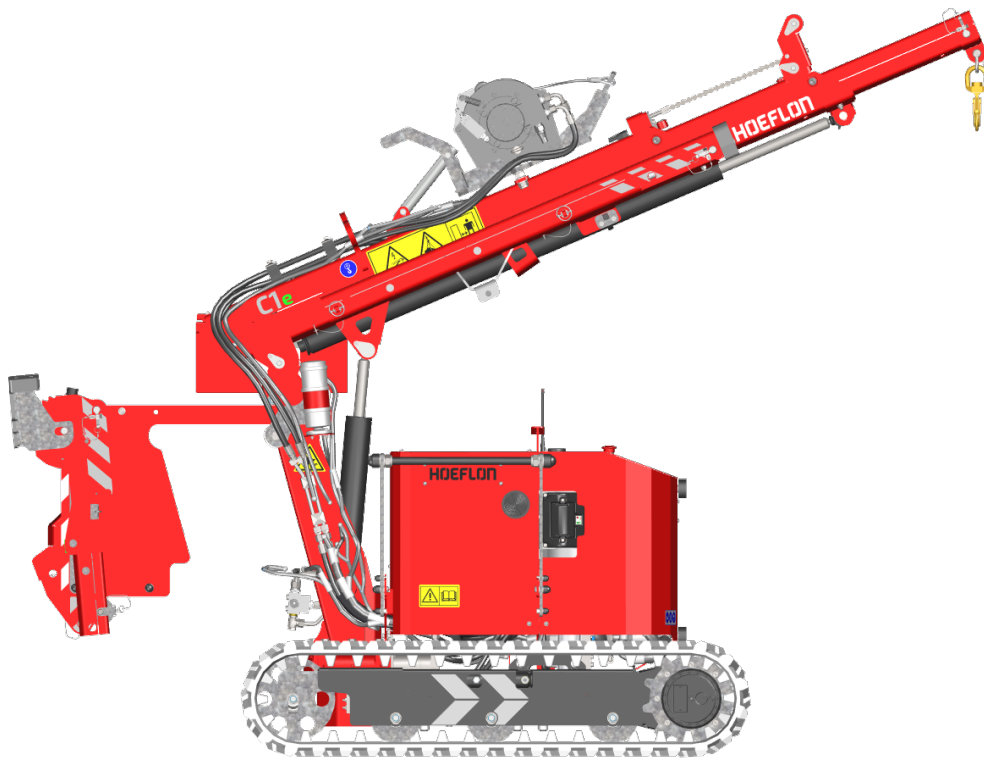


# HOEFLON®

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## User Manual

### C1 Compact crane



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Original instructions

Serial no.:

Delivery date:

Reference: U.C1.00.00.EN

Version: 3.0



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## REVISION CONTROL

Revision	Publication date	Comments	From serial number
Version: 3.0	19-5-2025		xxxx xxxx

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## **PREFACE**

Thank you for buying the Hoeflon C1 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 C1 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](http://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 C1 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:

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 manual is intended for everyone who works with or on 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.

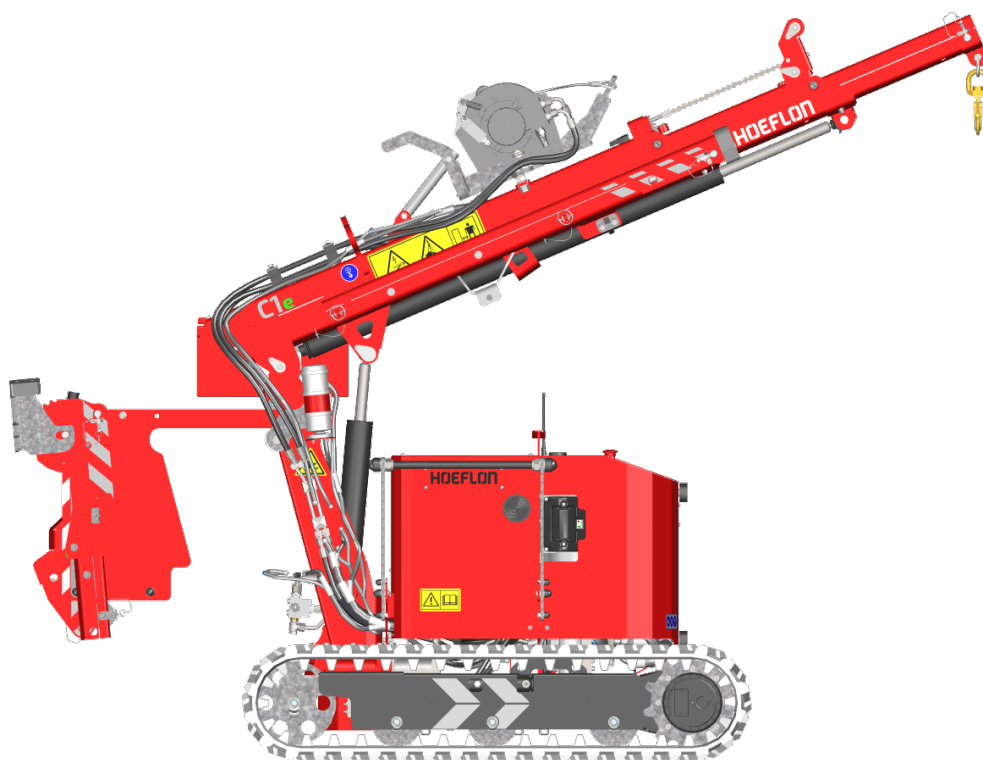
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# 1.

## 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 with a 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.

<b>HOEFLON®</b>		CE 2006/42 <b>CE</b>	
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3771 NR Barneveld	info@hoeflon.com		
THE NETHERLANDS	www.hoeflon.com		
Type	<input type="text"/>	Year of Registration	<input type="text"/>
Model	<input type="text"/>		
Serial No.	<input type="text"/>	Year of Manufacture	<input type="text"/>
Weight	<input type="text"/> KG	Max. Capacity	<input type="text"/> KG

<b>Type</b>	The type of compact crane
<b>Model</b>	The brand of the compact crane
<b>Serial no.</b>	The serial number of the compact crane
<b>Year</b>	The year the compact crane was built
<b>Weight</b>	The weight of the compact crane
<b>Max. capacity</b>	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 compact 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 compact 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 under the load.
- 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.

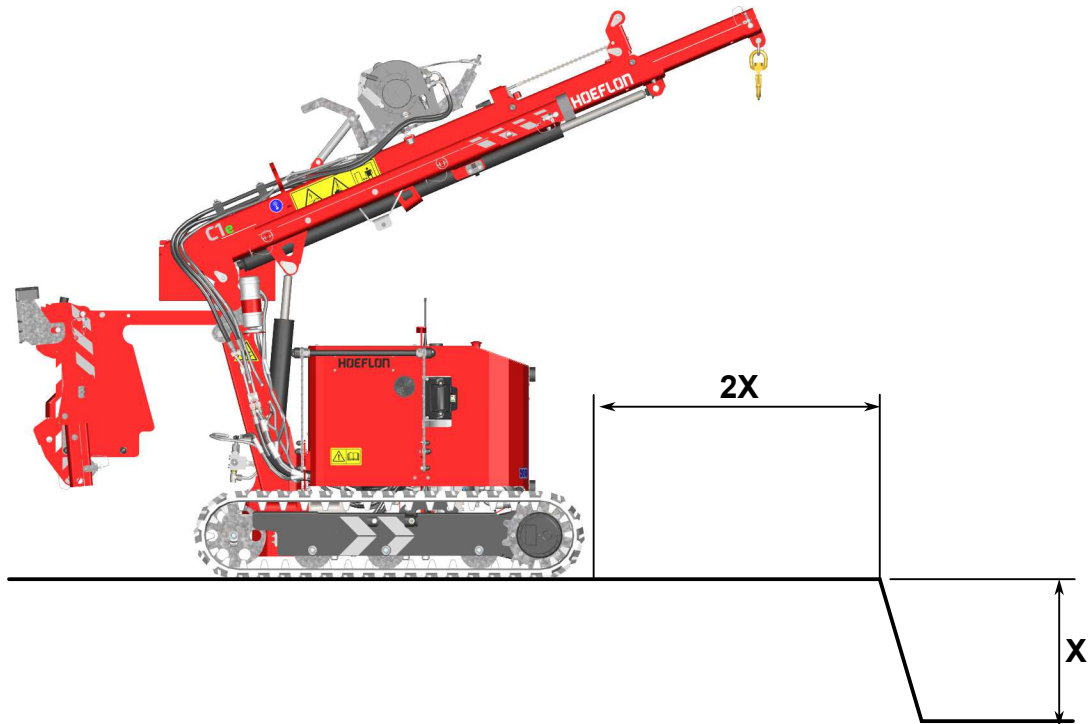
Obey the height restriction in covered areas.

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

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

## 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 and the load. Make sure that the boom 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:

- lock a lever on the remote control,
- 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.

## 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 over 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 and lower the boom.
- Retract the counterweight.

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.

## 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 batteries at the end of each day to keep them balanced and in good condition:

- Use an earthed mains supply for charging.
- Do not push the emergency stop buttons.

Do not:

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

## 2.11 After work

- Put the crane in transport position, (see 11.1.1 Put the crane in transport position).
- Do not transport the crane unless the crane and the counterweight are completely retracted, stowed and locked.
- Remove the key before that you leave the compact crane unattended.
- 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.

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"> <li>• Lower the boom</li> <li>• Retract the boom</li> <li>• Unwind the lifting cable</li> </ul>	<ul style="list-style-type: none"> <li>• Raise the boom,</li> <li>• Extend the boom,</li> <li>• Wind the lifting cable,</li> </ul>

## 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"> <li>• Foot protection is mandatory</li> <li>• Hand protection is mandatory</li> <li>• Head protection is mandatory</li> </ul>	On the cover at the front of the crane.
	Lifting point for lifting the crane	On the left and right sides of the boom.
	<ul style="list-style-type: none"> <li>• Stay away from high-voltage cables</li> <li>• Warning for hanging loads</li> <li>• Stay away from the crane</li> </ul>	On the left and right sides of the boom.
	Read the manual before operating the crane	On the two sides at the bottom of the cover.

Pictogram	Meaning	Location
	<p>Label that shows when annual inspection is due (Netherlands only)</p>	<p>On the left side at the bottom of the cover.</p>
	<p>Warning for entrapment hazard</p>	<p>On the crane at the pivot point of the boom.</p>
	<p>Warning for electrical voltage</p>	<p>On the door of the electrical cabinet.</p>
	<p>Warning for non-ionising radiation</p>	<p>On the door of the electrical cabinet.</p>



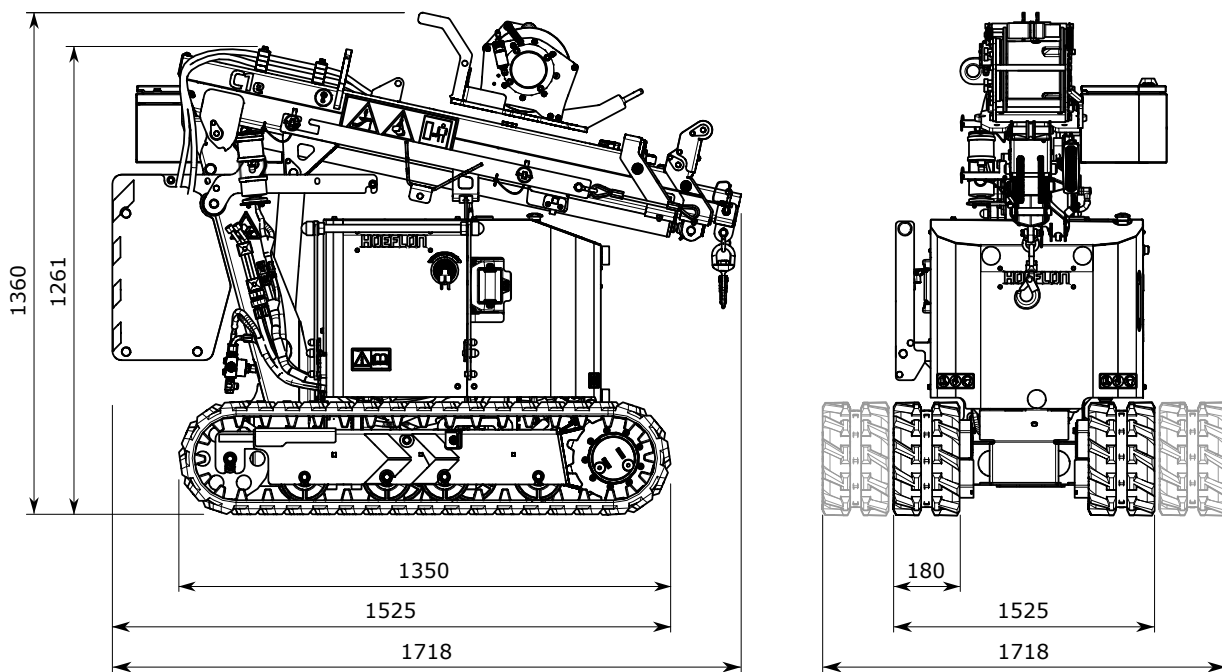
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# 3.

## Technical data

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### 3.1 Dimensions



### 3.2 Center of gravity

- Below the lifting hook at the top of the boom (boom fully lowered).
- TBD mm from the bottom of the crawler track.

## 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	136°

### 3.3.2 Crane and component weights

Total - including any counterweight	960 kg excl. winch
Counterweight	290 kg
Hook block	2.5 kg

### 3.3.3 Maximum loads

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

### 3.3.4 Environmental conditions

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

### 3.3.5 Undercarriage

Driving speed	1st gear 0.5 km/h 2nd gear 1.1 km/h
Tracks	Non marking
Maximum slope angle (forward)	15°
Maximum slope angle (rearward)	20°
Clearance angle	20°
Maximum angle from horizontal during lifting	2°
Transport position ground pressure	0.28 kg/cm <sup>2</sup>
Ground clearance	65 mm

### 3.3.6 Electrical system

System voltage (battery)	24 V
Drive system voltage	24 V
Electric motor power	2 kW
Battery pack data	2x 12 V 225 Ah
Charging	Charging voltage: 230 Vac

### 3.3.7 Hydraulic system

Volume of hydraulic tank	3,6 liter
Pump type	Gear pump
Maximum pump pressure	170 bar

