WALL TILTER

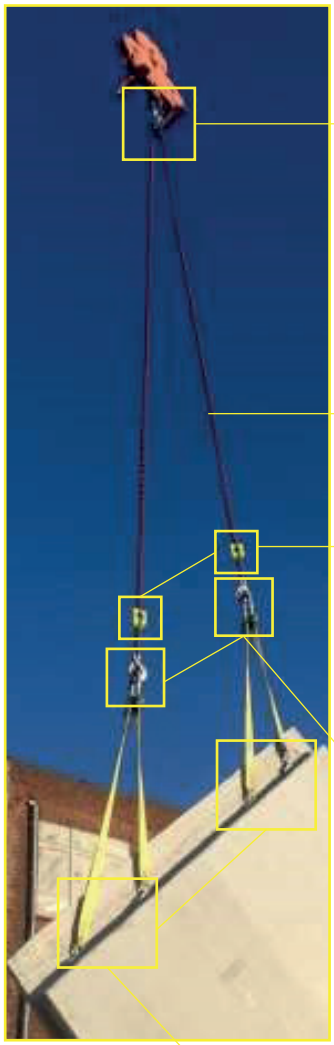
manual

USER MANUAL

THESE OPERATING INSTRUCTIONS MUST BE FULLY READ AND UNDERSTOOD BEFORE COMMENCING WORK AND SHOULD BE RETAINED FOR LATER USE

TOTAL WORKING LOAD LIMIT (WLL): 12 ton

1. Composition



1x Welded Alloy Master Link
Crosby A-1343
WLL: 17 tonnes

1x Bolt type anchor shackle
type G-2130 1 1/4
WLL: 12 tonnes

1x Chain block
lockable sheave
WLL: 12 tonnes

1x 15m Crosby Kuplex Spectrum
10 Grade 100 Alloy Chain
WLL: 6,7 tonnes (per supporting part)

Midgrab chain shortener
Type MIG 13-10
WLL: 6,7 tonnes

2x SHUR-LOC clevis hook
S1317 13mm grade 80/10
WLL: 6,8 tonnes

2x Green Pin Bow Shackle
WLL: 6,5 ton

A

B

2x Beneca Flat Webbing Sling
Type L4-60 (4-layers / 60mm web width)
WLL: 4 tonnes (load capacity per end)
SF 7:1 Safety hook in both loops
S1316A-10mm

SHUR-LOC Eye hook S1316A
10mm grade 80/100
WLL: 4 tonnes

C

<u>For tube lifting</u>
4x Round sling 4 tonnes x 2m
With double sleeve
WLL: 4 tonnes
SF 7:1

D

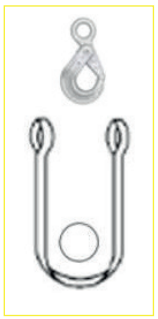
2. Assembly diagram

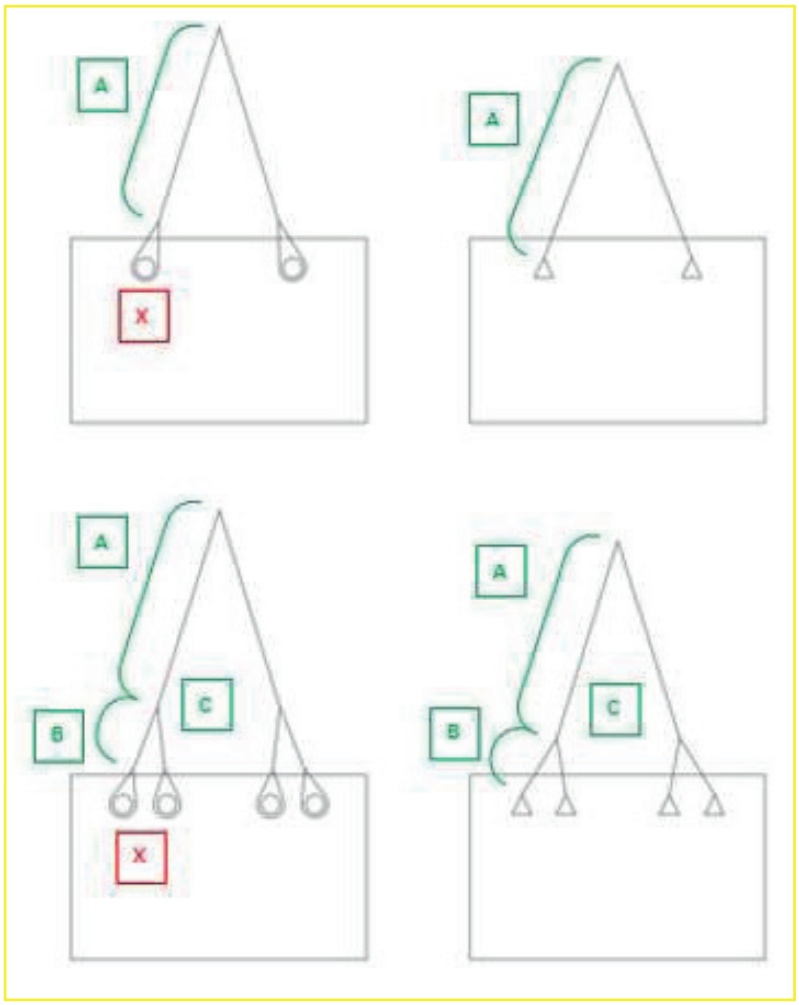
Type of hooks according to A4 production sheets

