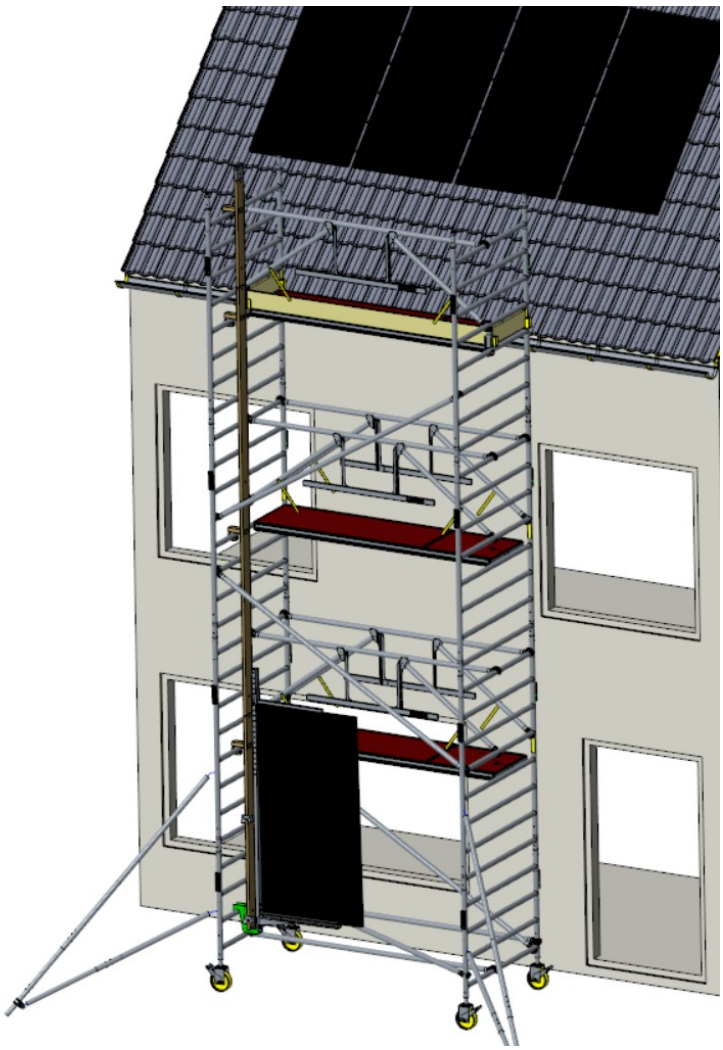
Assembly and operating instructions

# CUSTERS®
# Solar Lift



| | |
|---|---|
| Maximum load | : 30 kg |
| Minimum platform height | : 2 meters |
| Maximum platform height | : 12 meters |

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Safe access

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# Table of contents

# 1. Introduction

The Custers® Solar lift is available in 2 types, and both, if built according to this manual, comply with the Machinery Directive 2006/42/EC (according to article 2a, 5th indent)).

The solar panel lift type SL8 can be mounted on the Custers mobile scaffolds of the type Handy 1300.

The solar panel lift type SL7 can be erected on any mobile scaffold with a (2 platforms) wide base window with 7 rungs, a rung diameter between 50 and 51 mm, and a center-to-center rung distance of 280 mm.

The height of the lift can be adjusted to any whole metre of platform height, within the range of 2 to 12 metres.

This manual is intended to instruct you step by step to set up and use your solar panel lift easily and safely. Incorrect assembly and use may endanger the user and bystanders. Please read the safety instructions carefully before assembly and use. The assembly and dismantling must be done by experienced and knowledgeable persons.

These assembly and operating instructions must be available at the location of use of the solar panel lift.
The lift may only be used in accordance with the instructions in this manual without deviating from them.
The lift may only be used in accordance with national laws and regulations.

If any ambiguities arise as a result of this manual, please contact your supplier and/or the manufacturer.

Producer:
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Supplier:

## 2. Specifications

| | |
|---|---|
| Standard: | Machinery Directive 2006/42/EC |
| Max. load: | 30 kg |
| Max. panel dimensions: | 2100 x 1300mm |
| Platform height: | 2 to 12 meters |
| Max. wind load: | 5 Beaufort |
| Type: | SL7 en SL8 |

## 3. Warranty and Liability

Custers provides a warranty against material and manufacturing defects for up to 12 months after delivery.
The guarantee means that we will repair the errors at our own expense or - at our sole discretion - take back all or part of the delivered goods and replace them with a new delivery.

If we replace products delivered in fulfilment of our warranty obligation, the replaced products will become our property. All costs that exceed the obligation described above shall be borne by the Client. If products are provided for processing, repair, etc., only a guarantee is given for the soundness of the execution of the operations commissioned.

Our liability does not apply:

a. If the errors are the result of improper use or other causes other than inadequacy of material or manufacture.
b. If the cause of the errors cannot be clearly demonstrated.
c. If not all instructions given for the use of the products, including the guidelines indicated in this manual, have been strictly and completely complied with.

The liability of the manufacturer does not apply if the buyer makes or has carried out changes and/or repairs to the delivered products on his own initiative.

# 4. Control of the delivery

After receiving the solar panel lift, check whether it has been delivered complete and undamaged.
Contact your supplier immediately if you notice that the parts of the lift are damaged or that the delivered goods are incomplete.

# 5. Safety Instructions

## 5.1 Pre-assembly check

Check whether the technicians are sufficiently qualified and check whether the place where the solar panel lift is to be placed is safe and suitable.

Please note:
- The soil must be sufficiently load-bearing and flat;
- The space must be free of obstructions both on the ground and above ground;
- Check whether the wind conditions are such that the solar panel lift can be used;
- Check that all parts are present at the workplace;
- Damaged, incorrect or non-original parts must never be used;
- Be aware of potential electrical hazards.
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## 5.2 Personal protection

- Always wear work gloves, safety shoes and safety helmet.