### 3.3.8 Remote control

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



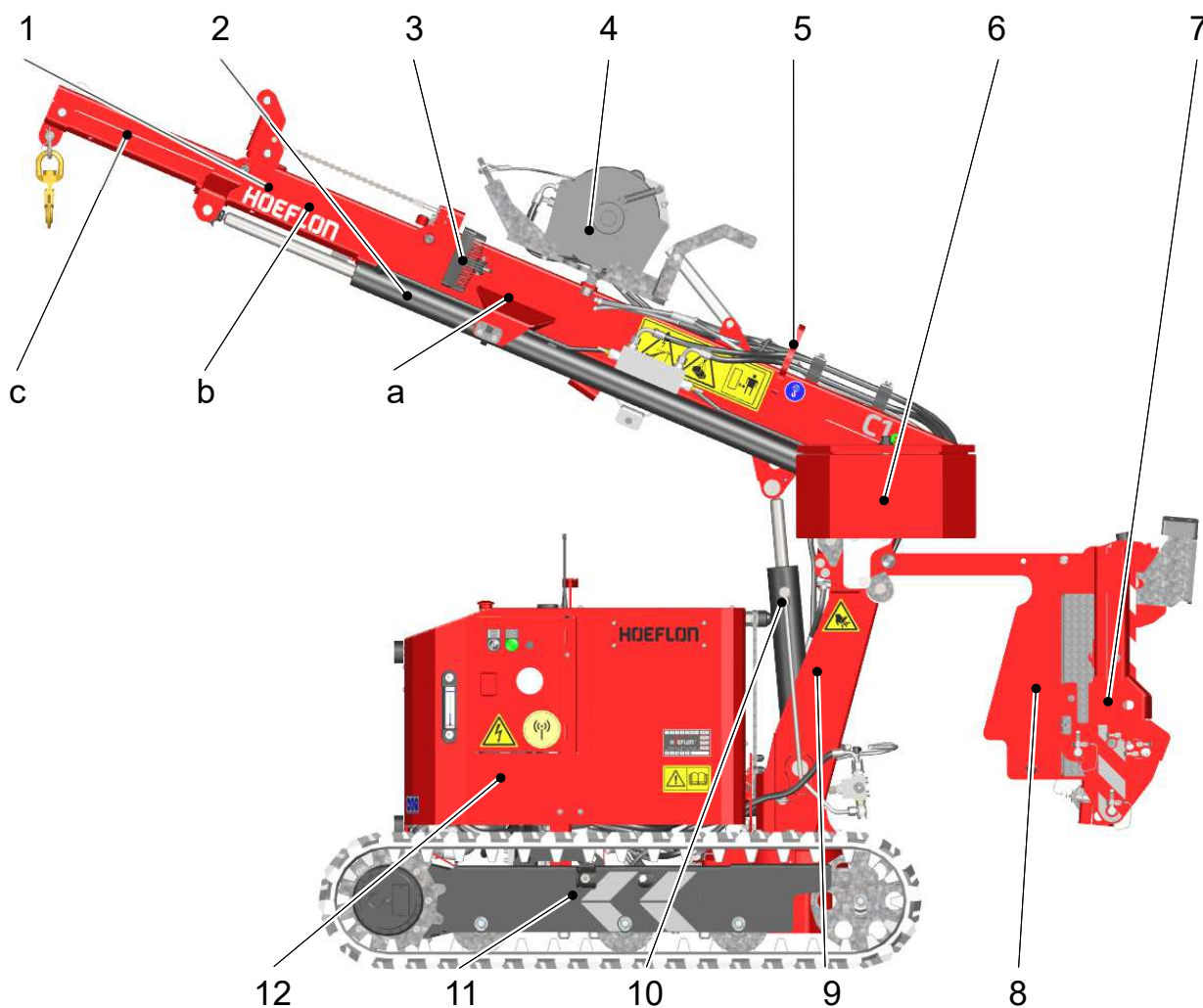
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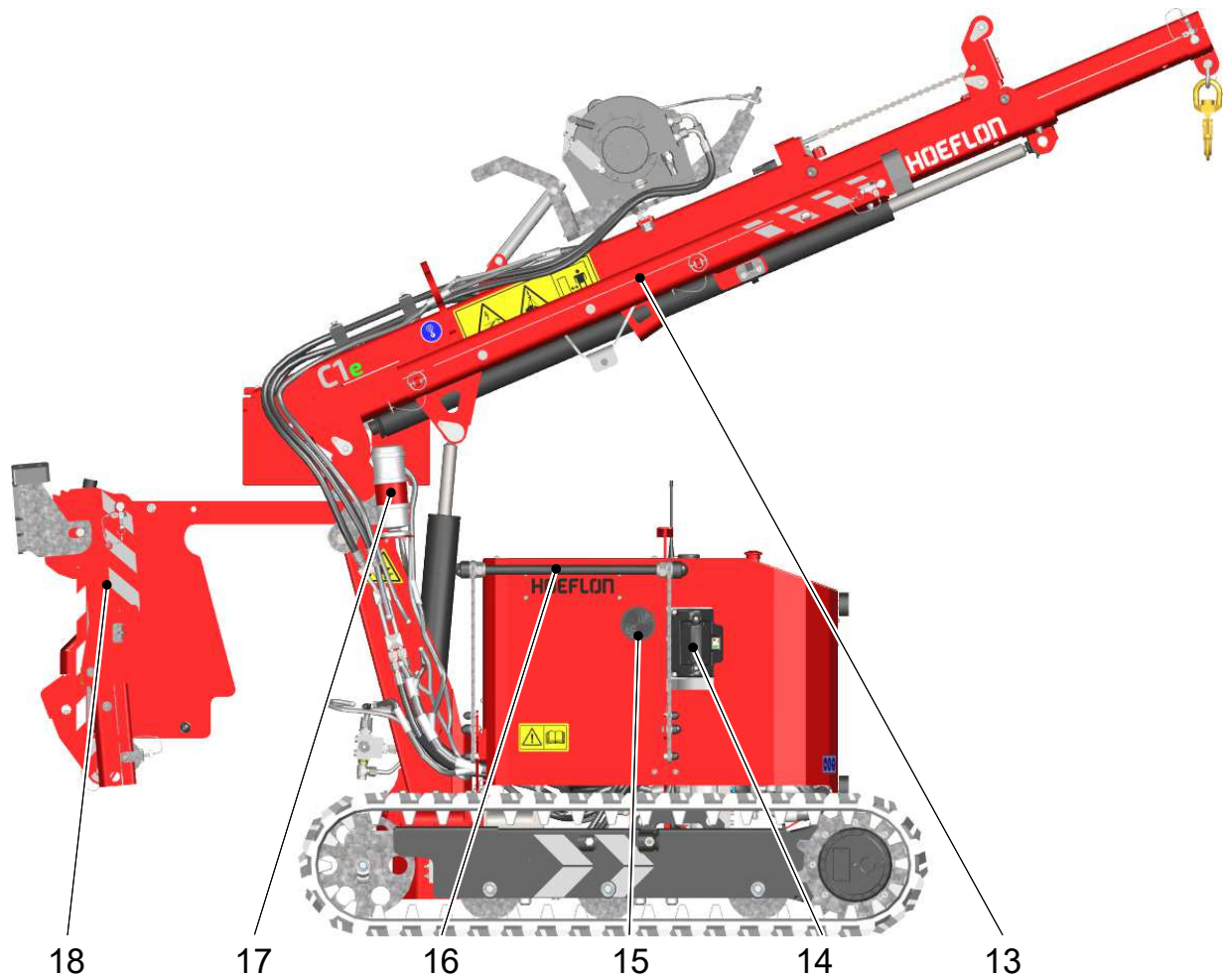
## Description

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## 4.1 Main components



- |                       |                        |
|-----------------------|------------------------|
| 1. Boom sections      | 6. Storage compartment |
| a. Main section 1     | 7. Angle adapter       |
| b. Section 2          | 8. Counterweight       |
| c. Section 3          | 9. Crane column        |
| 2. Extension cylinder | 10. Lifting cylinder   |
| 3. Work lamp          | 11. Undercarriage      |
| 4. Winch              | 12. Electrical cabinet |
| 5. Lifting point      |                        |



- |  |                       |
|--|-----------------------|
| 13. Searcher hook                      | 16. Transport support |
| 14. Battery charger for remote control | 17. Work lamp         |
| 15. Charging connector 230 V           | 18. Angle adapter     |

### 4.1.1 Boom

The boom:

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

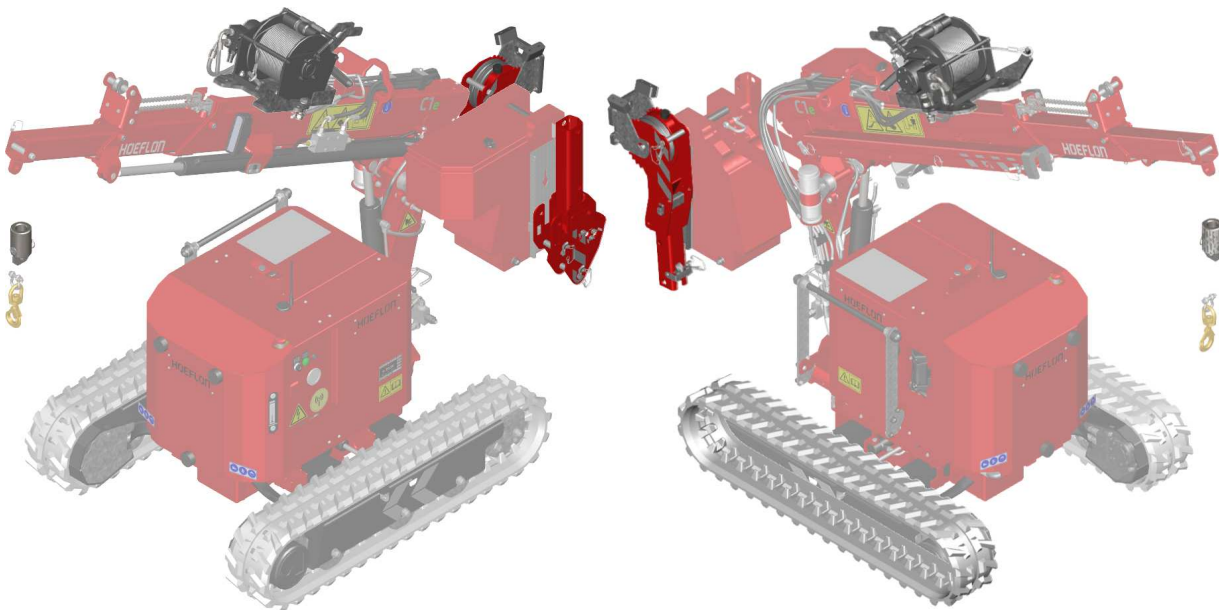
## 4.1.2 Counterweight

The counterweight:

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

## 4.2 Accessories

### 4.2.1 Winch



The winch makes it possible to lift loads with minimal movement of the boom. 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 the winch head, the hook block and the hook.

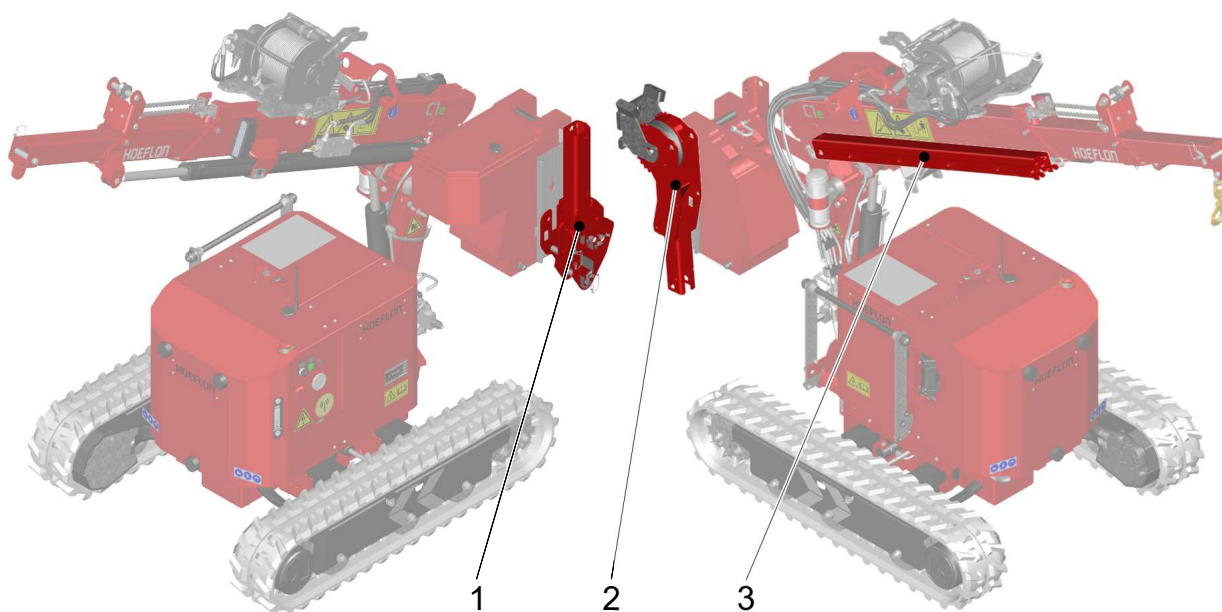


#### Caution

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

The hook block is kept in the storage box.

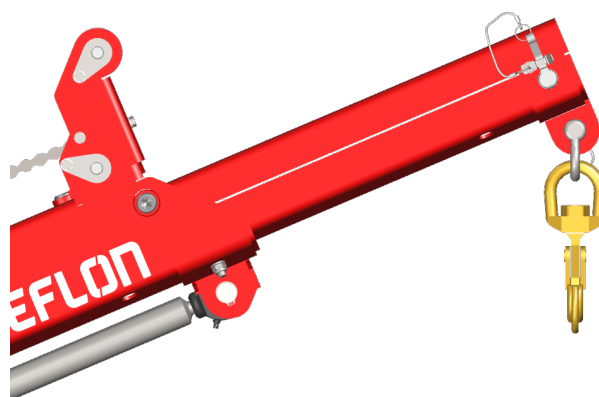
## 4.3 Lifting attachments



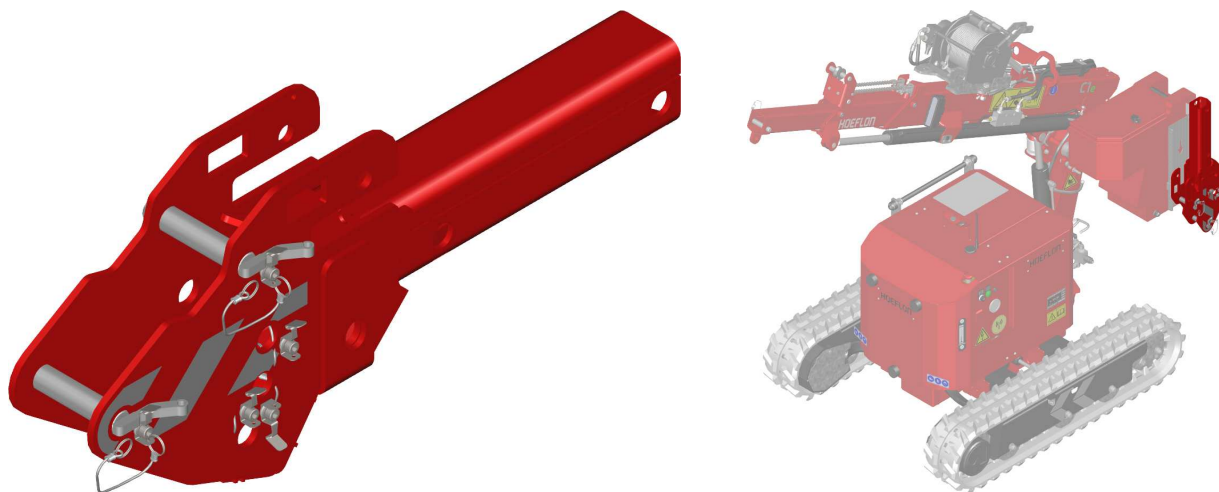
1. Lifting adapter
2. Winch head
3. Searcher hook

### 4.3.1 Hook

Use the hook to lift a load directly with the boom or the searcher hook.

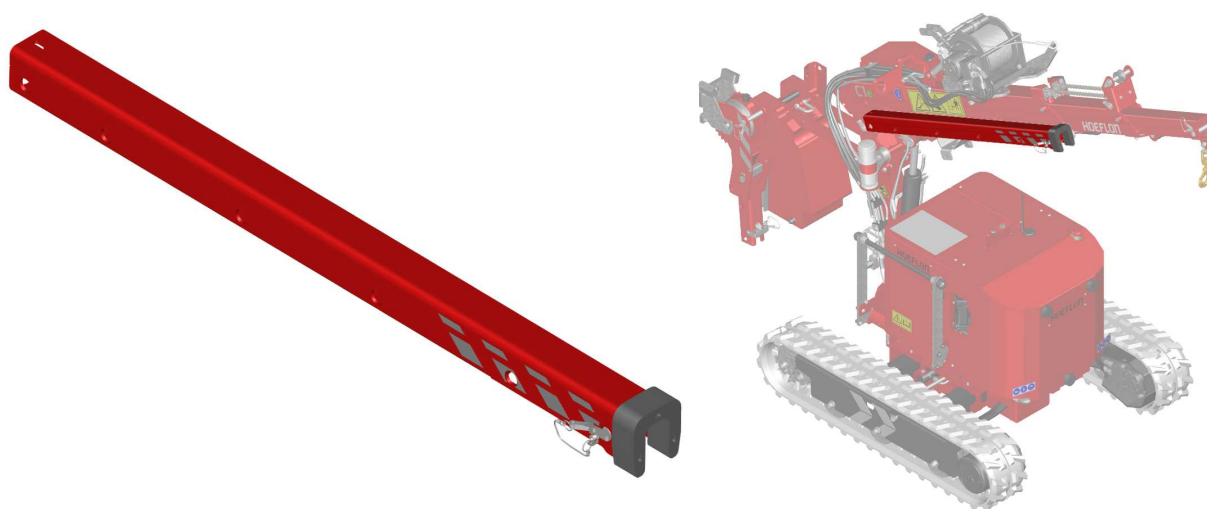


### 4.3.2 Lifting adapter



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

### 4.3.3 Searcher hook



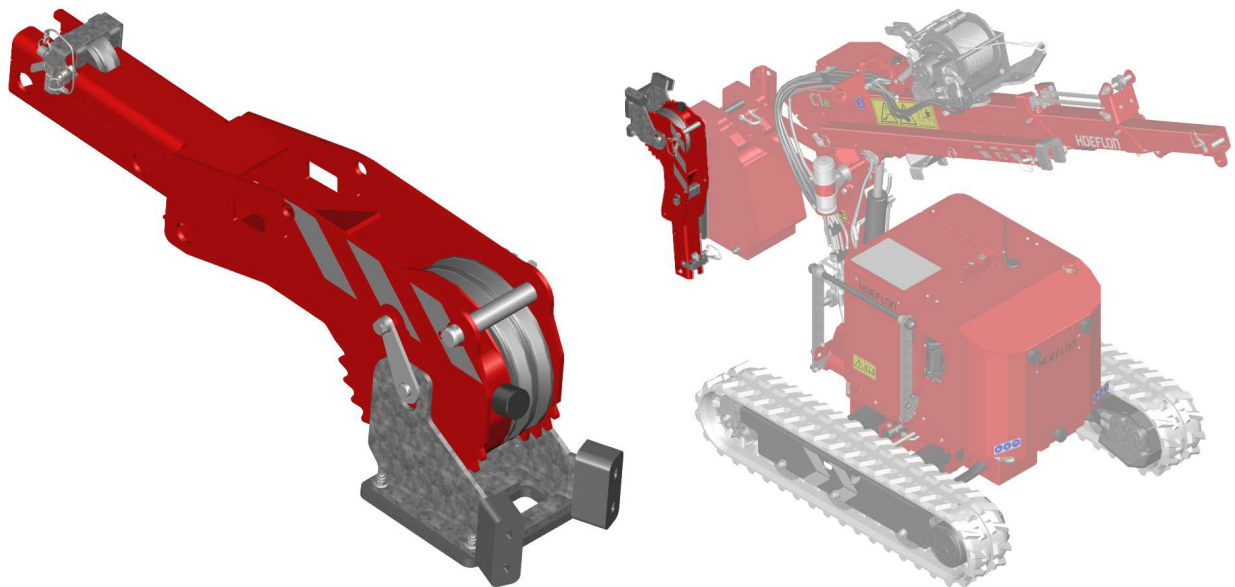
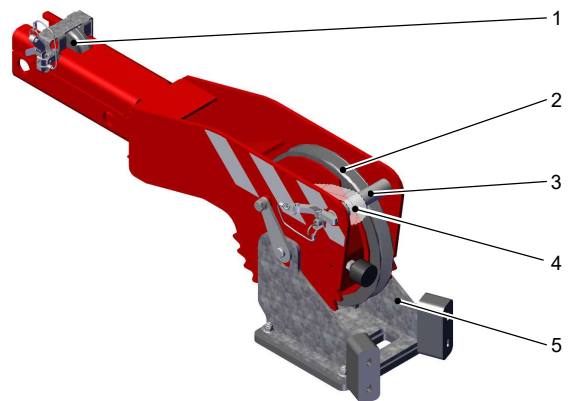
Use the searcher hook:

- 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 lifting adapter (see 7.5.3 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.

