner)							
		Daily	First 50 hours	50	100	250	500	1000	4000
Tension of crawler tracks	Inspect/adjust			●					
Oil level drive motors	Inspect/Fill					o			
	Replace						o		

9.4.3 Hydraulic system

Description of maintenance	Action	Interval in hours (o = manufacturer/dealer, ● = owner)							
		Daily	First 50 hours	50	100	250	500	1000	4000
Hydraulic oil	Inspect	●							
	Replace							o	
Leaks	Inspect	●							
Hydraulic hoses	Inspect					o			
	Replace								o
Pressure levels	Inspect							o	
Hydraulic return filter	Replace		o				o		
Hydraulic pressure filter	Replace						o		
Stop valves and pressure relief valve	Test							o	
Hydraulic system	Flush								o

9.4.4 Electrical system

Description of maintenance	Action	Interval in hours (o = manufacturer/dealer, ● = owner)							
		Daily	First 50 hours	50	100	250	500	1000	4000
Wiring connectors	Inspect					o			
Emergency stop and sensors	Inspect	●							
Voltage	Inspect					o			

9.5 Hydraulic system

9.5.1 Lubricants

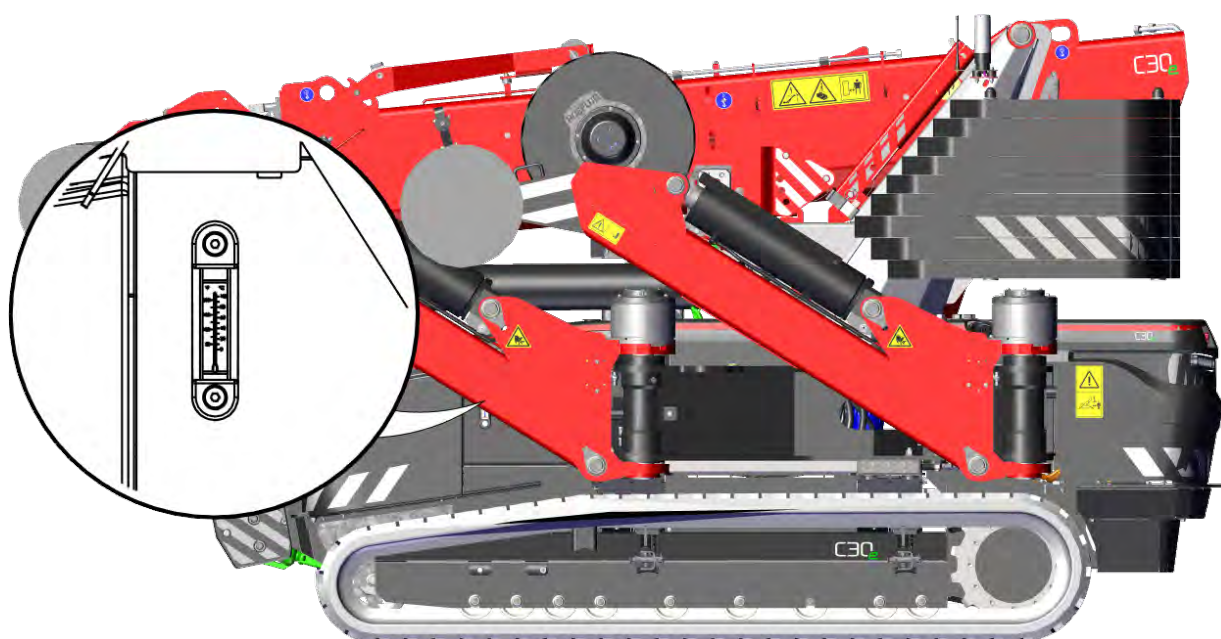
Use one of the following recommended oil types.

Manufacturer	Hydraulic oil	Final drives
Q8	Heller 46	T55
Total	Equavis ZS 46	EP-B 80W90
Shell	Shell Tellus S2/S3	Spirax S3 AX 80W-90
Kroon oil	Perlus ZF 46	Gearlube GL-5 80W-90

For grease fittings use: EP2

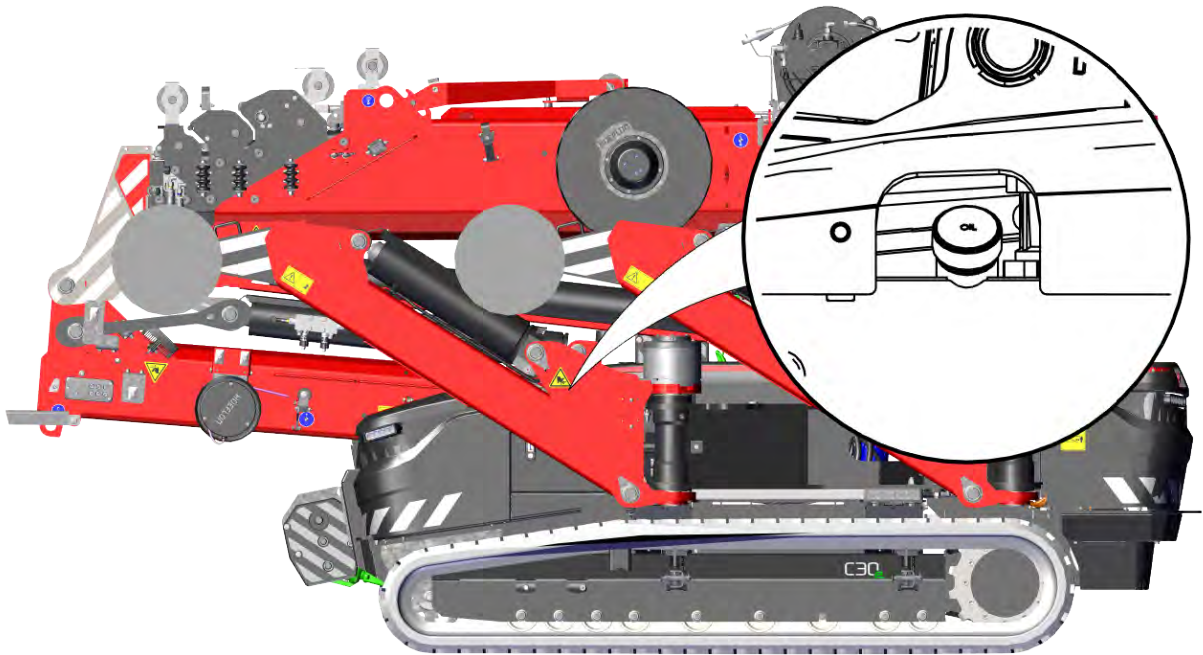
9.5.2 Inspect the oil level

1. Make sure that the crane is horizontal.
2. Fully retract the:
 - Boom and the jib
 - Outriggers
 - Counterweight
 - Tracks
3. Stop the crane and remove the key



4. Turn the outrigger out of the way.
5. Look at the oil level in the level indicator on the side of the tank.
6. The level must be between the lines.
7. Add oil if necessary, (see 9.5.3 Fill the oil tank).