## 5.3 Construction

The construction of the solar panel lift must be done with at least 2 people.

Be aware of the following:
a) User training cannot be a substitute for manuals but can only supplement them;
b) Only the original Custers parts as specified in this manual should be used; The use of types of rope other than the prescribed articles 9501970050, 9501970051, 9501970052 and 9501970053 can lead to the malfunctioning of the solar panel lift and therefore to damage and injury to property and/or persons.
c) Damaged or incorrect parts must never be used;
d) This product must be used in line with the manual;

# 6. Assembly instructions

## 6.1 Build-up in a Custers scaffold

The solar panel lift type SL8 can be used on the following Custers scaffolds

- Custers Mobile Guard mobile scaffold 1300, type Handy and CR, with a platform height of 2 to 12 meters.
- Custers Safe Guard mobile scaffold 1300, type Handy and CR, with platform height 2 to 12 meters.

When using a Mobile Guard mobile scaffold, only 1 platform with hatch should be placed for intermediate floors instead of 2 platforms prescribed by the mobile scaffold manual. To prevent the risk of falling, an extra knee and hip rule should be placed on the inside of these floors. For this purpose, the Safe Guard handrail frame can also be placed on the 4th rung above the platform with hatch.

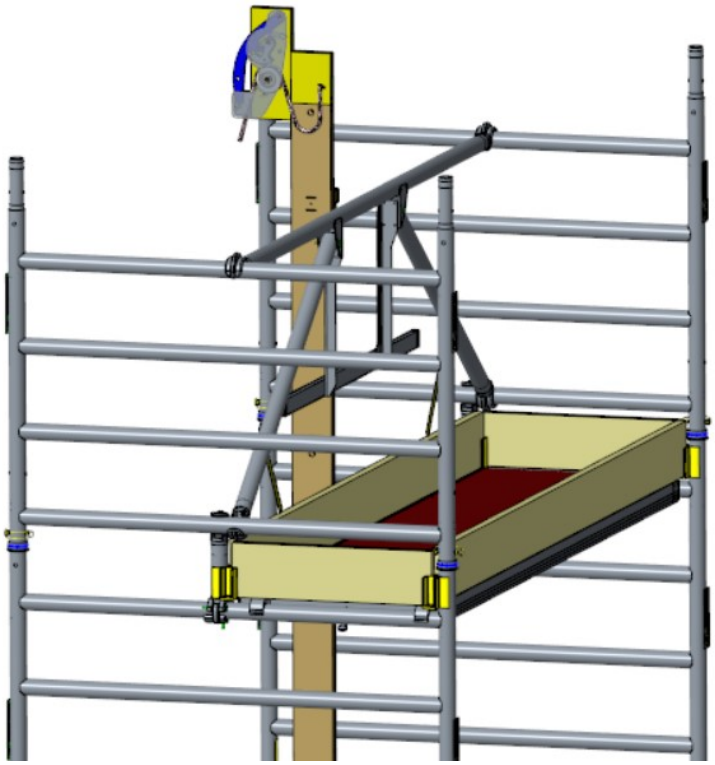
Make sure that the wheel spindles are about 10cm out, this is important if you want to move the scaffolding later. Otherwise, a caster may not be able to swivel properly due to contact with the lift frame.

The work floor on the top level of the scaffolding can be carried out in two variants, namely with 1 or 2 platforms.

Variant with a work floor of 1 platform

- Place a platform with a hatch on the side of the façade.
- The platform should be fully enclosed with toe boards. Use attachments to mount the toe board holders in the center of the scaffolding. (Article 9501.800.080).
- On the façade side, the handrail can be omitted if there is no risk of falling on that side due to the façade. This is the case when the distance between the longitudinal beam and the façade is less than 10 cm. On the lift side, a handrail should be placed in the middle of the scaffolding. The elevator is then located behind the handrail. When raising the panel, the panel must be lifted over the handrail.

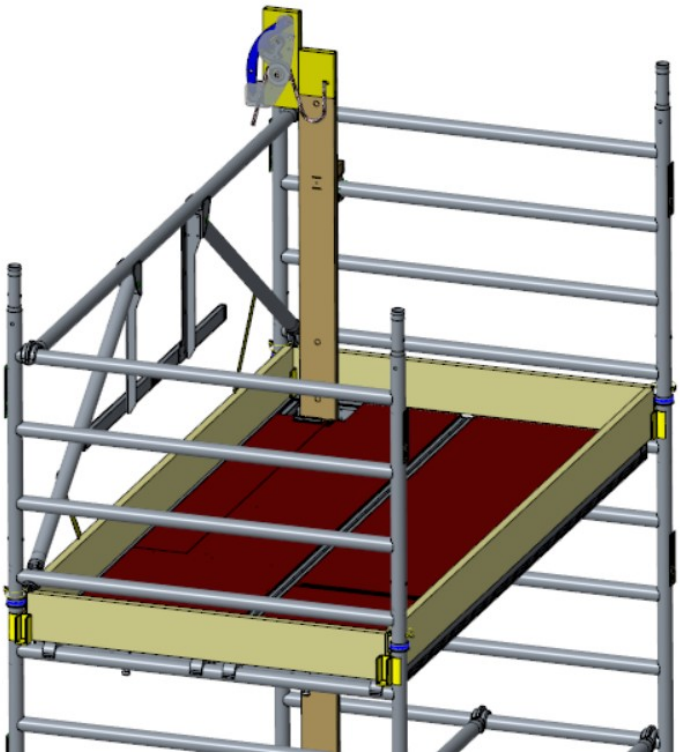
The work floor will then look like the image below.