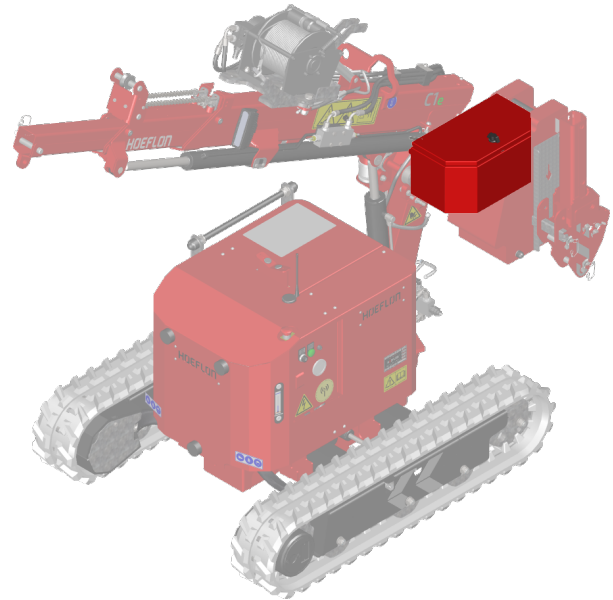


Only use the winch head in combination with the winch, the hook block and hook. Install the winch head on the lifting adapter (see 7.5.4 Winch head)

## 4.4 Storage compartment

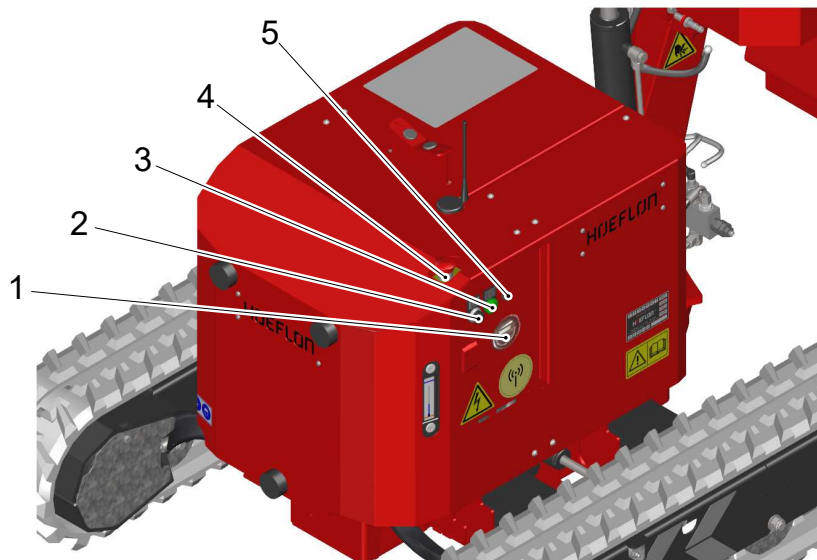
Contents of the storage compartment:


- safety helmet,
- safety vest,
- hook block,
- paint set,
- winch roller (for use with winch head).



## 4.5 Controls

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

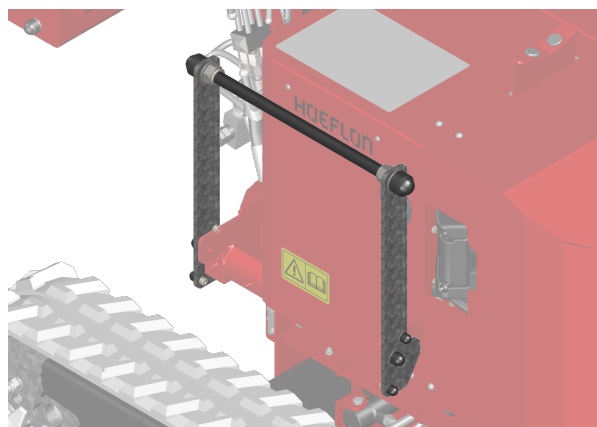


	Description	Function
1	Charge indicator	The charge indicator shows the charge in the battery (see 6.2 Charging the battery pack).
2	Main switch	0: Crane OFF 1: Crane ON
3	Indicator lamp	Is ON when the compact crane is ON
4	Emergency stop button	Push the emergency stop button to stop the crane immediately.  <div style="text-align: center;">  <p><b>Caution</b> ONLY use in an emergency. Do not use this button for ANY other reason.</p> </div>
5	Connector for wired control	For more information, (see 5.6 Wired connection of the remote control).

## 4.6 Carrier bracket

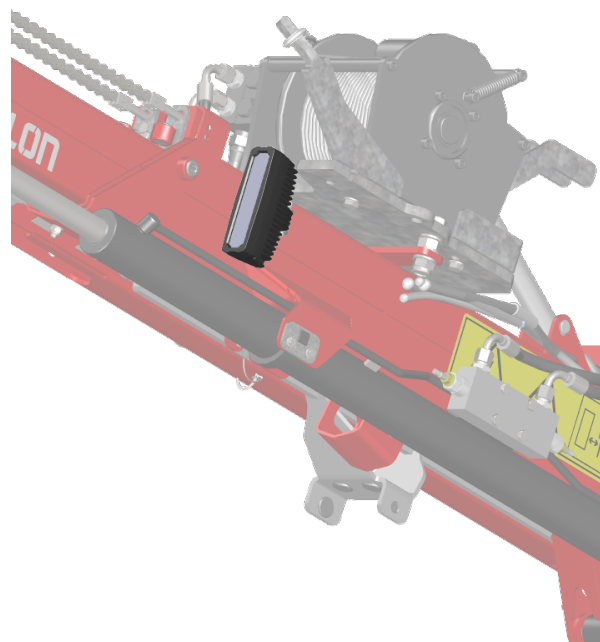
The C1 Compact crane has a carrier bracket. You can transport steel beams or similar items on these carrier arms. The carrier bracket is on the right side of the crane.

The load capacity of the carrier bracket is 150 kg.





## 4.7 Work light

A work light is installed on the left side of the boom.



## 4.8 Stack light

Light	Sound	Explanation	
		Override 100% to 110% (with the button on the remote control)	

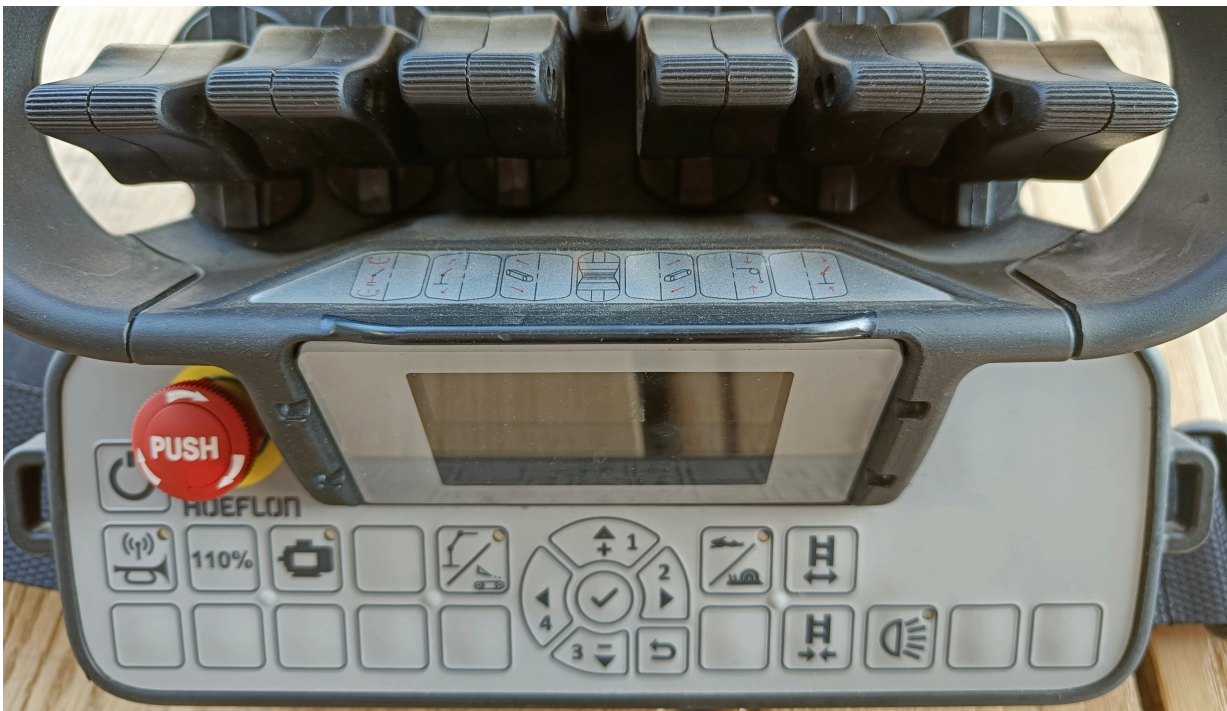
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# 5.

## Remote control

---

### 5.1 Introduction



Use the remote control to operate the C1 Compact crane.

Wear the remote control using the belt or the shoulder strap.

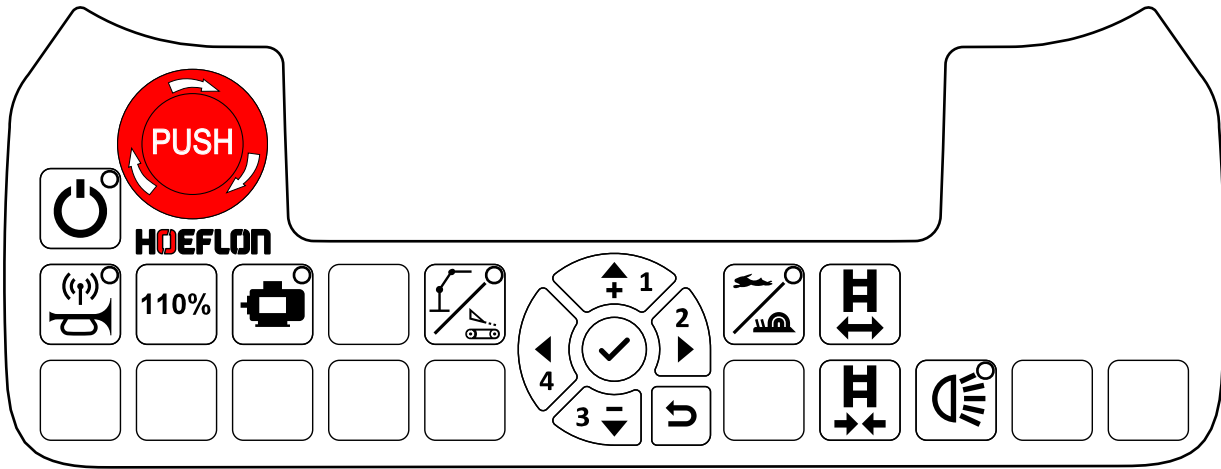
Always have a second battery in the charger.

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

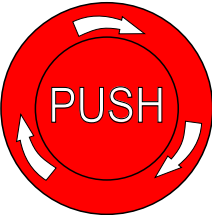



The remote control is sealed against splashed water and rain.

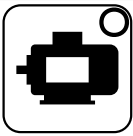





- Do not clean the remote control or the receiver with high pressure.
- Do not soak the remote control or the receiver in liquid.

## 5.2 Buttons



### 5.2.1 Control buttons for the compact crane

Button	Function	Explanation
	<b>Emergency stop</b>	<p>Immediately stops all functions of the compact crane.</p> <p><b>Caution</b>                      ONLY use in an emergency.                      Do not use this button for ANY other reason.</p>
	<b>On/Off</b>	<p>Start and stop the remote control.</p> <p>The remote control is ON when the LED is ON.</p>
	<b>Connect remote control and compact crane / operate horn</b>	<p>Push once to connect the remote control with the compact crane.</p> <p>The remote control is connected to a compact crane when the LED is ON.</p> <p>This button operates the horn when the compact crane is connected.</p>
	<b>Temporarily increase RCL</b>	(see 5.2.3 110% button)

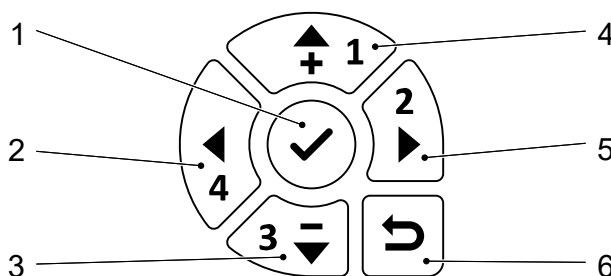
Button	Function	Explanation
	<b>Electric motor</b>	The electric motor is standby when the LED is ON.  <ul style="list-style-type: none"> <li>The electric motor moves when a lever is moved.</li> </ul>
	<b>Undercarriage / superstructure toggle</b>	LED OFF: undercarriage (driving) LED ON: superstructure (lifting)
	<b>Crane speed</b>	Toggle between fast and slow precise compact crane movements.  The compact crane is in fast moving mode when the LED is ON.
	<b>Extend crawler tracks</b>	Extend the crawler tracks in undercarriage mode.
	<b>Retract crawler tracks</b>	Retract the crawler tracks in undercarriage mode.
	<b>Work light</b>	Starts or stops the work light.



**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 navigate through the menus.
- to set the lever configuration (see 5.3.3 Function mapping)
- to calibrate the levers(see 5.3.2 Calibration)

### 5.2.3 110% button


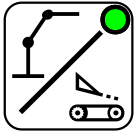
The Rated Capacity Limiter (RCL) is increased to 110% while you push the button.