Tube 3T

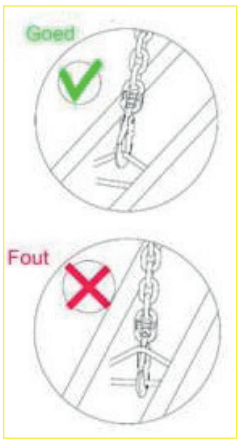
Hook 2T

Picking up tube





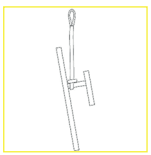
Picking up hook



D

The round slings with blue double sleeve can only be used when lifting tubes.
Each tube should be picked up separately and cradled in a U-shaped half loop.
For walls with limited clearance, single-use lifting slings can be installed during production (if requested in time).

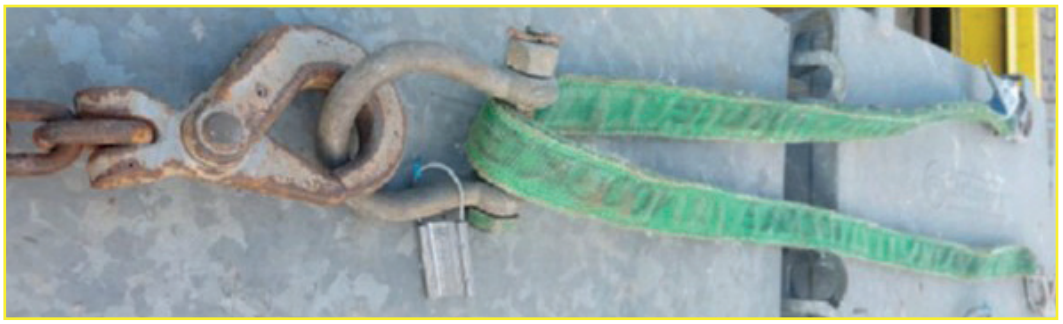
N.B.:
It needs to be strapped around the tube only in case of uneven shells when the wall hangs out of balance.
This prevents the sling from sliding over the pipe and tilting the element towards the heaviest point.
The sling should be applied against the heaviest shell.



3. Chain kit operating principle

- This chain kit is intended to keep all chains at the same tension at all times (and during the entire tilting process), even with walls that can be tilted at 90° in combination with the supplied tilter, and thus to load all lifting hooks evenly
- When installing precast concrete elements with 2 hoisting anchors, only the top two-leg section of the kit (A) should be used
- The upper two-leg chain can run freely through the chain block and can be blocked by locking the sheave with a screw (see farther down p.4)

- When installing precast concrete elements with 4 hoisting anchors, 2 additional shackles (B) are attached to the bottom of the upper two-leg chain (A), through which the 2 supplied lifting slings (C) pass over the locking bolt of the shackle and thus evenly load the 4 anchors in a self-levelling manner



- When installing precast concrete elements with tube anchors, round slings (D) also need to be used at the bottom of the hooks (from kit A or B) to secure around the tube

The round slings with blue double sleeve can only be used when lifting tubes.
Each tube should be picked up separately and cradled in a U-shaped half loop.
For walls with limited clearance, single-use lifting slings can be installed during production (if requested in time).