Variant with a work floor of 2 platforms

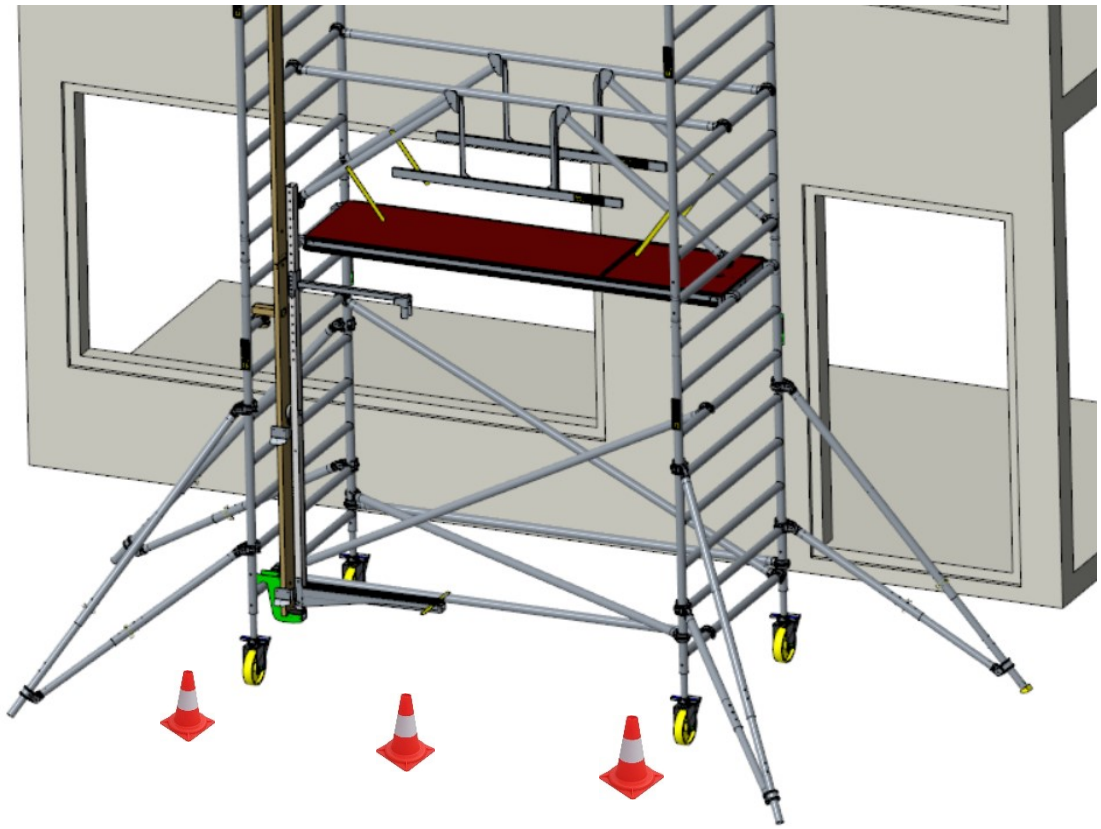
- Place a platform with a hatch on the side of the façade. On the side of the lift, special platform 9501970045 must be used. This platform has an elongated hatch that can be opened for the lift.
- The platform should be fully enclosed with toe boards.
- On the façade side, the handrail can be omitted if there is no risk of falling on that side due to the façade. This is the case when the distance between the longitudinal beam and the façade is less than 10 cm. On the lift side, a handrail must be placed to prevent the risk of falling. The lift is then located in front of the handrail, so that the panel can easily be removed from the lift.

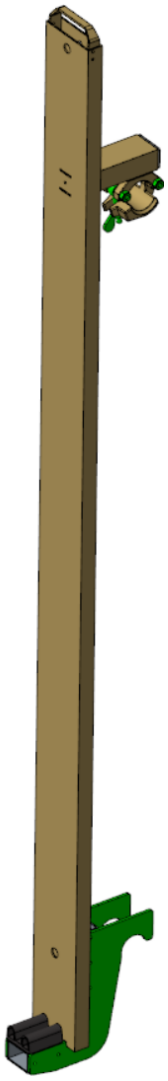
The work floor will then look like the image below (model Safe Guard).



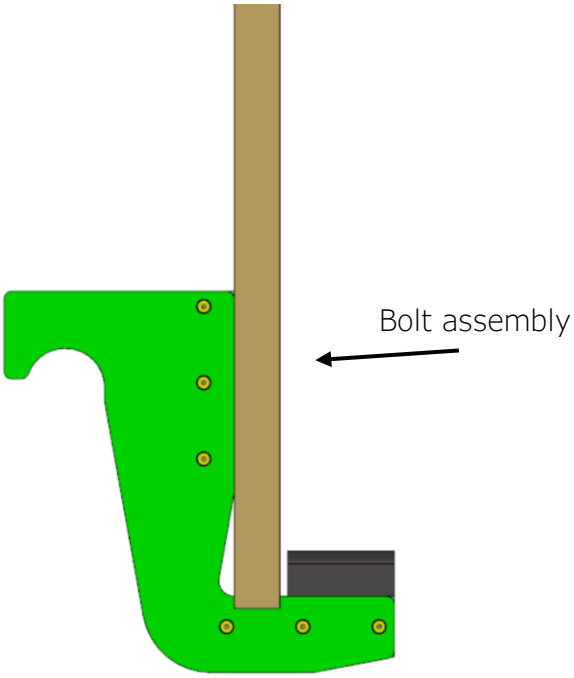
Pay attention to the following things before you start setting up the lift:

- Cordon off the workstation with cones, fences or tape. This should prevent bystanders from being under the lift, whether consciously or unconsciously, during construction or use.
- Always place the lift on the left side of the scaffolding. This is important for the installation of the upper part of the rail, later in the construction process.
- Place the platforms so that the hatches are always on the right side of the scaffolding. See image below.