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 Undercarriage / Superstructure toggle button

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



**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.

## 5.3 Levers

### 5.3.1 Default configuration

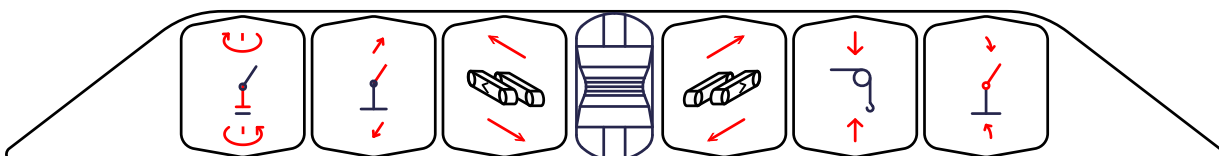


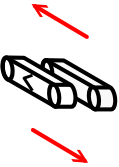
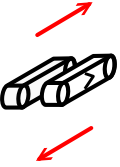




Image	Function	Pull the lever rearward	Push the lever forward
	Slew boom	Left	Right
	Extend / retract boom	Retract	Extend
	Operate crawler track (L – left)	Backwards	Forwards
	Operate crawler track (R – right)	Backwards	Forwards
	Winch in / out	In	Out
	Lift / lower boom	Lift	Lower

### 5.3.2 Calibration

#### Inspect the lever calibration

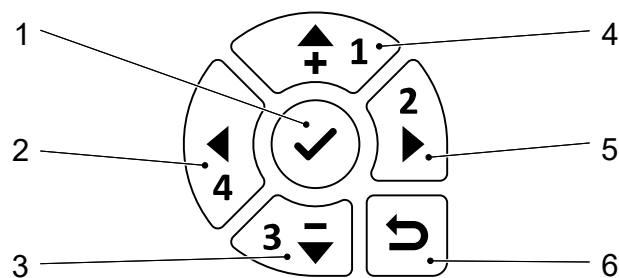
Calibrate the levers if:

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



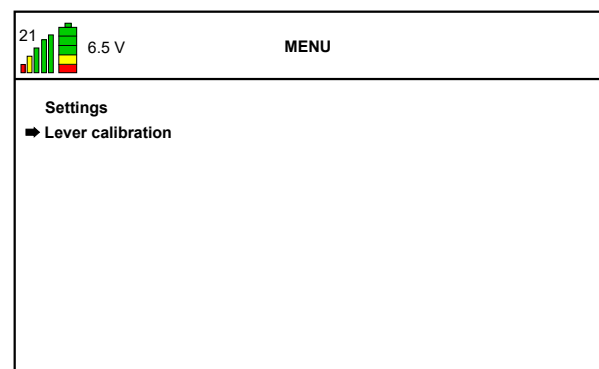
#### Note

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 compact crane.

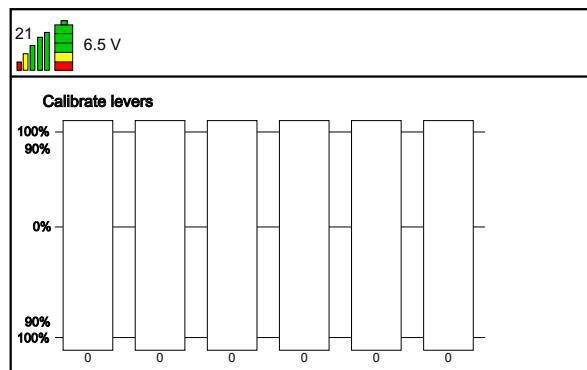


- |                           |                            |
|---------------------------|----------------------------|
| 1. Confirm / go into menu | 4. Up                      |
| 2. Left                   | 5. Right                   |
| 3. Down                   | 6. Return to previous menu |

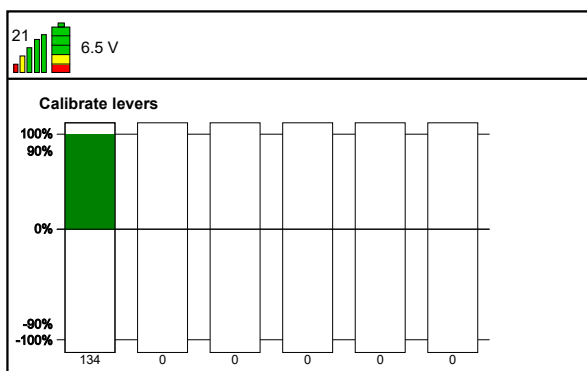
1. Start the remote control.
2. Push the **Confirm** button (1) to go into the *remote control menu*.
3. Push the **Down arrow** to move the arrow in the display until it points to *Lever calibration*.



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



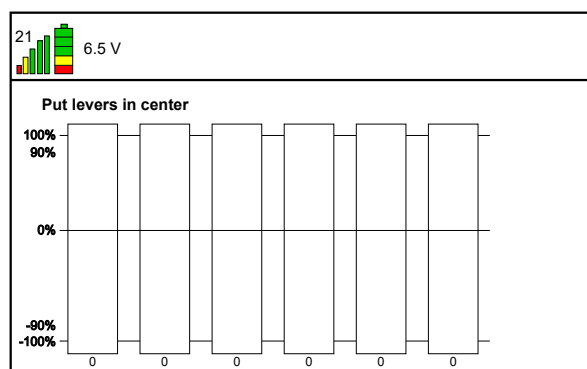
5. When you operate a lever the related bar must turn green.
6. Fully push the lever.
  - The green bar must be at 134.
  - Recalibrate the lever if the green bar is at 134 before fully pushing the lever.
  - Recalibrate the lever if the green bar is not at 134.



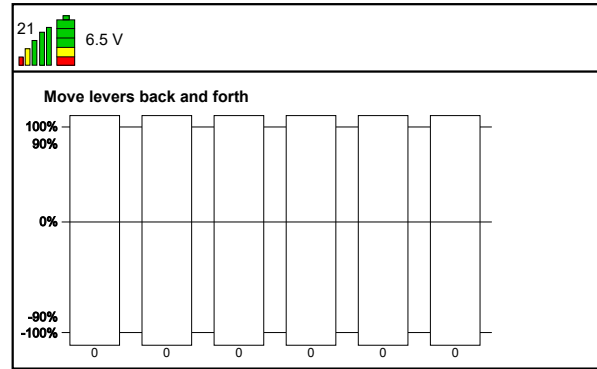
7. Fully pull the lever.
  - The green bar must be at -134.
  - Recalibrate the lever if the green bar is at -134 before fully pulling the lever.
  - Recalibrate the lever if the green bar is not at -134.
8. Do steps 6 and 7 again for the remaining levers.

**Calibrate the levers:**

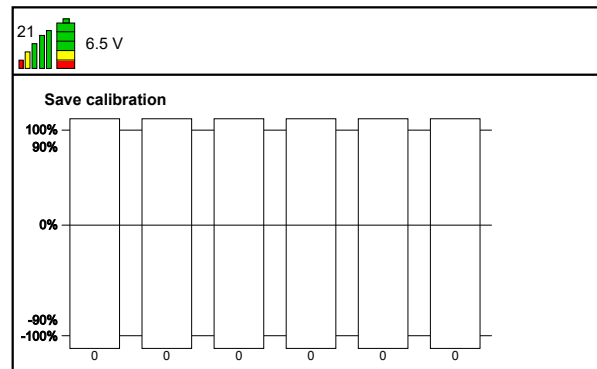
1. Push the **Confirm** button (1). The text *Put levers in center* is now displayed.
2. Make sure that all the levers are in the center position.



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.

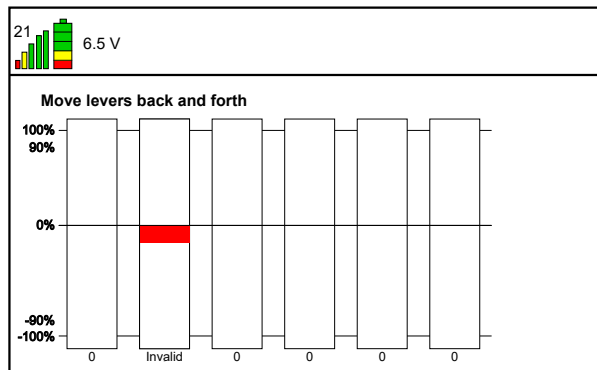


### Incorrect calibration

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

Do not use the compact crane.

Speak to your your Hoeflon dealer.

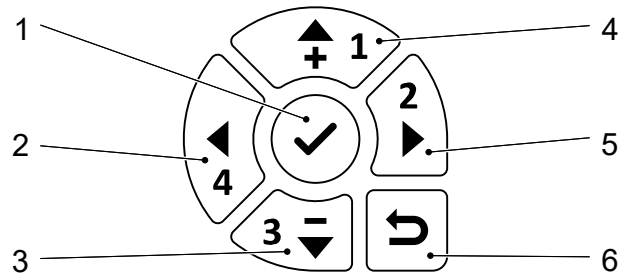


### 5.3.3 Function mapping

The default lever configuration is set by Hoeflon. You can change the configuration so that the C1 Compact crane is operated in the same way as many truck-mounted cranes.

Speak to your Hoeflon dealer or Hoeflon Support B.V. if you want to make a different lever configuration.

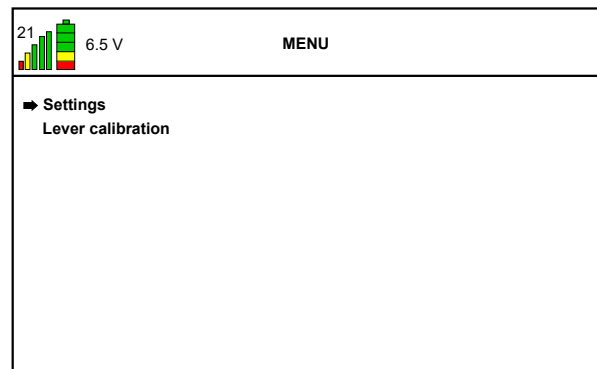
Set the lever configuration to "custom"



- |                           |                            |
|---------------------------|----------------------------|
| 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*.


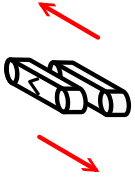
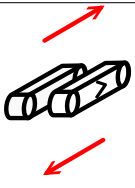


3. Make sure that the arrow in the display points to *Settings*.
  - Push the **Up arrow** or the **Down arrow** to move the arrow in the display until it points to *Settings*.



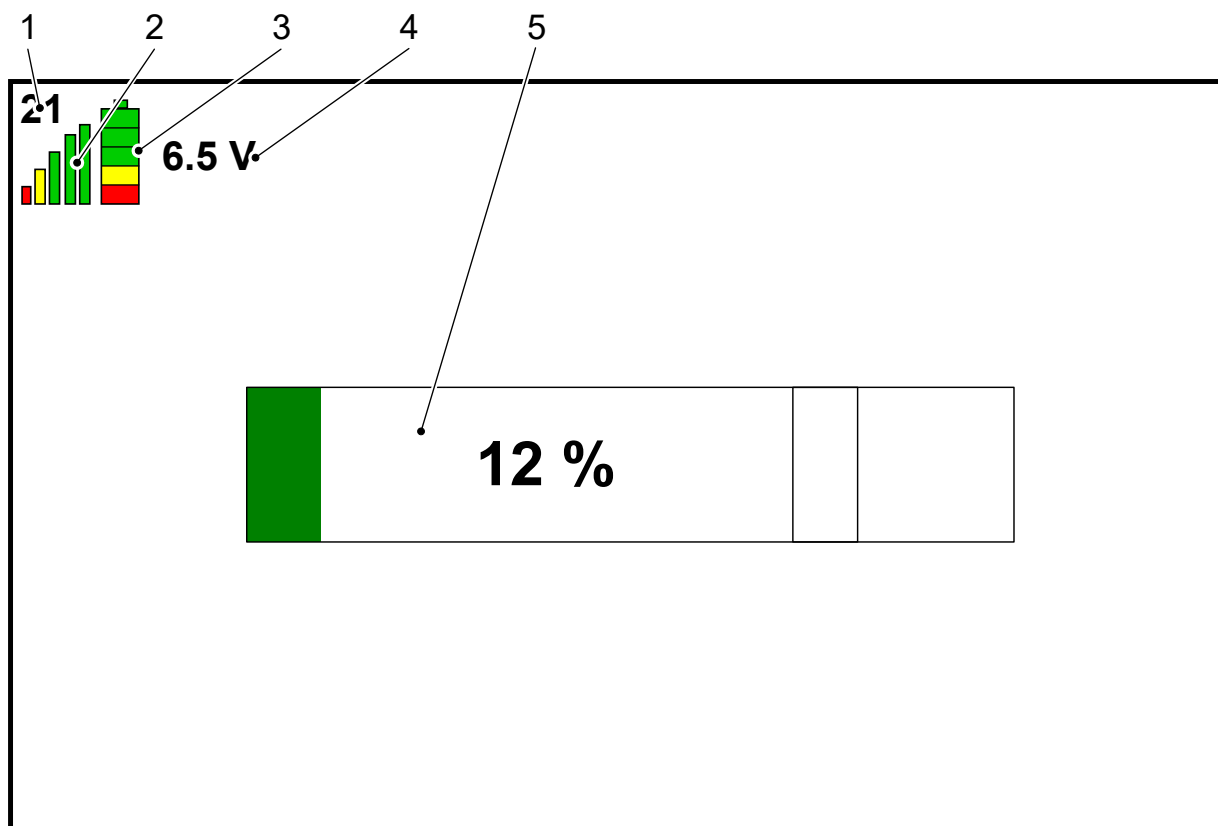
4. Push the **Confirm** button (1) to go into the *Settings menu*.
5. Push the **Down arrow** (3) to move the arrow in the display until it points to .
6. Push the **Right arrow** (5).
7. Select the configuration that you want.
8. Push the **Back** button (6) two times to go back to the home screen.

Custom configuration

Image	Function	Lever backwards	Lever forwards
	Slew main boom	Left	Right

Image	Function	Lever backwards	Lever forwards
	Boom up and down	Boom up	Boom down
	Extend/retract main boom	Retract	Extend
	Operate crawler track (L – left)	Backwards	Forwards
	Operate crawler track (R – right)	Backwards	Forwards
	Raise and lower winch	Raise	Lower

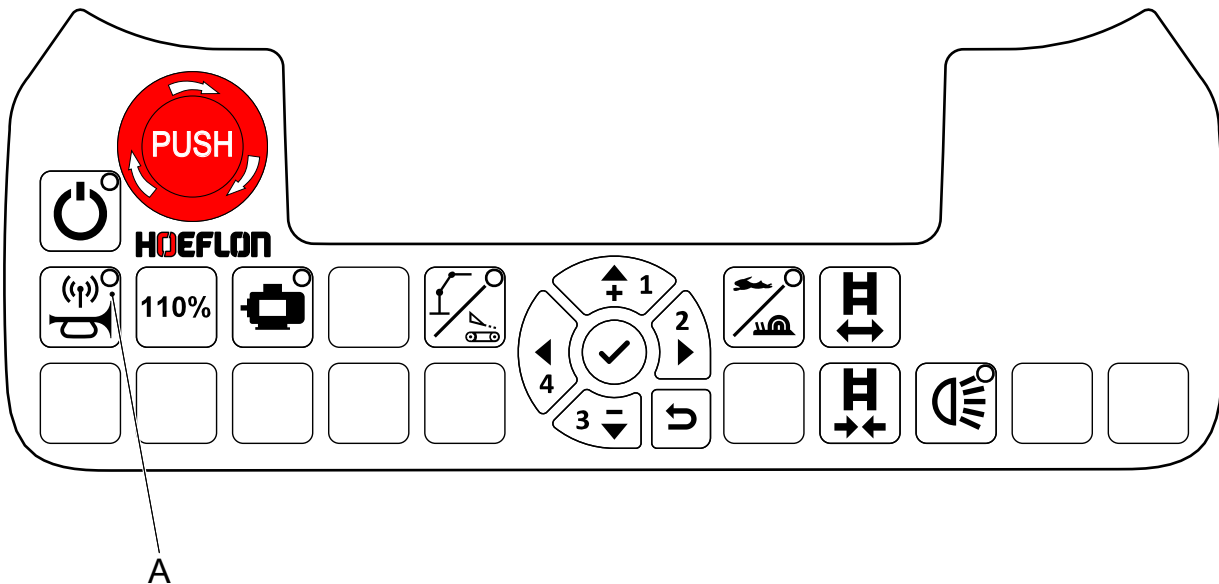
### 5.4 Display



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 5.7 Replacing and charging the remote control battery)
4	Voltage	The battery voltage of the remote control.

No.	Function	Explanation
5	Load percentage	(Current load / maximum load) x 100%
		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.

### 5.5 Connect with the compact crane



1. Start the compact 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 compact 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 compact 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 compact 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 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 Wired connection of the remote control

Connect the remote control to the C1 Compact crane with the emergency control cable:

- if the remote control cannot make radio contact
- if the display screen is broken
- if the battery of the remote control is empty and you do not have a replacement battery.



#### Caution

When the emergency control cable is connected, the display screen no longer works.



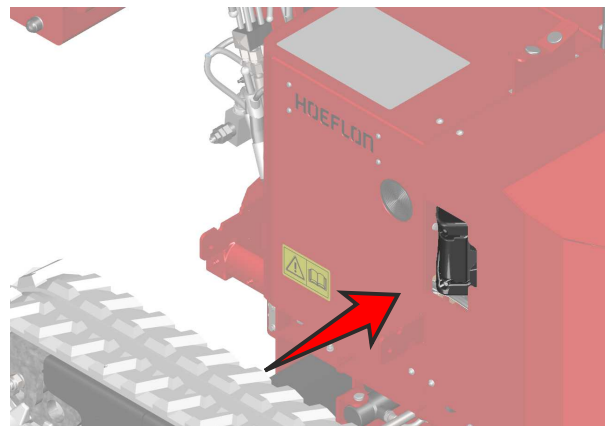
1. Connect one end of the emergency control cable into the socket on the bottom of the remote control.
2. Connect the other end of the cable into the socket on the electrical cabinet of the compact crane.
3. Use the remote control as usual.