N.B.:
It needs to be strapped around the tube only in case of uneven shells when the wall hangs out of balance.
This prevents the sling from sliding over the tube and stops the element from tilting towards the heaviest point.
The sling should be attached to the heaviest shell.

4. Locking sheave in chain block

- Always lock the sheave of the chain block when the chain is handled without a load so that it cannot shift to one side and therefore cause accidents
- Always unlock the sheave of the chain block before hoisting starts and before starting the tilting process to ensure that an evenly distributed tension can be applied to the chain

released :  blocked: 

- Before lifting, check whether the chain is blocked or released

5. Shortening chains

- In principle, the top two-leg chain does not need to be shortened
- A maximum stop angle of 30° must be respected at all times
  In other words:
  The longer the chains, the better.
  The chain length should be proportional to the length of the elements and the distance between the hooks.

- If the chains still need to be shortened (while respecting the stop angle), the MIG Midgrab chain shorteners can be used for this purpose (see farther down p.5)

6. Using the mig midgrab chain shortener

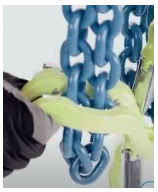
- YouTube video instructions for use of 'Midgrab MIG' chain shortener via this link : https://www.youtube.com/watch?v=rJEkzOnlqpU

Step 1:
Set the locking pins of the MIG Midgrab chain shortener in the open position

Rotate and pull

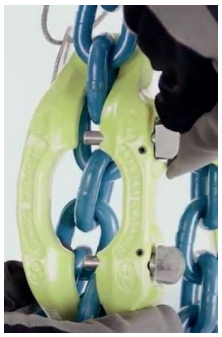
Step 2:
Double the chain sling into a loop

Step 3:
Insert the loop through the open MIG Midgrab chain shortener



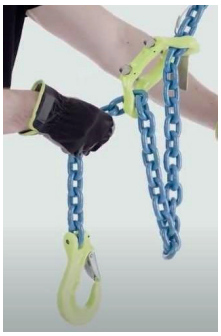
Step 4:
Pull the link below and above nicely into the provided slot