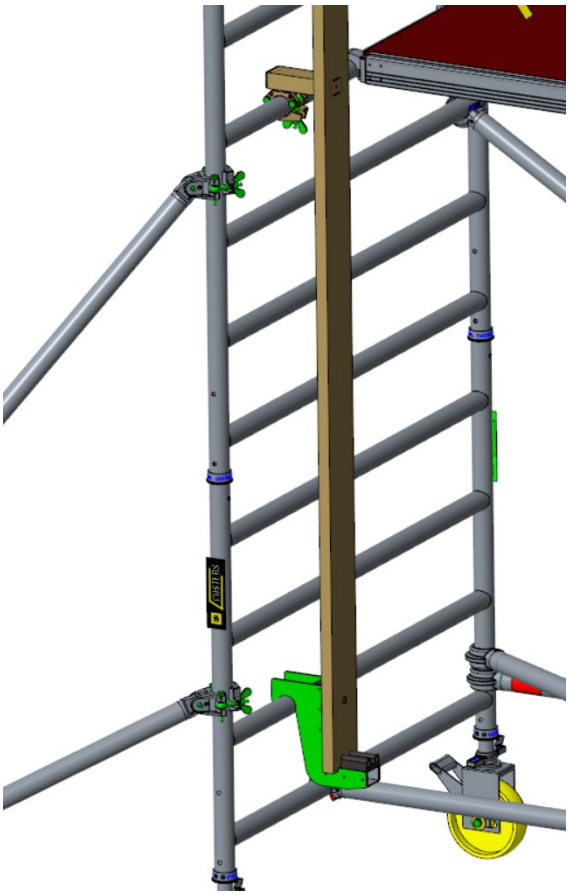




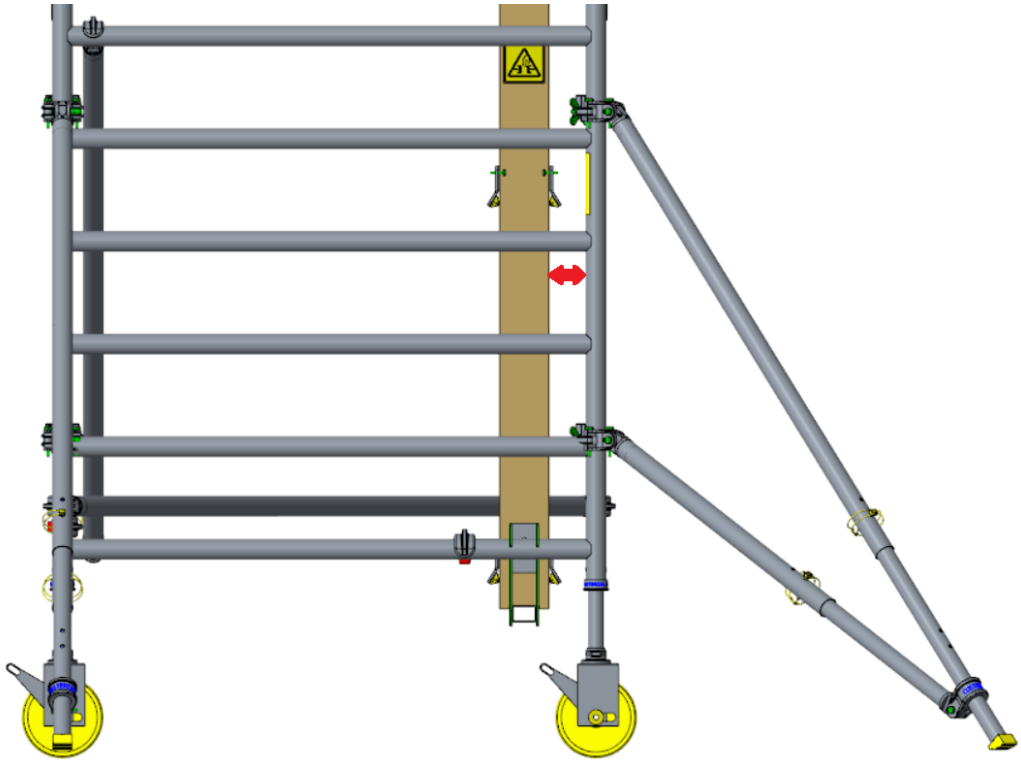
*M10 x 60 Cylinder inner hexagon*
*M10 Bodywork*
*M10 self-lock nut*