## 5.7 Replacing and charging the remote control battery

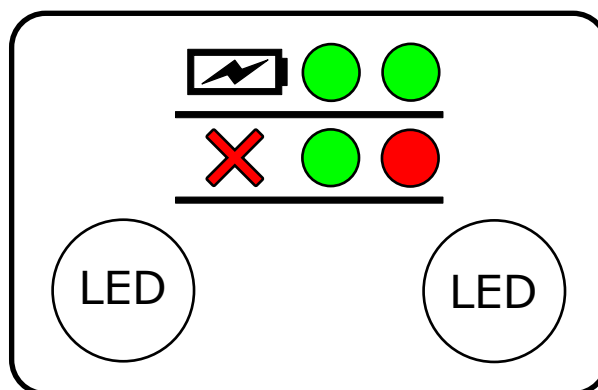
1. Push in the two clips (1) on the remote control next to the battery (2).
2. Remove the discharged battery (2) from the remote control.
3. Push the charged battery in position.
  - The two clips lock in position, listen for both "clicks".



4. Put the discharged battery in the battery charger.
  - The battery only charges if the main switch is in position 1.
  - The battery charger is on the right side of the electrical cabinet.
5. Start the remote control and make contact with the compact 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 2 seconds	Power supply connected	Off	Battery not connected
Continuous red	Fault	Continuous green	Battery fully charged
		Flashing green	Charging
		Continuous red	Fault in the battery

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# 6.

## Care of the battery pack

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### 6.1 Introduction

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

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

If the compact crane's key switch is ON:

- Most of the charge goes to operating the compact 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 Charging the battery pack



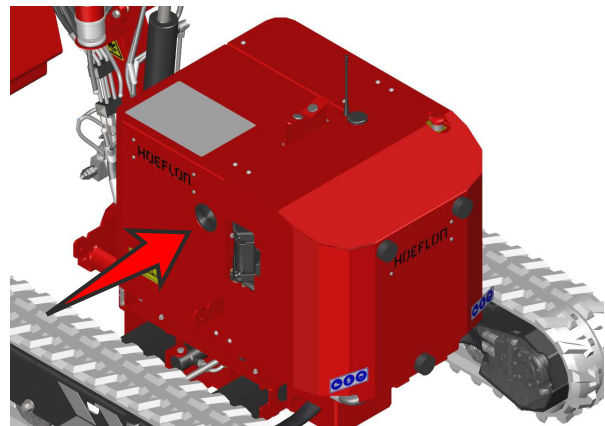
### Warning

An explosive gas mixture is formed during charging.

Make sure that, during charging, there is:

- no open flame near the compact crane during charging,
- no spark discharge near the compact crane during charging,
- sufficient ventilation.

1. Set the main switch on the electrical cabinet to position **0**.
2. Use the charging cable from the side of the electrical cabinet 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 power grid.
  - Charging starts automatically.
5. The charge indicator shows the charge in the battery.
6. Disconnect the charging cable from the power grid when the battery is fully charged.
7. Let the power cable wind back into the electrical cabinet.



## 6.3 Inspection of the 24V battery

Inspect the battery every five times that the battery is charged.

Make sure that there is enough liquid in the battery.

Add demineralized water until the liquid level is between the lines on the side of the battery.



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# 7.

## Installation

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### 7.1 Daily inspection (inspection before use)

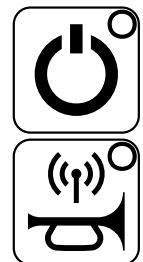
1. Make sure that the compact crane is in transport position:
  - the boom is down,
  - the counterweight is retracted.
2. Make sure that the compact crane is OFF.
3. Remove the key.
4. Do a visual inspection of the compact crane. Make sure that:
  - there are no oil leaks,
  - there is enough oil in the hydraulic tank, fill if necessary, (see 9.7.2 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 9.11.1 Inspect the tension).
  - If the tension is not correct tighten or loosen the track (see 9.11.3 Tighten a crawler track) or (see 9.11.2 Loosen a crawler track)
  - Speak to your Hoeflon dealer if a track is damaged. Do not continue working.

6. Make sure that:
  - the control levers return to the center position automatically,
  - the emergency stop button operates correctly,
  - the chains are not worn or damaged,
  - the lifting cable, hook and other lifting accessories are not worn or damaged,
  - all rotating and moving parts are not worn or damaged.
7. Speak to your Hoeflon dealer if you find any:
  - damage ,
  - leaks,
  - worn parts,
  - broken parts.
8. Start the compact crane (see 7.2.1 Starting the compact crane).

## 7.2 Starting and stopping the compact crane

### 7.2.1 Starting the compact 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 compact crane.
2. Turn the key switch on the electrical cabinet to position **1**.
3. Start the remote control with the **On/off** button.
4. Connect the remote control to the compact crane with the **Connect remote control and compact crane** button.



## 7.2.2 Stopping the compact 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.

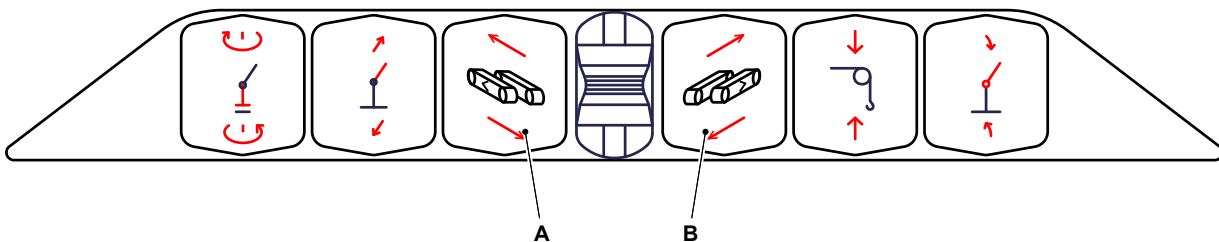
1. Make sure that the compact crane is in a safe and stable position.
2. Stop the remote control.
  - Use the On/Off button on the remote control.
3. Stop the compact crane.
  - Turn the key switch to position **0**.
4. Connect the compact crane to the mains supply if it is necessary to charge the batteries.



## 7.3 Moving the compact crane

### 7.3.1 Using the controls

1. Start the compact crane (see 7.2.1 Starting the compact crane).
2. Connect the remote control (see 5.5 Connect with the compact crane)
3. Make sure that:
  - the crane is folded in.
  - the counterweight is retracted.
4. Select "Undercarriage control" (see 5.2.4 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 compact crane.
  - The levers return to the center position automatically.

### 7.3.2 Maximum slope angles when moving the compact crane

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

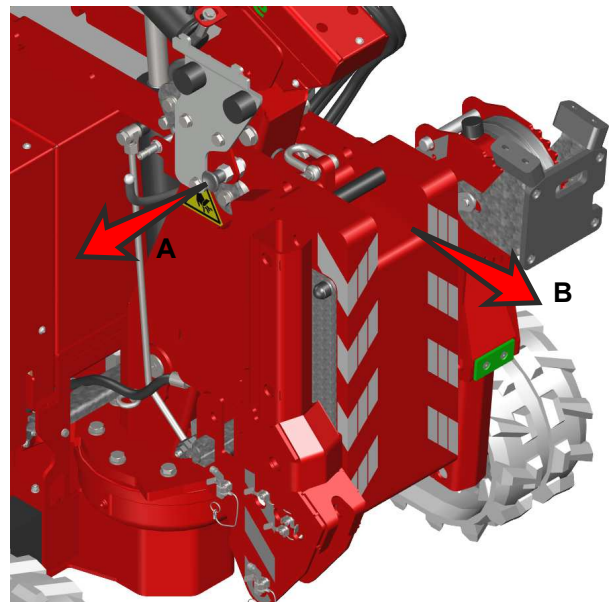
### 7.4 Setting the counterweight



#### Note

In the illustration, the storage box has been removed for clarity.

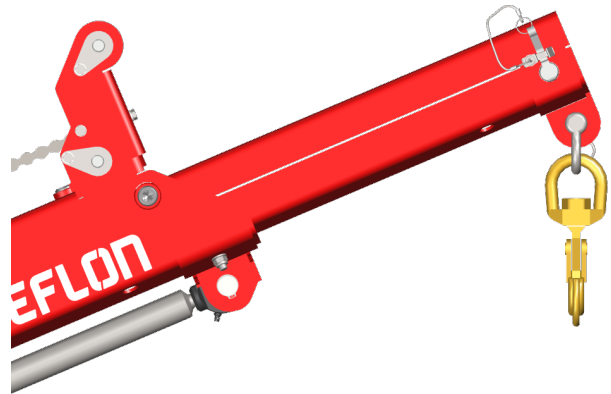
1. Pull the lock bolt OUT (A).
2. Fully pull the counterweight back (B).
  - Use the handle on the counterweight
3. Push the lock bolt back.
  - Make sure that it goes into the locking hole on the bar.



## 7.5 Attaching an attachment

### 7.5.1 Hook

Use a shackle to attach the hook to the boom or searcher hook.



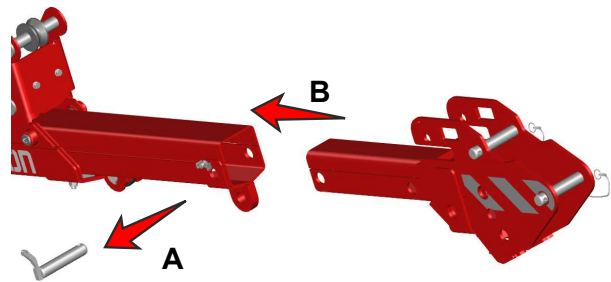
#### Caution

Make sure that the shackle is correctly rated.

### 7.5.2 Lifting adapter

Install the lifting adapter in the end of the boom.

1. Turn and remove the locking pin (A).
2. Fully insert the lifting adapter.
  - Make sure that the holes align.
3. Put the locking pin back and turn it into the clip.
  - Make sure that it fully engages in the clip.



### 7.5.3 Searcher hook

Install the searcher hook on the lifting adapter



Attach the searcher hook to the lifting adapter.

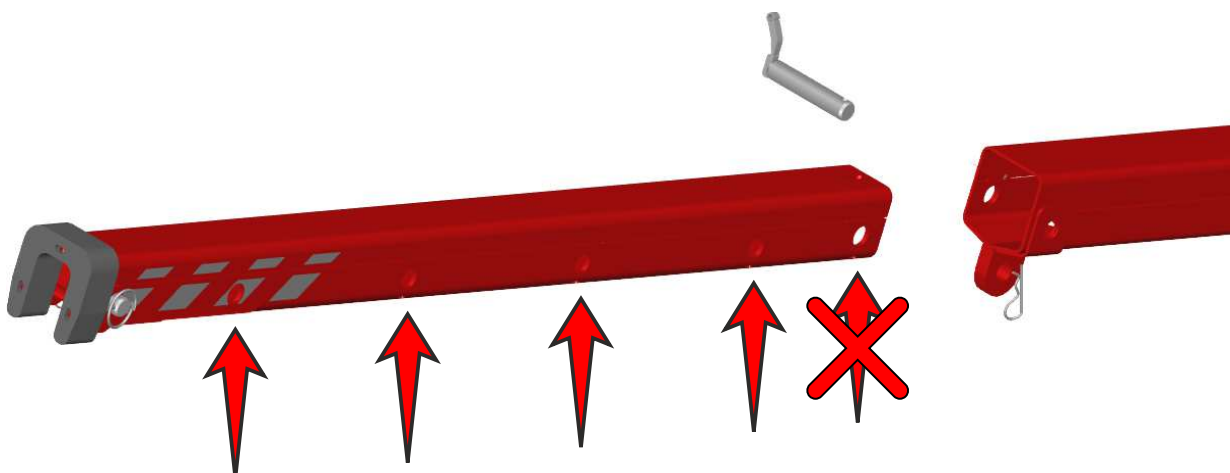
1. Unlock and remove the two pins.
2. Move the searcher hook into the lifting adapter.
  - Make sure that the searcher hook is turned to the correct angle.
3. Insert the two pins and lock them.

Install the searcher hook in the boom



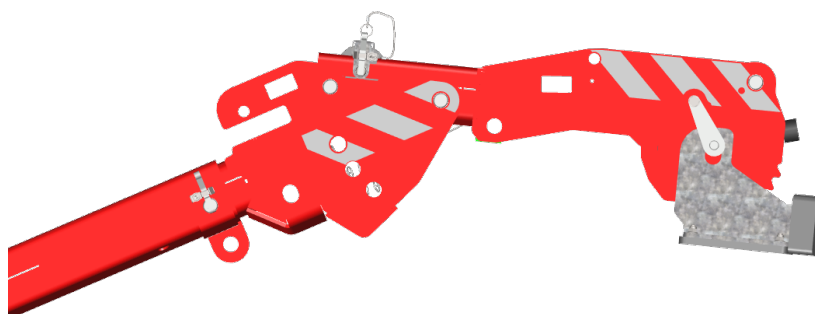
**Note**

Do not use the first hole on the searcher hook.



1. Unlock and remove the pin from the boom.
2. Move the searcher hook into the boom.
3. Select the additional length that is necessary.
4. Align the corresponding holes.
5. Insert the pin and lock it.

### 7.5.4 Winch head



Attach the winch head to the lifting adapter.

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

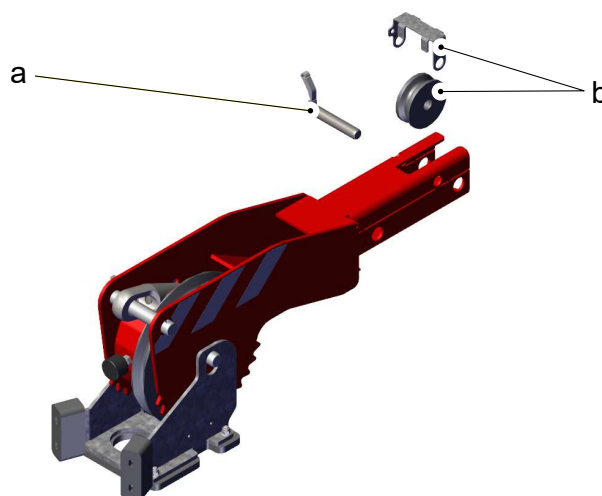


#### Note

In this description the winch head is installed at an angle of  $-30^\circ$ .

If it is necessary to install the winch head with a different angle ( $0^\circ$ ,  $15^\circ$  or  $30^\circ$ ) 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 storage compartment.
- d. Attach the winch head to the lifting adapter as specified above.



## 7.6 Prepare the crane for use with the winch

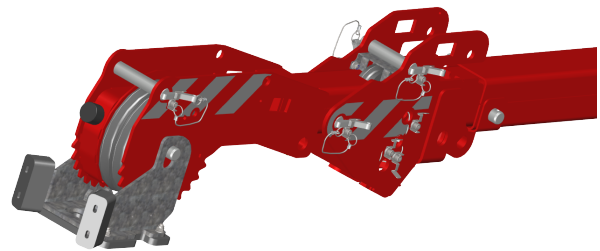


### Caution

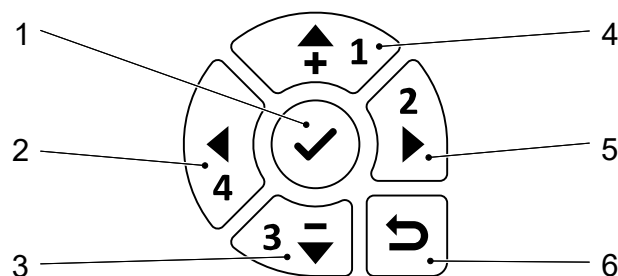
Do not use the winch without the hook block.

If you do not use a hook block the cable will not wind correctly and will tangle.

1. Install the lifting adapter (see 7.5.2 Lifting adapter)
2. Install the winch head (see 7.5.4 Winch head)



### 7.6.1 Identify the winch

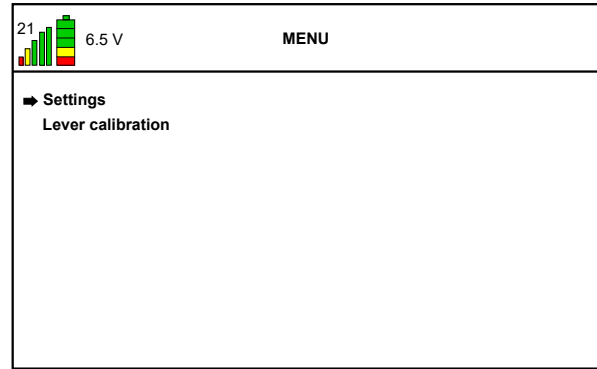


- |                           |                            |
|---------------------------|----------------------------|
| 1. Confirm / go into menu | 4. Up                      |
| 2. Left                   | 5. Right                   |
| 3. Down                   | 6. Return to previous menu |

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*.