Step 5:
Close both latch pins



Rotate and push

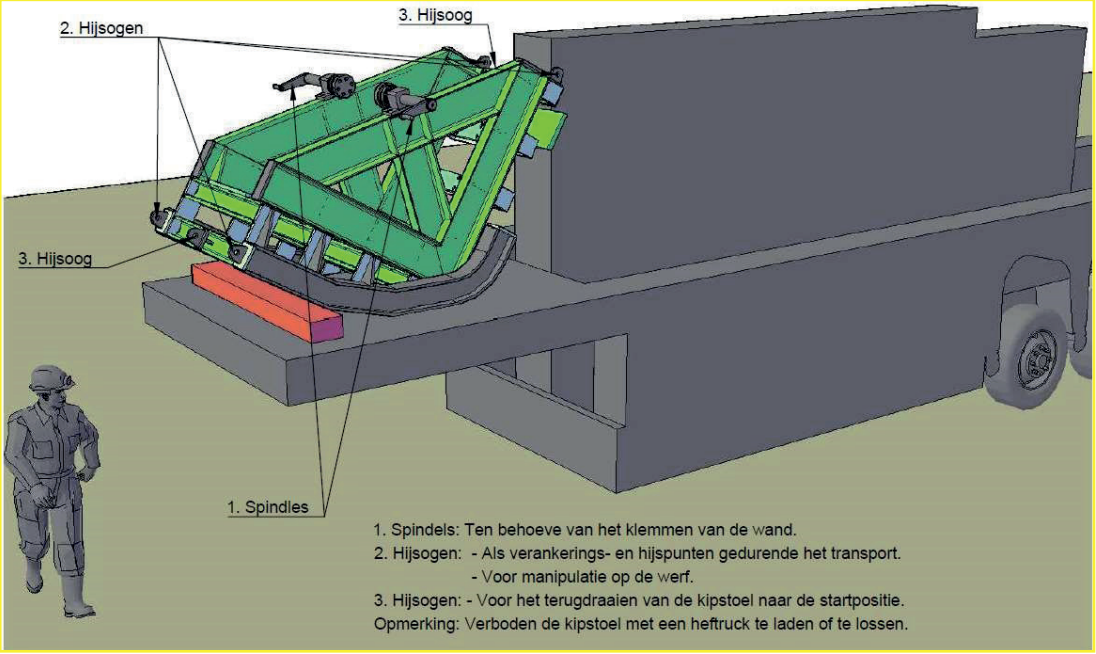
Step 6:
Ready for use



7. Using filter and tilting process

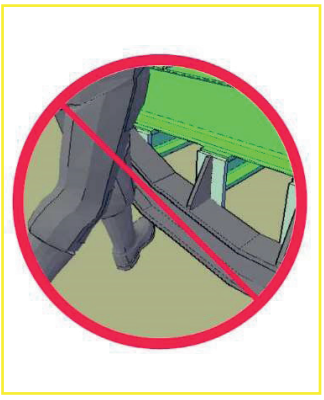
- Unload the box containing the chain kit and tilter from the inloader trailer

Characteristics of the tilter
Unladen Weight: 2,200 kg
Maximum operating load (maximum weight of the wall to be tilted): 15,000 kg
Use: auxiliary device to tilt twin walls



Preparation of the tilting area
- Place the tilter on a flat and stable surface
- Position it so that the twin wall stands parallel to the crane
- Demarcate a safety zone (minimum perimeter ≥ length of longest wall side +2 m)
- Place a support in front of the head of the wall

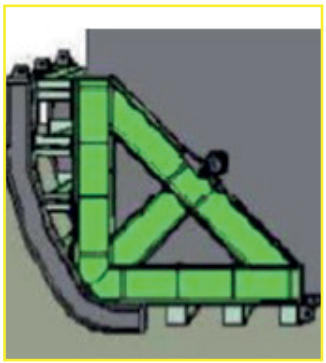
Safety
- Use a four-leg chain to load and unload the tilter
- Demarcate handling area and minimum perimeter for rotation
- Wearing personal protective equipment (safety shoes, gloves, helmet) is mandatory
- Systematically check for damage on all anchoring points
- Guide and signal crane operator during lifting
- Check wall alignment and correct if necessary



- Warning: **do not place feet under the tilter**
- Stay outside the safety zone during use and handling
- The tilter is **not** a hoisting device but an auxiliary system used for tilting and therefore does not need to be periodically inspected, unlike similar lifting equipment
- The tilter may not leave the ground at any time (except when unloading it from the truck)

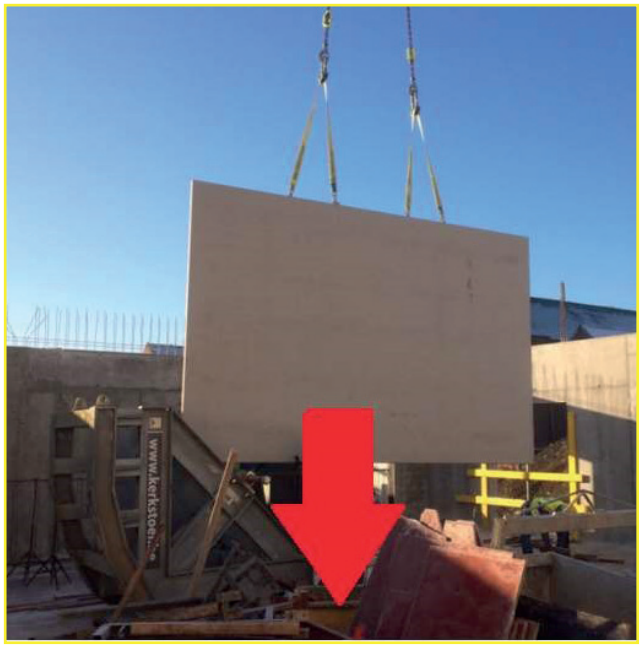
- Have the carriage holding the walls within crane reach and respect the safety instructions stated on the carriage
  - Slope of the surface < 5°
  - Use the carriage outriggers if possible
  - Load-bearing subsoil, no loose earth or mud
  - Never lift carriages (full)
  - Never loosen the pins securing the walls, one by one, and never before the wall is securely hanging from the crane