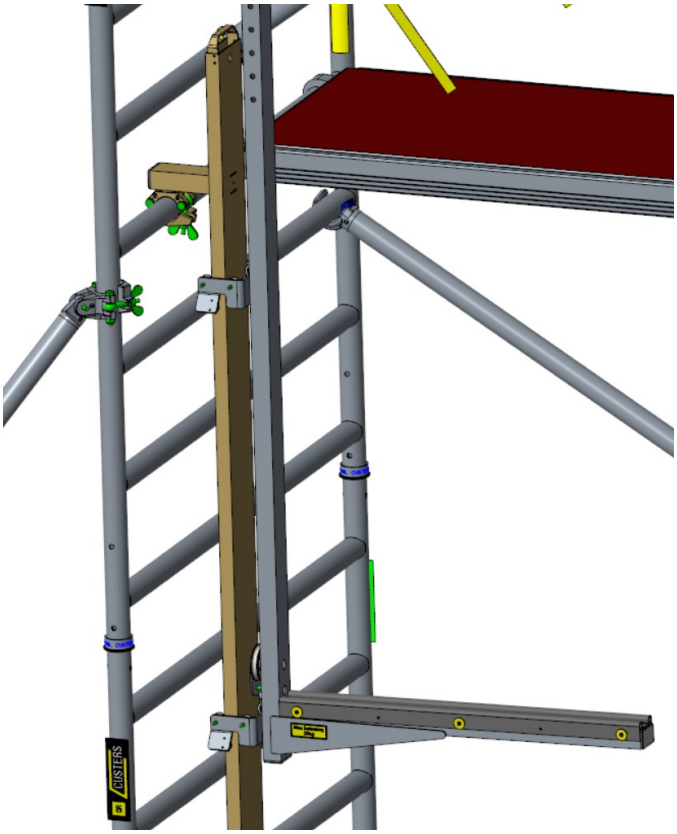

1. Connect a 2 meter guide rail to the end stop.
2. Mount it with the M10 cylinder inside hexagon bolt.



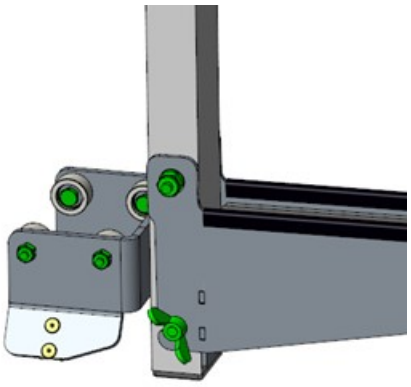
3. Support the final stop on the 1st or 2nd rung.



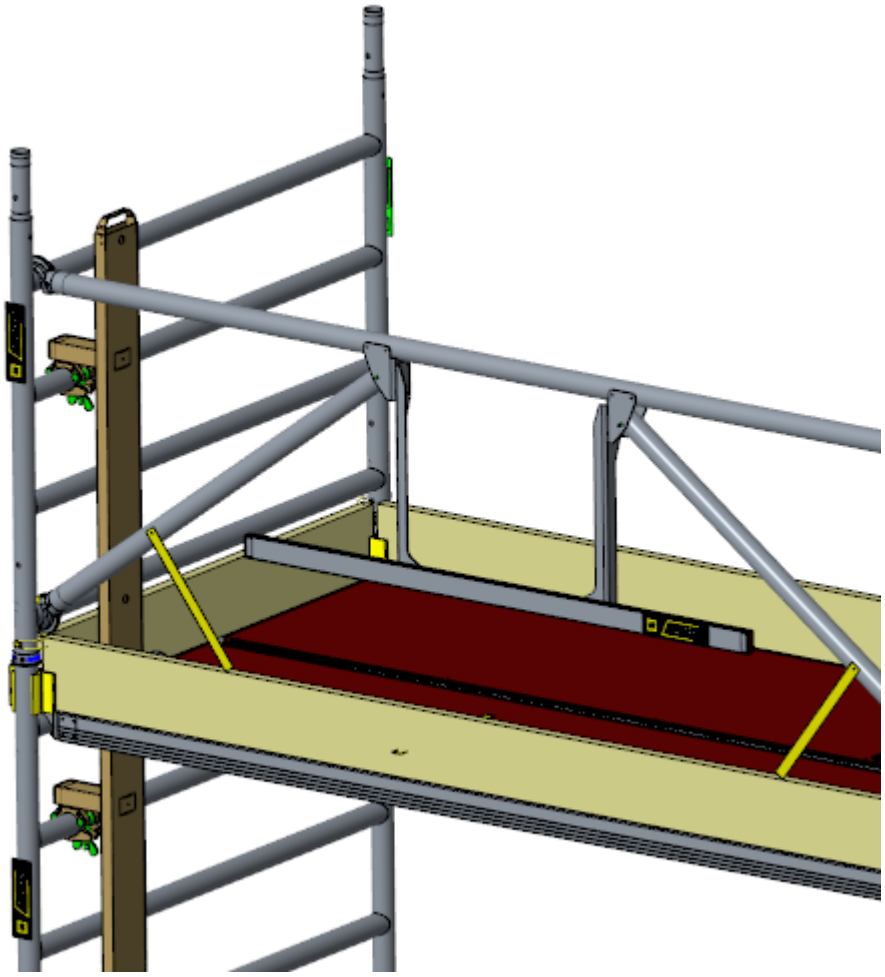
4. Connect the guide rail to the rung. Make sure there is 11cm of space between the upright of the scaffold and the tube of the coupling (see red arrow in the image above). Also make sure that the rail is neatly vertical, use a spirit level if necessary. Note: If you are only going to place 1 platform on the upper level and plan to lift the panel over the handrail, keep 40cm for this distance.