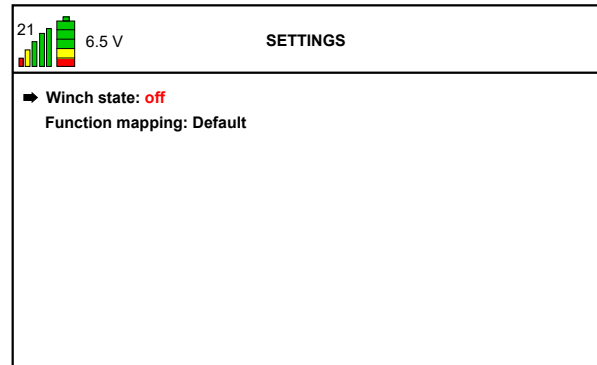
- Push the **Up arrow** (4) or the **Down arrow** (3) to move the arrow in the display until it points to *Settings*.



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. Select the winch state that you want.



**Caution**

Do not use the winch without the hook block.

If you do not use a hook block the cable will not wind correctly and will tangle.

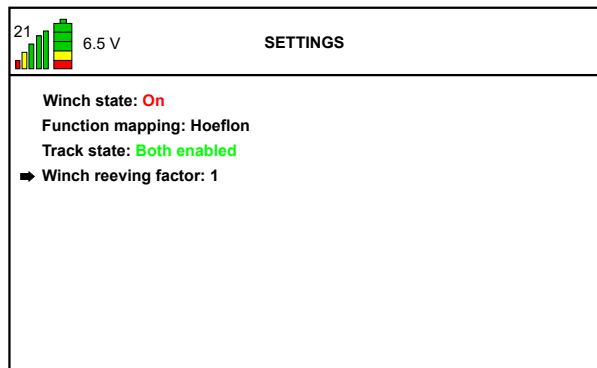
7. Push the **Back button** (6) two times to go back to the *Settings* menu.

8. The winch is now identified.

**7.6.2 Move the winch cable in position**

1. Set the remote control to use the winch (see 7.6.1 Identify the winch).

2. Set the *Winch reeving factor*.



3. Use the "winch lever" to unwind the winch.

4. Pull the cable while slowly unwinding the cable at the same time



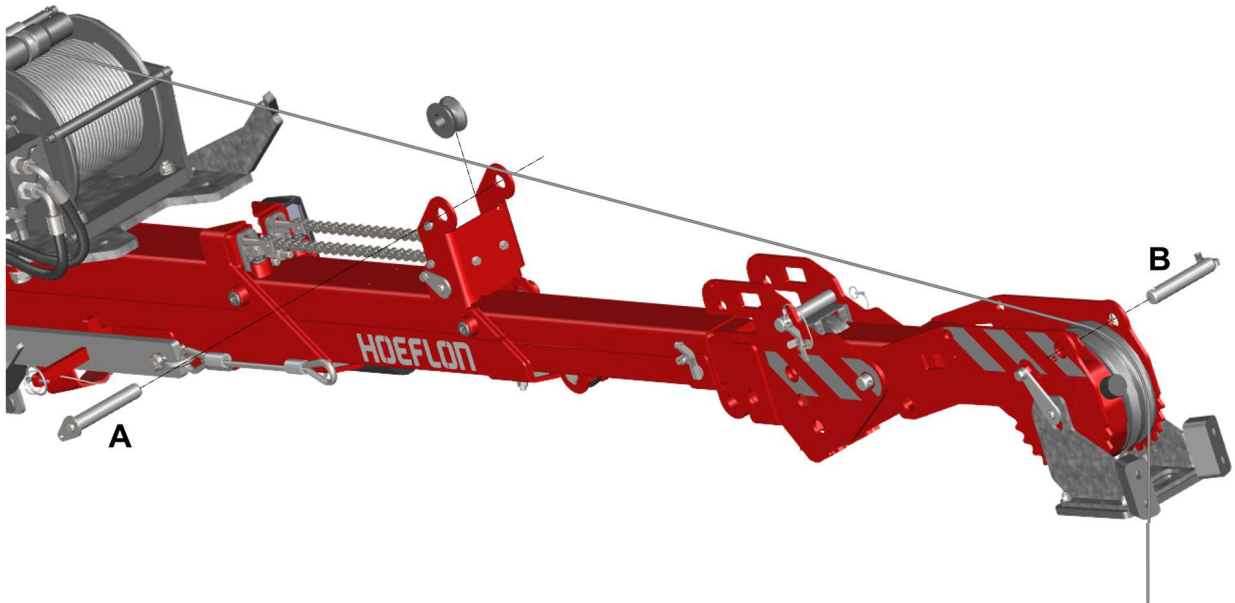
**Caution**

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

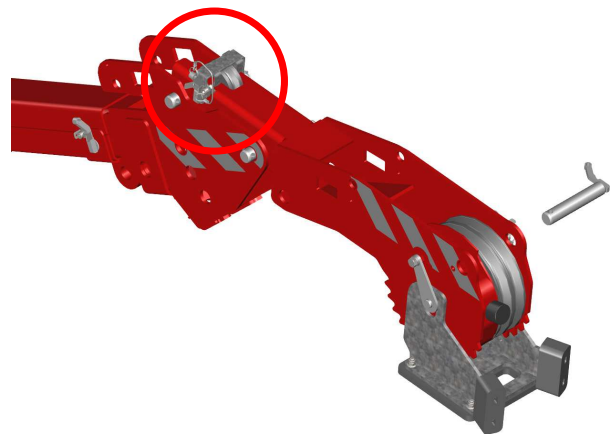
Pull the cable tight with your hand when you wind or unwind the cable.

**Caution**

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



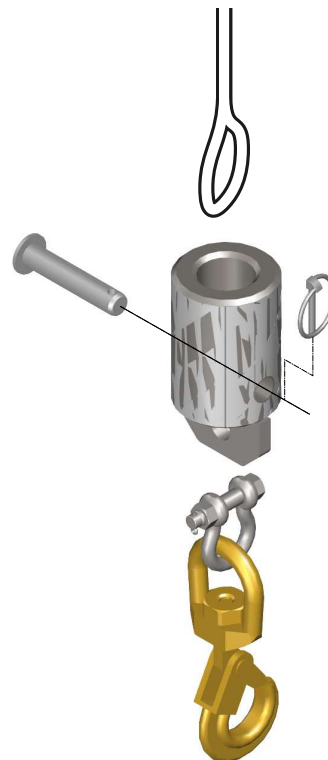
1. Remove the pins A and B.
2. Pull the cable under the first roll on the boom.
3. If you have the lifting adapter set at  $-30^\circ$ .
  1. Remove the pin and the bracket.
  2. Move the winch cable over the roll.
  3. Put the pins and the bracket back in position.



4. Move the cable over the roll in the winch head.
5. Put the pins A and B back in position.
6. You can now use the winch without reeving.

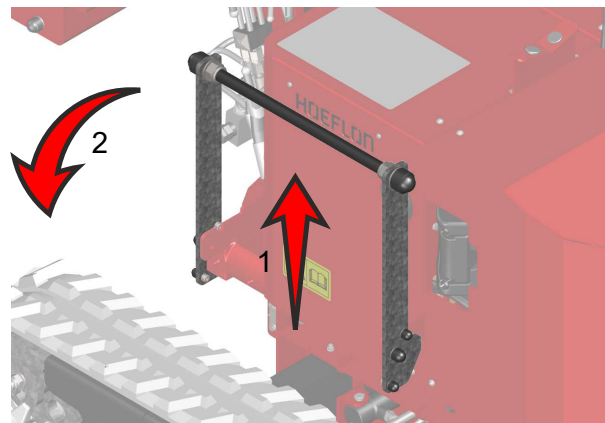
### 7.6.3 Attaching the hook block

1. Remove the clip and the pin from the hook block.
2. Insert the winch cable in the open end of the hook block.
3. Insert the pin.
4. lock the pin with the clip.
5. Attach the hook to the hook block (see 7.5.1 Hook).



### 7.7 Preparing the carrier bracket

1. Move the carrier bracket UP.
2. Turn the carrier bracket out



**Note**

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



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# 8.

## Operation

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### 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 C1 Compact crane has several options to get the best results of your compact crane.

Boom only	Searcher hook in boom	Boom and winch
Easy / quick setup		
Easy control	Easy control	Most complex controls
Heaviest lift	Long reach	
Minimum repeatability		High repeatability
Minimum flexibility		Highest flexibility
Reach under	Reach under	Reach under
	Reach over	Reach over

### 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 Emergency stop

#### 8.4.1 Location

The emergency stop button is:

- On the top of the electrical cabinet.
- On the remote control.

#### 8.4.2 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.

### 8.4.3 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. Connect the remote control with the crane(see 5.5 Connect with the compact crane).

## 8.5 Lifting the load with the boom

The crane lifts with maximum capacity when you lift with only the boom.

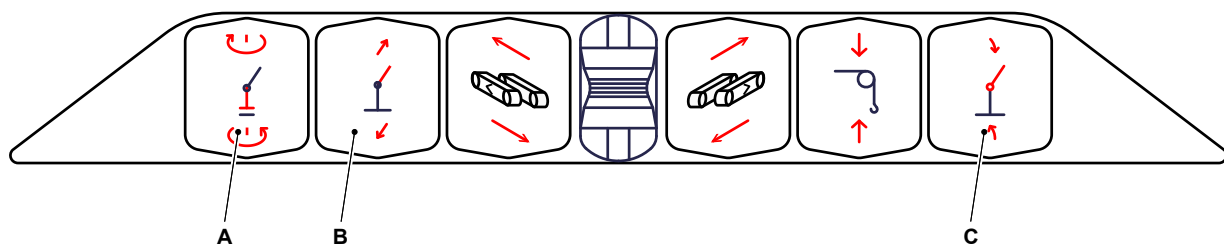
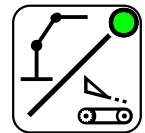
Only use the boom for a lift if:

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

Use the hook when you do a lift with the boom.

### 8.5.1 Controls

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

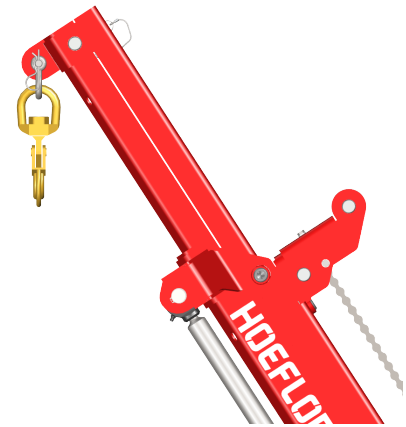


- A. Rotate boom,
- B. Extend / Retract boom,
- C. Raise / lower boom.

For more information (see 5.3.1 Default configuration)

### 8.5.2 Maximum angle of the boom when lifting with the hook

The maximum angle of the boom when you lift with the hook is 75°.



### 8.6 Lifting with 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.



#### Caution

Do not use the winch without the hook block. If you do not use a hook block the cable will not wind correctly and will tangle.

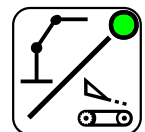
#### 8.6.1 When to use

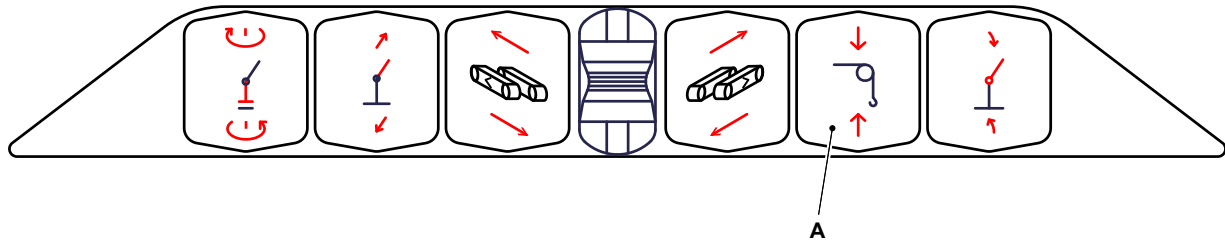
Use the winch in combination with the boom for a lift if:

- the load is not too heavy (see Appendix)
- you need to repeat the same lift many times,
- you need to lift over things (walls, embankments)

#### 8.6.2 Controls

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



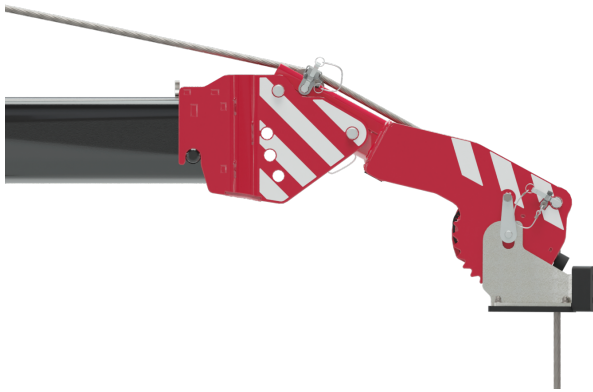


A. Wind / unwind winch.

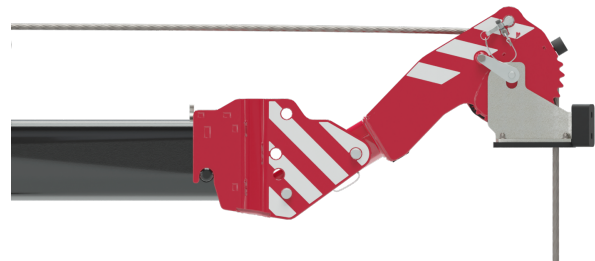
For more information (see 5.3.1 Default configuration)

### 8.6.3 Winch head positions in the lifting adapter

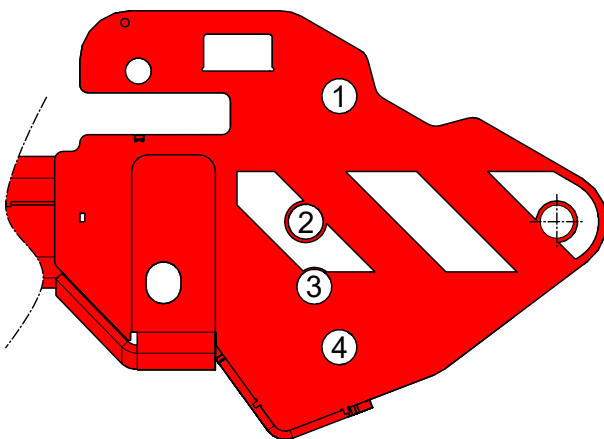
The maximum angle of the boom is limited when you install the winch head in the lifting adapter. If the angle becomes more than this maximum angle the hook block will touch the boom.



*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°

Winch head position	Minimum angle - Boom	Maximum angle - Boom
Winch head in boom	0°	70°
Installed in the adjustable section with the winch head in the lower position (1)	0°	75°
Winch head in position 2	0°	70°
Winch head in position 3	0°	65°
Installed in the adjustable section with the winch head in the upper position (4)	0°	60°

## 8.7 Removing and installing the counterweight

### 8.7.1 Remove the counterweight

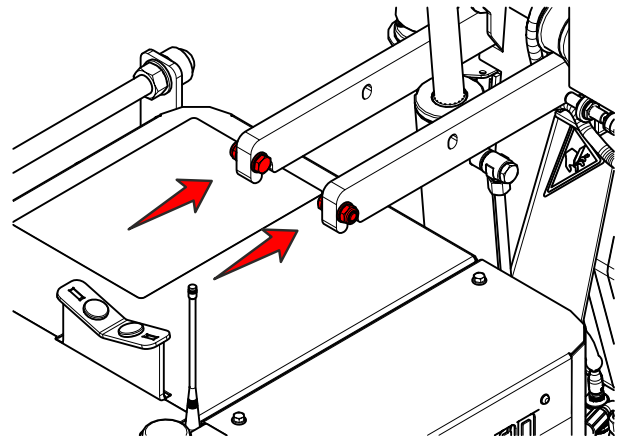
Remove the counterweight:

- to reduce the net weight of the crane.
- when you replace the wear parts in the sliding frame.

You can use the boom of the crane or a second crane to lift the counterweight.