9.5.3 Fill the oil tank



1. Clean the filler cap.
2. Remove the oil filler cap. Put it in a safe place.
3. Add hydraulic oil until the oil level is between the lines on the sight glass.
 - Fill the tank with new hydraulic oil. Use oil with the correct specifications (see 9.5.1 Lubricants)
4. Put the filler cap back onto the tank.

9.6 Lubrication

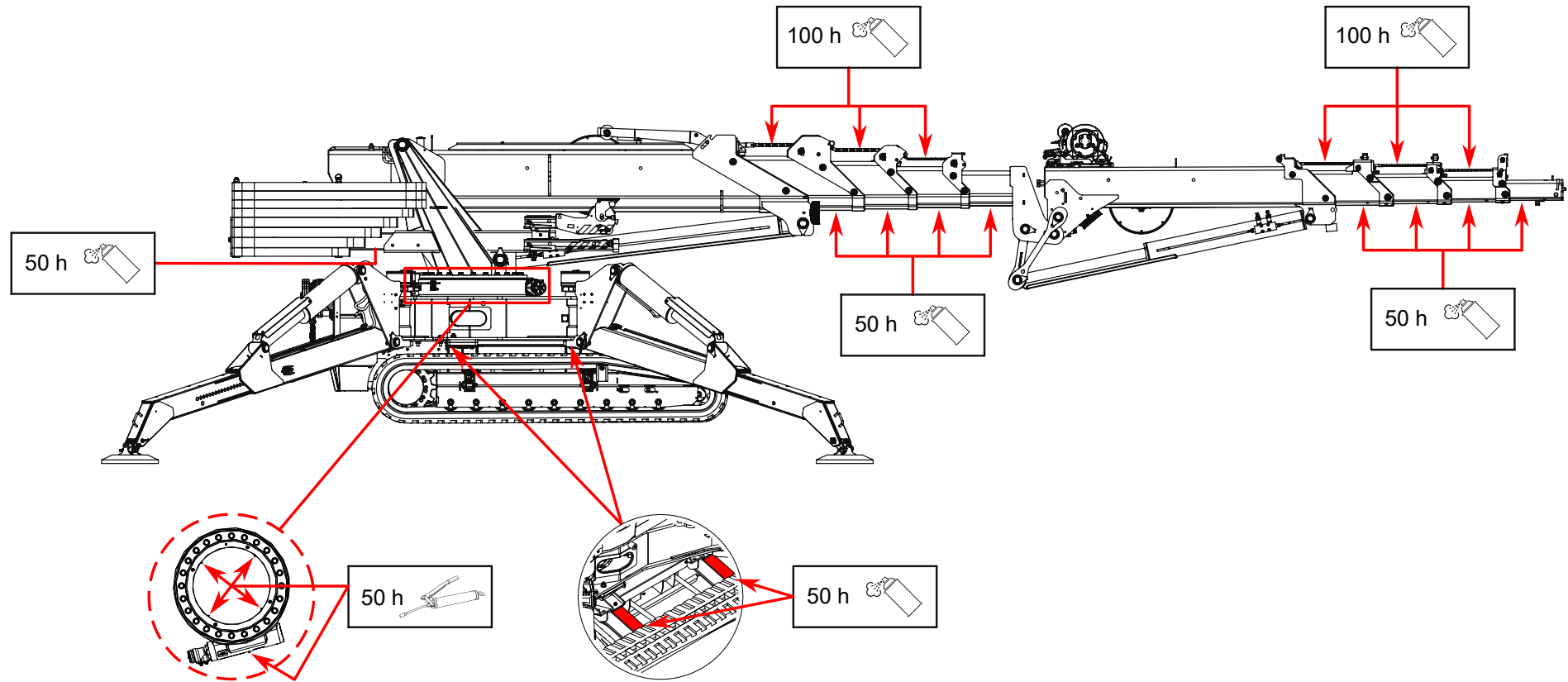
Lubricate the compact crane as shown in the lubrication chart below.

**Note**

- Clean the grease nipples thoroughly before lubrication.
- Remove excess / old grease from the booms.
- Use new and clean grease.

**Note**

Use INTERFLON GREASE OG or comparable.