- Assemble the chain according to the assembly diagram on page 2 depending on the number and type of hooks used on the top side of the wall to be placed
- Place the tilter with the four-leg chains in the starting position
- Make sure beforehand that the spindles are fully opened so that the spindles are not damaged when lowering the wall
- Make sure the chain block sheave is locked approximately halfway along the chain when it is lifted without a load
- Lift the wall out of the carriage using the transport hooks on the top
- Only when the wall is secured in the crane should you loosen the pins in the head unit of the carriage

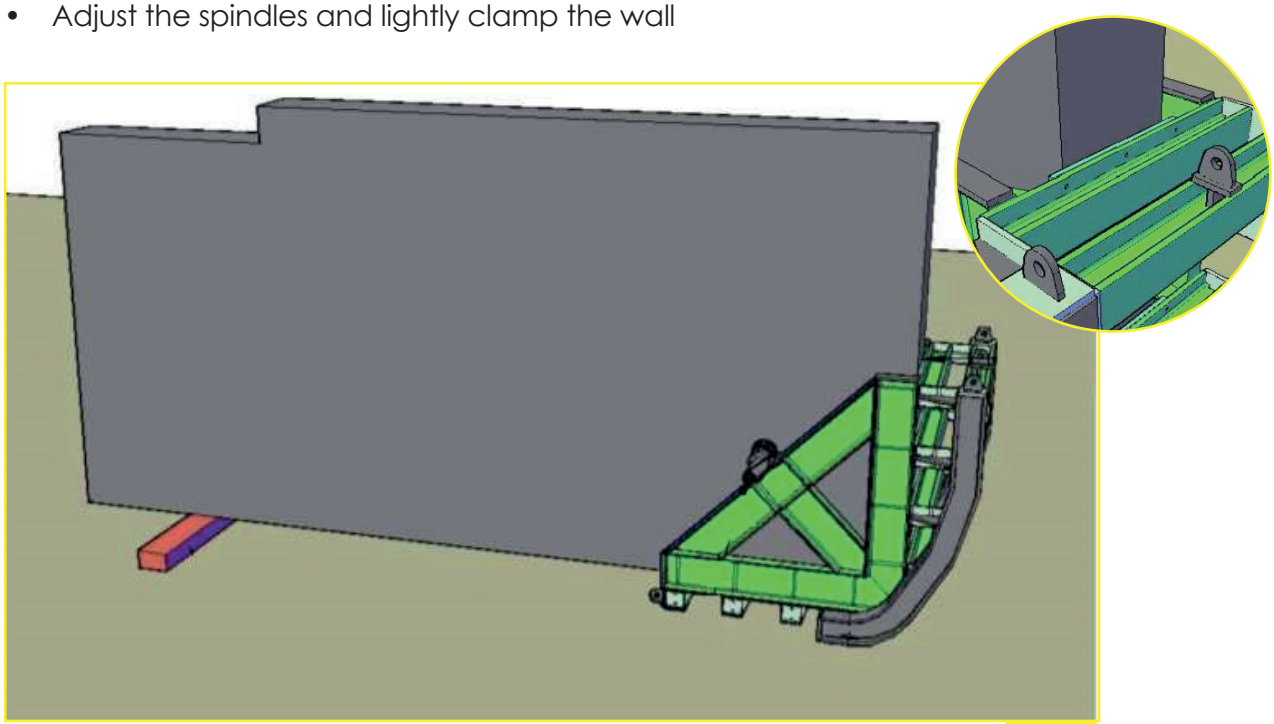


- First, check that the adjacent wall in the carriage is properly secured
- Don't forget to unlock the sheave of the chain block
- Tension the chain and check that the tension is evenly distributed everywhere
- Lift the wall out of the carriage. First horizontally away from the head unit, then upwards vertically.