#### Preparations

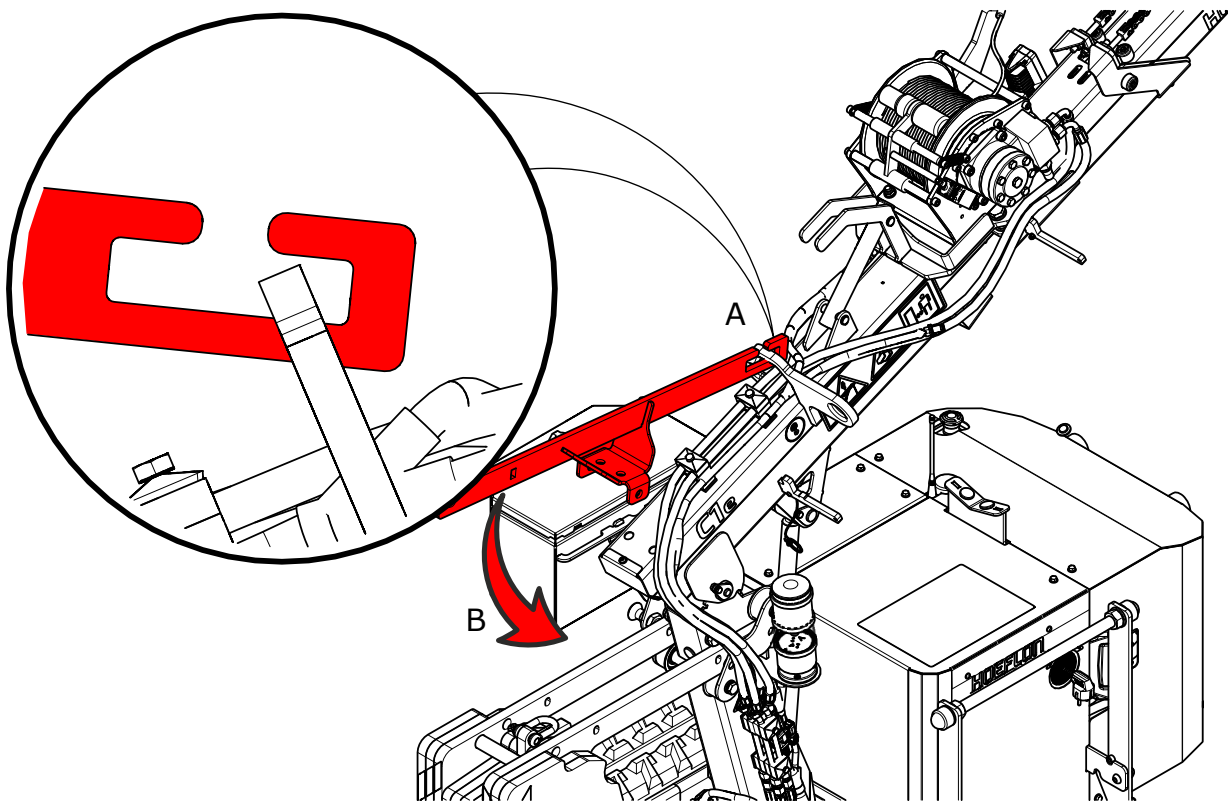
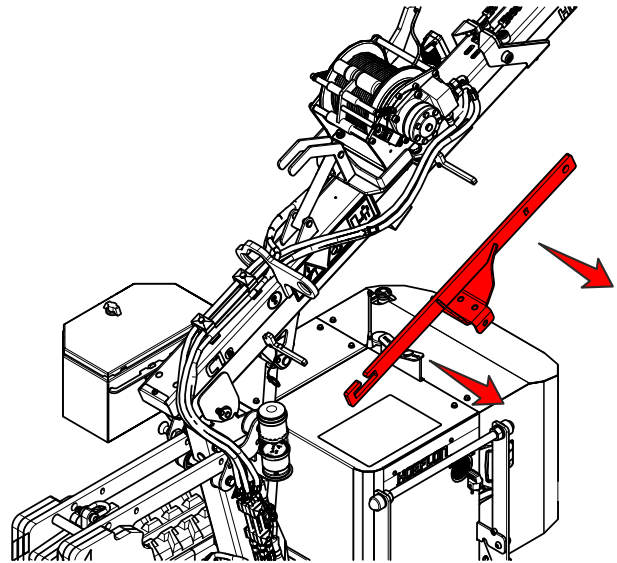
1. Make sure that the crane is level.
2. Remove the accessories from the counterweight.
3. Remove the searcher hook.
4. Remove the safety bolts and nuts from the front of the counterweight arm.
  - Put them in a safe place.
5. Pull the counterweight to extend it.



#### Caution

Make sure you do not fully extend the counterweight. It will fall out of the crane.

- Remove the lifting bracket of the counterweight from the boom.



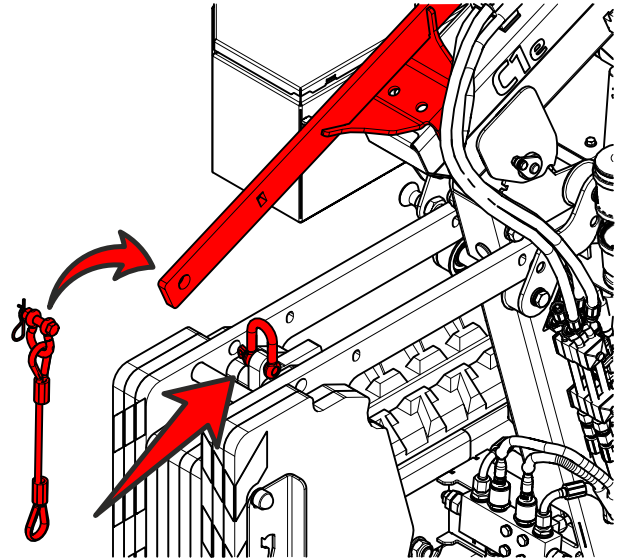
- Move the hook of the lifting bracket of the counterweight through the eye of the lifting bracket of the crane (A).
- Turn the lifting bracket of the counterweight down so that its foot is on the boom.



**Caution**

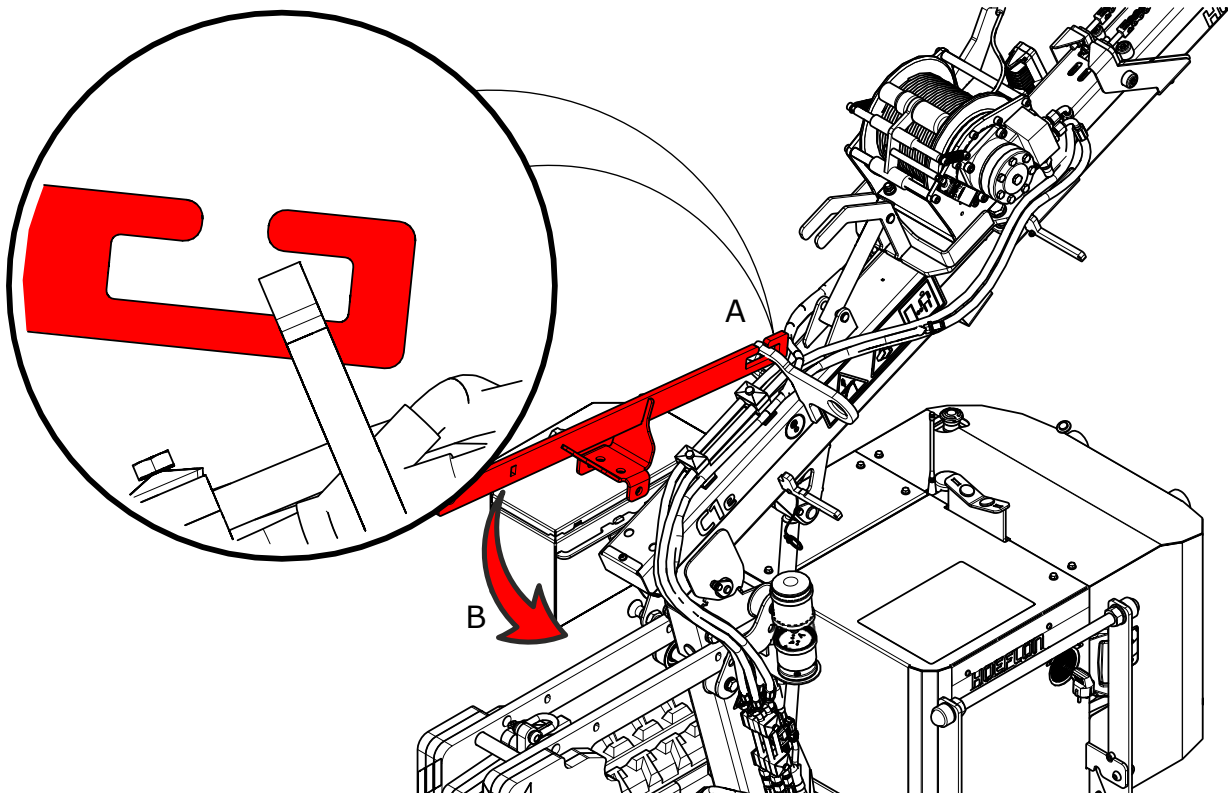
Make sure that you do not damage the hydraulic lines.

9. Use the cable to connect the counterweight to the bracket.
  - Use the shackle on the counterweight.
10. Fully extend the counterweight.
11. Slowly lower the boom.
12. The counterweight will hang free.
13. Slowly raise the boom.
14. Put the counterweight on a pallet or on the floor .



### 8.7.2 Install the counterweight

1. Make sure that the crane is level.
2. Remove the lifting bracket of the counterweight from the boom.

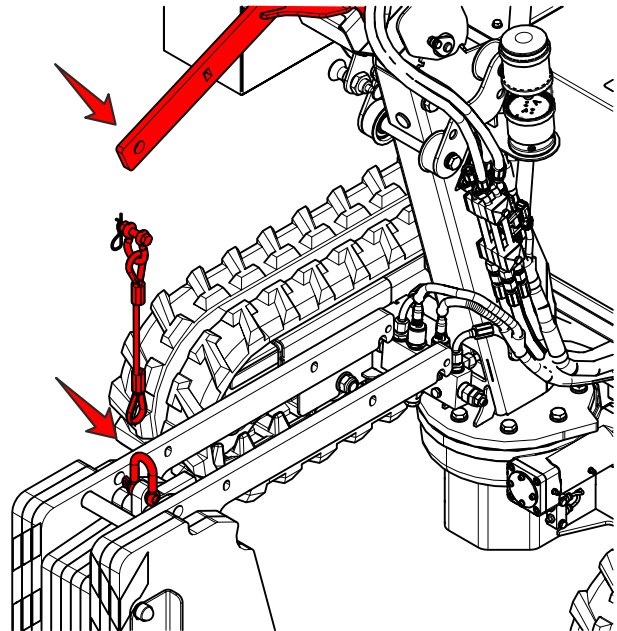


3. Move the hook of the lifting bracket of the counterweight through the eye of the lifting bracket of the crane (A).
4. Turn the lifting bracket of the counterweight down so that its foot is on the boom.

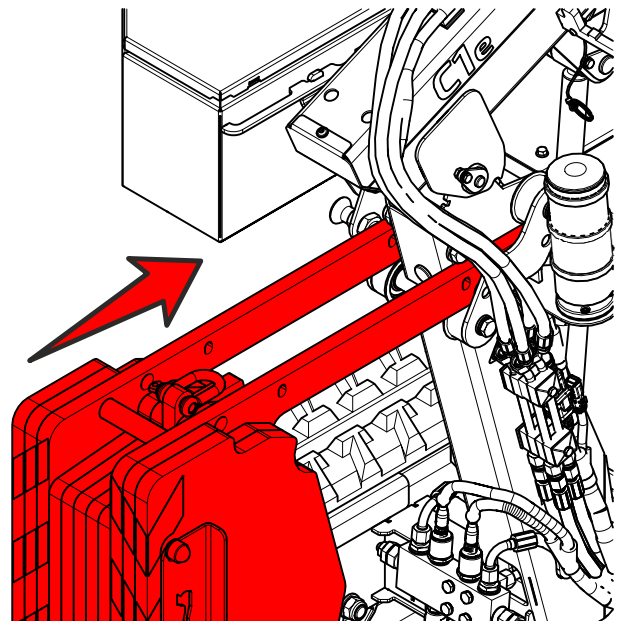
**Caution**

Make sure that you do not damage the hydraulic lines.

5. Fully raise the boom.
6. Use the cable to connect the counterweight to the bracket.
  - Use the shackle on the counterweight.
7. Slowly lower the boom (to lift the counterweight).
8. Align the counterweight with the crane.



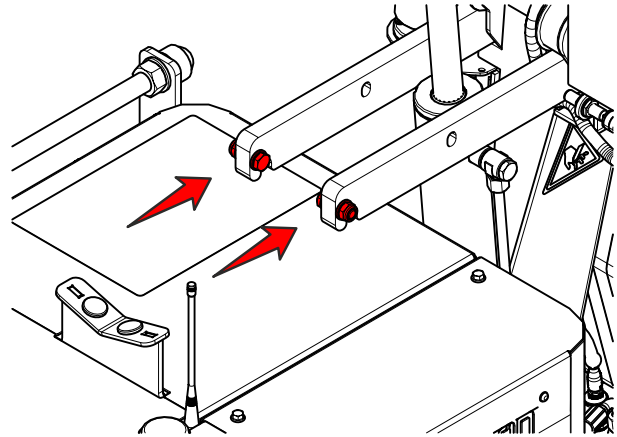
9. Insert the counterweight.

**Caution**

Make sure that the counterweight will not fall out of the crane.

10. Remove the cable and the top shackle.
  - Put them back in the toolbox.
11. Fully push the counterweight into the crane.

12. Put the safety bolts back in position.
  - Safety the bolts with the nuts.
13. Put the bracket back in its storage position on the boom.
14. Install the accessories on the counterweight.



# 9.

## Maintenance

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### 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.

Refer to your local authorities for the rules and guidelines on the inspection of the Hoeflon C1 Compact crane.



### 9.2.1 First use

Make sure that you do the daily inspection before using the compact 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 operation. Whichever comes first.
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 compact crane.

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 compact crane make sure that:
  - the compact 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, counterweight 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	
Construction incl. pins, shafts etc.	Inspect					o			
Boom extension and retraction chains	Inspect		●/o		●				
	Lubricate				●				
Plastic slide plates on boom	Inspect					o			
	Lubricate		●	●					
Boom guide bolts	Inspect					o			

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

### 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					○			
	Replace		○				○		

### 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							○	

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

#### 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
Emergency stop and sensors	Inspect	●							
Wiring	Inspect					○			
Wiring connectors	Inspect					○			
Voltage	Inspect					○			

## 9.5 Inspection of the 24V battery

Inspect the battery every five times that the battery is charged.

Make sure that there is enough liquid in the battery.

Add demineralized water until the liquid level is between the lines on the side of the battery.

## 9.6 Oils and 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

### 9.6.1 Grease

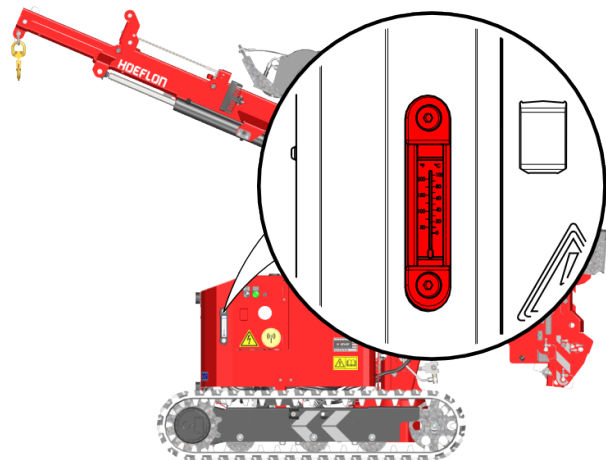
Grease fittings: EP2

Aerosol grease: Use INTERFLON GREASE OG or comparable

## 9.7 Hydraulic system

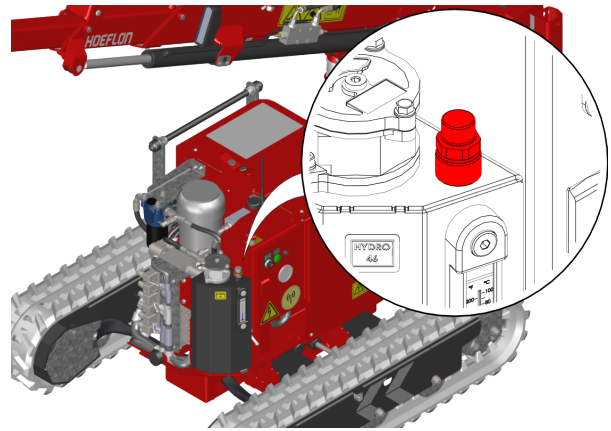
### 9.7.1 Inspect the oil level

1. Make sure that the crane is horizontal.
2. Fully retract the:
  - Boom
  - Counterweight
  - Tracks
3. Stop the crane and remove the key
4. Look at the oil level in the level indicator on the side of the tank.
5. The level must be between the lines.
6. Add oil if necessary, (see 9.7.2 Fill the oil tank).



### 9.7.2 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 9.6 Oils and lubricants)
4. Put the filler cap back onto the tank.