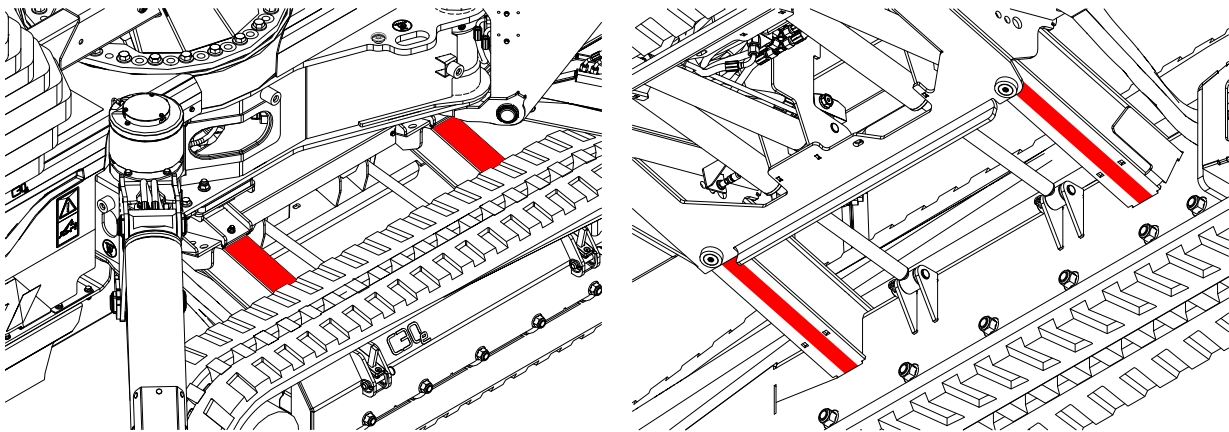


9.7 Every 50 hrs

9.7.1 Plastic wear strips of the counterweight

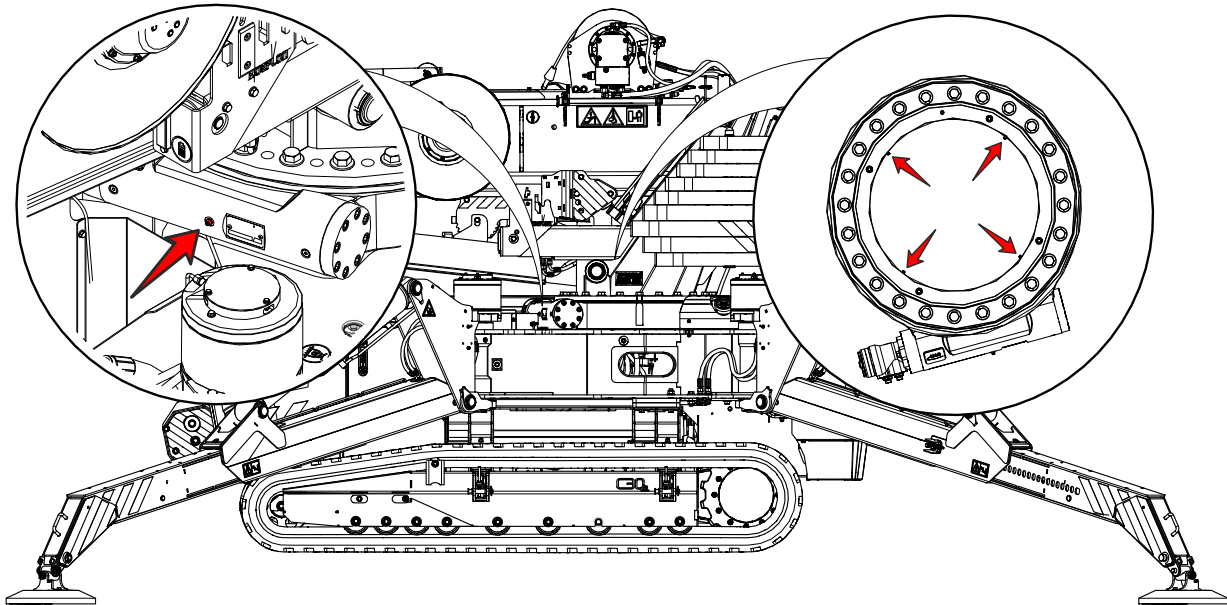
1. Fully extend the counterweight.
2. Apply grease:
 - to the plastic wear strips.
 - to the bottom of the counterweight beams

9.7.2 Plastic wear strips on the track extenders



1. Make sure that the jib and boom are in the transport position.
2. Put the outrigger legs in the correct position.
 - Each leg at 48°
3. Fully lift the crane on the outriggers.
4. Fully extend the tracks.
5. Clean the top of the track extenders.
6. Apply grease:
 - to the plastic wear strips.
 - to the top of the track extender beams.
 - to the center of the bottom of the track extender beams.

9.7.3 Grease nipples on the drive of the slewing ring



There are four grease nipples on the inside of the flange of the slewing ring.

There is one grease nipple on the drive of the slewing ring.

Lubricate these every 50 hours of operation or at least every four months.

1. Remove top cover at the front of the crane.
2. Apply grease through the grease nipples.
3. Turn the crane superstructure a small distance.
4. Do step 2 and 3 again until the superstructure has been fully rotated.
5. A small amount of grease is permitted to leak from under the seal on the inside of the slewing ring.



Note

Do not remove this grease. It functions as a dust seal.

6. Make sure that the seal is still in good condition.



Note

Push the seal back in position if it is pushed out by the addition of new grease.

9.8 Every 100 hrs

9.8.1 Chain maintenance

- Clean a chain with petroleum or diesel. Do not clean them with acidic agents or a pressure cleaner. These can damage the chains.
- Examine the chains. Make sure that:
 - they are clean,
 - they are lubricated,
 - there is no rust,
 - the pins and the plates are not broken or worn.

Speak to your Hoeflon dealer if a chain is broken. Do not continue working.

9.8.2 Lubricate the chains

**Note**

Use chain grease.

1. Fully extend the boom.
2. Clean the chains.
3. Spray the chains.
4. Retract the boom.

9.9 Crawler tracks

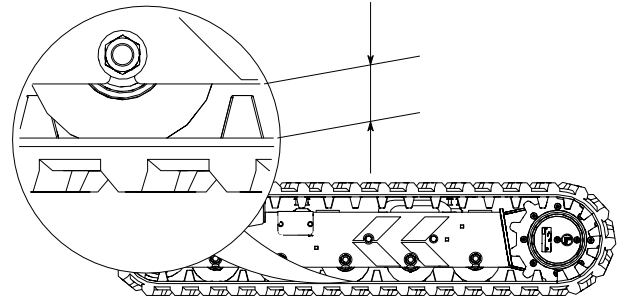
9.9.1 Inspect the tension

Make sure that the tension in the two crawler tracks is correct.

If the crawler tracks are too loose the sprocket wheels can slip and no longer drive the crawler track. Slipping sprocket wheels can cause damage to the crawler track.

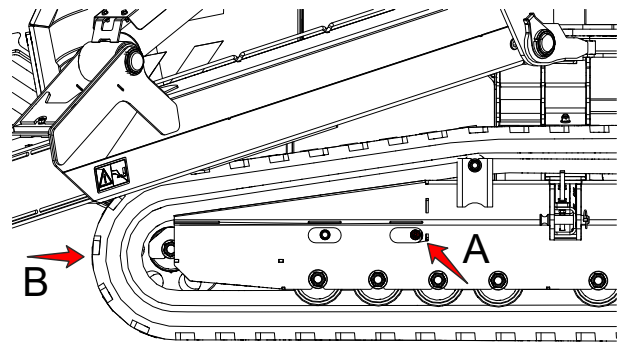
If the crawler tracks are too tight they will wear too quickly.

1. Make sure that the jib and boom are in the transport position.
2. Put the outrigger legs in the correct position.
 - Each leg at 48°
3. Lift the crane on the outriggers until the crawler tracks are 10 cm above the ground.
4. Examine the tension in the two crawler tracks.
 - Minimum: 20 mm
 - Maximum: 60 mm.



9.9.2 Loosen a crawler track

1. Make sure that the jib and boom are in the transport position.
2. Put the outrigger legs in the correct position.
 - Each leg at 48°
3. Remove the bush with the grease nipple from of the tensioning cylinder (A).
4. Lift the crane on the outriggers until the crawler tracks are 10 cm above the ground.
5. Push the tension wheel to the rear (B).
 - Usually the tension wheel moves to the rear because of the weight of the tracks.
 - Grease flows out of the tensioning cylinder.
6. Clean the unwanted grease off the tension cylinder.
7. Install the bush with the grease nipple back onto the tension cylinder.