- Carefully place the wall in the centre of the tilter

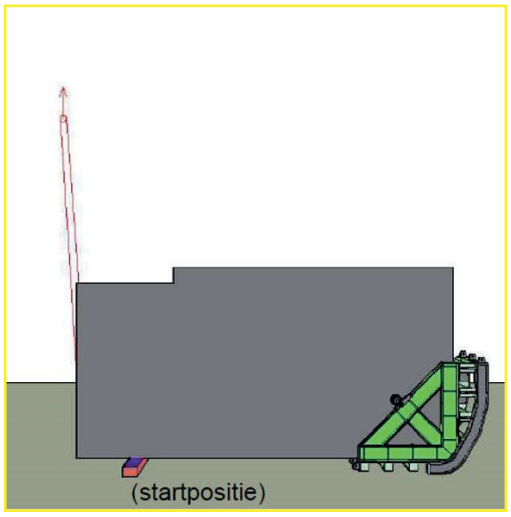


- Make sure that the side of the wall fits against the tilter
- Provide the necessary supports to keep the wall horizontal
- Shells that do not rest on the bottom of the tilter need support from underneath
- Adjust the spindles and lightly clamp the wall

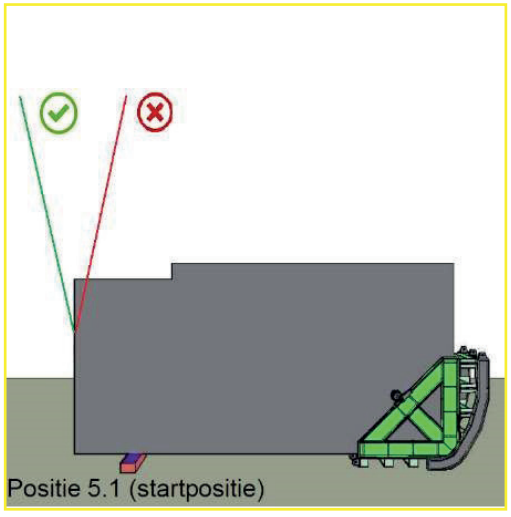


- The hoisting chain can be slackened and moved to the side of the wall only when the wall is stable in the tilter (If necessary, place additional temporary supports or outriggers)
- Do not forget to lock the sheave on the chain block when the chains are lifted without a load
- If the number or type of hoisting anchors on the head side differs from those on the top side, the assembly of the chain will need to be adjusted
- Attach the hooks to the anchors at the head of the wall

- Remember to unlock the chain block sheave before starting the tilting process
- The wall is now in the starting position and ready for tilting

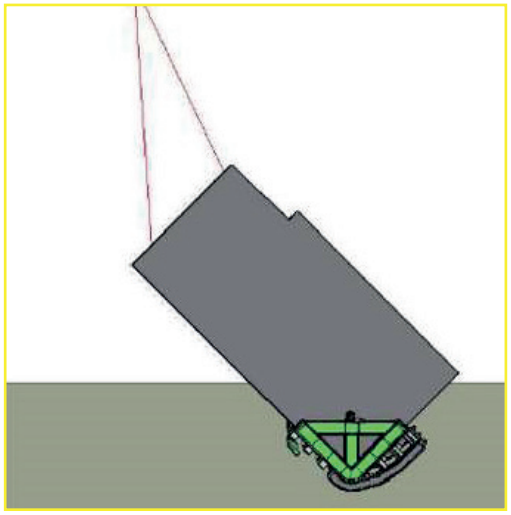


- Make sure that the chains are properly aligned with the precast concrete element. When hoisting at right angles, the lifting slings rub against the sharp inner edges of the concrete shells and can be damaged
- When starting the hoisting process, ensure that the centre of gravity of the chains is just next to the precast concrete element



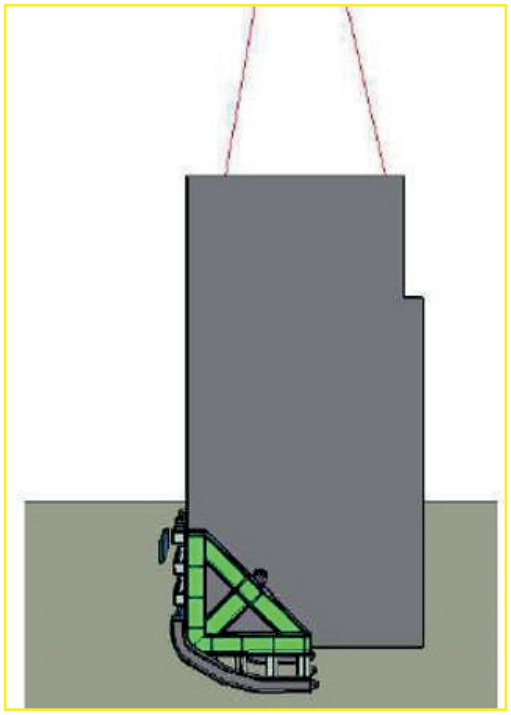
- When lifting, check that the two-leg chain runs smoothly through the chain block and that the lifting slings run properly over the safety bolt of the bow shackle and that all chains and lifting slings are properly tensioned. If this is not the case, tilting will not go as planned and too much weight will be placed on one anchor. Do not lift further. First, find out the cause, and solve the problem.