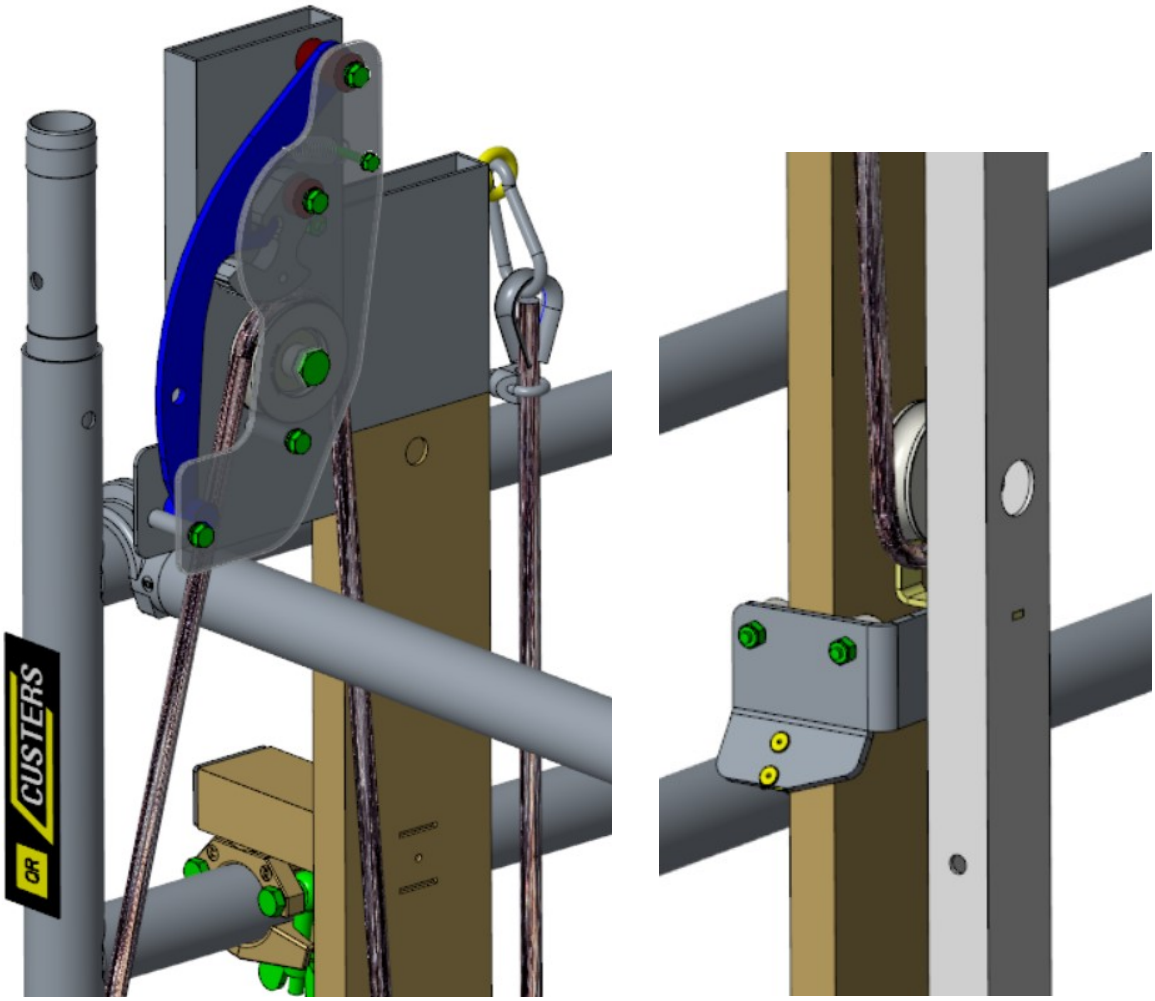
5. Slide the lift part over the rails.



6. Make sure that the wing nut is properly tightened before proceeding with the assembly of the lift.



7. Place guide rails of 2 or 1 meter and connect them to the rungs until one rises about 1m above the upper platform.
   Check that the distance from the socket to the upright is always 11 cm. Or bigger if you don't use the dedicated platform

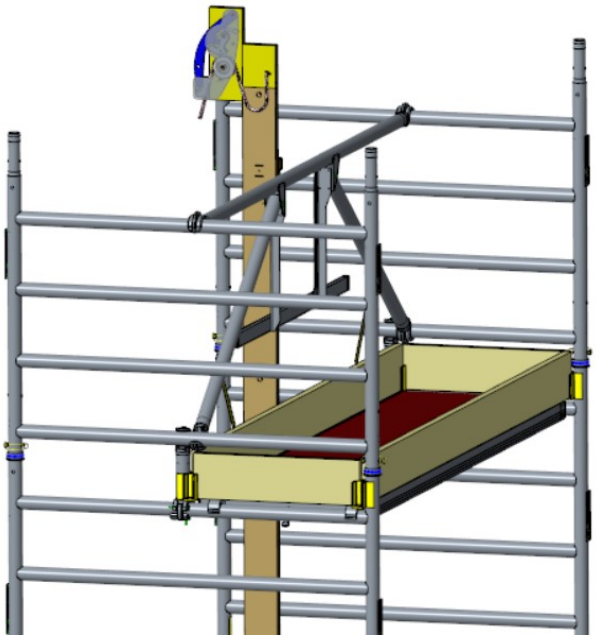


8. Place the end piece on top of the upper guide rails and fasten them by means of the hexagonal cylinder head screw and wing nut.
9. Attach the rope to the attachment eyelet of the end piece by means of the carabiner. Assemble the rope in such a way that the rope runs from the attachment eyelet in a straight line under the pulley of the lift, then runs over the pulley of the end piece. Finally, the rope on the inside of the banana-shaped bracket runs down to the ground level where the user is standing. (see images above).
10. The solar panel lift is now ready for use.

## 6.2 Structure in a scaffold with 7-sport frame

The solar panel lift type SL7 can be used on (2 platform) wide scaffolds with a 7-stage base window, with a rung diameter between 50 and 51 mm, and a center-to-center sport distance of 280 mm.
In the case of intermediate floors and the work floor on the highest level, only 1 platform with hatch can be placed instead of 2 platforms prescribed by the mobile scaffold manual. To prevent the risk of falling, an extra knee and hip rule should be placed on the inside of these floors. Please refer to the manual of the relevant scaffolding system.