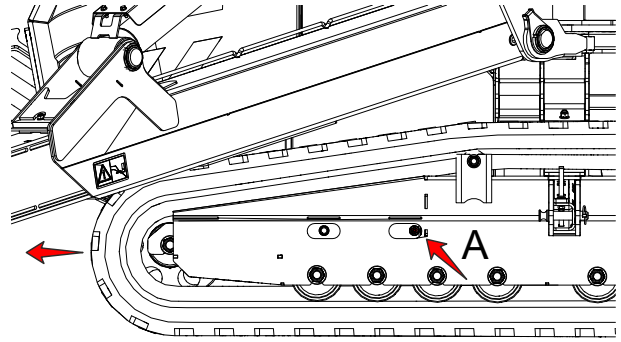


Caution

Do not forget to install the Bouded Seal.

9.9.3 Tighten a crawler track

1. Make sure that the jib and boom are in the transport position.
2. Put the outrigger legs in the correct position.
 - Each leg at 48°
3. Lift the crane on the outriggers until the crawler tracks are 10 cm above the ground.
4. Attach a grease gun on the grease nipple (A) in the track frame.
5. Pump grease into the tension cylinder until the track tension is correct (see 9.9.1 Inspect the tension).



10.

Troubleshooting

10.1 The remote control cannot connect with the crane

10.1.1 The LED does not flash

There is a problem with the RC6.

1. Make sure that all the levers are in the central position.
2. Calibrate the RC6 if all the levers are in the central position (see 5.3.2 Calibration)
3. Do an inspection of the **Connect** button (A).
4. Speak to your your Hoeflon dealer if you still cannot connect.

10.1.2 The LED stops flashing and goes OFF

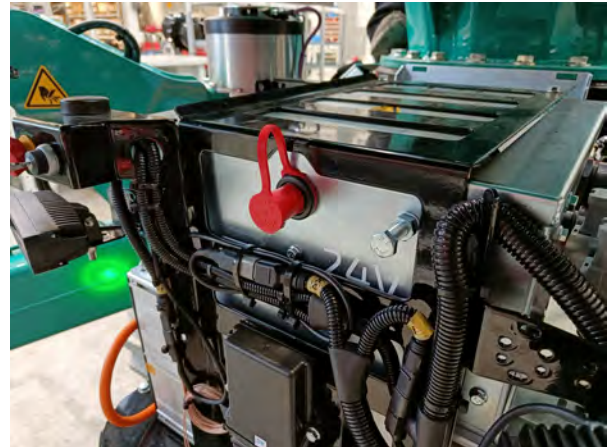
There is a problem with the compact crane. Speak to your Hoeflon dealer. Do not continue working.

10.2 Charging the 24V batteries

The crane will not start if the 24V batteries are empty. Charge the 24V batteries with the emergency charging points.

The emergency charging points are at the rear of the crane, under the compartment cover.

- Use a 24V charging system.
- Make sure that the area is dry and clean.



1. Remove the key.
2. Remove the compartment cover, (see 4.7.1 Remove the cover of the compartment at the rear of the crane).
3. Connect the + start assistance cable by clamping it firmly to the + charging terminal (with the red protective cap).
4. Connect the - start assistance cable by clamping it firmly to the - charging terminal.
5. Make sure that the start assistance cables:
 - are connected to the emergency charging points correctly.
 - are not twisted together.
6. Let the crane recharge for a few minutes.
7. Insert the key and start the crane.
8. Remove the start assistance cables in the reverse order (- first, then +).
9. Put the protective cap back on the + charging terminal .
 - Replace the protective cap if it is damaged.
10. Install the compartment cover.

10.3 Error codes - 20240206

The table contains has the error codes that can appear on the display.

Do the correction procedure first.

If the problem persists, speak to your Hoeflon dealer.

Error code	Description / comment	Correction procedure
1	Connection between gateway 3 and gateway 1 lost	<ol style="list-style-type: none"> Stop the compact crane. <ul style="list-style-type: none"> Turn the key to position 0. Fully push the emergency button IN. Remove the battery charger. Wait 5 minutes. Do the correction procedure. Start the compact crane. <ul style="list-style-type: none"> Release the emergency stop. Turn the key to position 1.
30	No attachment detected on boom	Install an attachment on the boom.
31	Attachment on the boom unknown	Install a correct (Hoefflon) attachment on the boom.
32	No (valid) CAN device found on boom. RFID tag is valid.	Connect the CAN plug from the attachment.
33	No (valid) RFID tag found on boom. CAN device is valid or not needed.	Make sure that the attachment is installed and locked correctly.
34	RFID tag and CAN device detected on the boom but data does not match.	Make sure that a correct (Hoefflon) attachment is installed.
35	No attachment detected on attachment (jib)	Install an attachment on the attachment (jib).
36	Attachment on attachment (jib) unknown	Install a correct (Hoefflon) attachment on the attachment (jib).
37	No (valid) CAN device found on attachment (jib). RFID tag is valid.	Connect the plug from the attachment to the jib.
38	No (valid) RFID tag found on attachment (jib). CAN device is valid or not needed.	Make sure that the attachment is installed and locked correctly on the jib.
39	RFID tag and CAN device detected on attachment (jib) but data does not match.	Make sure that a correct (Hoefflon) attachment is attached to the jib.
40	Outrigger angle slip detected since switch to hoist mode on front left outrigger	Do a check of the friction in the outrigger lock clutch.
41	Outrigger angle slip detected since switch to hoist mode at front right outrigger	Do a check of the friction in the outrigger lock clutch.
42	Outrigger angle slip detected since switch to hoist mode at right rear outrigger	Do a check of the friction in the outrigger lock clutch.
43	Outrigger angle slip detected since switch to hoist mode at left rear outrigger	Do a check of the friction in the outrigger lock clutch.
45	Jib3 winch pressure too low	Do a check for leaks on the winch cylinder.
46	Jib3 winch pressure too high	The load is too heavy. Reduce the load.
47	Double jib detected (jib 3 and jib 5).	
48	Jib5 angle sensor invalid	Do a check of the sensor connection.

Error code	Description / comment	Correction procedure
49	Jib5 winch pressure sensor invalid	Do a check of the sensor connection.
50	No RFID reader on boom	Install a correct (Hoeflon) attachment on the boom.
51	Invalid RFID attachment on boom	Install a correct (Hoeflon) attachment on the boom.
52	No RFID reader on jib3	Install a correct (Hoeflon) attachment on the jib 3.
53	Invalid RFID attachment on jib3	Install a correct (Hoeflon) attachment on the jib 3.
54	Chain deactivation system on boom invalid (sensors not equal)	Do a check of the sensor connection.
55	Chain deactivation system on jib3 invalid (sensors not equal)	Do a check of the sensor connection. Do a check of the cable reel.
56	Multi-tool lamp tower not present on clamp	
61	Emergency button pushed	<ol style="list-style-type: none"> 1. Make sure that it is safe to start the compact crane again. 2. Release the emergency button.
78	Outrigger FL angle sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
81	Stable-on-ground sensor invalid outrigger front left	
82	Outrigger FL extension sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
85	Outrigger leg FR angle sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
88	Stable-on-ground sensor invalid outrigger front right	
89	Outrigger leg FR extension sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
92	Outrigger BR angle sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.