- When all the chains are properly tensioned, you may resume lifting

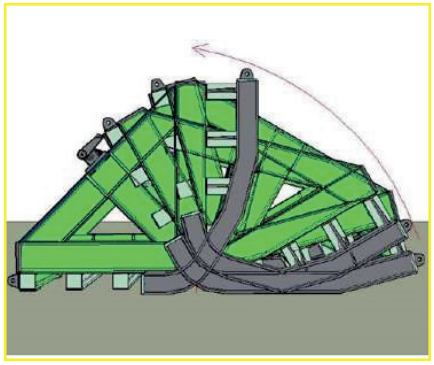


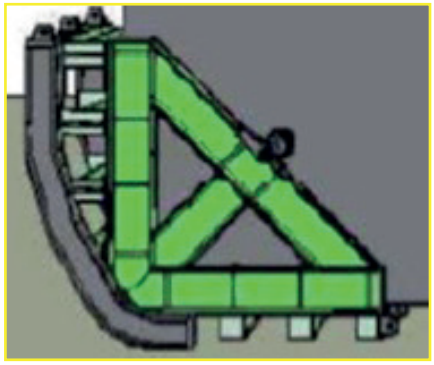
- Throughout the tilting process, keep the centre of gravity of the chains right next to the centre of gravity of the precast concrete element to ensure that the wall wil not suddenly shift to the final position when it passes the tipping point
- By maintaining the centre of gravity of the chains right next to the centre of gravity of the precast concrete element, the crane operator can prevent tipping and the wall can be slowly brought to the final position (see below)

- The wall is now in the final position



- The spindles can be turned completely to the open position only when the wall is fully stable, hanging from the crane
- Keep the chains under a slight tension when loosening the spindles of the tilter
- The tilter must be brought back to the starting position with the chains





8. General safety guidelines

- Never lift more weight than the permitted safe working load (WLL 12T)
- Only use the hoisting anchors provided for the purpose of lifting
- Never use other built-in components that are not intended for this purpose (lattice girders, fiberglass pins, etc.)
- Always use all provided hoisting anchors
- Always secure the anchors correctly (see assembly diagram p.2)
- Always use the correct chain assembly for the correct load (see assembly diagram p.2)
- A maximum stop angle of 30° (relative to the vertical direction) must be respected at all times
- The inspection of the chain kit is carried out and monitored by Kerkstoel 2000+
    - You will always receive an approved kit at the site (see coloured colson cable tie)
    - Certificates are available upon request
    - Under no circumstances should you use a chain kit with a red label
    - If an inspection certificate is likely to expire after prolonged use on the site, you will be informed by Kerkstoel 2000+ and the kit will be exchanged or re-inspected in situ on the building site
- Never lift in high winds
- Only 1 person is allowed to communicate with the crane operator (usually the slinger/signaller)
- The slinger and the crane operator must have good (preferably visual) contact with each other. If necessary, use walkie-talkies or other means of communication
- When using hand signals, these should be discussed and agreed first before hoisting
- Use the required personal protective equipment
- Maintain the centre of gravity of the chain above the centre of gravity of the precast concrete element
- Under no circumstances should the load be secured outside the turning radius of the crane (swinging!)
- Ensure that there are no uninformed workers at work within the turning circle who should not be there in the first place
- Never stand under or next to a lifted load (danger zone)
- Make sure that the sheave in the chain block is locked when the chain is lifted without a load so that the chain cannot fall through
- Never stand under hoisted chains without a load
- Never handle a lifted load or hoisted chains over people