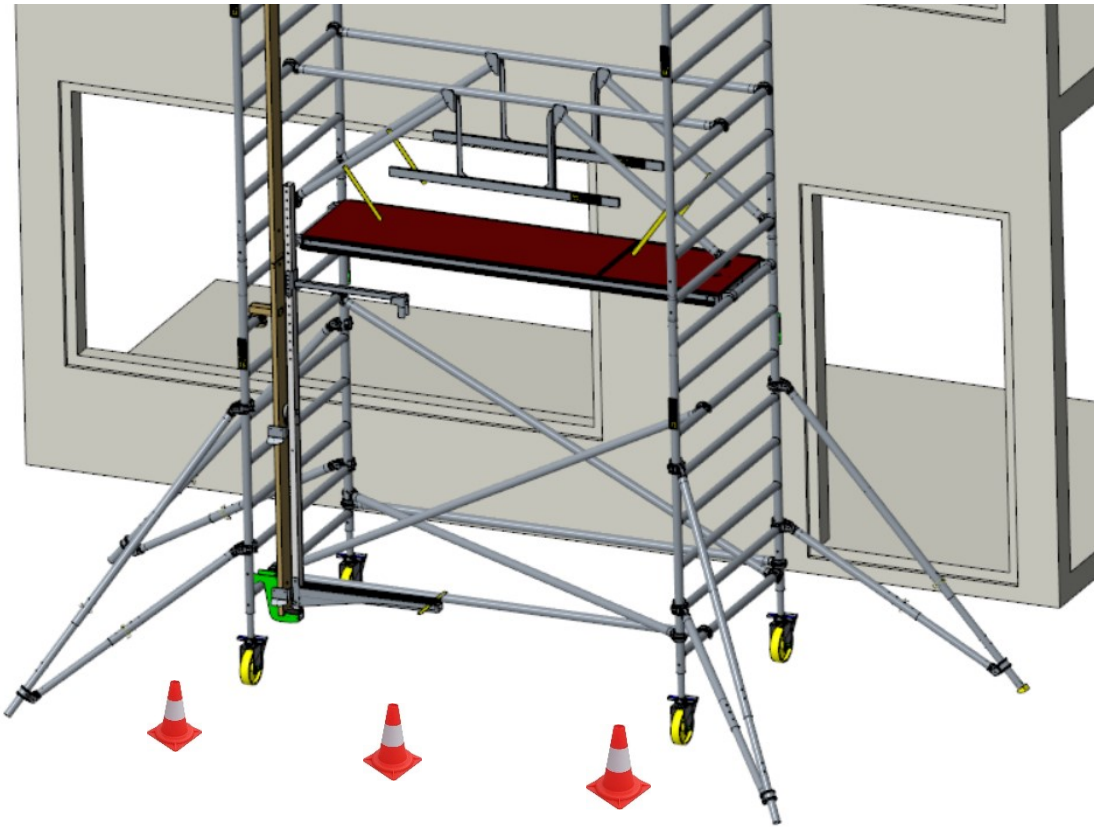
The shop floor at the top level will then look something like the image below. The exact version depends on the brand of scaffolding.



Make sure that the wheel spindles are sufficiently turned out, this is important if you want to move the scaffolding later. Otherwise, a caster may not be able to swivel properly due to contact with the lift frame.

Pay attention to the following things before you start setting up the lift:

- Cordon off the workstation with cones, fences or tape. This should prevent bystanders from being under the lift, whether consciously or unconsciously, during construction or use.
- Always place the lift on the left side of the scaffolding. This is important for the installation of the upper part of the rail, later in the construction process.
- Place the platforms so that the hatches are always on the right side of the scaffolding. See the image below for indication. The exact version depends on the brand of scaffolding.
- Always follow the instructions in the manual of the respective scaffolding system



For further construction, follow steps 1 to 10 in section 6.1.

Note: The guide frames of the SL7 have a length of 1.96 m and 1.12 m. These are not applicable to a Custers scaffolding.

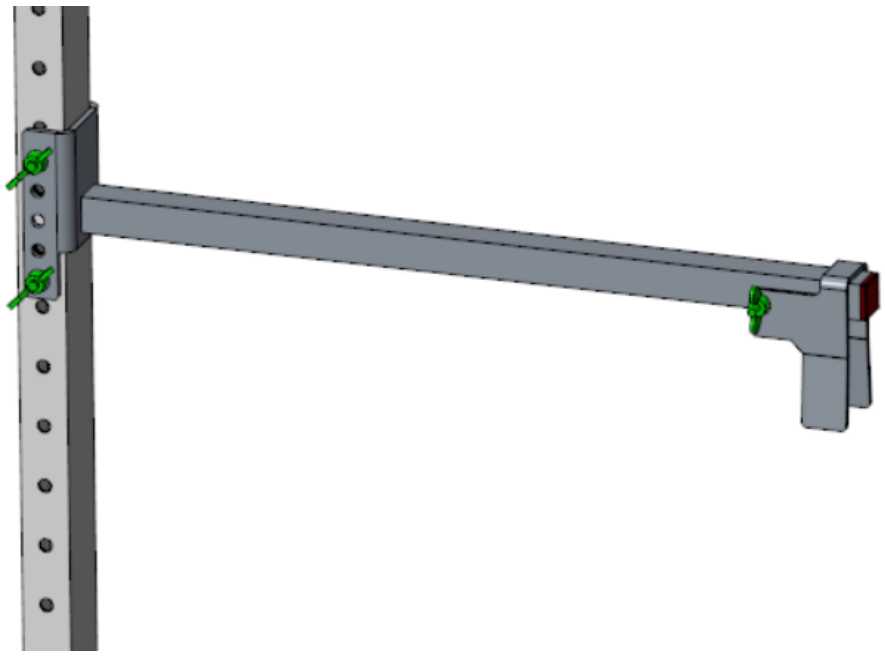
# 7. The use of the solar panel lift

Safety Instructions

- Read the manual before use.
- The minister must be at least 18 years of age.
- Only use the lift for solar panels. Not for other materials or people.
- Do not use the lift for solar panels larger than 2.1 x 1.3 meters
- Do not use the lift when the wind force is more than 5 Bft.
- Before use, check that the brake is working with a loaded and unloaded carrier.
- Check the attachment of the hoisting rope to the end piece prior to use.
- Beware of the risk of jamming when guiding the carrier.
- Never go under the elevator. Also, make sure that others are not under the elevator when it is raised.
- Check the installation for damage, cracks and deformations after assembly and before every day of use
- Replace weathered or damaged hoisting rope immediately.