Error code	Description / comment	Correction procedure
95	Stable-on-ground sensor invalid outrigger rear right	
96	Outrigger BR extension sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
99	Outrigger BL angle sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
102	Stable-on-ground sensor invalid outrigger rear left	
103	Outrigger BL extension sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
106	Jib3 angle sensor invalid	
108	Jib3 extension sensor invalid	
110	Boom angle sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
112	Boom extension sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
113	Pressure sensor lift cylinder base invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
114	Lift cylinder rod pressure sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
120	Slewing ring rotation sensor invalid	
132	Ballast present sensor invalid	Do a check of the sensor connection.
133	Ballast extension sensor invalid	Do a check of the sensor connection.
136	Boom winch pressure sensor invalid	
137	Pressure sensor winch boom low	
138	Pressure sensor winch boom high	The load is too heavy. Reduce the load.

Error code	Description / comment	Correction procedure
148	Chassis inclination sensor invalid	<ol style="list-style-type: none"> 1. Make sure that the system voltage is nominal 2. Do a check of the sensor connection. 3. Do a check of the cable.
171	Pressure sensor main pressure invalid	
172	Motor controller has a serious error	
174	State-Of-Charge Lithium is Critically low, lower than 10%	Charge the crane immediately. The warning disappears when the battery charge is more than 10%.
175	Multitool angle invalid	
176	Multitool tilt angle invalid	
177	Multi-tool clamp pressure invalid	
200	RF transceiver connection lost.	
201		
202	outrigger PC better than outriggers.	
203	Jib3 pressure sensor base-side cylinder	
204	Jib3 pressure sensor rod side cylinder	
205	Pressure sensor jib3 winch invalid	
206	1 or more CANopen valves are not in operational mode.	
210	Outrigger I/O module FL is not responding	
211	Outrigger I/O module FR is not responding	
212	Outrigger I/O module BR is not responding	
213	Outrigger I/O module BL is not responding	
214	Undercarriage front I/O module not responding	
215	Undercarriage rear I/O module not responding	
216	Boom I/O module is not responding	
217	Boom winch I/O module is not responding	
220	Outrigger front left backup mode sensor A	
221	Outrigger front left backup mode sensor B	
222	Outrigger front left recalibration required	Recalibrate the sensor: <ol style="list-style-type: none"> 1. Fully extend the outrigger leg, 2. Fully retract the outrigger leg, 3. Do a check to see if the calibration is correct.
223	Outrigger front right backup mode sensor A	
224	Outrigger front right backup mode sensor B	

Error code	Description / comment	Correction procedure
225	Outrigger front right recalibration required	Recalibrate the sensor: 1. Fully extend the outrigger leg, 2. Fully retract the outrigger leg, 3. Do a check to see if the calibration is correct.
226	Outrigger rear right backup mode sensor A	
227	Outrigger rear right backup mode sensor B	
228	Outrigger rear right recalibration required	Recalibrate the sensor: 1. Fully extend the outrigger leg, 2. Fully retract the outrigger leg, 3. Do a check to see if the calibration is correct.
229	Outrigger rear left backup mode sensor A	
230	Outrigger rear left backup mode sensor B	
231	Outrigger rear left recalibration required	Recalibrate the sensor: 1. Fully extend the outrigger leg, 2. Fully retract the outrigger leg, 3. Do a check to see if the calibration is correct.
232	Boom extension sensor: backup mode sensor A	
233	Boom extension sensor: backup mode sensor B	
234	Boom extension sensor: recalibration required	
235	Ballast extension sensor: backup mode sensor A	
236	Ballast extension sensor: backup mode sensor B	
237	Ballast extension sensor: recalibration required	
238	Jib3 extension sensor: backup mode sensor A	
239	Jib3 extension sensor: backup mode sensor B	
240	Jib3 extension sensor: recalibration required	
250	RCL invalid (probably because 1 of the inputs is invalid)	

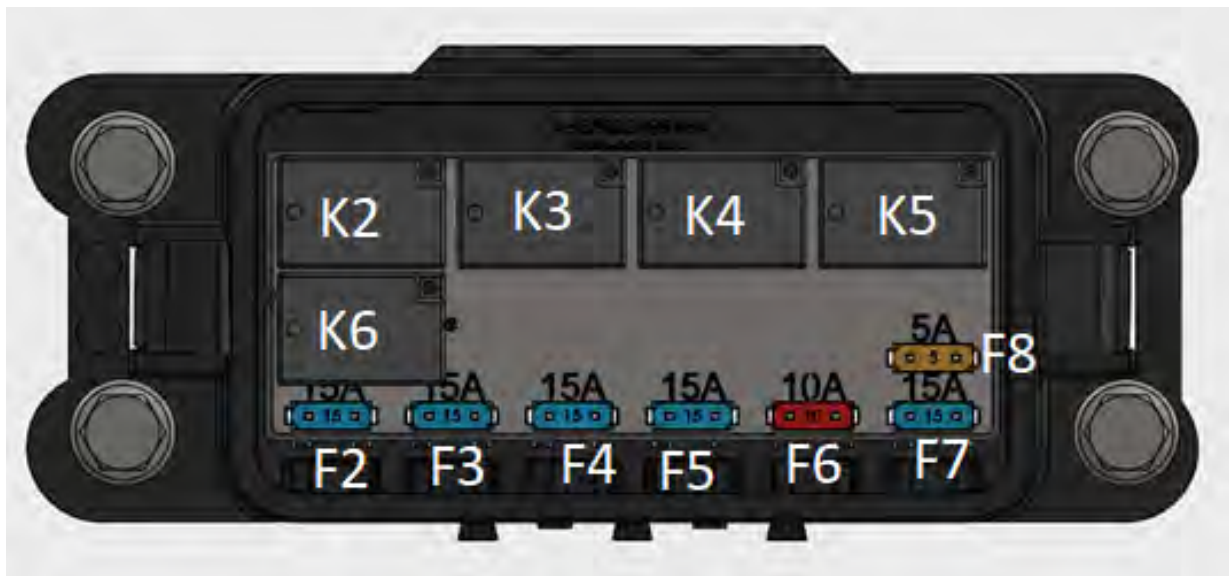
10.4 Fuses and relays

10.4.1 Replace a broken fuse or relay

1. Stop the crane and remove the key.
2. Remove the compartment cover, (see 4.7.1 Remove the cover of the compartment at the rear of the crane).
3. Turn the power switch (1) to disconnect the 24V battery.
4. Push the clips on the side of the fuse box (2) and remove the cover.
5. Replace the broken fuse or relay.
6. Close the cover of the fuse box and attach the two clips.
7. Reconnect the battery with the switch.
8. Put the compartment cover back in position..