## 9.8 Lubrication

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

### Grease nipples



#### Note

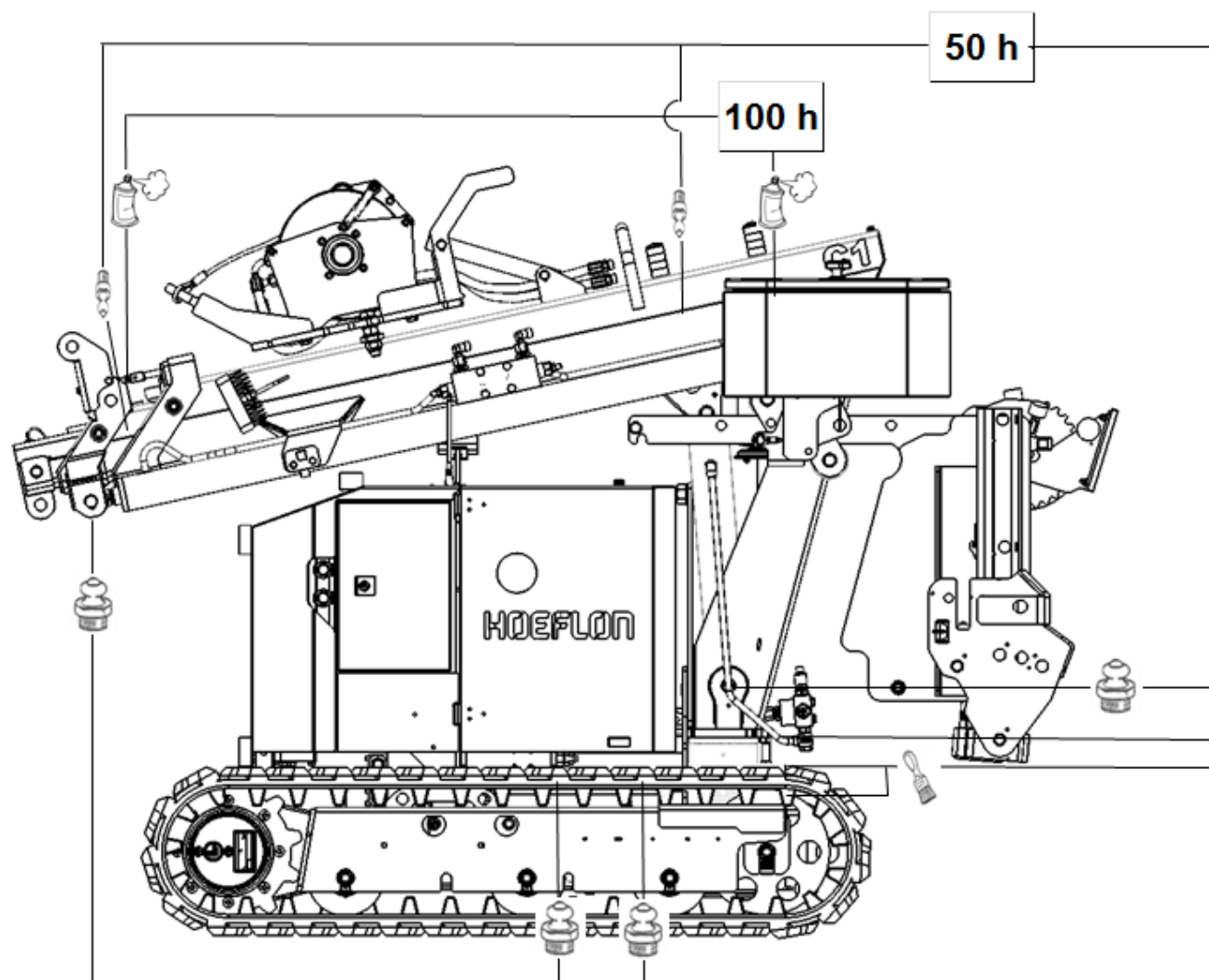
- Clean the grease nipples thoroughly before lubrication.
- Remove all excess and old grease from the booms.
- Use new and clean grease.

### Sliding parts



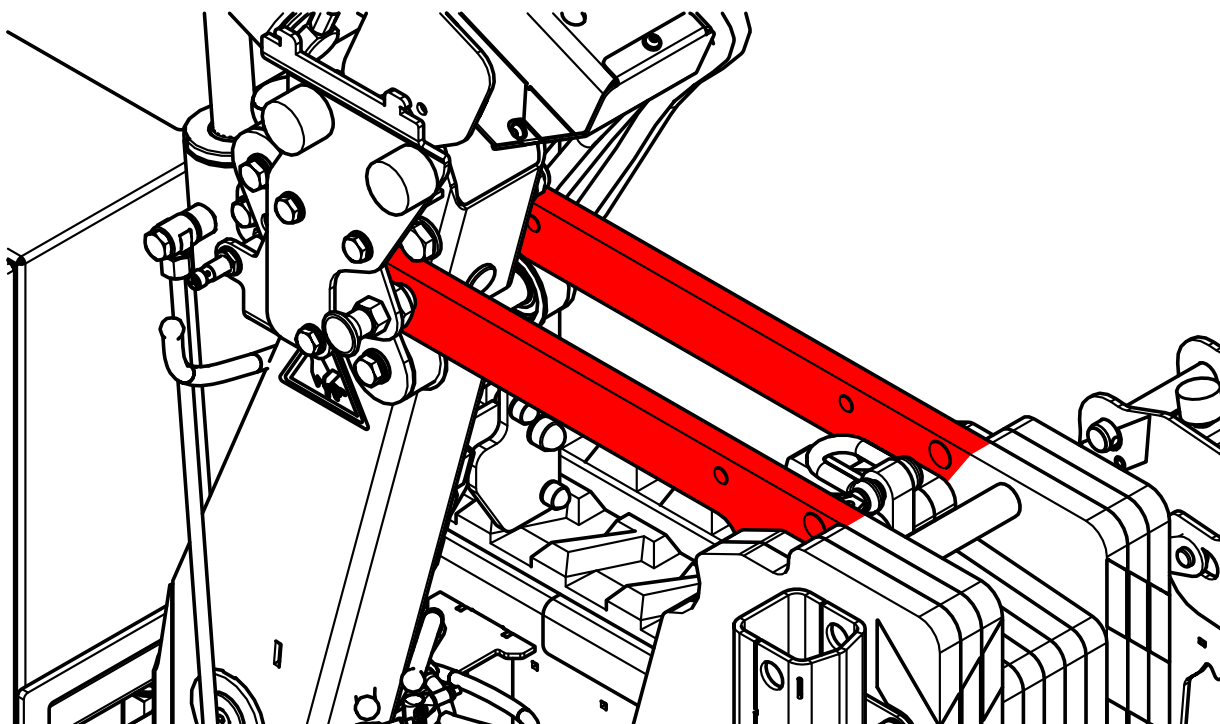
#### Note

Use INTERFLON GREASE OG or comparable.



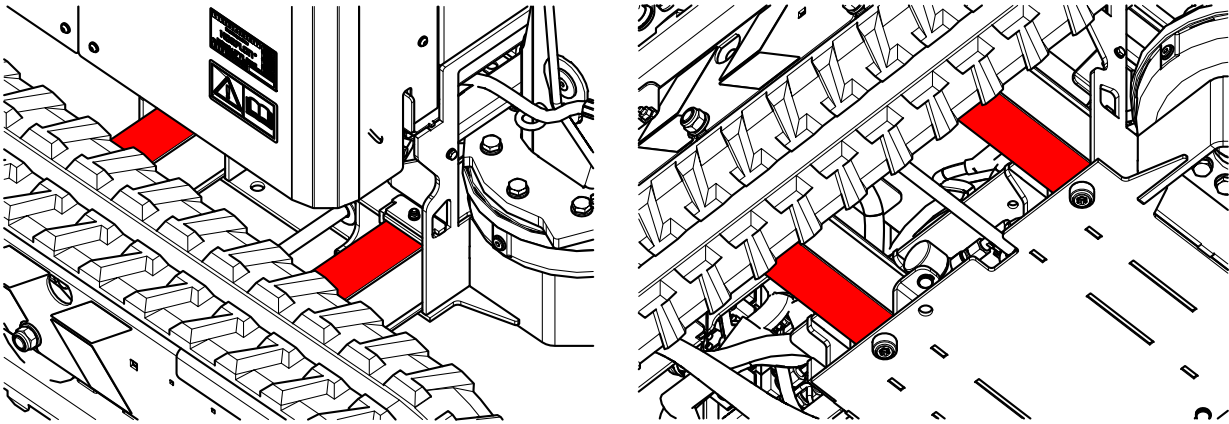
## 9.9 Every 50 hrs

### 9.9.1 Counterweight beams



1. Fully extend the counterweight.
2. Apply grease:
  - to the top of the counterweight beams.
  - to the bottom of the counterweight beams.
  - to the side of the counterweight beams.

### 9.9.2 Plastic wear strips on the track extenders



1. Make sure that the boom is down.
2. Fully extend the tracks.
3. Clean the top of the track extenders.
4. Apply grease:
  - to the top of the track extender beams.
  - to the center of the bottom of the track extender beams.
  - in the box girder of the track extender beams.

## 9.10 Every 100 hrs

### 9.10.1 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.

## 9.10.2 Lubricate the chains



### Note

Use INTERFLON GREASE OG or comparable..

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

## 9.11 Crawler tracks

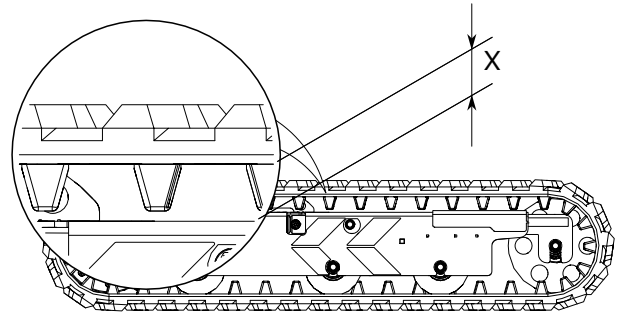
### 9.11.1 Inspect the tension

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.

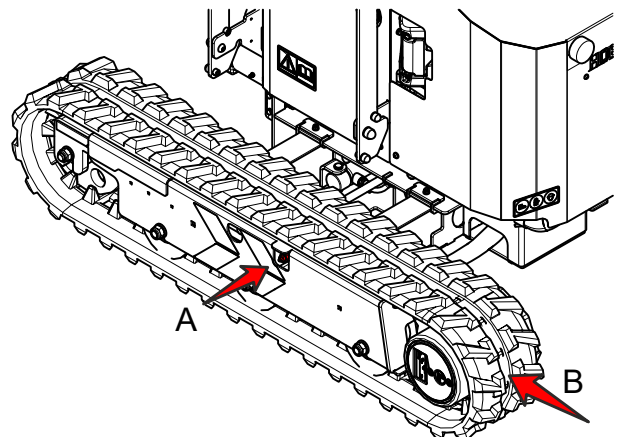
If the crawler tracks are too tight they will wear too quickly.

1. Make sure that the boom is down.
2. Fully extend the crawler tracks.
3. Pull each track UP in the top center.
4. Examine the tension (X) in the two crawler tracks.
  - Minimum: 20 mm
  - Maximum: 60 mm.



### 9.11.2 Loosen a crawler track

1. Fully extend the crawler tracks.
2. Remove the bush with the grease nipple from of the tensioning cylinder (A).
3. 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.



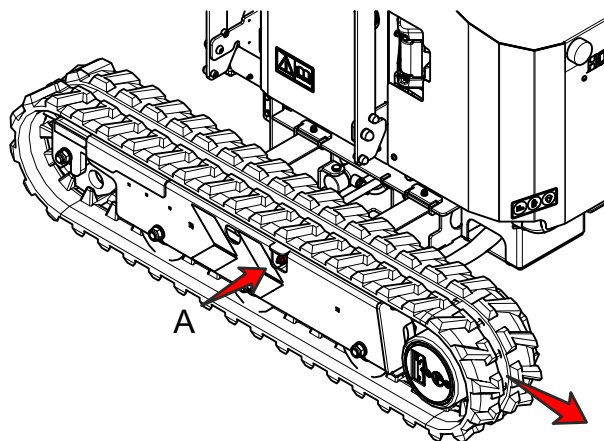
4. Clean the unwanted grease off the tension cylinder.
5. Install the bush with the grease nipple back onto the tension cylinder.

**Caution**

Do not forget to install the Bonded Seal.

### 9.11.3 Tighten a crawler track

1. Fully extend the crawler tracks.
2. Attach a grease gun on the grease nipple (A) in the track frame.
3. Pump grease into the tension cylinder until the track tension is correct (see 9.11.1 Inspect the tension).



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# 10.

## Troubleshooting

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### 10.1 The remote control cannot connect with the compact 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 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.

- Use a 24V charging system.
  - Make sure that the area is dry and clean.
1. Remove the key.
  2. Connect the + start assistance cable by clamping it firmly to the + charging terminal (with the red protective cap).
  3. Connect the - start assistance cable by clamping it firmly to the - charging terminal.

4. Make sure that the start assistance cables:
  - are connected to the emergency charging points correctly.
  - are not twisted together.
5. Let the crane recharge for a few minutes.
6. Insert the key and start the crane.
7. Remove the start assistance cables in the reverse order (- first, then +).

### **10.3 Error codes**

Talk to your Hoeflon dealer if an error appears on the display.

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# 11.

## Transport and storage

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### 11.1 Transporting a compact crane

#### 11.1.1 Put the crane in transport position

1. Remove any loads from the crane.
2. Remove all attachments and put them in their storage positions.
3. Fully wind the winch cable on the winch.
4. Fully retract the ballast.
5. Fully retract the boom.
6. Fully lower the boom.
7. Remove the key.

#### 11.1.2 Put the compact crane on the transport vehicle



##### Caution

Make sure that the transport vehicle:

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

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

Make sure that the loading ramps:

- can carry the full weight of the compact crane (see 3.3.2 Crane and component weights).
- are long enough so that the angle with the horizontal is less than the maximum permitted slope (see 7.3.2 Maximum slope angles when moving the compact crane).

**Caution**

Use slow speed when driving up a ramp or slope.

**Note**

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

### 11.1.3 Securing the compact crane for transport

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

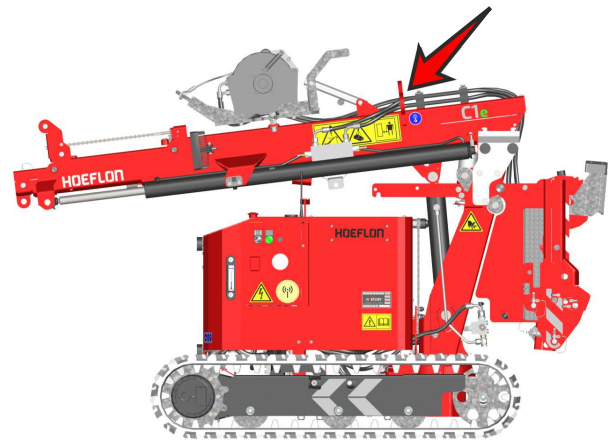
**Note**

Do not overload the lifting hook. This will damage the compact crane.

Secure the compact crane by attaching two lashing straps to the lifting point on the boom (see 11.2 Lifting the crane ) and the deck of the transport vehicle.

Use straps that are rated at 1000 kg each.

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



### 11.2 Lifting the crane

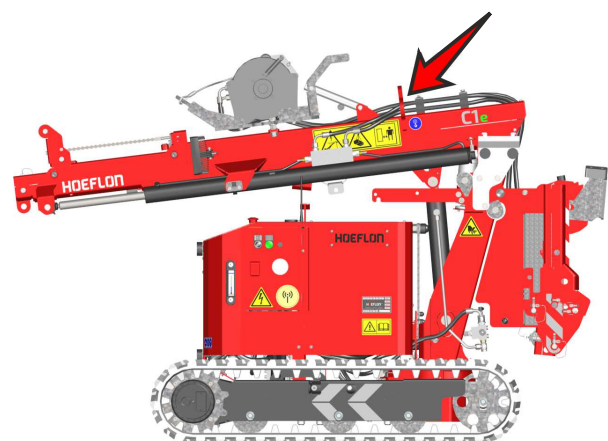
The C1 Compact crane has one lifting point for lifting the crane. It's location is at the top of the boom.



It is identified by the "Lifting point" pictogram

Make sure that your lifting equipment is properly rated.

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 9.8 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.
  - Do an inspection of the 24V battery every month.  
Make sure that there is enough liquid in the battery.  
Add demineralized water until the liquid level is between the lines on the side of the battery.
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 compact crane in storage without a charging facility

If the compact 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 70%.

Charge the battery if the SOC is below 70% .



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# 12.

## Disposal

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### 12.1 Dispose of the compact crane

Return the 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:

- hydraulic oil,
- batteries,
- greases.



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# Appendix

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