Go through the following steps for raising a solar panel.

1. Place the solar panel on the lower beam of the lift. Make sure the panel is directly against the vertical upright of lift.



2. Check the position of the top beam in relation to the top of the panel. If necessary, adjust this position by means of the adjustment holes so that the beam hangs just above the top of the panel.

3. Flip the flip bracket over the top of the panel so that the panel is trapped between the lips of the flip bracket.
4. Use the rope to hoist the lift with panel upwards. Make sure that you stand about 1 to 2 meters away from the lift during hoisting in order to raise the panel in a controlled manner.

Note: Do not suddenly let go of the rope while hoisting. Not even when the elevator has arrived at the height of the upper platform. Reduce the pulling angle of the hoisting rope until the brake engages. Only then can the hoisting rope be released. In the unlikely event that the rope is suddenly released, the brake will immediately intervene and block the lift. However, this abrupt braking movement can cause damage to the panel and should therefore be avoided.

5. Take the panel from the top of the elevator and place it on the roof. Make sure that you hold the panel with one hand when you release the folding bracket with the other hand. Otherwise, the panel will fall off the lift immediately.

## 8. Dismantling

Dismantling should be done in the opposite order to that during the assembly phase. Start at the top and work your way back to basics. Do not throw parts.

## 9. Maintenance of the solar panel lift

All parts, especially moving parts and welds, should be checked regularly for wear and damage, but at least once a year.
Missing and broken parts must be replaced.

Aluminium parts may no longer be used in one or more of the following cases:

- If square/rectangular tubes have 1 or more dull dents with a depth of more than 2.0 mm
- If pipes or tubes have 1 or more sharp dents or cracks, regardless of length/depth and location of the dent(s)/crack.

Moving parts, e.g. running wheels and guides, must be clean and running smoothly.
The rope must be clean, not weathered and undamaged.

Repair of equipment should always be done in consultation with the manufacturer.

# 10. Composition table

The following table shows which parts are needed for the construction of a solar panel lift. Make sure that these parts are also present before you start with the construction.

### Composition listings Custers® Solarlift SL8

| Nr. | Defintion | Article number | Kg | t/m 6m | t/m 8m | t/m 10m | t/m 12m |
|---|---|---|---|---|---|---|---|
| 1 | End stop Solarlift | 9501.970.005 | 1,22 | 1 | 1 | 1 | 1 |
| 2 | Guide Rail 2m Solarlift SL8 | 9501.970.010 | 5,60 | 3 | 4 | 5 | 6 |
| 3 | Guide Rail 1m Solarlift SL8 | 9501.970.015 | 3,27 | 1 | 1 | 1 | 1 |
| 6 | Hoist with brake Solarlift | 9501.970.020 | 3,93 | 1 | 1 | 1 | 1 |
| 7 | Lifting platform Solarlift | 9501.970.030 | 9,53 | 1 | 1 | 1 | 1 |
| 8 | Rope for Solarlift 21m (PH 2-6m) | 9501.970.050 | | 1 | 0 | 0 | 0 |
| 9 | Rope for Solarlift 27m (PH 8m) | 9501.970.051 | | 0 | 1 | 0 | 0 |
| 10 | Rope for Solarlift 33m (PH 10m) | 9501.970.052 | | 0 | 0 | 1 | 0 |
| 11 | Rope for Solarlift 39m (PH 12m) | 9501.970.053 | | 0 | 0 | 0 | 1 |

Depending on the surface-mounted variant you choose, you will need additional parts to make the Custers scaffold suitable for the use of the solar panel lift.

Variant with a work floor of 1 platform (see section 6.1)
- 2x attachments for the toe board holders (article 9501.800.080)

Variant with a work floor of 2 platforms (see section 6.1)
- 1x dedicated platform with hatch (item 9501.970.045)

### Composition listings Custers® Solarlift SL7

| Nr. | Definition | Article numberr | Kg | t/m 6m | t/m 8m | t/m 10m | t/m 12m |
|---|---|---|---|---|---|---|---|
| 1 | End stop Solarlift | 9501.970.005 | 1,22 | 1 | 1 | 1 | 1 |
| 4 | Guide Rail 1,96m Solarlift SL7 | 9501.971.010 | 5,50 | 3 | 4 | 5 | 6 |
| 5 | Guide Rail 1,12m Solarlift SL7 | 9501.971.015 | 3,60 | 1 | 1 | 1 | 1 |
| 6 | Hoist with brake Solarlift | 9501.970.020 | 3,93 | 1 | 1 | 1 | 1 |
| 7 | Lifting platform Solarlift | 9501.970.030 | 9,53 | 1 | 1 | 1 | 1 |
| 8 | Rope for Solarlift 21m (PH 2-6m) | 9501.970.050 | | 1 | 0 | 0 | 0 |
| 9 | Rope for Solarlift 27m (PH 8m) | 9501.970.051 | | 0 | 1 | 0 | 0 |
| 10 | Rope for Solarlift 33m (PH 10m) | 9501.970.052 | | 0 | 0 | 1 | 0 |
| 11 | Rope for Solarlift 39m (PH 12m) | 9501.970.053 | | 0 | 0 | 0 | 1 |

Please note that you may need additional parts to make the scaffold suitable for the safe use of the solar panel lift. (See Section 6.2)

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