10.4.2 Fuses



Fuze	Amperage	Corresponding relais	Protective function
F2	15A	K2	Motor cooling
F3	15A	K3	I/O front, I/O rear and HAWE valve block
F4	15A	K4	Signal column, I/O boom, I/O winch, I/O jib and RFID sensors
F5	15A	K5	I/O outrigger feet (left-front, left-rear, right-front and right-rear)
F6	10A	K6	Battery charger of the remote control
F7	15A		Gateway 3, battery pack 1 and battery pack 2
F8	5A		Key switch and status indicator of the battery pack

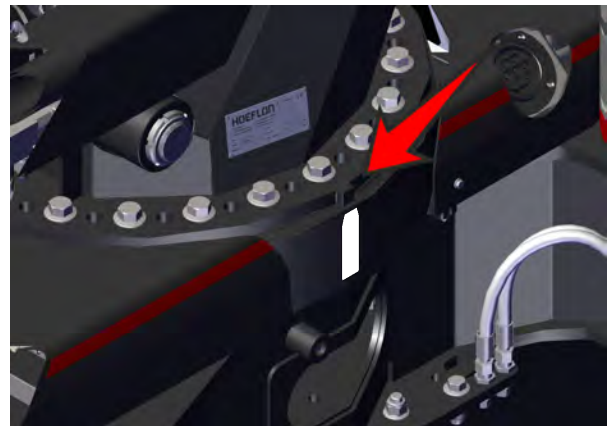
11.

Transport and storage

11.1 Transporting a crane

11.1.1 Put the crane in transport position

1. Remove any loads from the crane.
2. Turn the superstructure so that it is in line with the undercarriage.
 - Align the lug on the column with the white target mark on the slewing ring.
 - The target mark is on the left side of the crane.
3. Remove all attachments and put them in their storage positions.
4. Fully wind the winch cable on the winch.
5. Fully retract the jib.
6. Turn the jib under the boom.
7. Fully retract the ballast.
8. Fully retract the boom.
9. Fully lower the boom.
10. Move the outrigger extensions back into the outriggers (see 7.6 Using the outrigger extensions).
11. Retract the outriggers.
12. Put the outriggers UP.
13. Turn the feet in their storage position (vertical).
14. Remove the key.



11.1.2 Put the crane on the transport vehicle

**Caution**

Make sure that the transport vehicle:

- is rated to transport the full weight of the crane (see 1.3 Type plate).
- is large enough to contain the crane (see 3.1 Dimensions).

Use loading ramps to move the crane onto the transport vehicle.

Make sure that the loading ramps:

- can carry the full weight of the crane (see 3.3.2 Crane and component weights).
- are long enough so that the angle with the horizontal is less than 15°(see 7.4.2 Maximum slope angles when moving the crane).

**Caution**

Use slow speed when driving up a ramp or slope.

**Note**

When moving the compact crane on a slope (e.g. up loading ramps onto a transport vehicle), extend the outriggers on the LOW side to stop the crane from tilting (see 7.3 Setting the width of the crawler track).

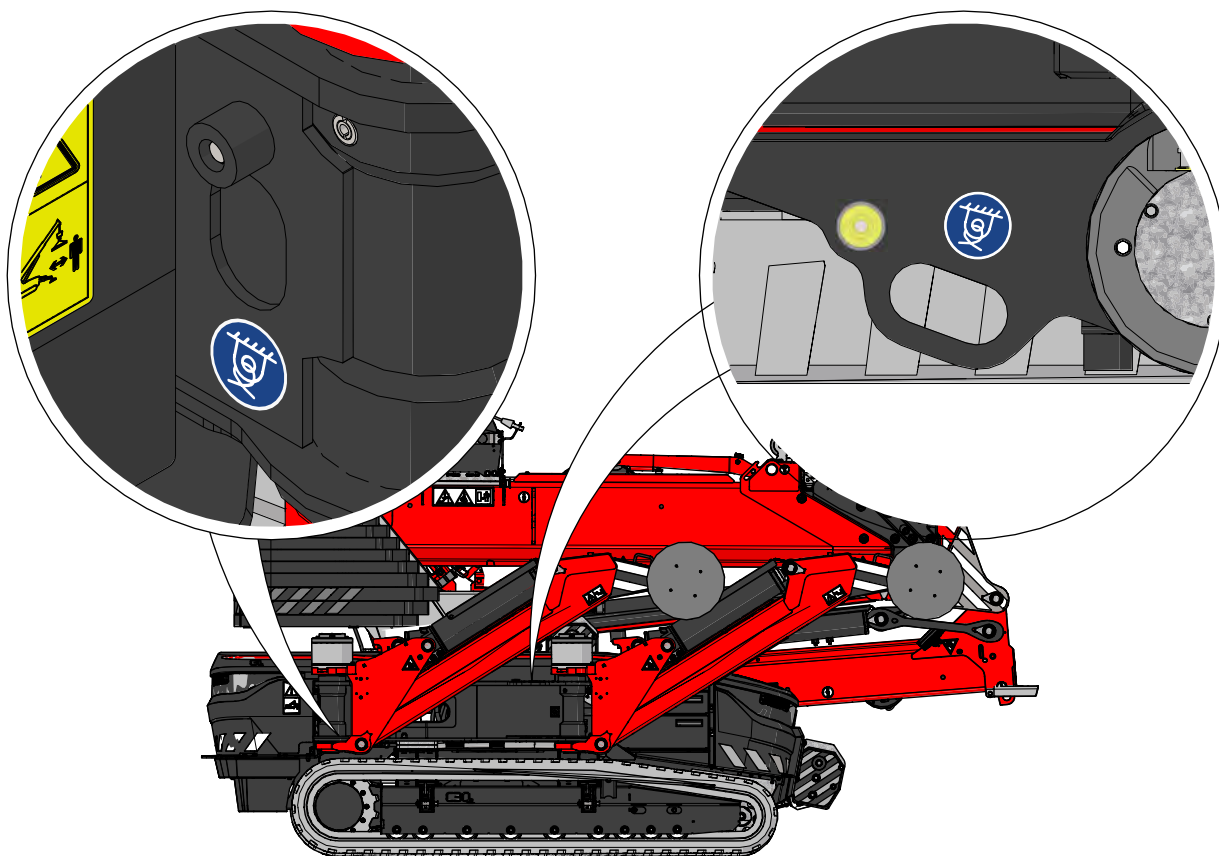
**Note**

Use an assistant when you move a crane up a ramp.

11.1.3 Securing the crane for transport

**Note**

Do not overload the lashing eyes. This will damage the compact crane.



Point	Maximum load on attachment point
Lashing points on undercarriage	Front 1500 kg per eye Rear 2500 kg per eye

Put the crawler tracks of the crane directly on the deck of the transport vehicle.

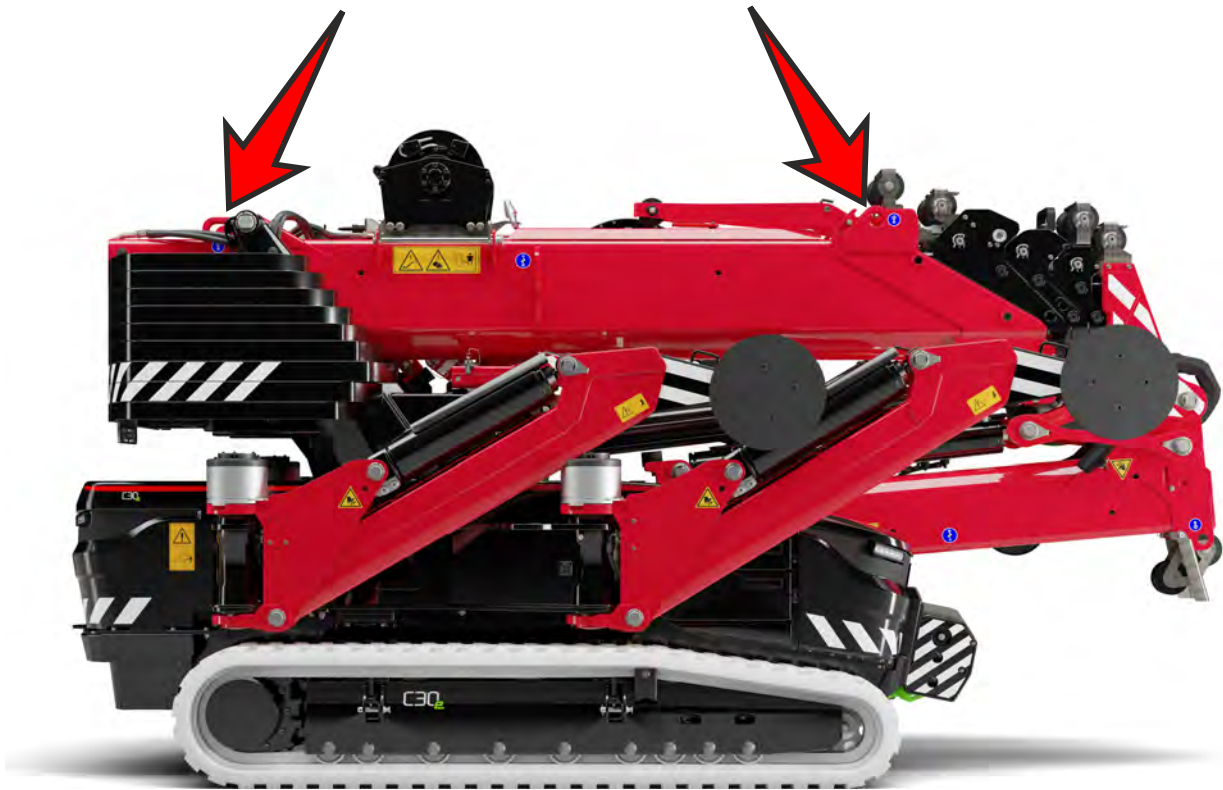
Secure the crane by attaching four lashing straps to the holes in the chassis (near the outrigger swivels). Use straps that are rated at:

- 0.5 x the crane's weight at the front and the sides.
- 1 x the crane's weight at the rear.

Fill the space between the front of the two crawler tracks and the headboard of the transport vehicle.

- If this is not possible then use lashing straps that are rated at 1.5 x the cranes weight at the rear.

11.2 Lifting the crane



The C30e Compact crane has four lifting points for lifting the crane.

- Two lifting points at the front of the boom,
- Two lifting points at the rear of the boom.

They are identified by the "Lifting point" pictogram.

Make sure that your lifting equipment is properly rated.

Use four chains (capacity: at least 2500 kg per chain) to lift a crane.

Put the crane into transport position before lifting the crane (see 11.1.1 Put the crane in transport position)



11.3 Putting the compact crane in storage

1. Fully clean the compact crane.
2. Clean the track undercarriage with a pressure washer.
 - Do not point the pressure washer at electrical components.
3. Grease the compact crane (see 9.6 Lubrication)
4. Repair all damaged paintwork.
5. Apply a thin layer of grease to the parts that may rust.

6. Keep the compact crane in a dry and cool area with good airflow.
7. Keep the battery charger connected to the grid.
 - The batteries remain charged.
 - The batteries will not be damaged if they are left on the charger for a long time.
8. Make sure that only approved persons are permitted to enter the storage area.
9. Make sure that the compact crane cannot be started by unauthorized people.
10. Cover the compact crane with a tarpaulin.
 - Keep a section away from the ground for ventilation.

11.3.1 Putting the crane in storage without a charging facility

If the crane is put in storage without a charging facility nearby then you must inspect the battery voltage weekly.

**Note**

Make sure that the SOC is above 30%.

Fully charge the battery after a long period of storage. This also resets and calibrates the SOC.

12.

Disposal

12.1 Dispose of the C30e Compact crane

Return the C30e Compact crane to your Hoeflon dealer at the end of its life.

12.2 Waste disposal



Note

Refer to local regulations when you discard waste material.

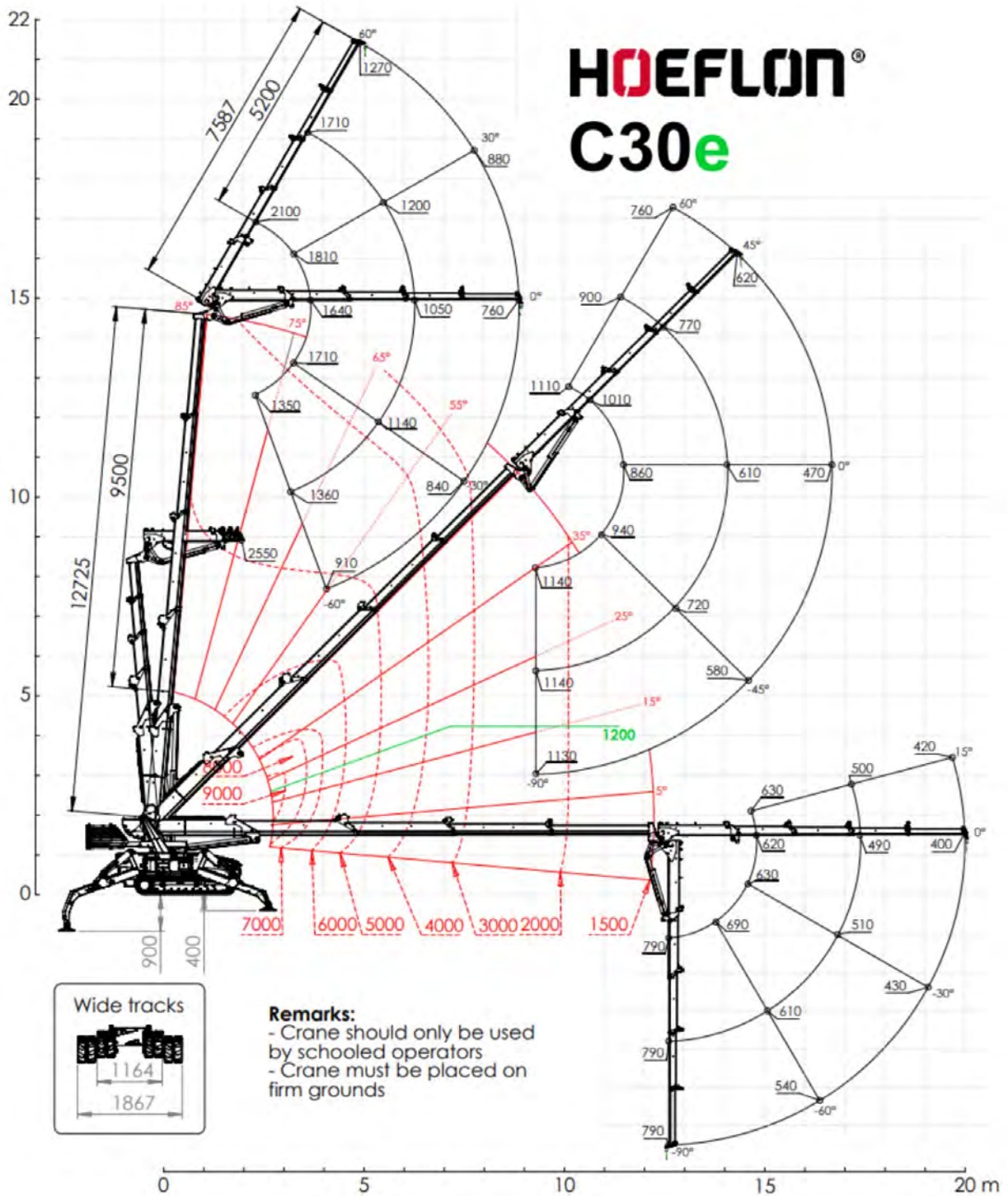
Incorrect disposal of waste is harmful to the environment.

Environmentally harmful waste includes but is not limited to:

- engine oil,
- diesel fuel,
- hydraulic oil,
- coolant,
- filters,
- batteries,
- greases.

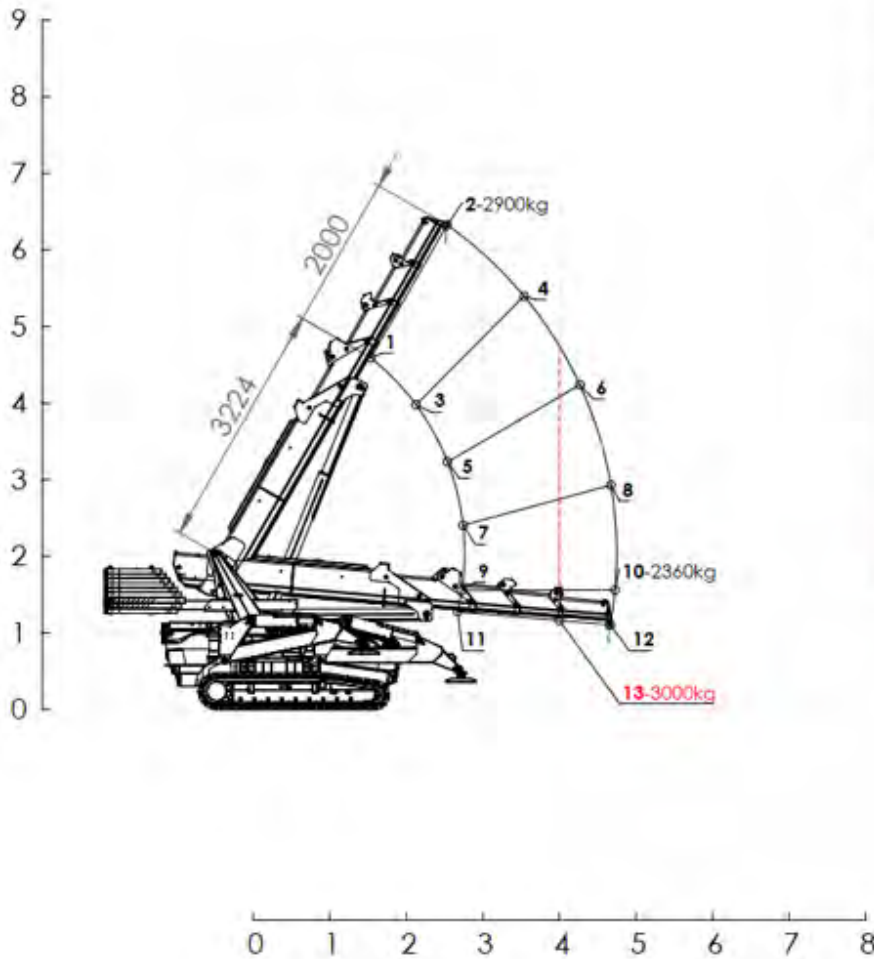
Appendix

13.1 Load chart - Counterweight



13.2 Load chart - Pick and carry

Max load: 3000 kg
 Max angle: 60°
 Boom extension: 2000 mm



LOAD BOOM [kg]			
Position	Front	Side	Rear
1	3000	3000	3000
2	2900	3000	1780
3	3000	3000	2230
4	3000	1830	1070
5	3000	3000	1700
6	2730	1360	800
7	3000	2660	1510
8	2340	1180	690
9	3000	2690	1520
10	2310	1170	680
11	3000	2780	1580
12	2360	1190	700
13	3000	1480	870

13.3 Load chart with boom and jib section interlocks

